

May 20, 2021

**VIA ELECTRONIC FILING**

Kimberly D. Bose  
Secretary, Federal Energy Regulatory Commission  
888 First Street, N.E.  
Washington, D.C. 20426

**Re: Response to April 26, 2021 Additional Information Request; Application for Surrender of License for Major Project and Removal of Project Works and Request for Expedited Review, FERC Nos. 14803-001, 2082-063.**

Dear Secretary Bose:

The Klamath River Renewal Corporation (Renewal Corporation) submits the attached response to the FERC's April 26, 2021 Additional Information Request (AIR) as lead applicant in the above-referenced proceeding. The Renewal Corporation's response to the AIR is enclosed at Exhibit A and includes Attachments 1 through 5 (collectively, the Response). All responses, statements of fact, views, opinions, interpretations and other communications set forth in the Response are solely and exclusively attributable to the Renewal Corporation, are based on facts and information that are known to the Renewal Corporation, and are not attributable to any other party. The Response includes the following documents:

Exhibit A	Response to AIR 1-5
Attachment 1	AIR-1: Tables 1 and 2
Attachment 2	AIR-2: National Historic Preservation Act Consultation Record
Attachment 3	AIR-3: Revised Table 3-4
Attachment 4	AIR-3: Maps [Privileged]
Attachment 5	AIR-5: Phase II Archaeological Research Design and Testing Plan Testing Plan [Privileged]

Attachment 4 and portions of Attachment 5 contain information about the location, character, or ownership of historic resources that, if disclosed, may cause a significant invasion of privacy; cause a risk of harm to the historic resource; or impede the use of a traditional religious site by practitioners. These attachments are separately filed as "Privileged" documents in accordance with 18 C.F.R. § 388.112, 18 C.F.R. § 388.107 and 36 C.F.R. § 800.11(c). Public versions of these documents are enclosed with this filing.

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Respectfully submitted,

*s/ Markham A. Quehrn*

Markham A. Quehrn  
Perkins Coie LLP  
Attorneys for Klamath River Renewal Corporation

cc: Service List (FERC Nos. P-14803-001 and P-2082-063)



**Exhibit A**  
**Response to April 26, 2021 Additional Information Requests**

**Terrestrial Resources**

**AIR 1.** *The Reservoir Area Management Plan states monitoring of vegetation establishment would be conducted in permanent plots randomly located with the reservoir footprints and stratified by landform (riparian or upland) and treatment (i.e., seeded only, planted and seeded, or unmanaged). The management plan also provides success criteria for metrics, including species richness, tree and shrub density, and invasive exotic vegetation relative frequency. However, the management plan does not specify the anticipated acreage of each landform/treatment class at each reservoir or whether replicate sample plots would be located within each landform/treatment class and, if so, how many study plots would be located at each reservoir restoration area. Additionally, the management plan does not discuss data analysis methodology. Footnote 2 in Table 6-5 states that if monitoring success criteria are achieved in one geographic area based on the Criteria Met description, the area will be recommended for removal from further monitoring activities. However, in this context, it is not clear whether “geographic area” refers to a specific landform/treatment class, an entire reservoir, or a study plot. It is not clear whether success criteria would be evaluated for each landform/treatment class, pooled and evaluated for each reservoir, or evaluated across reservoirs for the entire project for each metric (e.g. species richness, tree and shrub density, and invasive exotic vegetation relative frequency). Finally, it is not clear whether data collection would be discontinued for each metric as success criteria are met or if vegetation monitoring would continue for all metrics until all success criteria are met for each metric (e.g., what would occur if success criteria for species richness alone were met in year 1 but not met in year 2).*

*To address these concerns, please provide: (1) additional detail on the number of study plots planned for each reservoir by landform/treatment class and the total area of each landform/treatment class anticipated at each reservoir; and (2) methods for data analysis and determination of restoration success.*

**Response to AIR 1:**

**Detail on Study Plots.** Reference plots consist of plots located in the areas immediately surrounding the reservoirs for each habitat type. Reference plots will be surveyed once prior to dam removal, and again during monitoring years 1, 3, and 5.

Monitoring vegetation within the reservoirs (reservoir-based plots) will be stratified by landform, target habitat type, treatment, and reservoir (Attachment 1, Table 1). The data will be evaluated independently for each reservoir per habitat type and metric (see methods below).

All success criteria metrics will be surveyed at all reservoir-based plots. Woody stems are not expected in grassland areas (seeded only sites) but will be recorded if present.

The number of plots listed in Table 1 (Attachment 1) is based on revegetation monitoring in the Elwha River (Prach et al. 2019; Chenoweth et al. in review) and proportioned for the scale of the project and diversity of habitats. Primary successional plant communities differ by location (local flora) and disturbance (i.e., volcanic eruptions, glacier receding, and historical land use such as timber, row crop, and pasture). The Elwha Project has produced the only published data for a primary succession that was seeded and planted following large-scale dam removal. Monitoring for the Lower Klamath Project reflects elements of that monitoring plan to capture similar response variables. Total habitat acreage anticipated for each reservoir post-dam removal is listed in Table 2 (Attachment 1).

**Methods for data analysis and determination of restoration success.** Referencing the Reservoir Area Management Plan (RAMP) Table 6-5 n. 2, the AIR states that it “is not clear whether ‘geographic area’ refers to a specific landform/treatment class, an entire reservoir, or a study plot” and requests a definition of “geographic area”, and specifically, whether this refers to a specific landform/treatment class, an entire reservoir, or study plot. To help clarify this point, “geographic area” refers to habitat type within an individual reservoir. This table will be modified in a revised RAMP to remove the option of early termination of monitoring based on achievement of success criteria. Monitoring will be conducted for all metrics at all habitat types for a minimum of five (5) years or until success criteria are met.

The AIR also asks how success criteria will be evaluated for each landform/treatment class, pooled and evaluated for each reservoir or evaluated across reservoirs for the entire project metric (e.g., species richness, tree and shrub density, and invasive exotic vegetation (IEV) relative frequency). Success criteria analyses are aggregated by habitat type within the three reservoirs. Methods for data analysis follow the same protocols conducted in the Elwha Project revegetation (Chenoweth et al., in review). A permutational multivariate analysis of variance (PERMANOVA) will be used to test for significant differences between success criteria metrics (response variables). The explanatory variables in the models will be: plot type (reference or reservoir-based), and habitat type, using an alpha ( $\alpha$ ) of 0.05. Each PERMANOVA model will use Bray–Curtis distance matrices for non-parametric data (species frequency) and Euclidian distance matrices for parametric data (species richness, stem densities, total vegetation cover). Monte Carlo randomization (9,999 permutations) will be used to calculate probability (p) values for the resulting F-statistic. Response variables to be tested separately are species richness, bare ground, non-native or IEV frequency, and woody stem densities.

Non-metric multidimensional scaling (NMDS) ordination plots will be created to visualize differences between plots based on explanatory variables. NMDS solutions will be calculated from a random starting configuration using Bray–Curtis distance and run 300 times using 3 dimensions. The fit of the NMDS ordinations will be evaluated by plotting the original dissimilarities against the Euclidean ordination distances in Shepard plots.

Differences in response variable means between reference plots and reservoir-based plots are expected because the dewatered reservoir areas will be undergoing primary succession. If statistical models confirm the response variables differ between reference plot data and reservoir-based plots, means and standard deviations will be calculated and compared to determine if success criteria metrics are within standard deviations from the targeted values. If statistical models reveal no differences between reference plot data and reservoir-based plots for any one

criterion in any year, the success criteria target for that metric will be considered met for that year.

Here is an illustrative example. Assume that the mean species richness in reference plots located in grasslands around Iron Gate reservoir is 23.68 species. In year 1, PERMANOVA analysis finds the means between the reference plot data and the reservoir-based data are significantly different. Means and standard deviations are calculated and compared. The mean species richness within the reservoir grassland plots (seeded only) is 15.24 species with a standard deviation of  $\pm 2.35$  with a mean range of 12.89-17.59. The target value for the species richness success criteria in year 1 is 50% of reference (in this example, 11.84 species). The range of reservoir-based grassland species richness means is 54-74% of the reference mean, thereby exceeding the success criteria target.

Success criteria is a topic of ongoing consultation with state and federal agencies. Success criteria will be included in a revised RAMP.

**Discontinuation of monitoring against success criteria.** Based on previous experience on projects of similar scale and complexity (e.g., Elwha), the success criteria are expected to be met within five (5) years. Monitoring of all vegetation metrics will be conducted annually for a minimum of five (5) years. Even if year-five success criteria for any monitoring metrics are met in earlier years, monitoring of all metrics will continue for five (5) years. If all success criteria have been met by the end of the five (5) year monitoring period, monitoring will be terminated. If, by the end of the third year of monitoring, monitoring determines that treatment areas are not on an adequate positive ecological trajectory to meet the year-five monitoring success criteria, the Renewal Corporation intends to undertake adaptive management in consultation with the Commission and state and federal agencies, to correct deficiencies in site performance. Potential factors that would influence lower than expected performance include unanticipated restoration site conditions, drought, or other natural conditions. Potential adaptive management options are discussed in the RAMP and include potential modification of success criteria to better match post-drawdown and dam removal conditions.

Monitoring periods are a topic of ongoing consultation with state and federal agencies. Monitoring periods will be included in a revised RAMP.

## Cultural Resources

**AIR 2.** *PacifiCorp's 2006 draft Historic Properties Management Plan (2006 HPMP) prepared as part of the license application, filed on March 27, 2006, provides recommendations of National Register of Historic Places (National Register) eligibility for resources located within the Area of Potential Effects (APE). Some of the sites in Table 5.3.4 of the 2006 HPMP are recommended as eligible for listing on the National Register (e.g., Sites 35KL0013, 35KL0014, et.al.); however, Table 3-4 of the 2021 draft HPMP filed with the Amended Surrender Application (2021 HPMP) indicates that these same sites remain "unevaluated." Section 3.2.1 (page 48) of the 2021 HPMP further states that neither the California nor the Oregon State Historic Preservation Officer (SHPO) has concurred with the National Register evaluations offered in the PacifiCorp Final Technical Report (PacifiCorp 2004, 2006). Appendix E, Correspondence on the HPMP, of the 2021 HPMP and Attachment C, Consultation Record, of your March 22, 2021 filing regarding the status of your informal consultations also do not indicate whether the 2021 HPMP has been reviewed by either the Oregon or California SHPOs.*

*Please provide an update on your consultation with the Oregon and California SHPOs regarding the recommendations for National Register eligibility and if the SHPOs have reviewed the draft 2021 HPMP. If the SHPOs have reviewed the document, please provide copies of their comments.*

### **Response to AIR 2:**

**SHPO Review of the HPMP.** The Renewal Corporation submitted the HPMP (February 2021) to the SHPOs. It has not requested formal review. Our understanding is that the California and Oregon SHPOs will provide a formal review of this and similar documents only after the Commission initiates formal consultation.

The Oregon and California SHPOs have been extensively involved in the informal consultation efforts to date. As the designated non-federal representative for informal consultation under National Historic Preservation Act (NHPA) section 106, the Renewal Corporation convened a Cultural Resources Working Group (CRWG) in 2017. Members of the CRWG include the California and Oregon SHPOs, federally recognized and other tribes, and other stakeholders. The CRWG extensively reviewed various components of the HPMP, the process for identifying and evaluating historic properties, and the assessments of effects. A primary goal of the CRWG has been to obtain input from the members on documents needed for compliance with Section 106, including the HPMP. In total, the Renewal Corporation held 14 meetings with the CRWG (Attachment 2 at pp. 4-5, 6-10), which were attended by representatives of the California and Oregon SHPOs, prior to submission of the HPMP to FERC on February 26, 2021.

For a summary of the extensive consultation with the California and Oregon SHPOs and the CRWG generally Attachment 2 at pp. 567-662. Attachment 2 is an updated consultation record under NHPA. It supersedes the prior versions filed with the Commission on February 26, 2021 (as Exhibit E) and March 22, 2021 (as Attachment C).

CRWG members, including the California and Oregon SHPOs, received an overview of the HPMP at the September 2018 meeting (Attachment 2 at pp. 685-691, 918-945). CRWG members were also provided with copies of the Looting and Vandalism Prevention Plan and Monitoring and Inadvertent Discoveries Plan for review in August and September 2019 (Attachment 2 at pp. 7, 734, 1118-1149). The Renewal Corporation incorporated comments from the CRWG into subsequent drafts of those subplans.

**2006 v. 2021 Eligibility Recommendations.** Neither Oregon nor California SHPOs concurred in the NRHP evaluations presented in PacifiCorp's draft 2006 HPMP. Our understanding is that they did not concur because the document was not finalized, and thus formal concurrence was not requested at that time. During CRWG meetings, the Oregon State Archaeologist noted that subsurface testing was required prior to acceptance of eligibility recommendations and, specifically, assessment of effects and identification of appropriate mitigation measures. Whether archaeological evaluation of sites is warranted was an issue discussed in detail in several CRWG meetings, including those in August 2018 (Attachment 2 at pp. 678-684), February 2019 (pp. 706-710), April 2019 (pp. 711-719), September 2019 (pp. 734-741), October 2019 (pp. 742-749), and December 2019 (pp. 750-754). Once the Phase II efforts are completed, the Renewal Corporation will work with the California and Oregon SHPOs to finalize the eligibility determinations expeditiously.

**AIR 3.** *The 2021 HPMP uses several terms to describe various areas in the vicinity of the Lower Klamath River Project. These include a preliminary APE, the project boundary, the Area of Direct Impacts (ADI), and the Project Limits of Work and Access (LOW). Additionally, "Parcel B" lands are identified as those that would ultimately be transferred to the State of Oregon, the State of California, or a third-party following completion of license surrender conditions. Table 3-4 of the 2021 HPMP identifies all recorded sites within the ADI. However, there are some inconsistencies in this table that need to be clarified. For example, section 1, page 1 of the HPMP overview states that the "ADI is defined as those areas within the APE that correspond geographically to the project's Limits of Work (LOW), or physical extent of on-the-ground construction activities" associated with the license surrender. However, several sites in the ADI table are identified as not within the LOW. It is not clear how these sites could be located within the "ADI" but not located within the "LOW." Additionally, it is not clear from the table if all the sites within the project boundary for the Lower Klamath Project are also located within the ADI.*

*Please revise Table 3-4 to include: (1) all identified archaeological sites at the project and their locations relative to the APE, the project boundary, the ADI/LOW, and Parcel B lands; (2) whether each resource is a prehistoric, multi-component, or historic-period site; (3) whether each site is located on licensee, private, state, federal, or other lands; (4) any National Register recommendations and/or determinations for each site (including clarification of any recommendations provided in the 2006 HPMP) and identification of all sites that will be subject to the 2021 Phase II archaeological investigations; (5) a brief description of known and potential project effects to each specific resource (including any still-pertinent effects noted in the 2006 HPMP and any potential effects on historic properties as a result of downstream sediment transport associated with facility removal); and (6) whether those specific effects are*

*currently addressed in the 2021 HPMP. Include maps, filed as “Privileged”, that identify all archaeological sites at the project and their location relative to the ADI/LOW, and labeling those sites that are subject to the 2021 Phase II archaeological investigations.*

### **Response to AIR 3:**

**Terminology.** The Area of Potential Effects (APE) is the geographic area within which the undertaking may directly or indirectly cause alterations in the character or use of historic properties. The proposed APE is primarily a 0.5-mile-wide area on each side of the Klamath River from the upper reach of the J.C. Boyle Reservoir to the Klamath River mouth at the Pacific Ocean. Around the reservoirs where topography is more open and rolling, however, the APE extends at least an additional 0.5 mile to create a minimum 1-mile-wide area on each side of the reservoirs to address the potential for visual effects primarily related to viewshed alterations resultant from reservoir removal. The Renewal Corporation consulted with the California and Oregon SHPOs on the definition of the APE. See, e.g., Historic Properties Management Plan (February 2021) (HPMP), Exhibit E to the February 26, 2021 filing; and Attachment 2 hereto, pp. 569, 578-588, 598-608, 613-614, 620, 622, and 625. A detailed description of the APE is included in Attachment 4.

The Area of Direct Impacts (ADI) is a smaller footprint within the APE. The Renewal Corporation has identified the ADI to delineate where direct physical impacts may occur, particularly those areas that will be subject to ground disturbance, such as dam facility removal and reservoir restoration activities. The Limits of Work (LOW) refers to the physical extent of on-the-ground construction activities (i.e., demolition and removal) and restoration activities. The ADI expands upon but generally corresponds to the LOW. Although potential effects to archaeological sites due to downstream sediment transport are not anticipated, the ADI extends between Iron Gate Dam (RM 193.1) and Humbug Creek (RM 174.0) in California to account for downstream flood control improvements for habitable structures located within the preliminary 100-year floodplain—areas where no ground-disturbing impacts will occur. Consequently, it is possible for a site to be located within the ADI but not within the LOW. For that reason, the statement from section 1, page 1 of the HPMP does not equate the ADI and LOW.

Note that APE/ADI do not correspond to the larger Project Boundary. Therefore, archeological sites within the project boundary for the Lower Klamath Project are not necessarily located within the ADI. For purposes of the HPMP, in a few locations, the ADI extends further than the LOW to include complete boundaries of archaeological sites (buffered 40 meters) that (1) overlap into areas beyond the LOW or (2) that are within 40 meters of the LOW and the modeled post-dam removal floodplain. Therefore, all archaeological sites lie within the ADI, but some may lie (1) solely within the LOW; (2) solely outside the LOW, but still within the ADI (based on the parameters above); or (3) overlap into the broader ADI from the LOW.

**Table 3-4.** As requested, the Renewal Corporation revised Table 3-4 of the HPMP to:

- (1) Include all identified archaeological sites at the project and their locations relative to the APE, the project boundary, the ADI/LOW, and Parcel B lands;
- (2) Identify whether each resource is a prehistoric, multi-component, or historic-period

- site;
- (3) Indicate whether each site is located on licensee, private, state, federal, or other lands;
- (4) Present any National Register recommendations and/or determinations for each site (including clarification of any recommendations provided in the 2006 HPMP);
- (5) Identified all sites that will be subject to the 2021 Phase II archaeological investigations;
- (6) Provide a brief description of known and potential project effects to each specific resource; and
- (7) State whether those specific effects are currently addressed in the 2021 HPMP.

This revised version of Table 3-4 (Revised Table 3-4) is included hereto as Attachment 3. Revised Table 3-4 now explains the status of the development of preservation/management measures for all sites that are located within the current project boundary, including, but not limited to, Parcel B lands that would ultimately be transferred to non-federal ownership/oversight. As noted in Revised Table 3-4, such measures will be developed after the eligibility determinations using the framework described in the HPMP and its subplans.

**Maps.** Maps [Privileged] that identify all archaeological sites at the project and their location relative to the ADI/LOW and designating those sites that are subject to the 2021 Phase II archaeological investigation are provided hereto at Attachment 4.

**AIR 4.** *The regulations implementing section 106 of the National Historic Preservation Act state that the “transfer, lease, or sale of property out of Federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property’s historic significance may constitute an adverse effect” (36 Code of Federal Regulations 800.5[2][vii]). Exhibit E, Section 4.11.6 of the Amended Surrender Application also acknowledges that “land easement and transfer” can result in adverse effects to historic properties. In the revised Table 3-4 requested above, please also describe the preservation/management measures (if any) for all sites that are located within the current project boundary, including, but not limited to, Parcel B lands that would ultimately be transferred to non-federal ownership/oversight. Please provide any documentation of consultation with the Oregon and California SHPOs in this regard.*

#### **Response to AIR 4:**

The Renewal Corporation has not consulted with the Oregon and California SHPOs on the future disposition of the lands once the license surrender is effective. As stated in the Amended License Surrender Application, California and Oregon will dispose of Parcel B lands under Section 7.6.4 of the Amended KHSA.

The extent and nature of the subsequent transfer of properties from the respective states to other potential entities remain to be determined. Section 7.6.4 of the Amended KHSA provides that the Parcel B lands will be managed for public interest purposes, such as fish and wildlife habitat restoration and enhancement, public education, and public recreational access. *Id.* Upon completion of the removal of the Lower Klamath Project, the Parcel B lands will be transferred to Oregon or California, as applicable, or to a designated third-party transferee. *Id.*

The California Natural Resources Agency, California Department of Fish and Wildlife, and Oregon Department of Fish and Wildlife have begun the process to determine the disposition of Parcel B lands for public interest purposes.

As noted in its Mitigation Measure TCR-7, the California State Water Resources Control Board stated that impacts on cultural resources protected under California Public Resources Code 5097.993 may be mitigated through land easement and transfer stipulations ensuring that protection measures are developed to encumber the title for all subsequent owners.

As noted above, the revised Table 3-4 now describes the status of the development of preservation and management measures for sites located within the current project boundary, including, but not limited to, Parcel B lands that will be transferred to non-federal ownership/oversight. The Renewal Corporation will incorporate the results of the Phase II investigations (which will start in June) into the HPMP and sub-plans. The Renewal Corporation expects that this field work will be completed by August 2021, with a technical report completed by February 2022, per the Detailed Schedule in the response to AIR-5 below.

**AIR 5.** *The 2021 HPMP identifies four tasks that are anticipated to be completed in 2021 including: (1) continued consultation with participating tribes on the ethnographic summary; (2) identification of proposed treatment measures for Traditional Cultural Properties; (3) completion of Phase II archaeological studies; and (4) the identification of project effects on eligible resources. However, in a letter dated September 23, 2020, and filed with the 2021 HPMP, the California SHPO indicated that it was withholding its comments on the Lower Klamath Project Phase II Archaeological Research Design and Testing Plan (AECOM, July 2020) until consultation on the plan, including tribal consultation, had been completed. We have been unable to locate any subsequent documentation of SHPO approval or tribal consultation regarding the Phase II plan or the other pending tasks. Please provide documentation of any additional consultation regarding these tasks. Additionally, please provide a detailed schedule for completion of the four tasks, including a schedule for any outstanding SHPO and tribal consultation.*

#### **Response to AIR 5:**

**Detailed Schedule.** The Renewal Corporation provides the following schedule for completion of the four tasks outlined above. A more detailed schedule of required tasks will be developed pending completion of eligibility determinations and consultation with FERC and the California and Oregon SHPOs.

<b>Task</b>	<b>Timing</b>	<b>Notes</b>
Continued consultation with participating tribes on the ethnographic summary	May 2021 – July 2021	As indicated in the minutes from CRWG meetings (on August 23, 2018; October 20, 2018; June 4, 2019; August 28, 2019; October 29, 2019; and December 12, 2019), tribal input was requested on ethnographic summaries and identification of TCPs. An additional request for this information is currently being prepared.



		Information has been received from some tribes on ethnographic summaries, and that information is available in draft form in a Cultural Context Statement prepared as an appendix to the HPMP.
Identification of proposed treatment measures for Traditional Cultural Properties	June 1, 2021	TCP studies were completed in conjunction with preparation of PacifiCorp's draft 2006 HPMP, but not all tribes have agreed that those studies are ready for submittal to the SHPOs for consideration. The Renewal Corporation will send letters to each of the tribes in May 2021 to ascertain whether these studies should be submitted to the SHPOs to initiate discussion on the potential National Register of Historic Places eligibility of these resources. The Renewal Corporation will provide the Commission with any formal responses received from the tribes concerning these TCP studies.
Completion of Phase II archaeological studies	June 1, 2021	The Phase II Plan [Privileged] is attached (Attachment 5). The document was submitted to the Tribes, SHPOs, and other members of the CRWG for review. Phase II fieldwork will be initiated in June 2021, following the review.
Identification of project effects on eligible resources	June 1, 2021 – February 25, 2022	Phase II evaluative testing is planned for June - August July 2021. Analysis, eligibility recommendations, and determinations of effect will be provided in a technical report scheduled for completion in February 2022.

# **ATTACHMENT 1**

Response to AIR-1  
Tables 1 and 2

## Response to AIR 1: Table 1 and Table 2

**Table 1. Plot numbers for reservoir-based plots to determine success criteria metrics.**

Landform	Habitat Type	Treatment	Number of Plots <sup>1</sup>		
			JC Boyle	Copco	Iron Gate
Riparian	Riparian - main stem	Seeded & Planted	5	8	8
	Riparian - tributary		4	7	6
	Control - riparian	No treatment	6	9	9
Upland	Oak woodland	Seeded & Planted	0	4	8
	Chaparral <sup>2</sup>	Seeded & Planted	6	11	11
	Grassland <sup>2</sup>	Seeded only	6	14	13
	Yellow-pine forest	Seeded & Planted	6	4	0
	Palustrine wetland <sup>3</sup>	Seeded & Planted	4	4	4
	Control - upland	No treatment	6	9	9
<b>TOTAL PLOTS: 181</b>			<b>43</b>	<b>70</b>	<b>68</b>
<p>1. Plot numbers may be reduced if data analysis reveals no differences based on reservoir; Copco and Iron Gate are very similar and may not require independent sampling. If that is proven in data analysis across all habitat types, plots will be reduced by randomly selecting a few to remain in each reservoir for future monitoring efforts.</p> <p>2. Chaparral and grassland habitats are anticipated to occupy the largest area within the reservoirs post-dam removal.</p> <p>3. Palustrine wetlands have the fewest plots because the total area anticipated to become palustrine wetlands is low.</p>					

**Table 2. Total habitat acreage anticipated for each reservoir post-dam removal.**

Reservoir	Riparian – Main Stem (acres)	Riparian – Tributary (acres)	Dry Uplands (acres)*	Palustrine Wetlands (acres)	TOTAL LS (acres)
JC Boyle	40.6	15.1	197.1	5.8	258.6
Copco	82.4	53	719.5	7.5	862.4
Iron Gate	85.2	30.5	715	5.9	836.6
<b>TOTAL ACREAGE Exposed</b>					<b>1,957.6</b>
*Dry uplands includes Oak woodland, Chaparral, Grassland, and Yellow-pine forest. The final distribution and acreages of these four cover types will be determined and laid out post-drawdown when final post-drawdown conditions become visible.					

## **ATTACHMENT 2**

Response to AIR-2

National Historic Preservation Act Consultation Record



Lower Klamath Project

# **National Historic Preservation Act Consultation Record**

May 2021





# Appendices

- Appendix A LKP Consultation Summary Table
- Appendix B LKP Consultation Summary
- Appendix C FERC Transcripts
- Appendix D Consultation Correspondence
- Appendix E Cultural Resources Working Group Meeting Minutes
- Appendix F Cultural Resources Working Group Presentations

## **APPENDIX A      LKP CONSULTATION SUMMARY TABLE**

## **SUMMARY OF LKP CONSULTATION RECORD**

### **FERC TRIBAL CONSULTATION TRANSCRIPTS**

<b>Date</b>	<b>Tribe</b>	<b>Meeting or Teleconference</b>
January 16, 2018	Hoopa Valley Tribe	Meeting
January 16, 2018	Quartz Valley Indian Reservation	Meeting
January 17, 2018	Karuk Tribe	Meeting
January 18, 2018	Klamath Tribe	Meeting
January 19, 2018	Karuk Tribe	Meeting
February 5, 2018	Modoc Nation	Teleconference
July 9, 2019	Yurok Tribe	Teleconference

### **AGENCY CORRESPONDENCE**

<b>Date</b>	<b>From</b>	<b>To</b>
May 28, 2003	CA OHP	PacifiCorp
May 3, 2018	KRRC	CA OHP
May 3, 2018	KRRC	OR SHPO
June 7, 2018	KRRC	CA OHP
June 38, 2018	OR SHPO	KRRC
July 27, 2018	KRRC	OR SHPO
September 28, 2018	CA SHPO	KRRC
September 28, 2018	OR SHPO	KRRC
October 1, 2018	OR SHPO	KRRC
November 15, 2018	KRRC	CA SHPO
December 4, 2018	OR SHPO	KRRC
December 13, 2018	OR SHPO	KRRC
September 22, 2020	CA SHPO	KRRC
July 16, 2018 – December 4, 2018 (Email correspondence)	KRRC, BLM, USBR, CA OHP, OR SHPO	KRRC, BLM, USBR, CA OHP, OR SHPO

### **CULTURAL RESOURCES WORKING GROUP MEETING MINUTES**

<b>Date</b>	<b>Meeting or Teleconference</b>
September 5, 2017	Teleconference
December 14, 2017	Teleconference
March 15, 2018	Teleconference
August 14, 2018	Meeting
September 18, 2018	Meeting
October 29, 2018	Meeting
November 29, 2018	Meeting
February 19, 2019	Teleconference
April 25, 2019	Meeting
June 12, 2019	Meeting



July 30, 2019	Meeting
September 5, 2019	Meeting
October 29, 2019	Meeting
December 12, 2019	Teleconference

## **APPENDIX B      LKP CONSULTATION SUMMARY**

## **Summary of Tribal Consultation Efforts Conducted Under Section 106 of the NHPA**

To initiate compliance with Section 106 of the National Historic Preservation Act (NHPA), KRRC formed a Cultural Resources Working Group (CRWG) in August 2017. The purpose of the group is to compile information to assist FERC with regulatory compliance and to ensure open communication among all consulting parties. To form the group, KRRC sent invitation letters to PacifiCorp, federal agencies who administer lands or have regulatory responsibility within or near the Project area, the Oregon and California State Historic Preservation Officers (SHPOs), and a group of Indian Tribes derived from lists provided by the California Native American Heritage Commission (NAHC) and the Oregon Indian Commission requesting participation. KRRC conducted follow-up telephone calls and/or e-mail correspondence for those groups who did not initially respond. Based on final response, members of the CRWG to date include PacifiCorp; the Oregon and California State Historic Preservation Officers (SHPOs), US Forest Service (Klamath National Forest); Bureau of Land Management (Redding and Klamath Falls Field Offices); US Army Corps of Engineers (USACE; San Francisco District); US Bureau of Reclamation (USBR); and representatives of the Klamath Tribes, Modoc Nation (formerly Modoc Tribe of Oklahoma), Shasta Indian Nation, Shasta Nation, Karuk Tribe, Yurok Tribe, Quartz Valley Indian Community of the Quartz Valley Reservation of California, Cher'Ae Heights of the Trinidad Rancheria, and the Confederated Tribes of the Siletz Indian Reservation, and the Resighini Rancheria.

To date, KRRC has sponsored 14 CRWG meetings, an introductory Project meeting for tribal representatives (April 2018), and a field tour of the Project area for the CRWG (April 24, 2019; see Table 1 below). Many invited CRWG parties have regularly participated in the meetings, except for the USACE (one meeting); the USBR who declined participation; the Modoc Nation (two meetings); the Trinidad Rancheria and the Confederated Tribes of the Siletz, who participate occasionally. CRWG meetings have focused on a broad range of topics, including an overview of the Section 106 process; the Project schedule and updates; planned Project activities such as restoration and recreation planning; National Register of Historic Places evaluation of potentially affected sites (Phase II); and development of a Programmatic Agreement, Looting and Vandalism Protection Plan, Monitoring and Inadvertent Discovery Plan, and Historic Properties Treatment Plan.

In conjunction with the CRWG meetings, and at the request of tribal participants, since August 2018, KRRC has hosted a two-hour Tribal Caucus, held before each CRWG meeting and open to tribal representatives only. Since October 2018, KRRC has facilitated each Tribal Caucus, including agenda development and note-taking and distribution. In addition, KRRC has taken part in meetings with individual tribes on an as requested, but less frequent, basis. To date, individual meetings have been held with the Klamath Tribes, Modoc Nation, Shasta Indian Nation, Shasta Nation, Quartz Valley Indian Reservation, Karuk Tribe, and Yurok Tribe.

A major goal of the CRWG is assistance with preparing and reviewing documents designed to assist KRRC with compliance with Section 106 requirements. Documents presented to and reviewed by the CRWG to date include a Monitoring and Inadvertent Discovery Plan, a Phase II Evaluation Plan, a Looting and Vandalism Prevention Plan, and a draft Programmatic Agreement. All of these remain in draft form and will be available for review and comment until submitted to FERC.

A significant focus of recent meetings has been archaeological evaluation of potentially affected sites. Consistent with the Section 106 process, KRRC has proposed to conduct Phase II archaeological testing at 39 sites found within the Project's Area of Direct Impact (ADI). These sites may be subject to direct effects from project activities, including facility decommissioning, pipeline relocation, construction of access roads, landscape restoration, and shoreline erosion. A detailed presentation on the Phase II

testing and evaluation program (Phase II) was presented to the Tribes and other members of the CRWG on February 19, 2019, followed by the distribution of a written Phase II plan on May 3, 2019. Comments on the Plan were requested by May 24, 2019, and additional discussions on the planned testing activities were held at subsequent CRWG meetings on June 12 and July 30, 2019. Several tribal representatives raised objections to excavation, and additional discussions were held at the subsequent CRWG meeting on July 30, 2019, at which time the Shasta Nation and Klamath, Karuk, and Yurok tribes agreed that subsurface archaeological investigations should not be conducted.

Following a discussion with the OR and CA SHPO staff and the ACHP held on August 15, 2019, the KRRC proposed to reduce the level of effort in the Phase II program, relying primarily on small volume shovel probes to define site boundaries, as well as shovel testing to examine site integrity and site content. This refined approach to eligibility determinations has been discussed during individual meetings with the Yurok Tribe, Shasta Indian Nation, Quartz Valley Indian Reservation, and the Klamath Tribe, as well as during the September and October 2019 CRWG meetings. A decision on moving forward with some level of Phase II evaluation will need to be made soon.

CRWG meetings held in September, October, and December 2019 have largely focused on review of a draft Programmatic Agreement, a document which will assist KRRC and FERC in meeting obligations under the NHPA. Future meetings will also focus on preparation of a Historic Properties Management Plan.

Consultation moving forward will concentrate on individual tribal meetings, with larger CRWG meetings set up on an as-needed or as-requested basis. KRRC will be arranging these meetings in early 2020 and is looking forward to meeting with representatives of the Resighini Rancheria and expanding tribal participation in the Section 106 process.

**Table 1. Summary of Agency and Tribal Participation in the Section 106 Consultation Process**

<b>Tribe/Agency Party</b>	<b>Letters/Emails to Parties</b>	<b>Meetings</b>	<b>Project Tours</b>
USFS	August 8, 2017	09/05/2017; 12/14/2017; 03/15/2018; 08/14/2018; 09/18/2018; 10/29/2018; 11/29/2018, 02/19/2019(t); 04/25/2019; 07/30/2019; 09/05/2019; 10/29/2019; 12/12/2019(t).	April 24, 2019
USACE	August 8, 2017		
BLM	August 8, 2017	09/05/2017; 12/14/2017; 03/15/2018; 08/14/2018; 09/18/2018; 10/29/2018; 11/29/2018, 02/19/2019(t); 04/25/2019; 06/12/2019; 07/30/2019; 09/05/2019 10/29/2019; 12/12/2019(t).	April 24, 2019
USBR	August 8, 2017		

Klamath Tribes	January 8, 2018	08/14/2018; 09/18/2018; 10/29/2018; 04/25/2019; 06/12/2019; 09/05/2019; 10/29/2019.	April 24, 2019
Modoc Nation (formerly Modoc Tribe of Oklahoma)	January 8, 2018	08/14/2018; 09/18/2018	
Shasta Indian Nation	January 8, 2018	08/14/2018; 09/18/2018; 10/29/2018; 11/29/2018, 02/19/2019(t); 04/25/2019; 06/12/2019; 07/30/2019; 09/05/2019.	April 24, 2019
Shasta Nation	January 8, 2018	08/14/2018; 09/18/2018; 10/29/2018; 11/29/2018, 02/19/2019(t); 04/25/2019; 06/12/2019; 07/30/2019; 09/05/2019; 10/29/2019.	April 24, 2019
Karuk Tribe	January 8, 2018	08/14/2018; 09/18/2018; 10/29/2018; 11/29/2018, 02/19/2019(t); 04/25/2019; 07/30/2019; 09/05/2019 10/29/2019; 12/12/2019(t).	April 24, 2019
Yurok Tribe	January 8, 2018	08/14/2018; 09/18/2018; 10/29/2018; 11/29/2018, 04/25/2019; 06/12/2019; 07/30/2019; 09/05/2019 10/29/2019; 12/12/2019(t).	April 24, 2019
Quartz Valley Indian Community of the Quartz Valley Reservation of California	January 8, 2018	08/14/2018; 09/18/2018; 11/29/2018, 02/19/2019(t); 04/25/2019; 06/12/2019; 09/05/2019; 10/29/2019.	April 24, 2019
Cher'Ae Heights of the Trinidad Rancheria	January 8, 2018		
Confederated Tribes of the Siletz Indian Reservation	January 8, 2018	11/29/19; 04/25/19	
OR SHPO	August 8, 2017	09/05/2017; 12/14/2017; 03/15/2018; 08/14/2018; 09/18/2018; 10/29/2018; 11/29/2018, 02/19/2019(t); 04/25/2019; 06/12/2019; 07/30/2019; 09/05/2019; 10/29/2019; 12/12/2019(t).	April 24, 2019
CA SHPO	August 8, 2017	09/05/2017; 12/14/2017; 03/15/2018; 08/14/2018;	April 24, 2019

		10/29/2018; 11/29/2018, 02/19/2019(t); 04/25/2019; 07/30/2019; 09/05/2019; 12/12/2019(t).	
PacifiCorp	August 8, 2017	09/05/2017; 12/14/2017; 03/15/2018; 08/14/2018; 09/18/2018; 10/29/2018; 11/29/2018, 02/19/2019(t); 04/25/2019; 06/12/2019; 07/30/2019; 09/05/2019 10/29/2019; 12/12/2019(t).	

(t) - Teleconference

## **APPENDIX C      FERC TRANSCRIPTS**

1           FEDERAL ENERGY REGULATORY COMMISSION  
2    KLAMATH AND LOWER KLAMATH HYDROELECTRIC PROJECTS  
3           Nos: P-2082-062/ P-14803-000

4

5

6                       SCOPING MEETING

7

8

9           HOOPA VALLEY TRIBE NEIGHBORHOOD FACILITIES

10                   11860 HIGHWAY 96

11                   HOOPA, CA 95546

12

13                   TUESDAY, JANUARY 16, 2018

14                   10:00 a.m.

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1 PARTICIPANTS

2 FERC STAFF

3 ELIZABETH M. MOLLOY, TRIBAL LIAISON

4 JENNIFER POLARDINO, HISTORIAN

5 FRANK WINCHELL, ANTHROPOLOGIST/ARCHAEOLOGIST

6 ELIZABETH MCCORMICK, OFFICE OF THE GENERAL COUNSEL

7 HOOPA VALLEY TRIBE

8 RYAN JACKSON, CHAIRMAN HOOPA TRIBAL COUNCIL

9 VIVIENNA ORCUTT, COUNCIL MEMBER

10 LEONARD MASTEN, JR., COUNCIL MEMBER

11 OSCAR BILLINGS, COUNCIL MEMBER

12 EDWARD GUYER II, COUNCIL MEMBER

13 LEILANI POLE, COUNCIL MEMBER

14 JOSEPH LEMIEUX, COUNCIL MEMBER

15 DIANA MCCOVEY-FERRIS, COUNCIL MEMBER

16 GEORGE KAUTSKY, HVT FISHERIES

17 MIKE ORCUTT, HVT FISH DIRECTOR

18 DANIEL JORDAN, HVT SG COORDINATOR

19 KEN NORTON, HVT ENVIRONMENTAL DIRECTOR

20 BRIAN MCCAUGHEY, HVT GIS ANALYST

21 ROBERT FRANKLIN, HVT SENIOR HYDROLOGIST

22 DON RECK NMFS, FISH BIOLOGIST

23 DAVE MEURER, KRRC COMMUNITY LIAISON

24

25

1 P R O C E E D I N G S

2 (10:00 a.m.)

3 MS. MOLLOY: We can start with introductions.  
4 I'm Liz Malloy, I'm the Tribal Liaison for FERC. I have  
5 been at FERC for nearly 30 years working on hydro throughout  
6 that time. I'm with the Office of the General Council.

7 MR. WINCHELL: I'm Frank Winchell, I work with  
8 FERC too OEP -- Office of Energy Projects Division of Light  
9 Licensing. I'm an archeologist and I've been at FERC now  
10 for 20 years. I do pretty much all of the cultural  
11 resources west of the Rockies and then some east but I do  
12 all the stuff around here.

13 MS. POLARDINO: I'm Jennifer Polardino, I'm with  
14 also the OEP which is Office of Energy Projects with FERC  
15 and I am in the Division of Hydropower Administration and  
16 Compliance and we will be looking at the proposal to amend  
17 the project -- the Klamath to transfer it to the Lower  
18 Klamath Project.

19 MS. MCCORMICK: I'm Elizabeth McCormick. I'm  
20 also in the Office of the General Counsel at FERC and I'm  
21 working with the rest of the team on the transfer and  
22 amendment.

23 MR. ORCUTT: Mike Orcutt, Fisheries Department  
24 Director for the Hoopa Tribe and I have all kinds of  
25 different exposures to it over the years with the Klamath

1 Task Force -- I was on that group with the training program  
2 and so welcome.

3 MR. KAUTSKY: George Kautsky, I'm Deputy Director  
4 for Fisheries for Hoopa.

5 MR. FRANKLIN: Robert Franklin, hydrologist from  
6 the Fisheries Department. I'm here to make your job quick  
7 and get this over with and done with.

8 MR. LEMIEUX: Joseph LeMieux, Council member.

9 MS. POLE: Leilani Pole, Council Member.

10 MS. MCCOVEY-FERRIS: Diana Ferris, Council.

11 MR. MEURER: I'm Dave Meurer with Klamath River  
12 Renewal Corporation.

13 MR. RECK: Don Reck, National Fishery Service.

14 MR. NORTON: Ken Norton with the Hoppa Tribe's  
15 Environmental Program. We administer the Clean Water Act.

16 MR. MCCAUGHEY: And I'm Brian McCaughey, also  
17 part of Hoopa Tribe and I deal with water quality.

18 MR. CATHERINE: Gaynell Catherine, Court  
19 Reporter.

20 CHAIRMAN JACKSON: Okay, I see you have an Agenda  
21 here and maybe if the renewal folks were here a month or two  
22 ago and you guys are a different group associated with the  
23 renewal?

24 MS. MOLLOY: So we are the Commission before  
25 which they filed their application.

1 CHAIRMAN JACKSON: Okay.

2 MS. MOLLOY: So we're the ones that will decide  
3 on the application whether or not to grant.

4 CHAIRMAN JACKSON: Okay.

5 MS. MOLLOY: So we can start -- one thing I  
6 wanted to say is due to the proceeding being pretty much a  
7 contested proceeding -- there are strong views on this and  
8 it has been long ongoing. The meeting is being transcribed  
9 to be put in the record but it is between just us and you.

10 If anyone else walked in we would not be speaking  
11 with them, it is a meeting just between us. We -- the  
12 Commission is in Washington, D.C. It's FERC, it's the  
13 Federal Energy Regulatory Commission. We have five  
14 Commissioners and several departments.

15 Frank and Jennifer are in the Office of Energy  
16 Projects. They handle reviewing license applications,  
17 surrender applications and various things. Elizabeth and I  
18 are in the Office of General Counsel, we work with them on  
19 these applications so we work as a team in reviewing these  
20 and helping the Commission make decisions on this.

21 So right now there are two proposals that have  
22 been filed with us that we have noticed and we sought  
23 interventions. The Hoopa have sought intervening. Just to  
24 let you know because the application came into intervening  
25 to become a party was timely and unopposed, it was granted

1 automatically so that the Hoopa Tribe is an intervener in  
2 these two proceedings.

3           There won't be anything that goes out and says  
4 that until an order -- there will be a footnote, but it's  
5 automatic. So I just wanted to -- in case anyone was  
6 wondering, let you know that that has occurred.

7           The two proceedings we have -- the one which as  
8 Jennifer mentioned is an amendment application to the  
9 current license to split the license into two and to  
10 transfer part of it to the corporation.

11           So that's if the Commission were to grant that,  
12 all that means is we would administratively divide the  
13 license to the different developments and have a new  
14 licensee but the existing terms of the license would  
15 continue.

16           Then we would be looking at -- then we have the  
17 second application which is for a decommissioning of the  
18 lower four developments which would be part of this new  
19 separate license if the Commission were to grant that.

20           And that is also what the Commission would be  
21 looking at whether or not to grant or not and we would be  
22 seeking comments. We have been seeking comments, we would  
23 be making sure we have additional or as much information as  
24 we need.

25           We'd be looking at analysis that has already been

1 done. You know, the Department of Interior has done some  
2 documents so we would be reviewing those, seeing if there is  
3 anything else we need to do or examine and eventually  
4 issuing an order granting that or denying it.

5 MR. LEMIEUX: You are all attorneys, right?

6 MS. MOLLOY: Just two, just us two.

7 MR. LEMIEUX: I just wanted to know if we should  
8 have our attorney here or not, I was just asking the  
9 gentleman.

10 MS. MOLLOY: So that's in a nutshell what we have  
11 before us and sort of where we are where we've asked for  
12 comments and we are still reviewing the applications and  
13 looking for what additional information we might need.

14 CHAIRMAN JACKSON: Okay is anyone political  
15 appointees on the Commission?

16 MS. MOLLOY: Yes, there are five Commissioners  
17 are appointed by the President for five year terms and  
18 confirmed by the Senate. Right now we have all five  
19 Commissioners.

20 CHAIRMAN JACKSON: Okay.

21 MS. MOLLOY: Three of them are Republicans, two  
22 are Democrats. Under the FTA there's no -- there could be  
23 no more than three of one party. It tends to ebb and flow.  
24 Right now it is three Republicans two Democrats.

25 CHAIRMAN JACKSON: Okay and have you guys gone

1 through this process before related to you know, the  
2 transfers of licenses and decommissioning?

3 MS. MOLLOY: Yes.

4 CHAIRMAN JACKSON: And normally that process  
5 takes about how long generally?

6 MS. MOLLOY: It depends on certain pieces of  
7 information we have to have -- water quality certifications  
8 and depending how long states or entities that have the  
9 responsibility to issue one, on certifications take on that  
10 can affect it. Also, if there are other issues that come up  
11 that we're waiting -- that we have to have something before  
12 we act.

13 We did have a -- we have separated licenses into  
14 two parts before so we have that again. It's based on  
15 information -- when we get the information and then we'll  
16 act. We have also on the Penobscot River in Maine -- there  
17 was a settlement that worked to remove two dams and also  
18 took some of the turbines from the dam and moved to other  
19 projects thus giving more path on the Penobscot there for  
20 the Atlantic Salmon. So --

21 CHAIRMAN JACKSON: Have the water quality  
22 certifications all begun I suppose? Or they were in  
23 abeyance for a long time?

24 MS. MOLLOY: The applications have been filed.

25 CHAIRMAN JACKSON: Okay.

1           MR. MEURER: I believe -- don't quote me I've  
2 only been on the job a week but I believe they actually held  
3 on -- you know, they're filing with the Water Board, they're  
4 holding off on part of the FERC process I think they are  
5 permitting this week.

6           MS. MOLLOY: According to the application that  
7 was filed with us they have the same date -- the same date  
8 applied for water quality certification. Now the states may  
9 ask for or anybody might ask for additional information --  
10 there were some gaps of information that they have according  
11 to what was filed with us -- actually filed certification --  
12 that's starts the one year period.

13          MR. ORCUTT: So when sort of specifically on the  
14 white salmon or the white salmon project or whatever and  
15 that was a similar situation right where it was under  
16 removal so there are examples of where the company --

17          MS. MOLLOY: So PacifiCorp. has also done the  
18 Condit dam removal. You can look up YouTube videos because  
19 that was actually you know, that's where they strategically  
20 blew up portions of it.

21                 After they removed fish they had gone in with the  
22 fish -- I think Fish and Wildlife went in and they removed  
23 fish from the area before they did -- you know, so they  
24 worked to plan to not to affect things too much while they  
25 were doing it and then that's restored the river there.



1 CHAIRMAN JACKSON: Where's that at?

2 MS. MOLLOY: That is in --

3 MR. LEMIEUX: Washington State.

4 CHAIRMAN JACKSON: Was that the one that Tom  
5 refers to?

6 MR. LEMIEUX: White salmon yeah.

7 CHAIRMAN JACKSON: Okay.

8 MR. LEMIEUX: And then there's Ella.

9 MS. MOLLOY: And Ella was the --

10 CHAIRMAN JACKSON: Ella was the one he referred  
11 to.

12 MS. MOLLOY: Ella was done by Interior I believe  
13 right? Outline ZOA had been licensed and obtained by  
14 Interior I think and they took care of it, the fish and the  
15 demolition.

16 So but yes, we do have experience in reviewing  
17 these and authorizing removal and surrenders.

18 MR. LEMIEUX: Let me go back just to make sure  
19 I've got this clear in my head. You are FERC, can I say it  
20 that way?

21 MS. MOLLOY: Yes.

22 MR. LEMIEUX: You're all FERC.

23 MS. MOLLOY: Yes.

24 MR. LEMIEUX: So you are saying an application  
25 was made to change the license, is that --

1 MS. MOLLOY: It mentions that we have two  
2 applications basically.

3 MR. LEMIEUX: And that's your responsibility --  
4 FERC's responsibility, about the license? That's in your --

5 MS. MOLLOY: Yes.

6 MR. LEMIEUX: So somebody makes an application  
7 and you are reviewing it whether or not it's application  
8 ought to go forward or does not go forward?

9 MS. MOLLOY: Yes.

10 MR. LEMIEUX: And that's where we are?

11 MS. MOLLOY: Yes.

12 MR. LEMIEUX: And you say it's been divided into  
13 two sections?

14 MS. MOLLOY: So there are two applications  
15 pending. One is to administrative divide the project into  
16 two projects with a new licensee for the lower -- for the  
17 separated portion.

18 MR. LEMIEUX: Okay, for the physical-ness of it.

19

20 MS. MOLLOY: It all stays the same it's just the  
21 responsibility would change on the lower four.

22 MR. LEMIEUX: And so that's something you're  
23 considering? You're looking at that?

24 MS. MOLLOY: Right.

25 MR. LEMIEUX: And you're visiting here to see --

1 MS. MOLLOY: What people think about it.

2 MR. LEMIEUX: Okay, okay I got it.

3 MS. MOLLOY: And then the other thing would be  
4 those four -- the same four developments, whether to  
5 authorize decommission and under which conditions to approve  
6 that.

7 MR. LEMIEUX: Wow.

8 MS. MOLLOY: So applications come into --

9 MR. LEMIEUX: To surrender and that's the  
10 technical term that you have to do to move the dam or get  
11 rid of the dams, get all that in place first.

12 MS. MOLLOY: It would be surrendering the license  
13 which would remove the federal authorization for having a  
14 license.

15 CHAIRMAN JACKSON: We have one other individual --  
16 let's call him Tom, our attorney if you don't mind.

17 (Speaking on telephone)

18 MR. SCHLOSSER: This is Tom.

19 CHAIRMAN JACKSON: Hey Tom, it's Chairman  
20 Jackson. There's an audience here -- Council members as  
21 well as folks from FERC, EPA, Tribal EPA is here as well as  
22 I think the renewal corporation has a gentleman as well and  
23 then Don Reck.

24 MR. SCHLOSSER: Great, thanks.

25 CHAIRMAN JACKSON: So we've just been kind of

1 going over some of the preliminary discussions about what  
2 FERC is -- I guess, reviewing for the applications that have  
3 been submitted and I don't know, you probably have a lot  
4 more information than we do.

5 But this is Tom Schlosser, he's our attorney from  
6 Washington.

7 MR. SCHLOSSER: Hi everybody, thanks.

8 COURT REPORTER: Can you spell the last name?

9 CHAIRMAN JACKSON: S-c-h-l-o-s-s-e-r.

10 COURT REPORTER: Thank you.

11 MR. KAUTSKY: Can I ask you a question?

12 MS. MOLLOY: Yes.

13 MR. KAUTSKY: The two documents have been  
14 submitted now by -- presumably by PacifiCorp. and the  
15 Renewal Corporation?

16 MS. MOLLOY: Right.

17 MR. KAUTSKY: Are these public documents that we  
18 could access?

19 MS. MOLLOY: Yes.

20 MR. KAUTSKY: They're on your website?

21 MS. MOLLOY: Yes.

22 MR. KAUTSKY: Thank you.

23 MS. MOLLOY: And the Docket Numbers so that you  
24 can access them on are 2082 -- they're on top of the Agenda.

25 MR. KAUTSKY: Oh it's on the Agenda?

1 MS. MOLLOY: Yes, yes, use our e-library system  
2 to access. On the second line on the top the Agenda --

3 MR. KAUTSKY: That's how you get to those on  
4 that?

5 MS. MOLLOY: Yes.

6 MS. POLANDINO: Has everybody been on our  
7 e-library system? Okay.

8 MR. FRANKLIN: I have it's been quite a few years  
9 ago.

10 MS. POLARDINO: Right.

11 MR. FRANKLIN: And at the front end of all of  
12 this stuff and I found it nearly impenetrable. There was so  
13 much I didn't know how to search.

14 MS. MOLLOY: It is challenging because everything  
15 goes there.

16 MS. POLARDINO: Right.

17 MS. MOLLOY: For a project we make sure that  
18 everything is in e-library. Sometimes if there's privileged  
19 information there will be a docket line that says it's been  
20 filed and that you know, unless you are authorized you can't  
21 get to it.

22 MS. POLARDINO: Sometimes key words if you're  
23 looking for a particular --

24 MR. FRANKLIN: I wasn't good at filtering. I got  
25 everything and I started to look through it.

1 MS. POLARDINO: And I think I should say that  
2 when you are searching if you put in these numbers with a  
3 "P" and a "-" in front of them -- that's the proper way to  
4 search for hydropower dockets -- P-2082 or 14803.

5 MS. MOLLOY: The "P" stands for project number.

6 MS. POLARDINO: And that designates it as a  
7 hydropower proceeding. And I would go through the search  
8 terms -- go through all because it will automatically show  
9 through like a month period so if you click on the radius or  
10 button where it says "all" it will pull up everything for  
11 that docket as well.

12 MS. MOLLOY: And if you have trouble -- give one  
13 of us a call and we'll help you find something.

14 MR. KAUTSKY: I think I was trying to open one of  
15 these last week and it was on the order of a hundred or so  
16 megabytes.

17 MS. POLARDINO: Yes.

18 MR. KAUTSKY: And I was in a meeting and I never  
19 did get the document loaded -- is that the application that  
20 that's big?

21 MS. POLARDINO: Yes.

22 MR. KAUTSKY: 100 -- I mean over a few megabytes  
23 -- it's really large.

24 MS. POLARDINO: Yes.

25 MS. MOLLOY: So on the longer documents there's

1 usually --

2 MR. KAUTSKY: Thumbnails or?

3 MS. MOLLOY: There's usually a thing that says  
4 more files or something so they're supposed to break it  
5 down.

6 MR. KAUTSKY: Okay.

7 MS. MOLLOY: Into smaller pieces so that it is  
8 easier to download.

9 MR. KAUTSKY: Uh-huh.

10 MS. MOLLOY: So the application I know has a --  
11 something that says more files and if you click on that it  
12 actually gets you each little packet -- like it might be  
13 appendix, appendixes are separate so then it's not as bulky  
14 depending sort of where you are and how fast it --

15 MR. LEMIEUX: I will depend upon one of you,  
16 George, about -- pull down the documents okay?

17 MS. POLARDINO: You can go to Ferc.gov and on the  
18 heading it will say, "Documents and Filings" and just go  
19 down to where it says "e-library" and if you have any  
20 questions you can give me or anybody else here a call about  
21 searching for any documents on FERC online.

22 MS. MOLLOY: On the basic -- we can walk through  
23 on the basic stuff and everything and let you know where to  
24 find someone if it gets too complicated.

25 MS. POLARDINO: Right.

1 MS. MOLLOY: We look and say "Huh".

2 CHAIRMAN JACKSON: Okay I think we skipped the  
3 ground rules for the meeting?

4 MS. MOLLOY: Well the ground rules were merely  
5 that it was just -- that this was a discussion just between  
6 you and us.

7 MS. POLARDINO: Yeah.

8 MS. MOLLOY: And if any others from the public  
9 came to this that we were not inviting them to speak.

10 CHAIRMAN JACKSON: Okay, got you.

11 MS. MOLLOY: And I did describe just in talking,  
12 I did sort of describe the proposals briefly and if that's  
13 -- if you need more we can talk a little bit more. But we  
14 are very interested in identifying your concerns what FERC  
15 should be looking at -- particular items if possible.

16 If we were to grant the application or for the  
17 surrender for example, what we should be looking for to  
18 watch out for during the process any surrender and after or  
19 any concerns that you might have that you would be willing  
20 to share with us so that we can make sure that --

21 CHAIRMAN JACKSON: Yeah, Tom had -- before he got  
22 on the call had asked about interim measures for protection  
23 of fish. I think up until now there has been I would say  
24 refusals -- it's the Commission has not been willing to  
25 grant interim measures on behalf of fish protection.



1           Is that -- and maybe Tom, you can maybe allude to  
2   more of that but are those things going to be considered  
3   now?

4           MR. SCHLOSSER: (Speaking through Cell phone --  
5   Inaudible over the phone).

6           MR. ORCUTT: Well sort of related to that  
7   question that certain formulates a little bit for me is how  
8   would FERC -- definitely related to interim measures is you  
9   have the amended plan of hydro-settling agreement that  
10   certain parties have signed.

11           How would any of those conditions -- because a  
12   lot of the issues definitely about fish and stuff like  
13   hatcheries and that sort of thing are in there and so how  
14   would that maybe get incorporated into an order? It's  
15   pretty cumbersome I would think.

16           MS. MOLLOY: So in looking -- do we want to pause  
17   or --

18           MR. SCHLOSSER: I may have made a mistake on my  
19   end. Should I proceed with that question I had?

20           CHAIRMAN JACKSON: Yes please.

21           MR. SCHLOSSER: Well thank you everybody I'm  
22   sorry about the phone problems which I believe I caused over  
23   here. My question relates to fisheries conditions while  
24   this proceeding is underway.

25           And there is some history to this -- when the

1 federal agencies imposed terms and conditions under Section  
2 18 and 4E the licensee -- PacifiCorp. appealed those and an  
3 Administrative Law Judge held a trial and issued a decision  
4 on that.

5 That was in 2006. In 2007 the Hoopa Valley Tribe  
6 petitioned or made a motion to ask the Commission to impose  
7 some of those conditions, not the structural changes but the  
8 granting rates and most of the bypass and so on to protect  
9 fish.

10 And the Commission declined to do so in part on  
11 the grounds that the licensing proceeding was nearly over.  
12 Now, of course that was ten years ago and the licensing  
13 proceeding is not over. And although the request to  
14 transfer the license for the lower Klamath Project is  
15 promising and dam surrender could ultimately occur, the  
16 conditions in the river for fisheries is worse and worse.

17 And you have staff there in the room who can fill  
18 you in on the details of this, but essentially there are  
19 threatened coral salmon, there are Chinook salmon which are  
20 returning in numbers that are too small to allow harvest for  
21 Indian subsistence and so my question is will the Commission  
22 entertain imposing interim conditions on the project while  
23 this licensing decision is under way?

24 MS. MOLLOY: I can't say what the Commission  
25 would do with such a motion but certainly you are welcome to

1 file and request citing what you have just cited and the  
2 Commission would act on it. It doesn't currently have, you  
3 know, such a Motion before it so it would not be -- it's not  
4 part of either of the applications pending.

5 MR. LEMIEUX: Can you -- Tom, can you hear her?

6 MR. SCHLOSSER: Yes, yes, I can and so I gather  
7 the Commission won't do this on its own volition but we can  
8 certainly talk internally about whether to make this motion  
9 again because it's long overdue.

10 CHAIRMAN JACKSON: So those things are not  
11 currently under consideration?

12 MS. MOLLOY: Right, there's no motion currently  
13 so what the Commission has before it to look at is the  
14 transfer and transfer application to split the project.

15 CHAIRMAN JACKSON: Okay.

16 MS. MOLLOY: And have a new licensee and  
17 surrender application and the Commission will be looking to  
18 act on that using existing information and determining if it  
19 needs a supplement.

20 MR. LEMIEUX: Tom, you're familiar with what the  
21 -- what'd you call it splitting the two?

22 MS. MOLLOY: The amendment to transfer and divide  
23 the project into two projects.

24 MR. LEMIEUX: You're familiar with that Tom?

25 MR. SCHLOSSER: Yes.

1           MR. LEMIEUX: Okay as long as you're familiar.

2           MR. SCHLOSSER: Yes I am and we filed a request  
3 to intervene on behalf of the tribe in the new licensing  
4 proceeding.

5           MS. MOLLOY: And that's what I said earlier that  
6 the intervention, because it was filed timely and unopposed  
7 was granted automatically so the Hoopa is now a party to the  
8 proceedings -- the two proceedings.

9           MR. SCHLOSSER: Oh, okay great.

10          MS. MOLLOY: Yeah, I looked -- I checked on that.

11          MR. LEMIEUX: Well Tom had a question and we have  
12 an answer I guess we'll move on to the next point.

13          MR. SCHLOSSER: Sure.

14          MS. MOLLOY: So other than those questions, is  
15 there -- would you like to hear more? I think you  
16 understand that -- I get the idea that you understand the  
17 proposals for the most part. I don't know if you want any  
18 further discussion of that or we would love to hear comments  
19 and concerns.

20                 We know a number of them but it would be great if  
21 we could hear the current ones, the ones you have spoken of,  
22 anything that you would like to share with us.

23          CHAIRMAN JACKSON: I guess -- to what extent are  
24 you guys able to actually express on behalf of the  
25 Commission anything?

1 MS. MOLLOY: Because we are -- the Commission  
2 acts on proposals that are placed before it. In that way we  
3 act in a quasi-judicial manner so we take in information as  
4 much as we can but until an order is issued, a decision  
5 isn't made and so it falls on things.

6 CHAIRMAN JACKSON: So I mean you guys are here to  
7 talk about maybe a procedural type of things because if we  
8 get into the specifics on what the Commission may or may not  
9 do it doesn't sound like you guys have the answers to those  
10 things.

11 MR. WINCHELL: Yeah, let me add something to what  
12 Liz is saying is that we are certainly decisional employees  
13 where we are going to do the environmental analysis let's  
14 say on the surrender.

15 A lot of us -- John Mudre, I want to make clear,  
16 is project coordinator for these proceedings or the one  
17 that's for the surrenders, the 14 508.

18 MS. POLARDINE: It's 14803, 14803.

19 MR. WINCHELL: Anyway John Mudre is the project  
20 coordinator but John is also involved with the re-licensing  
21 as well. The Commission staff always goes through the  
22 analysis aspects and we make recommendations to the  
23 Commissioners.

24 Our track record is pretty good okay, so we are  
25 going to be doing the analysis so you are looking at the

1 people who are actually going to be involved with the  
2 surrender and the transfer of the license.

3 MS. MOLLOY: So we can't say what the Commission  
4 would do necessarily but we can say if the Commission were  
5 to grant the surrender, you know, are there concerns in  
6 particular areas you would want us to focus on in setting  
7 conditions?

8 Or is there anything that you feel that we should  
9 know also can be filed. It doesn't necessarily tell -- you  
10 know, but if it is filed on the record we're able to then  
11 look at that in making our decision and it helps us to  
12 understand and try to mitigate -- try to address the issues.

13 So we try to make it work out the best for  
14 everyone.

15 MR. KAUTSKY: So in your work, you know, the  
16 technical work that you do -- do you openly narrow down to a  
17 recommendation to the Commission regarding any application  
18 or --

19 MR. WINCHELL: Basically what they do is the  
20 recommendation is through our environmental analysis through  
21 the NEPA process which is going to be fulfilled through a  
22 NEPA document.

23 And the Commissioners -- the five Commissioners  
24 are going to take that and they are going to see if they are  
25 going to fashion an order to execute the environmental

1 analysis which essentially is their record of decision -- it  
2 goes through a license supporter.

3 MS. MOLLOY: And we know there's been some NEPA  
4 work -- there's been environmental analysis done and stuff  
5 and we would be looking at that and then doing our own as  
6 appropriate based on any of the changes since anything else  
7 was done.

8 MR. WINCHELL: And it would be -- you know our  
9 NEPA analysis is independent but of course like Liz was  
10 saying we certainly rely heavily on the stuff that was done  
11 in 2002 with the Interior, with their FDIS.

12 MR. FRANKLIN: Could I ask what specific NEPA  
13 document are you working on -- EADIS?

14 MS. MOLLOY: I don't believe the Commission has  
15 made a decision exactly on what that would be -- just we're  
16 still looking over the record and looking for where we would  
17 be filling in.

18 MR. FRANKLIN: How is this likely to synchronize  
19 or not with the 2020 dam removal that we've talked about  
20 forever?

21 MR. WINCHELL: It's going to have a lot to do  
22 with it of course because that's what we're -- you know, of  
23 course we had our own analysis that we did way back in 2008  
24 with our FDIS but after that we've got the full analysis of  
25 the 2012 FDIS so we certainly are going to look at that and

1     rely a lot.

2                   MR. FRANKLIN: I'm thinking about timing when I  
3     say synchronization.

4                   MS. MOLLOY: Right and timing is a little bit  
5     difficult because there are a couple of other -- it would be  
6     water quality certifications or anything we might need  
7     that's outside of our control.

8                   But to the extent that it's -- we have the  
9     information we need when we examine everything -- we've  
10    gathered all the information we need to do the analysis we  
11    will be turning to that and then it's getting that out --  
12    whatever we need to get out.

13                  So we will be seeking to move this you know, as  
14    we can.

15                  MR. FRANKLIN: What are the chances if you could  
16    guess at it -- that this could extend the period of time  
17    necessary for FERC to take action if the NEPA document  
18    itself can't come together fast enough?

19                  MS. MOLLOY: It is unlikely that would be -- on  
20    the NEPA?

21                  MR. FRANKLIN: Yes?

22                  MS. MOLLOY: I just don't see that being a  
23    problem, that's within our control for the most part.

24                  MR. FRANKLIN: Okay.

25                  MS. MOLLOY: If we have the information we need



1 and if we don't we will be asking for it. So, but on our  
2 end, you know, we will be turning to it and working as well  
3 as we can to get it out whatever we need.

4 But we try not to recreate -- we have to use  
5 what's existing so we would be just working on making sure  
6 that we've addressed anything that hasn't been addressed  
7 that we believe needs to, but we're still in the process of  
8 looking and determining.

9 MR. SCHLOSSER: Well this is Tom, if I can ask a  
10 question about this. Last month in the letter of December  
11 14 the Commission wrote concerning our request for extension  
12 of time to respond to items related to the staff's  
13 environmental analysis of the proposed surrender decision.

14 And the Commission's letter says the requested  
15 extension may not allow enough time for the Commission to  
16 act on the surrender application by December 31 of 2019 but  
17 then the Commission went ahead and granted the full six  
18 month extension.

19 So I guess I'm wondering how realistic that  
20 December 31, 2019 date is for action on the surrender  
21 application?

22 MR. WINCHELL: Well, this is Frank from FERC. I  
23 think if I understand this and again I'm speaking for John  
24 Mudre he's a project coordinator and he's another person to  
25 contact. But I do think we're waiting -- before we can move

1 to our next step we've got to have that information back to  
2 us and then at that point we'll know when we're ready "for  
3 environmental analysis" but right now what Liz is saying you  
4 know, we've got two processes before us -- we've got to deal  
5 with those first, the license amendment.

6 And of course then the surrender itself but you  
7 know, I think that we are waiting for the information from  
8 the licensee -- the additional information request, we can't  
9 really move until we get that information and I suspect it's  
10 going to be soon right?

11 MS. MOLLOY: So I mean I would take that  
12 extension -- we did grant the extension but by saying that I  
13 think we're plotting that the information be filed as soon  
14 as it's available because we don't want to unnecessarily  
15 wait and the request for the application came in seeking  
16 those further dates.

17 We just alerted them that if they, you know, want  
18 those dates they need to get us the information as quickly  
19 as they can.

20 MR. SCHLOSSER: Well at least the letterhead said  
21 that. You know you just can't grant the extension to July  
22 1st of this year -- it didn't say anything about earlier if  
23 at all possible. If it's there I missed it.

24 MS. MOLLOY: Well where we said that it might  
25 make it tight to make the dates that they had proposed.

1           MR. SCHLOSSER: Yes, now related to that -- so  
2     that the first decision is on the license amendment -- that  
3     is the transfer of the license for the lower four dams to  
4     the Renewal Corporation.

5           And that decision will be made first before you  
6     consider the surrender application right?

7           MS. MOLLOY: That application is an  
8     administrative decision not needing environmental analysis.  
9     Typically our transfers -- it would just be transferring  
10    part of the project under the existing terms and conditions  
11    of the current license.

12          MR. SCHLOSSER: Right, right. And so the request  
13    for additional information relates to the surrender not to  
14    the transfer or the unanswered request?

15          MR. WINCHELL: Right, correct.

16          MR. SCHLOSSER: And so does that mean the  
17    Commission is prepared to act promptly on the license  
18    amendment now? I mean do you need more?

19          MR. WINCHELL: Well we have got to have the  
20    additional information that we requested first.

21          MR. SCHLOSSER: But isn't that for the surrender  
22    rather than the licensing?

23          MS. POLARDINO: We have enough information.

24          MR. SCHLOSSER: I'm sorry I couldn't catch that.

25          MS. POLARDINO: Yes, we do have enough

1 information, on the amendment -- on the amendment, I'm sorry  
2 not on the surrender but the amendment application.

3 MR. SCHLOSSER: Right.

4 MR. WINCHELL: On the surrender but not for the  
5 -- I mean on the amendment we have enough information but  
6 not for the surrender. We're still waiting to hear from the  
7 additional information requests from the licensee.

8 MR. SCHLOSSER: So when would you project the  
9 decision gets made on the amendment?

10 MS. MOLLOY: So pursuant to our regulations,  
11 Commission staff is not able to talk about timing and nature  
12 of decisions, only the Commission Secretary is able to talk  
13 about issuance and so usually a week before a Commission  
14 meeting a Secretary notice will go out saying what items  
15 will be decided but we actually are prohibited from  
16 regulation by talking about -- talking about timing of  
17 decisions of orders so -- but it is on people's radar.

18 MR. SCHLOSSER: Okay, thanks. But one of the  
19 issues that was raised in our intervention motion relates to  
20 the disposition and the future of the Iron Gate Hatchery and  
21 I think there are folks in the room there that can talk more  
22 specifically about that but the tribe has some very great  
23 concerns about handing over the hatchery to Fish and  
24 Wildlife.

25 MS. MOLLOY: Okay.

1           MR. ORCUTT: So sort of building off that one,  
2   that's where -- by the way just keeping apprised of  
3   everything underway these days is really, really challenging  
4   and so I'm glad you know, Tom's got all the regulations and  
5   the laws and everything but on the ground level where we're  
6   trying to implement and get some of these things going it's  
7   really, really hard to.

8           I was looking at the list of meetings that were  
9   in partly answering the AIR's and the TRC at least. There's  
10  just a litany of things that some of them we were asked,  
11  some of then we weren't.

12           Anyway, but specific to a couple of items there  
13  that Tom mentioned one of them is one we're not -- Klamath  
14  Hydro settlement agreement, amended agreement -- we were a  
15  party to, invited to participate, did so and one of the  
16  areas -- and at the end of the day we didn't sign it.

17           And I'm not sure -- you'd have to look on the  
18  website I think Yurok has a member of the KRCC -- Karuk has  
19  -- I don't think Klamath tribes have signed it and so some  
20  of the information and processes we're a party to and some  
21  of them we're not.

22           But specifically the hatchery, if you look at  
23  that it's really -- that's why I asked the question how  
24  binding -- whenever you guys take an action you have the  
25  amended agreement and there's a specific section there 7.66

1 and the problem that we have with it is one -- my  
2 understanding is that the Iron Gate Hatchery, just for  
3 people -- the context of that is there is what -- 5 million  
4 Chinook, something like that?

5 A really large segment of the mitigation and  
6 that's -- then automating fisheries -- it's a part of the  
7 management process in terms of impact analysis on climate  
8 basing stocks because there is for the wild population --  
9 anyway there is a whole litany of different things it's used  
10 for.

11 But some of the things that you're transferring  
12 ownership upon when the license transfers -- that facility  
13 transfers to the state of California and then that's going  
14 to be overseen by CEFW -- the state of California and NOAA  
15 fisheries.

16 And we have a lot of experience from the Trinity  
17 River Hatchery which is different because it's a federal  
18 mitigation facility so we have a direct nexus there but  
19 there's management decisions that are made all the time and  
20 like -- I mean all kinds of different things over the 40 or  
21 50 years at this hatchery that have been implemented or not  
22 that we were not a part of but we are actively and have been  
23 actively a part of it.

24 We have an interest in fishery obviously and so  
25 that transfer -- the terms -- one way to look at it just

1 reading the rule book here and that's the amended agreement  
2 -- we haven't signed it so we aren't bound by it.

3 So what we're hoping is the tribe is a co-manager  
4 of Iron Gate Hatchery as well, that we're a party to those  
5 discussions because we just learned this -- we've been  
6 pushed in all different fronts and letting people know --  
7 Interior Alan Mikkelsen, different people in different  
8 forums -- I think it might have been raised when you guys  
9 met with the KRTC back in October I think it was.

10 On a number of fronts we've raised some questions  
11 about that and we just learned that now the state has said  
12 okay, the water supply is a big deal right now -- the water  
13 supply. And when Iron Gate Hatchery and the dams were  
14 removed there's no more water supply there and so Iron Gate  
15 needs to be moved in some manner.

16 We just heard that and there was a call a week or  
17 so ago about that but anyway the outcome of that is to  
18 reduce production by close to two-thirds if not more -- more  
19 than two-thirds of it.

20 Anyway, so that's our concern though is because  
21 if you reduce and take that large segment of the population  
22 that's out there, that's a mitigation for the fishery.  
23 Where else are they going to turn if they don't get those  
24 fish to harbors into the fisheries?

25 It's probably going to be turning the river

1 hatchery -- that's one outcome of that -- more dependency  
2 upon the Trinity River Hatchery populations and so -- but  
3 generally where that fits into it and we've been invited to  
4 other forums like the fishery introduction that's underway  
5 by the state of Oregon.

6           Anyway my read of the whole thing there's not a  
7 lot of coordination between the two entities -- it's  
8 relatively been an afterthought and everybody's knee jerk  
9 reaction is oh yeah, PacifiCorp. funds it for eight years  
10 and everybody's putting a lot of hope in the dam removal  
11 repopulating the areas above the dams.

12           And there are a lot of inherent problems --  
13 bigger problems that I'm not sure how much authority or  
14 jurisdiction you have over the matter but the fact of it is  
15 you'll have Kino and Linc in place yet right?

16           Okay well Kino -- between Kino and Linc River  
17 there's times that the water is of so poor water quality  
18 that fish can't get through that section of the river so  
19 you might take the dams out and they repopulate the area  
20 below Kino Reservoir but all this other stuff -- there needs  
21 to be some really, really -- and one of the hopes that we  
22 have is as you are probably aware, is interiors -- right now  
23 they have an immediate problem with the injunction with the  
24 endangered species and the lawsuit that the tribe was a  
25 party to last year, the water and the conditions are such



1     that imposing those requirements are going to be very, very  
2     hard on the farmer's up there.

3             And so that's the immediate problem but they also  
4     said that they're looking at long term solutions. So how  
5     and when -- I guess in that regard the other two facilities  
6     are FERC licensed, at least Linc is right?

7             MS. MOLLOY: So not the dam but their power  
8     houses.

9             MR. ORCUTT: The power houses okay, okay. And  
10    Kino is not right because they're --

11            MS. MOLLOY: Kino there's no --

12            MR. ORCUTT: Both of those are not under your  
13    authority except for the power houses.

14                   MR. WINCHELL: Right and Linc  
15    that's outside of our jurisdiction too.

16            MS. MOLLOY: Well the dam is, east and west  
17    that's it.

18            MR. WINCHELL: But the surrender is only involved  
19    with from J.C. Boyle to Iron Gate, okay, that's where our  
20    jurisdiction lies for that surrender.

21            MS. MOLLOY: Yes, so the other -- the upper ones  
22    are still -- the power houses are under our jurisdiction  
23    that the reclamation dams would not be because we only  
24    authorize non-federal projects. So federal projects are  
25    under their own authorization but these lower -- the lower

1     developments are our licensed projects -- licensed  
2     facilities.

3                 MR. JORDAN: I apologize for being late. I'm  
4     Danny Jordan. I think what we are talking about right here  
5     --

6                 MS. MOLLOY: One second, one second.

7                 COURT REPORTER: Yes, he's not on the record  
8     because it's so far back.

9                 MS. MOLLOY: Would you come closer?

10                MR. JORDAN: I'm Danny Jordan, I've come here for  
11     the tribe, been on the Council, worked on fishery stuff for  
12     35 years but I think what Mike talked about and just what  
13     you just talked about -- one of the biggest problems with  
14     the dam removal -- the climate management in general, dam  
15     removal being part of it, is the coordination.

16                With this reproduction discussion already Oregon  
17     is managing that -- not managing with California, not  
18     managing with the federal agencies either. And again dam  
19     removal is worth a big severance -- if you look at how the  
20     Iron Gate Hatchery removal actually came about it was a part  
21     of the billion dollar KBRA. So you have a billion dollar  
22     KBRA that half a billion dollars went into irrigation  
23     development, half a billion dollars going into fishery  
24     management and then dam removal and everything was supposed  
25     to be great right?

1           That's where Iron Gate Hatchery removal came  
2   from. But we don't have KBRA. We don't have a billion  
3   dollars, we don't even have anything KBRA. In fact what we  
4   have is the Hoopa are saying that the KBRA flow actually  
5   killed a lot of fish so we're dealing with less fish  
6   population today than when we did with the KBRA.

7           And people don't realize it's likely that the  
8   KBRA flows have actually done more damage to the fishery  
9   than the 2002 fish kill because the 2002 fish kill were  
10  adults and so one year good stock. The juvenile fish that  
11  died -- the fish came back as two year olds, threes, fours  
12  and hopefully fives if we ever see them again.

13           So but that fish kill, the fish kill with all  
14  costs of root stock so we are -- why there was a collapse  
15  this year is they have killed the fish -- the flow has  
16  killed the fish diseased and the fish died before they could  
17  go out and fill up.

18           And again if you look at how the fisheries are  
19  configured today, Hoopa rights -- 50% of our catch is  
20  hatchery stock and so thinking that we're killing -- you  
21  know we're killing fish up here -- I mean at the Trinity  
22  Hatchery right because of the effect so we are -- so  
23  actually dropping our production down -- we haven't done  
24  anything to make it for that but we are dropping the  
25  production down.

1           So we're killing fish on this side. Now we're  
2   implementing HGMP on the Iron Gate side, we're killing fish  
3   over there too, production is going down. In eight years  
4   after dam removal two bird cycles, that's all just two bird  
5   cycles.

6           We are going to eliminate the Iron Gate Hatchery.  
7   How does -- from a federal, you're FERC, you're federal?

8           MS. MOLLOY: Yes.

9           MR. JORDON: You're a federal agency, how does  
10   that fulfill federal trust responsibilities? Somebody has  
11   to answer that question and the FERC, DOR, Natural Fishery  
12   Service, Fish and Wildlife Service -- all federal trust  
13   responsibility agencies not talking to one another.

14          And so what I'm afraid -- we support dam removal  
15   but I think what we are going to see is a collapse in our  
16   fisheries and once we collapse the fishery how are we going  
17   to bring those fish back if we're -- we have no other plan  
18   other than to cut production in Trinity and Iron Gate --  
19   we're going to lose our fishing rights in the process here.

20          And thinking that somehow council 1 was built in  
21   1917 -- we're going to fix problems in eight years after dam  
22   removal, really? It's going to take at least four years of  
23   intensive hatchery and natural management to see what the  
24   effect is from dam removal. If we drop the production from  
25   the hatcheries -- eliminate it, even halfway through it, how

1 are we going to analyze anything and how are we going to  
2 know whether or not Hoopa fishing rights are going to be  
3 protected?

4 They're not being protected today. Right now  
5 we're in violation of ESA right for fishing according to a  
6 letter from the National Fishery Service for operating here  
7 to remove half restocks, it said half restocks, which is a  
8 very progressive way of managing.

9 We have a letter from NIM saying that the tribe  
10 is in violation of the Endangered Species Act, that's  
11 exactly what's happening on the Columbia. They are moving  
12 the hatchery stocks, getting some benefit to people,  
13 especially Indians, and letting these natural stocks produce  
14 right?

15 There's not even reintroduction plan, there was  
16 never a reintroduction plan in the KBRA. But again, we're  
17 operating a whole bunch of individual cubicles and everybody  
18 has their own little turf right?

19 Nobody is managing the fishery or the resources  
20 or what Mike says, what's going to happen with  
21 reintroduction with Lincoln and Kino. So yes, the plan, as  
22 was indicated already the plan is really piece meal and it  
23 doesn't -- from a trustee's standpoint it doesn't give us a  
24 comfort level if something happened on this side, an  
25 elimination of Iron Gate Hatchery.

1           They're going to do something on this side  
2   because of reintroduction plan they are not even being  
3   coordinated with it. There's a transfer of activity going  
4   on but nobody is coordinating it. And right in the middle  
5   of that there's fishing rights and by the way listing of  
6   spring Chinook is going to be a killer on dam removal and  
7   reintroduction right?

8           The Iron Gate Hatchery never, never -- even  
9   though it killed off the spring Chinook fishery it never  
10  managed for spring Chinook right -- so it totally eliminated  
11  the spring Chinook population from Iron Gate to Boyle even  
12  though that was a 15 mile responsibility it didn't produce  
13  any -- the state of California and PacifiCorp. walked away  
14  from spring Chinook.

15           And now we're listing spring Chinook right? How  
16  is the listing of spring Chinook one going to help with the  
17  hatchery, help with the reintroduction and third how is it  
18  -- what effect is it going to have on dam removal themselves  
19  if it is listed before dam removal happens?

20           MR. KAUTSKY: I just want to offer for the record  
21  here we have an opinion 381 from FERC. It's 14 March, 1963  
22  and that opinion 381 for Project Number 20-82 which is the  
23  project I think you're talking about in the first  
24  application called for mitigation that a facility be  
25  constructed and mitigation on the order of what Mike said,

1 six million king salmon and so many seal and Coho salmon be  
2 produced.

3 The licensee shall construct or arrange for  
4 construction of a facility that was constructed you know,  
5 under the record of this permit right. So now if you  
6 transfer that to another, to the dam renewal corporation or  
7 the Klamath Renewal corporation -- this is like a  
8 subordinate piece of that permit right or that 20-82 order.

9 How does this piece convey order number 381  
10 regarding the hatchery and convey to -- follow where that  
11 goes and where suddenly the federal government just drops  
12 the ball on us and mitigation suddenly ceases because like  
13 Mike said we have on one hand an expectation by some parties  
14 that signed an agreement for a hydropower settlement that  
15 the facility is basically moth-balled after eight years.

16 In the near term the first action you take in  
17 approving the separation of that project into upper and  
18 lower section in the Klamath Renewal Corporation assuming  
19 the lower piece at that point that this mitigation moves  
20 with that, correct? Is that true?

21 MS. MOLLOY: We haven't yet looked at the  
22 different or you know, when we issue the order what we will  
23 be doing is taking the conditions of the license and making  
24 sure that each one has the conditions appropriate to the  
25 license.

1           MR. KAUTSKY: Yeah, so this was a condition of  
2 20-82.

3           MS. MOLLOY: So any conditions in the license.

4           MR. KAUTSKY: Moves with it -- it's conveyed with  
5 it.

6           MS. MOLLOY: The license is -- it stands the same  
7 way, it doesn't change the licenses other than having --

8           MR. KAUTSKY: So when you move to the  
9 recommendation for the second application which is  
10 decommissioning how could any subordinate -- is that when we  
11 have the conversation with you about Iron Gate so we don't  
12 suddenly -- it just doesn't fall through the cracks because  
13 of either a hydropower settlement agreement or something and  
14 the dam removal corporation is reading that as their guide?

15           MS. MOLLOY: So when the Commission looks at the  
16 settlements that have been prepared by other parties -- so a  
17 group of people come and do a settlement. A settlement is  
18 filed with us as part of an application for either licensing  
19 or whatever someone is seeking to do. They have reached a  
20 settlement agreement with -- and that's great.

21           We encourage settlements. But what we do when we  
22 get a settlement is we look at it independently. So if  
23 someone is saying we've reached agreement on all of these  
24 conditions and we think it's a great deal, FERC approve it  
25 or include you know, what we're asking for in whatever order



1     you do.

2                 The Commission looks at it independently so it's  
3     -- we know that when a settlement is filed as part of an  
4     application, these people are on board. We sometimes or  
5     frequently hear from others, their view of the settlement  
6     and we then balance when we look at it.

7                 So any concerns that anyone has on a settlement  
8     brought to our attention where they are going to consider  
9     that when determining what action to take on an application.  
10    And that's for all and filed with us. We have a settlement  
11    policy, a policy statement on what the Commission does with  
12    hydro settlements when we look at it.

13                And it's on our website, we can get you a copy,  
14    but basically it says we look at them independently. We  
15    have to make our own balancing decision so we don't just  
16    take anyone's word that it's a good idea, we actually look  
17    at it ourselves.

18                And then we can tweak them, we can require  
19    different things. We make our decision. It is, to us, it  
20    is the proposal that has support by --

21                MR. KAUTSKY: So even in the action of  
22    decommissioning if the Commission were to take that action  
23    that's requested in the application right to decommission --  
24    that'd be the second permit.

25                MS. MOLLOY: Right.

1           MR. KAUTSKY: You could make stipulations or  
2 requirements there which might even include mitigation.

3           MS. MOLLOY: Which might be the same, might be  
4 different, might also involve conditions that other agencies  
5 like water quality services put in also factor. But  
6 basically we're taking all the comments, all the requests  
7 and examining it.

8           MR. KAUTSKY: Because I think what Danny was  
9 saying it seems -- if you trace this back to 1963 when that  
10 hatchery was created, it was created by action of the  
11 federal Commission. That's a federal responsibility that is  
12 being implemented at that point.

13           MS. MOLLOY: Well it's part of the -- its part of  
14 the license. So in exchange for having the right to have a  
15 federal license this is one of the things. So yes, it would  
16 be in the consideration.

17           So any specific concerns he's identified this  
18 will be, you know, in the record but if there is any other  
19 information filing it with us to highlight it would be, you  
20 know, an excellent thing. We'd certainly welcome it.

21           MR. JORDAN: Let me clarify one thing about that  
22 the hatchery problem.

23           MS. MOLLOY: Okay.

24           MR. JORDAN: This is for Trinity and Iron Gate.  
25 It will be totally unfair to Hoopa and Yurok, they're the

1 two holders of the Indian rights, 50% of the Indian  
2 retirement -- it goes back to 1855 where Yurok 1 -- down the  
3 lower Klamath, ours was 1864.

4 We absolutely have senior rights in this basin  
5 and actually pre-date FERC as well in the 1917 building of  
6 the dam -- the first dam, and the 1920 Federal Power Act.  
7 But we're getting trapped because what FERC is doing -- what  
8 could be doing, is looking at the policies as they exist  
9 right including ESA.

10 That is what's happening with BOR Fish and  
11 Wildlife Service and National Fishery Service. We have a  
12 collapse in the system because of dams being built -- not  
13 just dams being built but diversion of water in the upper  
14 Klamath right, and removal of wetlands and all of that.

15 And we have 50% of the diversions of in Trinity  
16 actually 90% into the central valley right? So we have a  
17 situation where we have completely depressed stock right?  
18 Now, and you get the letter right -- from Barry Tom saying  
19 the fishing on this reservation is illegal under the  
20 Endangered Species Act if we want to be creative by removing  
21 hatchery fish by where we can't do that.

22 We can't be creative because of the Endangered  
23 Species Act, that's the problem. We need FERC, BOR Fish and  
24 Wildlife Service, National Fishery Services to all sit in a  
25 room and say, "What does this plan look like"? And possibly

1 the state of Oregon and the state of California as well with  
2 the reintroduction plan.

3 Because what we are probably going to have to  
4 have is a relief from the ESA as is being interpreted today  
5 into a Coho four year recovery period cycle, 12 years. If  
6 you want to take four cycles of Chinook including spring  
7 Chinook seniors right -- we need a 16 year or a 12 year  
8 policy on ESA that gives us the ability to be liberalize how  
9 these hatcheries are done right?

10 You can't take a hatchery that was built in 1965  
11 and say now today it's going to do something different or a  
12 hatchery up here -- a 50 year old hatchery at Trinity and  
13 say, "Okay, today we are going to do something different."  
14 These hatcheries were built for whatever they were built for  
15 when they were built.

16 But they didn't compensate for where we're at  
17 today right? We have totally depressed stocks. So we are  
18 going to have to take both Iron Gate and Trinity and we're  
19 going to have to modernize them and create a link between  
20 ESA and hatchery management.

21 Hatcheries -- unless they are going to remove  
22 Lincoln and Kino right?

23 MS. MOLLOY: Right.

24 MR. JORDAN: Unless they are going to renew them  
25 the system has changed. And unless they are going to remove

1 all the conversions the system has changed. These  
2 hatcheries that were built back whenever they were built and  
3 never have evolved with the way the fisheries and actually  
4 the population of fisheries hatchery stock have evolved,  
5 they're still the same old hatcheries right?

6 The same old diversions and unless -- and the  
7 same with ESA right now right which causes a letter to come  
8 to Hoopa saying it's illegal for us to fish on our  
9 reservation -- this is a 2016 letter right?

10 We have to modernize these things including  
11 modernizing the ESA policy to where it gives us some  
12 flexibility on how we can take Iron Gate and Trinity  
13 Hatchery and jump start with tied into a natural stock  
14 program.

15 But the reintroduction plan was only being done  
16 by Oregon and not California and the fed's aren't even at  
17 the table. So what we have is a whole bunch of piecemeal  
18 things and more evaluation of dam removal will be -- will  
19 depend on very critical things that are happening in other  
20 places that FERC doesn't have control over.

21 At the end of the day we are the ones that are  
22 going to lose rights because we are losing fish. And if we  
23 can't fish our rights are gone anyway and yet the federal  
24 agencies are all sitting in their own little space right,  
25 not working these things out.

1           And all of a sudden Iron Gate Hatchery thing pops  
2     out -- not because it's well thought out because somebody  
3     thought about it back in -- before 2010 and didn't have any  
4     rational reason for figuring out what part of that played in  
5     reintroduction down the road.

6           That's the problem we have. We have got to -- we  
7     need dam removal for sure but we have to figure out where  
8     we're going because if we don't figure this out and all of a  
9     sudden removing dams causes a reduction in population, how  
10    are we going to rebound even to the ESA level if we don't  
11    figure this out before then we lose rights.

12           It could be done and it could be done very  
13    creatively. We can bring a lot of it back but we're going  
14    to have to figure out a different way to do it than we have  
15    been doing it since 1917 on the Klamath side and 1965-'64 on  
16    the Trinity side.

17           CHAIRMAN JACKSON: And so are all of those things  
18    going to be taken into consideration as we sit here --

19           MS. POLARDINO: Absolutely.

20           MR. WINCHELL: Anything that's been filed and  
21    transcribed is going to be considered.

22           CHAIRMAN JACKSON: Well how far into that will  
23    you guys mine -- to get a more accurate portrayal and simply  
24    because one route that signs this up says well we don't  
25    believe in hatcheries. That doesn't necessarily mean that

1     --

2                   MS. MOLLOY:  No.

3                   CHAIRMAN JACKSON:  I can say that we don't  
4     believe in a lot of different things and sign the document  
5     that subverts our rights.

6                   MS. MOLLOY:  But, so what we've heard right now  
7     is an explanation behind you know, a statement.  It isn't  
8     just don't do this, it's been explaining the thought process  
9     behind that so that is something we would be looking at.

10                  We are -- FERC is a creature of statute.  We are  
11     limited in jurisdiction to that which we license, the  
12     non-federal but certainly the other agencies will see the  
13     comments in the record and will be providing comments to us  
14     themselves.

15                  It is certainly worth pursuing with other  
16     entities, certainly the corporation and others hearing the  
17     concerns might look into --

18                  MR. ORCUTT:  It seems like where there might be  
19     some fertile ground there is there is like in that amended  
20     agreement and specifically at 7.66 or whatever it is -- the  
21     hatchery -- there is a reference to a study but I think you  
22     know people are moving really quickly on some of that stuff.

23                  But one of the things that's starting to emerge  
24     is it well might need a conservation effort somewhere along  
25     the way.  You know the mitigation for the lost production is

1 one thing but then the secondary lead is how are you going  
2 to get the fish up that upper part of the river and how are  
3 you going to recolonize them in some way.

4 And likely Kino would be still in place, right?

5 MS. MOLLOY: By reclamation.

6 MR. ORCUTT: The speculation may  
7 well be you need a conservation hatchery there. But  
8 anywhere along the way maybe that study needs to be beefed  
9 up on what your outcomes are during that period of time so  
10 you are providing direction on what the outcome is after  
11 that period of time.

12 Because right now it just says maybe do a study  
13 -- I don't know if it says if it is really required or not  
14 but what they're looking at but if you just cut off the  
15 production after eight years and hoping they're recolonizing  
16 that quick, having a lot of those impediments still there  
17 it's not going to work, so.

18 CHAIRMAN JACKSON: And I guess even back to what  
19 Bob George had talked about the original opinion -- all of  
20 those things even be met not to say well eight years from  
21 now it's just all going to be gone.

22 If you propose conditions or we can propose  
23 protections for fisheries based on the conditions I'm sure  
24 you can as well impose at the conservation hatchery or these  
25 other measures also be met based on the conditions.



1                   And what was the fishery -- 160?

2                   UNIDENTIFIED SPEAKER:   Yep.

3                   CHAIRMAN JACKSON:   160 fish, 160 salmon and based  
4   on what George and everyone else talks about clearly we're  
5   not meeting the obligations that are supposed to be there or  
6   there's just Indian people that you talk to now, but  
7   generally across the basin it seems like things are really  
8   falling apart.

9                   We have an opportunity actually to really address  
10  some of those things where the agencies either have failed  
11  to address them properly or adequately or are in the process  
12  of doing so or have not been very successful.  All the while  
13  we're just sitting here trying to survive and it gets to be  
14  pretty stressful and there's a lot of anxiety around the  
15  inability to harvest salmon.

16                  And then also to talk to the federal agencies  
17  repeatedly over and over and over again and present all of  
18  these things that continue to happen with the fishery and  
19  it's as if though they'll tell you that they're doing  
20  everything that they I guess can, but something isn't  
21  working and there's an opportunity here to help to address  
22  whatever those problems are from the trust obligation of  
23  the federal government and it should be done.

24                  MR. JORDAN:   And I want to make sure that the  
25  outcome here when you're going through this stuff and you're

1 weighing the value of comments -- the Klamath tribes have a  
2 treaty right -- an agent 64 treaty.

3 We don't know what effect -- we asked the  
4 question what in fact is dam removal on the rights? Do they  
5 have reserve rights to fish because in 1917 they were cut  
6 off? So what is the nature of the right today?

7 We already know by federal solicitor's opinion  
8 the Karuk Tribe does not have federally reserved rights.  
9 There's only -- there's a case called Parvano -- Parvano v.  
10 Babbott. It says that, "50% of the fish production from the  
11 Klamath River including Trinity is an illegal entitlement to  
12 Hoopa and Yurok only," -- it doesn't include Klamath, it  
13 doesn't include any other tribe.

14 So we don't want to start a tribe by tribe fight  
15 but when we are sitting at a table and the Karuk  
16 representative -- the ESA is a good example, is sitting  
17 there hammering about listing species it's not their rights  
18 that are being protected, that are being jeopardized, it's  
19 Hoopa rights.

20 We have an 1864 right. We have a senior right in  
21 this basin. Yurok again -- 1855 with Lower Klamath only,  
22 1891 from the 20 miles up to Weitchpec. So those are the  
23 only legal rights that the federal government, as federal  
24 agencies you have a trust responsibility to protect.

25 And so when you're looking at this -- and it's

1     also with the Dam Removal Commission or corporation -- the  
2     federal government cannot transfer trust -- federal trust  
3     responsibility treaty obligation to that group without  
4     oversight.

5             Because that's what happens -- not FERC, with the  
6     Iron Gate Hatchery -- elimination of the spring Chinook  
7     oversight, pure oversight -- but FERC allowed that to  
8     happen. The Federal Power Act had an obligation to protect  
9     that treaty obligation but it didn't work, it just got wiped  
10    out.

11            But again the decision was made by PacifiCorp.  
12    and the Office of -- Copco at the time and the state of  
13    California to wipe out this, above Iron Gate.

14            But again we're not just a group here that has  
15    one more voice, we are the legal by Congress and by court  
16    order we are protected right.

17            CHAIRMAN JACKSON: California will never deliver  
18    those obligations to the tribe because our relationship  
19    isn't with the state of California. We can go talk to the  
20    state of California but that's not who is the trustee  
21    agencies. They just aren't and we have had a number of  
22    interactions with them on the Trinity Hatchery with the Weir  
23    and other areas that haven't been very successful simply  
24    because at some point they really don't have to do anything.

25            Because they don't have an obligation to the

1     tribe like the federal government does so simply  
2     transferring that requirement to the state of California I  
3     think we would find it to actually be illegal at some point.  
4     You guys can't subvert us back down to having to deal with  
5     the state when the state operates by a whole set of rules  
6     that often don't apply or can't apply because they don't  
7     recognize Indian people as separate political entities, they  
8     just don't.

9             MR. ORCUTT: I think the sort of fine edge that  
10    we are is that -- one I have to clarify a little bit, it is  
11    -- the FERC processes tribes advocated that we were in  
12    support of the dam removal, we were supportive of all of  
13    those things and in fact that's what it shifted back to  
14    after the KBRE expired in whatever -- two, three years ago  
15    so.

16            But the fine line that we're playing here and I  
17    know I hear it from a lot of people. I've been invited to  
18    the Elwa field trip that Interior or Fish and Wildlife  
19    invited us to that and every time we speak up it's like  
20    we're trying to shoot something or we are perceived as we're  
21    not, we're just trying to get it right.

22            And so KBRE expires, KHSA came in and got them --  
23    there was some logic to saying we still need to do it right  
24    here and so that's what we are trying to convey here and I'm  
25    glad that KRCC's here because they are a party here.

1 Others, state board, whoever else needs to be we  
2 probably need to get engaged with there but I think the  
3 caution is that we want to get it right. It's not that  
4 we're against it -- we're not. But in fact there's a lot at  
5 play here and a lot of things that could happen if we don't  
6 do it right so I think that point needs to be really  
7 amplified.

8 But it's nice that we're here and we went through  
9 all of those things, we've been there -- we're at a meeting  
10 that we haven't been kicked out of that we can make and  
11 express our viewpoint and this is one where clearly the  
12 right heads need to be at the table to talk about this  
13 because -- and it needs to be then embodied into some type  
14 of order in some way that has a key finding.

15 MR. JORDAN: And if I haven't made it clear, Iron  
16 Gate needs to be improved the same way with Trinity. And  
17 then look at whether or not hatcheries have done their jobs  
18 and not just look at the hatcheries but natural habitat has  
19 done its job and it can actually carry the species -- 12  
20 years or there's four groups with Coho, 16 years if it is  
21 Chinook, including spring Chinook.

22 That's when you have to reevaluate and if it were  
23 doing things right, 16 years after that dam removal, then we  
24 can start managing, adaptive management right -- we can  
25 manage our way into doing something else.

1           But nobody can ignore the fact that we as humans  
2   have done some pretty significant things to these systems,  
3   Klamath system and Trinity and Central Valley where  
4   temporarily reversing the clock and thinking that things  
5   will go back to a natural state -- that's probably never  
6   going to happen right because we're probably never going to  
7   have, never going to remove Trinity Dam.

8           About 50% of the Klamath stocks come from  
9   Trinity. When we were trying to save fish under the KBRE  
10  flows, when they were threatening to kill the fish in Lower  
11  Klamath, Trinity water was released, not Klamath -- Trinity  
12  water was released to save them and yet the KBRA never  
13  brought the Trinity and Klamath together.

14           At that point those Trinity flows because we were  
15  trying to save fish from dying in the Lower Klamath, the  
16  adults, Trinity flow was dropped right on top of Hoopa  
17  fishing grounds and our numbers were down -- our fishing  
18  opportunity goes down because we're flooding in water when  
19  Indians should be fishing.

20           Again, nobody cared about that. Nobody came back  
21  after they signed the KBRA. The only one that came back is  
22  the 2016 lawsuit -- attempting lawsuit we filed, the only  
23  time the parties came back to the table is when we sued  
24  them.

25           But again, our fishery numbers have just gone

1 down dramatically. Our data clearly shows that since the  
2 KBRA resigned. So -- but again we just need to get our  
3 Commission and FERC, well FERC as well, NEPS, and Fish and  
4 Wildlife Service to think about how these hatcheries operate  
5 and improve them.

6 CHAIRMAN JACKSON: Can I ask a question about the  
7 Commission in the extent in which they can issue a license  
8 with you know, different requirements. How far can FERC go  
9 in saying like what was in '63 built these hatcheries in  
10 order for this to happen? Is it similar to today -- I  
11 suppose it would be and can require that certain conditions  
12 are met in order for the license renewals to be issued?

13 MS. MOLLOY: So when we issue a license we do  
14 frequently put in conditions about fish passage or -- not  
15 always hatcheries but we have some that have hatcheries or  
16 rec sites. You know we have different conditions on there.

17 On surrenders we typically have a shorter -- if  
18 someone is coming out of our jurisdiction because they are  
19 surrendering our license, hydro is all we license -- you  
20 know, we license it for hydropower.

21 And if someone is giving up a license to generate  
22 hydropower we do have some limits on time and on some future  
23 conditions. We usually focus on the removing or stabilizing  
24 or doing whatever it is. Sometimes, for some projects the  
25 dam's there -- it serves other purposes so the dam won't be

1 coming out but the power will be so we just take the power  
2 out.

3 Sometimes we have a partial dam or full dam  
4 removal -- we work on that and then restoring the banks and  
5 the area around there. But we have sort of a temporal limit  
6 to a certain extent but we try to work within that to try to  
7 make sure that everything is set up after any removal or  
8 partial removal is done.

9 That's sort of the general answer. It's kind of  
10 a range that we've done to give you an idea. But these are  
11 things, you know, we would look at and again we are  
12 constrained some by our authorities, but there have  
13 certainly been excellent points raised that are certainly  
14 worth looking in and getting further information if we need  
15 some information on that.

16 And anything you all want to add to it and file  
17 more than welcome. We're happy to receive it, it will help  
18 us anything else?

19 CHAIRMAN JACKSON: Did you have anything else  
20 Tom?

21 MR. SCHLOSSER: No, not at this time, thanks.

22 MR. JORDAN: My only question is when are you  
23 going to get down to real management? Right now we've got  
24 cubicles right -- everybody is doing their own thing and  
25 somebody's thing doesn't have anything to do with anybody



1     else's thing right?

2                 We're losing our fishery because of this and we  
3     see it happening all the time. Our population this year is  
4     a demonstration of the total conflict between management  
5     agencies. Dam removal by itself won't fix the problem.  
6     Where's EPA in the water quality issues -- it would help to  
7     create the disease problem that killed off the fish  
8     population?

9                 Again, we're -- the worse thing about the KBRE  
10    and dam removal agreement -- hydro agreement was that people  
11    ignored the problems and they ignored it for a long time and  
12    we need to get back to especially because of the trust  
13    responsibilities of federal responsibility.

14                We need it back to federal agencies doing their  
15    jobs. Not in individual cubicles but coming together. You  
16    talk with me and Mark, you talk with NEPS; do you talk with  
17    Fish and Wildlife Service?

18                MR. WINCHELL: Well yeah, if it's a surrender  
19    they're going to be participating.

20                MR. JORDAN: No, do you talk with them now? Are  
21    they giving you information about where we're going with  
22    this basin?

23                MR. WINCHELL: Not yet but we expect that they  
24    will of course.

25                MR. JORDAN: No, they will. This has been going

1 on since before 2010 -- right, 2006 actually. When have we  
2 ever sat down with every federal agency at the table -- a  
3 trust agency, and said you have an Indian trust  
4 responsibility, how are we going to put this together?

5 We aren't doing that. We have letters right?  
6 Saying that we're illegally fishing on our reservation --  
7 that's what we need to do because if we don't do that, we're  
8 going to stumble our way into a cubicle-sized decision on  
9 removal or the dam removal, but the entity right.

10 And then the entity itself, what responsibility  
11 will it have to monitor and manage the resources because  
12 that's what we're supposed to be doing here right --  
13 bringing the fish back. Who's going to be monitoring that?  
14 And if that isn't happening it's a big void in the system.

15 CHAIRMAN JACKSON: Well I think we've gone  
16 through the Agenda, is there anything else anybody else  
17 would like to add or I don't know if you guys have more to  
18 offer -- maybe future consultations I guess if that's what  
19 for the audience today.

20 What is the process moving forward and --

21 MS. MOLLOY: So it's -- do you want to check that  
22 --

23 MR. WINCHELL: So real quick on the surrender  
24 again we are certainly going to be moving forward on the  
25 process. At FERC these things such as administrative

1 decision to make we have got that -- I mean there are some  
2 things we have to do beforehand, before we actually get  
3 engaged and do the surrender proceeding.

4 But there's certainly going to be ample  
5 opportunity to participate, comment, all the things that you  
6 guys would expect us to do. There's going to be full  
7 participation so we're not finished. We're just starting  
8 the process now and of course this is our opportunity to  
9 talk with you all today.

10 You know this is why we are here today to get  
11 that one on one communication, tribal perspective, all that  
12 good stuff.

13 MS. MOLLOY: So it's typically our custom to try  
14 to reach out as early as we can to tribes and stuff and seek  
15 input and then we will process the applications when we go  
16 through on the one that's administrative so I don't think  
17 there is anything we need and that some -- just awaiting the  
18 decision.

19 But the other we'll be looking at for environment  
20 -- with NEPA, what work we need to do and the additional  
21 approvals and such that we have to receive during that.  
22 We'll probably have -- we haven't had scoping on this so we  
23 will have a scoping meeting I believe scheduled and various  
24 things.

25 So this will proceed. If you ever have a

1 question of where it is feel free to -- I have cards here, I  
2 can leave cards. Give me a call I can tell you where it is  
3 or track down someone if you have trouble with e-library  
4 give a call, or give any of us a call.

5 MS. POLARDINO: Right.

6 MS. MOLLOY: And we can work it with you or  
7 something or get something if you are having trouble.  
8 Sometimes our system has been acting up a little bit making  
9 it difficult to get documents. If that's the case we can  
10 try to track something down for you too.

11 But this is will continue. We will make sure  
12 that the concerns raised here are looked at and I can't you  
13 know, commit that all agencies will work as one but I can  
14 certainly say we certainly have it on the table and we'll  
15 look at it and I know some have heard so hopefully they'll  
16 also look at opportunities as well.

17 MR. FRANKLIN: I had a question on the NEPA  
18 compliance. We talked about it a little earlier and I made  
19 of that that the decision is yet to be made whether we have  
20 an EA or an EIS and if we've not had scoping and let's say  
21 -- who makes the decision would be one part of my question  
22 on the level of compliance necessary?

23 MS. MOLLOY: Well FERC will decide.

24 MR. FRANKLIN: The Commission itself?

25 MS. MOLLOY: No, well FERC staff.

1           MR. FRANKLIN: Staff makes that call okay. So  
2   should we find that an EIS is necessary and we haven't had  
3   scoping yet and it's January of 2018 -- my experience over  
4   decades suggests we're going to have trouble meeting the  
5   2020 deadline because an EIS takes a long time to pull  
6   together even though there's a great deal of material  
7   available already.

8           MS. MOLLOY: But I think we mentioned earlier  
9   that the Commission tries not to recreate the wheel. So  
10   relying on the information that's been done we'd be looking  
11   to fill in the gaps and do what analysis we need to do.

12           So it shouldn't be --

13           MR. WINCHELL: So I want to add, you know I am  
14   not 100% sure whether there may have been scoping done.

15           MS. MOLLOY: I'm drawing a blank actually. I  
16   said if we have --

17           MR. WINCHELL: I'll check, I'll check with John.  
18   I think there might have been some initial scoping because I  
19   don't want us to understand --

20           MS. MOLLOY: But we haven't issued the ready for  
21   --

22           MR. WINCHELL: Yeah we're not with the REA, the  
23   ready for environmental analysis -- that's way down the road  
24   but I think initially and I'll check with John on this. I  
25   think there was an initial scoping about the application

1     itself.

2                   MS. MOLLOY:   So I may --

3                   MR. WINCHELL:   But I don't know I have to check  
4     on that.

5                   MS. MOLLOY:   But we're not sure yet what --

6                   MR. FRANKLIN:   But it shouldn't get in the way of  
7     the -- it shouldn't slow the process?

8                   MR. WINCHELL:   No, right, right.

9                   MR. FRANKLIN:   Maybe I've been doing NEPA with  
10    the wrong people, slow interior.

11                  MR. WINCHELL:   I would say I mean you know, we're  
12    certainly going to do full NEPA analysis, that's a  
13    certainty, okay.  Whether we go the route of the EA or the  
14    route of an EIS we'll determine that along with everybody  
15    else's feedback.

16                  So that will get sorted out but rest assured we  
17    are going to do a full NEPA analysis.

18                  MS. MOLLOY:   We're going to examine and our REA's  
19    tend to be -- they aren't very limited to two pages or  
20    anything.  They fit whatever is appropriate so whether it's  
21    EIS or EA it is going to cover the material that we need to  
22    cover.

23                  MR. MEURER:   Chairman, can I clarify what is a --  
24    just regarding the status of the 401 permit I just  
25    remembered we had filed something in January and I thought

1    what did we file? It was just for the Sequa process with  
2    the Water Board we filed some additional information. I  
3    measured by the number -- so yes the Clean Water Permit was  
4    filed in September of '16 and we just provided the  
5    additional information for Sequa processes.

6                   MS. MOLLOY: Anything else?

7                   MR. JORDAN: We all know legal processes and we  
8    all know regulatory processes as well, we know technical  
9    processes. 2020 is not that far away and the level of work  
10   necessary to make 2020 work as a figured date will be  
11   nothing short of a miracle in a federal system.

12                   What is going to happen after that because we've  
13   launched that fishery between 2010 -- February 18, 2010 when  
14   the KBRE was signed up until 2016 whenever it was stopped  
15   and we actually stopped it by a lawsuit?

16                   We lost our rights during that period and nobody  
17   looked back and that's a concern. If all of a sudden 2020  
18   becomes 2022, 2024, 2030 what happens to our rights because  
19   at that points things have -- KBRE when it goes off track  
20   somebody has got to be saying let's monitor the situation  
21   and make sure that when it starts going off track it doesn't  
22   fall completely off the cliff like the KBRE did.

23                   Because at that point when we're talking about  
24   such now a fragile basin fishery because who knows what's  
25   going to happen next year with the ocean conditions and

1     maybe the fish population will start rebounding from the  
2     juvenile fish hill but if they don't we're carrying a bigger  
3     population burden into dam removal that we should have that  
4     was prompted under the KBRE.

5             And at that point we could lose a couple -- three  
6     year cycle, we could use entire cycles of fish and multiple  
7     cycles of fish and especially if you drop ESA listings on  
8     top of that we're -- how do we survive at that point?

9             But again the time frame that Robert's talking  
10    about is real, court cases are real -- a federal court case  
11    and a district court, you go through an appeal -- four  
12    years, minimum four years.

13            CHAIRMAN JACKSON: Okay, alright, I appreciate  
14    you guys coming it was a good discussion, unless there's  
15    anything else I guess we'll see you guys next time.

16            MS. POLARDINO: Thank you and I would like to say  
17    too is like even though we haven't produced the NEPA  
18    document, part of the reason why we're meeting with you guys  
19    now is to get all of your concerns on the surrender for the  
20    amendment proceedings.

21            So to kind of start that process of getting how  
22    you guys feel about what's going on. So we appreciate you  
23    guys being here.

24            MS. MOLLOY: Thank you for hosting us.

25    (Whereupon the meeting was adjourned at 11:56 a.m.)



1 CERTIFICATE OF OFFICIAL REPORTER

2

3 This is to certify that the attached proceeding  
4 before the FEDERAL ENERGY REGULATORY COMMISSION in the  
5 Matter of:

6 Name of Proceeding:

7 KLAMATH AND LOWER KLAMATH HYDROELECTRIC PROJECTS

8

9

10

11

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13

14 Docket No.: P-2082-062/ P-14803-000

15 Place: Hoppa, CA

16 Date: Tuesday, January 16, 2018

17 were held as herein appears, and that this is the original  
18 transcript thereof for the file of the Federal Energy  
19 Regulatory Commission, and is a full correct transcription  
20 of the proceedings.

21

22

23 Gaynell Catherine

24 Official Reporter

25

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1 FEDERAL ENERGY REGULATORY COMMISSION

2

3 KLAMATH AND LOWER KLAMATH HYDROELECTRIC PROJECTS

4 NOS: P-2082-062/ P-14803-000

5

6 SCOPING MEETING

7

8 QUARTZ VALLEY INDIAN RESERVATION OF CALIFORNIA

9 13601 Quartz Valley Road

10 Ft. Jones, CA 96031

11

12 TUESDAY, JANUARY 16, 2018

13 4:00 p.m.

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1 PARTICIPANTS

2 FERC STAFF

3 ELIZABETH M. MOLLOY, TRIBAL LIAISON

4 JENNIFER POLARDINO, HISTORIAN

5 FRANK WINCHELL, ANTHROPOLOGIST/ARCHAEOLOGIST

6 ELIZABETH MCCORMICK, OFFICE OF THE GENERAL COUNSEL

7

8 QUARTZ VALLEY INDIAN RESERVATION

9 FRIEDA BENNETT, CHAIRMAN QVIR

10 ISAIAH WILLIAMS, QVIR COUNCIL MEMBER

11 MIKE SLIZEWSKI, QVIR TRIBAL ADMINISTRATOR

12 SARAH SCHAEFER, QVIR WATER QUALITY COORDINATOR

13 CRYSTAL ROBINSON, QVIR ENVIRONMENTAL DIRECTOR

14 ELIZABETH NIELSEN, SISKIYOU COUNTY

15 LOUISE GLIATTO, CITIZEN

16 RICH MARSHALL, PRESIDENT CC WATER USERS

17 DAVE MEURER, KRRC COMMUNITY LIAISON

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1 P R O C E E D I N G S

2 (4:00 p.m.)

3 MS. BENNETT: My name is Frieda Bennett. I'm the  
4 Tribal Chairwoman for Quartz Valley Indian Reservation.  
5 First of all I'd like to say thank you guys for all being  
6 here. Being present shows me that you guys are taking  
7 Quartz Valley serious and then I would just also like to say  
8 thank you for bringing the meeting to us -- that also shows  
9 us a level of courtesy that you know, is sometimes needed  
10 and so I'd like to say thank you and I'll open it up for  
11 discussion or introductions.

12 MS. ROBINSON: I'm Crystal Robinson,  
13 Environmental Director with the Quartz Valley Indian  
14 Reservation.

15 MR. WINCHELL: I'm Frank Winchell, I'm an  
16 archeologist I work for the FERC and I've been at FERC for  
17 20 years, mostly in cultural resources.

18 MS. POLARDINO: I'm Jennifer Polardino. I work  
19 at FERC which is with the Office of Energy Projects in the  
20 Division of Hydropower Administration and our group will be  
21 looking at the amendment application to transfer the four  
22 developments to the Lower Klamath Project.

23 MS. MOLLOY: I'm Liz Molloy. I'm the  
24 Commission's Tribal Liaison and I'm in the Office of the  
25 General Counsel and we work with the Office of the Energy

1 Projects on hydro.

2 (Off mic question.)

3 MS. MOLLOY: I work with energy projects with  
4 hydro, not with gas -- that's separate, totally separate.

5 MS. MCCORMICK: I'm Liz McCormick also in the  
6 Office of General Counsel at FERC and I will be working with  
7 Jennifer and Frank and Liz on the transfer amendment.

8 MR. SLIZEWSKI: I'm Mike Slizewski and I'm the  
9 Tribal Administrator of the Quartz Valley Indian  
10 Reservation.

11 COURT REPORTER: Can you spell your last name?

12 MR. SLIZEWSKI: You bet, S-m-i-t-h -- just  
13 kidding. S-l-i-z-e-w-s-k-i.

14 COURT REPORTER: Thank you.

15 MR. WILLIAMS: Isaiah Williams, Quartz Valley  
16 Indian Reservation Council Member.

17 MS. SCHAEFER: He also works in the environmental  
18 department -- Sarah Schaefer with the Water Quality and  
19 Fisheries Coordinator.

20 MS. GLIATTO: Louise Gliatto, I'm just an  
21 interested citizen.

22 MR. MARSHALL: Rich Marshall, President of CC  
23 Water Users and we're here to listen and hear. We didn't  
24 have the advantage before of hearing FERC speak on this  
25 issue so we took advantage of this opportunity.

1           MR. MEURER: I'm Dave Meurer with the Klamath  
2 River Renewal Corporation.

3           MS. NEILSEN: Elizabeth Neilsen, Siskiyou County  
4 Natural Resources Specialist.

5           MS. MOLLOY: So we thank you for having us. I  
6 probably should mention a couple of things just so everyone  
7 knows. The meeting is being transcribed and that will be  
8 put in the FERC record for the projects -- both projects. I  
9 think it is within 30 days I think it will be.

10           And this is a meeting with the tribe and so  
11 observing is welcome but it is just between the tribe and  
12 FERC staff for this particular meeting and I think that's  
13 pretty much very simple, those would be our ground rules was  
14 those two little things.

15           So with your permission I could just describe a  
16 little bit of the Commission and then we have the two  
17 proposals and then we can discuss -- we want to hear the  
18 concerns that the tribe may have with regard to both of  
19 those.

20           The Commission is a small agency -- we're  
21 headquartered in D.C. -- Washington, D.C. There are five  
22 Commissioners that are appointed by the President and  
23 approved by the Senate. We currently have five. Last  
24 summer we were down to one but we now have five. There are  
25 three Republicans, two Democrats.

1           The Commission has several offices. Also the  
2   General Counsel and Office of Energy Projects work on hydro  
3   and we will process the applications and work on the review  
4   necessary for that.

5           We have -- applications are presented to us and  
6   the Commission will decide whether to grant or not grant so  
7   it's a quasi-judicial proceeding and that's why we have ex  
8   parte concerns on things and tend to have everything that we  
9   can on the open record.

10          We have two applications pending before us right  
11   now. One is for an amendment to the current license to  
12   split it into two licenses with the lower developments in  
13   one license that the corporation would then be the licensee  
14   for.

15          And the remaining three developments would be the  
16   upper three would be remaining in PacifiCorp's license --  
17   and that's more of an administrative type of function. We  
18   don't do an environmental analysis for that or a NEPA  
19   document but we do look at whether it makes sense to  
20   transfer or amend the license as suggested.

21          So the Commission will be reviewing that and  
22   issuing a decision. The second proposal is to decommission  
23   the -- or surrender the lower developments. And the  
24   Commission is looking at the record that has been  
25   established already. We are awaiting some additional



1 information on that and then we will conduct whatever  
2 environmental review that is necessary including issuing an  
3 additional document as yet not decided what type exactly.

4 It will depend on sort of what's necessary. The  
5 Commission traditionally tries to rely on existing  
6 information and if someone has already done analysis and has  
7 it out on the record we will try to rely on that and just  
8 supplement as necessary.

9 So that's where we are. Are we all caught up on  
10 things or do you need any more detail? We can -- fine, then  
11 with that so we will be processing those both but we are  
12 seeking concerns and comments at this point so we can make  
13 sure to factor them in as we go forward.

14 MS. SCHAEFER: I have a question. Why was it  
15 proposed to split into upper and lower?

16 MS. MOLLOY: Do we know why, Frank? I'm trying  
17 to think in the application if it was explained.

18 MR. WINCHELL: Yeah I think it's based -- again  
19 like what Liz is saying you know, are we going to an  
20 administrative, you know, before the Commission as far as  
21 whether it would change hands from PacifiCorp. to the  
22 corporation.

23 Of course that's going to be an administrative  
24 decision made by the Commission. And the second part of  
25 what we are here today for is the actual surrendering of the

1 four lower projects, okay, from J.C. Boyle on down to Iron  
2 Gate. So that's the reason why it's being separated as  
3 such.

4 Without going into really a lot of great details  
5 those are the four developments that we are planning to be  
6 -- so.

7 MS. MOLLOY: I think in the application it was  
8 described as sort of for funding and different kinds of  
9 reasons they wanted to split it off to process any surrender  
10 if the Commission were to grant it.

11 I think that is what they were explaining when  
12 they were explaining how they had different people  
13 interested in that.

14 MS. ROBINSON: Is there a timeline for your  
15 conclusion of your portion?

16 MS. MOLLOY: No timeline per se. We tend to  
17 process and if we need additional information which we do  
18 have one additional information request out there now, but  
19 we also require water quality certifications from -- and so  
20 anything that we need from other entities drive some of our  
21 timeline.

22 But we will be looking at the material in  
23 preparing whatever we need to prepare. We also to the  
24 extent, you know, talking about time for any order on  
25 anything -- we are actually prohibited by regulations from

1 revealing timing and nature of the decisions.

2 And so even if we you know, had an idea we  
3 couldn't say, but we're looking at processing it once we get  
4 information in proceeding along as necessary. And it  
5 depends on comments and such that are received from everyone  
6 and what that might entail.

7 MS. POLARDINO: I guess sometimes comments from  
8 others can say in turn oh we need more information to try to  
9 answer some of the point people for that.

10 MS. MOLLOY: So unless there's other questions  
11 are there particular concerns you would like us to look out  
12 for or to make sure to address that you could share with us  
13 at this time? The other thing is you know, comments can be  
14 filed with the Commission as well.

15 MS. ROBINSON: What is the plan for replacement?  
16 Has that been discussed? Is that in your realm?

17 MS. MOLLOY: It's usually something we would look  
18 at in sort of effects of what it would be. I don't know --  
19 we wouldn't -- so our jurisdiction is only on hydroelectric  
20 -- non-federal hydroelectric development.

21 So under the Federal Power Act we authorize a  
22 company or state municipality, even a tribe, to have a  
23 hydropower project and so we issue a license for that. But  
24 we can't, you know, whether someone comes and asks for that  
25 license or not is up to someone interested in having a

1 license and if someone is interested in not having that  
2 license anymore, we're looking that.

3 We would look at what -- in balancing things,  
4 what the effect of the loss of that power would be and look  
5 at what the alternatives are in the area but we wouldn't  
6 mandate other types of power or anything. It's just -- it's  
7 sort of if someone is going to develop hydropower and they  
8 aren't a federal agency and they're on a navigable waterway  
9 or certain things they have to have a license.

10 And if they aren't going to there's nothing for  
11 us to license.

12 MS. SCHAEFER: And you haven't had any inquiries,  
13 any entities searching to do that yet?

14 MS. MOLLOY: Not that I'm aware of.

15 MS. SCHAEFER: And you would only be aware of  
16 hydro projects?

17 MS. MOLLOY: So for like wind power would be a  
18 state, solar would be state -- so we only are authorized to  
19 act on hydroelectric projects.

20 MS. SCHAEFER: Is anyone looking into any types  
21 of development? Do you know or could you say if you knew?

22 MS. MOLLOY: I don't know.

23 MS. ROBINSON: I think that's been the most  
24 immediate impact to the reservation. What is the power  
25 source and how will that monetarily impact.

1           Another concern that I've had is -- and I'm not  
2   sure how much of this falls under you but there is the  
3   largest Coho salmon is in the Scott River. They do spawn on  
4   the reservation and they return to Quartz Valley actually in  
5   the high numbers compared to other tributaries of the Scott.

6           And the proposal to remove the dams is happening  
7   in the large run year -- they return every three years.

8           MS. MOLLOY: Um-hmm.

9           MS. ROBINSON: And one year of three is stronger  
10  than most and that's the big year they are planning to  
11  remove the dams. So I have expressed this concern to other  
12  members of KRIC if I have that acronym right -- just that  
13  the timing of that if there's a way to mitigate for this  
14  impact so the returning Coho adults -- that should be a top  
15  priority.

16           And the timing -- there could be a study  
17  implemented using maybe radio tags to see if the fish are in  
18  the Scott before the work starts and you know the tribe  
19  would definitely want to see that more fish rather than less  
20  were in the Scott when the removal starts.

21           MS. MOLLOY: So on a timing thing -- so if you  
22  had any information, more detailed information, on what  
23  types of things and not only maybe for that year but sort of  
24  surrounding years because while that has been requested,  
25  depending on any number of things -- if the Commission were

1 to approve the application it might not happen right then  
2 because there are other things that the Commission would be  
3 waiting for.

4 And so if there was any information on the  
5 different -- in that range, that would be helpful.

6 MS. SCHAEFER: Okay.

7 MS. MOLLOY: And sort of the timing of when  
8 historically they would be appearing and stuff, that would  
9 also help. Because if the Commission were to approve  
10 frequently timing of things will be looked at four different  
11 species of things -- there have been a few other dam  
12 removals and I know for one PacifiCorp. had Condit -- a  
13 Condit project which is I think the White Salmon River maybe  
14 -- and they, I know, removed the fish in the area, I think  
15 above and below and it was a cooperative effort with the  
16 Fish and Wildlife and there are YouTube videos actually  
17 where they made sure they were out of the way and before any  
18 activity was done on the particular structure.

19 They had a shooting thing to shoot them back in  
20 -- it was simple.

21 MS. ROBINSON: So if FERC issues the removal  
22 application or approves -- I'm not sure of the terminology  
23 there, it will include timing and will that be a number that  
24 can be adaptively managed to be watching fish in the main  
25 stem -- I guess that would be -- the request would be that

1 it includes a broad enough time frame that allows for the  
2 migration back to the Scott to be you know, at a certain  
3 percentage yet to be determined.

4 MS. MOLLOY: So certainly something like that  
5 would be if that is something that you think would make  
6 sense in there to suggest it because that is -- we have in  
7 prior, even building dams or changing facilities on certain  
8 things there will be timing things or there will be triggers  
9 for when something -- so trying to work on that.

10 So that is certainly something that the  
11 Commission would be interested in in order to consider,  
12 anything else?

13 MS. SCHAEFER: Those eagles depended upon those  
14 wrens that are wintering during that period so you know,  
15 whatever is going on with the fish you know. It's hard  
16 because we knew when those fish were going to come if we  
17 could predict with the weather and conditions were going to  
18 be like but it's so -- to have something to be a little bit  
19 meetable would be fantastic or just to project it outside of  
20 that window.

21 MS. MOLLOY: Is it temperature dependent? So  
22 there are certain triggers that would cause them to start  
23 hitting home?

24 MS. SCHAEFER: We don't know really -- nobody  
25 really knows all the chapters but yeah, it can be

1 temperature, you know, water quantity, water quality,  
2 there's lots of things.

3 MS. POLARDINO: Do you know what locations?

4 MS. SCHAEFER: For the eagles?

5 MS. POLARDINO: Yes?

6 MS. SCHAEFER: Yeah, so a lot of eagles have  
7 taken up residence at Costco because well there's a spot for  
8 them and you know I imagine that that would not -- if it was  
9 just a straight waterway like you know, it was before the  
10 dams were built there I'm sure there'd be a less intense  
11 concentration of both eagles and osprey.

12 So I'm imagining that they're going to work --  
13 that that's going to work itself out you know and they will  
14 work their way up to the Klamath Basin, higher up in the  
15 basin but for a year or two I'm sure they'll be confused.

16 MS. MOLLOY: Where's our buffet?

17 MS. SCHAEFER: Right, right.

18 MS. MOLLOY: Excellent, thank you, any others?

19 MS. ROBINSON: I know there's been a concern  
20 mentioned with the Council members -- oh sure, there's been  
21 concern of the sediment behind the dams and I think that  
22 kind of ties in with you know, what kind of water your type  
23 is going to be back there that's released and the timing  
24 again.

25 MS. POLARDINO: So primarily what times of the



1 year are you concerned mostly about?

2 MS. ROBINSON: So for the Coho they're trying to  
3 get into the Scott around Thanksgiving -- so in November. I  
4 don't know that that date has been proposed, so that lines  
5 up with their migration is being in that area below the dams  
6 and of course they're going back to the Shasta River as well  
7 so that whole region would be impacted.

8 And you know the timing of the fish -- it's all  
9 over the year you know, I just mentioned the adult Coho  
10 because I've seen that proposed that it would be in November  
11 and that would be during that run in particular.

12 Migrations in the spring -- you know every season  
13 you're going to have something but that being said I think  
14 that if the Coho were in the Scott that is probably the best  
15 time that you could really send them into the river -- it's  
16 just are they all the way in the Scott, what percentage of  
17 the run is in and what's out?

18 But you know looking at the rest of the calendar  
19 that seems like a feasible time to have the least amount of  
20 impact if you can avoid hitting that last strong run.

21 MS. SCHAEFER: For fish but perhaps not for birds  
22 you know -- other wildlife. They're nesting, they are doing  
23 all sorts of things and there are nest sites out there for  
24 osprey and eagles and you know I don't know -- I don't know  
25 what kind if anybody has looked at the specific impacts to

1     them if we were to use those nesting areas, you know, during  
2     that time of year -- if it would be one nest that would be  
3     gone you know, or one nesting year that you know, I really  
4     don't know, I really don't know.

5             They will be impacted for sure, they will be  
6     impacted.

7             MS. MOLLOY: And these are typically things the  
8     Commission will look at when looking at an application and  
9     frequently timing with eagle nests and also fish runs we run  
10    into on different types of applications and try to work  
11    around to the best we can or find other ways to try to  
12    protect against harm. So certainly we will be looking at  
13    that.

14            MR. WILLIAMS: The lamprey run around the same  
15    time as the salmon in the extension and the people are  
16    fishing the lamprey.

17            MS. MOLLOY: It would be good to avoid them.

18            MS. ROBINSON: We have noticed a lot of lamprey  
19    in the Scott in particularly. So the Scott River is an  
20    enjoyable habitat for them, so yeah it's another species of  
21    concern for the tribe for sure.

22            MS. MOLLOY: So they currently have to get up and  
23    around.

24            MS. POLARDINO: Yeah and there's not a lot of  
25    information on the timing and the migratory movements of

1 lampreys so that's probably one you will have to look at  
2 more trouble determining when that window would be best.

3 MS. ROBINSON: And it varies by species too,  
4 there might be like seven species in the Klamath Basin so  
5 they ought to know about them.

6 MS. MOLLOY: Anything else on that? So we've got  
7 the power, the salmon coming upstream and going downstream,  
8 the eagles that will feed upon them and lamprey, both  
9 directions as well -- cool.

10 MS. SCHAEFER: There's so much but I'm not sure  
11 you know, what is specifically appropriate for this meeting,  
12 you know. I mean there's -- wow, you know, such a huge --  
13 it's a huge project, yeah.

14 MS. MOLLOY: So certainly the Commission will be  
15 asking for comments. Feel free please to submit comments.  
16 There is also a way in case you are interested in what is  
17 being filed or issued by the Commission -- we have an  
18 e-subscription where you can sign-up and you receive an  
19 email notification when something has been filed or issued  
20 and you can look at it or -- I sometimes delete if it is  
21 something I am not working on.

22 But it just lets you know something has been  
23 coming in and so you can see what it is and you know, it  
24 sort of -- it's not a service list type of thing, but when  
25 something is issued or filed it just sort of notifies

1 everyone that has signed up for that particular project.

2 MS. SCHAEFER: What scientific information or --  
3 new inputs?

4 MS. MOLLOY: Any filings that are made by the  
5 applicants, the licensee, you know, or by others -- comment  
6 letters or motions or if we issue notices they'll come out  
7 through that. So anything that happens in that docket --  
8 the two dockets.

9 Someone who is e-subscribed will get an email  
10 when something is there and it will be a link to that  
11 document.

12 MS. MCCORMICK: And notices to solicit comments  
13 too for when we're ready for the environmental analysis.

14 MS. MOLLOY: So if you go on our webpage there's  
15 a drop-down for documents and filings and it's on there and  
16 you just sort of can sign-up on it to register for it and  
17 then just put in the project number or until you no longer  
18 want it anymore.

19 MR. WINCHELL: If you have any questions you can  
20 always call any one of us, we have cards today to give you  
21 folks so feel free to contact us so we can help you.

22 MS. MOLLOY: We can help navigate e-library,  
23 e-subscription sometimes.

24 MS. SCHAEFER: We'll be very interested in the  
25 environmental, you know, impact statement for sure for you

1 know, cultural and natural resources.

2 MS. MOLLOY: We will also of course the 106  
3 process will be occurring as well. Frank will be working  
4 closely on that.

5 MS. SCHAEFER: Okay.

6 MS. MOLLOY: We don't know there will be an EIS  
7 at this point. The Commission will be doing a NEPA review  
8 and stuff -- it hasn't yet said what it will be. It will be  
9 looking at all of the existing information that's out there,  
10 the documentation that Interior has done as well as others  
11 and then we'll sort of not recreate the wheel but will  
12 supplement as appropriate.

13 But we haven't yet decided exactly what form it  
14 will be -- just to clarify, but we will be doing the  
15 environmental analysis -- so.

16 MS. SCHAEFER: Do you have a timeline for them?

17 MS. MOLLOY: No, so we are still waiting for some  
18 additional information and so I don't think we are entirely  
19 set yet but we are looking at -- the staff is looking at  
20 what it has before them already and so working towards that.

21 But we will issue a notice when we start to turn  
22 to that phase, when we feel that we have enough that we can  
23 confidently get started on that and then we'll ask for  
24 comments.

25 MS. MCCORMICK: For the transfer and amendment

1 question I don't think we're waiting for any more  
2 information so that will probably happen sooner than the  
3 surrender.

4 MS. MOLLOY: The transfer being more  
5 administrative not requiring an environmental analysis --  
6 that would be earlier.

7 MS. SCHAEFER: So will you be taking information  
8 from USGS from previous dam removal projects and using that  
9 to model what will be taking place here?

10 MS. ROBINSON: When would that need to be  
11 submitted?

12 MS. MOLLOY: Probably need to be submitted but we  
13 will be -- I mean so with what's being filed and proposed we  
14 have staff who will be -- we sort of have a multi-discipline  
15 staff -- engineers as well as fish biologists, cultural  
16 resource people.

17 MR. WINCHELL: To add real quick John Mudre is  
18 the project coordinator for this surrender aspect and of  
19 course John was also the coordinator at that time so that's  
20 another person that will be available for procedural kinds  
21 of questions.

22 MS. BENNETT: Well I guess if I were to say  
23 anything weird, you know, on the kind of descent and that's  
24 upper people and so anything and everything that affects the  
25 river is going to affect our people and so all things that

1 are transparent and the easier it is for us to get that  
2 information you know, I would appreciate on the tribal level  
3 and our people.

4 MS. MOLLOY: The e-subscription certainly helps  
5 on knowing when things are filed and again we'll be  
6 available if you have issues with accessing stuff or want to  
7 check where we are in the process. Any of us are happy to  
8 let you know.

9 We will -- all the merit stuff, the stuff about  
10 -- that we consider we will be putting on the record and  
11 working with that and that is e-library is basically where  
12 we keep all of our documents on all proceedings.

13 And so when you -- if you go online and you go to  
14 e-library and look something up -- if you do P- and then the  
15 number 2082 or 14803, you can pull up all the documents that  
16 have been filed -- and it's a lot. It's in for a long time  
17 but its' all there.

18 Some of the documents might be large -- they  
19 should be broken up into smaller files. So sometimes you'll  
20 get something that's huge -- it will take a long time to  
21 download maybe, but it should be sort of sub-files usually  
22 on that.

23 But if you ever have trouble trying to get a hold  
24 of the document let one of us know and we'll see what we can  
25 do to help but it should be -- you know I go looking at

1 different federal agencies websites on occasion, just  
2 comparison shopping, and I find ours -- while it has a lot,  
3 once you know where you're looking or to be able to see the  
4 record of the e-library, I find it better than most federal  
5 agencies, but that might be pride of working.

6 MR. WINCHELL: I'll second that -- e-library is a  
7 very good system. It's remarkable, anybody could probably  
8 get up there and easily if you put in the project number  
9 bingo -- it's got everything and it can go back of record  
10 twenty years. So that's just the stuff that's recent but it  
11 goes way back.

12 MS. MOLLOY: And anything that's filed -- so  
13 talking cultural sometimes material is filed as privileged  
14 that isn't revealed to the public and that can be filed  
15 privileged and that is limited in -- there's a line, there's  
16 an entry that says it was filed but it also says it's  
17 privileged and so it's limited access to it.

18 MR. WINCHELL: And that's basically to protect  
19 any stuff that's sensitive not only to archeological sites  
20 but also tribal information -- the tribe does not want to  
21 disclose publically. But that gets distributed, of course,  
22 to all the people on a need to know basis which would be the  
23 applicant, of course FERC, all the tribes, the SHPO's, land  
24 managers. But otherwise that stuff is privileged.

25 MS. SCHAEFER: Do you do that for sensitive



1 locations for wildlife?

2 MS. MOLLOY: Yes. And then there's some -- in  
3 some cases it may be that even revealing some details for  
4 tribal matters might be sensitive. What we would typically  
5 ask is if there is any such -- that in general terms,  
6 somehow to give us something to be able to rely on.

7 We do rely on the record in making decisions in  
8 case someone will take us to court we have to be able to  
9 defend our decisions we've made so we will, you know, ask if  
10 there's anything that people don't want to put in writing to  
11 frame it if possible in such a way that we can -- we can  
12 rely on something.

13 It may not be the case but sometimes it is -- a  
14 tribe doesn't want anyone to know something and it's like  
15 well if we're trying to protect an area -- we need to know  
16 something if possible, you know, to help us be able to  
17 defend doing whatever we're doing in any order.

18 But we try to make it, you know, as flexible as  
19 possible.

20 MS. SCHAEFER: Is everything that's been  
21 published for example on the KBMP website -- is that all  
22 been submitted to your review -- the Klamath Basin  
23 Monitoring Program website.

24 MR. WINCHELL: Well I don't know if everything  
25 has got to be FERC related -- it's got to be related to the

1 relicensing that occurred years ago or it's got to be  
2 related to whatever is before us as far as the amendment or  
3 the surrender.

4           So I would assume they have a lot of the  
5 information but I don't know if they have it on everything.

6

7           MS. ROBINSON: If there's stuff in particular you  
8 are thinking of we can submit it in our comments.

9           MR. WINCHELL: Yeah.

10           MR. POLARDINO: And also if you even submitted  
11 comments in the past through a past proceeding you would  
12 have to resubmit them because these are looked as a brand  
13 new proceedings so --

14           MS. SCHAEFER: In terms of comments, information  
15 gathered -- like are you saying that you are hoping to not  
16 reinvent the wheel.

17           MS. POLARDINO: Right and that makes the comments  
18 -- right.

19           MS. SCHAEFER: There's been an awful lot of water  
20 quality monitoring that's gone on in the basin for months,  
21 I'm sure you guys know that.

22           MS. MOLLOY: And if you filed something  
23 previously but you wouldn't be making these comments, you  
24 can refer back to it or something if you want to remind us  
25 that it exists, that's certainly fine and helpful.

1           Any other questions -- any other areas we haven't  
2 covered? Well we appreciate your meeting with us and  
3 extending the hospitality and thank you so much. We enjoyed  
4 the drive.

5           MR. WINCHELL: It's not every day you get to see  
6 that kind of stuff.

7           MS. MOLLOY: Feel free -- we'll leave cards and  
8 feel free to call us for e-library subscription or  
9 navigating any status we'd be happy to help.

10          MS. POLARDINO: And we prefer that anybody making  
11 comments to make them electronically so if you have any  
12 issues when filing the comments on the record, feel free to  
13 give one of us a call and we'll try and navigate you through  
14 that too.

15          MS. MOLLOY: We still do accept paper. I think  
16 most people find a lot of times it's easier doing it  
17 electronically anyway but one thing with papers -- it goes  
18 through -- ever since the old days with the Anthrax thing it  
19 gets x-rayed and so sometimes the ink gets all gummed up to  
20 the paper and it's harder to read and it takes a little  
21 longer, you know.

22          So less and less is coming that way and more is  
23 being electronically because it gets there faster.

24          MS. SCHAEFER: I wish that you were going tribe  
25 to tribe to seek comments on the off-shore oil proposal --

1 I'm just throwing that out there.

2 MS. MOLLOY: Our jurisdiction is limited to that  
3 which -- alright, well thank you very much.

4 (Whereupon the meeting was adjourned at 4:49 p.m.)

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1 CERTIFICATE OF OFFICIAL REPORTER

2

3 This is to certify that the attached proceeding  
4 before the FEDERAL ENERGY REGULATORY COMMISSION in the  
5 Matter of:

6 Name of Proceeding:

7 KLAMATH AND LOWER KLAMATH HYDROELECTRIC PROJECTS

8

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10

11

12

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14 Docket No.: P-2082-062/ P-14803-000

15 Place: Ft. Jones, CA

16 Date: Tuesday, January 16, 2018

17 were held as herein appears, and that this is the original  
18 transcript thereof for the file of the Federal Energy  
19 Regulatory Commission, and is a full correct transcription  
20 of the proceedings.

21

22

23 Gaynell Catherine

24 Official Reporter

25

Document Content(s)

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1 FEDERAL ENERGY REGULATORY COMMISSION

2

3 KLAMATH AND LOWER KLAMATH HYDROELECTRIC PROJECTS

4 DOCKET NOS: P-2082-062/ P-14803-000

5

6 SCOPING MEETING

7 KARUK DEPARTMENT OF NATURAL RESOURCES

8 39051 Highway 96

9 Orleans, CA 95556

10

11 WEDNESDAY, JANUARY 17, 2018

12 10:00 a.m.

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1 PARTICIPANTS

2 FERC STAFF

3 ELIZABETH M. MOLLOY, TRIBAL LIAISON

4 JENNIFER POLARDINO, HISTORIAN

5 FRANK WINCHELL, ANTHROPOLOGIST/ARCHAEOLOGIST

6 ELIZABETH MCCORMICK, OFFICE OF THE GENERAL COUNSEL

7 KARUK TRIBE

8 ALVIS JOHNSON, COUNCIL MEMBER KARUK TRIBE

9 KRISTEN KING, COUNCIL MEMBER KARUK TRIBE

10 ROBERT SUPER, VICE CHAIRMAN, KARUK TRIBE

11 JOSH SAXON, EXECUTIVE DIRECTOR, KARUK TRIBE

12 SUSAN FRICKE, WATER QUALITY PROGRAM MANAGER KARUK TRIBE

13 ARCH SUPER, COUNCIL, KARUK TRIBE

14 JOSEPH WADDELL, COUNCIL, KARUK TRIBE

15 CRAIG TUCKER, NATURAL RESOURCES ADV., KARUK TRIBE

16 CHOOK-CHOOK, KARUK TRIBE

17 MOLLI MYERS, KARUK TRIBE

18 ANNA JOSEPH, YUOK TRIBE

19 ERIN C., COMMUNITY MEMBER

20 REGINA CHINCOLA, PCFFA/IFR

21 ALPHONS COHEGN, HOOPA TRIBE

22 DAVE MEURER, KRRC COMMUNITY LIAISON

23 ELIZABETH NIELSEN, NATURAL RESOURCES SPECIALIST, SISKIYOU

24 COUNTY

25



1 P R O C E E D I N G S

2 (10:00 a.m.)

3 MR. TUCKER: I would like to welcome you guys here  
4 with our meeting with the Council and the FERC Board and I'd  
5 like to say that we're happy to have you, we're happy to  
6 host you and we're excited about the dam removal. Is there  
7 any other elder that wants to do the prayer?

8 (Prayer)

9 MR. TUCKER: So I think we'll go around and  
10 introduce ourselves.

11 (Introductions)

12 FERC's prepared an Agenda -- it looks really good  
13 to me. I would just add that what we'd like to do is  
14 provide opportunities for the 101 presentation and I think  
15 all the FERC and Council -- there's no -- it's kind of a  
16 weird meeting right because you usually have government to  
17 government consultation and in sort of a private meeting and  
18 because of the -- I guess the ex parte -- because this is an  
19 active FERC process we -- it has to be a publically noticed  
20 meeting in the Federal Register and what not.

21 There's not an obligation to have public comments  
22 but I think Tribal Council may want to consider allowing  
23 tribal members to speak and register their comments with  
24 FERC at the end of the meeting if that sounds appropriate --  
25 does that sound go to you -- to allow the tribal members to

1 have an opportunity to make a comment in the meeting and ask  
2 questions.

3 Does that sound appropriate to you guys kind of  
4 within the -- and I think after I go through and give this  
5 maybe you guys can give -- kind of help the folks understand  
6 the FERC process and we can have some back and forth.

7 So again other than that if the Resource Policy  
8 Act is approved I have worked with the tribe for about  
9 almost 14 years now and through that time my primary  
10 responsibility has been to work on --

11 I would just note that -- is also from South  
12 Carolina as am I. So I just want to point out where Karuk  
13 is -- we are in Karuk original territory now. The Karuk has  
14 been here from time immemorial. Karuk would never displace  
15 from this place. Karuk aboriginal territory is 1.3 million  
16 acres -- thereabout.

17 And it really goes -- you know we have Yurok down  
18 river from us. We have Shasta and Klamath, Modoc people up  
19 river from us and Karuk still -- in large part, manages much  
20 of this landscape -- next slide.

21 One thing that's really remarkable about the  
22 Klamath and I hope when you drive through this place it's a  
23 pretty remarkable landscape. It is very remote and it is  
24 one of the most ecologically diverse places left in America.

25 And we have multiple runs of Salmon. We have

1 multiple runs of steel head, we have sturgeon in the river  
2 that live to be 120 years old and are 12 feet long. We have  
3 Pacific lamprey which is sort of a mysterious fish to a lot  
4 of biologists -- they're still learning about these things.

5 But I would just note that that diversity is far  
6 limited to what it once was. The Klamath used to host pink  
7 and chum salmon which have been extirpated from the Klamath.  
8 Spring run Chinook are hanging on by a thread and Coho  
9 salmon are hanging on by a thread.

10 Coho are on the federal endangered species list  
11 and recently Spring Chinook salmon have been petitioned to  
12 be added to the federal endangered species list. Green  
13 sturgeon and Pacific lamprey are species of special concern  
14 by the State of California, Department of Fish and Wildlife,  
15 next slide.

16 The thing that I really love about working for  
17 Karuk is Karuk's still do today what they've done for a long  
18 time. The language is intact, the fishing methods have not  
19 changed appreciably. Karuk basketry is the same as the  
20 world over and it's still practiced.

21 The Karuk are very culturally rich and a lot of  
22 the cultural knowledge and ecologic -- tribal ecological  
23 knowledge has been preserved and is still being passed down  
24 generationally today. It's a real privilege to work for  
25 people who have this history, next slide.

1           In the 18 -- around 1850 is when things  
2   dramatically changed here. The old white rush kind of was  
3   on so you had influence of gold miners. The logging  
4   industry really changed things here. Commercial fishing off  
5   the coast, an era of hydropower development and I should  
6   probably update this slide and put a big pot leaf up there  
7   because that's something that we are struggling with today.

8           There are a lot of cultural and ecological  
9   impacts that are affecting us from industrial pot growing in  
10  this area, the next slide.

11          So the real result of all of those impacts has  
12  been a real strain on natural systems. And in the river  
13  it's really manifested as a disaster. So in 2002 we had a  
14  fish kill of unprecedented magnitude on the Klamath River  
15  and somewhere around 68,000 adult Chinook salmon died before  
16  spawning.

17          You know fish come back to the river spawn out  
18  and die -- that's normal. But these fish died from "ick",  
19  Ichthyophthirius -- it's a gill disease and it is really an  
20  issue associated with warm water, poor water quality and not  
21  enough water being in the river.

22          The thing we see really annually on the Klamath  
23  is massive blooms of a toxic blue-green algae called  
24  microcystis aeruginosa.

25          The Klamath -- the upper Klamath Basin which you

1 guys will notice when you drive up there is a volcanic  
2 dominated system so the geology and the soils up there are  
3 naturally rich in oxygen and phosphorus. That creates what  
4 we call a hypereutrophic system -- so it's a nutrient rich  
5 system to begin with.

6 Historically, vast wetlands in the upper basin  
7 consume many of those nutrients that today much of those  
8 nutrients stay in the river. They collect behind reservoirs  
9 -- a hot summer comes along and you have these massive  
10 blooms of blue-green algae. The flavor of algae we have  
11 here is important because it's not only a problem for fish  
12 health but it's a human health risk.

13 Virtually every year for two or three months  
14 there are postings along the reservoirs and as far down over  
15 to the very mouth of the river warning people not to touch  
16 the water because of these massive algae blooms. And this  
17 is something that we think will be addressed through dam  
18 removal, next slide.

19 I throw this slide in usually just to illustrate  
20 that it's complicated. You know this is a -- you drive  
21 along here and you might get the impression not much is  
22 going on in Klamath but it turns out there's a lot going on  
23 in Klamath.

24 We have a lot of competing interests. You have  
25 tribes, you have different irrigation communities throughout

1 the basin, you have America's first national wildlife  
2 refuges that have to be balanced in this equation.

3           You have a very large federal irrigation programs  
4 from around 225,000 acre irrigation project and so even  
5 though it's complicated it's less complicated than some  
6 places. Like it's less complicated than the Bay Delta for  
7 example. It's less complicated than Columbia for example.

8           And I think the fact that there are not a whole  
9 lot of people. The biggest city -- if you would call it  
10 that in the Basin is Klamath Falls, Oregon. And putting  
11 this system back together to make it healthy, functional and  
12 productive from the fisheries perspective is completely  
13 possible on the Klamath in a way that maybe a challenge in  
14 some other large watersheds left in the world, next slide.

15           So as productive as the Klamath can be in some  
16 years, it really is a shadow of its former self. Chinook  
17 runs -- the average is probably 10% of what it was  
18 historically. As I mentioned we have got ESA listed species  
19 and species that have been completely extirpated from the  
20 system.

21           And I would just emphasize that you know we've  
22 been working towards dam removal for reasons we can talk  
23 about for a long time but the time is of essence. Chinook  
24 -- Spring run Chinook salmon literally number in the  
25 hundreds of individual animals.

1           We count them by hand in the Salmon River. So  
2   when you guys go upstream today you'll cross the county  
3   line, you're crossing the Salmon River and the Salmon River  
4   is one of the last places that Spring run Chinook migrate to  
5   spawn.

6           And we snorkel the river each summer in segments  
7   all in the same couple of days and we literally count the  
8   fish by hand and there's just a few hundred of these fish  
9   left.

10          Coho salmon is a similar story. It's -- I feel  
11   like we are witnessing an extinction event here if we don't  
12   do something big and do it immediately. Chinook --  
13   following Chinook is largely -- you know the Klamath is  
14   really different than the Trinity.

15          The Klamath River can still produce fish in the  
16   wild. There's Iron Gate Hatchery was put in place in 1962  
17   or so to mitigate impacts of Iron Gate Dam it produces fall  
18   run Chinook.. I think it's debatable the benefits of that  
19   fish hatchery but the fact of the matter is that we had so  
20   few Chinook salmon that probably for the first time in  
21   history the Karuk Tribe limited tribal member harvest to 200  
22   fish.

23          And I'm not even sure if we caught that many. I  
24   don't know -- the Karuk fishery is fish dependent. If the  
25   fish aren't there you don't catch them, we don't use gill

1 nets the way some other tribes do. But I think all the  
2 tribes in the basin self-limited their harvest this year and  
3 it's really a horrific thing for the Karuk people.

4 I think and I'll let other people speak to this  
5 point more but there's an expectation and an obligation to  
6 serve fish at ceremonies, fish are part of ceremonies and  
7 it'd be like showing up to the Vatican and there's no wine  
8 and bread to have at mass. It's like that, next slide  
9 please.

10 So this puts really Karuk culture at risk. You  
11 know it's hard to practice your culture if you don't have  
12 the key elements of your culture and then there's a health  
13 piece to it to so there's a denied access to traditional  
14 foods and medicine -- next slide please.

15 And one of the things that we did early on in the  
16 first round of the FERC process, I think this is our third  
17 round FERC process. In our first round of FERC process is  
18 we did a very interesting study that really looked at how  
19 much fish did Karuk people eat back in the day -- how much  
20 tube fish do people eat today and what's the result of that  
21 and are there any correlations with various health impacts  
22 with that decline and there is a very strong correlation.

23 So it's estimated that the average Karuk probably  
24 ate over a pound of Salmon per person per day and today you  
25 know people are getting less than five pounds a year. And



1 the result of that is that heart disease is three times the  
2 U.S. average, diabetes rate -- four times the U.S. average  
3 and you can see the onset of diabetes in the population rise  
4 as the fishery declines.

5 So there's a very strong correlation. Of course  
6 if you had diabetes or heart disease and went to the doctor  
7 and asked him what to do, he would say eat more fish. Eat  
8 more Omega 3's which is what Salmon is for, next slide  
9 please.

10 I would say probably in the '40's and '50's this  
11 is one of the most famous places in the world for anglers to  
12 come and fish. People came from all over the -- a lot of  
13 historic photos of people like Zane Gray holding up big  
14 salmon at the lodges in this area.

15 Every fish caught by recreational fisherman in  
16 the area is worth about \$200.00 to the local economy once  
17 you figure in you know, gas and beer and tackle and bait and  
18 all that sort of stuff. And so this is -- in this area,  
19 having this sort of economic opportunity through guide  
20 services and other things is really important, next slide  
21 please.

22 So the lack of the fishery has created this  
23 battle over water and so I often describe this as the  
24 Klamath's rotating crisis and so some -- it seems like every  
25 year at least one group -- and if you are talking about

1 tribes, agricultural communities, off-shore coastal  
2 fisherman -- the Klamath management zone goes from Coos Bay  
3 to Monterey Bay.

4 So when we have poor fish returns on the Klamath  
5 it affects the entire west coast commercial salmon fishery.  
6 Someone is odd man out virtually every year now, next slide  
7 please.

8 And so the dams are not the only part of this  
9 problem but we view the dams as being a necessary -- dam  
10 removal is necessary but in itself it's an insufficient step  
11 to completely solve these problems.

12 So I don't think we saw it without dam removal  
13 but we will say that even after dam removal we are going to  
14 have to address issues related to poor timber management.  
15 We're going to have to address issues related to fish  
16 habitat in various tributaries in the Klamath Basin.

17 But we cannot fix this fishery without dam  
18 removal, next slide please.

19 And I think you guys know this part -- next  
20 slide. And so this is Iron Gate, Copco 1, Copco 2 and J.C.  
21 Boyle. If you haven't been to the dams, Boyle and the  
22 Copco's are actually kind of hard to get to. But when you  
23 guys drive up if you have the time and you drive up to  
24 Klamath Falls, Iron Gate is only about five miles or so off  
25 of Interstate 5. So go over there and just kind of take a

1 look at it -- since you came all this way and you are in the  
2 neighborhood you should drop by.

3 The dams are relatively old. I think the first  
4 one was built in 1918 and the most recent Iron Gate Dam was  
5 built in 1962, next slide please.

6 So why are we so -- why has the Karuk Tribe  
7 fought so hard to get to where we are and have this decision  
8 before you about dam removal and there are several pieces of  
9 that but salmon used to go above Klamath Falls to the  
10 tributaries that feed Upper Klamath Lake -- it's very  
11 clearly documented.

12 So there are hundreds of miles of spawning  
13 habitat the fish just can't get to because of the dams. The  
14 dams have a severe effect on water quality, I show you the  
15 picture of these toxic algae blooms that would be Susan  
16 Fricke's famous right-hand down there in that slide taking  
17 water quality samples.

18 The other piece that I think gives an  
19 increasingly better understanding as we go is relationship  
20 between dams and a fish disease called Ceratomyxa Shasta --  
21 they changed the name. Ceratomyxa Shasta and it's an  
22 interesting fish disease -- it spends half its life-cycle in  
23 a small worm called a polychaete.

24 It spends half its lifecycle in fish and sort of  
25 jumps between the two but because the flows below Iron Gate

1 Dam tend to be static and because flows of Iron Gate Dam  
2 don't tend to rise and fall with the natural hydrograph you  
3 kind of create a stable environment downstream of the dams  
4 that allow filamentous algae to grow and this sort of  
5 creates the perfect habitat for these polychaete worms.

6           You throw a fish hatchery next to that -- so all  
7 fish congregate in this one place full of these polychaete  
8 worms and the disease just jumps back and forth. So in 2014  
9 and 2015 as many as 90% juvenile salmon sampled were  
10 infected by this disease which is usually fatal -- which is  
11 exactly why this year or this past year there were no fish  
12 in the Klamath River. They all got whacked by this fish  
13 disease.

14           And so what we anticipate and what we think the  
15 science demonstrates is through dam removal we will disrupt  
16 the lifecycle of this disease and we'll alleviate to some  
17 degree this problem at the fishery.

18           And then the last point I'd make is that the dams  
19 limit run diversity. So really the Klamath has become  
20 almost wholly dependent on this single run of fall run  
21 Chinook as opposed to having spring run Chinook, fall run  
22 Chinook, river run Chinook, summer steel head, winter steel  
23 head -- because of the way the rivers operate -- it's almost  
24 operated for fall Chinook.

25           And the dams create these thermal lags in the

1 system so that means so in the summer time the reservoirs  
2 become a hot pool of water. When falls comes along it takes  
3 longer for the water to cool down to the appropriate  
4 temperature. In the winter time the reservoirs become cold  
5 pools of water. It takes the water longer to warm up in the  
6 spring and so you sort of constrain the window where the  
7 water temperatures are appropriate for fish migration and  
8 fish production, next slide please.

9           And the reason why I think these dams are a  
10 candidate for dam removal and I think a lot of reciprocal  
11 things are a candidate for dam removal as well. The dams do  
12 not make a lot of electricity. It think they have a name  
13 plate capacity of somewhere around 90 megawatts.

14           I think under current FERC conditions they  
15 generate around 60 megawatts and that will probably be  
16 further diminished if they were able to get a new license to  
17 operate. So they don't make a lot of power and they don't  
18 make a lot of money.

19           And the other thing that they don't do is they  
20 don't provide any irrigation or drinking water diversions.  
21 The dams don't provide any irrigation or drinking water  
22 diversions and I'll repeat that because it is a commonly  
23 perpetrated fallacy, myth, lie that somehow dam removal  
24 affects irrigated agriculture in Siskiyou County and it's  
25 just not true.

1           There are no irrigation diversions associated  
2 with these dams. There are no drinking water diversions  
3 associated with these dams and they provide virtually no  
4 flood control. The dams store very little water relative to  
5 Upper Klamath Lake.

6           So, most of the water storage in the Klamath side  
7 here is in Upper Klamath Lake and not in the reservoirs that  
8 are impounded by these dams, next slide.

9           We spent a long time convincing PacifiCorp that  
10 dam removal was a good idea and I think you know it's --  
11 antithetical. And so you know I think PacifiCorp I think  
12 had a legal obligation to do was to attempt to get a new  
13 license to operate these dams in a way that was maintained a  
14 certain affordable power rate to their customers -- there's  
15 an obligation there that PacifiCorp has and their also a  
16 corporation that has obligations to create profit for  
17 investors.

18           So I think PacifiCorp fulfilled those obligations  
19 the best they could but as time went on and as additional  
20 science came into play and we had various federal and state  
21 agencies increasingly interested and concerned about the  
22 state of the fishery, PacifiCorp did engage with us and try  
23 and develop some sort of pathway to where we are today which  
24 is an application before FERC to transfer and decommission  
25 the dams, next slide please.

1           And we did provide -- we pressured PacifiCorp  
2   every way we knew possible and I think a lot of what's  
3   talked about in terms of all of the grass roots pressure  
4   that we applied but the one thing that's fantastic about the  
5   Indian tribes in this Basin is we have the best biologists,  
6   water quality experts on the planet work for tribes.

7           And so we have been able to populate the FERC  
8   record with a lot of technical studies. We ended up early  
9   on in the first FERC EIS process FERC staff actually  
10  recommended -- trap and haul. The agencies came behind that  
11  and obligated additional fish passage and PacifiCorp  
12  challenged that there was a Federal Power Act amendment  
13  that happened about this time and I think it was the first  
14  time a company uses Federal Power Act amendment to actually  
15  challenge the mandatory terms and conditions issued by the  
16  agencies.

17           And so we had a judicial proceeding that was  
18  overseen by Administrative Law Judge and tribes showed up  
19  with their biologists and we won that hands down  
20  demonstrating that fish -- there is plenty of fish habitat  
21  upstream of these dams to support recovery and those fish  
22  would use those reaches of river, next slide.

23           So I would just say that I know it's not exactly  
24  relevant to you guys -- it's kind of out of the scope of  
25  FERC's analysis but I do think it's relevant that the same

1 time that we're addressing this issue with the dams that the  
2 communities -- irrigation communities, tribal communities,  
3 non-profits -- we're still wrestling over the water piece.

4 So the dams we're talking about do not control  
5 how much water is in the Klamath River -- that's really  
6 controlled by how the Bureau of Reclamation operates the  
7 irrigation project. So we need to remove the dams but we  
8 also have to have water that remains in the Klamath River to  
9 accommodate fish needs.

10 So those are ongoing processes that are sort of  
11 outside the FERC process but really do run kind of in  
12 parallel to the FERC process so I would just like kind of  
13 full disclosure there with all the stuff that's going on.

14 And I think what you see at least to some degree  
15 in Klamath Irrigation Project Irrigators is they have really  
16 been held accountable more than anybody else for impacts to  
17 ESA listed Coho salmon. And I think a lot of those reasons  
18 why you don't see those guys protesting dam removal -- I  
19 think their comments to FERC were very neutral on the  
20 subject of dam removal.

21 Because I think people generally understand that  
22 more fish means fewer regulatory obligations for irrigators  
23 and I think that people are starting to digest that, next  
24 slide.

25 A few things I would just say about the Klamath



1 Hydropower Settlement Agreement which I think lays out the  
2 blueprint for how we engage with FERC and how the various  
3 parties engage with FERC is it was not -- it was very  
4 difficult to get there.

5           We -- I've -- I'm on my third Presidential  
6 administration working on this. We had an agreement in  
7 principle under Bush 2 -- that's how long this has been  
8 going on. And taking sort of a tentative agreement on how  
9 to do this and getting to like an application before FERC  
10 has taken 10 years, something like that.

11           So the points I would make is I don't think  
12 there's unanimous agreement on anything in the Klamath but I  
13 think there's about as broad agreement on this topic as you  
14 can get in the Klamath on any single topic.

15           And another point I would just make is we think  
16 FERC -- like every other federal agency, has trust  
17 obligations in the Karuk Tribe. And I think what we would  
18 say is that implementation of the KHSA and the approval of  
19 the applications pending is consistent with FERC's trust  
20 obligations to the Karuk Tribe.

21           And I would just a little bit illustrate and  
22 support. On the left is sort of -- and I think I could  
23 probably go on a couple more pages but these are previous  
24 non-governmental organizations that have expressed support  
25 and it kind of ranges from you know, your prototypical

1 environmental group to more conservative hunting groups,  
2 fishing groups.

3 We've had support from state and federal  
4 agencies, the California and Oregon Public Utility  
5 Commissions have judged the current KHSA to be in the  
6 interest of rate payers and then we have had sort of looking  
7 at the opinion end of things, and I think I could probably  
8 tackle them in about three times as many newspapers to what  
9 you see there -- editorialize in favor of this proposal.

10 And I think that's what I have. I would ask if  
11 -- I don't know if Josh or Council members if there's  
12 anything I've missed that you would add to that kind of, who  
13 Karuk is and why we're here and why we're invested.

14 MR. WADDELL: So I'm Joey Waddell, the Tribal  
15 Council person on the Tribal Council. Joey Waddell.

16 COURT REPORTER: Can you spell the last name?

17 MR. WADDELL: W-a-d-d-e-l-l. I just wanted to  
18 mention -- this is not what my total thoughts are on the dam  
19 but this is to go with what Greg was saying and the  
20 misconception of flood control.

21 When the Iron Gate Dam was built it was a flood  
22 control dam but not for flood control of the Klamath.  
23 Before that dam went in all the people fished on high -- low  
24 water days, not on high water days -- and the reason that  
25 was, was because when they made electricity in Copco the

1 water high one day when they were making electricity and  
2 lower and back and forth.

3 So Iron Gate was put in to control the water  
4 coming out of Copco Dam not for the control of the flood on  
5 the river which it really shows. In '64 we had one of the  
6 largest floods we have ever had here and that was right  
7 after the dam was built, so that was one of the things that  
8 I wanted to mention, you know.

9 MR. SUPER: And my name is Robert Super, I'm Vice  
10 Chairman and I'd like to say too that some of our ceremonies  
11 we use salmon to feed our people and one of our last  
12 ceremonies that we had they had to import salmon from other  
13 tribes at the rivers to feed our people because we didn't  
14 have the salmon.

15 MR. TUCKER: So with that maybe you guys would  
16 kind of give the FERC end of the presentation to help us  
17 better understand your guy's process and how you see things  
18 going forward.

19 MR. WADDELL: So I've got one other thing that I  
20 spend probably 27 years salmon and steel head guide business  
21 all up and down the Klamath from the ocean to Iron Gate and  
22 all up and down the coast, so I have a little different  
23 perspective.

24 I mean I go from what I've seen plus what I've  
25 learned from what you guys have brought up in your

1 scientific and we have had several heavy discussions about  
2 that here and the scientific kind of proved a lot of things  
3 to me.

4           So just with that aspect it gives me a little  
5 different opinion. You know when we start talking about  
6 money Warren Buffet, one of the richest men around I always  
7 say follow the money. It's going to cost him 800 million  
8 dollars to bring the dams up to license. For 300 it could  
9 get removed and then when he gets all the help from all of  
10 us and everybody else, he's willing to donate a couple of  
11 million dollars to help us, you know.

12           If you follow the money you find out a lot of  
13 different things.

14           MS. MOLLOY: So I'm Liz Molloy, the Tribal  
15 Liaison from FERC and we appreciate your visiting with us  
16 today. There's -- as mentioned there are two applications  
17 pending before the Commission.

18           One is to amend the license and transfer -- amend  
19 the license to remove the lower four developments and  
20 transfer those to the corporation. And then a second  
21 application if that is granted to surrender those four  
22 developments. And so in having this meeting today it's on  
23 both of those applications.

24           The Commission will be looking at the  
25 applications and if the transfer is granted proceeding with

1 the dam decommissioning proposal. And would do NEPA  
2 analysis -- environmental analysis -- some has been done,  
3 the Commission would be looking at that and filling in  
4 whatever it felt would be necessary due to any changes or  
5 such and make sure that it analyzes as much from comments  
6 from your tribe, other tribes, the public, the communities  
7 around here and all the agencies.

8 So all the comments will be taken into account in  
9 evaluating the proposal, then the Commission would determine  
10 whether or not to grant it or not so it's sort of an  
11 intertwined kind of thing a bit -- they're related so.

12 So that's sort of where we are. We have put out  
13 the notice seeking some comment on the transfer proposal and  
14 we will be seeking -- I think we have not yet done a notice  
15 but we will be seeking comments on the surrender later if  
16 that is pursued. I think that's -- we don't.

17 One thing -- it's contingent on a number of  
18 things, some additional information for at least one of the  
19 applications but even if we knew, which we don't, but if we  
20 did, we can't tell the timing of decisions pursuant to our  
21 regs.

22 We can't discuss timing and nature of our  
23 decisions but it's certainly in reaching out and talking to  
24 all of the tribes along the area it won't happen before we  
25 hear from you all and so that information will be going back

1 to the Commission as well and it will be on the record in  
2 our e-library system and so that will be factored in to the  
3 consideration.

4 UNIDENTIFIED SPEAKER: So all around the transfer  
5 -- would it be a year, four years or is there --

6 MS. MOLLOY: So talking the surrender -- so there  
7 is some additional information that would be needed from --  
8 on the surrender application and some other things. There  
9 would also be water quality certifications required and I  
10 believe they've been filed -- the applications.

11 So before the Commission could act on the  
12 surrender should that be happening they would have to have  
13 water quality certification waiver and there's probably a  
14 few other things that we would be required to have before  
15 acting.

16 So timing is somewhat dependent on that and it  
17 would be reviewing what information we still would have to  
18 put into an environmental document and issue, so timing is a  
19 little bit influx right now.

20 MR. TUCKER: Do you guys -- so California tells  
21 me that their expectations have a draft -- so California had  
22 to go through SEQUA to get to the 401 permitting. So  
23 California is supposed to have a draft what do they call it  
24 -- EIR which would be a draft EIS in the federal in the  
25 spring. Do you guys -- you can't do anything until

1 California finishes or is there some pieces of this that can  
2 go in parallel?

3 Can FERC begin -- and what we would hope -- I  
4 mean I think this probably is one of the best scrutinized  
5 dam system in the FERC record would be my guess. We've gone  
6 through two EIS's and the Secretarial determination overview  
7 report which was EIS on steroids.

8 So can FERC begin the process of identifying what  
9 they're going to add? Does FERC expect to re-route the EIS  
10 or do they expect to use the 2012 EIS with addendums?  
11 Because as you know we're trying to stay on this 2020  
12 timeline and I think California is doing everything it can  
13 to be on that timeline so what can you tell us how we jam  
14 the two processes into one?

15 MS. MOLLOY: So the Commission needs to have  
16 water quality certification or waiver before issuing an  
17 order. The Commission doesn't need to have anything else  
18 from the state prior to starting any process.

19 There is some additional information that the  
20 Commission is awaiting on that application and we would then  
21 be seeking comments. So we would be looking for complete  
22 application and then seeking comments on the proposal and  
23 then determining what information needs to be added to  
24 existing analysis.

25 We won't recreate a wheel but we will make sure

1       that it's looking at the current situation.

2                   MR. TUCKER:   You might change the tires?

3                   MS. MOLLOY:   We might change the tires but you  
4       know, we would look at what the existing -- you know what's  
5       out there and what we need to do to make sure we have a  
6       complete record to make a decision.

7                   MR. TUCKER:   And if I can ask so the other thing  
8       that's I think a complication maybe not necessarily but so  
9       it would be a two-step process right so there's an  
10      application before FERC that transferred kind of through a  
11      renewal corporation and there would be a second application  
12      before FERC to actually do the surrender decommissioning and  
13      so I think there's -- like how does -- so KRRC wants the  
14      dams if they can remove them.

15                   So how do we -- is there a way to build into the  
16      FERC license some contingencies?   So you know we were ready  
17      to up to license the transfer if eventual surrender was  
18      highly likely so that KRRC receives this and doesn't want to  
19      be in a position to receive the dams and then they can't  
20      remove them or FERC provides some mitigation that's  
21      unachievable for whatever reasons.

22                   How do we structure that legally so that  
23      PacifiCorp, the Renewal Corporation, everybody feels like  
24      they're holding the right amount of obligation and  
25      responsibility?



1 MS. MCCORMICK: The reason we are doing it in two  
2 steps the transfer followed by a surrender is because it is  
3 kind of a unique situation where the purpose of the transfer  
4 is to eventually go through decommissioning so legally we  
5 want to make sure when we are looking at the transfer  
6 application that KRRC is in a position to eventually go  
7 through with successful dam removal and mitigation goes  
8 along with that.

9 So there are two separate proceedings from a  
10 legal perspective but they are very closely related but  
11 that's why we're looking at the transfer first to make sure  
12 that dam removal will be successful, does that make sense?  
13 Does anybody have any questions about that?

14 I know they're very closely related but legally  
15 they are two separate proceedings.

16 MS. MOLLOY: But at such time as the Commission  
17 would be reviewing the dam removal -- the dam surrender  
18 proposal, the Commission will be looking at that proposal in  
19 determining whether or not to grant or deny it -- I mean  
20 that will be --

21 MS. MCCORMICK: And under what conditions to do  
22 so.

23 MS. MOLLOY: Under what conditions to do so.

24 MR. TUCKER: One EIS for the two --

25 MS. MCCORMICK: Yes, right, transfer application

1 is purely administrative. There's no environmental analysis  
2 that goes with that.

3 MS. MOLLOY: Yes typically when we do a transfer  
4 of facilities there's no EIS done for that. The conditions  
5 of the license remain and it would be cutting out the  
6 different facilities and moving the -- having the  
7 requirements in both licenses but there would be the  
8 existing license terms.

9 MS. MCCORMICK: And I think at this point we're  
10 still waiting, as Liz mentioned, we're waiting for some  
11 additional information pertaining to the surrender but I  
12 believe we have a complete application before us for the  
13 transfer.

14 MS. POLARDINO: And they also asked -- sorry, they  
15 also asked for additional time in December to provide that  
16 information too.

17 MR. WADDELL: They're saying the dams can stand  
18 for whatever reason -- does PacifiCorp still have to bring  
19 them up to the specifications to be relicensed?

20 MS. MOLLOY: So if the -- if the surrender  
21 application was not approved there would be a relicense.  
22 Something would have to happen that either it would be  
23 relicensed you know, under the new conditions or something.  
24 There would be some -- it would have to happen.

25 MR. TUCKER: So since you don't have to do an EIS

1 on the transfer, can you give us some concept of when you  
2 think that the process -- I mean would you process the  
3 transfer application to issue a decision then go to the  
4 surrender? And if that's the case, can you give us some  
5 sense of the timeline for the decision-making on the  
6 transfer?

7 MS. MOLLOY: So still we can't divulge the nature  
8 and timing of action and I'm not sure we even would know --  
9 right, but it would be because of waiting for additional  
10 information and the applications came in saying that it was  
11 intended that they would still -- they would be providing  
12 additional information a little bit later.

13 But it is pending before the Commission. We are  
14 coming out and receiving comments so I'm sure the Commission  
15 would be looking at it.

16 MS. MCCORMICK: And even though we can't speak  
17 today to the nature of the time of our proceedings, we have  
18 our Commission meetings once a month. Ten days prior to the  
19 meeting the Secretary issues a government agenda list and so  
20 if you go to [ferc.gov](http://ferc.gov) you can find out through our e-filing,  
21 e-subscription and you could see when that notice is issued  
22 and that will list for each Commission meeting the items  
23 that will be voted on.

24 So that will give you a little bit better sense  
25 of the timing and I know it's only ten days-notice but --

1 MS. MOLLOY: And our Commission meetings are on  
2 the third Thursday of each month.

3 MR. WINCHELL: I'd like to add something about  
4 what the two Liz's are saying. A lot of us were involved  
5 with the Klamath River relicensing and the coordinator is  
6 still John Mudre on this particular surrender so you are  
7 probably going to have a lot of us who are pretty familiar  
8 with this.

9 So I think that's going to help the review  
10 process going forward.

11 MS. POLARDINO: And I'd also add that anything  
12 that's said on the record here during this meeting will be  
13 on the record. We'll have the transcription 30 days after  
14 the meeting and if there's anything that you want to add  
15 that's not in this meeting you can -- we would be more than  
16 happy to accept any comments in our e-library system.

17 MR. WINCHELL: I just want to add another real  
18 quick point too -- okay John Mudre and other folks are  
19 involved with the surrender not with the application. But  
20 once the surrender is in place will we know what's going to  
21 take place as far as that process and that's what we will be  
22 involved in.

23 MS. MOLLOY: So and one thing in having the  
24 meeting on the both applications and everything -- one  
25 thing, it was an excellent presentation. I really liked

1     seeing that. Another thing we would want to hear either  
2     here or in comments would be concerns if you had specific  
3     concerns for if the surrender application -- the information  
4     comes in and that is pursued and we're doing analysis what  
5     concerns there would be during any removal or after -- so  
6     anything that you would want us to make sure to focus on  
7     when we were reviewing for that application.

8                 MS. MCCORMICK: And we're happy to hear comments  
9     about that.

10                MR. TUCKER: Can you speak either in general or  
11     in specifics as to the additional information that you're  
12     still waiting for?

13                MS. MOLLOY: Right, I'm just drawing a blank.

14                MS. MCCORMICK: Yes it's the Renewal Corporation  
15     their financial and technological capacity to take over  
16     these dams and in the case that surrender takes a little bit  
17     longer that they will be able to operate them and mitigate  
18     this -- insurance, things like that.

19                MR. WINCHELL: I think the deadline is July of  
20     this year, July 1st.

21                MR. TUCKER: We have -- we're signatories to the  
22     amended KHSA and we were able to put forth a representative  
23     of our selection to be on the Board of Directors for the  
24     KRRRC's -- Wendy George, and so we stay pretty -- you know we  
25     sometimes will attend the Board meetings and kind of follow

1 the process.

2 But the thing I will say is I think they did a  
3 good job finding the right Executive Director and they're  
4 doing a good job finding the right consulting team to help  
5 do the technical end of things and the right kind of  
6 experience.

7 You would speak highly of their qualifications to  
8 carry out the task and we have a vested interest in that.  
9 In fact we you know, demanded to have a little bit of skin  
10 in the game there about putting someone on the Board because  
11 these proceedings are often litigious and so you know, it  
12 does us -- if our objective is to remove dams and restore  
13 this river it's got to be done -- cross all the "T's", dot  
14 all the "I's" and it's going to have to be durable in  
15 whatever structure it could possibly land in.

16 So I think we've had a very vivid, cautious about  
17 KRRC but the Board of Directors is a bit of an all-star team  
18 when it comes to western policy issues and you know in a lot  
19 of ways this process is kind of informed by the success on  
20 the transfer and decommission of the Edward's Dam on the  
21 Penobscot River in Maine and so the Executive Director of  
22 that organization is also on the Board of the KRRC so I  
23 think it gives us at least somebody who has kind of been  
24 around the block in something almost exactly like this  
25 helping us to kind of navigate all the regulatory agencies

1 and approvals.

2 Does anyone else want to add to that? Any other  
3 comments from Council members -- good stories?

4 MR. JOHNSON: While you know, but hey that river  
5 as a kid now down to my old place on the reservation down  
6 the road like it used too, thousands of them it seemed like  
7 when I was a kid. I didn't know when the dam went in either  
8 -- I was gone at the time I was in the Army, 1962, yeah I  
9 didn't know it happened.

10 I can see it come back and see thousands of them  
11 rolling all over the place. The one time I went down there  
12 not too long ago and a couple of years ago just four or five  
13 albeit, really sad to see it all come back to natural  
14 habitat again. Someday I hope soon.

15 MR. WOODELL: Kind of like bug -- you're  
16 underrated around here. It's as much upon Indian Creek the  
17 tributary of Klamath that's where I was raised at but as  
18 soon as I was big enough to get to town I started fishing in  
19 the river too.

20 1969 was the first year that I started guiding  
21 with the riverboat. The interesting part of that is in 1969  
22 there was a big group here filming and they were here to  
23 film to make the Klamath River into a wild and scenic river.

24

25 The people I had in my boat were Bing Crosby and

1 Phil Harris. They were here to support that -- to make it  
2 into -- so that's when all this stuff started 1969.

3 MR. TUCKER: Did Bing Crosby sing to you?

4 MR. WODELL: Right. We just had a great time.  
5 They were here and enjoyed the scenery and it was very, very  
6 interesting. He was here for about a week. So it's been a  
7 long time that people have been fighting to try to make the  
8 river stay the wild and scenic river -- 100 trips a year for  
9 25 years on the Klamath. I've seen lots of changes and  
10 stuff it slowly deteriorated.

11 MR. TUCKER: You have an opportunity for people  
12 who are here to make a comment and ask a question. So come  
13 up and state your name. If anybody from the public would  
14 like to make a comment or ask questions come on up here.

15 MS. BETH: My name is Ronnie Beth and you know,  
16 I'm from here I belong here but it's been many, many years.  
17 The river has been so sick we can't even go swim down by the  
18 bridge like we used to when we were kids and our future  
19 kids, my grandkids, won't be able to do that. It's  
20 important to me. I always dreamt of that happening -- that  
21 togetherness, it's been a long time and it's right here I  
22 just want you to feel that, thank you.

23 MR. MYERS: I'm Molli Myers, M-y-e-r-s. I'm a  
24 Tribal member. I am part of the group that has been  
25 spending a lot of time -- years in fact I was pregnant with



1 my oldest son when the fish kill happened and he's 14 now.

2 So it's really emotional and I don't -- I've  
3 spoken to FERC so many times now, kind of all melting this  
4 together but I'm a basket weaver, my husband is a  
5 traditional fisherman. Last year -- last fall we didn't  
6 fish -- we didn't fish not for one fish because there were  
7 no fish.

8 We wanted to give them the best chance to keep  
9 going to stay in the river. But growing up I was taught by  
10 my dad who was a traditional fisherman that it is our  
11 responsibility to fish. That's who we are -- it's part of  
12 who we are and that the fish they come back here for us.

13 And so you know, we're supposed to fish but you  
14 know, with silence like we know that there's no fish so it's  
15 just -- it's really heartbreaking. And you know, you guys  
16 were asked about the timeline right -- and I heard you say  
17 over and over we can't tell you, we can't tell you but it's  
18 really gone on too long.

19 And we see the end in sight and I just really  
20 want to ask you guys to do your very best to make this  
21 process go as fast as it can because we're out of time, you  
22 know. We're out of time --we don't have any fish left. So  
23 if you guys don't do the right thing and do it soon we are  
24 fish people and you are effectively wiping us out.

25 The longer that the dams stay and the more damage

1     that's done, the more we feel who we are is just slipping  
2     away and you will put that in your hands -- so think about  
3     that when you're doing those things and when you're at the  
4     third Thursday and as the third Thursdays keep going by and  
5     going by, think about that.

6                 I have five kids. I have four boys and a  
7     daughter and you know my little guys they're not old enough  
8     to remember when there was a lot of fish, you know. I  
9     remember when there was fish when I was a kid and our family  
10    would fish and that would keep us -- we'd have fish all year  
11    long because we would put it away.

12                Now we don't have fish in our -- I can see our  
13    fish is like getting lower and lower and we weren't able to  
14    replenish it last year. So you know, just try -- just try  
15    to put yourself into our position and try to make this go as  
16    quickly as it can because you know it's been so many years  
17    already, thanks.

18                MS. PRESTON: Hello, my name is Vicky Preston. I  
19    live here in Orleans and I grew up here in Orleans at the  
20    mouth of Red Cap Creek which is just down river from here  
21    and I've always lived here in Orleans, a small town.

22                So I think that to say that the fish in the river  
23    are a major part of our lives here is like -- it just is.  
24    It's like we, being raised here like, you know, going to the  
25    river every day and like to see those changes happen within

1 my life it's been really -- it's really telling and really  
2 drastic.

3 I'm 27 years old now. Growing up we used to  
4 catch a lot more fish than at least me personally than we  
5 used to. It just used to be a lot easier so I feel like  
6 that doesn't -- in my mind doesn't seem like that long ago  
7 that things have kind of changed.

8 Like every year you can see the differences  
9 because around here we're very -- the connection is very  
10 close to the places that we all go to. Every day we move in  
11 and around and you know we see these changes every day and  
12 we feel it when, you know.

13 And let's not underestimate the impacts on the  
14 generations you know. I don't think that it was that long  
15 ago that I was a kid and living differently than I feel like  
16 my nieces and nephews live now, you know, and they might be  
17 just a few years old.

18 But to have their fishing regime -- the way that  
19 they interact with the river and the water would be a lot  
20 different, you know, than when I grew up. And I feel like I  
21 want that for them to have that, you know, to have that  
22 family time down by the river to have the healthy food  
23 source that we used to be able to, you know, catch fish  
24 mostly every day for them and it was so accessible to us.

25 And to feel like you've lost that accessibility

1 is a major impact on your health, your food security as a  
2 people and you know, my family feels it and to see and to  
3 not be able to go into the river like people were talking  
4 about -- it really does affect the way you move around and  
5 interact with it. And I feel like I don't want to see the  
6 impacts on like the way families -- maybe families are going  
7 there less.

8           Like I feel like it's really -- don't  
9 underestimate the importance of like the family time and the  
10 people time and the time people spend there and it has  
11 impacts on this whole -- like people not observing things as  
12 much, people not spending healthy time out there doing those  
13 things.

14           And so I feel like -- and that's the thing that,  
15 you know, sometimes they say it's not like -- it's the  
16 memories that really leave that you really remember and I  
17 think that I don't want that to be gone to the younger  
18 generations now who might not remember things the way that I  
19 quite do.

20           I was about 12 when the fish kill happened and  
21 that was something that is always going to be with me and  
22 you know, the generations. And they're saying the timeline  
23 and stuff and like I think it is really crucial. Just a few  
24 years -- just a year has a lot of impact, you know.

25           A few years ago when my nephews were like, just

1     barely being born, you know, and then a few years from now  
2     -- like those are years lost of that learning and that  
3     process and that time so as much of that that we can have  
4     with, you know, I appreciate all the work that people do for  
5     this.

6                 And it's been an interesting time growing up and  
7     seeing people doing a lot of this work and I don't feel like  
8     I've been in it quite as much but I feel like I really  
9     appreciate all the struggles and the cooperation that has  
10    happened. And just yeah -- I just wanted to say that so  
11    thank you.

12                MR. HILLMAN: I'm Jim (Chook-Chook) Hillman and I  
13    really appreciate what the folks have already said. I'm one  
14    of those people that were just talked about that has been  
15    doing this since the beginning and it's been a long road.

16                I mean we've gone before FERC and the state and  
17    we've been doing it the right way and I think that that's  
18    really part of the frustrating part is that we have gone  
19    with this the right way the whole time.

20                We've gone to states, fed's, corporations -- done  
21    all the boring, boring, boring meetings that you guys know  
22    all too well. Do you know what I mean? These meetings are  
23    just terrible and you travel hundreds and hundreds of miles  
24    from this place, leave our lives behind and go fight for our  
25    lives in the right way -- do you know what I mean?

1           Not going in and you know, doing it the wrong way  
2   and it feels like there keeps being these like -- at every  
3   point government agencies let it down, let it down, let it  
4   down even though there's a corporation that says, "We want  
5   to do this thing. Here's a pile of money."

6           You know we've pushed them and they've accepted  
7   that and like the whole way we keep doing it the right way  
8   and it keeps going further and further down the road. And  
9   in '08 I had an agreement written out between myself and  
10   Warren Buffett -- you know, the ultimate owner, and we  
11   argued and argued about what the date for dam removal should  
12   be in that agreement that I tried to get him to sign with  
13   me.

14           And that was 2015 and even that felt like a  
15   stretch -- like can we hold on until 2015, like will salmon  
16   make it? And so now we've had this 2020 date and we've all  
17   had like baited breath like not sure if salmon are going to  
18   make it to 2020 and it feels like we are making good  
19   progress even though we had it.

20           Let's get the legislature and the people that are  
21   supposed to represent us to get this done -- nope, nothing.  
22   For years and years all of those people in D.C. holding our  
23   future and our lives in their hands and just -- letting it  
24   go like that, like it doesn't matter because of their  
25   parties and their this and their that.

1           And this is like -- salmon are some of the most  
2   incredible animals on the planet and we're going to let  
3   those incredible creatures just go extinct because of party  
4   politics and people not actually living it. And that's what  
5   I'd say to you and folks are upset and might get emotional  
6   in front of you guys.

7           Like this is real -- it isn't about parties, it's  
8   not about getting our way it's about like the future and the  
9   survival of salmon and people and the world. My grandfather  
10  told me when I was a kid when you run out of salmon you run  
11  out of everything.

12           So like if we don't have salmon like we're gone  
13  and it's not just going to be an Indian problem. The more  
14  creatures like salmon go extinct the worse off the world is  
15  for it. The world gets no better by allowing salmon to go  
16  extinct and people to fight and go back to their district  
17  and say, "Well we didn't let them Indians have their way."

18           This just makes sense when we talk about those  
19  timelines that is -- you guys asked what things we need to  
20  look at and I think that something that really needs to be  
21  looked at is the timeframes. Like it has to be like, urgent  
22  -- like a sense of urgency -- we've all been doing this for  
23  a long, long time and we need to come to fruition.

24           Everything is kind of laid out -- boom, boom,  
25  boom, boom, boom. Everything is there I feel like -- we've

1 got the science, we've got the cash, like everything has  
2 like come to this point. It is right here on your doorstep  
3 either accept it or deny it.

4 And then my other comment was that you guys  
5 e-filing system has been terrible lately. I mean bad. Aw  
6 man -- yeah it's like -- it's blowing up my email but then  
7 even if you go to try to click on the comments -- whether it  
8 is from the house or from Army Corp or personal people maybe  
9 three-quarters of those things won't even open.

10 They just won't even open. They will be blank or  
11 whatever. Yeah, I really appreciate it like in theory it's  
12 a really cool -- this e-library you can get everything.

13 MR. WINCHELL: They are in the process of  
14 restructuring because you can imagine I mean it's  
15 overwhelming there's so much stuff getting filed and they've  
16 got to update and people from IT they're aware of this but  
17 it's unfortunate, it's something that they're working on and  
18 I wish, you know, it would get fixed too because it  
19 frustrates us.

20 MS. MOLLOY: Although we still in comparison to  
21 other websites I still think like because it does try to  
22 have everything open and out.

23 MR. HILLMAN: I just like to stay up on it and I  
24 go to click to read what does the Army Corp say about this  
25 and that and it's just blank and it's frustrating. I get



1 post-it notes, like that one came up and it's huge and it's  
2 like do something -- you know what I mean?

3 MS. MOLLOY: Every now and again on a blank one  
4 -- I don't know if this is the reason but every now and  
5 again if you click on the FERC pdf it will not -- if  
6 something was filed in pdf go to the original pdf file and  
7 that will be there.

8 Sometimes the FERC one will come up blank and  
9 saying it couldn't be converted or something.

10 MR. HILLMAN: Yeah, yeah.

11 MS. POLARDINO: I was going to say too is if you  
12 go to our FERC website -- go under documents and filings and  
13 go to the e-library. There will be like an alternative  
14 e-library and so sometimes if the main one isn't working try  
15 the alternative one because it does -- it's a frustration.

16 MR. HILLMAN: It's making me crazy because I like  
17 to read that stuff so I know what's happening and it's been  
18 tough.

19 MS. POLARDINO: We hear you, absolutely. And we  
20 also have passed out cards with our contact information. If  
21 there's any problems with trying to get into e-library feel  
22 free to give any one of us a call.

23 MR. HILLMAN: Cool, thank you.

24 MR. KINNEY: Good morning, my name is Ed Kinney.  
25 I would like to -- K-i-n-n-e-y -- and I would like to thank

1 the Tribal Council for this opportunity to provide comment  
2 and I really want to take a brief minute to discuss empathy.

3 And when you really look at these issues and  
4 taking these down with an empathetic lens, the urgency comes  
5 to the top. It doesn't become a political issue. It  
6 doesn't become about money -- it becomes about doing the  
7 right thing.

8 And you all are unable to do that and that's  
9 where I want to really stress on that urgency because the  
10 time is now and you know, sometimes tomorrow is too late and  
11 that's where when we practice empathy and not just identify  
12 the ways to use it, if we practice it as a lifestyle  
13 everything becomes a lot more because you start to have  
14 voices for things that don't have a voice.

15 Salmon or wildlife or even our young people don't  
16 necessarily have that voice to speak up for themselves yet.  
17 This is why we all have to do our part and make sure that  
18 not to less apathy set in because once apathy sets in you  
19 can look the other way and things fall through the cracks  
20 like they have done time and time again.

21 And that's what I want to really stress on is  
22 again without taking swift action to take these dams down  
23 -- what is that doing in perpetuating the institutional  
24 racism to not just the indigenous people from here but the  
25 people that have lived here for generations and the

1 community at large?

2 And so that's what I want to quickly just, you  
3 know, briefly provide that comment today -- practicing  
4 empathy and take that into your perspective on this whole  
5 project. And I really feel that that will show the urgency,  
6 thank you.

7 MS. CHINCOLA: Hello my name is Regina Chincola,  
8 C-h-i-n-c-o-l-a. I will support dam removal. I think that  
9 dam removal should happen quickly and I thank the Karuk  
10 Tribe so much for the last 14 years I think it has been of  
11 leading this effort.

12 I'm not a tribal member. I do work for the  
13 Pacific Coast Federation of Fisheries Association that has  
14 been very involved with this situation but I am speaking as  
15 a member of the Oregon community.

16 I actually have a question and then a comment and  
17 my question is how does the transfer deal with the Kino  
18 Reservoir? Is it going to the Department of Reclamation or  
19 -- I mean the Bureau of Reclamation, since it's hard to get  
20 information off of FERC I figured I should ask you guys.

21 MR. WINCHELL: Well I think in the transfer it is  
22 administrative just to transfer the responsibility of the  
23 removal of the four developments which starts with J.C.  
24 Boyle downstream all the way down to Iron Gate, okay.

25 MS. MOLLOY: That's what the application was for.

1 MS. CHINCOLA: You guys aren't involved?

2 MR. WINCHELL: Yeah, again -- you've got -- okay  
3 Kino is a different, it's complicated but we're focusing --  
4 at least today and we are going to be doing our analysis and  
5 so more insight is going to come into let's say Kino and  
6 Linc but basically, basically we're looking at the surrender  
7 of the four developments from J.C. Boyle down to Iron Gate.

8 That's what the surrender process would be  
9 involved with because upstream there are other  
10 jurisdictions, so the Bureau of Reclamation controls Linc  
11 and again there's not any hydroelectric facilities at Kino  
12 so there's --

13 MS. MOLLOY: Right but I think the transfer  
14 application -- the amendment application to transfer  
15 requests was for the four lower developments.

16 MS. CHINCOLA: Right.

17 MS. MOLLOY: So that's what that application is  
18 looking at.

19 MS. CHINCOLA: Okay so you guys aren't involved  
20 in the Kino transfer.

21 MS. MOLLOY: The transfer application would be  
22 for the four developments.

23 UNIDENTIFIED SPEAKER: (Off mic): I think  
24 because they are transferring Kino into a federal agency,  
25 FERC does not have jurisdiction. FERC's jurisdiction is

1 privately held RS's.

2 MS. CHINCOLA: That would be just between the  
3 PacifiCorp and the United States, alright thank you that  
4 clarifies. I wondered what would happen at Kino. Okay,  
5 well thank you that was my question. I will support this  
6 happening fast. I've studied NEPA and SEQUA for the  
7 majority of my life.

8 I have done extensive comments on all of these  
9 and I think even the people who are opposed to dam removal  
10 have done extensive comments. Their comments have been  
11 heard. They are being dealt with through mitigation  
12 measures and people are making sure that this is done in a  
13 legal way and a responsible way and that everyone is heard  
14 and has happened.

15 So I would also ask for you to move forward as  
16 quickly as possible. I look forward to reading the EIS or  
17 whatever supplemental EIS you're doing on dam removal and  
18 see how the dams will be removed and I would also hope that  
19 all of us can watch it happen, thank you.

20 Sorry to ask a question if it was something I  
21 have been wondering for a long time.

22 MR. TUCKER: Does anybody else want to make  
23 comments?

24 MR. WADDELL: I'll make a quick comment. Besides  
25 the water, the dams and all that because remember we were

1 all raised to take care of our land and that affects the  
2 run-offs and whatever has gone on in 100 years, we always  
3 want to remember that everything depends -- just like he was  
4 saying you know.

5 MS. CADWELL: My name is Erin Cadwell,  
6 C-a-d-w-e-l-l and I'm not from here but I have lived here  
7 for quite some time and I have been volunteering on the fire  
8 department and an EMT for a long time.

9 And doing that you really see a lot of health  
10 issues at a rate that I don't think you see in the general  
11 population. We have some big suicide clusters -- a lot of  
12 diabetes, a lot of heart disease, a lot of health issues  
13 that really stem from -- I think, you know, just a general  
14 malaise and I know that in Western culture we have this  
15 tendency to see the mind and the body as being separate and  
16 both of those things being separate from the environment.

17 But you don't really have to be on the ground  
18 doing emergency health care for very long to see that's  
19 bullshit. And you know, despair and poverty and  
20 hopelessness kill and it's a slow death but its sure and its  
21 killing people here, especially indigenous people.

22 And when I think about how tired I am of seeing  
23 it I can only imagine how tired they are of living it. So I  
24 really urge you to do what you can to take these dams down  
25 and to listen to these people when they say that not being

1   able to fulfill, you know, the purpose that their  
2   traditional life is meant to fulfill is hurting them and  
3   it's killing them because I could tell you that I see it  
4   all the time and that's all I have to say about that.

5               MR. WIEGEL: My name is Ryan Wiegel, I'm a local  
6   resident. W-i-e-g-e-l -- I'm a local resident for a short  
7   time but I'm actually a member of the -- Tribe. I would  
8   like to talk about in the early '20's when California has  
9   its first environmental initiative and this was in response  
10  to a dam that was going to be put on the Salmon River.

11              And the vote came out that the dam was not  
12  allowed to happen and so the people want the health of the  
13  Klamath River back and starting in the early '20's and I  
14  wanted just to bring that part out that this is a long time  
15  and it's the people, of course they're native and they're  
16  very strong but all the people want the dam gone, thank you.

17              MS. JOSEPH: I'm Anna Joseph, I'm a Yurok Tribal  
18  member but I'm also a Karuk and -- Paiute, Shoshonee. I  
19  grew up swimming on the Klamath River and it breaks my heart  
20  that my nieces and nephews have no idea what it's like to  
21  swim on the river.

22              We have to go elsewhere -- the Salmon River to  
23  see the birds go swimming and I come from a long line of  
24  fishermen and commercial fishermen and I no longer  
25  commercial fish because I want to give the salmon a chance

1 to come back.

2 2002 during the fish kill my grandmother passed  
3 away at the same time and so it's very emotional for me and  
4 I want to see the dams out of here, thank you.

5 MR. SAXON: Thank you all for taking time out of  
6 your work day and coming in and participating in this. It  
7 was good to hear your thoughts and again thank you to the  
8 Council for opening up the public comment for folks to speak  
9 their mind -- it's respectful and it's a good thing.

10 So with that I think we'll close everything up  
11 and go on with our day, thank you.

12 (Whereupon the meeting was adjourned at 11:28 a.m.)

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1 CERTIFICATE OF OFFICIAL REPORTER

2

3 This is to certify that the attached proceeding  
4 before the FEDERAL ENERGY REGULATORY COMMISSION in the  
5 Matter of:

6 Name of Proceeding:

7 KLAMATH AND LOWER KLAMATH HYDROELECTRIC PROJECTS

8

9

10

11

12

13

14 Docket No.: P-2082-062/ P-14803-000

15 Place: Orleans, CA

16 Date: Wednesday, January 17, 2018

17 were held as herein appears, and that this is the original  
18 transcript thereof for the file of the Federal Energy  
19 Regulatory Commission, and is a full correct transcription  
20 of the proceedings.

21

22

23 Gaynell Catherine

24 Official Reporter

25

Document Content(s)

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1       FEDERAL ENERGY REGULATORY COMMISSION  
2               KLAMATH AND LOWER KLAMATH  
3               HYDROELECTRIC PROJECTS

4

5       DOCKET NOS: P-2082-062/ P-14803-000

6

7               SCOPING MEETING

8       KLAMATH TRIBES ADMINISTRATION BUILDING

9               501 Chiloquin

10              Chiloquin, OR 97624

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12              THURSDAY, JANUARY 18, 2018

13              10:00 a.m.

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## 1 PARTICIPANTS

## 2 FERC STAFF

3 ELIZABETH M. MOLLOY, TRIBAL LIAISON

4 JENNIFER POLARDINO, HISTORIAN

5 FRANK WINCHELL, ANTHROPOLOGIST/ARCHAEOLOGIST

6 ELIZABETH MCCORMICK, OFFICE OF THE GENERAL COUNSEL

## 7 KLAMATH TRIBES

8 DON GENTRY, CHAIRMAN, KLAMATH TRIBAL COUNCIL

9 MELISSA HESS, KLAMATH TRIBES, ALLOTTEE TRIBAL MEMBER

10 KATHY HILL, KLAMATH TRIBES MEMBER

11 PERRY CHOCKTOOT, KLAMATH TRIBAL COUNCIL

12 IRVIN KIRK, KLAMATH TRIBES MEMBER

13 NICK D. KIMBOL, SR., KLAMATH TRIBES MEMBER

14 CHARLES JACKSON, SR., KLAMATH TRIBES MEMBER

15 ROBERTA FROST, KLAMATH TRIBAL COUNCIL, SECRETARY

16 DENISE LAWVER, MODOC TRIBAL MEMBER

17 DARRELL BLACK, KLAMATH TRIBES MEMBER

18 ANNA BENNETT, KLAMATH TRIBES, TTP MANAGER

19 TAYLOR TUPPER KLAMATH TRIBES, PR NEWS MANAGER

20 KATHLEEN MITCHELL, KLAMATH TRIBAL COUNCIL

21 BARRY KIMBOL, KLAMATH TRIBAL MEMBER

22 JIM ROOT, KRRC BOARD MEMBER

23 JOSEPH DUPRIS, PUBLIC CITIZEN

24 KIVA STEVENS, EMPLOYEE, NATURAL RESOURCES

25 BRIAN QUICK, KSWCD, PROJECT MANAGER

1 JOE WATKINS, PUBLIC  
2 LYLE AHRENS, KOTI/NBCZ TELEVISION  
3 DOUG MCCOURT, KLAMATH TRIBES, LEGAL COUNSEL  
4 ROWENA JACKSON, KLAMATH TRIBAL MEMBER  
5 STEVEN FLOYD, HERALD AND NEWS  
6 KONRAD FISHER, KLAMATH RIVER KEEPER  
7 MARK BUETTENER, KLAMATH TRIBES, FISHERIES TECH  
8 KIRA STEVENS, KLAMATH TRIBES, NATURAL RESOURCES  
9 DON WARD, KLAMATH TRIBES, CONSERVATION CHAIR  
10 DARRYL BLACK, KLAMATH TRIBES, NATURAL RESOURCES  
11 TYLER MARTIN, KLAMATH IRRIGATION DISTRICT  
12 JOE WATKINS, IRRIGATOR  
13 DEREK KIMBOL, KLAMATH TRIBAL MEMBER

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1 P R O C E E D I N G S

2 (10:00 a.m.)

3 CHAIRMAN GENTRY: Thanks, we have a big of  
4 a discussion about the process what this is today and folks  
5 from the Federal Energy Regulatory Commission here today  
6 will be introducing themselves and explaining a little bit  
7 of context for the meeting and we also have a representative  
8 from the Klamath River Renewal Corporation -- he will  
9 introduce himself, Jim Root.

10 But I thought it would be good to just start this  
11 meeting with a prayer and a blessing and then we'll have  
12 some discussion about what the available Tribal Council  
13 members about presence of media here today. It is a  
14 publicly noticed meeting but it is a meeting primarily  
15 between the Klamath Tribes and FERC.

16 I don't believe that we will be getting into  
17 sensitive areas of discussion like where cultural sites are  
18 or something like that. It's going to be an informational  
19 meeting. We have some questions. We wanted to affirm our  
20 commitment to the process and hoping to see it through and  
21 the dams removed because of our interests.

22 And we also have some other folks -- citizens  
23 that are here and the FERC representatives will explain, you  
24 know the process there that they could listen in and it's  
25 really not an opportunity for other folks to comment at this

1 time since it's a meeting between the Klamath Tribes and the  
2 Federal Energy Regulatory Commission.

3 And we'd also -- it is a time -- one of the  
4 purposes of this meeting is to inform interested tribal  
5 members of the status of the project and even -- it's  
6 totally appropriate for our tribal members to you know,  
7 raise issues, concerns, ask questions -- I want to provide  
8 an opportunity for that.

9 So it's a meeting between the Klamath Tribes and  
10 FERC primarily and we know there's a separate process for  
11 the licensing and once it's licensed the dam removal  
12 component -- Klamath River Renewal Corporation is going to  
13 be handling that.

14 So I wanted to just frame that right from the  
15 very start and pray -- have a prayer to open the meeting so  
16 if you could join me in the prayer I'd really appreciate it.

17 (Prayer)

18 CHAIRMAN GENTRY: I appreciate the tribal members  
19 that are here. We have some of our Councils -- there will  
20 be introductions. The FERC folks will introduce themselves  
21 but I wanted to have the Tribal Council members that are  
22 here stand -- I see Roberta back there and Perry and blessed  
23 to have them to be a part of this process.

24 Roberta Frost is our Secretary and Perry  
25 Chocktoot on the Council but also our Cultural and Heritage

1 Department Director so we're blessed to have him here. We  
2 have other tribal members and so I think it would be good  
3 too, there's some other folks in the room that are joining  
4 us from other entities concerned about the dam removal  
5 process -- not necessarily on the same page as where the  
6 Klamath tribes are.

7           So just so folks know who's in the room I think  
8 it would be helpful to go around, there's a few of us here  
9 so folks know who's here and then we can have a discussion  
10 about whether or not to include media -- you know it is at  
11 our discretion since this is our meeting so we could talk  
12 about -- there's only a couple of Tribal Council members  
13 here but interested in thoughts from our tribal members too.

14           And I know Lyles basically wants to share the  
15 information but -- so he's willing to go if that's what  
16 folks think we need to be doing. So folks that don't know  
17 and I think I have introduced myself to everybody. I'm  
18 Chairman of the Klamath Tribes and I'm glad that you folks  
19 came and set this up for us and the other affected tribes, I  
20 appreciate that one on one communication.

21           So maybe we could -- I guess if you guys want to  
22 introduce yourselves first would that be helpful and then  
23 we'll go around the room and let folks know who we are -- I  
24 think that would be helpful.

25           While you're coming up I also wanted to introduce



1 by phone Mr. Doug McCourt who is new legal counsel that we  
2 brought on that's really -- it's my understanding works with  
3 folks in a previous position on FERC related matters.

4 So Doug if you could introduce yourself to the  
5 folks. I know you can only be with us for a time and  
6 listening in but if you want to do that I appreciate that.

7 MR. MCCOURT: Well thank you Chairman, thank you  
8 to members of the Tribal Council and the tribal members that  
9 are in attendance. My name is Doug McCourt, I am senior  
10 counsel with the Rosette firm based in Washington, D.C. and  
11 it is our privilege to represent the Klamath tribes on a  
12 variety of treaty rights matters, water resources, fisheries  
13 and related concerns and I'm very happy to see knowledgeable  
14 and dedicated FERC staff here today -- hello Liz.

15 I apologize that I was not able to be there in  
16 person but I wanted to just let you know we're on board  
17 representing the Klamath Tribes and we'll be counsel of  
18 record in these proceedings and we will also be actively  
19 participating as appropriate down the road.

20 So thank you again for taking the time to consult  
21 with the tribes to come out to Chiloquin and we'll look  
22 forward to working with you as we go down the road here.

23 CHAIRMAN GENTRY: Thank you Doug. I'm glad you  
24 could join us even if it's for just a short time. Hang on  
25 as long as you can, you're certainly welcome.

1 MS. MOLLOY: So thank you for having us visit  
2 with you today. My name is -- so we'll do introductions.  
3 My name is Liz Molloy, I'm the Tribal liaison for FERC and  
4 I'm in the Office of the General Counsel at FERC.

5 MS. POLARDINO: I'm Jennifer Polardino and I'm in  
6 the Office of Energy Projects and the Division of Hydropower  
7 Administration and Compliance and my last name  
8 P-o-l-a-r-d-i-n-o. I always like to -- when we're doing  
9 introductions if you could say your names and spell it out  
10 for our transcriptionist that would be appreciated.

11 MR. WINCHELL: Hi, my name is Frank Winchell,  
12 W-i-n-c-h-e-l-l. I'm an archeologist. I work with the  
13 Federal Energy Regulatory Commission with the Office of  
14 Energy Projects, Division of Hydropower Licensing.

15 MS. MCCORMICK: Hi, I'm Elizabeth McCormick, also  
16 in the Office of the General Council working on the transfer  
17 and amendment application.

18 MR. FLOYD: Hi my name is Steven Floyd, I'm with  
19 the Herald and News. Holly Dulmath is usually at these  
20 meetings but she was unavailable this morning and so I'm  
21 going to be filling in. Oh Steven Floyd, I'm sorry that was  
22 a little too fast.

23 MS. JACKSON: Rowena Jackson, Klamath Tribal  
24 member.

25 MS. HILL: Kathy Hill, Klamath Tribal member.

1 But I am going to say something at this point. I'm  
2 concerned that this meeting -- we weren't informed about the  
3 tribe told me a little bit about the meeting apparently  
4 until December 29th and then tribal members -- at least some  
5 of us just got the notice yesterday via email and that's  
6 extremely short notice.

7 And I think you'd have a lot better participation  
8 if you could set things up at least. I don't consider it  
9 real consultation if you don't set things up enough in  
10 advance for people to actually participate so I'm glad  
11 you're here but I don't think this process is fair to the  
12 tribe or the other tribes as well or community members, so  
13 anyway, Kathy Hill, H-i-l-l.

14 And I would also like to have the person who's  
15 transcribing introduce himself when we get a chance.

16 MR. DUPRIS: Hi, Joseph Dupris, D-u-p-r-i-s,  
17 community member and Cheyenne River Sioux.

18 MR. FISHER: My name is Konrad Fisher,  
19 K-o-n-r-a-d F-i-s-h-e-r. I work for a social justice  
20 organization, Klamath River Keeper but if I were to speak it  
21 would be from my heart as someone who -- my family has only  
22 been here four generations but we all would love to see  
23 salmon again in the upper basin and as someone who formerly  
24 lived on the lower basin I would like to stop seeing the  
25 river to turn green and be unsafe to touch, so I'm here for

1 personal reasons, thank you.

2 MR. ROOT: I'm Jim Root, Board Member on the  
3 Klamath River Renewal Corporation appointed by Governor Kate  
4 Brown, also a rancher. I have a property over on the Wood  
5 River and I'm serving as the corporate secretary and  
6 treasurer for the KRRC.

7 MR. BUETTENER: I'm Mark Buettener with Klamath  
8 Tribes, Buettener B-u-e-t-t-n-e-r. I'm a fisheries tech.

9 MS. STEVENS: I'm Kira Stevens, Stevens with a  
10 "V". I am an employee here I work for the Natural Resources  
11 Department in aquatics.

12 MR. WARD: Don Ward, resident of Klamath County  
13 50 years -- it's not very long in this building I'm sure but  
14 I'm here representing the Rogue Fly Fishers. I'm a  
15 Conservation Chair for them.

16 MR. KIMBOL: Nick Kimbol, tribal member. Last  
17 name Kimbol, K-i-m-b-o-l, concerned.

18 MS. FROST: Roberta Frost, Tribal Secretary,  
19 F-r-o-s-t.

20 MR. CHOCKTOOT: Perry Chocktoot, Tribal Council,  
21 C-h-o-c-k-t-o-o-t.

22 MR. KIRK: Irvin Kirk. I work for Natural  
23 Resources, Klamath Tribal member and I'm a water quality  
24 tech.

25 MR. BLACK: Darryl Black, I work with the water

1 quality crew as well for Natural Resources.

2 MR. KIMBOL: Barry Kimbol, tribal member.

3 MR. MARTIN: Tyler Martin, M-a-r-t-i-n, I work  
4 for Klamath Irrigation District.

5 MR. QUICK: Brian Quick, just a long-time  
6 resident of the Klamath Basin.

7 MR. WATKINS: Joe Watkins, W-a-t-k-i-n-s. I'm an  
8 irrigator in the project area and a life-long resident.

9 MR. JACKSON: Charles Jackson, Senior  
10 C-h-a-r-l-e-s J-a-c-k-s-o-n Senior, Klamath tribal member.

11 MR. KIMBOL: Derek Kimbol, Klamath Tribal Member,  
12 former Natural Resource technician, former Klamath language  
13 instructor and graduate of the University of Oregon  
14 Environmental Studies -- Bachelor.

15 MS. HESS: Missy Hess, Klamath tribal member.

16 MS. LAWVER: Denise Lawver, I'm an enrolled  
17 member of the Klamath tribe. I also own a ranch from a  
18 tribal member so and a member of the tribe's Water  
19 Committee. I'm here on my own behalf and also, a survivor  
20 of the salmon wars, thank you. -- L-a-w-v-e-r.

21 MR. AHRENS: Hi there I am Lyle Ahrens,  
22 A-h-r-e-n-s I am with KOTI and BC2 Television.

23 CHAIRMAN GENTRY: So I know this is  
24 a lot different type of meeting than we typically have -- oh  
25 yeah I'll let you go sir.

1           MR. CATHERINE: Gaynell Catherine, Ace Federal  
2 Reporters, Washington, D.C.

3           CHAIRMAN GENTRY: So the type of meeting being  
4 that FERC is a contested process it really would be helpful  
5 for you to share the context of this meeting and the  
6 framework and then we can move on from there. Then I would  
7 like to make a statement.

8           MS. MOLLOY: So today's meeting is between FERC  
9 and the Tribal Government pursuant to the Commission's  
10 tribal policy statement where we reach out to tribes that  
11 are affected by a potential proposal and seek an offer to  
12 meet with them and the Klamath was kind enough to accept our  
13 requests, our offer.

14           And so we're here to learn the concerns of the  
15 tribe and make sure that we are able to consider them as we  
16 go forward. Because the proceeding is a contested  
17 proceeding this is on the record. We have it being  
18 transcribed that will be filed in the FERC e-library 30 days  
19 from now.

20           And if there should be any discussion about any  
21 matter that's sensitive we can put a privileged portion of  
22 the information that would then be posted on e-library with  
23 a privileged so it would not be available to everyone and we  
24 would be willing to clear the room for any such discussion.

25           And then other than that we would really

1 appreciate hearing the views. I'm trying to think what's  
2 left -- I think that's pretty much it. We welcome -- we are  
3 welcome to the Council members and everyone else to this  
4 meeting and thank you again for having us -- I was going to  
5 talk about that.

6 CHAIRMAN GENTRY: It is working -- so there was  
7 an opportunity to meet directly and I know we've been --  
8 just for everybody to understand the Klamath tribes have  
9 been engaged in this process for quite a while in efforts to  
10 remove the dams.

11 We spent quite a bit of time providing input and  
12 testimony into the EIS process that looked at removing the  
13 dams and submitted a lot of information and perspectives and  
14 raised a whole host of issues.

15 You know many have focused on the fact that when  
16 we signed a treaty with the federal government that  
17 established this relationship -- this trust responsibility,  
18 and all federal agencies, including FERC, has that  
19 responsibility to appropriately consider that trust  
20 relationship.

21 We intended to reserve with our lands the rights  
22 to do as we felt appropriate but to reserve the lands and  
23 the resources necessary to continue to be who we believe  
24 Creator intended us to be and salmon was a part of that --  
25 it's a part of our history, it's our language and it's in

1 our history.

2           Unfortunately it's in our histories and it's in  
3 our culture and so we have made that pretty clear and have  
4 numerous efforts since, including the first proposal to put  
5 the dam in -- you know, we were promised fish ladders and it  
6 never happened.

7           But I wanted to point out that the tribes -- it's  
8 been a long-standing goal to have these salmon steelhead  
9 returned to us and all the resources that are important to  
10 our survival and existence and culture and everything that  
11 should be here.

12           The Creator placed us here -- placed here for us  
13 a need to be provided for. So that's been clearly  
14 communicated throughout that process and so I wanted to just  
15 reaffirm that nothing has changed in that perspective though  
16 we are not a party to the amended Klamath hydroelectric  
17 settlement agreement because of the one provision that  
18 basically said that if we were a party that we would be  
19 willing to pursue settlement, whatever that meant -- our  
20 members aren't into that place right now -- we didn't sign  
21 into that.

22           But I just wanted to basically remind folks here  
23 and even our members that we have been involved in this  
24 process and even in recent process we're interveners in the  
25 process. We preserved our standing. If there's a decision



1 to not move forward with the license and allow the removal  
2 that gives us standing to appeal that decision.

3 We're hoping that things will be on track and you  
4 know, with the removing the dams as originally planned and  
5 intended and we know FERC has the regulatory role -- the  
6 licensing role and I appreciate Mr. Root being here.

7 The Klamath Tribes have met with Klamath River  
8 Renewal Corporation and shared our concerns and it has been  
9 acknowledged by Klamath River Renewal Corporation that  
10 because we are a very significant affected party, they are  
11 going to continue to work with us to address our concerns  
12 along the way and partner with us where they can.

13 Though we're not a party to the hydroelectric  
14 settlement agreement there's that commitment and the meeting  
15 here today, you know, we were wondering what the real value  
16 is at first because we are involved in the process and the  
17 very sensitive information and issues -- we're raising that  
18 directly and we're not doing this in public meetings.

19 And I don't anticipate that we'd be doing that  
20 again today because of that direct communication or  
21 relationship so the envisioning for this meeting is to  
22 provide the opportunity for our tribal members to catch up  
23 to speed as much as possible but to take you up on the offer  
24 to meet.

25 And I want to speak, Kathy, I really apologize

1 for that -- there's an opportunity dates are flung out and  
2 we were looking at originally it was just a government to  
3 government meeting and through the way reminded that this  
4 needs to be a publicly noticed meeting and we didn't do a  
5 good job on our part and getting notice out to our members.

6 And we can continue to coordinate with our  
7 members and get more input to bring forth directly in the  
8 process. And there -- FERC was willing to accommodate, work  
9 with us, but they had dates that they were going to be in  
10 the area meeting with other tribes and we took them up on  
11 that date.

12 So I apologize for the short notice and we can do  
13 a better job of coordinating with our members on these  
14 issues. We haven't talked about it in recent water  
15 meetings, we know that process very much -- in the general  
16 Council meetings, so I apologize for that because we had a  
17 role in that too.

18 So that's the main things I wanted to start  
19 things off with but I also wanted to find out the  
20 comfortable -- whether the folks are comfortable having the  
21 media here. We have Steven from Herald News, we have Lyle  
22 here -- what's the thinking, Perry, Roberta, Tribal Council  
23 members, general Council members -- yes?

24 (Off record statements)

25 CHAIRMAN GENTRY: Let's take a show of hands of

1 the Klamath Tribal members you know, about whether to have  
2 the media here or not. If you are comfortable having them  
3 here please raise your hand, okay -- that's for the media,  
4 yeah, it's not actually can't be a closed meeting, all the  
5 other folks that are here.

6 It's basically whether we want media to be here  
7 or not or are comfortable with that. I appreciate that too,  
8 I appreciate that -- that's respectful too. Now the  
9 question is specifically about the media. Well it was a  
10 government to government meeting between the Klamath Tribes  
11 and FERC.

12 (Off record statements)

13 CHAIRMAN GENTRY: I would agree with you in that  
14 respect. We've had a lot of concerns about the process and  
15 have learned the law about being a contested proceeding and  
16 how notices were -- other parties can come and participate  
17 in this public meeting.

18 And maybe you could speak to that about what's  
19 your legal responsibility and requirement is?

20 MS. MOLLOY: Because the Commission is -- so I  
21 guess I'll step back for one moment and say the Commission  
22 has two applications right now pending before it. One is to  
23 take the project and take the lower four developments and  
24 transfer those to the corporation.

25 And the second one would be a surrender

1 application for those four developments and the application  
2 was conditioned on the transfer. So those we have -- the  
3 Commission has before us to act on and the Commission will  
4 be acting on those applications.

5 But once -- because we act in a judicial --  
6 quasi-judicial fashion once a matter becomes contested  
7 there's opposition to it -- that becomes a process that we  
8 have to avoid ex parte -- speaking individually with any  
9 party, any participant.

10 So we have meetings open so that everyone knows  
11 what everyone is telling us so that there's no fear that any  
12 entity could come and talk to us and tell us something that  
13 not everyone else would know. So that tends to be when a  
14 process is like this one, where there's very strong views  
15 across the spectrum, we tend to have meetings open.

16 We do recognize that it is a compromise but this  
17 way we are able to protect the process.

18 MS. HILL: Okay I can accept that that is the  
19 circumstance that we have to deal with but I don't think  
20 it's proper to call it government to government  
21 consultation. So you know, that's just where it hinges with  
22 me because we do have a specific relationship with the  
23 federal government.

24 You know FERC is an entity onto itself and not  
25 like other entities like you said because of the

1 quasi-judicial role that you play. So I just want to be  
2 clear that this doesn't meet the criteria that I believe in  
3 for a government to government consultation but I'm glad  
4 we're having the meeting so I don't want to say, you know,  
5 it's all bad. I just want to be careful about how we as  
6 tribal members accept government to government consultation  
7 and that we know the government to government consultation  
8 is government to government, not public. So I think it's  
9 just a misnomer in this case.

10 MS. MOLLOY: Thank you for sharing.

11 MS. HILL: Thank you.

12 CHAIRMAN GENTRY: I very much appreciate that  
13 because that's a struggle we talked about quite a bit  
14 internally with some of our Council and legal staff -- you  
15 know, the value of these meetings. So I think we could take  
16 it for what it is -- information sharing.

17 We could submit information that we're  
18 comfortable submitting publicly you know and so I guess take  
19 it for what it is so there's value in finding out the status  
20 of the process and answering questions about the process and  
21 it is my understanding in terms of some of the timelines  
22 that you may not be able to respond to that.

23 But at our discretion with Klamath River Renewal  
24 Corporation here we can ask questions specifically about the  
25 process and so it really is our meeting and though it has a

1     limited scope and framework it is our meeting though there  
2     might be folks that might have an adversarial position with  
3     what we desire in the room here.

4                 So it is an awkward situation but we're going to  
5     continue to communicate our position where appropriate, you  
6     know, and be involved in the process, you know. I just  
7     don't like the way things are set up for us, you know,  
8     because when I think of the Constitution and I think of the  
9     fact that we actually ceded our own lands to the federal  
10    government and reserved our own land so we could be who  
11    Creator intended us to be forever, there was a commitment  
12    and that trust obligation flows with that.

13                And we don't feel it's appropriate what we're  
14    locked into we're going to take advantage of the opportunity  
15    that we do have.

16                MS. MOLLOY: Thank you for sharing and we  
17    appreciate your taking the time and providing some  
18    information and asking questions.

19                CHAIRMAN GENTRY: Sure, so I guess we wanted to  
20    -- I think it would be helpful for us to share where we are  
21    in the status of the process. There have been a number of  
22    hearings, a number of meetings -- I had some follow-up  
23    questions. I know some of our members do but many we could  
24    just share information on the status.

25                And I think if folks are comfortable I'd like to

1 get an update too from KRRRC, you know, about the status of  
2 the parallel process there -- if you're comfortable with  
3 that Jim, okay and Perry.

4 UNIDENTIFIED SPEAKER: (Off-mic) What about the  
5 media?

6 CHAIRMAN GENTRY: Oh yeah, so we didn't resolve  
7 that I guess should we keep them or kick them out? Okay, it  
8 sounds like we are in consensus, people must like you Lyle  
9 and Steve and I --

10 (Off mic comments).

11 CHAIRMAN GENTRY: So I think it would be  
12 appropriate for you to share a status report on the process  
13 and we may have some follow-up questions and I'm interested  
14 in hearing from our members. I think it's appropriate to  
15 share even for the record their views about the importance  
16 of removing the dams.

17 MS. MOLLOY: Absolutely.

18 MS. MCCORMICK: Good morning. So as Liz  
19 mentioned we have two applications before us. The first is  
20 for -- oh Elizabeth McCormick, Office of the General Counsel  
21 at FERC.

22 So we have two applications pending before us.  
23 They both came in around the same time I believe in the  
24 fall. And the first application is for a transfer and  
25 amendment of the existing license.

1           And so what that would do is take the four lower  
2   dams and transfer them to the Renewal Corporation and amend  
3   the existing license to remove those four. So it's purely  
4   administrative. There's no environmental review involved  
5   and at the moment we have -- pardon? Yes, yes, so when we  
6   transfer the lower four into a new license they will contain  
7   all the same licensing conditions that were attached to the  
8   original license.

9           So it's a purely administrative process. We  
10   currently have a complete application so we will be able to  
11   act on that before we move on to considering the surrender  
12   application.

13           The surrender application is for the physical  
14   removal of the lower four dams once they've been transferred  
15   to the KRSE. We've gotten some questions about why these  
16   are happening in two separate proceedings and the reason for  
17   that is that while it's not uncommon for the Commission to  
18   transfer licenses from one entity to another, the situation  
19   is unique in that these four dams are being transferred for  
20   the express purpose of being surrendered and removed.

21           And so we just want to make sure that we're  
22   comfortable, that the KRSE has the technical, financial and  
23   legal capacity to carry through with the removal and any  
24   mitigation to the area following the removal. So that's why  
25   they're happening in two different proceedings although



1     they're very closely related.

2                 Yes and so I said we have a complete application  
3     for the transfer of the license. The surrender we're still  
4     waiting on some additional information that I believe we're  
5     expecting to get by the beginning of July. And so once we  
6     receive that information then we'll have a better idea of  
7     the timeline moving forward.

8                 But once we do consider -- once we are  
9     comfortable that we have a complete application for the  
10    surrender, we will issue a Notice of Ready for Environmental  
11    Analysis and then probably some more staff will come out to  
12    do scoping meetings and that's when we'll hear concerns  
13    about the environmental impacts of the dam removal land  
14    decommissioning.

15                And then we'll move through our NEPA analysis  
16    which will either be an EIS or an EA -- there's already been  
17    an EIS done by Interior I believe, so we may just add on to  
18    that and fill in some gaps.

19                We try not to recreate the wheel but once the  
20    environmental analysis is complete then we will be able to  
21    act on the application for surrender. So that's a bit  
22    longer of a process.

23                The transfer and amendment of the license should  
24    be happening more quickly and while we can't speak to the  
25    timing the Commission will be voting on the application and

1 our Commission meetings are the third Thursday of every  
2 month. I believe there's one today.

3 And about 10 days before the meeting we issue  
4 what's called a Government in the Sunshine Act and that will  
5 list the proceedings on which the Commission will be voting  
6 that month. So I know it doesn't give very much notice but  
7 if you log in to ferc.gov and our e-subscription service you  
8 can enter the project numbers and kind of get an update on  
9 when those notices go out.

10 MS. MOLLOY: The one thing I would add is even if  
11 the license is amended and transferred that doesn't mean  
12 that the Commission would be voting to approve any  
13 subsequent application on surrender. It would be  
14 considering it and determining whether or not to approve it  
15 or not after it has analyzed all the information.

16 So whoever would be the licensee would continue  
17 to operate the project as well. But the surrender is --  
18 would be an application that we would be acting on -- either  
19 granting or denying.

20 CHAIRMAN GENTRY: I guess a follow-up question  
21 you know just, you know, we do have this relationship with  
22 the federal government. This is a quasi-judicial process.  
23 I guess you know the value of whatever input and  
24 recommendations that we provide for consideration in the  
25 licensing -- how is that considered?

1           From our perspective there is this federal  
2   obligation, trust obligation -- the resources should have  
3   been here and they weren't provided you know, and I know  
4   there's folks that oppose the dam removal, they're  
5   participating in the process and providing their  
6   perspectives.

7           But I'm just wondering this legal standing that  
8   affected tribes have -- how is that considered in the  
9   process? I really want to see the value of everything that  
10   we are providing whether it is on the technical level, the  
11   scientific level on you know, just the direct communication  
12   about the importance of these resources to the tribe.

13           How is that considered in the process and weighed  
14   against opponents for one and so if we could have a better  
15   idea of the process? One of the significant concerns we  
16   have frankly is the Board that will be making the decision  
17   -- it's a politically appointed Board and we could do the  
18   best job of providing all the information and making the  
19   recommendations.

20           I guess I want to find out how that works in this  
21   quasi-judicial process and if they make a decision that's  
22   adverse to our interests, what is the remedy that we might  
23   have?

24           MS. MOLLOY: So the Commission is -- there are  
25   five Commissioners appointed by the President and confirmed

1 by the Senate. There can be no more than three of one  
2 party. Currently there are three Republicans, two  
3 Democrats.

4 Four of the current Commissioners were nominated  
5 by President Trump. The Commission is an independent  
6 Federal Regulatory Commission and as such it is governed by  
7 the statutes. It's also governed by -- well statutes such  
8 as the Federal Power Act, also NEPA which is the National  
9 Energy sorry -- National Environmental Policy Act and the  
10 other acts, ESA, National Historic Preservation Act -- all  
11 the acts that Congress has passed plus treaties that have  
12 been entered into with tribes, plus other laws and our own  
13 reg's.

14 So historically the Commission has been very good  
15 about working together -- the Commissioners in determining  
16 decisions and they usually come out unanimous and so they  
17 have all worked together. Every now and again there might  
18 be a split but historically they've been very good about  
19 working together.

20 They -- you've mentioned earlier you've  
21 intervened. The tribe since it's an intervener, if it does  
22 not like the decision is able to seek rehearing before the  
23 Commissioners again -- that would be the Commissioners would  
24 be looking at arguments that they had made a mistake in  
25 making a decision and if the tribe didn't like that answer,

1 they would then be able to take it to court.

2 Any party that doesn't like our decisions can  
3 seek rehearing which is appealing it for a look again and  
4 then if they -- any party who intervenes who does not like  
5 that decision can go to court. And then the court will  
6 decide whether we acted appropriately or not.

7 MR. WINCHELL: I'd like to add along with what  
8 Liz was saying -- this is Frank Winchell again at FERC -- is  
9 that the process would be -- and I'm talking about the  
10 surrender application.

11 Once we get through the decision on making the --  
12 whether the corporation would actually assume the  
13 responsibilities for the going to the next step which would  
14 be the surrender proceeding then as Liz and -- the two Liz's  
15 were saying, then we would go ahead and go forward with our  
16 full NEPA analysis.

17 And of course that's going to be done through  
18 Commission staff. And that staff is partially here today  
19 and there are other staff members like for example John  
20 Mudre is the staff person -- he's a fisheries biologist. He  
21 is the one who is going to be coordinating the surrender  
22 process.

23 But what's someone reassuring I think is that we  
24 take all the comments and opinions and all the information  
25 that's provided to us, and this is that opportunity to

1 letting the tribes give fully all the information that they  
2 have along with other folks as well -- all the stakeholders  
3 and all the other people who want to participate in this  
4 process is that we are going to take all that information  
5 and we are going to do an effective, objective, independent  
6 analysis to whether we think as staff that there should be a  
7 removal to take place through this surrender and then we  
8 bring all of that information to the Commissioners.

9           And the Commissioners themselves are the ones who  
10 are the elected officials who will make that decision about  
11 whether to go ahead and surrender the dams or not. The good  
12 news is that basically a staff decision brought before the  
13 Commissioners is almost 90% or more they will take with what  
14 staff recommends should be done.

15           And then of course that recommendation is made  
16 through our NEPA document. So again I think we're going to  
17 do an objective independent analysis that will make a  
18 determination whether we're going to remove the dams or not.

19           And I would reassure everybody in this room that  
20 we are going to make a good decision and it's going to be a  
21 reliable and fair decision.

22           MS. POLARDINO: Hi, this is Jennifer Polardino.  
23 I would also add that as we are looking at two separate  
24 proceedings we're trying -- even though we have both the  
25 amendment it is has not been decided whether or not to

1     approve the transfer amendment. We are also looking at the  
2     possible surrender proceeding and any comments that are made  
3     today will be on the record and 30 days after our meeting  
4     today they will be on our e-library systems.

5             So please make comments because we will be  
6     considered that when we are evaluating those proposals.

7             CHAIRMAN GENTRY: Just a couple more things and  
8     then we could start with Perry on the comments. So it's my  
9     understanding what you described -- that you will come forth  
10    with a recommendation based on all the information that you  
11    received.

12            MS. MOLLOY: Yes.

13            CHAIRMAN GENTRY: And you've kind of answered the  
14    question I had too in terms of the EIS process. We  
15    submitted a lot of comments, documentation, raised a number  
16    of issues -- environmental justice, a whole host of issues  
17    and documentation -- the fact that salmon are here and they  
18    are important to the tribes.

19            So you will take a look at that or do we need to  
20    resubmit that or it's basically is it a part of the process  
21    at this point?

22            MR. WINCHELL: It's part of the process. You're  
23    welcome to go ahead and if there's anything else you would  
24    like for us to know of that we don't presently know about it  
25    then please go ahead and submit.

1           But we already have the existing information that  
2   you have submitted in the past and that will certainly be  
3   considered and be part of our analysis.

4           CHAIRMAN GENTRY:   Okay.

5           MS. MOLLOY:   And you can if you choose to make  
6   reference to it and remind us.

7           CHAIRMAN GENTRY:   Yeah so we incorporate by  
8   reference in a comment letter or recommendation.   So the  
9   other thing that I wanted to share -- this is in regards to  
10   my understanding of the current status of this  
11   administration that was communicated directly to the Klamath  
12   Tribes -- this is for our members.

13           And I know it's gone out to the community.   I'm  
14   not sure what kind of press was around this but Alan  
15   Mikkelsen, Secretary Zinke's point person shared with this  
16   what he was allowed to share respective on the dam removal  
17   process as it is.

18           And what was shared through this current  
19   administration is they look at these dams as privately owned  
20   property.   If PacifiCorp determines that this is in their  
21   best interest, you know, that's something they could do.  
22   They are not going to intervene in any way -- they are going  
23   to go through the FERC process.

24           That's kind of paraphrased I guess from the  
25   discussions we have had and I know he -- Mr. Mikkelsen



1 shared that with Siskiyou County folks. He shared that with  
2 other folks in the basin that are opposed to dam removal.  
3 So it is my understanding that it sounded like there is a  
4 commitment to not get involved in the process in a political  
5 way -- whether that ends up where we are or not I don't  
6 know.

7 But I just wanted to share that's what we've  
8 heard directly. So I guess at this point did you have  
9 anything additional to share at this particular point? So I  
10 think it would be helpful. I would want to start with  
11 Perry, he's chomping at the bit to share about the  
12 importance of the dam removal.

13 MR. CHOCKTOOT: Thank you, Perry Chocktoot. I'm  
14 on Tribal Council and I'm a Director for the Culture and  
15 Heritage Department with the Klamath Tribes. I'd like to  
16 speak in support of dam removal today.

17 We need to re-establish volitional fish passage.  
18 When these dams were put on the Klamath River in the early  
19 1900's it robbed us -- robbed us from our God given right to  
20 have these fish -- not just salmon, steelhead, lampreys,  
21 eels, everything that migrated up and down that river it was  
22 ours -- given to us by the Creator.

23 And we were given shallow promises by the federal  
24 government to establish fish hatcheries down there. The  
25 concrete went up but the fish never occupied a pond. So

1     it's time. It's time for these fish to come home where they  
2     belong. It's time for us to be able to harvest these fish  
3     again.

4                 It's time for these promises to be kept. It's  
5     time for our people to have a resource that we had forever  
6     and it took the European a little bit of time to destroy it  
7     and take it from us. As the first Europeans came in our  
8     valleys in the 1820's and so in 1917 -- just a very short  
9     period of time they took from us a gift -- a gift from God  
10    and it needs to be given back.

11                If we have the ability to remove these dams we  
12    need to see it through. It needs to happen. This will be  
13    the largest dam removal project in U.S. history. This will  
14    be one of the biggest clean-ups of one of the major fish  
15    bearing streams in the west. It was third on the list for  
16    salmon.

17                Today there's not enough fish for the tribal  
18    members. Today the water is poison. Today it's allowed to  
19    be anaerobic and stagnant. It's like four huge restrooms --  
20    that's what it is, the water is terrible, it smells bad, its  
21    poison.

22                There's a toxic algae bloom that happens down  
23    there every year. Let's clean this up. Let's work toward  
24    re-establishing indigenous fish populations, thank you.

25                MS. MOLLOY: Thank you.

1           CHAIRMAN GENTRY: I would encourage other tribal  
2 members to come forth and share their views, yes? Let me  
3 put you on the mid so that we can get it clearly on the  
4 recorder and the record.

5           MR. KIMBOL: Hello I'm Derek Kimbol, Klamath  
6 Tribal member. I was looking at your website for Ferc.gov  
7 and the industries since I graduated in sustainability  
8 really from the University of Oregon for future and covered  
9 energy and sustainable energy, conventional energies, well  
10 electric, oil, hydropower and natural gas all have pretty  
11 big environmental detriments -- all of them.

12           So they look like they're pretty unsustainable  
13 which is on your website for what industries you do. So  
14 also on your website you have net zero energy for federal  
15 buildings which is a really good concept, you know.

16           So that's a solution I'd like you to take in  
17 consideration. Also, like small micro-hydro is happening in  
18 central Oregon which is giving energy to the farmers without  
19 dams -- so there's no need for dams with the run of the  
20 river systems of turbines and small hydro.

21           And also the policies -- so my thing is looking  
22 at sustainable policy and moving forward into what is  
23 sustainable for the future and you have it on your website  
24 so I say that's awesome and if you could just take that  
25 consideration into it because it is a sustainable way and we

1 know from all the data that the dams are outdated.

2 Like Perry said the blooms -- they're only just  
3 intensified and they're outdated, the concrete. So it is my  
4 understanding they have way more -- they cost more to keep  
5 in but also for the future since we have these solutions we  
6 have to move for them.

7 I mean that's where the politicians should be --  
8 I thought they were going to be education people, the  
9 politicians, but actually they're not always doing the smart  
10 -- you know -- the right thing. So please take policy and  
11 sustainability of what you have on your website into  
12 consideration and move forward, thank you.

13 MS. MOLLOY: Thank you.

14 CHAIRMAN GENTRY: I appreciate that. I'm  
15 willing to take the mic around if somebody wants to raise  
16 their hand, okay. Thanks Kathy, for the record it might be  
17 good to state your name.

18 MS. HILL: Kathy Hill, thank you, easier to  
19 remember, H-i-l-l. My comments -- I don't want to turn my  
20 back on anybody but my comments are really for our tribal  
21 members. And I was fortunate to be one of the tribal  
22 representatives that went to Scottish Power in 2004 to  
23 protest the dams.

24 And Joseph and I were teaching at Humboldt State  
25 when I was invited to participate in that trip. And it was

1 a wonderful opportunity and blessing to be there with the  
2 downriver tribes. There were representatives of all of the  
3 tribes because all of the Klamath River tribes want those  
4 dams out because of the harm they are causing.

5 But what I wanted to share with people was there  
6 was a beautiful Karuk woman and I know I'm not saying that  
7 properly -- but a beautiful Karuk woman on that trip and we  
8 were having dinner one night and she started telling me  
9 about seeing the salmon hit the Iron Gate Dam, still trying  
10 to make their way up here.

11 And that's when I knew that you know, as Perry  
12 said, the Creator blessed us with this homeland and with  
13 these resources but along with that blessing comes a  
14 responsibility and once I heard about those salmon hitting  
15 the dams and still trying to get up here I know that we have  
16 a responsibility to bring them home.

17 And you know, I haven't gone down there and seen  
18 that but I have heard it since then from other downriver  
19 people and Perry you may even have seen it. So I think that  
20 for us it really -- it's our responsibility as keepers of  
21 this homeland -- the protectors of this homeland and the  
22 laws and termination, all of our history has kept us from  
23 being able to exercise that responsibility.

24 So I'm glad you're here that we have a  
25 responsibility to tell you that it's not just about salmon

1 so we can exploit a resource. It really is as much about  
2 caretaking and protecting as it is any personal benefit to  
3 us, thank you.

4 MS. MOLLOY: Thank you.

5 CHAIRMAN GENTRY: I appreciate that, thank you.

6 MS. LAWVER: Denise Lawver. My -- I have -- my  
7 great aunts and uncles were born in the late 1860's and some  
8 at the turn of the century but when my father married my  
9 mother, a Wasco Indian from the Columbia River, she always  
10 brought salmon and they would always say we used to have  
11 salmon.

12 And I did not believe them. And then so when  
13 Copco Iron Gate was given their license through the federal  
14 procedure, we really didn't have a good defense. We had  
15 people that were agents that did not represent our interest.  
16 So the beauty of this meeting right here is that now we can  
17 speak for ourselves but I want you to know that my family  
18 personally did eat salmon and I'm very fortunate to have  
19 known them being born as long ago as I was, I knew them.

20 But when you pulled out of the system the salmon  
21 and you put up those, of course, obsolete dams now, you took  
22 a big chunk out of this whole chain -- the eco-system that  
23 now we are seeing the damages of that species being gone.

24 And so if I think a lot of federal policies that  
25 were made at the turn of the 1900's now you guys have a

1 responsibility too and the ability to look at it objectively  
2 and look at these things and remember that our people didn't  
3 have the voice that we do now but we're telling you.

4           And when I grew up during the salmon wars of the  
5 Columbia River, there were stickers that said, "Save a  
6 salmon, can an Indian." And what happened was that was the  
7 end of the world. The commercial fisherman -- their life  
8 was over.

9           Well now go up to Hood River and the dells -- you  
10 have all of this recreation because there has to be water  
11 for those 50% of the fish. So always look objectively about  
12 how in 217 we can maybe turn back the clock a little bit and  
13 make this area a little bit closer to what it was before the  
14 federal government came in and made some of these -- I don't  
15 know whose ancestors made those decisions but not mine to  
16 put in the dams.

17           But you know, we've got plenty of hydro from BPA  
18 so that shouldn't even be an interest but I wanted you to  
19 know that is our history and it is not about money, it's  
20 about a lifestyle, thank you.

21           MS. MOLLOY: Thank you.

22           MR. KIMBOL: Another thing I wanted to say about  
23 it is the salmon did so much for this forest that is beyond  
24 -- beyond money. Over 200 plants and animals relied on the  
25 nutrients that came into our forests so these old growth

1 forests have salmon deep way up inside of them.

2 So the ocean nutrients they brought up here made  
3 this forest grow five times faster -- between three and  
4 five. You can say that so -- that's -- and for all the  
5 eagles, I feel sad for them all the time here in the basin  
6 because this placed got rashed -- this is their home, these  
7 Spragues.

8 But the salmon I can't even explain how much they  
9 brought here to this forest. They made this forest grow for  
10 thousands of years diverse so it's damaged -- this whole  
11 thing is damaged beyond by the -- since the time of the  
12 salmon have gone it got really bad.

13 So the forest is destroyed and that's what's  
14 wrong too, it's because the fish are gone and all for the  
15 rest of the people too what happened to all of us. I can  
16 tell you, you know we have went through a lot of deaths our  
17 people, you know, and lost and hurt and poverty and with no  
18 culture and no health -- diabetes, heart disease, okay more  
19 things than.

20 So this was from the loss of the fish for our  
21 brains. A lot of people went into the mental hospitals of  
22 our own -- our people, our families, you know, by not having  
23 the nutrients.

24 So I think -- I already know what this food does  
25 for the heart and for the brain and for all everything out



1 here. The mountains and all the birds and everything that  
2 we believe in is -- salmon that's what we caught the village  
3 -- even the littlest kids so it was given to our people that  
4 way and then it was taken just like that.

5 So we're always -- we're going to fight real hard  
6 for the right for this eco-system and for the rights of our  
7 people but we want to work together to make sure that  
8 everything benefits everyone and this eco-system at the same  
9 time because that's available you know, so thank you.

10 CHAIRMAN GENTRY: Thanks Derek.

11 MR. KIMBOL: Nick Kimbol, Senior, K-i-m-b-o-l. I  
12 came to this meeting, you know, out of concern. You know, I  
13 come here wishing you guys were coming to us to tell us good  
14 news that you had a date in January 2020 for dam removal,  
15 I'm serious.

16 This process has been taking way too long for  
17 some of us you know. We lost a lot of tribal members during  
18 this process you know and none of us are guaranteed  
19 tomorrow, you know.

20 I look at this as historical. Everything that  
21 was put in front of me from negotiating our water rights I  
22 did not vote for. The only thing they agreed upon through  
23 the whole process was dam removal, okay -- that's the only  
24 thing that made sense to me.

25 You can look at this drum out here in this lobby

1 out here. I painted it okay, that was a map from an  
2 ethnographer who made that map before the dams were put on  
3 the Klamath River. He called it the headwaters of the  
4 Klamath River, okay -- they go to the head of the  
5 Williamson, Sprague and the Sycan Rivers on our reservation  
6 okay, on our former lands, okay.

7 We don't even have access to our water rights  
8 anymore to even the way our people were called the people of  
9 the lake. We have limited fishing on this lake right here,  
10 Klamath Lake. We should have 100% fishing right there in  
11 every portion of that lake clear down the Klamath River,  
12 okay.

13 Our people fished the Klamath River. The Modoc  
14 people are a family of the Klamath Indians that split. The  
15 Modoc people decided to take their family to live on Tule  
16 Lake okay. The Tule Lake now is farmland, okay. And the  
17 Modoc people are with their people on this reservation, on  
18 this trust land now were mixed together -- back together out  
19 of a loss of our inherent rights, okay.

20 They knew that that land down in the Tule Lake  
21 was farmland okay -- that it was lush, prime, made into  
22 farmland okay, that's why they wanted it okay. And so  
23 that's that portion of the Tulelake okay. They lost all of  
24 their rights too, okay.

25 So you know what and I come here you know and how

1 I look at this -- you guys, to me you blew it when you  
2 mentioned Donald Trump's name you know. I don't want to get  
3 political, you know, but you know what I have to look at it  
4 as political you know.

5 You're the government, we're the tribe and we  
6 have been fighting for our rights for how long? How long  
7 did it take us to get restoration after we were exterminated  
8 -- wrongfully terminated as a tribe, okay?

9 I look at that as this process right here is just  
10 as much historical as our restoration, okay and some of us  
11 live with that trauma -- we were put out of the reservation,  
12 okay. We've heard it from other tribes and I'm one of  
13 those.

14 I'm one of those descendants. They don't call us  
15 descendants anymore we're just a tribal member but I was a  
16 descendant at one time in my life and I'm a 57 year old man  
17 now so you know what I'm looking at this process, I want to  
18 see -- I want to hear it from you guys, I want to hear it  
19 from -- I always thought it was a done deal.

20 People are paying for it out of California and  
21 Oregon to PacifiCorp you know what they've been paying for  
22 it on their electric bills, okay. That sounds like to me  
23 like a done deal okay -- doesn't it sound like a done deal  
24 to you?

25 And then now we have this process you know, the

1 FERC process okay. You guys are going to determine if it is  
2 good, if it is good to take out those dams. I always  
3 thought -- I always thought that was done. I always thought  
4 that was established but apparently not.

5 To me when you mentioned Donald Trump and  
6 Republicans that control Congress okay, you know what -- you  
7 guys just look like the middle people, okay. You know you  
8 look like the middle people coming here just like the  
9 Interior.

10 You know how many people here go through the  
11 Interior in a 20 year span? People get let go, you know,  
12 you guys are the middle people okay. Donald Trump could  
13 take that -- we could sign and everybody can celebrate, he  
14 can turn up he can take that and put it on his desk and void  
15 it.

16 So you know what -- when I came here you know I  
17 was optimistic you know -- I want to see it in the paper  
18 where it says from PacifiCorp you know, this is a done deal  
19 and we have a set time. Then I want to see it on paper so I  
20 can look at it you know.

21 And then let's celebrate. But until then you  
22 know what -- if it is up to you guys, you guys need to do  
23 the right thing that's how I see it because you know want, a  
24 lot depends on it. A lot of people have come and gone  
25 waiting for that time. Do you know what -- everybody knew

1 it was wrong in the beginning so the government needs to  
2 step up and do the right thing, thank you.

3 MS. MOLLOY: Thank you.

4 CHAIRMAN GENTRY: Thanks Nick. We will ask Mr.  
5 Root to do an update on that actual -- the dam removal  
6 process. It's still in play, the money is being collected  
7 -- California bond money is still in play so there is this  
8 FERC process that allows that to move forward and so we  
9 could at least answer your questions the best we can or at  
10 least Jim can and we have that opportunity.

11 But I still want to let our tribal members to  
12 provide comments at this point and we'll get to that.

13 MR. JACKSON: Charles Jackson, Sr., Klamath  
14 Tribal member. Nick was right. He's my cousin. You're  
15 smiling.

16 MS. MOLLOY: Well you've admitted he's your  
17 cousin, that's good.

18 MR. JACKSON: You guys took money from Oregon  
19 taxpayers, you guys took money from California taxpayers to  
20 pay for this dam removal. The dams were created by  
21 individual wealthy people and they have been the ones  
22 benefitting but I don't see any stakeholders living in  
23 Klamath Falls or down in Yreka where they have the dams.

24 They're probably sitting in New York City living  
25 the high life while we're the ones paying for it. So it's

1 not fair that you guys are still making money and you're  
2 always going to make money until these dams are removed and  
3 they're just protecting themselves.

4 FERC is protecting these dam people because it  
5 was wrong in the first place for those dams to be there  
6 because the tribes didn't have a say in it -- just like our  
7 water liaison said. We weren't there to oppose it -- we  
8 didn't have the right. So now you guys are here and Nick  
9 said it was a done deal -- these dams are supposed to be  
10 gone.

11 But the dam people have a right also and they  
12 have more of a right than any of the tribal people which is  
13 wrong. So these dams have to be removed. It's good that  
14 you put them in because now we get to point the finger at  
15 who messed it up.

16 The problem is Kino Dam that's not being removed  
17 and the tribe doesn't want to push that issue because we  
18 have people that are working lands at the off project and it  
19 helps our people so we don't get everything we want but we  
20 are going to help these off project people continue to help  
21 the economy and live in a good way.

22 Our people they live up Whiskey Creek, they know  
23 they can't have salmon back up there because the waters are  
24 so messed up. The tribe -- we removed the Sprague River Dam  
25 because we knew it was wrong and that was simple but that's

1     because it's our land and it was the right thing.

2                   And these fish ladders that were never  
3     implemented -- you could just stand there and look at those  
4     dams and you have money in one hand and said hey, we could  
5     have used this money for fish ladders but instead you got  
6     those greedy Americans back east, maybe southern California,  
7     wherever they live -- they're collecting this money because  
8     that's what they are entitled to.

9                   They're not entitled to do the right thing. So  
10    we're pointing the finger and we're saying we want these  
11    dams removed. All the benefits were not for the tribes and  
12    we'll never benefit until the dams are removed. That's all  
13    I have to say.

14                  MS. MOLLOY: Thank you.

15                  MS. HESS: Melissa Hess. I have a question -- we  
16    had as power -- consumers of power we're being charged for  
17    the -- or we're helping to pay for the dam removal. Well I  
18    know at one time landowners had the 50 year agreements with  
19    Pacific Power so how does that go forward on power rates and  
20    power negotiations?

21                  Is it still 50 year dates beyond this if the dams  
22    would happen to be taken out or would it be a whole new ball  
23    game that we would be going forth with Pacific Power?

24                  CHAIRMAN GENTRY: I think she was asking about  
25    the licensing being a 50 year -- or relicensing being a 50

1 year process and if the dams are relicensed is it going to  
2 be another 50 year process, is that what you're asking?

3 Yes, need to be relicensed another 50 years?

4 MS. MOLLOY: So if the projects -- if the project  
5 or projects were to undergo relicensing the statute says  
6 that on a relicense we can issue no less than 30 and no more  
7 than 50 years for a term. And that's the Federal Power Act  
8 Section 15.

9 MR. WINCHELL: I'd like to also mention that now  
10 the rates and the things of that sort -- again once we go  
11 through this amendment proposed transition, we're looking  
12 strictly mostly at the environmental aspects of dam removal,  
13 okay.

14 And again we know that there are other  
15 developments of the existing Klamath River projects that  
16 basically it's the east/west power houses which are  
17 associated with Linc Dam and Keno is Bureau of Reclamation.

18 So the focus -- what we're talking about today  
19 going into the surrender involves the four -- removal of the  
20 four developments which would be J.C. Boyle, the two Copco's  
21 -- Copco 1 and Copco 2 dams and Iron Gate Dam.

22 Other aspects of the hydroelectric project that  
23 exists to date would remain but we're focusing on the  
24 environmental consequences of dam removal from the Lower  
25 Klamath Basin that includes J.C. Boyle on downriver through



1 Iron Gate.

2 And again, that is something that is doable as  
3 far as the analysis. We know what the aspects of dam  
4 removal are and we can address that. Now these other things  
5 are going to be beyond that surrender review.

6 MS. MOLLOY: Sort of to summarize that -- our  
7 current proceedings that we're talking about at the lower  
8 four developments and we are limited by our jurisdiction.  
9 So there are some features further up that are Bureau of  
10 Reclamation which is outside of our --

11 CHAIRMAN GENTRY: And then the power issue with  
12 the project and other folks is a separate process their  
13 efforts to try to, you know, address that, I know with  
14 current legislation and other things but that's nothing that  
15 you are a part of. That's a completely separate process.

16 MS. MOLLOY: Separate, yes.

17 CHAIRMAN GENTRY: And different process?

18 MS. MOLLOY: Yes.

19 MR. CHOCKTOOT: Perry Chocktoot, Klamath Council.  
20 Just for clarification that's how we got into this was the  
21 license came up and they needed to be recertified for  
22 another 50 years of hydroelectric use.

23 Well there were benchmarks that need to be made  
24 -- the Wild Scenic River Act, Clean Water Act, the  
25 Endangered Species Act, and none of them could be met with

1 the water quality as it was.

2 So a decision was put before PacifiCorp -- either  
3 you rebuild these dams which I presume meant putting a head  
4 gate down below to release cooler water or you remove them.  
5 So you know they weighed the pluses and minuses and it was  
6 going to be literally billions of dollars to do these four  
7 dams so they made a decision to remove them.

8 Just another FYI -- none of those dams helped  
9 Oregon. None of this energy stuff helps Oregon. Bonneville  
10 doesn't help Oregon. That goes on a grid that goes to  
11 California. Klamath Cogen Plant goes to California. It  
12 doesn't help us any here.

13 Oregon has always been made to shoulder the brunt  
14 of the environmental impacts with no benefits to us ever.  
15 There are sometimes we need to stand up and speak for Oregon  
16 because it doesn't seem like Oregon gets to be heard by  
17 anybody. And I hope that FERC listens to us. I hope you  
18 honestly take this into consideration unlike the LNG  
19 Pipeline, because you denied it.

20 You denied rehearing and we're hearing it again  
21 -- something is wrong with that. So hopefully we're not  
22 going through this same process again.

23 MS. MOLLOY: Thank you.

24 CHAIRMAN GENTRY: There are a couple of things  
25 that I wanted to add just a little bit. Derek talked about

1 sustainability and I think that's what we're talking about.  
2 You know, it's pretty plain in our eyes the impacts that  
3 we've suffered to our resources and that this watershed has  
4 suffered.

5           It's benefitted others and had negative impact on  
6 the Klamath and other folks and other folks concerned about  
7 the fish. And so the environmental justice issue is  
8 important but you know, Derek also mentioned the health  
9 issues. We raised that issue, you know, the sudden  
10 departure in a relatively short period of time from our  
11 traditional foods to the foods that we have now.

12           I mean even in the treaties getting flour and  
13 those kinds of things you know. We have diabetes issues, we  
14 have health issues that we never, ever had in the past prior  
15 to this whole treaty reservation you know, kind of system  
16 that was set up. So the importance of these fish -- are  
17 important to us.

18           And the federal government actually -- I mean I'm  
19 concerned -- it doesn't even recognize this whole trust  
20 obligation. And it was evident when even in this continued  
21 resolution they were going to remove the program that helps  
22 us to address and prevent diabetes amongst our people.

23           They're going to take that funding away. It's  
24 easy to just get rid of the stuff that helps the Indians  
25 after the problem wasn't created by us. So that's a justice

1 issue too but I just wanted to point out the importance of  
2 the salmon in restoring our treaty resources and our  
3 abilities to gather and use those foods.

4 The other thing you know in terms of the dams.  
5 I'm hoping that there will be -- I think our technical folks  
6 may come forward with the information but you know the  
7 current status of the dams and water management is a pretty  
8 dire situation.

9 We have a current biological opinion that  
10 basically is focused on stopping the fish from becoming  
11 extinct. It's not focused on restoring our fisheries -- our  
12 current twam and kuptu our lost river and short no suckers  
13 are basically there to stop it from going into jeopardy.

14 We do know there's a relationship and it became  
15 really evident in the last court proceedings where the  
16 downriver folks challenged the current biological opinion  
17 and ended up with court ordered flows to address disease  
18 problems caused by the dams are one of the most significant  
19 culprits.

20 We do have water quality issues clear up at the  
21 upper part of the basin but the part of the mix is these  
22 dams. And in a very severely dry year like this it may  
23 actually pit -- concerns for salmon downstream for our  
24 concerns for making sure that we have appropriate lake  
25 levels to manage the risks to our currently endangered

1 species.

2           So what I'm saying is there's a relationship  
3 there in terms of what happens here in the basin and the  
4 availability of water for our fish and even AG for that  
5 matter. With these dams removed -- it seems the scientists  
6 are telling us that would help to address some of the water  
7 quality issues and maybe address some of the concerns about  
8 the status of the salmon down below and maybe not overtax  
9 what we need to have for the lake.

10           So I'm hoping our scientists and other folks will  
11 contribute that science to this and address that but I can  
12 see that right now in the current situation that we're in  
13 right now with what we've heard from our biologist is our  
14 twam and our kupto -- our kupto, the short-nose in  
15 particular could blink out.

16           Even this year they could blink out -- the  
17 remaining fish that we have could be gone. And these are  
18 fish that I used to take to my elders and in fact the elder  
19 that gave me my Klamath name I used to take those fish all  
20 the time and she was a Christian lady.

21           She was the one that actually said we need to  
22 reinitiate our return of twam ceremony. She really  
23 supported that because I guess the way that she paraphrased  
24 it was it's great to have scientists and all these technical  
25 people doing what you can to work on restoring the fish but

1     you have to do first things first. You have to pray for  
2     their return. You have to honor that ceremony the Creator  
3     directed us to do.

4             And so that's why we did that. So I'm one and  
5     unfortunately my grandson isn't -- we have a generation plus  
6     of people that haven't had that opportunity to catch and eat  
7     those fish. And I really attribute much of who I am today  
8     and my feeling of place you know, in all of God's creation  
9     being a tribal member, catching those fish and taking that  
10    to our people.

11            That shaped me to be who I am today. So to me a  
12    big part of who we are is lost if we don't have the salmon.  
13    If we don't have the suckers -- the people, I've said it  
14    this way numerous times. I really believe it's true. How  
15    can we be the people the Creator intended us to be if we  
16    don't have our fish.

17            So I wanted to point that out. I also -- mainly  
18    I wanted to point out the lady that gave me my Klamath  
19    Indian name was here when the salmon came here. I talked to  
20    her about it. She remembers the salmon and the steelheads.  
21    She remembers our people catching those fish before she  
22    passed.

23            She passed quite a while back but I just wanted  
24    to mention that. And I've also read the Lane and Lane  
25    report that has a personal testimony of our tribal members

1 and families that were alive that caught those salmon at  
2 Sprague Creek and Beatty -- what we call Bacon Powder Hill  
3 just being right out of the Chiloquin area here.

4 I read the documents from non-tribal members who  
5 used to trade beef for salmon that our tribal members caught  
6 on the Sprague River Valley. So I just wanted to point that  
7 out because folks want to be in denial. Those fish are  
8 important to us and they're still important to us and it's a  
9 fact. You know there's archeological evidence.

10 I've gotten in disputes with people that are  
11 reported biologists that say the fish were never here. I  
12 don't understand that. Chi-offs -- that's our name for the  
13 salmon. Why would we have that name, you know. Maybe  
14 people could say it because we trade with people downriver  
15 that's why we have that.

16 But our legends and stories even make reference  
17 to salmon in Klamath Lake. There are legends about that --  
18 they were here and we can't deny that. So I just wanted to  
19 state that for the record along with why it's important for  
20 us today.

21 You know my time in history in my life -- I've  
22 lived away from here, came back in '69. My dad was a tribal  
23 fisherman. He grew up catching suckers on the river and he  
24 became a salmon fisherman also on the Rogue River. We  
25 couldn't catch them here so he learned how to catch them

1 over there.

2 I also -- so I had a taste for salmon because we  
3 ate it, because we caught it in one of the limited places.  
4 And even that -- the headwaters were traditional Klamath  
5 fishing area in the Rogue but I can say I worked with tribal  
6 entities downstream and helped secure salmon -- traded deer  
7 and elk and you know they've given us salmon because of our  
8 relationship.

9 And I've taken around to elders in our community.  
10 You just don't know how fast it goes. Everybody wants  
11 salmon. I think it's in our DNA -- it's in our genetics,  
12 that taste and that desire to have the salmon and you know,  
13 I have in this broken situation without the dams some of our  
14 friends downriver would bring up truckloads of salmon that  
15 are iced down and one of those reservation times they'd give  
16 that salmon out to people.

17 Our people would take them out and hunt deer and  
18 elk. We had that relationship but that's no substitute for  
19 the loss of those fish that should be right here right now  
20 for our people. So I wanted to share those few things.

21 MS. MOLLOY: Thank you.

22 MR. KIMBOL: I just had one more thing on what he  
23 was saying about the salmon being here and a lot of people  
24 saying they weren't, you know. So Maude Baldwin Klamath  
25 Falls, there's photographs by Maude Baldwin of Linc River



1 residents holding salmon. So that should do it right there  
2 -- Maude Baldwin in the Klamath Falls.

3 So one of the oldest stories that was told it's  
4 in Frederick Colville -- it's a government book by Frederick  
5 Colville. The oldest stories of the Modoc Indians called  
6 Myths of the Modocs, which it was told by the oldest living  
7 Modoc woman in 1880 and she was 88 years old so she told the  
8 stories before there was any people here -- any Europeans.

9 So she told the story of Laconquash. She was  
10 beautiful -- she was a blue being that lived on the earth  
11 lodge down at Tulelake and a lot of people wanted to marry  
12 her so they made -- they sat in a sweat lodge, they made  
13 basket hats, they tried to go see and marry this beautiful  
14 woman that she had powers. She changed every time that they  
15 came there and they didn't get a glimpse of her then.

16 But anyways, her brothers are Laconquash brothers  
17 the five brothers who were salmon fisherman on the Lost  
18 River. So every day they went and caught salmon on the Lost  
19 River and this story by the oldest living woman in 1880 and  
20 they dressed those salmon every day and brought them back.

21 So these are stories told long ago and not  
22 everyone got to hear them in our tribe but they are true  
23 stories and oral history so you know, we do identify  
24 spiritually with this land and with all the teachings that  
25 were told to us.

1           A lot of those were lost but I'd like all of  
2 those to come back, you know.

3           MS. MOLLOY: Thank you.

4           MS. HESS: Melissa Hess. My husband's  
5 grandfather was Bill Scheme. He was 96 in 1969. He told  
6 and showed my husband Teeter Hess, where the salmon had  
7 come. It wasn't hearsay -- it was a grandpa telling his  
8 grandson where he could go to fish if the salmon were ever  
9 coming back.

10           And he hoped in his lifetime he knew it probably  
11 wasn't going to, he was 96, but he hoped my husband would be  
12 able to go to those places and catch the salmon again. Our  
13 children now have never seen the salmon. I, being 6 years  
14 younger than my husband, never had the chance to hear those  
15 stories.

16           But I believe my husband. I believe his  
17 grandfather and my belief is I would really like to possibly  
18 see those salmon back before I die. I know that may not be  
19 something that will happen but I hope my children will get  
20 to see it.

21           And those salmon down there hitting against the  
22 dams -- that is no lie, they have no political ways to say  
23 oh, we're going to try to go up there just to make them  
24 think this. They know where home is. Let them come home.

25           MS. MOLLOY: Thank you.

1           MR. KIMBOL: Nick Kimbol again tribal member. I  
2 know you guys aren't local but here's an issue of today's  
3 paper as to KRRC liaison breaks down dam removal, okay.  
4 Imagine, did you guys -- you guys met each other right?  
5 Okay, he's sitting in the audience right in front of me.  
6 He's not here right this minute because he walked out.

7           But me, you know, I don't want this determined by  
8 the breakdown of water negotiations okay. To me that's was  
9 inevitable but to me there's supposed to be still ongoing --  
10 I don't know, so I don't know, okay.

11           So we'll just leave that part at that but I don't  
12 want that to determine your guys decision what's going on  
13 with water rights okay -- that's another big issue, you know  
14 what -- a big issue, okay.

15           Now this man is here -- see I'm getting mixed  
16 messages okay. I've always been getting mixed messages you  
17 know. You read in the paper about it and it says that is  
18 both during and after dam removal okay, alright that sounds  
19 good to me, that's what I want to hear okay?

20           And it was just quoted by the gentleman that I am  
21 referring to that just walked back into the room and yeah,  
22 but then again he said you know, he says I do believe that  
23 dam removal is going to take place, okay. See that's kind  
24 of like a mixed message you know it's kind of like okay --  
25 before you quoted yeah, okay, they're coming down and now

1 he's talking about okay, we're still uncertain, okay.

2 But anyway being that said if I'm going to ask  
3 Don and the tribal members here in this room Mr. -- I don't  
4 know how to pronounce your name Mr. Murr -- oh Jim Root,  
5 okay -- okay. Well I thought this man was supposed to be  
6 here today too, yeah he was supposed to be here too, okay.

7 CHAIRMAN GENTRY: If folks are comfortable maybe  
8 we can launch into -- we can come back if folks have more  
9 additional comments then we can have Jim talk about the  
10 process if you're cool with that.

11 MR. KIMBOL: Yeah, that's fine with me.

12 CHAIRMAN GENTRY: Jim, come up and introduce  
13 yourself -- and we'll you're already introduced but maybe  
14 you can give us a summary of the status and answer questions  
15 that folks might have if you are comfortable with that.

16 MR. ROOT: Thank you Chairman Gentry. I'll  
17 address my comments to the tribal members. Our corporation,  
18 Klamath River Renewal Corporation is the designated dam  
19 removal entity.

20 We're a private corporation 501C3 non-profit  
21 corporation and we're coming up on our second year of  
22 existence. We have a 14 member Board -- very diverse Board  
23 made up of tribal members, conservationists, business  
24 people, scientists -- and a hard-working Board.

25 We have been meeting monthly and everybody

1 attends. It's really remarkable the dedication that the  
2 Board has. We have been working on the requirements for the  
3 transfer of the license and we need to show financial  
4 capacity to take on dam removal.

5 We've been talking today about where the  
6 financing comes from. One other step that we haven't talked  
7 about is the monies reside with the entities who raise them  
8 -- that being the Public Utility Commissions in Oregon and  
9 California and the Natural Resource Agency.

10 We now have financing agreements with all of  
11 those entities so our financing is secure. We need to show  
12 legal capability and we've retained legal counsels who  
13 represent the different areas that we are working in -- one  
14 of the key relationships is with FERC and we've retained the  
15 Perkins Cooley law firm who has good FERC experience.

16 We need -- excuse me. We need construction  
17 counsel to be able to contract with the designers and the  
18 general contractors who will be executing the project.  
19 We've hired Hawkins Della Field Wood, a well-respected known  
20 construction counsel.

21 We also have general counsel on board and that's  
22 the water and power group out of Berkeley, California and  
23 many of you may have worked with Richard Ruse Collins. He's  
24 been involved in Klamath water and settlement issues almost  
25 from the beginning. He brings a lot of knowledge to us as

1 general counsel.

2           It seems like there is one more capability we  
3 need to demonstrate -- oh technical capability -- there we  
4 go. Threes are hard for me. I can come up with two, the  
5 third one always challenges me.

6           We've retain an engineering firm, A.E. Kham to  
7 provide the technical consultations for us. A.E. Kham back  
8 in the day was one of the largest dam designers and have  
9 tweaked their business model now that we're not building  
10 many dams and are one of the larger designers of dam  
11 decommissioning.

12           A.E. Kham has also affiliated themselves with CDM  
13 Smith. You might recall CDM designed the Chiloquin Dam  
14 removal and they've also affiliated themselves with River  
15 Design Group who will be the restoration entity and River  
16 Design Group has been doing the restorations on the Rogue  
17 Dam removals.

18           So I think we have the three areas for the  
19 transfer agreement well in motion and later I can answer any  
20 questions you might have about that. On surrender, the key  
21 item that we've been -- well there have been a number of key  
22 items, but the first that comes to mind is designing the dam  
23 removal.

24           We're starting with a plan that the Bureau of  
25 Reclamation produced called the detailed plan and the

1 assignment goes to A.E. Kham to modernize and bring that  
2 plan up to date -- one that we're calling the definite plan  
3 -- the definite plan is almost at completion -- it has not  
4 been submitted to FERC yet, it's not been required for FERC  
5 submittal.

6 But we're also working through 401 water quality  
7 certifications and in California we work with the California  
8 Water Control Board and the definite plan is to a point that  
9 we have submitted a draft of it to the Water Control Board.

10 So it's very close to having the -- our part of  
11 the design piece completed. We also have environmental  
12 responsibilities and the numbers of permits that are  
13 required for environmental permitting, both in Oregon and  
14 California.

15 The California Water Quality permit goes by an  
16 acronym CEQA -- California Environmental Quality Act and  
17 they administer the 401 certification. We've been working  
18 with them right from the beginning and their process is  
19 probably the longest process for us to work through and  
20 we're well through it -- expect in the next few months to  
21 see the draft of the CEQA permit out which will then start  
22 the public process that you all can participate in.

23 In Oregon the 401 certification is administered  
24 by the Oregon Department of Environmental Quality and they  
25 report to us that they expect to release their draft plan in

1 April of this year and once it's made public in a draft form  
2 then it starts the public process which again you all can  
3 participate in.

4 We're also working on a 404 permit which is  
5 administered by the U.S. Army Corp of Engineers and that's a  
6 removal and fill permit. It's what's needed to physically  
7 transport and deposit the materials that the dams are  
8 constructed of.

9 We're on schedule for that permit and again there  
10 will be a public release once it's in draft form and open  
11 for review. Those are kind of the major milestones that we  
12 have. We -- well I think I can just stop at that point. I  
13 don't want to drone on for too long but would sure be happy  
14 to try to answer a question, yes ma'am?

15 MS. HESS: Melissa Hess. Filling that process is  
16 there -- are you addressing just the environmental and or  
17 the environmental and the liabilities afterwards because we  
18 have to make sure that things are done right if the dams do  
19 go out that the salmon will have the ability to come back.

20 MR. ROOT: Yes, that is correct. We have to show  
21 that we have a control of liability. First by designing and  
22 implementing a project that will accomplish the goals but  
23 then there will be substantial insurance and bonding  
24 requirements -- we're anticipating this in the event that  
25 something happens that -- for some reason we were unable to



1 control.

2 MS. HESS: Okay so who is actually funding that  
3 and how long would that process go on? I mean if we take  
4 these dams out to let the fish come home I want to make sure  
5 they get home and I don't want it just ending -- well we did  
6 our best.

7 Because who is actually paying for that? Will it  
8 be the people of Oregon and California? Will it be private  
9 money? How is that actually going to happen and who will  
10 have the input on how that is done?

11 MR. ROOT: Our process will come to an end, where  
12 we're not an entity that will stay in business forever. We  
13 will work through the restoration of the reach of the river  
14 that the dams occupy and some distance downriver.

15 We anticipate after dam removal that we will be  
16 involved for 3 to 5 years in the active restoration process.  
17 It could be as long as 7 years.

18 CHAIRMAN GENTRY: So we know that there's going  
19 to be a process afterwards to re-establish the salmon.  
20 There needs to be a salmon recovery plan and it needs to  
21 engage all the federal agencies, the state agencies  
22 appropriate and definitely to tribes.

23 The tribes -- we anticipate and they are sort of  
24 going to push to have a significant role in how it's done  
25 but we'll be looking to the federal agencies and the

1 Congress to provide the funds that are necessary to restore  
2 the salmon back and to meet the trust obligations.

3 So it's a separate process. Their responsibility  
4 will end at a point then we are going to continue to move  
5 forward to put something in place similar to what was  
6 envisioned with the KBRA, you know, how we coordinate with  
7 the other parties and the level of funding identified -- may  
8 even need more funding now, I don't know.

9 MR. ROOT: Good thanks for filling in that piece,  
10 Chairman Gentry. Ours is a limited role but there is a lot  
11 of activity in place to ensure as fully a recovery of the  
12 anadromous species as the river and river conditions allow.

13 MS. HESS: Thank you.

14 CHAIRMAN GENTRY: And I had a question about the  
15 timeframe that was envisioned for the dam process --  
16 actually removal would be in 2020 earlier -- are we on track  
17 for that or any foreseen obstacles there?

18 MR. ROOT: That timeline is a tight timeline. We  
19 have to hit every mark to accomplish that and the bogey in  
20 this is to protect the fish to the best degree. We need to  
21 remove all four dams at the same time such that yes, we are  
22 going to disturb an anadromous run of fish -- there will be  
23 fish killed because of dam removal.

24 But if we would remove these sequentially we  
25 would disrupt four cohorts which is just unacceptable. We

1 also need to accomplish a dam removal in one year which is a  
2 monumental task.

3 And once we start we can't stop so we've got to  
4 make sure we have it right when we commence. So if we hit  
5 every benchmark we could start the process of lowering the  
6 pools, the reservoirs in late 2019, finish the draw down oh  
7 -- in March of 2020 and then complete the dam removal by the  
8 end of 2020.

9 But I would say it's a coin flip that we are  
10 going to hit every benchmark and this whole process could be  
11 delayed by one year.

12 CHAIRMAN GENTRY: Another thing I think our  
13 members would be interested in is I summarized at the  
14 beginning what my understanding is of the relationship  
15 between KRCC and the Klamath tribes and other effected  
16 parties.

17 Could you speak to that and summarize how KRCC  
18 that we're not a party to the amended agreement -- how do  
19 you see us in this whole mix and what's your commitment to  
20 make sure that our interests are considered and addressed?

21 MR. ROOT: We view the Klamath tribes as a  
22 stakeholder in the process. Stakeholders are represented on  
23 the Board of Directors. There are lower river tribes,  
24 environmental groups and there is a place held -- a Board  
25 spot that is open for the Klamath tribes to occupy should

1 the tribes choose to occupy that position.

2 We had a meeting last summer with the governing  
3 council and I gave advice which was seconded by my fellow  
4 Board members that there isn't a particular need for you to  
5 occupy that Board place. We will communicate with you in  
6 the same way we do with our stakeholder members.

7 We will invite you to every event that we have,  
8 do our best to keep you fully informed. We view you as a  
9 full partner in the dam removal activity.

10 CHAIRMAN GENTRY: Derek, I'll get you the mic so  
11 it will show up on the recording. It will be in the history  
12 books.

13 MR. KIMBOL: Thank you Mr. Root for the talk and  
14 explaining that to us. Yeah I just want to say thank you a  
15 lot on that and this is very inspiring to think about these  
16 dams coming out and the success that this can have because I  
17 was just looking at the Elwa story and it was just posted  
18 last year from National Geographic.

19 River revives after largest dam removal in U.S.  
20 history. So this is just saying you know that the salmon --  
21 the river restored itself right away and the salmon had come  
22 back and it's just a great success story and I believe that  
23 that's going to do it -- I know it's going to do it. I know  
24 the capability of the eco-system to heal itself so I just  
25 wanted to say it's a great track what we're on, but just how

1 great it is -- I want to say thank you.

2 I mean it is meaning a lot, it is a great success  
3 for all of us so I just can't wait to see it happen, but  
4 thanks.

5 CHAIRMAN GENTRY: Are there other comments or  
6 questions? All right I did want to make sure it's clear  
7 Nick raised some issues in his discussion about the process  
8 and feeling like it's a done deal.

9 In many respects we're way down the road in  
10 getting it a done deal but it's pretty clear that we have to  
11 go through this FERC permitting process and what I'm not  
12 certain of and I don't know if folks can speak to this.

13 You know there are some folks that oppose this,  
14 you know, strongly and what -- can they throw some  
15 roadblocks in terms of litigation and where might that  
16 happen and whether it's in the FERC permitting process or  
17 appeal -- if there's a positive decision to move forward or  
18 in any activity that KRCC has spoken with.

19 I know you don't have your attorneys here or  
20 whatever but I'm just wondering where potential snags could  
21 potentially occur.

22 MR. ROOT: Well we do have opponents and we're  
23 running as open a process as we possibly can. You can view  
24 everything we're doing on our Klamath River Renewal website.  
25 We put out a quarterly newsletter that can keep you all

1 current and we treat everybody the same.

2 We have had numerous meetings in Siskiyou County  
3 where the resistance mostly resides -- we're trying to do a  
4 good job of listening and responding. One of the issues  
5 that has come up is the water supply for the City of Yreka  
6 runs underneath the Iron Gate Reservoir.

7 So we've dedicated a lot of engineering, design  
8 and consultation with the City of Yreka to come up with a  
9 suitable for them rebuilding of that pipeline. We're  
10 meeting with property owners who live around the reservoirs  
11 and they have concerns that their property values will  
12 decline when the reservoirs are removed.

13 We're listening -- can't say we have solid  
14 answers for them but yes there can be legal processes  
15 involved and whether that's delaying or what might happen  
16 there is a little above my pay grade but yes, there is  
17 certainly resistance that is being exhibited.

18 MS. HILL: Assuming if you're the person after --  
19 is it on -- okay, what -- assuming the dams are transferred.  
20 Once they're transferred when will they stop generating  
21 power? Is that discussed?

22 MR. ROOT: Yes, upon transfer we have  
23 pre-negotiated an operations and maintenance agreement with  
24 PacifiCorp. So at the transfer point this agreement will  
25 kick in and everything will proceed up until surrender just

1 as it has before.

2 The agreement calls for PacifiCorp to operate the  
3 dams and maintain them right until we start disassembling  
4 them and of course that would start with the reservoir draw  
5 down because you need to have that head of water to run the  
6 turbines.

7 At that point the electricity will stop being  
8 produced.

9 MS. HILL: Okay I also wanted to say that I agree  
10 with Derek that this has been outstanding information and  
11 I'm very impressed with the team of people that have come  
12 together and that KRCC has drawn on, so thank you so much.

13 MR. ROOT: Thank you.

14 CHAIRMAN GENTRY: Other comments -- we might be  
15 getting close to ending here, well I really appreciate that.

16 Well there is one other thing that we did talk  
17 about in our communication last fall we talked about  
18 opportunities -- maybe employee tribal members and it sounds  
19 like there is somebody here in the local office that we  
20 could coordinate with to employ tribal members.

21 And I checked with Perry and our Natural Resource  
22 Director we're developing a cultural resource monitoring  
23 agreement because we know when there's ground disturbing  
24 activities there's the potential to disturb those sites and  
25 we need to have a plan in play to address that.

1           If we want to avoid those sites, our approach --  
2   so I know we have a budget that we haven't moved forward  
3   with yet I guess but we're real close to moving that forward  
4   in consideration but we may need to take a look at you know,  
5   all the activities and make sure that we are considering  
6   everything appropriately.

7           So we will propose a draft budget and I imagine  
8   we'll have more communication about that but if you could  
9   speak to some of the opportunities that may arise and I  
10   guess really that is a commitment to work with us to see how  
11   we can employ tribal members and involve them.

12           MR. ROOT: Yes, there is a little more detail  
13   since the meeting we had last summer. We indicated that we  
14   would be hiring local representation. We just announced  
15   last week the hiring of the first local person. His name is  
16   Dave Meurer. Dave resides in Reading, California and is the  
17   field staff for State Senator and -- I don't know the  
18   California senators but he will be leaving that position and  
19   is not full-time with us.

20           We plan on having a half-time position in Klamath  
21   Falls. We're interviewing but that hire has not been made  
22   yet. These individuals will do the community outreach  
23   assisted by interested Board members like me or Executive  
24   Director Mark Branson.

25           We're all going to be here. We're reaching out



1 to economic development folks including the Klamath tribes  
2 for participation in the project. The Board is committed to  
3 having multiple construction contracts such that we can have  
4 contracts appropriate for local contractors to participate  
5 in.

6 I think this is posted currently on the website.  
7 We also will be helping to fund job fairs which will present  
8 the kind of work that we will be doing and how individuals  
9 can start qualifying themselves to participate.

10 We will have a lengthy restoration period and  
11 that should offer particular opportunity for local  
12 employment.

13 CHAIRMAN GENTRY: Yes?

14 MS. POLARDINO: Hi, this is Jennifer Polardino  
15 with FERC. Kind of tying in with the whole culture  
16 resources -- if there's any cultural or TCP's or historic  
17 sites that are not on the record that would be of interest  
18 to the Klamath tribe and you wanted to note that for  
19 Commission's consideration that you can always file that as  
20 a privileged document in our e-library system.

21 So it would just be between the Commission staff,  
22 the licensee, the SHPOs, so those are the only people who  
23 would be able to view that documentation. So we're  
24 considering the decommissioning of the project that we could  
25 maybe work it out so we would avoid those areas.

1           MR. WINCHELL: This is Frank again, let me add to  
2 what Jennifer is saying. If there was this new kind of  
3 information that we don't already have involving sensitive  
4 cultural resources, the Klamath tribes would need to go  
5 ahead and provide that to the two SHPOs, to California and  
6 Oregon SHPOs, land managers as well as the application  
7 PacifiCorp and the corporation.

8           And then you go ahead and file that with us as a  
9 privileged document. Well we have to make sure that those  
10 people from the need to know basis -- SHPOs, land managers,  
11 other tribes, applicants, they would be provided that same  
12 information.

13           So when we review it we know that they've got  
14 that information as well. And we've done this in the past,  
15 so okay.

16           MS. POLARDINO: Right.

17           CHAIRMAN GENTRY: But you still need one more  
18 question because I've been -- I was at the dam removal EIS  
19 hearings and there were entities that are not federally  
20 recognized tribal entities -- the Shasta folks downriver and  
21 I had a direct conversation with a couple of the folks.

22           They show up at the meetings and they even said  
23 things like salmon weren't there or people never caught  
24 salmon, you know, that kind of stuff. But then just kind of  
25 on the end of their communication they were talking about

1     their need to be federally recognized.

2             They raised some concerns I think that are valid  
3     protecting cultural resources that may be under the water  
4     and the reservoirs and so forth but they took this approach  
5     that it's almost like the reservoirs are sacred -- you can't  
6     remove the reservoirs because it might expose human remains  
7     or village sites.

8             I'm just wondering how that will be addressed?  
9     That information and things that they've raised and I know  
10    it's on the record even in the EIS proceedings. I think we  
11    might have some differing perspectives on that in what may  
12    or may not occur and I know Perry actually in a previous  
13    part of his career was actually he had the opportunity when  
14    they dewatered some of the dams to do some of the survey  
15    behind that when he was a part of a BLM process.

16            So I know he has a pretty good understanding what  
17    may be behind some of the reservoirs -- maybe not all, I  
18    don't know. But we have had experience here with the  
19    Chiloquin dam removal so when these same concerns came up  
20    and I'm just wondering how that's going to be considered and  
21    what kind of information would be helpful.

22            I think it's a valid issue they raised but it  
23    seems to me there is a way to mitigate that and address  
24    those concerns.

25            MR. WINCHELL: Hi, this is Frank again and yes.

1 Again, we would review everything that's been filed before  
2 us and of course we would take in that consideration just as  
3 Chairman Gentry has said. You know we would certainly  
4 consider everything and anything that anybody would say  
5 about dam removal.

6 So we would consider it of course, but we would  
7 have an opportunity to figure out ways to mitigate as Don  
8 was saying, about certain concerns that does say that  
9 non-federally recognized Shasta tribes may have.

10 CHAIRMAN GENTRY: So if there's information that  
11 we can -- based on personal experience or recommendations we  
12 maybe want to address that, would that be helpful -- ok.  
13 Okay and that would be privileged, confidential information,  
14 okay.

15 MS. POLARDINO: And in our e-library system when  
16 you file documents you can make that choice to whether you  
17 want it to be public or privileged documents when you are  
18 doing that e-library.

19 After this meeting I will email you all of our  
20 contact information so -- phone numbers so people could  
21 contact us if they have any issues with filing anything with  
22 the Commission as well.

23 MR. CHOCKTOOT: Just for informational purposes  
24 to satisfy the NEPA requirements and the CEQA in California  
25 we spent two years from Linc River Dam serving all the way

1 to Iron Gate Dam, both side of the river, thousands of sites  
2 were found.

3 We are going to enter into a monitoring agreement  
4 with KRRC and we're going to protect those sites. There by  
5 far is more sites outside the water than there is inside the  
6 water. So wherever the machinery is going we need to have  
7 monitors on it, we need to keep them out of sites for the  
8 purpose of inadvertent discovery.

9 We're going to have to file an inadvertent  
10 discovery plan and we're going to have to protect the  
11 remains of our people that come up. You never consulted  
12 with the Klamath tribes when you put the dams in. It's time  
13 to consult with the Klamath tribes when you are taking them  
14 out because you could do just as much damage.

15 But it is very culturally significant. It is a  
16 traditional cultural property. It's probably eligible for  
17 multiple property nomination document actually because the  
18 village sites are continuous from Linc River all the way to  
19 Agrabasswick which is south of the canyon.

20 So we are going to be involved, we are going to  
21 be involved and we look forward to getting the opportunity  
22 to come up with the contract with KRRC.

23 MS. JACKSON: Rowena Jackson. What happens to  
24 the license after the dam removal? Does it still exist or  
25 does it expire immediately?

1           MS. MOLLOY: So when -- in the Commission when it  
2 would review the decommissioning which is being proposed for  
3 the four lower -- when -- if the Commission approved it that  
4 would terminate the license. The license would end, the  
5 decommissioning would be approved so the dams would be taken  
6 out and there would be no more licenses for those four.

7           The upper three developments would be a different  
8 proceeding.

9           MS. JACKSON: What are in a nutshell like all the  
10 reasons for an organization or a company or whatever to come  
11 to FERC? Just from my experience I only know like pipelines  
12 and now this and what are other reasons that you would  
13 either make a decision on something -- what are those  
14 others?

15           MS. MOLLOY: So the Commission is directed by the  
16 Federal Power Act to license hydropower projects to --  
17 non-federal hydropower projects that are located in certain  
18 locations -- navigable waterways, federal lands, there's  
19 certain conditions that if someone wants to create  
20 hydropower they have to get a license from us.

21           They also have to get permission from us on how  
22 to take it out or how to surrender their license. So that's  
23 under the Federal Power Act. The pipelines would be under  
24 the Natural Gas Act and those are the two areas that we do  
25 infrastructure for the most part -- that would be interstate

1 natural gas and liquefied natural gas facilities and  
2 non-federal hydropower.

3 So those are pretty much -- we also -- FERC also  
4 works on certain rate issues not like you're an electric  
5 company to a customer but sort of like company to company,  
6 certain interstate rates and certain security issues.

7 MS. JACKSON: Do you mean like water?

8 MS. MOLLOY: No, no, power. And certain security  
9 so on the dams we also have a dam safety, we have a dam  
10 compliance and a project compliance and a licensing.

11 But so there's market stuff that would be the  
12 power rates and stuff like that and then infrastructure, so  
13 we're infrastructure and it's those two -- three areas and  
14 what are more the markets.

15 MS. JACKSON: What do you mean by the markets?

16 MS. MOLLOY: I'm sorry power rates between  
17 interstate power rates between companies or something but  
18 not -- I guess it's wholesale, not retail. So we don't tend  
19 to work with that we work with infrastructure.

20 MS. JACKSON: Who does work with that?

21 MS. MOLLOY: We have other staff that works with  
22 the wholesale rates.

23 MS. JACKSON: Okay and then who would that be?

24 MS. MOLLOY: We can find you contact information  
25 for that but that wouldn't be involved in this hydropower

1 proceeding and as I said it's not retail electric rates or  
2 anything between companies and customers, but we can find  
3 someone to give you a name.

4 Actually I can give you a name afterwards if you  
5 want to contact someone.

6 MS. JACKSON: Okay, thank you.

7 CHAIRMAN GENTRY: I think we're getting near the  
8 end here.

9 MR. KIMBOL: Nick Kimbol, tribal member. Can  
10 anybody -- I know Donnie should know -- how long has  
11 PacifiCorp been running on a temporary license, okay? When  
12 did their license expire and their renewal process start?

13 CHAIRMAN GENTRY: I believe that was 2005, is  
14 that correct?

15 MS. MOLLOY: Yes.

16 MR. KIMBOL: Thank you 12 years, okay, so now I'm  
17 going to make the comment okay -- 12 years ago they've been  
18 running business as usual until 2020 so anyway it's like the  
19 process is long and slow we understand that you know, this  
20 can drag on for you know what up to -- I wanted to come in  
21 here and be optimistic but you know the more I hear the  
22 little bit more I hear you know I'm kind of losing that  
23 optimism, you know.

24 I'm hearing from the gentleman right here on this  
25 board right here that says this process can be extended to



1 maybe another year if all the cards are played right and  
2 everything goes right okay, cross your fingers and there  
3 should be hopefully no too many delays.

4 But you know what -- we have all the counties in  
5 this process on the Klamath River, including Klamath County  
6 opposed to our thoughts, okay. So you know that's kind of  
7 like hard to swallow, you know it's like this process you  
8 know, in the beginning, you know, we knew it was going to be  
9 a time long fought battle you know.

10 And I just hope that it doesn't turn into a drag  
11 on -- dragging your feet process, you know. And I hope that  
12 everything is on the up and up okay -- that's what I want to  
13 know, that's what I want to hear. I want to hear positive  
14 stuff you know, I'm tired of seeing the negative. It's like  
15 -- I want my mom and dad to be there -- they're in their  
16 almost middle '80's.

17 I want my dad and mom to be there to see this  
18 happen, okay. So with this process I know it's going to be  
19 tough you know, we have a fight ahead of us. Yes, there are  
20 opponents and there have been opponents all along.

21 And to me it's kind of -- I think ahead you know,  
22 when the process finally starts if and when it finally  
23 starts, there's going to be water issues. Look at it right  
24 now, there isn't any snow out there. 75% -- there's only  
25 25% of the snow at Creator Lake right now, okay.

1           So you know it's going to take water to push that  
2   sediment downstream. You know there's issues you know,  
3   there's big issues waiting ahead of us, you know but you  
4   guys have to take that into consideration or there's going  
5   to be a fight all the way, you know and it's like it's sad  
6   but true

7           And no disrespect to you guys, you guys just have  
8   a job to do and you're doing your job, you know, but there's  
9   a lot of us -- and other tribal members that don't have  
10  trust in the government, you know and it's like look what  
11  Trump did to everything Obama did and is still doing it.  
12  He's reversing everything, you know.

13           I just hope for the best, okay, thanks.

14           MS. MOLLOY: Thank you.

15           CHAIRMAN GENTRY: I appreciate it Nick. Well I  
16  think we're about ready to wrap up -- close, don't want to  
17  miss this opportunity, not trying to cut us off but you  
18  know.

19           MS. JACKSON: I don't even know how to say this  
20  so I've been a part of -- this is just an example, Nestle  
21  coming in and trying to privatize water in the Cascade Locks  
22  area and this kind of -- this whole thing kind of raises a  
23  red flag for me. I don't know if anybody else is getting it  
24  but it's just for me it's a red flag. All of a sudden you  
25  know there's these dam removals and then all this interest

1 and I'm just trying to say this in a good way, I'm not  
2 trying to be -- you know.

3 So it just raises a red flag for me. I've been  
4 out there long enough to see the hidden red flags and stuff  
5 and especially when FERC wasn't wanting to answer my  
6 questions so I just want to put it out there just like that,  
7 thank you.

8 CHAIRMAN GENTRY: Well I really appreciate  
9 everybody coming. I think it was a good information -- I  
10 really appreciate the summary of where we are at on the KRRC  
11 process and thanks for being here and answering questions.

12 It was kind of a limited format in many respects.  
13 I think it was helpful to get information out and to I guess  
14 reaffirm our interest and commitment to the dams coming out  
15 and our folks aren't going to back down on that, you know.  
16 And at the Tribal Council level you know just our  
17 responsibility is to provide and protect for our treaty  
18 resources -- it's in the Constitution and that's a goal of  
19 our members that has been reaffirmed in a recent planning  
20 process so be assured that we are going to continue to be  
21 committed to making sure those dams come out and our treaty  
22 resources are restored, so thank you.

23 MS. MOLLOY: Thank you for hosting us, providing  
24 us information and sharing your thoughts with us, we  
25 appreciate it.

1 (Off mic comments)

2 CHAIRMAN GENTRY: So alright well thanks again  
3 everybody. We just really appreciate everybody for coming  
4 and look forward to getting a copy of the transcripts.

5 MS. MOLLOY: Thanks.

6 CHAIRMAN GENTRY: So again thanks. Any timeline  
7 on when we might receive those -- I think you mentioned it  
8 earlier, 30 days -- okay 30 days.

9 MS. MOLLOY: So they will come to you?

10 CHAIRMAN GENTRY: They'll come to the Council  
11 they will actually be published on the website -- e-library,  
12 yeah, it's public information.

13 (Whereupon the meeting was adjourned at  
14 12:23 p.m.)

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1 CERTIFICATE OF OFFICIAL REPORTER

2

3 This is to certify that the attached proceeding  
4 before the FEDERAL ENERGY REGULATORY COMMISSION in the  
5 Matter of:

6 Name of Proceeding:

7 KLAMATH AND LOWER KLAMATH HYDROELECTRIC PROJECTS

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15 Docket No.: P-2082-062/ P-14803-000

16 Place: Chiloquin, OR

17 Date: Thursday, January 18, 2018

18 were held as herein appears, and that this is the original  
19 transcript thereof for the file of the Federal Energy  
20 Regulatory Commission, and is a full correct transcription  
21 of the proceedings.

22

23

24 Gaynell Catherine

25 Official Reporter

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1 FEDERAL ENERGY REGULATORY COMMISSION

2

3 KLAMATH AND LOWER KLAMATH

4 HYDROELECTRIC PROJECTS

5 DOCKET NOS: P-2082-062/ P-14803-000

6

7 SCOPING MEETING

8 YUOK TRIBE KLAMATH TRIBAL OFFICE

9 190 Klamath Boulevard

10 Klamath, CA 95548

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12 FRIDAY, JANUARY 19, 2018

13 10:00 a.m.

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1 PARTICIPANTS

2 FERC STAFF

3 ELIZABETH M. MOLLOY, TRIBAL LIAISON

4 JENNIFER POLARDINO, HISTORIAN

5 FRANK WINCHELL, ANTHROPOLOGIST/ARCHAEOLOGIST

6 ELIZABETH MCCORMICK, OFFICE OF THE GENERAL COUNSEL

7 YUOK TRIBE

8 THOMAS O'ROURKE, CHAIRMAN YUOK TRIBAL COUNCIL

9 JOE JAMES, YUOK TRIBAL COUNCIL MEMBER

10 MINDY NATT, YUOK TRIBAL COUNCIL MEMBER

11 EDWARD AUBREY, YUOK TRIBAL COUNCIL MEMBER

12 RYAN RAY, YUOK TRIBAL COUNCIL MEMBER

13 DAVID GENSAW, SR., YUOK TRIBAL COUNCIL MEMBER

14 LANA MCCOVEY, YUOK TRIBAL COUNCIL MEMBER

15 TOBY VANLANDINGHAM, YUOK COUNCIL MEMBER

16 LARRY HENDRIX, YUOK COUNCIL MEMBER

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18 DAVE HILLEMEIER, FISHERIES DIRECTOR FOR THE YUOK TRIBE

19 LOUISA MCCOVEY, YUOK TRIBE ENVIRONMENTAL DIRECTOR

20 JAVIER KINNEY, YUOK TRIBAL MEMBER

21 CHEYENNE SANDERS, YUOK TRIBAL MEMBER

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1 P R O C E E D I N G S

2 (10:00 a.m.)

3 CHAIRMAN O'ROURKE: Good morning, my name is  
4 Thomas O'Rourke. It is custom to have a prayer before we do  
5 any business or even before we introduce ourselves you know  
6 and so that I would -- can you hear me, okay there you go.  
7 So Frank if you would come up and do the honors and give us  
8 a prayer you know that would be go until our day hopefully  
9 flows smoothly.

10 MR. MEYERS: (Prayer.)

11 CHAIRMAN O'ROURKE: So he talked about our maker  
12 and gives thanks for what our Creator gives us and for the  
13 waters and our fish, you know, and the life that surrounds  
14 it that depends on it, you know, and prayers for his tribe  
15 to know how to protect what he gave us, his people, in the  
16 beginning.

17 So first off I would like to say welcome to all  
18 of you that have come, you know, to put in their comments to  
19 make your remarks and a special welcome to the FERC team  
20 that comes to hear our comments that will help them to guide  
21 their decision as to the permitting.

22 So I guess everyone knows what FERC is, you know.  
23 Anyone that doesn't know what FERC is -- stands for --  
24 Federal Energy Regulatory Commission. So before I even  
25 begin with other opening remarks I would just like to say

1 welcome to our home.

2           You know we've been here since time immemorial.  
3 Our stories go back to the time of darkness before there was  
4 human form here in this place. Archeologists have traced  
5 our people back over 10,000 years here in this very place  
6 and so that we've been here for a very, very long time.

7           And with that before I state any further or other  
8 opening comment I would like to do introductions so I don't  
9 know where I'm going to start but with our table anyway that  
10 is here and so I'm Thomas O'Rourke, Chairman of the Yurok  
11 Tribe.

12           MR. JAMES: Good morning, Joe James, Yurok Tribal  
13 Council.

14           MS. NATT: Hello, I'm Mindy Natt, I'm the Tribal  
15 Council for the Pecwan District. It's located about 20  
16 miles upriver and we're real rural up there and I am a  
17 fisherwoman and I have lived on the reservation all my life  
18 and I look forward to hearing all the discussions and thank  
19 you for coming.

20           MR. AUBREY: Edward Aubrey, North District, thank  
21 you.

22           MR. GENSAW: David Gensaw, Sr. Vice-Chairman of  
23 the Tribe.

24           MR. VAILANDINGHAM: Toby Vailandingham I'm from  
25 the Weitchpec District which is a little bit further upriver

1       than Mindy and thank you all for being here.

2                   MR. HENDRIX:   Good morning, Larry Hendrix,  
3       Council member, welcome, waiting to see what's happening  
4       here today.

5                   MS. MOLLOY:   Good morning thank you for having us  
6       here in your beautiful facility.   I'm Liz Molloy, I'm the  
7       Tribal Liaison for FERC.

8                   MS. MCCORMICK:   Good morning.   I'm Liz McCormick,  
9       I'm in the Office of General Counsel at FERC.

10                  MS. POLARDINO:   Good morning I'm Jennifer  
11       Polardino and I'm in the Office of Energy Projects which is  
12       a division of Hydropower Administration Compliance.

13                  MR. WINCHELL:   Hi, I'm Frank Winchell.   I work  
14       with FERC with the Office of Energy Projects, Division of  
15       Hydropower Licensing and I'm an archeologist.

16                  MS. CORDALIS:   Good morning, Amy Cordalis,  
17       General Counsel Yurok Tribe and also tribal member.

18                  MR. HILLEMEIR:   Good morning I'm Dave Hillemeir  
19       and I'm the Fisheries Department Director for the Yurok  
20       Tribe.

21                  MS. MCCOVEY:   Good morning, Louisa McCovey,  
22       Environmental Director for the Tribe.

23                  MR. CATHERINE:   Good morning, Gaynell Catherine,  
24       Ace Federal Reporters, I'm the court reporter.

25                  CHAIRMAN O'ROURKE:   Very good.   Once again

1 welcome. I will go across the ground rules for the meeting.  
2 Can you hear me okay back there now? Alright -- so members  
3 of the public and interveners in the FERC process,  
4 precedents may attend these meetings however comment will be  
5 limited to tribal representatives, tribal members and  
6 employees and FERC representatives.

7 And I believe that that has been changed to allow  
8 community input as well, you know, so that people from the  
9 community are able to make comments.

10 Tribal member and employee comment will be  
11 limited to three minutes. The consultation meeting will be  
12 transcribed by a court reporter and the transcript will be  
13 placed in the public record of these proceedings.

14 If any tribe or tribal representative wishes to  
15 disclose information about a specific location which would  
16 create a risk or harm to an archeological site or Yurok  
17 Tribal cultural resource, the public will be excused for  
18 that portion of the meeting when the information is  
19 disclosed.

20 I have another sheet here and I'm going to set it  
21 here and speak from my heart. You know that the Klamath  
22 River is our lifeline and always has been and always will.  
23 If the Klamath River dies, we die with it.

24 Our live revolves around the river -- it's our  
25 main artery and it provides our traditional foods, you know,

1 our ways of life. It sustains a society of people which is  
2 us. We are an endangered species as a people and when you  
3 are looking at societies you know, it's the river that gives  
4 us our identity that gives us the ability to carry on and to  
5 teach others how to take care of something, to be an example  
6 of what good stewards should be.

7           The importance of the river is just that. It is  
8 our existence. Thousands of years my people -- our people  
9 have fished these waters. These waters gave life to  
10 everything that supports us and continues this day to do  
11 that.

12           The river is sick you know, for many reasons and  
13 many of the reasons stem from the dams being there. The  
14 dams in the water holds the waters back and they become huge  
15 incubators for poisons and toxins that come down the river  
16 and kill all of the life that depends upon it.

17           And so it's not just the fish -- everything else  
18 is an eco-system and it's a major eco-system and anyone that  
19 knows about eco-systems knows that they are all attached.  
20 One feeds another one and it's a big old cycle.

21           A major eco system is sick that impacts and will  
22 continue to impact many other eco systems. Eco systems  
23 support life -- your life, my life, all mankind and so that  
24 what we're working on is to have the dams removed and so  
25 that the river can begin to heal to be able to provide and

1     sustain the salmon runs which in turn feed many other  
2     animals, people and give people joy that come here.

3             You know it's a beautiful place and people come  
4     here from around the world to fish here. They come here to  
5     boat, or sightseeing for recreation and so it's much -- it  
6     goes out much broader than just Yurok. But for Yurok alone  
7     our way of life -- our very existence depends upon it.

8             And so with that you know, I would hope that FERC  
9     can see the reasons why the permit should be issued to KRRC  
10    -- Klamath River Renewal Corporation. Just a couple of  
11    short words to speak about this entity -- I've never seen a  
12    more capable or competent Board put together to do  
13    something.

14            If you look at the components each individual,  
15    you know, where they come from, what they've done and why  
16    they sit on this Board -- why they were chosen, whoever put  
17    this Board together and we offered up an individual, you  
18    know, and they did a very, very good job.

19            All doers -- people that made things happen  
20    wherever they come from. I'm impressed with them and I  
21    don't get impressed very easy, you know, and they come from  
22    all walks of life, you know and so each of them were  
23    hand-picked to do something and so I believe that that not  
24    only can this be done or they can do this but they'll do it  
25    in the best way that it can be done.

1           And so I have complete faith in them and their  
2   ability to be able to address any situation that may arise.  
3   And so I guess with that I'm going to turn it over to  
4   somebody here -- as soon as I see who -- presentation, where  
5   do we want to go --

6           MS. MOLLOY: I think we're next on the Agenda for  
7   just a brief little -- we'll just give a brief little  
8   statement of FERC and the two applications we have pending  
9   before us. So I think everyone is familiar with FERC but  
10   just briefly the FERC is Federal Energy Regulatory  
11   Commission.

12           We will be acting on the applications that have  
13   been brought before us. In doing so we build a record and  
14   do any environmental analysis that needs to be done,  
15   building upon what has already been done and then the  
16   Commissioners -- we have five Commissioners that will make a  
17   decision on the applications.

18           We have the two applications that Elizabeth will  
19   tell us about.

20           MS. MCCORMICK: So as Liz mentioned, we have two  
21   applications before us. The first is an application for  
22   amendment of the existing license to remove the four lower  
23   dams from that license and transfer it to the Renewal  
24   Corporation. It's purely administrative -- there's no  
25   environmental review involved in that part of the process.

1           And I believe at this time we have a complete  
2 application for that portion of the proceeding. The second  
3 application which we will act on once we've acted on the  
4 first application is the application for surrender and  
5 decommissioning of those four lower projects and that  
6 proceeding will involve an environmental analysis.

7           I believe we're still waiting for some additional  
8 information which once we have that will determine when the  
9 application is complete and once it's complete we'll begin  
10 an environmental review.

11           There has already been some environmental review  
12 done by Department of the Interior so we're still not sure  
13 whether we'll just supplement that or whether we'll do an  
14 entirely new review. We don't like to recreate the wheel  
15 and there's a lot of information about the Klamath Basin  
16 that's already out there so I'm guessing we'll use quite a  
17 bit of that.

18           So once we have all of that and we do the  
19 environmental analysis then we will be able to act on the  
20 surrender application. Because these two projects are so  
21 interrelated though we are taking comments even though we're  
22 not acting on the surrender proceeding, we're taking  
23 comments on the surrender proceeding at this time.

24           So like he said before, anything what you say  
25 will be put on the record and this transcript will be on our



1 e-library system 30 days after this meeting. So I just  
2 wanted to make sure that everybody speaks their mind. We  
3 want to hear your comments and concerns for consideration.

4 MR. WINCHELL: Hi, I just want to add real quick  
5 for the surrender application that will be forced shortly  
6 that John Mudre, a think a lot of you folks know from the  
7 past relicensing, continues to be the project coordinator  
8 for the surrender aspect of the Klamath and the Lower  
9 Klamath River Projects -- of course from J.C. Boyle down to  
10 Iron Gate Dam.

11 MS. MOLLOY: And the last thing I'll mention is  
12 we can't speak to timing. For one thing we have a  
13 regulation that says we can't talk about nature and timing  
14 of decisions but in addition there is still additional  
15 information and some other materials that will be required  
16 on the surrender application as it proceeds further -- water  
17 quality certifications and such so that affects timing on  
18 when the Commission can act because they will need  
19 approvals of water quality certification before taking  
20 action and any other permits they might require before  
21 taking action.

22 So the timing -- it's still early so we can't  
23 know the timing yet but we will be working on it as soon as  
24 we can.

25 MS. POLARDINO: And I want to add too this is --

1     this is also a contested proceeding which is why we have our  
2     tribal meeting with you guys today with the public being  
3     able to attend. So anything we say will be on the record  
4     and so everybody will be able to see it.

5             Like we said earlier if there are any sites that  
6     would be considered confidential to the tribe and you want  
7     to disclose that to us what we can do is ask the public to  
8     leave during that portion of time and we'll record that but  
9     anything we record that goes to these confidential sites we  
10    would put on the record as a privileged document so we would  
11    have two portions where we have a public and the portion  
12    that would be considered confidential historical sites we  
13    would have as a privileged document.

14            CHAIRMAN O'ROURKE: Thank you. I guess with that  
15    I'm going to turn it over to staff for a presentation.

16            MS. CORDALIS: Thank you Chairman and thank you  
17    to the FERC staff and to the tribal members and employees  
18    who have joined us today. Before I jump in to our  
19    presentation I had a couple of questions for you.

20            So one of my questions that I was going to ask  
21    was about timing and processing and so I hear you that you  
22    can't comment on that -- that's fair. What I will add is  
23    that as you know the KRRC, the State Water Board, the  
24    tribes, all of the signatories to the KHSA have been working  
25    under the assumption that we would at least start with dam

1 removal by 2020.

2 And to the extent you are able to keep your  
3 permitting processes in line with that timeline we strongly  
4 urge you to do that. And the other question I had so with  
5 respect to the two different applications -- so right now  
6 the transfer application is filed and basically all the  
7 documents have been submitted so you have that okay.

8 And then there's the surrender application coming  
9 and supplemental files will be coming in so that -- okay and  
10 so are you wanting to have one record for both of those  
11 applications? So each application has its own FERC Project  
12 Number --

13 MS. CORDALIS: Right.

14 MS. MCCORMICK: So we do have two separate  
15 records --

16 MS. CORDALIS: Okay.

17 MS. MCCORMICK: For each proceeding but they  
18 are very closely related yes. So rather the documents  
19 you'll see in both dockets on our e-library system and the  
20 reason for that is because they're so closely intertwined  
21 it's really hard to separate them out so they're technically  
22 two proceedings but we're here today to talk about both  
23 because the transfer really depends on the ability of the  
24 surrender to be completed successfully and without  
25 mitigation.

1 MS. CORDALIS: Okay and so the comments we make  
2 here today will be added to both records?

3 MS. MCCORMICK: Yes.

4 MS. CORDALIS: Excellent, okay, very good.

5 MS. POLARDINO: So if anybody has any questions  
6 even then about the transfer itself you could ask those too.

7 MS. CORDALIS: Can you -- for everybody's  
8 collective knowledge, can you all offer a few points on what  
9 FERC is and your role in the dam removal process -- thousand  
10 foot level.

11 MR. WINCHELL: I'll jump in. Basically okay,  
12 FERC is an independent regulatory agency and again it's  
13 headed by five Commissioners who are Presidential  
14 appointees. Of course, as you probably -- a lot of you know  
15 that we were down to one Commissioner when President Trump  
16 got elected.

17 And then he shortly you know, whenever appointed  
18 and was confirmed by the U.S. Senate four additional  
19 Commissioners. So they are the best body who actually makes  
20 a decision for let's say --a surrender or a licensing  
21 involving us as hydropower folks.

22 And again for the surrender, it ultimately goes  
23 before the Commissioners who make that decision but they  
24 base their decision on us staff and the people who are  
25 involved with that NEPA analysis along the Section 106 of

1 the National Historic Preservation Act.

2 So the good news with that is that for the most  
3 part our decision when we forward that to the Commissioners  
4 for their licensing decision based upon our environmental  
5 analysis is pretty much like 90% good.

6 I mean it's -- they normally and most usually  
7 will accept our decision. They may make some modifications  
8 to a license order but it's very unusual for the  
9 Commissioners themselves to actually contradict an  
10 environmental analysis from Commission staff.

11 So we are the staff people who are going to be  
12 involved with this environmental analysis.

13 MS. MOLLOY: And one final point the  
14 Commissioners are -- there's three Republicans, two  
15 Democrats. Historically, FERC Commission has been very good  
16 about working with regard to the issues and not other  
17 factors so they will look at the record, they will look at  
18 the recommendations made, they will look at the comments and  
19 they will make the decision and they have been historically  
20 very good at working together as a group.

21 MS. POLARDINO: And within the Commission itself  
22 we have different divisions. Like for example there's both  
23 Liz's are part of the Office of General Counsel. Frank and  
24 myself are part of the Office of Energy Projects and within  
25 that you have the Division and Licensing which Frank is part

1 of and they will be looking at the surrender application.

2 And I am part of the Division of Hydropower  
3 Administration Compliance and we're looking at the transfer  
4 and then the application. And another division that will be  
5 a part of the surrender they'll be looking at that will be  
6 also the Division of Dam Safety Inspections.

7 So I just kind of wanted you to know that there's  
8 going to be different divisions that will be looking at the  
9 different pieces of this project.

10 MS. CORDALIS: Excellent. So for the group's  
11 knowledge then you folks are the staff that is involved in  
12 doing the actual work of the environmental work, the  
13 statutory work to process the applications that we all hope  
14 will result in dam removal.

15 MS. MOLLOY: Yes.

16 MS. CORDALIS: Got it okay, excellent. Alright  
17 well with that I think we'll go ahead and jump into the  
18 staff presentation portion of the consultation today. Just  
19 as a reminder my name is Amy Cordalis. I am the tribe's  
20 general counsel. I'm also a tribal member and my family is  
21 from Requa which is at the mouth of the river.

22 My grandma and auntie and several other family  
23 members are here today in the audience also from Requa and  
24 we -- I know we are very pleased to have you here. It's a  
25 great honor to be able to be here in this place to talk

1 about dam removal which is something the tribe has been  
2 working on ever since the last brick was installed into Iron  
3 Gate Dam to be frank.

4 So today I'm going to cover kind of the  
5 introduction -- make some of the tribe's key points that we  
6 want to make sure you all hear today and then we are going  
7 -- I'm going to turn it over to our very well-trained  
8 scientific experts who are going to talk about the science  
9 of the river.

10 Our presentation should be about -- we're hoping  
11 it will be under an hour and then we'll break for lunch and  
12 then when we come back from lunch that's when we'll open up  
13 the meeting to the tribal member, tribal employee comment  
14 period.

15 And then at the conclusion of that we'll hear  
16 from Tribal Council and then if there are members of the  
17 general public here who would like to speak we'll hear from  
18 them. We do have a process for receiving the public comment  
19 and anybody who would like to make a comment you need to  
20 sign-up to do so at the table there.

21 Mya is there to get your information and we will  
22 make those comments in the order that they are received.  
23 FERC staff very graciously has offered to stay here as long  
24 as it takes to hear from every single one of you and so we  
25 will accommodate folks who want to speak.

1           Comments are limited to three minutes -- and on  
2   the screen there will be a countdown and at the end of your  
3   three minutes a very bright red or green -- I'm not sure  
4   what color, will flash and everyone will know it's the end  
5   of your time.

6           So that will be the general process for the day.  
7   If you have any questions about how things are going to  
8   proceed feel free to ask Mya or myself. Also I think  
9   Cheyenne Sanders is around and available to answer  
10   questions.

11           So we really encourage everyone to speak up and  
12   let these folks know how you feel about dam removal, talk  
13   about your experiences on the river, talk about your  
14   cultural experiences with the river, talk about what it  
15   means -- what dam removal means to you.

16           This is our opportunity to send our words and to  
17   speak for the river and as it's been communicated already  
18   what we say here is being recorded and that will go into the  
19   official record that these folks will rely on to inform  
20   their work which then the FERC Commission staff will  
21   consider when they are deciding whether to deny or grant the  
22   permits.

23           And that's how we're going to get to dam removal.  
24   Okay.

25           MS. POLARDINO: I would only add that when you're



1 speaking your comments if you guys could say your name and  
2 spell out your name for our transcriptionist that would be  
3 really helpful.

4 MS. CORDALIS: Thank you I was supposed to make  
5 that point. Alright, so I think with that we're actually  
6 ten minutes ahead -- shocking, and I'm going to go ahead and  
7 jump into our presentation and these first couple of points  
8 are basically the gist of what we want you all to hear.

9 That is that the Yurok tribes strongly supports  
10 the transfer of the license to the Klamath River Renewal  
11 Corporation which today I'll refer to as the KRRRC for just  
12 ease. And we also support the subsequent license surrender  
13 application and of course decommissioning of the dams.

14 And we strongly urge you to take action on those  
15 applications in a timely fashion so that we can stick to  
16 that 2020 dam removal start date. Okay, also when I change  
17 the slide I have to let the folks in Weitchpec know -- hi  
18 folks in Weitchpec, so I'm going to say change slide and  
19 when I change the slide.

20 Again, kind of keeping on our points of -- can  
21 everyone hear me if I'm right here -- good. So keeping on  
22 our points of the things that we really want you all to hear  
23 is that the Yurok Tribe has been involved in the dam removal  
24 process since it started.

25 We were -- we started it as the Chairman reminds

1 me. We went to Scotland to strongly tell Warren Buffet how  
2 we felt about those dams and I think that was really a  
3 turning point for the movement that has gotten us here  
4 towards dam removal.

5 We were at the negotiation table, led the  
6 negotiations for the Klamath hydroelectric settlement  
7 agreement. We were a key player in the amendment to that  
8 agreement and as you all probably know the signing ceremony  
9 for the amended KHSA was held here in Klamath a few years  
10 back.

11 And for us that dedication has come from the  
12 tribe's deep cultural commitment to preserving the river but  
13 then also informed by our very extensive technical expertise  
14 in the area of the science and the biology of the fisheries  
15 on the Klamath River and also its overall health.

16 Both of those sources have led the tribe to  
17 acknowledge that dam removal is the key component to making  
18 our river healthy. And because of that we have led all of  
19 this work from our perspective.

20 In that work when the amended KHSA was signed and  
21 the dam removal entity was called for and created which is  
22 now the KRRC, we have continued to be very involved in their  
23 processes of forming the corporation, getting their staff,  
24 organizing their finances, having their Board meetings,  
25 keeping in touch with the signatories to the KHSA.

1           We of course, have a Board representative, Scott  
2 Williams, who serves as a Board member. And through all of  
3 that work we have seen the inner workings of the KRRC and we  
4 can say with utmost confidence that we know they are capable  
5 of accepting the license, of facilitating dam removal and  
6 they are working in a very, very calculated thorough and  
7 careful process.

8           They understand that they have a significant  
9 amount of risk associated with this project and they are  
10 carefully and in a very calculated manner evaluating that  
11 risk and managing it in a good way.

12           And so we want you all to know that from our  
13 perspective they are the person for the job. PacifiCorp has  
14 made it clear that they no longer want these dams and that  
15 for better or worse -- well for better, from our  
16 perspective, it's time for a new day and the KRRC has  
17 stepped up and built the capacity to take those licensees  
18 on and facilitate the dam removal.

19           So you know, with the entire support of the Yurok  
20 Tribe, we support transfer of those applications to the KRRC  
21 and we are confident in their capabilities.

22           Today, as I spoke earlier, I'm going to cover the  
23 Yurok Tribe's legal rights on the Klamath River, our  
24 fishing, our water rights and I'm going to attempt to tell  
25 you sort of the story and the history of the Klamath River

1 as it relates to our rights and our culture.

2 And what I hope is -- at the end of this meeting,  
3 you will walk away understanding how the Yurok Tribe sees  
4 the river and our vision of the future which includes a  
5 free-flowing healthy Klamath River.

6 At the end of my remarks I'll pass it over to Mr.  
7 Hillemeier who is our senior fisheries biologist and has  
8 over 30 years of expertise working in fisheries and water  
9 issues on the Klamath River.

10 And I get the great honor of representing the  
11 tribe in court. Often our cases come down to a battle of  
12 sciences and as you folks probably know, there's a legal  
13 term of art -- the best available science. And I am very  
14 proud to say that most often the best available scientist is  
15 sitting to my right so we have developed an extensive amount  
16 of research and work related to that.

17 So I'll hand it over to him to talk about that  
18 work and also Miss Louisa McCovey, she's the Director of our  
19 environmental department and also a very distinguished  
20 scientist and policy maker who is going to speak to some of  
21 the water quality issues that the dams create for the  
22 Klamath.

23 So what I'm hoping you'll get from this again is  
24 just the understanding that the Yurok Tribe not only has  
25 legal rights to water and fish on the Klamath River which we

1 take very seriously, we also have some of the best science  
2 on the river.

3 And I think that distinguishes us from maybe some  
4 of the other entities that you've met with recently and so  
5 we hope to share that with you all today.

6 CHAIRMAN O'ROURKE: Neither behind nor ahead of  
7 the Confederated Tribes of the Klamath which is where you  
8 were yesterday. We likewise have a senior water right.

9 MS. CORDALIS: Thank you Chairman. So to kind of  
10 orient us I'm going to start with this map. The Yurok  
11 people, we are still an aboriginal territory. You are in an  
12 Aboriginal territory right now.

13 Unlike some of the other tribes in the Midwest  
14 the Yurok Tribe was never relocated from our aboriginal  
15 territory and that has allowed us to continue our fishing  
16 way of life. Since time immemorial we have fished the same  
17 river or the same fish actually -- the salmon, the  
18 steelhead, the trout, the candle fish, the sturgeons that  
19 are going through that river now and I think we all kind of  
20 agree at this point we share the same DNA.

21 And that way of life allowed us to thrive. There  
22 were really fish in the river year round and in addition to  
23 that there were you know, the habitat, the natural  
24 environment supported us. So there was ample food, the  
25 climate was you know, fairly mellow.

1           We had these wonderful redwood plank houses, you  
2   know, I think that things were pretty good for us here. In  
3   recognition of that the Yurok Reservation was created in  
4   1855 by an executive order and the boundaries were set as a  
5   mile on either side of the Klamath River from the Village of  
6   Requa down at the mouth of the river up 44 miles to  
7   Weitchpec.

8           And those are the same boundaries as the  
9   reservation has today. Now that didn't include all of our  
10  aboriginal territory but it did include sort of some of the  
11  main villages -- not all of them. Luckily for us it  
12  included the river and that allowed us to preserve that  
13  traditional fishing way of life.

14          And in the creation of the reservation, the Yurok  
15  people reserved for ourselves -- a fishing and a water  
16  right. Now that was an aboriginal based fishing and water  
17  right. It wasn't something that the federal government gave  
18  to us it was something that we reserved in the creation of  
19  the reservation.

20          Now those rights we call now federally reserved  
21  water rights and as a matter of federal law it's recognized  
22  that the Yurok Tribe has fishing and water rights as is  
23  necessary to fulfill the purposes of the reservation.

24          And here the purposes of the reservation was to  
25  preserve -- well was to create a permanent homeland for the

1 Yurok people and in doing so preserving our fishing way of  
2 life. And there's really great language in some of our case  
3 law that says the fishery was not much less necessary to us  
4 than the existence -- excuse me, not much less necessary to  
5 us than the atmosphere we breathe and I think that statement  
6 is absolutely true today as you've heard from the Chairman.

7           So we kind of went through that -- so our  
8 federally reserved fishing rights include the right to fish  
9 for commercial, subsistence and ceremonial purposes. And  
10 it's important to remember those three points -- commercial,  
11 ceremonial and subsistence purposes.

12           In addition to that, our federally reserved water  
13 rights include water and stream flows necessary to support a  
14 fishery for those commercial, ceremonial and subsistent  
15 purposes.

16           And as the Chairman noted earlier, because that  
17 -- because those rights -- those federally reserved rights  
18 weren't a grant of rights from the government but were  
19 rather a reservation of our own rights that were based on  
20 our aboriginal uses, our water right has a priority date of  
21 time immemorial. And so what that means is that along with  
22 the Klamath Tribes, the Yurok Tribes has one of the most  
23 senior water rights in the entire basin.

24           The federal government has a trust responsibility  
25 to protect those rights and that means that there's a

1 responsibility and a duty on behalf of the federal  
2 government to manage the basins -- excuse me, the basin's  
3 resources even off reservation in a manner that protects our  
4 federally reserved rights.

5           This duty extends to FERC to take the necessary  
6 actions to protect our federally reserved rights and in this  
7 case that means by granting the necessary applications to  
8 facilitate dam removal.

9           That is the like -- you know, I think I did that  
10 in about five minutes. That is the five minute overview of  
11 our rights, of our rights as they relate to the Klamath  
12 River and I'm sure that later on we will hear from community  
13 members talking more about the scope of those rights and  
14 what they mean to us.

15           But now what I want to do is turn to this map.  
16 So those rights were secured to us in 1955 and one of the  
17 promises that the federal government made to us when they  
18 created that reservation in 1855 was protection of those  
19 rights.

20           So meanwhile, what was happening is that at the  
21 same time you had development of the whole Klamath Basin.  
22 So this map shows the entire Klamath Basin and it shows some  
23 of the other projects that were happening, that have been  
24 developed over the past 170 years since 1855 that have  
25 frankly been in direct conflict or extremely harmful to the



1 Yurok Tribe's fishing rights and our water rights.

2 As it relates to the discussion today the Klamath  
3 Hydroelectric Project which you see in yellow, is right  
4 smack in the middle of the river. What that did -- and I'm  
5 kind of going to go back and forth between these two slides  
6 but when the last dam was finished and I believe that was in  
7 the 1960's when Iron Gate Dam -- what that did, so this is a  
8 picture of Iron Gate Dam.

9 It blocked this fish passage right and  
10 essentially ended access for salmon to 450 miles of spawning  
11 habitat. No fish ladders on this. So the Klamath River was  
12 once the third largest salmon producing river in the entire,  
13 you know, Pacific Coast, and here in 1960 you have your  
14 final dam built, no fish passage, this is the end of the  
15 river for fish.

16 And so you go back to this slide and you see how  
17 that's like right smack in the middle of the river. So all  
18 of that area up in the north where the salmon had been going  
19 they no longer had access to.

20 And that -- you could kind of say that that final  
21 brick on Iron Gate Dam was in some ways the final nail in  
22 the coffin. It marked a time where the salmon really  
23 started declining. In addition to the dams of course you  
24 had the Klamath irrigation project which was authorized in  
25 1902.

1           And basically what that did was turn a bunch of  
2   high desert land into irrigation lands by diverting massive  
3   amounts of water out of Upper Klamath Lake and parts of the  
4   main stem to support agriculture.

5           In addition to that it also --over the years, you  
6   know, with the different pesticides being used and so on and  
7   so forth it allowed a lot of pollutants to go down to the  
8   dams, collect behind the reservoirs and create really high  
9   water temperatures and poor water quality and Louise is  
10  going to speak to that earlier.

11           But the gist of what's happened there is that all  
12   of those actions that were supported by the federal  
13   government were in direct conflict to the Yurok's Tribe's  
14   water rights at the bottom of the river.

15                       And so even though those rights have  
16   been in place -- well really secured under federal law in  
17   1855, you have 170 years of development on the basin and in  
18   a manner that is extremely harmful to fish, extremely  
19   harmful to the natural environment of the river and has  
20   decimated the river and the fish and as a result has  
21   extremely limited our ability to exercise our fishing rights  
22   for subsistence for ceremonial and for commercial purposes  
23   and I'm going to talk about that a little bit later.

24           There has been a trend of -- in federal policy to  
25   support all of this. From our perspective today and the

1 fact that FERC is here and that there are pending  
2 applications that we hope will result in dam removal -- that  
3 marks what we hope is a new day of federal policy and a  
4 policy that supports fish -- that supports the Yurok Tribe's  
5 rights, that supports restoration of the Klamath River as a  
6 whole. And for us, that's what this means right

7           And I think that's critically important to be on  
8 the record and for you all to hear is that dam removal for  
9 us marks the beginning of a new era -- an era of  
10 restoration, an era of healing -- not only for us as people  
11 but for the whole entire river.

12           And also an era where there is the potential to  
13 fulfill that original promise that the federal government  
14 made to us that this river would be ours and that we would  
15 be able to continue our fishing way of life on it.

16           So that is a critically important point and I  
17 hope that you all can take that back to the Commissioners  
18 themselves and reiterate it to them and know that that's  
19 what this means for us.

20           And I'm going to kind of step into why this is so  
21 important and it also -- this new era is absolutely needed  
22 right now because frankly we're at a critical juncture where  
23 if we don't make dramatic policy changes, we are going to  
24 see our fish die.

25           We're going to see the river die. The fish are

1 going to go extinct and Mr. Hillemeier will talk about that  
2 more. We've had several signs on the Klamath River of the  
3 declining health of the river.

4 One of those big ones was the 2002 Klamath River  
5 fish kill. That was a year in which it's estimated -- we're  
6 debating numbers because there's a lot, but what I guess the  
7 official word is that is estimated over 60,000 adult Chinook  
8 fall salmon died within a period of a couple of weeks in  
9 September. This is a picture of it. This is a picture of  
10 the river just below Blue Creek. You can see the mouth of  
11 Blue Creek on the left side of the picture here.

12 And what happened during that time was salmon  
13 acquired a fish disease -- "ick" and it killed them. And by  
14 the end of the kill the whole entire river all within the  
15 Yurok Reservation the sides -- the banks of the river were  
16 lined with dead fish all the way down and up the reservation  
17 and it was horrifying.

18 It was absolutely horrifying and so we know that  
19 things like this are not in our natural history right? We  
20 don't know of things ever occurring like this in our natural  
21 history and we've been on this river since time immemorial  
22 so this is not a natural phenomenon.

23 This was a man-made problem. A lot of it  
24 resulted from excessive water diversions to the Upper Basin  
25 but the dams played a role in it also in that again that bad

1 water comes down the river, the water quality is poor, the  
2 water temperature rises and when that's released it goes  
3 down into our neck of the woods and salmon can't survive in  
4 that.

5 And these two will talk more about that but the  
6 gist of it is to know that there are signs -- and we know  
7 that our river is not healthy. Even more recently in 2016  
8 and 2017 we had basically a collapse of the fall Chinook  
9 run.

10 Last year we had the second smallest allocation  
11 in the tribe's history which means that --

12 CHAIRMAN O'ROURKE: I think that was the smallest  
13 allocation we have ever gotten in our history last year.  
14 The year before was the second smallest.

15 MS. CORDALIS: That's what I said so the 2016 was  
16 the second smallest and then 2017 was the smallest. And  
17 basically what that means is that the returning run was the  
18 smallest that had ever been on record.

19 Mr. Hillemeier is going to talk about why that  
20 was but what I'm going to go through is talk a little bit  
21 about what that meant for us and I'm sure you will hear more  
22 from the fishermen about what that meant for us.

23 But as an initial matter we cancelled our  
24 commercial fishery. Our fishery is at the heart and soul of  
25 who we are as Yurok people. And usually there's fish in the

1 river all year long and even when we're not fishing we're  
2 cleaning our boats, we're tending our nets, we're smoking  
3 salmon, we're drying salmon or we're eating salmon or we're  
4 talking about salmon.

5 In some way, shape or form we are always doing  
6 something about salmon but provided the really low, low  
7 numbers of the returning runs, we have to cancel our fishing  
8 season and that is incredibly difficult for us. But we  
9 regulate our own fishery right -- the tribal government has  
10 laws that apply to the tribal harvest and the allocation.

11 We have a significant amount of staff biologists  
12 who work to set the allocations and to make sure that our  
13 fishery is sustainable and provided the low numbers over the  
14 last two years we felt we couldn't make a sustainable  
15 harvest and so the Tribal Council had to make a very  
16 difficult decision to close down the fishery and that's what  
17 we did, because that was right to preserve the fishery.

18 Now we will never put a price tag on our fish  
19 ever because they are -- there's no monetary value worth  
20 enough to compensate us for the inability to fish. But what  
21 I will say is that we did apply to the Secretary of Commerce  
22 for a fisheries disaster declaration that was awarded in  
23 2016 and in a part of that process we had to estimate the  
24 amount of the economic loss to the community and our  
25 estimates were just under 30 million dollars and that's just

1 to this little community of Klamath.

2 And in an area where there aren't a lot of  
3 economic opportunities, you can imagine how harmful that is  
4 to everybody here. We also are waiting for a 2017 disaster  
5 declaration as well and we're hoping that the federal  
6 government will step up and do the right thing and offer us  
7 some fisheries disaster relief funding there.

8 One of the hard things about this year was that  
9 in addition to cancelling the commercial fishery we also  
10 cancelled the subsistence fishery and I don't think that  
11 since time memorial there has ever been a year where the  
12 Yurok people did not fish for subsistence purposes before  
13 2017.

14 And that is an important point because it notes  
15 how poor the Klamath River is right now. It is sick. And  
16 our fish can only take so much and the fact that we removed  
17 ourselves and you know, said that blessing to those fish to  
18 let them go up and spawn, you know, that is a very clear  
19 sign again that if we don't change things, if these dams  
20 aren't removed that we are on a path towards extinction and  
21 I think Dave will talk more about that as well.

22 So I think with that I'll hand it over to Dave  
23 and I know that our tribal members will offer more about  
24 their experiences on the river as fishermen, but I wanted to  
25 offer that so that you understand who we are.

1           I think another important point to note is that  
2 we are the only tribe in the whole basin with undisputed  
3 fishing and water rights on the Lower Klamath and our  
4 reservation encompasses the lower 44 miles of the Klamath  
5 Rivers.

6           So when you are talking about the stakeholders,  
7 when you are talking about the legal interests implicated in  
8 dam removal, you're talking about the Yurok Tribe.

9           And let's see -- and that's just important to  
10 note so I hope that this gave you sort of an overall  
11 perspective of what dam removal means to us and the legal  
12 interests that are implicated from our perspective and I'll  
13 hand it over to Dave.

14           MR. HILLEMEIER: Thank you Amy. Before I get  
15 into the PowerPoint I wanted to talk briefly about the  
16 science that's gone into the dam removal process. This has  
17 been going on a long time. I know PacifiCorp -- I think  
18 they filed for their traditional license application before  
19 the settlement discussions began back in the early 2000's --  
20 like 2001 I think is when they applied.

21           I have a picture -- I wish I would have put it in  
22 here of Ronnie Pierce who used to do some work -- remember  
23 Ronnie? Yeah, yeah -- he wasn't a tall person but I have a  
24 picture of her sitting next to the license application that  
25 PacifiCorp filed with FERC back in 2001 and it dwarfs her by



1     about two feet all of these binders stacked on top of each  
2     other.

3             That was just the beginning of the process and  
4     since that time there's been an enormous amount of science  
5     that's been developed in regards to the effects of the dams  
6     upon the resources of the river and the tribe and the people  
7     that depend upon the river's resources as well as the  
8     effects of taking the dams out and what the short-term  
9     impacts are going to be and what the long-term benefits are  
10    expected to be as well.

11            So with that I would just encourage you to rely  
12    heavily upon that science that's already been developed in  
13    particular, in regards to the Secretarial determination and  
14    the wealth of science that was developed largely by the  
15    Department of the Interior and as you are probably aware a  
16    lot of that is readily available on [Klamathrestoration.gov](http://Klamathrestoration.gov).

17            But I think that now that we're 17 plus years --  
18    18 years I guess into this process my hope is that you're on  
19    the downhill slope. You've already got this wealth of  
20    information to base your determination upon so I would just  
21    recommend that you rely heavily upon that. There's  
22    definitely no need to recreate the wheel in regards to the  
23    science associated with the dams on the Klamath River.

24            Okay so we were talking about the recent decline  
25    in Klamath fall Chinook on the Klamath River. I did want to

1 clarify that the number that we had in there for 2017 that  
2 was a projection. We don't really know yet what the actual  
3 escapement was in 2017. Indications are that it is going to  
4 be a little bit better than what was projected but it is  
5 still well below what we need to have a healthy fishery in  
6 the Klamath River.

7           So a large -- well there were several things that  
8 contributed to that decline and this slide just touches upon  
9 the fact that ocean conditions played a part, flows played a  
10 part and also the dams played a part and this presentation  
11 is going to focus more on the role that the dams had in  
12 regards to the decline of the salmon that we had this year  
13 as well as the role that the dams have in regard to the  
14 health of all of the tribal fisheries.

15           And for the Weitchpec folks we are on a slide  
16 right now where the title says "Extremely high sea Shasta,  
17 et cetera." So what this shows is that in 2014 and 2015 we  
18 had extremely high incidence of infection of *Ceratomyxa*  
19 shasta, the juvenile Chinook in the Klamath River.

20           In 2014, 81% of the hundreds of juvenile Chinook  
21 that were samples for the presence of *C shasta*, 81% of them  
22 were infected with it. In 2015, 91% of the juvenile Chinook  
23 that were headed down the river were infected with the  
24 disease *Ceratomyxa shasta*. It doesn't necessarily mean that  
25 all of those fish died, but it does mean that a bunch of

1 fish died and most of those fish the pathologists believe --  
2 especially given that a lot of the sampling takes place in  
3 the Upper River so they were still infected with it for  
4 weeks before they hit the ocean.

5 The pathologists believe that most of those fish  
6 would have perished because of being infected by that  
7 disease. So a little bit about the Ceranova shasta -- when  
8 the -- where do we start here?

9 Well initially we'll start with the worms. These  
10 are called polychaete worms and I lost my pointer but at the  
11 upper end of the figure there is a little worm. It's about  
12 2 to 3 millimeters long and it's called a polychaete worm.

13 And the little parasite -- the Ceranova shasta  
14 parasite infects those worms. And in the springtime when  
15 the juvenile fry salmon are out rearing and migrating down  
16 to the ocean, the worms release what are called actinospores  
17 which is the live stage of that parasite.

18 And those actinospores then infect -- they're  
19 ingested by the little juvenile fish and they cause an  
20 inflammation in their stomach which causes them to die.

21 And so that is the life cycle of C shasta but  
22 then when the -- I probably should have started with the  
23 adults coming up but the way that those worms get infected  
24 is by the adults. When the adults spawn and die and the  
25 carcasses rot in the river they release what are called

1 myxosporeas that then float down and infect those little  
2 polychaete worms.

3           So I'm going to talk a little bit more about the  
4 polychaete worms because they are a really critical part of  
5 the C shasta lifecycle. In this picture off to the right is  
6 right there -- those are polychaete worms. That's a big  
7 boulder -- that's about a meter size boulder and that's a  
8 cluster of gazillions of polychaete worms that have  
9 colonized that boulder.

10           And so there are several things that can minimize  
11 the abundance of the polychaete worms in the Klamath River  
12 -- one of them is flows and this shows that flows since the  
13 2000's have been reduced and we have not had the scouring  
14 flows that we had in decades before that.

15           What this is, is a slow duration curve for the  
16 number of days in a year that we had flows over certain  
17 levels and the blue portions of the lines are flows over  
18 6,000 CFS. The red portions in the line are those over  
19 10,000 CFS. So as you can see we've had reduced flows since  
20 2000 which we think has contributed to the prevalence of the  
21 polychaete worms which have contributed to the prevalence of  
22 the C shasta.

23           But it's not just flows that affect these  
24 polychaete worms and here's a picture that shows the affect  
25 that flows can have. On the left-hand side is this rock

1     that had all these polychaete worms living on it. In 2016  
2     after we had a pretty good flow you can see that those  
3     polychaete worms have been scoured off of it. So that's  
4     pretty much all flow related.

5             But another thing that is really important to  
6     minimize these polychaete worms is the ability to move the  
7     rocks around that the polychaete worms are living on and  
8     that has to do with the size of the rocks that are in the  
9     Klamath River.

10            And one things that the dams have done and the  
11     reservoirs behind the dams have done -- when you have all  
12     the sediments flowing downstream, they settle out when they  
13     hit those reservoirs -- they don't pass downstream over the  
14     dams.

15            So what that results in is a Klamath River bed  
16     that has much larger rocks than there would be if we had a  
17     natural sediment regime going through the river and so that  
18     makes it so you only have these big boulders.

19            They don't get tumbled over as easily as say a  
20     fist-sized cobble would or even smaller substrate that the  
21     polychaetes would be growing on otherwise. So if we had a  
22     more natural sediment budget that was not being trapped by  
23     the dams we wouldn't have this large substrate and life for  
24     the polychaete worms would be much more miserable -- not to  
25     mention they'd be getting sandblasted during all the high

1 flow events and things like that.

2 Furthermore, another way that the dams and their  
3 reservoirs can affect the high juvenile disease rates that  
4 we've been experiencing in the Klamath River is in regard to  
5 the toxic algae blooms that we see in those reservoirs every  
6 year. The algae grow -- the algae dies and then the algae  
7 floats downstream and that is food for the polychaete worms.

8

9 So not only are we providing a really nice home  
10 for them to live on but we're feeding them as well with all  
11 of the algae that is coming downstream from the dams.  
12 Another way that the dams affect the juvenile disease rates  
13 that we have in the Klamath River is with Iron Gate  
14 Hatchery.

15 As you're probably aware Iron Gate Hatchery is a  
16 mitigation hatchery for the lost habitat between Iron Gate  
17 Dam and Copco Dam. It was put there in the early 1960's.  
18 What happens and you can see a picture of the Iron Gate Dam  
19 and the hatchery is right below it on the right-hand side of  
20 the slide up there.

21 And what happened -- often times you'll have  
22 thousands if not tens of thousands of adult Chinook  
23 returning to the hatchery each year which is mitigation for  
24 the dams being there and then they die and you have really  
25 high concentrations of carcasses within a fairly short

1 reach.

2           And these carcasses we talked about early about  
3 the lifecycle of C shasta as they rot if they have been  
4 infected with the myxospores they then release these  
5 myxospores you can have hot spots which is where we've had  
6 some of the highest incidence of C shasta has been not too  
7 far below Iron Gate Dam.

8           And actually there have been centennial stage  
9 where they have taken fish out to see if they get infected  
10 below Iron Gate Dam and if they get infected above Iron Gate  
11 Dam and there's been 100% survival of fish above Iron Gate  
12 Dam and almost 100% mortality of fish from C shasta that  
13 were held in the water for three days below Iron Gate Dam  
14 and then taken back to the lab to see how long they live.

15           So -- and then another way that the hatchery can  
16 affect the juvenile disease rates in the river is that often  
17 times the hatchery fish -- they're not up to size to be  
18 released when the natural fish migrate downstream which is  
19 typically April and May through middle part of May -- so  
20 oftentimes the hatchery fish are not released until early  
21 June to mid-June and that coincides with the water quality  
22 getting extremely warm in the Klamath River and also when  
23 the C shasta infection rates in the river are becoming  
24 elevated.

25           So often times these hatchery fish are getting

1 infected at a higher rate than the natural fish would have  
2 and this infection of these juvenile fish -- they then die  
3 in the river. They release myxospores, they go infect the  
4 polychaetes and it's been speculated that that's how the  
5 adults then may get re-infected when they come back out  
6 because then those polychaetes by about October or November  
7 are releasing those little actinospores that are infecting  
8 the adults as they return to spawn so they're perpetuating  
9 this cycle of C shasta disease.

10           So that's it in regards to the effects of the  
11 dams. There may be other effects from the dams in regards  
12 to disease issues but that's my understanding of how the  
13 dams are affecting the disease in the Klamath River for  
14 juveniles anyway.

15           Now I wanted to talk a little bit about the  
16 benefits to the fishery -- to the tribe's fishery from  
17 removing the dams. Okay so Iron Gate Dam -- actually Amy  
18 touched upon this but Iron Gate Dam is located right there  
19 and as you can see there's an enormous amount of historic  
20 habitat upstream of there -- over 420 miles of historic  
21 anadromous habitat that was totally cut-off in about 1917  
22 or 1918 whenever the first dam was put in place.

23           So needless to say taking those dams out and  
24 providing volitional fish passage is going to be a huge  
25 benefit to the resource, especially important for spring



1 Chinook that are doing really poorly in the Lower Klamath  
2 River.

3           Some of the largest spring Chinook populations  
4 historically were above the dams on the Klamath River.  
5 Another place that a lot of the spring Chinook used to  
6 inhabit on the Klamath River was above the Trinity dams  
7 which is over here and there's also no fish passage at  
8 Trinity dam, so we lost two of our huge populations for  
9 spring Chinook.

10           And the remnant populations which are the Salmon  
11 River which is right there and the southward Trinity River  
12 which is right there -- they're a fraction of their  
13 historical abundance. So being able to provide access for  
14 spring Chinook to the Upper Klamath Basin that contains a  
15 lot of thermal refugia -- which is really important for this  
16 species that stays in the river throughout the summer months  
17 and needs to have adequate temperatures to be able to do  
18 that.

19           I'm going to talk a little bit more about that  
20 soon. So it's really important for spring Chinook not to  
21 mention the benefits that will be there for fall Chinook,  
22 Coho salmon and Steelhead and of course expanding this range  
23 it increases the spatial and the life history diversity of  
24 these species as well as the abundance of the species.

25           And all three of those are the primary factors

1 that are considered say when NYMPS is doing some sort of  
2 viability analysis to figure out whether or not a population  
3 is facing extinction or should be listed on the Endangered  
4 Species Act.

5 The spatial diversity, the life history diversity  
6 and abundance are the key factors that they consider and  
7 taking these dams out would address all of those -- not to  
8 mention the staff on the lower left-hand sides -- that's  
9 from the Secretarial determination -- some of the science  
10 that they conducted.

11 And it shows the increase in tribal harvest that  
12 can be expected which could be for fall Chinook we're  
13 expecting an average or median increase of about 55% and  
14 the production of fall Chinook is expected to increase by  
15 81% for the modeling that was done for the Secretarial  
16 determination.

17 And these graphs -- the graph on the left was  
18 taken from some of their work. This is something that Mike  
19 Belchak, a colleague of ours who is on vacation right now or  
20 he'd be here, had put together in regards to thermal refugia  
21 and so the blue circles that you see there -- these are  
22 areas of thermal refugia that are above the dams.

23 You have the Wood River Basin, the Williamson  
24 River Basin, the Sprague River Basin and then below J.C.  
25 Boyle there's about 220 cubic feet per second of cold water

1     that inputs the stream right there from the Sprague as well  
2     as the Shasta and you have the Trinity Alps -- Trinity Alps  
3     right here, the Shasta River, all above Trinity Lake, above  
4     the dams on the Trinity, the south floor of Trinity and then  
5     the Lower Klamath because of the marine influx.

6             When you put it -- when Iron Gate Dam was put in  
7     place, all of that refuge which is quite abundant in the  
8     Upper Klamath -- the analogous fish lost access to it.

9             And then with climate change some of the  
10    predictions for climate change is that our influence of cold  
11    water refuge from the wilderness areas from the snow pack is  
12    going to be diminished substantially which really magnifies  
13    the importance of other thermal refugia areas.

14            And so it just ends up -- so if we were to get  
15    these dams out we would at least once again have the refuge  
16    that is not so much snow-packed drive, although there is  
17    some snow pack influence of course in the Upper Klamath but  
18    there's a lot of groundwater influence -- a lot of volcanic  
19    geology up there, both in the Upper Klamath as well as in  
20    the Shasta that will provide cold water once again.

21            So the Klamath River dams -- because you have  
22    these large bodies of water -- the reservoirs that sit there  
23    and they have thermal inertia which means once the  
24    atmospheric air temperature starts to change, there's a  
25    substantial lag before the water temperature within the

1 reservoir starts to change.

2           So what that has resulted in is in the fall time  
3 in particular the reservoirs get very hot in the summertime  
4 and then they cool down much slower than a natural flowing  
5 river would. And what that has really done is made it so  
6 you have these elevated water temperatures up to about 4  
7 degree centigrade higher in some of the fall times  
8 downstream of the dams than we would have had historically.

9           And those higher water temperatures are not  
10 tolerable for fall Chinook to hopefully be able to spawn and  
11 have healthy success with their eggs -- it's just those  
12 temperatures eggs cannot be spawned and hatched in those  
13 warmer water temperatures.

14           So what it's really done is it's truncated the  
15 fall Chinook run. Historically before the dams the fall  
16 Chinook probably started to enter the Lower Klamath River  
17 more in mid-July and even into early August and now the peak  
18 of the run is more toward the second to third to fourth week  
19 of August so it's really chopped off a couple of weeks of  
20 the run.

21           And some have speculated that that may be one  
22 reason that we had the fish kill back in 2002 is that you  
23 have the Klamath fish and the Trinity fish which typically  
24 enter the river later than Klamath side fish -- now they're  
25 much more on top of each other so you have higher densities

1 of fish in the Lower Klamath which can lead to the  
2 conditions that caused the fish kill of 2002.

3 So we feel that removing the dams and allowing  
4 the fish to go through natural selection to start to expand  
5 their migration timing will be a substantial benefit  
6 allowing them to get to the Upper Klamath earlier.

7 Also you have the same thing -- I don't have a  
8 graph in regards to the springtime months but you have the  
9 same thing in the springtime when the river stays cooler  
10 because of the coolness of the reservoir and it doesn't warm  
11 up as fast as the free-flowing river would and that affects  
12 the growth of the juvenile salmon which also affects the  
13 time that they head out to the ocean.

14 They do not smolt and head to the ocean as early  
15 as they would if the dams weren't there and the river were  
16 warming sooner and that makes them much more vulnerable to  
17 the C shasta disease because typically we see the disease  
18 rates becoming more elevated as we get through May and start  
19 to enter into June.

20 So just a quick summary of the benefits from  
21 access to the historic habitat -- one, it's the 420 miles  
22 that would once again be available to the analogous fish --  
23 all of the thermal refugia that exists in the Upper Basin  
24 would be extremely beneficial, especially for the spring run  
25 Chinook but also for Coho salmon, especially below Upper

1 Klamath Lake there's some good Coho habitat there and the  
2 cold springs that are in the Klamath River and that area  
3 would be very beneficial for the ESA listed Coho salmon as  
4 well.

5           The improvement to the viability of all of the  
6 populations because the increased spatial and life history  
7 diversity and their abundance and just as we noted the  
8 increased productivity by 81% and then the lack of the  
9 thermal inertia from the reservoirs would let the fish once  
10 again experience the temperatures that they have evolved  
11 with over thousands of years.

12           With that I'm going to hand it over to Louisa.

13           MS. MCCOVEY: Thank you Dave. So as these guys  
14 have mentioned before I'm the Environmental Director but  
15 also Yurok Tribal member so I'm going to talk a little bit  
16 today about water quality impacts and public health impacts  
17 that the dams have created as well as I guess give us some  
18 tribal member perspective.

19           So much of the environmental program has been  
20 collecting water quality data on the Klamath River for about  
21 17 years. Some of the major parameters that we collect --  
22 water quality parameters that we collect are toxic algae  
23 including microcystin, temperature, dissolved oxygen and PH.

24

25           And we've had USE EPA approved water quality

1 assurance planned and sampling analysis planned for about 15  
2 years so it sort of gives us a way to collect legally  
3 defensible data and do that in a way that's standardize --  
4 through standardized methods, USGS and EPA standardized  
5 methods, next slide.

6           So some of the water quality impacts from dams  
7 that we've seen they're -- it's long been held by tribes and  
8 other organizations collecting data on the Klamath River  
9 that you know dams have negatively affected temperature, DO,  
10 and PH in the Middle and Lower Klamath River as a direct  
11 result of dams.

12           Nitrogen and phosphorous concentrations in the  
13 basin substantially decreased between Iron Gate and the  
14 Klamath River estuary. The removal of these dams could help  
15 reduce the lifetime of these sediments in the Klamath River  
16 and possibly reduce the overall concentrations in the  
17 watershed.

18           And getting to Dave's point earlier this could  
19 help with the sediment budget and armoring that's happening  
20 because of that imbalance and help with the fish disease.  
21 So that brings me to the public health impacts that the  
22 Yurok Tribe experiences from toxic algae blooms.

23           So there is some major stratification that's  
24 happening as a result of the dams. So water falling behind  
25 the dams mix the nutrients inputs upriver from the dams

1 create conditions that are favorable for these blooms and so  
2 they're basically creating this stuff on the river --  
3 unnatural stuff and you know, creating a cesspool and  
4 perfect conditions for these blooms to proliferate which  
5 create an urgent public health need for dam removal for  
6 Yurok tribal members.

7           So we've been experiencing the detrimental  
8 effects from these cyanobacterial blooms for the entire  
9 length of our river from Weitchpec at the inception of our  
10 reservation up river all the way down to the estuary which  
11 also means that the entire river has been affected by these  
12 blooms.

13           And they have been linked to reservoir water  
14 conditions behind the dams. They have put highly exposed  
15 Yurok tribal members at risk -- public health risk. They  
16 have generated disproportionate negative impacts -- health  
17 impacts and created a serious environmental justice issue.

18           So this back here what we're looking at is the  
19 microcystin data that we've collected since 2009 and you can  
20 see there's a red dash line down there toward the bottom and  
21 that's the public health threshold for recreational use.

22           And so you can see over the years that on average  
23 for a 10 week duration we are exceeding that public health  
24 threshold in micrograms per liter.

25           And I think another important point about this



1 slide is that the timing of the toxic algae blooms also  
2 happens to coincide with the tribe's use of the water. It's  
3 the same exact time that we're you know, practicing our  
4 ceremonies, we're using the river for fishing, we're in the  
5 river all the time at the same exact time that there are  
6 these toxic blooms happening.

7 So last year we had a record high amount of toxic  
8 algae in the Klamath River. You can see over the years that  
9 it has consistently exceeded the threshold and last year in  
10 2017 it got up to 30 micrograms per liter which is way off  
11 the charts and posing an incredible public health risk to  
12 our tribal members.

13 So a way that this is sort of an environmental  
14 justice issue is our tribal members have unique exposure  
15 pathways because we are a living, breathing culture. We're  
16 here -- we're practicing our way of live every single day.

17 And so some of those pathways include dermal  
18 absorption through commercial fishing, cultural  
19 practitioners you know, during basket collection for the  
20 materials. They are submerging their arms and legs into the  
21 water and coming in contact with the water.

22 There was a picture down there on the far right  
23 of some folks actually in the water. A lot of the materials  
24 are plants that grow right next to the river and so you have  
25 to get into the river physically to collect these species.

1           And also dermal absorption during ceremonies for  
2   maybe ritual bathing or water collection. Also general  
3   recreational use -- and accidentally falling in the river --  
4   so the second unique pathway is ingestion -- and so this  
5   happens through eating subsistence and traditional foods  
6   like freshwater mussels, there could be some ingestion on  
7   the salmon that we eat, lamprey, sturgeon, whatever fish  
8   that we're harvesting or species that are harvesting from  
9   the river could actually be making it into our bodies.

10           And so microcystin is a liver toxin and so there  
11   are potential impacts from that. So the third and final  
12   pathway is inhalation could potentially be coming from the  
13   aerosolization of water through jet boat motors and jet ski  
14   motors and so folks are out there on the river breathing  
15   that in and ingesting it into their bodies.

16           So we as Yurok people believe the river is a  
17   living, breathing being and right now as the Chairman and  
18   Amy said our river is sick. And there's just something  
19   inherently wrong with that and it inhibits our way of life  
20   and our ability to I guess be Yurok.

21           Every year there comes a point in the hot summer  
22   months where my program has to go out and post fliers around  
23   the community and tell tribal members that it's unsafe to  
24   come in contact with the river.

25           We utilize the river in the same way that our

1     ancestors did. We hunt fish down where we live on the  
2     Klamath River every single day of our lives and so our  
3     exposure rates to the toxic algae that's present in the  
4     river and the impacts that are felt from degraded and poor  
5     water quality are unique and far greater than the general  
6     public.

7                     And this is creating a major environmental  
8     injustice issue that has one solution and that solution is  
9     the decommissioning of the dams, Copco 1, Copco 2, Iron Gate  
10    and J.C. Boyle. So if that as Amy mentioned earlier we are  
11    confident in the KRRRC's ability to accept the transfer of  
12    the license and successfully complete the decommissioning.

13                    We strongly urge you as the federal entity that's  
14    overseeing this process to take part in this monumental  
15    river restoration and help to heal our sick river. Thank  
16    you.

17                    MS. CORDALIS: Thank you Louisa. I just wanted  
18    to add that I think what I saw come through is the point  
19    that we are still a living and breathing culture and our  
20    very much traditional way of fishing and we're at a juncture  
21    now where if we don't change the way that the river is being  
22    managed we're going to lose those fish.

23                    And I'd like to -- I don't like to but I think  
24    there's an analogy to be made here with the Sioux people and  
25    how they lost the buffalo in the 1800's and how the loss of

1     that buffalo really ended that Sioux way of life.

2                 We are at a junction now you know, 200 years  
3     later where if we lose these salmon in this river we will  
4     also lose our way of life and that is a huge loss to not  
5     only everyone in this room and our entire tribe but to the  
6     nation, right and to the whole -- you know, humanity and I  
7     would like to think that at this day and age and with how  
8     much we have progressed that the United States values  
9     native cultures sufficiently.

10                They value, and we as a nation value our public  
11    natural resources sufficiently to take actions to preserve  
12    them and that's why the dams need to come out.

13                So I want to offer Javier Kenney an opportunity  
14    to speak and then we'll close the tribal portion oh and  
15    Chairman.

16                CHAIRMAN O'ROURKE: I do have something to share  
17    with you and it's very short but very brief and very true  
18    and but if you heard of the story of the Yellowstone -- you  
19    know the wolf and the Yellowstone.

20                So in the Yellowstone park long ago there was a  
21    wolf problem you know until they put a bounty on them on the  
22    wolf's back there, the gray wolf, and they hunted the wolves  
23    near extinction, you know, and what was left they ran out so  
24    you didn't see wolves very often in Yellowstone if at all.

25                Until not long after the wolves left you know,

1     they started having water problems, you know -- wetlands  
2     drying out, you know and so they started to track the reason  
3     why these wetlands dried up.

4             And they noticed there was no more beavers, you  
5     know and so they couldn't figure out, you know, what's going  
6     on here -- no more wolves, no more beavers and our fields  
7     are drying up, what was our dam water problem.

8             And so after an individual that thought about it  
9     and a person with vision you know, he seemed to answer. And  
10    what caused the problem as when they hunted the wolf to near  
11    extinction and ran directed them out that the elk which is  
12    the wolf -- the wolf is the elk's only predator back then  
13    outside of man, you know, and so without the predators  
14    around them, they stayed and overgrazed our lands too much.

15            And one of their favorite foods was the willow  
16    sprig that grows along the springs there. It's the willow  
17    trees that the beaver makes his dams out of so when the wolf  
18    was gone, the elk overgrazed, there was no more home for the  
19    beaver so the beaver moved out.

20            When the beaver moved out there was no more dams  
21    to supply the wetland with the waters to back the waters up  
22    to make the wetland and so it caused havoc across the whole  
23    land. So very much the same when we start to disrupt  
24    nature, you know -- that nature's way of life or fixing  
25    things or taking care of things without truly understanding

1 all that it does.

2                   The eco-system is the web of life.  
3 Everything is connected to something that drives something  
4 else and when you upset that balance, you cut one thread in  
5 my shirt you know it doesn't seem like much when you pull a  
6 thread and watch what happens in a couple of years where you  
7 pulled that thread.

8                   You know pretty soon you have to get a new shirt  
9 because that one is not looking too good or it's starting to  
10 fall apart. So very much an example of what it is and to  
11 understand what it is that we do and to go back and to fix  
12 these things first somebody has to understand them.

13                  But right now the first thing that we need to do  
14 is quit unraveling it, you know, and that's where we're at.  
15 And so mankind depends upon water. They depend upon our  
16 eco-system you know, nature and so when we disrupt it we  
17 have to be very careful or we end up with what they call  
18 climate change. So thank you, Javier.

19                  MR. KINNEY: Again good morning and we want to  
20 welcome you to not only the Yurok Reservation but Yurok  
21 country. My name is Javier Kinney, I'm a tribal member and  
22 the Director of the Office of Self Governance for the Yurok  
23 Tribe. The spelling of my name is J-a-v-i-e-r K-i-n-n-e-y,  
24 from the villages of Wedgepouce, Pectaw.

25                  We just wanted to share a few things as well

1 during your time here. The Yurok people are a water, fish,  
2 natural resource and prayer people.

3 I wanted to share three things with  
4 you today as well in regards to the train of governance of  
5 including indigenous knowledge and technical expertise, the  
6 importance of recognizing and implementing Yurok Tribal  
7 decision-making and thirdly, the implementation of Yurok  
8 knowledge in these proceedings as we move forward toward dam  
9 removal.

10 The Yurok Tribe strongly supports the application  
11 of the Klamath River Renewal Corporation to transfer the  
12 hydroelectric license from PacifiCorp to the Klamath River  
13 Renewal Corporation.

14 The Yurok Tribe strongly supports the Klamath  
15 River Renewal Corporation application for license surrender  
16 and dam removal in 2020. As explained earlier, the  
17 technical expertise, the cultural knowledge and the  
18 governmental leadership of the Yurok Tribe is key and  
19 critical to all decisions made on the Klamath Basin.

20 As has been expressed before, dam removal in many  
21 conversations and discussions and federal government  
22 decisions did not include the Yurok Tribe. Energy policy  
23 and infrastructure development also excluded not only the  
24 Yurok Tribe's indigenous knowledge but cultural importance  
25 of we're still here -- we will always be here.

1           So our recommendation and the technical expertise  
2   of not only Yurok Tribal members as well as scientific  
3   biologists, hydrologists and other technical staff should be  
4   very carefully and intricate to all of these proceedings.

5           The Yurok Tribal decision-making is also critical  
6   as you see the trend of excluding indigenous knowledge is no  
7   longer evident or comparable to the historic exclusion of  
8   those types of insights.

9           The implementation of Yurok knowledge in dam  
10  removal is going to continue not only for the current  
11  project of the dams coming out in 2020, but our  
12  grandchildren's grandchildren to also work together in a  
13  very critical and cooperative way that recognizes not only  
14  the benefit to the Yurok people and communities and  
15  resources but the protection of the region as a whole.

16          So with that we'd like to again thank you for  
17  coming to the Yurok Reservation. We'd like to welcome more  
18  cooperation on the governmental level as well as share with  
19  your colleagues the importance of coming out to tribal lands  
20  and seeing for yourself, getting on the river and locating  
21  the importance of the cultural prayers, the ceremonies, the  
22  White Deer Skin Dance, the Brush Dance, the Jump Dance,  
23  because those prayers are not just for us but for all of  
24  mankind, thank you.

25  CHAIRMAN O'ROURKE: You know so we're getting pretty close



1 to lunch time. I think that we have like four or five  
2 minutes. We'll give this time to get up and to stretch and  
3 to do whatever it is that we do when we stand up, you know.  
4 So let's get ready to break for lunch. I don't know where  
5 lunch is but I'm sure that it will be here soon if it is not  
6 here already. How long are we going to need for lunch -- an  
7 hour? So we'll break for an hour. (Whereupon a lunch  
8 recess was taken to reconvene later this same day.)

9

10

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14 A F T E R N O O N S E S S I O N

15 MR. GENSAW, SR: The chair is behind here and he  
16 said to get things started so I guess we can get things  
17 going.

18 MS. SANDERS: Great. So welcome back everyone my  
19 name is Cheyenne Sanders I work for the Office of Tribal  
20 Attorney and I'm a tribal member. I'm going to be helping  
21 facilitate public comment this afternoon.

22 Just as a refresher we do have our ground rules  
23 listed on the back of one of the handouts that you received  
24 at the front desk. I have a list of everyone's name who  
25 checked the "Yes" they would like to submit a comment box at

1 the front desk.

2 I'm going to read those names aloud in the order  
3 that they will be called. If you do not hear your name or  
4 you would like to be added, please reach out to Mya who is  
5 sitting at the front desk and you will be added to the list.

6 Just as a reminder we're planning on starting  
7 comments in Klamath now and then we will be switching over  
8 to the Weitchpec Office at 2 and then after the conclusion  
9 of the Weitchpec comments we'll come back to Klamath.

10 If I call your name and you're not present I'll  
11 just go ahead and keep you on and return to you at the  
12 conclusion of the list that I have. I'm going to read the  
13 names now. The first -- again in order that they will be  
14 called, Gino O'Rourke, Mel Brooks, Jacque Mattz, Victor  
15 Knight, Frank Eisele, Susan Masten, Levina Bowers, George  
16 Gensaw, Toni Peters, Bessie Shortee, Shelly Shahawmin,  
17 Alison McCovey, Joe Hausler, Lucinda Myers, Oscar Gensaw,  
18 III, Franklie Myers, Laura Woods, Micah Gibson and Rich  
19 Nelson.

20 Again, if you'd like to give comments and didn't  
21 hear your name please speak with Mya. We're going to do  
22 three minute comments. I'm going to have the clock up behind  
23 and it will ding at the conclusion of your three minutes.  
24 Please wrap up your comments at that time.

25 I'd like to invite Gino O'Rourke. The comments

1 will be given right here in this chair so if you would like  
2 to come forward and Mel Brooks is on deck. Mel if you would  
3 like to come a little closer and we'll go through comments  
4 that way.

5 Are there any questions that I can answer right  
6 now about the public comments?

7 UNIDENTIFIED SPEAKER: Off mic question.

8 MS. SANDERS: So it's not necessary, thank you  
9 for asking. Any other questions or comments at this time?

10 MR. O'ROURKE: Is that necessary clarification?

11 MS. SANDERS: It is not necessary. I have them  
12 written down. Again, if you did not hear your name please  
13 make sure that you check in with Mya and we'll confirm the  
14 spelling for the court reporter at that time.

15 So I'm going to let Gino get started, thank you  
16 all.

17 MR. O'ROURKE: Hello, I just want to thank you  
18 for coming again. Gino O'Rourke, Yurok Tribal member from  
19 the Weitchpec area -- Weitchpec District.

20 I just want to start off saying I fully support  
21 the removal of the dams. A large part was because of the  
22 health of the fishery is -- the fish is really important to  
23 Yurok people. You know it just gives us sustenance to  
24 survive, also it helps us to connect to our culture and  
25 connect to our land in spiritualness.

1           The Yurok spirituality is all connected together  
2   and I just want to say that some of my favorite times and my  
3   most memorable times have been out on this river fishing  
4   with my friends and family so it does bring us to this  
5   connection -- all the way to back when the old times.

6           It's there -- it's not only just for the fish but  
7   also for the health of the river. Like if I want to get a  
8   kayak and just go kayaking on the river but by the time it  
9   gets late months that's the way -- we get warnings that the  
10  river is not even safe to touch, you know, don't even go so  
11  close to it.

12          And so that's not good. I don't swim in the  
13  river, I get hot I'll go swim in the creek because how dirty  
14  they said the river is. My brother was down there fishing  
15  one time and he had an open cut and then he got staph in his  
16  hand just from keeping that hand in the river.

17          And through all the science and everything that  
18  we heard today I don't really see the purpose of keeping the  
19  dams in. It seems like it's more beneficial -- there's a  
20  lot more benefits of taking it out than leaving them in,  
21  that's what I have to say, thank you.

22          MS. SANDERS: Thank you Gino, I'd like just to  
23  confirm for the record that Gino is a Yurok Tribal member  
24  from the Weitchpec District. Next up we have Mel Brooks, a  
25  Yurok Tribal member from the North District and on deck we

1 have Mr. Jack Mattz.

2 CHAIRMAN O'ROURKE: Tribal elder.

3 MR. BROOKS: Wait a minute now, oh there you go.

4 Good afternoon, my name is Mel Brooks, M-e-l B-r-o-o-k-s,

5 Yurok Tribal member. I was raised at the mouth of the

6 Klamath River here.

7 The first year that I can remember gill netting

8 was when I was 5. My dad was sick and my mother and I went

9 down in the springtime and fished. Well we had those ugly

10 nests back in those days and it was just a little throw net

11 which was heavier than -- four or five times heavier than

12 the nets now and it was only about 20 foot long.

13 But we'd catch fish because there's a lot of fish

14 that come up here for that. What I'd like to say is that I

15 heard all the comments made by the esteemed panel and

16 esteemed tribal share but 1978 we had a big fish kill up at

17 Iron Gate -- I think it was '78 or '79.

18 What they did they had one of them -- biologist

19 at that time was U.S. Fish and Wildlife Services and they

20 didn't know their you know what's from their you know

21 what's. But what happened is that there was a guy named

22 Gallagher who worked for and he was a layman -- he worked

23 for Cal Fish and Game and he worked at the dams. He'd come

24 down and try to get little, little hatcheries on the

25 tributaries and things like that.

1                   And so up at Iron Gate they had one of the  
2   biggest returns that they had for years -- they had 8,000  
3   fish up there.   They hatched them out and low water. The  
4   water got too warm -- there was worry about that time to  
5   whatever size -- fingerlings I guess and they all started  
6   getting the hatchery gill disease.

7                   So they had massive burials up there. And then,  
8   subsequent to that or after they started trucking fish down  
9   from Iron Gate down to the grand -- different places and  
10  dropped them off. But that's like feeding -- they'll stay  
11  around for three or four days and they're just feeding the  
12  birds really.

13                  There might be some that survived which would be  
14  good but we didn't really have good, reliable fishery data  
15  back in those days and the U.S. Fish and Wildlife Service  
16  they were more or less lay people too.

17                  We hired people or they did -- they hired people  
18  that could do the paperwork but didn't do really good  
19  investigations. We got biologists that didn't do good  
20  investigations because they just came out of college --  
21  probably Humboldt State or some place.

22                  We had to tell them that felines eat salmon and  
23  they didn't know that which is kind of far-fetched -- I  
24  don't know what they went to biology school for. I have got  
25  to tell you one thing about -- oh, oh, my twin brother is

1 going to be here so can I finish -- can my twin brother  
2 finish was I was starting. So that's it -- oh, alright.

3 CHAIRMAN O'ROURKE: You get an elder minute.

4 MR. BROOKS: Back in -- oh the '70's, the  
5 biologist -- I mean the anthropologists at that time were  
6 being taught that Indians of the Pacific Northwest were  
7 lucky to live, reside around water systems because it was  
8 plentiful of animals, plentiful of fish, plentiful of ocean  
9 -- for us, of clams and stuff like that.

10 Well you know that's not too far gone. That's  
11 not too far back. That's one of the problems with when the  
12 dams were started they didn't talk to us because it was  
13 stupid. They didn't have to talk to us because at that time  
14 when the commercial fishery started here years ago,  
15 California -- they're the ones that issued the permits  
16 because a guy wanted to build a carry down here and a  
17 couple of carries.

18 But what they did was they opened up a commercial  
19 fishery here and on the other systems -- Sacramento and the  
20 Eel. Now Smith River also had a fishery that, you know,  
21 they never asked anybody down here.

22 We were happy and I know my dad said he was happy  
23 to get to fish and sell his fish even though it was a nickel  
24 a pound. It was still a good deal because there's no money  
25 floating around. Everybody had enough to eat and things

1 basically but they didn't have any money for buying extra  
2 things like shoes and clothes and things like that, you  
3 know, on a regular basis because there just wasn't that much  
4 money floating around and Indians weren't getting their fair  
5 share of the jobs.

6 And then the logging industry kind of eliminated  
7 that. It just went whole hog -- but you know, we don't have  
8 those options anymore. All we have is our system. They  
9 always said that the river was the lifeline of the Yurok  
10 people.

11 Now I don't know, I don't know what we're going  
12 to do if our lifeline is severed at the neck because our  
13 head can keep on talking I guess but we can't feed our  
14 bodies -- that's not what it is.

15 I think I better let you guys -- they only gave  
16 me three minutes, plus, thank you.

17 MS. SANDERS: Thank you, Jack Mattz is up next  
18 followed by Victor Knight.

19 MR. MATTZ: Good afternoon everybody, Council.  
20 I have been part of the river my whole life. My family  
21 comes from Requa, my grandmother grew up down there -- all  
22 my relations have actually. I learned how to swim in this  
23 river when I was just a little kid 7 years old being able to  
24 swim across the river.

25 Nowadays I won't even touch it because of the



1 diseases that come down it. Dam removal has to happen. It  
2 is a very important part to get our river back to where it  
3 used to be. Right now 55% of the water that used to come  
4 down that river goes somewhere else. That means we're only  
5 getting 45%.

6 And I see where the state of California is  
7 wanting to take more out of the Trinity and sent it down  
8 there to the farmers. They're saying it's not going to the  
9 farmers -- they're trying to say it's going to the  
10 communities down there but we know where it's going.

11 I am all for dam removal. I hope you people turn  
12 the licenses over. The main company itself has already said  
13 that they don't want the dams anymore they want to turn the  
14 licenses over to you so you can turn them over to the dam  
15 removal company.

16 I have met all of those people that we have  
17 appointed on to that dam removal company. They're all a  
18 very bunch of wise, smart people and every one of them are  
19 for dam removal and just listen to them and listen to  
20 everybody here and do the right thing, thank you.

21 MS. SANDERS: Thank you Jack, next up is Victor  
22 Knight followed by Frank Eisele.

23 MR. KNIGHT: My name is Victor Knight, I'm from  
24 Weitchpec. I would like to thank the Council and the  
25 Commission for being here. One of the things that I would

1     like to talk about is the dam removal as far as the Yurok  
2     Tribe and tribal members having to take part in it.

3             I own a corporation -- an S corp in the state of  
4     California. I have different contacts. I would like to,  
5     you know, get in on the actual hands on on doing this. I  
6     believe that it's an economic stimulus for our tribal  
7     members to be part of this and to build a relationship with  
8     the Commission and employ some people on this project, thank  
9     you.

10            MS. SANDERS: Thank you Victor, next we have  
11     Frank Eisele followed by Susan Master.

12            MR. EISELE: My name is Frank Eisele, Frank I. L.  
13     Eisele, Yurok member elder. I've been involved with the  
14     fisheries down there about 30 years. Dave Hillemeier gave  
15     me a lot of information much dam work on tribal program  
16     fisheries.

17            And I represent Oregon fisheries up in Oregon.  
18     We come down every summer on the mouth of the Klamath. And  
19     every year I watch the river get sicker and sicker, sicker.  
20     In my -- it's spiritual, it affects the whole tribe. It's  
21     just not our tribe -- it's the whole west coast.

22            Every tribe I talk to that's on that river has  
23     the same issues, you know. Water is the most important  
24     factor in survival. I don't know much about our tribe  
25     because I was raised in Oregon. I lived on the Klamath six

1 months a year for five - six years 20 years ago so I watched  
2 this river get sick.

3 And then in 2000 it really got sick and it's --  
4 dam removal is the answer. So I have to depend on our  
5 Council and our fisheries and people like you to fix it, you  
6 know. We have great traditions in our stories of our  
7 heritage that we live in a different time, you know, and our  
8 generation did all the damage but we can fix it.

9 Like I said spiritually is my goal as I pray on  
10 that river, I pray on that the last five-six years heavily.  
11 But then again I have to apologize to our holy people that  
12 pray on that river also that I didn't get involved with them  
13 but I prayed with some of the fishermen -- they're all  
14 fishermen on the river that lived on that river and  
15 survived.

16 And I'm just an estuary tribal fisherman. I'm  
17 not an upper river fisherman -- I don't know that river. I  
18 didn't know the estuary and when it gets sick upriver  
19 really, really, really deteriorates.

20 And I watched all those fish over the years get  
21 killed. Boy that three minutes goes quick but we're  
22 depending on you guys to make the right decisions and our  
23 tribal Council and our tribe -- they did a great  
24 presentation this morning. It was very simple and I'm  
25 really surprised that more people didn't show up because

1     this is a very, very important meeting.

2                 So I pray that every year I'll be back here, that  
3     Chairman, every year our fisherman come down and have a  
4     reunion down here during salmon festival time and this year  
5     we'll be here again and we'll have fresh fish to serve our  
6     elders through that salmon festival.

7                 So I thank you guys for coming and I'm proud of  
8     our tribe for where we're headed.

9                 MS. SANDERS: Thank you Frank, next we have Susan  
10    Masten followed by Lavina Bowers.

11                MS. MASTEN: Good afternoon, Susan Masten,  
12    S-u-s-a-n M-a-s-t-e-n and I am the past Chairman and the  
13    past Vice-Chair and the past Yurok transition team member  
14    and Yurok Council member so I've been around a long time.

15                And prior to that I came home at a time when it  
16    was can an Indian and save the salmon. It was my uncle's  
17    Supreme Court case that Mattz v. Arenet that reaffirmed our  
18    fishing rights on the Klamath Basin and it was a turbulent  
19    time -- a time when the federal agents were called in in  
20    full riot gear with helmets and shields and M16's and bullet  
21    proof vests to protect the salmon.

22                However, the only people not fishing were the  
23    first people of this land. The river sport was fishing, the  
24    ocean sport was fishing and the ocean commercial fishermen  
25    were fishing. So as that's not okay for us that we had just

1 won in the highest court of the land and so the people  
2 protested.

3 And we protested for several months -- that would  
4 have never happened if we would have had a tribal government  
5 at that time but we weren't organized. We did organize as  
6 the fishermen of this river and we held numerous meetings  
7 and we began to get involved in the management system of  
8 those fish because we never intended for that to happen to  
9 us again.

10 So it's been the Yurok people that have been  
11 there to protect the river from day one. We have been  
12 provided with everything that we need. Our spiritual  
13 well-being is dependent on the health of that river. As a  
14 fishing people we spend the majority of our time on that  
15 river whether we're gathering materials or fishing to put  
16 food on the table or we're fishing to make enough money to  
17 put clothes on our children.

18 The unfortunate thing is that a lot of other  
19 people have gained a lot of wealth off of our resources  
20 including this dam, including timber and fishery and that's  
21 the unfortunate thing. And it's ironic that the dam which  
22 provided power to people -- provided power to everyone  
23 except the first people of this land and we didn't have  
24 power on our reservation on the upper 40 miles until the  
25 Yurok Tribe came into place and began to put the power line

1 on the river.

2 So you know, it's time for the dams to be  
3 removed. Our cultural well-being, the health of the people  
4 depends on the health of that river and as soon as the dams  
5 come down and the river begins to restore itself and our  
6 fish with their DNA remember where to find their home, the  
7 healthier the Yurok people will be.

8 And so I just want you to understand how  
9 important this system is to who we are as a people. It is  
10 who we are and it's not lifeline it's our heart line and so  
11 I thank you very much because there was a time when  
12 decisions were being made about our livelihood and our way  
13 of life without having a voice.

14 And so you being here is important for us because  
15 it's about time and I want to thank you.

16 MS. SANDERS: Thank you Sue, next we have Lavina  
17 Bowers followed by George Gensaw.

18 MS. BOWERS: Good afternoon. My name is Levina  
19 Bowers. I'm in my 80's so I know a lot about when I was  
20 young and on this river I know that my mom and my brothers  
21 and my dad did a lot with fishing like smoking and canning  
22 and all that.

23 But the most important thing was my mother prayed  
24 a lot for our fish. It was Indian way of living that we  
25 fished and we prayed before we went. I know one time my

1 mother was -- and she prayed for a lot of other things, our  
2 boys did also, but this -- when they would go fishing my mom  
3 always prayed that they would go and they would come home  
4 with fish.

5           So that was something in our lives that we did.  
6 Yurok people know who Yurok people are. That's what we were  
7 born, we were raised, and they don't make up rules, and  
8 that's why everybody knows our dams have to come down  
9 because our people lived right. Our people did things that  
10 honored and took care of their babies and their growing up  
11 families.

12           I just wish now that a lot of people understood  
13 what it means to say our prayers for our fish, for  
14 everything that we have to do on our river. The last two  
15 years I have not eaten fish. My daughter, Sue, keeps  
16 telling me mom if it's smoked, if it's cooked, if it's this  
17 -- you can eat it but when they say it's got "ick" in it I  
18 don't want to eat it.

19           So I have missed a lot the last two years. I  
20 think the first spring salmon came in I ate but -- and a lot  
21 of people tell me, you know, it's alright and I was -- my  
22 nephew's wife he said, "Auntie, you can eat that fish," and  
23 I said, "Does your wife eat it?" He said, "No, she didn't  
24 eat it." Well why would you want your auntie to eat it?

25           But if we get rid of our fish we'll get rid of

1 the ick on the river and we'll be able to do what Yurok  
2 people did -- take care of our fish. And I have a lot of  
3 thanks to give to Dave Hillemeier. My daughter worked with  
4 him for a long time and I know how hard Dave worked for our  
5 river and how hard he has tried to get things back on the  
6 way it was.

7 I don't see Dave in here right now but I feel  
8 that and Ronnie Pierce also, worked with -- her and Sue used  
9 to go on traveling trips about the fishing and sometimes  
10 they didn't have enough money for a room so they put their  
11 money together or people would donate some money for them to  
12 go and I don't know Ronnie Pierce and her sometimes slept on  
13 the floor of some of the rooms to get to go.

14 So we have a lot to do to thank Ronnie Pierce,  
15 Dave Hillemeier and my Susan Masten, thank you.

16 MS. SANDERS: Thank you next is Georgiana Gensaw  
17 followed by Toni Peters.

18 MS. GENSAW: Georgiana Gensaw, G-e-o-r-g-i-a-n-a  
19 G-e-n-s-a-w. I hope that won't count in my time. I agree  
20 Georgiana Gensaw and Oscar Gensaw the third. I have three  
21 sons, David -- Faylynn is 13, David is 10, Oscar the IV is 6  
22 and my daughter is a year and a half old and her name is  
23 Queen.

24 We are all Yurok Tribal members and of Cutter  
25 descent. Since 2002 dam removal has been the biggest



1 priority for the tribes and those of us that live along it  
2 -- along the river. My family and I have attended and even  
3 helped organize rallies, meetings, negotiations and many,  
4 many FERC consultations and state water board meetings --  
5 everyone has.

6 Klamath River people have traveled to Sacramento,  
7 Portland, Salem, Omaha and Scotland. Along the river we  
8 have an unemployment rate of over 50% and yet we combined  
9 our limited resources to keep pushing for dam removal  
10 efforts.

11 I saw all of this to remind you, FERC, that  
12 Yurok, Cutter, and Hoopa people have always been committed  
13 to the river. Our loyalty has never wavered and our demand  
14 has never changed. We want dam removal and we want it now.

15 Our fishery is collapsing and every summer our  
16 river is made toxic by the dams. This past fall the Yurok  
17 Tribe had to shut down its fall fishery. This was an  
18 agonizing decision -- it caused hard feelings and it was  
19 catastrophic for fishing families like mine.

20 Both my husband and my father are fisherman. My  
21 brothers and brother-in-law depend on the bounty of the  
22 river to feed our families. No fish means no food. No fish  
23 means nothing we can barter with. No fish means our  
24 smokehouses went empty.

25 Our communities depend on the river for

1     sustenance. Right now our generation is watching the  
2     Klamath diminish and we are fighting to not let it fade  
3     away. It's January -- we should be opening jars of fish to  
4     make dinner or to give to our kids to snack on.

5             This is not happening. Instead I'm relying on  
6     tuna that was purchased at the Crescent City docks to feed  
7     my family fish just to keep fish in their diet. But nothing  
8     can replace salmon for the Yurok people. It's another dry  
9     winter and we as river people know that things will only get  
10    worse this summer and fall.

11            We all know that dam removal is the one thing  
12    that can save our fishery and our river. I am asking FERC  
13    to please approve the permits that are necessary for  
14    PacifiCorp to give the dams to the Klamath River Renewal  
15    Corporation so that we are one step closer to dam removal.

16            I know that we are not in a political climate  
17    that values our environment but I know that the powers that  
18    be do value business and this is a business decision --  
19    plain and simple. PacifiCorp made the decision for dam  
20    decommissioning instead of putting in fish ladders.

21            River people have relied on FERC to protect our  
22    river from a dangerous pipeline project and now we call on  
23    you to continue to champion dam removal. The road to dam  
24    removal has been long and at times depressing. The light at  
25    the end of the tunnel is to see dam removal take place that

1 would make every hardship my people have had to endure worth  
2 it.

3 It cannot bring back the dead fish of 2002.

4 MS. SANDERS: Thank you, next we have Toni Peters  
5 and then after that we'll be moving to the Weitchpec and  
6 then we'll return back to Klamath.

7 MS. PETERS: My name is Toni Ray Peters. I come  
8 from the Klamath Weitchpec Hoopa District Orleans and I  
9 would like to say these dams need to come out because if we  
10 don't have water, we don't have life.

11 Let me ask you this. Put your guys' lives in our  
12 shoes and see how far you flow and see what you think about  
13 life. You guys look and smile and think it's all okay, it's  
14 not. This is our life, this is where we come from, respect  
15 our rivers.

16 You guys think it's all fun and jokes. This lady  
17 thinks -- look she's smiling and smirking and things it's  
18 all okay, it's not okay. We don't have nothing without  
19 water. If we don't have that water our kids and our  
20 grandkids and our kid's grandkids they will have nothing in  
21 life.

22 The fish are our world -- that's where we live.  
23 We rely on that. You can't just go and saw to one elder or  
24 another elder, "Hey we're taking your fish away, we're  
25 taking this away from you." Why don't you put your guys'

1 selves in our shoes and see how you feel for one year -- for  
2 one year I want you guys to get in our shoes to see how we  
3 feel, then you'll really know what's going on in our family  
4 life.

5           Why we don't have water. We should have water.  
6 You look at me and you smile like it's funny -- it's not  
7 funny. This is our elder's program. This is where it comes  
8 from, years and years past and from. What are all of our  
9 grandkids going to say later down the road when you guys  
10 are, "Oh no, you can't do this, you can't do that." Then  
11 what?

12           Nothing. See? Just like always. Natives don't  
13 matter to you people maybe you ought to put yourselves in  
14 our boat, in our shoes and see what the real life is all  
15 about then you'll know why we need water for these fish and  
16 to replenish everybody, feed our elders and all the other  
17 kids and everything.

18           You guys think it's all okay -- it's not. You  
19 guys need to stop and think and look. Maybe you guys ought  
20 to come and spend one week in our shoes to find out what you  
21 guys really want to shut us down for.

22           That is my thing for you guys.

23           CHAIRMAN O'ROURKE: Your time is up.

24           MR. PETERS: And put all you guys -- I  
25 want you guys to come and spend one week in our shoes to see

1     how things are -- see how life is. One week in our shoes, I  
2     guarantee you, you'll change your mind.

3                 MS. SANDERS: Thank you, at this time we're going  
4     to transition to the Weitchpec Public Hearing. Dawn, are  
5     you able to facilitate bringing up people in order? Before  
6     we get started, we're having some technical difficulties.

7                 I'm being informed the audio is not coming over  
8     the mic. It's not coming through to our court reporter.  
9     The audio is not coming through to our court reporter, we're  
10    going to update the batteries, just be on standby, thank  
11    you. Just a few moments, I apologize for the delay.

12                Loud and clear, thank you -- and just a reminder  
13    to Weitchpec I'm going to be having the timer up on the  
14    screen on my end if you wouldn't mind trying to pay  
15    attention to that during the course of your testimony but  
16    Sammie I'll hand it off to you.

17                MS. MASTEN: We just wanted to add to the record  
18    that when the Yurok Tribe was organizing in our early years,  
19    one of the things that we recognized that needed to happen  
20    first was the development of the fisheries department  
21    because the fishing resource is so important in that river  
22    system to the Yurok people.

23                So at the time then and now it's been ever  
24    important for us -- not just to have good science, but to  
25    have the best science and that's the science that's being

1 looked at today to approve the permits but also for removal  
2 of the dam.

3 MR. GENSAW: Sammie Gensaw. I come from the  
4 Village of Requa. I was raised on the same land as my  
5 ancestors have lived since the beginning of time. My blood  
6 runs deep in these lands and I have been a part of an  
7 organization known as Klamath River Justice Coalition since  
8 a young age.

9 I was raised in the "Undam the Planet Movement".  
10 Some might say I was born in a struggle and raised in a  
11 resistance. I will always speak for the people of the  
12 river. I will always speak for those who are defending what  
13 we hold sacred.

14 The time to act upon the circumstances of our  
15 river is now. We need to take the right steps to make sure  
16 that future generations of our people have the same access  
17 to sustainable energies, sustainable lifestyles and healthy  
18 lifestyles for many generations to come.

19 If we do not act now, we threatening more than a  
20 way of life -- we are threatening a huge economy on the  
21 north coast. We are threatening more than an economy -- we  
22 are threatening the environment which we all need to live.

23 And what's happening on our river is not just  
24 happening on our river, it's happening all over the world  
25 and we need to be the prime example to lead to be that

1     example so others can see and look back on this point in  
2     time and say, "Yes, during this administration, this was the  
3     decision that we made that was good for the American  
4     people."

5             And not only is it good for the American people  
6     because when you protect resources in northern California,  
7     you are protecting resources in southern Oregon. When  
8     you're protecting resources in southern Oregon you are  
9     setting the examples for the United States to follow.

10            We need to come together on this and we need to  
11     make sure that these dams come out and we need to let you  
12     know that when these dams come out this is not the end, but  
13     it is just the beginning because when these dams come out  
14     the next thing on our list is to fix the water that is being  
15     diverted from our rivers, from our people -- and when I say  
16     people I'm not just talking about Yurok people, I'm talking  
17     about all people that depend upon the Klamath River for  
18     life.

19            I'm talking about all the tribes and non-tribal  
20     members alike because we live in this community together and  
21     as we live in this community we hold certain rights and we  
22     hold certain responsibilities. And that right is the  
23     lifestyles and we can choose to live a healthy life and our  
24     duty is that we do what we can so we maintain that, thank  
25     you.

1                   MS. DAWN: Thank you Sammie. Next up is John  
2 Link. I'm sorry John would you mind asking the speakers to  
3 state their full name and spell it for the record.

4                   MR. GENSAW: John Gensaw, Requa. I speak for the  
5 youth and I speak for everybody that's indigenous and lives  
6 along the Klamath and the Trinity River. When I was growing  
7 up I was a fisherman and this life on the Klamath River is  
8 all we have ever known.

9                   The Klamath River has helped me get through  
10 depression and it's helped me climb through struggles and  
11 it's helped me to be a better person. Growing up I noticed  
12 that the water has been getting sick and our people are  
13 getting sick along with it.

14                  The river ties into many lifestyle issues among  
15 our people and if we can't stop this now I don't know what's  
16 going to happen to my kids or even their kids. All that I  
17 can say is the dams are something that's just poisoning our  
18 people and it's not right.

19                  And it's known -- it's been known for years. And  
20 we just need to stand together and fight for what is right  
21 as indigenous people. And we can't do it alone so we need  
22 your help and we need you to acknowledge that we've been  
23 here for years.

24                  And the dams -- the electricity plant or is it  
25 how much they actually emit is outdated. It's -- 30 wind



1 turbines can be just as effective as the dams itself. When  
2 it comes down to it it's just a system of depression and  
3 we've been involved with it for years.

4 So like again I said -- I talk for the youth  
5 because growing up I noticed that the river has been getting  
6 warmer. The river has been getting more shallow and there's  
7 no better time to fight for our future generations than now,  
8 thank you.

9 MS. DAWN: Thank you, next up we have Annelia  
10 Hillman.

11 MS. HILLMAN: I agree Annelia Hillman,  
12 A-n-n-e-l-i-a H-i-l-l-m-a-n. I've been following this dam  
13 removal process from the beginning. I've seen all the  
14 effort that has gone into it, you know, the different  
15 parties that have worked together and come to these  
16 agreements and you know, I think that I would hope that you  
17 would respect in your decision the effort that has gone into  
18 this thusfar.

19 I think you've heard the testimony today from the  
20 tribe and the evidence of the effects -- the environmental  
21 effects that these dams have had on our river. But I'd also  
22 like to speak to the psychological and emotions effects that  
23 it has had on our people.

24 We have been suffering and if you think about it  
25 like a family member being sick and watching that and

1 watching somebody you love die -- that's kind of the pain  
2 that our people feel. This river gives us purpose. It  
3 gives us a reason to live. It is our purpose and it is why  
4 we exist.

5 And I know that it has always historically been  
6 the intention of the United States to wipe out indigenous  
7 cultures and I hope that we are on a different track now but  
8 that we're moving towards living together as humans.

9 And I think that we understand now that the  
10 environmental tactics that they've used to wipe out our  
11 cultures is not only affecting us but it's also affecting  
12 you.

13 So you know, I hope that in the decision that you  
14 make that you think about your children and your  
15 grandchildren and your families and your life and human life  
16 in general. I hope that you think about those people that  
17 you love, that the decision that you make is also affecting  
18 them.

19 But I think that we've stalled long enough.  
20 These dams need to come out. We are confident in the KRRC.  
21 We want you to transfer the license and we want you to  
22 accept the surrender and we want dam removal to stay on  
23 track for 2020. It must come out now, it's urgent.

24 There's no people waiting, there's no more time.  
25 And I just hope that you keep all of those things in mind.

1 I also want to remind you that gas pipelines -- these kinds  
2 of things go through in a very timely manner so I hope the  
3 dam removal can do the same.

4 MS. DAWN: Next we have tribal member Larry  
5 Alameda.

6 MR. ALAMEDA: My name is Larry Alameda, Jr. Last  
7 name is spelled A-l-a-m-e-d-a. I hope FERC realizes this is  
8 very emotional for everybody involved. Each event -- it's  
9 harder and harder. Many times a month my family tries to  
10 have a salmon dinner and I have to tell them I'm sorry we  
11 don't have food in our freezers, we have to serve whatever  
12 fish we have left.

13 My auntie, my uncles, my elders ask for more  
14 salmon. We do not have enough to last us a year and I have  
15 to say to them I'm sorry, there's not enough this year,  
16 hopefully next year.

17 I have to fill my diet with something that's  
18 soaked with calories. And each year it's harder and more  
19 difficult to catch salmon. Not to mention I'm starving  
20 myself and my family because of the hazardous conditions on  
21 the river forced itself -- we just want to continue to be  
22 Yurok with these hazardous toxic water conditions.

23 I finally suggest to FERC that they do not stall  
24 in this transition process to quickly hand over the  
25 licensing to KRRC so we have a chance to save our salmon and

1 steelhead, not for us, but for our grandchildren's children  
2 as well as you and your families.

3           During the lunchbreak I thought if I went to the  
4 area where the Trinity and the Klamath come together, I was  
5 actually able to put my hands in the water -- wash my hands  
6 and splash water on my face. I was not able to do that in  
7 July and August when it's hot out and all you want to do is  
8 jump in the river -- I couldn't because it's toxic and it's  
9 dangerous.

10           Remove these dams and give the river a chance to  
11 heal itself and go back to what it used to be. To have  
12 summer steelhead and stringer salmon go to where their homes  
13 are, the -- sorry it's emotional.

14           I actually grew up with the fisheries my entire  
15 life. I love fish and I just want there to be more fish and  
16 if you remove these dams you give them a chance, thank you  
17 for your time.

18           MS. DAWN: That's everyone we had signed up.  
19 Last call -- anyone in the room want to make an additional  
20 comment? Okay we have one more person and I will have her  
21 introduce herself.

22           MS. MOON: I'm Cindy Niles Moon, a Yurok Tribal  
23 member and I'm here and I'm just hoping that you know,  
24 you'll do what's right and please transfer the license from  
25 the current owner PacifiCorp to the Renewal Corporation so

1       that would be much appreciated.

2                   And it's just really sad that, you know, we have  
3       to go through this when you know what's right is right, so  
4       I'm hoping you do what's right for our river and our fish  
5       and all, thank you.

6                   MS. DAWN:   Okay that's everyone we have here and  
7       we'll turn it back over to Anna.

8                   MS. SANDERS:   Thank you Dawn.   Next on our list  
9       is Bessie Shorty followed by Shalishah Harman -- is  
10      Shalishah here?   Is Allison McCovey here?   Joe Hostler --  
11      Joe is here, Joe Hostler is our next speaker followed by  
12      Lucinda Myers.

13                  MR. HOSTLER:   Joe Hostler, I'm a tribal  
14      descendent but I'm also a Yurok Tribe employee.   I work in  
15      our environmental program throughout the last 10 years and  
16      I've worked the last 10 years or so my job has been  
17      dedicated to protecting the environment for the Yurok people  
18      and I work in a communities and eco-systems division which  
19      we study the health of the environment and the health of the  
20      people that we recognize the Yurok people are tied to the  
21      land and the health of the land is a reflection of the  
22      health of the people.

23                  And we know that with these dams being in place  
24      and the impacts -- the negative impacts that the dams have  
25      on water quality is directly impacted on the Yurok people

1 and the health of the people and the physical health,  
2 emotional health, spiritual health -- it's all tied  
3 together.

4 I've been fortunate to talk to a number of elders  
5 who were familiar with the river long before the dams came  
6 in and in talking with them they all mentioned that the  
7 water quality was so much better before the dams came in,  
8 before Iron Gate and Copco 1 and 2 were placed.

9 That prior to these dams being in the Klamath was  
10 clear, cold, healthy -- a beautiful river that is nothing  
11 like what it is today. It's unfathomable to think about  
12 what the river could be again and with the removal of these  
13 dams in a timely manner we can correct something that's been  
14 wrong for long.

15 And I also think that part of my job is studying  
16 the health of the people and we've also had a rash of  
17 suicides on the reservation. A number of young men have  
18 chosen to take their own lives and I personally tie that to  
19 the health of the environment as well.

20 Without these salmon, without purpose these young  
21 men -- I apologize to any families if I offend anybody but I  
22 see that as a direct impact -- that these dams are having a  
23 real impact right now and they need to come down right now.

24 And also too, part of my job is studying climate  
25 change and so I'm working with many people across the

1 country in the federal government in academia that we are  
2 already seeing all the effects of climate change -- the  
3 negative impacts are already here.

4 We see chaotic weather, we have extreme drought,  
5 we have floods -- all the problems that we are having right  
6 now are just going to become worse with climate change and  
7 so one of the things that we can do to mitigate climate  
8 change and rebuild resiliencies to remove these dams to  
9 allow the river to be healthy and that can be a mechanism to  
10 heal the people, heal the environment and let the  
11 candlefish come back.

12 We used to have candlefish here on the Klamath  
13 River and many of the others I've talked to blame the  
14 collapse of the candlefish on the placement of Iron Gate Dam  
15 and the Trinity River Dam as well.

16 And so if we can fix this, we need to do it now.  
17 There's no time to wait, thank you.

18 MS. SANDERS: Thank you Joe, I see a few people  
19 have rejoined us so I'm going to go back to the top of the  
20 list. Next up is Bessie Shorty followed by Shalishah  
21 Harman.

22 MS. SHORTY: Bessie Shorty, Requa. I said hello  
23 my name is Bessie Shorty and I'm from the Village of Requa.  
24 My mom is Lavina Brooks and my dad is Tom Joseph. And I  
25 came to you to speak about the removal of the dam and the

1 health of the water.

2 I've raised four kids up and down the river on  
3 all six rivers. My oldest is 25 and my youngest is 16. The  
4 health of the water reflects the health of our youth and the  
5 health of our people. Just like the salmon they spend the  
6 beginning of their years in the water and they spend the end  
7 of their years in the water. They're born in the water of  
8 the river and they die in the water of the river.

9 And our people spend their time on the river.  
10 They learn from 0 to 5 how to swim, how to read the  
11 environment, how to read the tides, how to read the stars  
12 and how to read the wind. That's where they learn their  
13 early developmental skills.

14 Then they reach junior high and high school and  
15 that's when they learn to fish, to eel, to dip net and to  
16 gather basket materials and to gather anything else that  
17 might grow.

18 Downriver at the mouth we can get  
19 seaweed along the ocean and that teaches the youth how to be  
20 independent, how to feed themselves, know their physical  
21 development, to be able to trust their environment and trust  
22 those around them -- because once again they have to know  
23 their environment to have that skill to know their  
24 surroundings to be safe.

25 All of that knowledge is turned around and



1 reflected in their everyday life. It's reflected in the  
2 relationships with their community, the relationship with  
3 their tribe and the relationship with their family.

4 Without a healthy river our youth are unable to  
5 learn those skills. We have ceremonies here with the Yurok  
6 Tribe, our transitional ceremonies help us learn how to  
7 transition from childhood to puberty to adulthood and then  
8 also once we cross the river when we pass away.

9 When boarding school came along we forgot all of  
10 those -- like a lot of the transitional skills and then  
11 drugs and alcohol take the place of those transitional  
12 skills. We've lost our coping skills. The ceremonies are  
13 our coping skills and they all coincide with the health of  
14 that water in that river.

15 So when the river is ruined and the water is  
16 unhealthy we are unable to transition. We're unable to  
17 teach those coping skills to our youth and we're unable to  
18 leave this earth in the way and the manner that we have for  
19 thousands of years.

20 So I'm speaking on behalf of the removal of the  
21 dam. If the dam is not removed the water deteriorates, it  
22 gets sick and the people aren't able to learn those coping  
23 skills, those transitional skills, they don't learn the  
24 skills to trust their environment, trust their community and  
25 trust themselves.

1 MS. SANDERS: Thank you Bessie. Next we have  
2 Shalishah Harmon, followed by Alison McCovey.

3 MS. HARMON: Shalishah Harmon, S-h-a-l-i-s-h-a-h  
4 Harmon is H-a-r-m-o-n. I come from Sregon and I'm actually  
5 not making a comment I'm asking a request to please hear out  
6 each and every comment that is made to you, that you hear  
7 our elders, that you listen to the people of this community.

8 I left when I was about five from the area. I've  
9 been back home two years and I didn't realize the vital  
10 importance of this river. I hope you hear each and every  
11 comment and listen and pay attention especially to the  
12 elders. They are the most important people to pass down  
13 this information and we need to continue it for the health  
14 of our environment and especially this river -- at least  
15 take down the dams.

16 MS. SANDERS: Thank you Shalishah, Alison McCovey  
17 is next followed by Lucinda Myers and then Oscar Gensaw.

18 MS. MCCOVEY: Hi, my name is Alison McCovey. My  
19 mother grew up at the Village of Kapow and my father grew up  
20 at the Village of Notchco, those are upriver villages.

21 I was lucky to grow up on the river fishing and  
22 swimming and through all those year's I've heard my elders  
23 talk about the detrimental damages that the dams have done  
24 to our river. I feel like I was unable to give my daughters  
25 the same experience that I had.

1           The river looks like Armageddon at this point  
2   with all of the -- with all of the damage to it and it's  
3   barely not really even able to swim it in anymore with the  
4   film that's on you when you get out of the water.

5           They definitely haven't had the same experience  
6   that I had and I know I didn't have the same experience that  
7   my parents and my grandparents had. And for all the things  
8   that have been taken away from us, this is something that we  
9   could actually build back.

10           It would be wonderful to have something to give  
11   to the next generation so you know, I ask that you transfer  
12   the hydroelectric license from PacifiCorp and that you  
13   approve the application and surrender the hydraulic license  
14   and remove the dams, thank you.

15           MS. SANDERS: Thank you Allison. Is Lucinda  
16   Myers still here -- no? Next up is Oscar Gensaw, followed  
17   by Frankie Myers.

18           MR. GENSAW: Oscar Gensaw, I come from the  
19   Village of Requa. I'm a Yurok Tribal member and I was born  
20   and raised on the Klamath River. I am supportive of the dam  
21   removal. I am a fisherman. I grew up fishing with my  
22   grandpa, dad and uncle who are no longer here with us.

23           They taught me a lot about this river and how to  
24   be a Yurok man and fisherman and that's important to me  
25   because I am a father of four. I have three boys and one

1 daughter. As a Yurok man it is important to me to be able  
2 to pass what I've learned from them on to my kids.

3 And in order for that to happen that river needs  
4 to be healthy and I'm asking you today to help me be a part  
5 of the healthy process and transfer the license so we can  
6 get this river back to where it needs to be, thank you.

7 MS. SANDERS: Thank you Oscar, next up is Frankie  
8 Myers followed by Laura Woods.

9 MR. MYERS: Frankie Myers. Our river is our  
10 church. We are connected. Our future and our past is  
11 intertwined. Our fate as a people depends on the fate of  
12 the river. Time is not on our side. You must act swiftly.  
13 The KRRC has the knowledge and experience to get this job  
14 done.

15 FERC has the power to save our river and secure  
16 the future of our people. Future generations will look back  
17 on this time as a tipping point. Use your heart, look at  
18 the science and the data to support what you already know is  
19 the right thing to do.

20 In your life, you will look back on the work you  
21 were doing. When you look back and when you face your  
22 Creator, you will be held accountable for your actions and  
23 your decisions. You are writing the history of the river --  
24 the history of our people, now here, today.

25 The science is sound, the plans are thorough.

1 The KRRC is the organization to get it done. We know from  
2 the knowledge of our ancestors the river has the power of  
3 renewal. You must act now to allow it to begin to restore  
4 itself.

5           You're not processing an application of transfer.  
6 You're processing an application for the future of our  
7 people. Don't sit on this. Don't get caught up in the red  
8 tape. We've done our homework, we've done our science. Do  
9 your part for us, for you, for all of our future  
10 generations.

11           MS. SANDERS: Thank you Frankie, next up is Laura  
12 Woods followed by Micha Gibson and Rich Nelson.

13           MS. WOODS: Good afternoon, good morning, good  
14 afternoon. My name is Laura Woods, L-a-u-r-a W-o-o-d-s.  
15 I'm a Yurok Tribal member, I'm an elder. I also work in the  
16 Tribal Court as a paralegal and a family law mediator and I  
17 appreciate your time. I'm glad you're here and at the same  
18 time I think that what I feel in my heart is why is this  
19 still an issue?

20           Why are we still debating this issue? This, to  
21 me, is a no-brainer because the river is connected not just  
22 to the fish, but to life itself -- the big catch phrase  
23 lately is water is life and that's true for you.

24           As human beings you wouldn't last very long  
25 without it. So as one people -- as one species, human

1 species on earth, we're the same -- we're brothers and  
2 sisters in the same way. This is a no-brainer. This is  
3 good for the river, this is good for the people.

4 What's good for the river is good for the people,  
5 good for the communities. So whether you have to stand on  
6 one foot, hop backwards and circle three times to do  
7 whatever it takes, to amend an application, to make a new  
8 law, to render a new agreement, to whatever it takes to  
9 bring these dams down, please do that. It's up to you.

10 This is an opportunity for the federal government  
11 to do something right for the first peoples of this country  
12 and we're all painfully aware of a lot of mini-atrocities  
13 that have happened over the years and this is your  
14 opportunity to make sure that another atrocity isn't  
15 propagated.

16 This is your opportunity to fight on behalf of  
17 these people -- of my people, this land, this river and all  
18 the people that depend on it. You can champion this cause.  
19 You can do what's right and we can move together in the  
20 partnership that can help untold people and untold  
21 generations to come.

22 I have two little granddaughters who are 6 and I  
23 don't want them to have to be here when they're my age  
24 saying please do what's right. Do what's right.

25 We know from the science that rivers and

1 waterways and watersheds and the earth itself have a  
2 tremendous healing ability if allowed the chance. There are  
3 rivers whose dams have come down and the scientists have  
4 been astounded at the rate of healing that took place in  
5 such a short time so it can happen.

6 So sign your papers, push your agendas, whatever  
7 you have to do, let's get this thing done and let's get it  
8 done now, thank you.

9 MS. SANDERS: Thank you Laura. Is Micah Gibson  
10 in the room -- Micah -- no? Is Chrystal Helton in the room?  
11 Oh yeah, so Chrystal will be next followed by Cassandra  
12 Grimm.

13 MS. HELTON: Good afternoon, my name is Chrystal  
14 Helton, I am not a Yurok Tribal member but I live in Klamath  
15 and I have Yurok boys -- three Yurok sons. I'm a -- woman  
16 who lives here and decided to raise my kids here on the  
17 reservation which is their home.

18 I'm here for them today. I work at the Head  
19 Start, I'm the site supervisor and all of our staff wanted  
20 to be here but they can't because we are a very busy people  
21 raising the next generation.

22 My sons wanted to come today as well but they're  
23 really shy and I literally came over here to pick something  
24 up and said oh I should stop. Thank you, I should stop in  
25 and say something -- my lips are packaged.

1                   So I'm here for my sons really. When I asked  
2   them I said, "What would you say," two days ago, I said,  
3   "What would you say if you were able to go to the FERC  
4   meeting?" The first thing he said is do we seriously have  
5   to say something again? Hasn't dad already told FERC about  
6   dam removal? So that was the first reaction.

7                   And their second was -- well we haven't eaten  
8   fish in month's mom -- we haven't tasted salmon in months.  
9   We don't even know the smell of it anymore. We also haven't  
10  been out fishing with dad because dad doesn't go fishing  
11  because why would you go fishing if there are no fish when  
12  you have a lot of other responsibilities?

13                  And when I asked my 7 year old -- that was my 9  
14  year old. When I asked my 7 year old, "Well what about you  
15  son," he said, "You know I would like to be able to swim in  
16  our river when it gets hot in the summertime without getting  
17  sick."

18                  So those are my son's reasons that dam removal  
19  must happen. It's been a hard -- a very awkward year  
20  without fish in our river and fish -- my son's believe have  
21  a responsibility given to them by something way higher than  
22  us and they cannot fulfill that responsibility and that's to  
23  feed the people.

24                  And it's your responsibility, I think, listening  
25  to us to make sure that this transfer happens and make sure



1 dam removal happens as fast as possible, thank you.

2 MS. SANDERS: Thank you Chrystal. Is Cassandra  
3 Grimm in the room, followed by Suzanne Fluharty.

4 MS. GRIMM: Cassandra Grimm, K-a-s-s-a-d-n-d-r-a  
5 Grimm, G-r-i-m-m. I'm here to speak in support of any  
6 measures that need to be taken for the timely removal of the  
7 dams on the Klamath River.

8 I am a new community member and not a tribal  
9 member so I would like to thank the Council for the  
10 opportunity to speak here today being a community member. I  
11 moved here less than a year ago because I got a position  
12 here with the Tribe as the water quality specialist.

13 I was really excited at the opportunity to be a  
14 water quality specialist on a river with a dam removal  
15 coming up. I worked on the Elwa River during dam removal  
16 and that was a very exciting time to be doing any kind of  
17 environmental monitoring, watching the eco-system heal  
18 itself with the dam removal process was very moving.

19 And so I am very excited to be here but my work  
20 there didn't prepare me for exposure to harmful algae blooms  
21 so working here has been my first experience with that. So  
22 I'm exposed to these harmful algae blooms in my professional  
23 life because during the summer season I am monitoring the  
24 water quality in the main stem of the Klamath River being in  
25 the field exposed to the river water at least two days a

1 week during that field season.

2 And then when I receive data results that there  
3 are toxic levels of microcystin in the river it is my job or  
4 it is part of my job to make sure that the public knows  
5 about the risks that that river poses.

6 And so being a professional in water quality it's  
7 been a very sobering experience moving to this area and  
8 being responsible for notifying the public about the risks  
9 that a river can pose them. And so for that reason I have a  
10 professional interest in having these dams removed and I  
11 also have a personal interest in having these dams removed.

12 I have really enjoyed living in this community  
13 because I have been able to grow on the Klamath River. It  
14 really is very special to me and knowing the health hazards  
15 that can be posed from that river -- I'm having to weigh  
16 those risks with my desire to be outside and active.

17 And so removal of these dams will fulfill my  
18 personal interests, professional interests in seeing the  
19 water quality in this river improve and also the community  
20 interest -- both cultural and economically so yeah, thank  
21 you.

22 MS. SANDERS: Thank you Kassandra. Next up is  
23 Suzanne followed by Victoria Carlson.

24 MS. FLUHARTY: Greetings. I am Suzanne Fluharty,  
25 S-u-z-a-n-n-e F (as in Frank) - l-u-h-a-r-t-y. I have my

1     Doctorate in environmental sciences and I've had the great  
2     privilege of working here in Yurok country for the last 9  
3     years.

4             I am the Assistant Director for the Eco-System  
5     and Community Health Division and so I have a lot of things  
6     I could add but I really feel compelled to speak and explain  
7     some of the microcystin issue that has been brought up over  
8     and over here.

9             And so I want to thank the Council for hosting  
10    this and you for giving your time to come down and here what  
11    it is that's important to the Yurok people. So focusing on  
12    that it's important to know that microcystins are the toxin  
13    that are produced during mats.

14            It is however, only one of 80 toxins that are  
15    associated with that algae mat that brewing and growing  
16    above the dams. It is primarily a liver toxin and it  
17    impairs the function and it is proven to significantly  
18    increase the weight of tumors of the liver but in addition  
19    to that microcystins are classified as a general tumor  
20    promoter with body-wide effects, secondarily focusing on the  
21    stomach and the skin organs.

22            We are finding out that the other ones have a  
23    great many other ones including impacts to the central  
24    nervous system. Some of these are expressed  
25    inter-generationally so that the people who are exposed now

1 are putting their children and their grandchildren at risk  
2 through alteration of the body.

3 So the important thing is is that you have heard  
4 all of these things from people from the heart but what I am  
5 here for is to be the primary investigator for two National  
6 Institute of Health and U.S. EPA National Center for  
7 Environmental Research, million dollar grants that the Yurok  
8 Tribe has been awarded twice.

9 And so this is not just hearsay evidence but with  
10 five years of United Indian Health Clinic data we gathered  
11 the actual diagnoses codes for over 300 enrolled Yurok  
12 Tribal members -- significant findings that the Yurok Tribe  
13 has three times the rate of cancers in general over other  
14 tribes, it has over a 40% greater rate of this in the  
15 general population.

16 Of those cancers that are diagnosed the primary  
17 one is skin cancers. And the rate of the skin cancer has  
18 indications that they are five times greater for the Yurok  
19 than it is for the general population. There are  
20 significant connections between microcystin and these  
21 cancers.

22 Because of this I really urge that a speedy  
23 decision be reached to begin this implementation of the  
24 removal of the dams. It is imperative that these dams that  
25 support a totally preventable condition that is poisoning

1 thousands of people proceed.

2 This is something with the dams are removed, the  
3 poisoning, the toxin, will not be in this river down here  
4 and be impacting the tribal members and their children. And  
5 I better just quit so thank you very much and I ask for a  
6 speedy decision.

7 MS. SANDERS: Thank you Suzanne, next is Victoria  
8 Carlson followed by Pergish Carlson who is the last speaker  
9 I have listed.

10 MS. CARLSON: So my name is Victoria Carlson. I  
11 come from the Village of Sregon and Kepel. My husband and  
12 my daughters -- that's what I said, their names, and right  
13 now I live in Terwer which is here in Klamath.

14 And I work for the Yurok language program as the  
15 language coordinator and I've worked with several  
16 departments, you know, working with the youth and the elders  
17 and the same ones that you have heard here today listening  
18 to their words.

19 You've heard the youth, you know, express their  
20 concerns and the elders express their concerns. We've had  
21 community leaders get up here and talk and I just want to  
22 say that the river and our language -- the connection  
23 between our river and our language -- our Yurok language was  
24 predicted by linguists to be extinct by 2010 and as of today  
25 we have over 100 basic, you know, learners learning the

1 language.

2           We have intermediate speakers. We have the  
3 language taught in four different high schools within the  
4 two counties here. So you know, as Yurok people we  
5 persevere and as you heard some of the history that was  
6 spoken about, you know, the fish wars.

7           My mother -- she's a full-blooded Yurok and my  
8 grandparents were both full-blooded Yurok and they fought in  
9 the fish wars and it was a time, you know, where it was  
10 pretty rough and my mom talks about a story where she was  
11 down at Requa in a little boat with her mom and her sister  
12 and the feds would come and that's the time they came and  
13 basically granted at a pretty good speed, towards their  
14 boat, trying to tip their boat over and they were almost  
15 going out the mouth.

16           And if they probably would have went out the  
17 mouth, they probably could have tipped their boat over and  
18 it probably could have been pretty bad, you know. But they  
19 took measures -- those types of measures you know, to fight  
20 for their river and to fight for their fish and to fight for  
21 their people because you know, the river keeps our people in  
22 balance.

23           And you know like everyone says it's connected to  
24 our life, to our hearts and in the recent year's we've been  
25 having, you know, we had an emergency suicide action go on

1     because of our youth -- our young people.

2                 You know that hasn't happened before. That  
3     hasn't happened in our past history. We have elders who,  
4     you know, they get too fish a year and that's most of them  
5     or some of them get that. So I think it's the connection  
6     with mental health and our youth and our elders and you  
7     know, our community leaders.

8                 We're all going to keep fighting for our river  
9     and I hope today that you hear all of our concerns and you  
10    know, you take it into account when you go back and make  
11    that decision so.

12                MS. SANDERS: Thank you Victoria. Next we have  
13    Pergish Carlson followed by Amy Cordalis.

14                MR. CARLSON: I'm Pergish Carlson, I live here in  
15    Klamath, that's my wife Victoria. And I grew up here in  
16    Klamath on the river and I'm on the river all the time --  
17    I'm a fishing guide, that's what I do. I take people  
18    fishing on the river, sport fishing and scenic tours and so  
19    on.

20                And you know I -- this is a time where I look at  
21    dam removal and I'm excited. I'm excited about it because  
22    the river is just running and I think, you know, only on  
23    about 20% so not even to its full potential.

24                And I'm so excited that maybe someday, maybe in  
25    my life-time, I'll be able to see that. And if not, you

1 know, maybe my kids will be able to see that potential of  
2 the river at its fullest you know -- not just for Yurok  
3 people, for everybody.

4 This river was so abundant a long time ago where  
5 people came here that were hungry and they'd come and get  
6 food from us, you know and so this is an exciting time for  
7 all of us, you know, and I think that it will happen.

8 And just like my wife said, you know, we will  
9 continue to fight no matter what and if your decision or  
10 not, we're still going to continue to fight until they come  
11 down. And I feel that you know, salmon, you know the water  
12 and everything, you know, it is us, it's us. It's who Yurok  
13 people are, you know and I'm on the river every single day  
14 in the summertime, in the fall, in the winter and I see how  
15 the river like will be really clean sometimes and beautiful  
16 and it's like man, it's beautiful.

17 And then later on it starts getting sick and ugly  
18 and I have clients come up and say, "Why does the river look  
19 like that, why does it look like -- it kind of looks like  
20 anti-freeze?" And I say, "Yeah it does." And you see these  
21 little things and I have to explain everything, you know.

22 Well there's these dams, you know, and they're up  
23 there and you know, they ruin everything, they're obsolete  
24 and you know most people are like, "Well, you know I thought  
25 they were taking those out." I go, "Yeah."



1           You know after the fish kill and stuff and the  
2 fish kill -- that's another thing that I always kind of look  
3 on and I always think like you know, maybe that happened for  
4 a reason. You know, maybe we wouldn't be sitting here today  
5 if the fish kill didn't happen. Dams would be still there,  
6 nothing happened, you know, but I think the fish took a  
7 sacrifice so we could be sitting here today.

8           It's kind of happened for a reason and I think  
9 they took all the sacrifice for themselves so the dams could  
10 come out in my opinion, thank you.

11           MS. SANDERS: Thank you next is Amy Cordalis.

12           MS. CORDALIS: Thank you. I spoke earlier as you  
13 all know my name is Amy Cordalis, that's A-m-y  
14 C-o-r-d-a-l-i-s. I'm the tribe's general counsel but I'm  
15 also a tribal member and I wanted to make a comment on  
16 behalf of myself and my family with -- well regarding the  
17 Tribe's commercial fishery.

18           We are, as you have heard today, fisherman. And  
19 before I was a lawyer or anything else I was a fisherman and  
20 I still am a fisherman. And that river has brought me home  
21 to this place year after year in pursuit of catching salmon.

22           And I come from a long line of men and women who  
23 have been fishermen. There are stories of my great, great  
24 grandmother and father loading fish into you know, a horse  
25 wagon, and covering it with brush and then loading it up and

1 going to Crescent City to sell it.

2 And they had to cover it up because it was  
3 illegal to sell it and that's what they were going to do.  
4 And so I always say that we were salmon bootleggers. And  
5 then my great uncle's Supreme Court case, *Mattz v. Arnett*,  
6 got reaffirmed the status of the Yurok Reservation as Indian  
7 Country and then that set the stage for our federally  
8 reserved fishing and water rights.

9 And my uncle is -- in my opinion -- just an  
10 excellent fisherman and he taught my dad how to be a very  
11 good fisherman. And my dad had four girls and one boy and  
12 so guess what I learned how to fish.

13 And I love fishing and we have in good years a  
14 very healthy, thriving, commercial fishery and that's where  
15 this community is at our best -- where we're all working  
16 together continuing that ancient tradition and it's an art.  
17 And it's a fine art that we have developed since time  
18 immemorial and we're very good at it.

19 In a good year our allocation which is set with  
20 the Pacific Fisheries Management Council, is about 100,000  
21 fish. Last year our allocation was 650 fish. So the Tribal  
22 Council had the very difficult decision of closing the  
23 commercial fishery as well as just the fishery in general  
24 because that number was so small.

25 And not having a commercial fishery -- that has

1     disastrous economic effects on us. It's estimated through  
2     here that the unemployment rate on the reservation is  
3     somewhere between 50 and 80% right -- it's atrocious.

4             The commercial fishery is one of the only sources  
5     of income that tribal members will have. And I want to add  
6     that the unemployment rate is so high in part because there  
7     are no other options and so that commercial fishery is  
8     really important to us and without the dams coming out,  
9     we're not going to have one.

10            So this is cultural, it's spiritual, it's  
11     economic, thank you.

12            MS. SANDERS: That concludes the list of speakers  
13     that I have so I'll turn it back to Tribal Council.

14            CHAIRMAN O'ROURKE: I would like to ask Council  
15     that Council has not made comments one way or the other, you  
16     know, and that you are all tribal members, you know, and we  
17     are. And so does Council wish to make comments?

18            MR. HENDRIX: Larry Hendrix, H-e-n-d-r-i-x. I  
19     like to look at our fish as the subsistence and for culture,  
20     not so much as commercial. And I look at it as water  
21     quality and quantity and you can sum that up into one word  
22     and that's a healthy river. Thank you.

23            MR. VANLANDINGHAM: Hello again, Tony  
24     Vanlandingham, do you need me to spell that -- okay thank  
25     you. So as a family man the river has continually been

1     resourced for my family as a source of food, a source of  
2     many hours of recreation. At times it's been highway when  
3     our land had that rogue spell in the winter.

4             I fish to feed my family, to feed my elders, to  
5     teach my kids and my grandkids how to sustain themselves the  
6     way we have for thousands of years. Excuse me -- in 2015 I  
7     caught 21 fish. In 2015 I caught 6 fish. Last year I could  
8     not fish. So it's been a hardship on my family and the  
9     elders that relied on me to fish for them.

10            I wasn't here during the 2002 fish kill. I'm  
11     glad I wasn't because I mean I see the pictures and I hear  
12     the stories and it causes me pain. It's a physical pain  
13     because we as a people we lost so much of ourselves in that  
14     one year to see that kind of devastation.

15            When I talk to elders when we -- usually it turns  
16     to talking about the fish, the river. And a lot of times if  
17     in Karuk country and in here with the Yuroks we've heard the  
18     stories of how we had salmon runs so great that we could  
19     literally walk across the river on the backs of the salmon.

20            We know that these stories are true because you  
21     can still see it today up in Alaska with the sock-eye runs,  
22     when you see an untamed wild river that isn't disrupted with  
23     dams you have good, health fish.

24            So we know that those stories are true. I'd like  
25     to see a day when my grandchildren can go out and see that

1 and then be able to give that story to their grandchildren,  
2 a day where we can once again see that the salmon runs on  
3 this river and her tributaries are so great that we could  
4 walk across the backs of the fish.

5 So since time began our people have been great  
6 fisherman, we've been eeler's, we've been basket weaver's,  
7 we've been canoe maker's, storytellers, singers, dancers,  
8 healers and great medicine people.

9 So what you're looking at right now is we are a  
10 culture interrupted. We're sitting here today trying to  
11 regain a piece of that. Our place needs a healthy river.  
12 Our people need a healthy river and a healthy river is a  
13 free river.

14 So I'm asking you to support all the necessary  
15 steps required to help us bring these dams down. Thank you  
16 for being here.

17 MR. GENSAW, SR: David Gensaw, Sr. I'm not going  
18 to spell that for you, you've heard several Gensaw's here  
19 today talking. I'm a Yurok Tribal member. I'm a Karuk  
20 ancestry, Tolowa, Chetco. I'm a hunter, a fisher and a  
21 gatherer. And our people today I mean I hope that you heard  
22 everybody here.

23 Because you heard it all -- and we're not here  
24 just today talking for today. We're here talking for  
25 tomorrow and years after in future generations for our

1 people. We're survivors. We survived conquests, massacres,  
2 we survived the disease -- germ warfare, small pox blankets  
3 that were given to help us supposedly and boarding schools,  
4 separate our families to make us civilized human beings and  
5 assimilate us, change us.

6 But we're still here today and we're still living  
7 the way we have even in this vast world the way we lived  
8 since the beginning of time. Our ancestors told us when our  
9 fish are gone so are we -- so are the Yurok people.

10 We don't plan on going anywhere so that's why  
11 we're here telling you today these stories that -- stories  
12 of our history, stories of today, stories of survival. My  
13 great-grandmother, Kitty Genshaw was one of the people that  
14 saw the first white man coming up the river.

15 Since then came the gold rush, commercial  
16 fisheries -- 7 canneries down here, fished out the river  
17 night and day for 20 years in the salmon runs, the logging  
18 industry. We had huge redwood trees -- you can see some of  
19 the remnants of it right now -- Douglas Fir and those trees  
20 shaded the river, provided when it rained -- held that water  
21 in the ground, shade the fish, kept the temperature down --  
22 they're not here anymore.

23 Dams came up, cut our salmon run off. The  
24 Creator made those salmon for the people to go all the way  
25 up through all the tributaries, all the up to Upper Basin.

1 They can't make it there anymore.

2 We know that PacifiCorp wants those dams down.

3 They have to pay a lot of money -- more money to put fish  
4 passage there than to tear them down. Those dams need to  
5 come down. You know, we are fighters. You know the salmon  
6 wars -- we saw the salmon wars.

7 We saw the federal marshals coming down the river  
8 in full riding gear with M-16's ramming our boats, grabbing  
9 up our people, clubbing them up, hauling them off to jail.  
10 In 2001 irrigators got shut off their water.

11 They went up and opened up the flood gates. They  
12 never saw federal marshals, riding gear and 16's clubbing  
13 them up like they didn't have to fight for that. 2002 we  
14 saw the largest fish kill ever. Today they say 33,000  
15 salmons laid dead on the shores of the Klamath River in 2002  
16 but they admit it was 88,000 salmon.

17 2014 -- 80% of our juveniles were lost. 2015 --  
18 90% of our juveniles were lost. You couldn't see them like  
19 that fish year on our shores stinking up our river, but it  
20 was just as bad..

21 CHAIRMAN O'ROURKE: Worse.

22 MR. GENSAW, SR: So that's why we're here. We're  
23 not going anywhere. And we are asking you to take it back  
24 to the people that are going to make the decisions, take  
25 those dams down. Let those fish go up the river and feed

1 everybody -- all the people they are supposed to.

2 Do what's right. Listen to what you hear today,  
3 what you heard today and all the rest of the people I know  
4 you heard at your other meetings, thank you.

5 MR. RAY: Ryan Ray, Requa District. You know  
6 growing up here on the river I think we all shared the same  
7 memory as one of the first things I learned how to do was  
8 check a net and row a boat, maybe even before I learned how  
9 to swim.

10 You know, which is, you know, you see a lot  
11 around here. You see the kids in the boats or with the  
12 lifejackets on and that's one thing that we all share is  
13 that memory and you know it didn't matter what time of year  
14 it was, I'd be in the river every day of the year.

15 And if I wasn't home my mom knew where I was. I  
16 was probably in the river somewhere. But you know, last  
17 year I took the kids out -- I have five kids, I took the  
18 kids down to Wakel to go and do a barbecue.

19 So we got down there in this big beautiful river  
20 but you can't go fishing -- there's no fishing. So we're  
21 sitting there and as my older kids are chasing the younger  
22 ones away from the river like it was poison -- you know I  
23 sat back watching this thinking man, this is supposed to be  
24 a fun day but for me it really turned kind of depressing  
25 because you couldn't fish and you are chasing the little



1 kids away from the river, like don't touch it, don't touch  
2 it you'll get sick.

3 And you know, you can make a beautiful chocolate  
4 cake and if you tell them don't eat it they won't as long as  
5 you are in the room with them but once you walk out of the  
6 room you come back they have frosting on their face.

7 But in this case the frosting comes in the form  
8 of big, nasty scabs on their face, on their head, so when  
9 they come home and the next day they have got these big  
10 scabs you know they were in the river and they kind of  
11 learned from that.

12 But that's why we need to get these dams down to  
13 restore the health of the river and restore our people to  
14 what we used to be. I'm not that old -- I'm only 34 years  
15 old. 25 years ago, you know, I could never remember anybody  
16 telling me to get away from the river you're going to get  
17 sick -- ever.

18 And now I've got to chase my kids away from the  
19 river because, you know, it's not good for them and we see  
20 that. Get these dams out and this Council is fully  
21 committed to dam removal and there's no doubt in my mind  
22 come 2020 we will see the decommissioning of these four dams  
23 in the Klamath River, thank you.

24 MR. AUBREY: Hello, my name is Edward Horse  
25 Aubrey. I'm from North District. I grew up fishing on the

1 Klamath River with my grandfather. This really hurts here  
2 because toxic algae is poisoning the Klamath River. FERC  
3 has an obligation because if you take the tribal resources.  
4 The collapse of the fishery in 2016 and 2017 points the need  
5 for urgent action.

6 Dam removal is the most important step to  
7 restoring our rivers and our fisheries. FERC should approve  
8 the transfer and surrender the application immediately and  
9 let our Klamath River heal itself, thank you.

10 CHAIRMAN O'ROURKE: Mindy?

11 MS. NATT: My name is Mindy Natt. I'm a Yurok  
12 Tribal member and a Council member for the Yurok Tribe. I'm  
13 only 34 years old and I have lived on the Yurok Reservation  
14 all my life.

15 I grew up in Pequa. I spent most of my time on  
16 the river swimming and learning how to fish with my  
17 stepfather, Tommy Wilson. I never went without any fish  
18 because my stepfather, Tommy Wilson, would provide plenty  
19 for me.

20 The poor quality and the lack of natural flow are  
21 making our river sick and it's due to the dams. And as a  
22 result our fishing are dying. I remember the 2002 fish  
23 kill. I was out of town at school and I was out of town  
24 going to school for like five years so that pretty much was  
25 all my life on the reservation.

1           And I remember it like it was yesterday. It was  
2   devastating to me. It brings back the intergenerational  
3   trauma that was passed down to me through my ancestors and  
4   what our people went through.

5           And so, basically what I'm trying to say is that  
6   this epidemic inflicted harm on not only me but our tribe as  
7   a whole. And I'm asking FERC to remove the four dams off  
8   the Klamath River to restore our traditional way of life,  
9   our river and our fish.

10           CHAIRMAN O'ROURKE: Before I get ready to close  
11   up the meeting are there comments that you folks would like  
12   to make and then I do have a little bit of a closing  
13   statement so.

14           MS. MOLLOY: I would like to thank everyone who  
15   provided comments for providing the comments. I know it was  
16   difficult and we appreciate it greatly. It will be  
17   considered when the Commission considers the transfer and  
18   surrender applications.

19           It will be put in the record so it will be there.  
20   We will also be putting the presentation that was made this  
21   morning in the record and that will be considered as well.  
22   We appreciate the time that it's taken for you to come out  
23   today and listen and also provide comments.

24           We have heard all that you have said and we will  
25   make sure that everyone back in Washington hears it and

1 understands it and again it will be written and in the  
2 record. So thank you again for your time and your comments  
3 and also to the Council for allowing comments and for your  
4 comments as well, thank you.

5 CHAIRMAN O'ROURKE: In closing you know, first  
6 off thank you folks for coming out you know and for hearing  
7 our concerns. You know the facts that we present and to  
8 share a part of us with you so that you can better  
9 understand this native people -- that's important.

10 I believe that the dam removal is a very  
11 important component of -- for the healing of the river. I  
12 think that all who live around the river -- the river  
13 doesn't know what color we are, not really, maybe, but you  
14 know it will repair and treat us all the same.

15 It doesn't matter who you are or what color you  
16 are, if you live around a river you talk about the river,  
17 you use the river in one form or another. You know, and to  
18 our visitors that come from abroad to see the beauty along  
19 the river and the river itself you know, to the excitement  
20 that it brings when they ride a rubber raft or a kayak  
21 through one of the rapids that are out there or to reel  
22 fishing in the boat, or to pull a fish in the boat out of a  
23 net.

24 You know, right now it is not safe for any of us  
25 to do any of that. In mid-summer, you know, and towards the

1 later end of summer it's not safe for us to do that. You  
2 hear of Council member Ryan what he says about his kids.  
3 What he says is so and I know it to be so and so do most of  
4 the people in this room.

5 I think that it's beneficial to all people to  
6 remove the dams and to begin to do our part in restoring the  
7 health back to the river. I believe we have that power  
8 within our grasp and that we are able, you know, and capable  
9 of doing this component of it.

10 Who all knows what all it's going to truly take  
11 to truly heal it, but this is a major step towards making it  
12 happen? You know, if you show effort and you show care and  
13 your prayers comes from your heart and your action comes  
14 from your heart -- usually positive results that come from  
15 it.

16 And who knows how much ability that that river  
17 has to heal itself you know. We can go back and look at  
18 other dam removals and what has happened you know, and in  
19 the short timeframes that they have taken the major of what  
20 has happened as far as restoration of itself.

21 And so with those thoughts in your mind I would  
22 hope that you would consider all that you heard here today.  
23 You know I think that you have heard from many people, not  
24 only their minds but their hearts.

25 You know, and it's not easy for native people to

1 share their heart with someone from outside, you know. And  
2 so travel safe and we thank you once again for your time  
3 here with us. Thank you.

4 MS. CORDALIS: Just a housekeeping note -- we  
5 would like to add the Yurok Constitution on to the record.  
6 And then also for folks in the audience if you haven't  
7 signed-up we want to make sure that your presence is known  
8 so please make sure you sign up with Mya out there in the  
9 front desk, so thank you.

10 (Whereupon the meeting was adjourned at  
11 3:21 p.m.)

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1 CERTIFICATE OF OFFICIAL REPORTER

2

3 This is to certify that the attached proceeding  
4 before the FEDERAL ENERGY REGULATORY COMMISSION in the  
5 Matter of:

6 Name of Proceeding:

7 KLAMATH AND LOWER KLAMATH HYDROELECTRIC PROJECTS

8

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14 Docket No.: P-2082-062/ P-14803-000

15 Place: Klamath, CA

16 Date: Friday, January 19, 2018

17 were held as herein appears, and that this is the original  
18 transcript thereof for the file of the Federal Energy  
19 Regulatory Commission, and is a full correct transcription  
20 of the proceedings.

21

22

23 Gaynell Catherine

24 Official Reporter

25

Document Content(s)

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1 FEDERAL ENERGY REGULATORY COMMISSION  
2 KLAMATH AND LOWER KLAMATH  
3 HYDROELECTRIC PROJECTS  
4

5 DOCKET NOS: P-2082-062/P-14803-000  
6  
7

8 TRIBAL CONSULTATION MEETING  
9 TELECONFERENCE  
10

11 Monday, February 5, 2018  
12 11:00 A.M.  
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1 PARTICIPANTS

2 FERC STAFF

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4 JENNIFER POLARDINO, HISTORIAN

5 FRANK WINCHELL, ANTHROPOLOGIST/ARCHAEOLOGIST

6 ELIZABETH MCCORMICK, ATTORNEY-ADVISOR

7 MODOC TRIBE

8 CHIEF BILL G. FOLLIS, CHIEF AND TRIBAL ADMINISTRATOR

9 JUDY COBB, CHIEF

10 ROB BURKYBIKE III, HOUSING & ENERGY DIRECTOR

11 W. BLAKE FOLLIS, ENVIRONMENTAL DIRECTOR AND TRIBAL ATTORNEY

12 MARISSA FAHRING, TRIBAL BUSINESS REPRESENTATIVE

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19 JOHN HAMILTON, COMMUNITY MEMBER

20 JEFF MORRIS

21 HOLLY DILLEMUTH, HERALD AND NEWS

22

23

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1 P R O C E E D I N G S

2 (11:00 a.m.)

3 MS. POLARDINO: So first off, before we begin, I  
4 kind of wanted to make sure that we kind of know who's  
5 attending the meeting. So first off, I will kind of go  
6 through the attendance sheet that I have and if there's  
7 anybody here who is not on this sheet please let me know.

8 And after the meeting what we can do is you can  
9 email me to verify all of the information that you have --  
10 for example, the spelling of your name, the entity that you  
11 represent, et cetera. And you can email me at Jennifer -  
12 J-e-n-n-i-f-e-r dot Polardino which is P-o-l-a-r-d-i-n-o @  
13 FERC.gov -- because I understand sometimes people get the  
14 call-in information from other people or what not.

15 So first off, do we have Chief Bill G. Follis of  
16 the Modoc Tribe on the phone?

17 CHIEF FOLLIS: Yes, he's here.

18 MS. POLARDINO: Okay, do we have Judy Cobb from  
19 the Modoc Tribe?

20 CHIEF FOLLIS: Judy will not be here this  
21 morning.

22 MS. POLARDINO: Okay, do we have Rob Burkybike,  
23 III from the Modoc Tribe?

24 MR. BURKYBIKE, III: Yes, I'm here.

25 MS. POLARDINO: Okay, do we have W. Blake Follis

1 from the Modoc Tribe?

2 MR. FOLLIS: Yes, I'm here Jen.

3 MS. POLARDINO: Thank you, do we have Marissa

4 Fahring from the Modoc Tribe?

5 CHIEF FOLLIS: Marissa will be in shortly.

6 MS. POLARDINO: Okay, do we have Troy LittleAxe

7 from the Modoc Tribe?

8 MR. LITTLEAXE: Yes, I'm here.

9 MS. POLARDINO: Okay, do we have any other

10 members or representatives from the Modoc Tribe on the phone

11 today?

12 CHIEF FOLLIS: No, we do not have any from our

13 office and should any come in we'll be happy to announce

14 them.

15 MS. POLARDINO: Okay, great -- that'd be great.

16 MS. POLARDINO: Do we have Dave Meurer from the

17 Klamath River Renewal Corporation on the phone?

18 (No response.)

19 MS. POLARDINO: Okay. Do we have Kevin Takei -- I

20 apologize if I'm mispronouncing anybody's last name -- from

21 the California Department of Fish and Wildlife on the phone?

22 (No response.)

23 MS. POLARDINO: Do we have Joshua Adrian from Duncan,

24 Weinberg?

25 MR. ADRIAN: Yes, I'm here.

1 MS. POLARDINO: Okay, do we have Diane Henkels  
2 from Henkels Law, LLC?

3 (No response.)

4 MS. POLARDINO: Okay, do we have Thomas Schlosser?

5 MR. SCHLOSSER: Yes.

6 MS. POLARDINO: Okay, do we have John Hamilton on  
7 the phone?

8 MR. HAMILTON: Yes we do. I'm a member of the  
9 general public. I assume that's okay to attend.

10 MS. POLARDINO: Yes, yes. Do we have Jeff Morris  
11 on the phone?

12 (No response.)

13 MS. POLARDINO: Okay, do we have Elizabeth Nielsen  
14 from the County of Siskiyou -- I apologize?

15 MS. NIELSEN: Yes, you do.

16 MS. POLARDINO: Okay, yes. Do we have Natalie  
17 Reed from the County of Siskiyou?

18 MS. NIELSEN: She may be calling in a little bit  
19 later.

20 MS. POLARDINO: Okay, do we have Holly Dillemuth  
21 from the Herald and News on the phone?

22 (No response.)

23 MS. POLARDINO: Okay, are there any other people on  
24 the phone that I haven't called out their names?

25 (No response.)

1 MS. POLARDINO: Okay -- so hello?

2 (No response.)

3 MS. POLARDINO: Okay, so for the members of the  
4 public if you would not mind muting the phones so we won't  
5 have a lot of extra static on the teleconference call.

6 Also, since we're having a teleconference call anytime  
7 anybody would speak if you wouldn't mind re-identifying  
8 yourself whenever you're on the phone and what not.

9 My name is Jennifer Polardino. I'm a Historian  
10 from the Division of Hydropower Administration and  
11 Compliance and with the Office of Energy Projects and I'm  
12 going to go around the tables to identify other FERC staff  
13 members who are here.

14 MS. MCCORMICK: Hi, I'm Elizabeth McCormick. I'm  
15 in the Office of the General Counsel here at the Commission.

16 MS. MOLLOY: I'm Liz Molloy, I'm the Tribal  
17 Liaison here at the Commission and I'm also from the Office  
18 of the General Counsel.

19 MR. WINCHELL: Hi, I'm Frank Winchell. I'm an  
20 Archeologist with the Office of Energy Projects Division of  
21 Hydropower Licensing at FERC.

22 MS. POLARDINO: Okay so first off, we have an  
23 agenda I sent out to the Modoc Tribe. Do you have an  
24 opening statement?

25 CHIEF FOLLIS: I think our opening statement is

1     rather simple. We're happy you all can be here today and  
2     happy for the opportunity to have this call. And I also  
3     wanted to let you know Jennifer, that Marissa did just walk  
4     in.

5                 MS. POLARDINO: Great.

6                 CHIEF FOLLIS: Do you want to say hi Marissa?

7                 MS. FAHRING: Hello.

8                 MS. POLARDINO: That's Marissa Farring, and again  
9     if you guys wouldn't mind re-identifying. We have a court  
10    reporter who's transcribing the meeting -- that's the reason  
11    why we were asking everybody to re-identify themselves so  
12    when we are doing the transcript we would have an idea who  
13    actually was speaking.

14                CHIEF FOLLIS: Okay.

15                MS. POLARDINO: Just first some ground rules for  
16    the public. I think I kind of have already stated this --  
17    this is a meeting between the Commission staff and the Modoc  
18    Tribe to see any concerns or what not they have with regards  
19    to their proposals for the Klamath and Lower Klamath  
20    Projects.

21                The general public is able to attend this meeting  
22    but this meeting will not be for public comments so we'll  
23    kind of maybe turn this over to Elizabeth.

24                MS. MCCORMICK: Sure, I'll just -- this is Liz  
25    McCormick again. Thanks everyone for being on the call

1 today. I'll just give a little background of the proceeding  
2 up to this point. I'm kind of -- our goals for the call  
3 today. So I think as most of you know, we have received an  
4 application from the Klamath River Renewal Corporation and  
5 PacifiCorp.

6 We have two applications in front of us. One is  
7 for an amendment of the existing license and to transfer it  
8 to the Renewal Corporation -- four dams that PacifiCorp  
9 would like to transfer to the Renewal Corporation and then  
10 they would amend their existing license to remove those four  
11 dams from the project.

12 And then there would be a new license issued to  
13 the Renewal Corporation for those lower four dams. The  
14 second application is for a surrender of those lower four  
15 dams by the Renewal Corporation.

16 And so we do have two separate proceedings before  
17 us which can get a little bit confusing but they're very  
18 closely related and so the purpose of doing them separately  
19 is because it's kind of a unique situation where one entity  
20 is transferring dams to another entity for the explicit  
21 purpose of removing those dams from the river.

22 So they're very closely related but there's a lot  
23 of information that is pertinent to both proceedings.  
24 Anything else that you can think of -- so yeah, so as far as  
25 our process goes we have these applications before us.



1           We anticipate acting on the application for  
2   amendment and transfer first and then once we've made a  
3   decision on that application then we will be able to move  
4   forward with considering the application for surrender.

5           So the amendment and transfer proceeding is more  
6   of an administrative proceeding -- there's no physical  
7   change proposed in that application. It's a purely legal  
8   and administrative proceeding.

9           When we eventually get to the point where we --  
10   if we decide to consider the application for surrender that  
11   proceeding will involve the full environmental analysis and  
12   also the cultural resources, historic properties -- all that  
13   kind of stuff that is really into the physical removal of  
14   the dams from the river.

15           So the transfer and amendment is purely an  
16   administrative proceeding.

17           MS. POLARDINO: And anything that got transferred  
18   over would have the same terms and conditions -- this is  
19   Jennifer Polardino. Anything that would be from the four  
20   projects would be transferred over and have the same terms  
21   and conditions for the new license.

22           MR. FOLLIS: Jennifer and Liz, this is Blake  
23   Follis from the Modoc Tribe. My question is -- is that  
24   nothing has been done as far as cultural resource studies or  
25   environmental studies at this point, is that correct?

1           MR. WINCHELL: Yeah, this is Frank Winchell  
2 speaking. Yeah like -- okay there has been quite a bit of  
3 background work done that was conducted during the previous  
4 relicensing as well as there's been some more recent work  
5 done when the Department of Interior issued their final  
6 environmental impact statement back in 2012.

7           So there is quite a bit of cultural resources  
8 information that we already have before us that's on record.

9           MR. FOLLIS: Okay Frank, this is Blake again --  
10 and how much of that has included our tribe?

11          MR. WINCHELL: Good question. I don't think  
12 we've got a whole great deal of information. We certainly  
13 -- we have the contextual information about the Modoc  
14 historically, but as far as recent information -- like let's  
15 say the perspective from the tribe, we would by all means  
16 welcome any additional information that you may have that  
17 can be provided on the record for us to use as part of our  
18 environmental analysis for the Klamath.

19          MR. FOLLIS: Frank, this is Blake again, so my  
20 understanding of the cultural resource studies that have  
21 been conducted that's everything on the surface as of today,  
22 correct?

23          MR. WINCHELL: Yeah, now when you say surface --  
24 you know there's quite a bit of a comprehensive  
25 archeological surveys done. I think there was some

1 sub-surface testing of some particular sites.

2 Of course there's a lot of traditional cultural  
3 resources information that was provided as well.

4 MR. FOLLIS: So let me re-define that in line  
5 with that. When I say surface I'm discussing areas not  
6 currently covered by water.

7 MR. WINCHELL: Yeah, I think we pretty much have  
8 most of the surface area that's been intensively inventoried  
9 involving the Lower Klamath Project.

10 MR. FOLLIS: So with that said there's nothing  
11 underneath the existing reservoirs right now to think about?

12 MR. WINCHELL: Correct. Now of course we are  
13 aware that there is stuff that's inundated since the  
14 reservoirs have been put in place over the last hundred  
15 years or so, so we are definitely aware that there would be  
16 resources that would probably be exposed to some degree if  
17 and when the dams would be removed.

18 MR. FOLLIS: Okay. And then moving towards a  
19 little bit of the environment -- again this is Blake Follis  
20 -- the environmental side, you know, how much as far as  
21 mitigation efforts and remedial efforts have been taken into  
22 account with this study?

23 From my research of just briefly looking through  
24 the filings that have been made, I'd say those were rather  
25 voluminous but volume doesn't always mean that something has

1     been addressed directly.

2                 So I'm looking in terms of what type of sediment  
3     mitigation is being accounted for prior to the consideration  
4     of the dam removal and then post-dam removal what type of  
5     sedimentation mediation and mitigation aspects will be done?

6                 MR. WINCHELL:   Right.   The corporation has  
7     provided what they call the "detailed plan" and that's going  
8     to be followed up with sort of the finalization of the  
9     detailed plan.   There's quite a bit of information about  
10    the, the -- what kinds of sediments are behind the dam.

11                They have done some coring so they do -- you  
12    know, they do have some empirical data about the sediments  
13    and there's been some work on what would happen once the  
14    sediments got removed.

15                So I would definitely recommend that the Tribe  
16    look at that information in the detailed plan and then of  
17    course the corporation is going to be filing their final  
18    finalization of the detailed plan which would also be  
19    available on the record fairly soon.

20                MR. FOLLIS:   Okay, okay and that would also --  
21    again this is Blake Follis.   That will also address  
22    different types of fish habitat impacts?

23                MR. WINCHELL:   Yeah.

24                MR. FOLLIS:   Species impacts, different types  
25    that would otherwise be considered under an ESA -- or EIS?

1           MR. WINCHELL: Correct, correct. And that  
2 information is also -- again we've got two NEPA analyses.  
3 The one I would start off with would be the FERC final  
4 environmental impact statement which was done back in 2008.  
5 That's a very comprehensive analysis on the existing and  
6 anadromous fish and the impacts are such also riparian  
7 impacts along the shoreline with terrestrial resources.

8           And then of course we've got the more recent  
9 analysis on involving the final environmental impact  
10 statement that was done by the Department of Interior back  
11 in 2012. And again, these are very comprehensive  
12 environmental analyses. They have a lot of this  
13 information -- if not everything, that we need to go forward  
14 with an analysis on a surrender of the projects and  
15 subsequent dam removal.

16           MR. FOLLIS: Okay and I'm -- in here I'm briefly  
17 assuming but that would also take into account the impact on  
18 the water table itself for the river?

19           MR. WINCHELL: Yes.

20           MR. FOLLIS: Okay and all of the hydrology  
21 studies have been included on that as well?

22           MR. WINCHELL: As far as we know, yes.

23           MR. FOLLIS: Okay -- other aspects that I'm  
24 looking at -- what's the basis of filing this application  
25 with the KRRC and PacifiCorp? What's the foundational

1 reasoning for that?

2 MR. WINCHELL: Well I believe again -- they want  
3 to transfer the jurisdiction from PacifiCorp specifically to  
4 essentially the corporation is made up of the states of  
5 California and the state of -- or the state of California  
6 and Oregon. They're the principals of the corporation along  
7 with involved Indian Tribes and some other entities.

8 So it's essentially a jurisdictional transference  
9 of the authority from PacifiCorp which is a private entity  
10 to the states of California and Oregon who also have the  
11 water quality certification authority as well.

12 MR. FOLLIS: Frank, this is Blake, you mentioned  
13 tribes and of the tribes that are included on that --

14 MR. WINCHELL: Right.

15 MR. FOLLIS: We are not and I'm kind of wondering  
16 as far as the elephant in the room as to why we are not  
17 included on that as being involved with the KRRRC in that  
18 type of -- any type of settlement agreement as it applies to  
19 the river considering the fact that the four dams in  
20 question here are well within our ancestral territory.

21 MR. WINCHELL: Right.

22 MR. FOLLIS: And the water rights that are going  
23 to be impacted according to, you know, our 1864 Treaty and  
24 then pre-dating it ancestral files.

25 MR. WINCHELL: Right.

1           MR. FOLLIS: Why we have not been consulted is an  
2 area of concern for us.

3           MR. WINCHELL: Well again Blake, you are  
4 certainly -- and we recognize you as a federally recognized  
5 tribe and that you are indeed involved with this -- these  
6 procedures that are before us.

7           In the past I can only say that there were, you  
8 know, attempts to involve the tribes way back over a decade  
9 ago. Why that didn't occur I'd have to look into the record  
10 but I think that's literally, you know, water underneath the  
11 bridge and hence forward you are certainly involved.

12          MS. MOLLOY: This is Liz Molloy. Certainly from  
13 our proceeding we certainly encourage you to file comments.  
14 We certainly will take those comments into account and we  
15 will consider your views in analyzing the application and  
16 going towards making the decision on both the applications.

17          But as to why the corporation -- the corporation  
18 is not us, it is an applicant and so any questions about  
19 whether -- why they would not have included you or why --  
20 whether or not they would be interested in having you  
21 participate now in their corporation would be a question for  
22 them as an applicant.

23          That wouldn't be us. We will be analyzing the  
24 applications and making a decision based on that but they  
25 are the ones applying.

1 MR. WINCHELL: Yeah.

2 MR. FOLLIS: Thank you for that Liz, I appreciate  
3 it. I do have another question -- again this is Blake  
4 Follis. What's going to be the impact of, you know, fire  
5 safety? As I understand it those reservoirs right now are  
6 used for fire-fighting efforts and if you remove a large  
7 body and volume of water away from, you know, basically  
8 you're removing that resource. What will be the impact on  
9 that?

10 MS. POLARDINO: We will be analyzing that Blake.

11 MS. MCCORMICK: Yeah that is something that we'll  
12 be looking at as part of the application for surrender and  
13 so we're still waiting for some additional information from  
14 applicants before we can fully analyze that application --  
15 but that's definitely something that we've received comments  
16 on and we are going to be analyzing.

17 MR. FOLLIS: That's awesome. One more question  
18 -- who carries the liability during the removal of the dams  
19 and then once the dams are removed? As I understand it the  
20 KRRC is a 501C3 and typically non-profits don't carry much  
21 liability outside of their assets.

22 So what's, you know, either personal or I guess  
23 it's going to really end up coming down to personal  
24 liability. What's the impact for an individual who may be  
25 harmed -- what do they do as far as finding a remedy?



1           MS. MCCORMICK: So we are still waiting on  
2 additional information regarding insurance and risk  
3 mitigation as part of the application for surrender. From  
4 what the Renewal Corporation has told us, they have kind of  
5 a general business kind of insurance policy and then they  
6 will also have more project-specific policies.

7           And so we're waiting on additional information  
8 but that's definitely something that we're looking at very  
9 closely and we're anticipating that we should be getting  
10 that information with the definite plan that Frank was  
11 talking about hopefully in the next few months.

12           MR. FOLLIS: Okay, yeah because I think it would  
13 be a very intelligent move on their part to have a long-term  
14 insurance policy based on the effect of this removal.

15           MS. MCCORMICK: Yes, absolutely and to your  
16 question earlier about who exactly will be liable and when  
17 -- PacifiCorp has agreed to continue operating the dams up  
18 until decommissioning begins, if and when that does happen.

19           And then from the beginning of decommissioning  
20 on, it will be the Renewal Corporation alone -- it will be  
21 the full entity responsible.

22           MR. FOLLIS: Okay, what will be the economic  
23 impacts that take place? I've read a little bit of the  
24 charge issue -- rate users right now for electric -- the  
25 argument is that it will be minimal but I find that a little

1 bit hard to believe when you don't have power coming in to  
2 be distributed.

3 I see that as kind of a great opportunity to  
4 raise prices because you have a lower amount of supply.

5 MR. WINCHELL: Well, we're going to do some --  
6 you know, the economic analysis was going to be part of our  
7 NEPA analysis on the surrender so a lot of that information  
8 would be -- we would be looking into it and that would be  
9 part of our analysis.

10 There is something that you know,  
11 jurisdictionally wise, you know, the Commission isn't  
12 involved with let's say -- in-state retail and so there may  
13 be things that would be outside of our jurisdiction as part  
14 of regulating electric prices as such but we certainly would  
15 -- that would be part of our analysis on the effects of a, a  
16 decommissioning removal of the dams on the local economy and  
17 things as such.

18 MR. FOLLIS: Okay well I think for my part I'll  
19 allow for the rest of the Tribal members who are present to  
20 speak if they have any questions or concerns, so far I'm  
21 getting a bunch of no's.

22 MR. WINCHELL: Okay this is Frank again. I just  
23 wanted to add that the -- the project coordinator for this  
24 surrender his name is Dr. John Mudre. He is a Fisheries  
25 Biologist, he was also the coordinator for the analysis that

1 we did on the original relicensing so again you're welcome  
2 to contact any of this today but I just wanted to make it  
3 clear that John Mudre is going to be the Project Coordinator  
4 for the surrender process.

5 MR. FOLLIS: Frank, this is Blake again, I'd  
6 appreciate it if you all worked through Jennifer to send me  
7 the appropriate contact information and --

8 MS. POLARDINO: Blake, this is Jennifer, I was  
9 planning on doing so, so yes, absolutely.

10 MR. FOLLIS: Yeah because I, you know, it's kind  
11 of rough coming in late in the game, so to speak, how  
12 everything is working out but we still definitely want to  
13 have a place on this project.

14 MR. WINCHELL: Sure.

15 MR. FOLLIS: And work with everybody within the  
16 community that we've been very well opened and obvious with  
17 making investments in the area and then also insuring that  
18 everybody benefits from decisions that we have the  
19 opportunity to have an impact on.

20 MS. MOLLOY: One -- this is Liz Molloy, one thing  
21 I'd like to clarify is due to our quasi-judicial role where  
22 we're making a decision on an application and there is both  
23 support and opposition on various aspects of this -- this is  
24 a contested proceeding and therefore our -- the Commission's  
25 ex parte rules apply.

1           So that's one reason -- that's why we're having  
2   this -- a court reporter report on this, do a transcript of  
3   this meeting and all the other tribal meetings. But so,  
4   while we can answer procedural questions we actually need to  
5   have comments and concerns raised on the record.

6           So we certainly will be on the surrender when we  
7   get the additional information. We will be issuing a notice  
8   asking for comments and we certainly welcome any comments  
9   that you all would have. And if there are any comments that  
10  you would be filing or interested in making that would be  
11  privileged that you would want confidential, we do have  
12  privileged filing methods that would keep it more sheltered,  
13  the information.

14           MR. WINCHELL: Yeah, and this is Frank just  
15  following up on what Liz is saying is that of course,  
16  anything that's procedural -- like if there was a filing of  
17  confidential information as such we would certainly be able  
18  to help you understand that and we can do that by telephone.

19           But anything involving the merits of the project  
20  we can't talk about because of our off the record  
21  communication prohibitions involving a contested proceeding.  
22  That would have to be put on the record, but anything that's  
23  procedural we certainly can walk you through these kinds of  
24  things.

25           MR. FOLLIS: I appreciate that very much Frank

1 and Liz and as it kind of stands right now I think we're a  
2 little bit near the issues as well and it would be premature  
3 of us to support this without further involvement of the  
4 Tribe going forward and we appreciate you all providing an  
5 opportunity for the call today and we really look forward to  
6 working with you all in the future.

7 MS. MOLLOY: In the -- one other thing I would  
8 notice -- this is Liz Molloy again, one thing I would  
9 mention is that the applicant -- the Klamath Renewal  
10 Corporation -- in the notice that we issued of the  
11 applications filed, we issued a notice in November, 2016 --  
12 I believe they were designated non-federal representatives  
13 for 106 -- Section 106 National Historic Preservation Act  
14 and for ESA.

15 So to the extent they reach out and ask for any  
16 information you might have or might be willing to share with  
17 them we encourage you to work with them to help make sure  
18 their application and additional information they filed with  
19 us is as complete and accurate as possible.

20 MR. FOLLIS: So let me understand -- they are  
21 authorized to reach out to tribes?

22 MS. MOLLOY: They are.

23 MR. FOLLIS: Okay, okay thank you. Okay, does  
24 anybody else -- Chief do you have anything? Okay, well  
25 again thank you all for your time. We appreciate it and if

1 we have any other opportunities to visit with you we'll be  
2 happy to do so.

3 MR. WINCHELL: Great.

4 MS. POLARDINO: Yes, and just to remind you guys  
5 on the phone, everybody outside, this meeting will be  
6 transcribed and will be on the record at least 30 days after  
7 this meeting.

8 And if there are any additional comments as both  
9 Frank and Liz have made clear, if there are any additional  
10 comments you want to make for the record you can file it on  
11 our e-library system and if you have any issues for filing  
12 anything, contact anybody here that you're talking to today.

13 And we thank you for your time and your comments  
14 and your questions.

15 MS. MOLLOY: Thank you.

16 MR. FOLLIS: Thank you all as well.

17 (Whereupon the meeting was adjourned at 11:31 a.m.)  
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21  
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24  
25

1 CERTIFICATE OF OFFICIAL REPORTER

2

3 This is to certify that the attached proceeding  
4 before the FEDERAL ENERGY REGULATORY COMMISSION in the  
5 Matter of:

6 Name of Proceeding:

7 KLAMATH AND LOWER KLAMATH

8 HYDROELECTRIC PROJECTS

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12

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14

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16 Docket No.: P-2082-062/P-14803-000

17 Place: Washington, D.C.

18 Date: Monday, February 5, 2018

19 were held as herein appears, and that this is the original  
20 transcript thereof for the file of the Federal Energy  
21 Regulatory Commission, and is a full correct transcription  
22 of the proceedings.

23

24 Gaynell Catherine

25 Official Reporter

1 FEDERAL ENERGY REGULATORY COMMISSION

2 KLAMATH AND LOWER KLAMATH

3 HYDROELECTRIC PROJECTS

4

5 DOCKET NOS: P-2082-062/P-14803-000

6

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8 TRIBAL CONSULTATION MEETING

9 TELECONFERENCE

10

11 Monday, February 5, 2018

12 11:00 A.M.

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1 PARTICIPANTS

2 FERC STAFF

3 ELIZABETH M. MOLLOY, TRIBAL LIAISON

4 JENNIFER POLARDINO, HISTORIAN

5 FRANK WINCHELL, ANTHROPOLOGIST/ARCHAEOLOGIST

6 ELIZABETH MCCORMICK, ATTORNEY-ADVISOR

7 MODOC TRIBE

8 CHIEF BILL G. FOLLIS, CHIEF AND TRIBAL ADMINISTRATOR

9 JUDY COBB, CHIEF

10 ROB BURKYBIKE III, HOUSING & ENERGY DIRECTOR

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12 MARISSA FAHRING, TRIBAL BUSINESS REPRESENTATIVE

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19 JOHN HAMILTON, COMMUNITY MEMBER

20 JEFF MORRIS

21 HOLLY DILLEMUTH, HERALD AND NEWS

22

23

24

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1 P R O C E E D I N G S

2 (11:00 a.m.)

3 MS. POLARDINO: So first off, before we begin, I  
4 kind of wanted to make sure that we kind of know who's  
5 attending the meeting. So first off, I will kind of go  
6 through the attendance sheet that I have and if there's  
7 anybody here who is not on this sheet please let me know.

8 And after the meeting what we can do is you can  
9 email me to verify all of the information that you have --  
10 for example, the spelling of your name, the entity that you  
11 represent, et cetera. And you can email me at Jennifer -  
12 J-e-n-n-i-f-e-r dot Polardino which is P-o-l-a-r-d-i-n-o @  
13 FERC.gov -- because I understand sometimes people get the  
14 call-in information from other people or what not.

15 So first off, do we have Chief Bill G. Follis of  
16 the Modoc Tribe on the phone?

17 CHIEF FOLLIS: Yes, he's here.

18 MS. POLARDINO: Okay, do we have Judy Cobb from  
19 the Modoc Tribe?

20 CHIEF FOLLIS: Judy will not be here this  
21 morning.

22 MS. POLARDINO: Okay, do we have Rob Burkybike,  
23 III from the Modoc Tribe?

24 MR. BURKYBIKE, III: Yes, I'm here.

25 MS. POLARDINO: Okay, do we have W. Blake Follis



1 from the Modoc Tribe?

2 MR. FOLLIS: Yes, I'm here Jen.

3 MS. POLARDINO: Thank you, do we have Marissa  
4 Fahring from the Modoc Tribe?

5 CHIEF FOLLIS: Marissa will be in shortly.

6 MS. POLARDINO: Okay, do we have Troy LittleAxe  
7 from the Modoc Tribe?

8 MR. LITTLEAXE: Yes, I'm here.

9 MS. POLARDINO: Okay, do we have any other  
10 members or representatives from the Modoc Tribe on the  
phone  
11 today?

12 CHIEF FOLLIS: No, we do not have any from our  
13 office and should any come in we'll be happy to announce  
14 them.

15 MS. POLARDINO: Okay, great -- that'd be great.

16 MS. POLARDINO: Do we have Dave Meurer from the  
17 Klamath River Renewal Corporation on the phone?

18 (No response.)

19 MS. POLARDINO: Okay. Do we have Kevin Takei -- I  
20 apologize if I'm mispronouncing anybody's last name -- from  
21 the California Department of Fish and Wildlife on the  
phone?

22 (No response.)

23 MS. POLARDINO: Do we have Joshua Adrian from Duncan,  
24 Weinberg?

25

MR. ADRIAN: Yes, I'm here.

1 MS. POLARDINO: Okay, do we have Diane Henkels  
2 from Henkels Law, LLC?

3 (No response.)

4 MS. POLARDINO: Okay, do we have Thomas Schlosser?

5 MR. SCHLOSSER: Yes.

6 MS. POLARDINO: Okay, do we have John Hamilton  
on the phone?

7 MR. HAMILTON: Yes we do. I'm a member of the  
8 general public. I assume that's okay to attend.

9 MS. POLARDINO: Yes, yes. Do we have Jeff  
Morris on the phone?

10 (No response.)

11 MS. POLARDINO: Okay, do we have Elizabeth Nielsen  
12 from the County of Siskiyou -- I apologize?

13 MS. NIELSEN: Yes, you do.

14 MS. POLARDINO: Okay, yes. Do we have Natalie  
15 Reed from the County of Siskiyou?

16 MS. NIELSEN: She may be calling in a little bit  
17 later.

18 MS. POLARDINO: Okay, do we have Holly Dillemuth  
19 from the Herald and News on the phone?

20 (No response.)

21 MS. POLARDINO: Okay, are there any other people on  
22 the phone that I haven't called out their names?



25 (No response.)

1 MS. POLARDINO: Okay -- so hello?

2 (No response.)

3 MS. POLARDINO: Okay, so for the members of the  
4 public if you would not mind muting the phones so we won't  
5 have a lot of extra static on the teleconference call.  
6 Also, since we're having a teleconference call anytime  
7 anybody would speak if you wouldn't mind re-identifying  
8 yourself whenever you're on the phone and what not.

9 My name is Jennifer Polardino. I'm a Historian  
10 from the Division of Hydropower Administration and  
11 Compliance and with the Office of Energy Projects and I'm  
12 going to go around the tables to identify other FERC staff  
13 members who are here.

14 MS. MCCORMICK: Hi, I'm Elizabeth McCormick.  
I'm  
15 in the Office of the General Counsel here at the  
Commission.

16 MS. MOLLOY: I'm Liz Molloy, I'm the Tribal  
17 Liaison here at the Commission and I'm also from the Office  
18 of the General Counsel.

19 MR. WINCHELL: Hi, I'm Frank Winchell. I'm an  
20 Archeologist with the Office of Energy Projects Division of  
21 Hydropower Licensing at FERC.

22 MS. POLARDINO: Okay so first off, we have an  
23 agenda I sent out to the Modoc Tribe. Do you have an  
24 opening statement?

25

CHIEF FOLLIS: I think our opening statement is

1     rather simple. We're happy you all can be here today and  
2     happy for the opportunity to have this call. And I also  
3     wanted to let you know Jennifer, that Marissa did just walk  
4     in.

5                   MS. POLARDINO: Great.

6                   CHIEF FOLLIS: Do you want to say hi Marissa?

7                   MS. FAHRING: Hello.

8                   MS. POLARDINO: That's Marissa Fahrung, and  
again

9     if you guys wouldn't mind re-identifying. We have a court  
10    reporter who's transcribing the meeting -- that's the  
reason

11    why we were asking everybody to re-identify themselves so  
12    when we are doing the transcript we would have an idea who  
13    actually was speaking.

14                  CHIEF FOLLIS: Okay.

15                  MS. POLARDINO: Just first some ground rules for  
16    the public. I think I kind of have already stated this --  
17    this is a meeting between the Commission staff and the  
Modoc

18    Tribe to see any concerns or what not they have with  
regards  
19    to their proposals for the Klamath and Lower Klamath  
20    Projects.

21                  The general public is able to attend this  
meeting  
22    but this meeting will not be for public comments so we'll  
23    kind of maybe turn this over to Elizabeth.

24 MS. MCCORMICK: Sure, I'll just -- this is Liz  
25 McCormick again. Thanks everyone for being on the call

1 today. I'll just give a little background of the  
proceeding

2 up to this point. I'm kind of -- our goals for the call  
3 today. So I think as most of you know, we have received an  
4 application from the Klamath River Renewal Corporation and  
5 PacifiCorp.

6 We have two applications in front of us. One is  
7 for an amendment of the existing license and to transfer it  
8 to the Renewal Corporation -- four dams that PacifiCorp  
9 would like to transfer to the Renewal Corporation and then  
10 they would amend their existing license to remove those  
four  
11 dams from the project.

12 And then there would be a new license issued to  
13 the Renewal Corporation for those lower four dams. The  
14 second application is for a surrender of those lower four  
15 dams by the Renewal Corporation.

16 And so we do have two separate proceedings  
before  
17 us which can get a little bit confusing but they're very  
18 closely related and so the purpose of doing them separately  
19 is because it's kind of a unique situation where one entity  
20 is transferring dams to another entity for the explicit  
21 purpose of removing those dams from the river.

22 So they're very closely related but there's a  
lot  
23 of information that is pertinent to both proceedings.

as           24    Anything else that you can think of -- so yeah, so as far  
              25    our process goes we have these applications before us.

1           We anticipate acting on the application for  
2   amendment and transfer first and then once we've made a  
3   decision on that application then we will be able to move  
4   forward with considering the application for surrender.

5           So the amendment and transfer proceeding is more  
6   of an administrative proceeding -- there's no physical  
7   change proposed in that application. It's a purely legal  
8   and administrative proceeding.

9           When we eventually get to the point where we --  
10   if we decide to consider the application for surrender that  
11   proceeding will involve the full environmental analysis and  
12   also the cultural resources, historic properties -- all  
that  
13   kind of stuff that is really into the physical removal of  
14   the dams from the river.

15           So the transfer and amendment is purely an  
16   administrative proceeding.

17           MS. POLARDINO: And anything that got  
transferred

18   over would have the same terms and conditions -- this is  
19   Jennifer Polardino. Anything that would be from the four  
20   projects would be transferred over and have the same terms  
21   and conditions for the new license.

22           MR. FOLLIS: Jennifer and Liz, this is Blake  
23   Follis from the Modoc Tribe. My question is -- is that  
24   nothing has been done as far as cultural resource studies  
or



25 environmental studies at this point, is that correct?

1                   MR. WINCHELL: Yeah, this is Frank Winchell  
2 speaking. Yeah like -- okay there has been quite a bit of  
3 background work done that was conducted during the previous  
4 relicensing as well as there's been some more recent work  
5 done when the Department of Interior issued their final  
6 environmental impact statement back in 2012.

7                   So there is quite a bit of cultural resources  
8 information that we already have before us that's on  
record.

9                   MR. FOLLIS: Okay Frank, this is Blake again --  
10 and how much of that has included our tribe?

11                  MR. WINCHELL: Good question. I don't think  
12 we've got a whole great deal of information. We certainly  
13 -- we have the contextual information about the Modoc  
14 historically, but as far as recent information -- like  
let's  
15 say the perspective from the tribe, we would by all means  
16 welcome any additional information that you may have that  
17 can be provided on the record for us to use as part of our  
18 environmental analysis for the Klamath.

19                  MR. FOLLIS: Frank, this is Blake again, so my  
20 understanding of the cultural resource studies that have  
21 been conducted that's everything on the surface as of  
today,  
22 correct?

23                  MR. WINCHELL: Yeah, now when you say surface --  
24 you know there's quite a bit of a comprehensive

25    archeological surveys done.    I think there was some

1 sub-surface testing of some particular sites.

2 Of course there's a lot of traditional cultural  
3 resources information that was provided as well.

4 MR. FOLLIS: So let me re-define that in line  
5 with that. When I say surface I'm discussing areas not  
6 currently covered by water.

7 MR. WINCHELL: Yeah, I think we pretty much have  
8 most of the surface area that's been intensively  
inventoried  
9 involving the Lower Klamath Project.

10 MR. FOLLIS: So with that said there's nothing  
11 underneath the existing reservoirs right now to think  
about?

12 MR. WINCHELL: Correct. Now of course we are  
13 aware that there is stuff that's inundated since the  
14 reservoirs have been put in place over the last hundred  
15 years or so, so we are definitely aware that there would be  
16 resources that would probably be exposed to some degree if  
17 and when the dams would be removed.

18 MR. FOLLIS: Okay. And then moving towards a  
19 little bit of the environment -- again this is Blake Follis  
20 -- the environmental side, you know, how much as far as  
21 mitigation efforts and remedial efforts have been taken  
into  
22 account with this study?

23 From my research of just briefly looking through  
24 the filings that have been made, I'd say those were rather

has 25 voluminous but volume doesn't always mean that something

1       been addressed directly.

2                       So I'm looking in terms of what type of sediment  
3       mitigation is being accounted for prior to the  
consideration  
4       of the dam removal and then post-dam removal what type of  
5       sedimentation mediation and mitigation aspects will be  
done?

6                       MR. WINCHELL: Right. The corporation has  
7       provided what they call the "detailed plan" and that's  
going  
8       to be followed up with sort of the finalization of the  
9       detailed plan. There's quite a bit of information about  
10      the, the -- what kinds of sediments are behind the dam.

11                      They have done some coring so they do -- you  
12      know, they do have some empirical data about the sediments  
13      and there's been some work on what would happen once the  
14      sediments got removed.

15                      So I would definitely recommend that the Tribe  
16      look at that information in the detailed plan and then of  
17      course the corporation is going to be filing their final  
18      finalization of the detailed plan which would also be  
19      available on the record fairly soon.

20                      MR. FOLLIS: Okay, okay and that would also --  
21      again this is Blake Follis. That will also address  
22      different types of fish habitat impacts?

23                      MR. WINCHELL: Yeah.

24                      MR. FOLLIS: Species impacts, different types

25 that would otherwise be considered under an ESA -- or EIS?

1           MR. WINCHELL: Correct, correct. And that  
2 information is also -- again we've got two NEPA analyses.  
3 The one I would start off with would be the FERC final  
4 environmental impact statement which was done back in 2008.  
5 That's a very comprehensive analysis on the existing and  
6 anadromous fish and the impacts are such also riparian  
7 impacts along the shoreline with terrestrial resources.

8           And then of course we've got the more recent  
9 analysis on involving the final environmental impact  
10 statement that was done by the Department of Interior back  
11 in 2012. And again, these are very comprehensive  
12 environmental analyses. They have a lot of this  
13 information -- if not everything, that we need to go  
forward  
14 with an analysis on a surrender of the projects and  
15 subsequent dam removal.

16           MR. FOLLIS: Okay and I'm -- in here I'm briefly  
17 assuming but that would also take into account the impact  
on  
18 the water table itself for the river?

19           MR. WINCHELL: Yes.

20           MR. FOLLIS: Okay and all of the hydrology  
21 studies have been included on that as well?

22           MR. WINCHELL: As far as we know, yes.

23           MR. FOLLIS: Okay -- other aspects that I'm  
24 looking at -- what's the basis of filing this application



25 with the KRRC and PacifiCorp? What's the foundational

1 reasoning for that?

2 MR. WINCHELL: Well I believe again -- they want  
3 to transfer the jurisdiction from PacifiCorp specifically  
4 essentially the corporation is made up of the states of  
5 California and the state of -- or the state of California  
6 and Oregon. They're the principals of the corporation  
7 with involved Indian Tribes and some other entities.

8 So it's essentially a jurisdictional  
9 transference of the authority from PacifiCorp which is a private entity  
10 to the states of California and Oregon who also have the  
11 water quality certification authority as well.

12 MR. FOLLIS: Frank, this is Blake, you mentioned  
13 tribes and of the tribes that are included on that --

14 MR. WINCHELL: Right.

15 MR. FOLLIS: We are not and I'm kind of  
16 wondering as far as the elephant in the room as to why we are not  
17 included on that as being involved with the KRRC in that  
18 type of -- any type of settlement agreement as it applies  
19 to the river considering the fact that the four dams in  
20 question here are well within our ancestral territory.

21 MR. WINCHELL: Right.

22 MR. FOLLIS: And the water rights that are going  
23 to be impacted according to, you know, our 1864 Treaty and

24     then pre-dating it ancestral files.

25                     MR. WINCHELL:   Right.

an 1 MR. FOLLIS: Why we have not been consulted is  
2 area of concern for us.

3 MR. WINCHELL: Well again Blake, you are  
4 certainly -- and we recognize you as a federally recognized  
5 tribe and that you are indeed involved with this -- these  
6 procedures that are before us.

7 In the past I can only say that there were, you  
8 know, attempts to involve the tribes way back over a decade  
9 ago. Why that didn't occur I'd have to look into the  
record

10 but I think that's literally, you know, water underneath  
the  
11 bridge and hence forward you are certainly involved.

12 MS. MOLLOY: This is Liz Molloy. Certainly from  
13 our proceeding we certainly encourage you to file comments.  
14 We certainly will take those comments into account and we  
15 will consider your views in analyzing the application and  
16 going towards making the decision on both the applications.

17 But as to why the corporation -- the corporation  
18 is not us, it is an applicant and so any questions about  
19 whether -- why they would not have included you or why --  
20 whether or not they would be interested in having you  
21 participate now in their corporation would be a question  
for  
22 them as an applicant.

23 That wouldn't be us. We will be analyzing the

24 applications and making a decision based on that but they  
25 are the ones applying.

1 MR. WINCHELL: Yeah.

2 MR. FOLLIS: Thank you for that Liz, I  
appreciate

3 it. I do have another question -- again this is Blake  
4 Follis. What's going to be the impact of, you know, fire  
5 safety? As I understand it those reservoirs right now are  
6 used for fire-fighting efforts and if you remove a large  
7 body and volume of water away from, you know, basically  
8 you're removing that resource. What will be the impact on  
9 that?

10 MS. POLARDINO: We will be analyzing that Blake.

11 MS. MCCORMICK: Yeah that is something that  
we'll

12 be looking at as part of the application for surrender and  
13 so we're still waiting for some additional information from  
14 applicants before we can fully analyze that application --  
15 but that's definitely something that we've received  
comments  
16 on and we are going to be analyzing.

17 MR. FOLLIS: That's awesome. One more question  
18 -- who carries the liability during the removal of the dams  
19 and then once the dams are removed? As I understand it the  
20 KRRC is a 501C3 and typically non-profits don't carry much  
21 liability outside of their assets.

22 So what's, you know, either personal or I guess  
23 it's going to really end up coming down to personal  
24 liability. What's the impact for an individual who may be

25    harmed -- what do they do as far as finding a remedy?

1 MS. MCCORMICK: So we are still waiting on  
2 additional information regarding insurance and risk  
3 mitigation as part of the application for surrender. From  
4 what the Renewal Corporation has told us, they have kind of  
5 a general business kind of insurance policy and then they  
6 will also have more project-specific policies.

7 And so we're waiting on additional information  
8 but that's definitely something that we're looking at very  
9 closely and we're anticipating that we should be getting  
10 that information with the definite plan that Frank was  
11 talking about hopefully in the next few months.

12 MR. FOLLIS: Okay, yeah because I think it would  
13 be a very intelligent move on their part to have a long-  
term  
14 insurance policy based on the effect of this removal.

15 MS. MCCORMICK: Yes, absolutely and to your  
16 question earlier about who exactly will be liable and when  
17 -- PacifiCorp has agreed to continue operating the dams up  
18 until decommissioning begins, if and when that does happen.

19 And then from the beginning of decommissioning  
20 on, it will be the Renewal Corporation alone -- it will be  
21 the full entity responsible.

22 MR. FOLLIS: Okay, what will be the economic  
23 impacts that take place? I've read a little bit of the  
24 charge issue -- rate users right now for electric -- the



25 argument is that it will be minimal but I find that a  
little

1 bit hard to believe when you don't have power coming in to  
2 be distributed.

3 I see that as kind of a great opportunity to  
4 raise prices because you have a lower amount of supply.

5 MR. WINCHELL: Well, we're going to do some --  
6 you know, the economic analysis was going to be part of our  
7 NEPA analysis on the surrender so a lot of that information  
8 would be -- we would be looking into it and that would be  
9 part of our analysis.

10 There is something that you know,  
11 jurisdictionally wise, you know, the Commission isn't  
12 involved with let's say -- in-state retail and so there may  
13 be things that would be outside of our jurisdiction as part  
14 of regulating electric prices as such but we certainly  
would  
15 -- that would be part of our analysis on the effects of a,  
a  
16 decommissioning removal of the dams on the local economy  
and  
17 things as such.

18 MR. FOLLIS: Okay well I think for my part I'll  
19 allow for the rest of the Tribal members who are present to  
20 speak if they have any questions or concerns, so far I'm  
21 getting a bunch of no's.

22 MR. WINCHELL: Okay this is Frank again. I just  
23 wanted to add that the -- the project coordinator for this  
24 surrender his name is Dr. John Mudre. He is a Fisheries

that 25 Biologist, he was also the coordinator for the analysis

1 we did on the original relicensing so again you're welcome  
2 to contact any of this today but I just wanted to make it  
3 clear that John Mudre is going to be the Project  
Coordinator  
4 for the surrender process.

5 MR. FOLLIS: Frank, this is Blake again, I'd  
6 appreciate it if you all worked through Jennifer to send me  
7 the appropriate contact information and --

8 MS. POLARDINO: Blake, this is Jennifer, I was  
9 planning on doing so, so yes, absolutely.

10 MR. FOLLIS: Yeah because I, you know, it's kind  
11 of rough coming in late in the game, so to speak, how  
12 everything is working out but we still definitely want to  
13 have a place on this project.

14 MR. WINCHELL: Sure.

15 MR. FOLLIS: And work with everybody within the  
16 community that we've been very well opened and obvious with  
17 making investments in the area and then also insuring that  
18 everybody benefits from decisions that we have the  
19 opportunity to have an impact on.

20 MS. MOLLOY: One -- this is Liz Molloy, one  
thing  
21 I'd like to clarify is due to our quasi-judicial role where  
22 we're making a decision on an application and there is both  
23 support and opposition on various aspects of this -- this  
is

24 a contested proceeding and therefore our -- the  
Commission's

25 ex parte rules apply.

1           So that's one reason -- that's why we're having  
2   this -- a court reporter report on this, do a transcript of  
3   this meeting and all the other tribal meetings. But so,  
4   while we can answer procedural questions we actually need  
to  
5   have comments and concerns raised on the record.

6           So we certainly will be on the surrender when we  
7   get the additional information. We will be issuing a  
notice  
8   asking for comments and we certainly welcome any comments  
9   that you all would have. And if there are any comments  
that  
10   you would be filing or interested in making that would be  
11   privileged that you would want confidential, we do have  
12   privileged filing methods that would keep it more  
sheltered,  
13   the information.

14           MR. WINCHELL: Yeah, and this is Frank just  
15   following up on what Liz is saying is that of course,  
16   anything that's procedural -- like if there was a filing of  
17   confidential information as such we would certainly be able  
18   to help you understand that and we can do that by  
telephone.

19           But anything involving the merits of the project  
20   we can't talk about because of our off the record  
21   communication prohibitions involving a contested  
proceeding.  
22   That would have to be put on the record, but anything  
that's

23 procedural we certainly can walk you through these kinds of  
24 things.

25 MR. FOLLIS: I appreciate that very much Frank

1 and Liz and as it kind of stands right now I think we're a  
2 little bit near the issues as well and it would be  
premature  
3 of us to support this without further involvement of the  
4 Tribe going forward and we appreciate you all providing an  
5 opportunity for the call today and we really look forward  
to  
6 working with you all in the future.

7 MS. MOLLOY: In the -- one other thing I would  
8 notice -- this is Liz Molloy again, one thing I would  
9 mention is that the applicant -- the Klamath Renewal  
10 Corporation -- in the notice that we issued of the  
11 applications filed, we issued a notice in November, 2016 --  
12 I believe they were designated non-federal representatives  
13 for 106 -- Section 106 National Historic Preservation Act  
14 and for ESA.

15 So to the extent they reach out and ask for any  
16 information you might have or might be willing to share  
with  
17 them we encourage you to work with them to help make sure  
18 their application and additional information they filed  
with  
19 us is as complete and accurate as possible.

20 MR. FOLLIS: So let me understand -- they are  
21 authorized to reach out to tribes?

22 MS. MOLLOY: They are.

23 MR. FOLLIS: Okay, okay thank you. Okay, does



24 anybody else -- Chief do you have anything? Okay, well

25 again thank you all for your time. We appreciate it and if

1 we have any other opportunities to visit with you we'll be  
2 happy to do so.

3 MR. WINCHELL: Great.

4 MS. POLARDINO: Yes, and just to remind you guys  
5 on the phone, everybody outside, this meeting will be  
6 transcribed and will be on the record at least 30 days  
after  
7 this meeting.

8 And if there are any additional comments as both  
9 Frank and Liz have made clear, if there are any additional  
10 comments you want to make for the record you can file it on  
11 our e-library system and if you have any issues for filing  
12 anything, contact anybody here that you're talking to  
today.

13 And we thank you for your time and your comments  
14 and your questions.

15 MS. MOLLOY: Thank you.

16 MR. FOLLIS: Thank you all as well.

17 (Whereupon the meeting was adjourned at 11:31 a.m.)

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## 1 CERTIFICATE OF OFFICIAL REPORTER

2

3 This is to certify that the attached proceeding  
4 before the FEDERAL ENERGY REGULATORY COMMISSION in the  
5 Matter of:

6 Name of Proceeding:

7 KLAMATH AND LOWER KLAMATH  
8 HYDROELECTRIC PROJECTS

9

10

11

12

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16 Docket No.: P-2082-062/P-14803-000

17 Place: Washington, D.C.

18 Date: Monday, February 5, 2018

19 were held as herein appears, and that this is the original  
20 transcript thereof for the file of the Federal Energy  
21 Regulatory Commission, and is a full correct transcription  
22 of the proceedings.

23

24 Gaynell Catherine

25 Official Reporter





Document Content(s)

020518Klamath.DOCX.....1-23

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**ERRATA SHEET**

DEPOSITION OF: P-2082-062 and P-14803-000, Public Version

DATE OF DEPOSITION: 7/9/2019

PAGE 1 of 1 pages

<b>Page</b>	<b>Line</b>	<b>Correction</b>
1	4	PacificCorp should be replaced with PacifiCorp
3	3	Change Private Power to Hydropower
4	15	Unidentified Male is Mr. Myers
6	13	Ms. Nguyen should be replaced with Ms. Shannon
6	13	Kim Nguyen should be replaced with Diana Shannon
7	15	Unidentified Male is Mr. Myers
7	17	Ms. Espy should be replaced with Ms. Polardino
8	18	Replace “elements” to “developments”
8	23	Replace “and concurrently,” with “Concurrently”
9	11	Replace “created” with “stated it”
9	19	Replace “findings” with “financing”
9	20-21	Replace “as was” with “until”
10	22	Replace “okay, okay” with “yes”
10	25	Replace “Ms. Espy” with “Ms. Polardino”
11	3	Replace “Ms. Espy” with “Ms. Cordalis”
11	6	Replace “Ms. Espy” with “Ms. Cordalis”
11	9	Add “want to” at the end of sentence
22	21	Replace “hemo’s” with “members”
30	3	Replace “photos” with “flows”
48	12	Replace “lab” with “lot”
49	19	Replace Unidentified Speaker with Mr. Belchik
56	24	Replace “credit council” with “critics”
57	18	Replace “because it’s correct” “because I want to get it correct”
63	13	Replace “three days” with 30 days”



1           Federal Energy Regulatory Commission  
2  
3           Teleconference with the Yurok Tribe  
4   To discuss PacificCorp and the Klamath River  
5           Renewal Corporation's application.  
6   Docket Nos. P-2082-062 and P-14803-000  
7           Federal Energy Regulatory Commission  
8                   888 First Street, NE  
9                   Washington, D.C.  
10           Tuesday July 9, 2019  
11                   1:00 p.m.

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1     SPEAKER LIST  
2     Jennifer Polardino, Chair  
3     Paige Espy  
4     Linda Gilbert  
5     Michael Belchik  
6     Amanda Clark  
7     Frankie Myers  
8     Amy Cordalis  
9     Andrea Claros

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1 P R O C E E D I N G S

2 CHAIR POLARDINO: My name is Jennifer Polardino  
3 and I'm with the Commission Division of Private Power  
4 Administration and Compliance. And just really briefly, I  
5 would like to kind of go through and see who's in  
attendance  
6 for this meeting.

7 So, first off, I will go through the people who  
8 are in the room right now, and then I'll go to the people  
9 who are on the phone, okay. Do I have Frankie Myers?

10 MR. MYERS: Yes, ma'am.

11 CHAIR POLARDINO: Yes, okay. Amy Cordalis?

12 MS. CORDALIS: Yes.

13 CHAIR POLARDINO: And if I mispronounce  
anybody's  
14 name, please correct me. I won't be offended. Michael  
15 Belchik?

16 MR. BELCHIK: Belchik.

17 CHAIR POLARDINO: Belchik, okay.

18 MR. BELCHIK: And it's misspelled on my email, I  
19 won't get that, so I'll correct that for you.

20 CHAIR POLARDINO: Okay, thank you. And I think  
I  
21 don't have you on my list?

22 MR. MYERS: Frankie Myers.

23 CHAIR POLARDINO: Oh, Frankie Myers, I do,  
sorry.

24 Thank you. Okay, Amanda Clark?

25 MS. CLARK: Clark.

1 CHAIR POLARDINO: What is your title?

2 MS. CLARK: I'm the Assistant Director of the  
3 Office of Self Governance. And it's  
4 Aclark@yuroktribe.nsn.us like the other three.

5 CHAIR POLARDINO: Yeah. Okay, just really  
6 quickly, I'd like to get the Yurok Tribal members who were  
7 on the phone. First, can we kind of go through that really  
8 quickly?

9 MR. RAY: Council Member Ryan Ray, Yurok Tribal  
10 Council. Toby Vanlandingham, and Council Member Edward  
11 Aubrey.

12 CHAIR POLARDINO: Can you spell those names for  
13 me please?

14 MR. RAY: R-y-a-n R-a-y.

15 UNIDENTIFIED MALE: We got it Councilman Ray.

16 MR. RAY: What's that?

17 UNIDENTIFIED MALE: We'll fill out your names  
for  
18 yourself and Councilman Vanlandingham, Councilman Aubrey.

19 CHAIR POLARDINO: Do we have anyone else from  
the  
20 Yurok Tribe on the line?

21 MS. THOMPSON: Yes, this is Geneva Thompson, I'm  
22 Associate General Counsel with the Office of Tribal  
23 Attorneys for the Yurok Tribe.

24 CHAIR POLARDINO: Is that all the members from

25 the Yurok Tribe?



1 MR. RAY: Yeah.

2 CHAIR POLARDINO: Okay. I'm going to go down  
3 through the list of participants that -- not participants,  
4 the attendees who said they would be on this phone call,  
and  
5 if there's anybody else who did not notify me, after I get  
6 through this list I will ask you to let me know who was on  
7 the call.

8 Okay, Nathan Rietnmann? Okay. Thomas  
Schlosser?

9 MR. SCHLOSSER: Yes.

10 CHAIR POLARDINO: Okay, Richard Marshall? Okay,  
11 Kevin Takei?

12 MR. TAKEI: Yes, here.

13 CHAIR POLARDINO: Okay, Pat Reiten? Anika  
14 Marriott? Demian Ebert? Elizabeth Nielsen?

15 MS. REED: This is Natalie Reed from Siskiyou  
16 County and Elizabeth will be joining me shortly.

17 CHAIR POLARDINO: Okay, Natalie, what's your  
last  
18 name?

19 MS. REED: Reed, R-e-e-d.

20 CHAIR POLARDINO: Okay.

21 MS. REED: I'm with the County Council.

22 CHAIR POLARDINO: Okay, Peter Brucker?

23 MR. BRUCKER: Here, I am.

24 CHAIR POLARDINO: Okay, Bob Gravely?

25

MR. GRAVELY: Yes, here.

1 CHAIR POLARDINO: Okay, Mark Quehrn?

2 MR. QUEHRN: Mark Quehrn, yes, I'm here.

3 CHAIR POLARDINO: Okay, thank you. Janice  
Crowe?

4 MS. CROWE: Janice Crowe, present.

5 CHAIR POLARDINO: Okay. Around the table for  
the

6 Commission Staff, I am Jennifer Polardino.

7 MS. ESPY: Paige Espy, in the Office of General  
8 Counsel.

9 MS. GILBERT: Linda Gilbert, also in the Office  
10 of General Counsel.

11 MS. CLAROS: Andrea Claros with the Division of  
12 Hydropower Compliance.

13 MS. NGUYEN: Kim Nguyen with the Division of  
14 Hydropower Administration.

15 CHAIR POLARDINO: Is there anybody else on the  
16 line that I did not call their name? Okay, just to move  
on.

17 We are meeting with the Yurok Tribe. I should say the  
18 Commission staff is meeting with the Yurok Tribe to discuss  
19 the Klamath and Lower Klamath Projects.

20 Just to really quickly, I would like to  
establish

21 some ground rules for this. The public is on -- they can  
22 listen in on this teleconference, but they cannot comment  
on

23 it. If there's any comments on the proceeding or on the

24 teleconference as a whole, you can electronically file your  
25 comments with the Commission through our e-filing process.

1                   If there's anything that the Yurok Tribe feels  
2                   that is privileged or sensitive they want to discuss with  
3                   the Commission, like if there's any archeological sites  
that  
4                   they're concerned about, we will wait to discuss that at  
the  
5                   end of this meeting and that would be filed on the  
6                   transcript as a privileged document.

7                   So, there will be a public transcript and there  
8                   will be a privileged transcript, if there's any sort of  
9                   sensitive things they want to talk to us directly about. I  
10                  think that's it.

11                  MS. ESPY: We do have a Court Reporter here, so  
12                  if any of the Tribal Members on the line comment, if you  
13                  could just state your name again, quickly before  
commenting,  
14                  so we can associate it with the right person.

15                  UNIDENTIFIED SPEAKER: What's his name?

16                  MR. FLOWERS: Larry Flowers.

17                  MS. ESPY: And the transcript for this  
18                  teleconference will be on the record after 30 days, on the  
19                  e-library system. Okay, alright. I'm going to give a  
20                  fairly brief background of the proceedings leading up to  
21                  where we are now.

22                  MR. MYERS: Paige, before you get going, we have  
23                  a Tribal Law that we need to start.

24                  MS. ESPY: Okay.

25

MR. MYERS: All of our first meetings with an

to 1 opening prayer, so if you don't mind taking a few minutes

2 open with prayer.

3 MS. ESPY: Okay, great.

guide 4 MR. MYERS: I pray that you watch over and

5 us as we go about our business today talking of the river

our 6 and dam and I pray that you watch out for our hearts and

of 7 minds as we continue the conversation. Watch out for all

8 us as we go about our business today and I also pray that

the 9 you watch over our families and our communities, for all

listening 10 people in the room, and for all the people who are

11 in.

12 MS. ESPY: Thank you, alright, so if it's okay,

the 13 I'm going to move into just giving a brief background of

14 proceeding. So, in September of 2016, PacifiCorp and

15 Klamath River Renewal Corporation, KRRC, filed an

16 application to amend and partially transfer the Klamath

17 Project, specifically the applicant's propose to

18 administratively remove the four lower elements of the

19 Klamath Project, create and administratively place those

20 four developments into a new license for the Lower Klamath

from 21 Project, and transfer the Lower Klamath Project license

22 PacifiCorp to KRRRC.

23                   And currently, with that application, KRRRC filed  
24 an application to surrender the Lower Klamath Project and  
25 remove the four developments. The Commission has not yet



1 noticed that surrender application. If the Commission  
2 ultimately approves the transfer at that time would move to  
3 then notice the surrender application.

4 As to the amendment and transfer application, in  
5 March of last year the Commission approved the proposed  
6 amendment and deferred consideration of the transfer. The  
7 Commission explained it needed additional information  
before  
8 it would act on the transfer, specifically information  
9 regarding KRRC's capacity to complete, decommission, and  
10 removal of the Lower Klamath Project.

11 In addition, the Commission created and would  
12 need the results of an independent review of the adequacy  
of  
13 the proposed funding, insurance and bonding arrangement.  
14 The Commission had previously notified KRRC that an  
15 independent board of consultants, or BOC, would be required  
16 to review aspects of the proposed dam removal process, and  
17 so in the March order, the Commission explained that the  
BOC  
18 -- that that BOC could conduct its independent review of  
19 the findings of insurance and bonding.

20 That March 2018 order was subsequently stayed as  
21 was the Commission's acts on the transfer application so as  
22 to avoid unnecessary compliance issues. In May of 2018,  
the  
23 Commission staff approved KRRC's BOC and the BOC held its

24 first meeting in October of 2018.

25 The BOC generated a report which was provided to

1     KRRRC at the end of November 2018, and in the report the BOC  
2     concluded that there's likely sufficient funding for the  
3     project of the BOC identified areas where information was  
4     lacking, and the BOC provided KRRRC with some  
5     recommendations.

6             In December of 2018, KRRRC filed that report with  
7     the Commission and stated it would address the  
8     recommendations and file updated information with the  
9     Commission by April 29, 2019. The KRRRC subsequently  
10    requested an extension which was granted by Commission  
11    staff, and so that information is now due to be filed by  
12    July 29, 2019.

13            So, at this point we are awaiting that filing.  
14    So, that's sort of the background of where we're at now.

15            MS. CORDALIS: Can I ask one question just to  
16    make sure I understood correctly? So, at the beginning of  
17    that you said that the Commission would not notice the  
18    surrender application until the transfer order is complete.

19            MS. ESPY: Until if and when a transfer is  
20    occurring.

21            MS. CORDALIS: If and when?

22            MS. ESPY: Okay, okay.

23            CHAIR POLARDINO: And could you state your name?

24            MS. CORDALIS: Oh, Amy Cordalis.

25            MS. ESPY: As a ground rule before we say



1 anything internally, we should also state our name.

2 CHAIR POLARDINO: Yes.

3 MS. ESPY: Yes.

4 CHAIR POLARDINO: Yes, because it would help him  
5 with the transcription.

6 MS. ESPY: Okay, no problem.

7 CHAIR POLARDINO: Thank you.

8 MS. ESPY: Okay, alright well I guess we will  
9 sort of turn it over to you all to go through what you  
10 discussed.

11 CHAIR POLARDINO: Great.

12 MR. MYERS: Absolutely, I first wanted to say  
13 thank you for allowing us the space to meet with you, to  
14 confer with you on this project. It's extremely important  
15 to us, to move it forward, and I think one of the things  
16 that Yurok tries to convey to anyone when talking about the  
17 river, is to really get a sense of the meaningfulness to

the

18 Tribes of people and so I think what is appropriate today,  
19 and also consistent with our culture practices to begin the  
20 meeting with a story and then throughout the rest of the  
21 meeting we can explain how that story is implemented and  
22 those lessons can be shown to today.

how

23 And I think the story that is fitting -- there  
24 was a couple that were fitting for today. I think the one

25 that is most paramount on this subject specifically, deals

1 with the river itself and existence of the Yurok people.

2           Natiqua Queen, lived in the village of Kennick,  
3 and Kennick is the center of the Yurok world as well. And  
4 people came from -- she lived there in a house and when she  
5 was elderly and she recounts a story and it was passed down  
6 to us to be told and to be remembered and she tells the  
7 story of one night she was laying in bed in her house, and  
8 she was awoken --

9           She was awoken by a spirit being that had woken  
10 her up. And for whatever reason, she immediately knew  
11 exactly who it was, and it was Rawa, it was the spirit that  
12 lived in the river -- not the river spirit, but one that  
13 lived in the river. And he woke her, and he told her to  
14 follow him, so she did. She followed him down to one of  
15 prayer rocks that's close to the river, a place that she  
16 visited many times.

17           And she stood there with him and she just waited  
18 and he said Kaseen, look, look, and so she looked at the  
19 river and she looked at Pacheek and the lake, and she  
20 up the river and she looked down the river and soon she was  
21 able to see the entirety of the Klamath Basin, and she  
22 see all the way to the pebbles on the ground from Rekwa,  
23 the way up to the headwaters.

24 She could see the entire river and she was  
amazed  
25 that she could see the salmon returning, and the fish



coming 1 returning, the eels returning, and she could see runs  
2 over and over and over again in a matter of moments. And  
3 she looked and she stared with awe and she had felt so  
showing 4 incredibly blessed that she told him, "Thank you for  
5 me this.  
6 This is incredible and I'm deeply moved by what  
7 you're showing me." And he shook his head and he said,  
8 "No, that's not what I want you to watch, keep watching,  
9 keep looking."  
salmon, 10 And so, she did and soon she started to see that the  
11 when they were coming back, they weren't coming back as  
12 much.  
13 And the eels, they weren't coming back as much,  
then 14 and the Kakah and sturgeon, they weren't returning and  
15 finally as she had first seen in the buoy, what we eat --  
16 the salmon, started to vanish, and soon and before her eyes  
17 there was no more salmon and no more eels, and no more  
18 sturgeon in the river at all.  
19 It was completely gone, and she was overwhelmed  
done 20 with sadness and grief. She had asked him what she had  
demise 21 to have to see such a thing in her life -- to see the  
22 of what was her entire world -- her whole life and the

23 generations before.

24                   And she asked what have I done to deserve to  
have

25 to see this? And he said, "I'm showing you this because I

1 need for you to understand without the salmon in the river,  
2 without the eels and the sturgeon, if you let this pass  
3 where they go away, there will be no need for Yurok people  
4 anymore."

5 And so, she took the message and she handed it  
to

6 him. It was one that's shared by many of the proud people  
7 along the river, throughout their families. We all have  
8 similar stories of similar experiences.

9 The continual survival of salmon as a species is  
10 a continual survival as us as Yurok people. And without  
11 them in the river, we believe there will be no need for us  
12 to continue. That's what drives the Tribe to move the way  
13 we move. That's what forces us forward. It's not for any  
14 one action, but self-preservation.

15 Self-preservation is what you will hear today  
16 from our presentation. And whatever it means that we find  
17 to preserve the salmon, preserve our way is what we move  
18 forward with. Trying to act with no preconceived notions  
19 about what is right, what is wrong, but we move forward  
with

20 what we believe is in the best interest of the salmon,  
21 because we believe that's the best interest for us as a  
22 people as a whole.

23 We're going to cover many topics today. We're  
24 going to go into detail into the science, the policy aspect

25 of this project that's before you. The other thing I think

world 1 that's important that Yurok people believe -- we are a

2 with ceremony people.

3 We pray for the world as a whole and our part of it -- the  
4 salmon, the river, it's for all of us.

5 We are sent here to protect it, to maintain it,  
6 to harvest it. We believe that the Project that's sitting  
7 before you for the decommissioning of the lower four dams  
on

8 the Klamath and the transfer and surrender application that  
9 you'll be deciding on, is critical to our survival as a  
10 people and we will outline that.

11 We feel that it is in the best interest of the  
12 public for it to move forward. We have thoroughly vetted  
13 the KRRC, as if our lives depended on it because we believe  
14 it does. We feel that they have the capacity to move this  
15 project forward.

16 We've used the same and the local science that  
we  
17 do for our fisheries and natural resources as we do for  
18 anything. We use that same analytical approach in looking  
19 at the KRRC and found that they are sufficient to complete  
20 the task.

21 I also think that the Tribal trust  
responsibility  
22 relies on this Commission as well. That type of trust  
23 that's been granted, that's been given, that is held by the

24 federal government came at a cost -- a cost that we have  
25 paid, a cost that our Tribal people have paid in full for,

1 and the one that we hope that you will adhere to and listen  
2 to.

3 And we need to move quickly. Salmon run in  
4 cycles. The fear is based on how the salmon populate and  
5 how they spawn -- the concern is we don't understand how  
6 many low cycles we have left before we won't be able to  
7 bring them back again. And we'll go into the status about  
8 the other fisheries a little bit more and with that I'll  
9 hand it over to our general counsel, Miss Cordalis.

10 MS. CORDALIS: Thank you, Chairman. Let's see,  
11 so a couple of housecleaning matters. As for the agenda  
12 today, for the benefit of the folks on the phone, we gladly  
13 have a description of Yurok interests in Klamath dam  
14 removal, status of the plan of river fishery, which will  
15 include a discussion of water quality issues, the KRRRC's  
16 capacity, status of applications, and then dam removal and  
17 public interests.

18 Excuse me, is there anything else that the  
19 Commission staff would like to add to the agenda? We're  
20 good, okay.

21 CHAIR POLARDINO: Just really quickly for the  
22 people on the phone. I did try to email the PowerPoint  
that  
23 the Yurok Tribe has prepared for the meeting, and when we  
do  
24 change slides, I will try to make it clear when we're on  
the

25 next slide.



a 1 MS. CORDALIS: Okay, excellent. So, we do have  
2 PowerPoint for the status of the Klamath River fishery and  
3 that includes some more technical aspects. But for the  
rest 4 of these issues, we envision just more of a conversation.  
5 Also, we have before this consultation, submitted a lot of  
6 documents to the FERC record, and we don't intend to repeat  
7 that information here today.  
8 Really, the purpose of this meeting is to update  
9 you on new information that's happened since our last  
10 consultation, which Jennifer was that in --  
11 CHAIR POLARDINO: Last January.  
12 MS. CORDALIS: Last January, yeah, so, okay,  
13 good. So, any other logistics we need to cover before we  
14 jump right into it? Alright, and our time with you is over  
15 at 3 today.  
16 CHAIR POLARDINO: And by last January, I should  
17 say actually January of 2018, yeah.  
18 MS. CORDALIS: Okay, excellent. Alright, so I'm  
in 19 going to start with a description of the Tribe's interest  
20 Klamath dam removal and much of that has already been  
21 covered in our previous filing, so I'm not going to get  
into 22 the specifics other than just to orient the Commission  
23 staff.

24                    So, the Yurok people are still in an aboriginal  
25    territory -- that area included, can we go back to that map

1 please? That area included the lower 45-miles of the  
2 Klamath River along with some of the coastal territories  
3 from -- is that the Little River Bend, right around here  
all  
4 the way down to what is now known as McKinleyville and  
5 Arcata area. And so, our aboriginal territory included  
this  
6 land and then up into some of our shared areas, what we  
call  
7 the high country, but the reservation was created in 1855  
8 and included the lower 45-miles of the Klamath River.

9           There were some executive orders and things that  
10 got adjusted that through time, but the current status of  
11 the Yurok Reservation is that it includes a mile on either  
12 side of the Klamath River from the mouth of the river and  
13 the village that my family is from, Rek'-woy, up to 45-  
miles  
14 to the village of Weych-pues.

15           So, that's the Reservation, and you could  
imagine  
16 the Klamath historically was the third largest salmon  
17 producing river in the whole Northwest, and because of that  
18 great abundance, we developed as salmon people.

19           And so, we fish, that's what we do. We fish, of  
20 course the salmon, but then also the other species of fish  
21 that are in the river, the steelhead trout, candle fish,  
22 sturgeon, eels, but pretty much all year around there was

like

23 some kind of fish or food in the river, and so I always

24 kind of over romanticized our aboriginal times, because we

25 had lots of food, we had these great ceremonies.

1           The river was our highway, where we travelled on  
2   it to get up and down through Yurok country. We would  
trade  
3   with the coastal villages for different kinds of seafood.  
4   And then one of our traditional creations stories talks  
5   about how all of that was created for Yurok people, and as  
6   long as we lived in the balance with the natural  
environment  
7   and never took more than what we needed, we would never  
want  
8   for anything.

9           And so, I think we all had it fairly well back  
10   in the day. Things have changed, right? Things have  
11   changed. As you can tell through this map, you know, the  
12   basin has been largely developed and what happens up here  
13   affects what happens down here.

14           We're going to get into the status of the  
15   fisheries, but I'm not going to talk about that much now  
16   other than to note that the fishery is collapsing because  
of  
17   what's happening up here and because of the dam. And it's  
18   critical to preserve, our fairly preserved fishing rights  
to  
19   remove those dams, so that we can restore the fishery,  
20   resource the river.

21           A part of our story and our legacy is that we  
22   have always tried to preserve the, you know, our territory.  
23   So, what happened through the settlement of this country,

24 through the development of this county through basically  
25 trying to get farmers out into this part of Oregon in the

1 upper basin, the whole promise was water right?

2 If you come and farm, we'll give you water and  
3 that water came from the Klamath River. Power -- they also  
4 needed power and so those dams were built. All of that  
5 negatively impacted our rights and our fisheries down here,  
6 but at the time as that was happening, you know, between  
7 really 1902 and today still, there was little that we could  
8 do about it.

9 So, right now the Tribe is in a place of trying  
10 to reclaim our land to figure out a way in which fisheries  
11 here, clean water, recreation, commercial fisheries, both  
in  
12 the estuary and off the off-shore, the Orca whales even,  
can  
13 all survive and benefit from the bounty of what was the  
14 Klamath River, while supporting agriculture.

15 And a big key for that is removing these dams so  
16 that we can then start rebuilding our habitat, restoring  
the  
17 natural hydrograph of the river and cleaning up water  
18 quality. So, that's the work that we're doing now. The  
19 tribe has a Constitutional mandate to do that work.

20 One of the things I wanted to bring to the  
21 Commission's attention is that the Tribe is preparing a  
22 comprehensive plan, and that plan we will submit to the  
FERC  
23 record.

24                   We're shooting for submittal right around the  
25   beginning of August, but that plan will basically lay out a



1 lot of what I just said with respect to what the  
2 significant resources are highlighting the fishery there,  
3 talking about the different uses, so the commercial  
4 fisheries, the recreation, the tourism, the hydropower, the  
5 agriculture -- those kinds of things.

6 Also getting into what is the law of the river.  
7 And there's a significant amount of law of the river  
dealing  
8 with -- well, actually law of the river under the Yurok  
9 Tribe's own body of law. We have an annual Harvest  
10 Management Plan that governs our harvest of salmon.

11 We have various Tribal ordinances that govern  
our  
12 interaction, and also the various kinds of actions that can  
13 take place on the river. In addition to Tribal laws, of  
14 course that area there are also two ESA listed species,  
15 which you guys all know about. There's a biological  
opinion  
16 which we'll get into a little bit later that protect Coho.

17 There's also various Clean Water Act issues on  
18 the river, so that's all to say that there is a lot of law  
19 that applies to the river and the Yurok Tribe law is an  
20 important component of the law that governs the lower  
21 45-miles of the river, and so the comprehensive plan will  
22 outline that and basically make the main point that removal  
23 of the lower 45 or excuse me, the removal of the lower four  
24 dams on the Klamath River is consistent with the Yurok

the 25 Tribe's long-term plan for management and restoration of

1 lower 45-miles of the river.

2 So, I think with that we're going to transition  
3 into the site of the Klamath River fishery. And I think  
4 I'll turn it over to Vice Chair to discuss what the fishery  
5 closures have been and how that's been affecting people on  
6 the ground and then we'll turn it over to Mike to do his  
7 PowerPoint.

8 MR. MYERS: Absolutely, as Miss Cordalis said,  
9 the salmon typically, are crucial and vital to our economy,  
10 to our way of life and to our members who still -- it's  
11 extremely important to remember that our Tribe members  
still  
12 have subsistence fishery. They still depend on the fishery  
13 to live.

14 I think it's important to recognize when  
thinking  
15 about what subsistence harvest means -- the portion of the  
16 Reservation. I live in the district. I live in the one  
next  
17 to us has an annual median to \$11,000 subsistence harvest  
of  
18 salmon is a significant portion of the protein needed for  
19 those communal members to live their lives.

20 Around the turn of the century and so on, many  
of  
21 our hemo's had to leave the Reservation had to leave to go  
22 and find work for their families to live. There are still  
23 members who live along the river who subsistence fish for

24 salmon and eels and sturgeon, and it's incredibly important  
25 to their day to day lives.

1           I think what is often lost is the individual who  
2 still to this day, makes salmon camps along the river bars,  
3 that's still a part of our culture and who we are. There  
4 are still family gatherings where individuals and families  
5 come together and harvest and smoke their fish.

6           I tell the story when my youngest sister went to  
7 college, we spent the summer fishing so that she would go  
8 off with salmon -- smoked salmon to eat. Many of our Tribe  
9 members have the same stories and our students come home to  
10 get salmon to go back to feed themselves as well as our  
11 members, but it's also a vital part of our economy beyond  
12 when we have the ability to sustainably harvest for  
13 commercial.

14           It's a huge part of the lives of our members as  
15 well. It's an opportunity for them to get caught up. It  
16 used to be an opportunity for them to get ahead. Those  
days  
17 are no longer. Now it's opportunities for them to get  
18 caught up on what they can for as much as they can for the  
19 few short times they have it.

20           And at the back of our minds every year that we  
21 are no longer able to harvest as in previous years, the  
22 story that had been handed down as the one that I just hope  
23 linger in the back of our minds, and I think it also pleads  
24 to the psychology of our members and our community.

25           We have come through numerous horrific times in



1 the past and in the very recent. A lot of the issues  
2 affected that our communities deal with are based on mental  
3 health. We believe the connection of the people and the  
4 river is at a place where we see that as being an absolute  
5 cause and effect scenario within our communities.

in

6 When our river suffers, our people suffer hand  
7 hand. You could go back, and you could see it happens over  
8 and over again.

9 MS. CORDALIS: And just to highlight the  
10 Chairman's point, this is Amy Cordalis again. The last  
11 three years Tribal Council has voted to close our fishery.  
12 So, they declared a fishery disaster for the last three  
13 years. That was because the returning salmon runs were the  
14 lowest on record, lowest in history.

15 2016, '17, and '18, fishery closed. In 2017,  
16 right -- our allocation was 650 fish. We have over 6,400  
17 Tribal members, so that wasn't even enough for our, you  
18 know, our Tribal members to have a sliver of salmon. And  
19 for a salmon people who have traditionally eat it or ate  
20 thousands and thousands of pounds of salmon, that reduction  
21 really does affect our health in both a spiritual,  
22 physically and mental way.

23 In 2016, I think it was in May, Council declared  
24 the fishery disaster and then by August they declared a  
25 suicide emergency because we have had a string of suicides





1 along in the Reservation of Tribal members, often who were  
2 under, you know, 26 years of age.

3 So, I just wanted to highlight that because the  
4 Chairman or the Vice Chairman's point is right on. So,  
5 literally we're losing our people.

6 MR. MYERS: Absolutely, and I think in hand and  
7 hand with that also the idea or the hope for an abundant

run

8 of salmon is also there and we also understand that, and we  
9 also know that. I want to make sure that you understand  
10 that the Yurok Tribe, or Yurok people, we are not anti-dam  
11 and we are not pro-dam. We are pro-survival. That is our  
12 goal.

13 Whether that means leaving the dams in or taking  
14 them out, there's no difference to us. If we can have  
15 abundant runs of salmon again, that's what's at our core.  
16 And I think we'll run into that in Mr. Belchik's  
17 presentation.

18 MS. CORDALIS: The only thing that I could just  
19 note -- so, the closure of the Klamath River fishery it  
20 affected us in a real economic way. We've estimated that  
21 over that time we've lost over 150 million in income and  
22 that's just within the Tribe. Also, the Klamath River  
23 fishery collapse has affected the offshore commercial  
24 fisherman, and I can't attest to you know, the economic  
25 impact of that but I'm sure it's quite significant.



1                   MR. MYERS: That's a good point Amy. Our Tribal  
2 members are also commercial fisherman -- ocean commercial  
3 fisherman as well.

4                   MS. CORDALIS: Yeah.

5                   MR. MYERS: So, this impact is doubled down when  
6 they no longer have an in-river fishery, or do they have an  
7 ocean fishery. We see the impacts in our communities and  
we  
8 also see the impacts that we live in, the communities that  
9 we live in -- you had mentioned earlier that many members  
10 had to move from the Reservation, an essential territory  
11 around the turn of the century.

12                   Well they moved to the coastline areas where  
13 there was still an abundant job market. We see those same  
14 affects now in those areas as well because of the amount of  
15 geographic area that the Klamath River affects. Our  
Klamath  
16 River affects from --

17                   MR. BELCHIK: Well from Monterey all the way up  
18 through middle Oregon.

19                   MR. MYERS: So, these are a lot of communities  
20 just like ours. They're small, rural communities who are  
21 dependent on migrant runs to sustain them. And we know  
that  
22 because our members lived there as well.

23                   MR. BELCHIK: Well thank you, my name is Mike

Yurok 24 Belchik and I am a Senior Water Policy Analyst for the  
25 Tribe. My training is in biology, I'm the Senior Fishery's

1 Biologist for about 22 years and the last 2 years, I've  
2 become a Senior Water Policy Analyst.

3 I've been working on the Klamath -- basically my  
4 entire career -- for 24 years, for the Yurok Tribe. It's  
5 important to understand that you've heard a lot of human  
6 reasons here, spiritual reasons and everything, but the  
7 Tribe is also committed to science -- Western science and  
8 using the best possible science.

9 We've made numerous submissions to the FERC  
10 record, including the Fishery Introduction Plan that we did  
11 with the Klamath Tribes, among many other submissions that  
12 we've done with the Tribe, and they have very high  
standards  
13 for that.

14 Today I want to talk to you about three main  
15 topics. I want to talk to you about the existing record of  
16 science that's available for FERC to use when looking at  
17 this project because we know that you have environmental  
18 compliance and NEPA and things like that that you're  
19 thinking about.

20 We want to talk about some newer information  
21 that's been developed, especially with regard to fish  
22 disease, C. shasta, sediment movement and the role of the  
23 dams in that. And then I want to talk to you about Spring  
24 Chinook and restoration and some of the new information on  
25 that, so next slide please.



1 I'm going to say that out loud even though I  
2 could reach the button. It's for those of you on the phone  
3 here. So, here's a slide show of a map, a geographic map  
of  
4 the Klamath, and just as they pointed out, just taking the  
5 big picture, there's a couple things I like to point out  
6 here.

7 One is just the sheer diversity of numbers of  
8 people here that are affected. This is a nationally  
9 significant river here. It provides, as they stated, a  
10 significant portion of the mixed dock ocean fisheries that  
11 affects the ocean all the way from Monterey to Mid-Oregon.

12 And then within the Klamath basin, everybody who  
13 makes their living and lives in the Klamath basin depends  
on  
14 the river in one way or another, even directly or  
15 indirectly, from irrigators, national wildlife refuges,  
16 irrigators on the Shasta and Scott, and the Tribes, all the  
17 way down river.

18 So, looking -- the viewpoint that the Tribe has  
19 looking upriver is that everything that happens above  
20 affects the Yurok Tribe in one way or another -- whether  
21 it's just water diversions or water quality impacts for the  
22 dams or things like that.

23 When we started talking about -- well I was  
there  
24 when PacifiCorp rolled into town with its first relicensing

25     introductory meeting.    And this was right around the year



many                   1     2000, when the license expired in 2006. I went through  
2     of those meetings with PacifiCorp, and we've developed  
3     professional relationships with PacifiCorp and their very  
4     capable technical staff, as well as many other people.

5                   As we worked through the information during the  
6     FERC relicensing, it became increasingly clear that dam  
looked               7     removal was an option that really should be seriously  
8     at. And our early position with FERC in our filings, was  
9     that that was at least something you guys should take a  
look               10    at.

11                  It often fell in other relicensing processes  
into               12    the category of considered but not considered seriously.  
13    And we looked at the criteria that FERC itself has for  
14    decommissioning, wrote, went through that, did some filings  
15    and in fact it was analyzed, next slide please.

16                  So, when we look at the previous environmental  
17    studies and what we have available. I want to start with  
18    the FERC EIS. There's also PacifiCorp's license  
application       19    too, but I want to start with the FERC EIS.

20                  In the FERC EIS, you guys did analyze dam  
removal           21    and some of those conclusions I believe are still valid.  
22    FERC, you found that dam removal would help the C. shasta

23 situation, the disease situation, and also improve water  
24 quality.

25 As part of the FERC EIS in the relicensing

1 process, there were also 10(j) and 4(e) requirements. The  
2 10J, of course, being fish passage and the 4(e)  
requirements

3 were from Vera Rock Glen Management required bypass photos  
4 and things like that. Those were issued requiring  
5 volitional fish passage, PacifiCorp disputed those, and we  
6 went to court over it under the new Energy Policy Act.

7 The court found in favor of the federal agencies  
8 that required the conditions on I think 19 out of 20  
counts,

9 I'm not -- I can't remember the exact number. The only one  
10 that was not found enough evidence was lamprey passage, but  
11 it's clear that there are Pacific lamprey above the dams,  
12 land-locked, so that already seems to be settled too.

13 Consequently, or subsequently, we -- there are  
14 two milestone agreements reached -- the KBRA and the KHSA,  
15 that were intended to be twin agreements that governed  
16 basically three major aspects, one of which was the water -

-  
17 there was a Water Sharing Agreement with the irrigators in  
18 the Upper Basin, and these are agreements made by the  
people  
19 directly affected.

20 And there was another -- that also included  
major  
21 water quality and fish passage or fish restoration and then  
22 there is the Klamath Hydro Electric Settlement Agreement.

23       The Agreement as structured back then required a  
Secretarial

24       determination to be made.

25                       So, the Secretary of Interior had to take a look

1 at it and there was very specific wording in there about  
2 what criteria they needed to base it on, but I think what  
3 you guys need to know is that a very large body of work was  
4 done related to that.

5 I know that there has -- some people have raised  
6 questions about it, but I think the important thing to  
7 understand about the Secretarial determination work is that  
8 it was subject to a very rigorous and independent peer  
9 review process.

10 So, this isn't like they -- Fish and Wildlife  
11 decided to review Fish and Wildlife's work and said it was  
12 okay. They contacted people and did a blind peer review,  
13 they had an expert panel on various aspects including the  
14 Chinook, the expected effects to Coho salmon et cetera, and  
15 took a look -- took a fresh look at all the work that they  
16 did.

17 I think, including sediment modeling fish  
18 production affects to Coho salmon, et cetera. I think this  
19 is an incredibly strong point to make is that this science  
20 is still relevant. There's not been significant new  
science  
21 developed since then that would replace it, not to my  
22 knowledge.

23 And the circumstances are still the same. It's  
24 not like there's dramatically changed base circumstances.  
25 And so, since then -- since 2010, as we all know the KBRA



1 and KHSA failed to be ratified in Congress, so there's an  
2 amended KHSA and there's been water plans ever since that  
3 are generally guided by biological opinions.

4 In response to rising disease levels, the Yurok  
5 Tribe, along with our other Tribal partners and our federal  
6 partners, produced a guidance document that succinctly put  
7 the C. shasta disease lifecycle and affects into one  
8 understandable and peer-reviewed document and provided  
9 management recommendations.

10 We subsequently went to court against the Bureau  
11 and won in court and elements of the guidance document were  
12 put in under the restraining order -- no, it's a --

13 MS. CORDALIS: Injunction.

14 MR. BELCHIK: Injunction, next slide please.

So,

15 but it hasn't stopped there -- the guidance document.

16 There's been more, so the State of California just  
completed

17 a draft EIR, the analysis which is -- I don't know exactly  
18 how many pages, let's call it 6 or 700 pages of  
19 state-of-the-art water quality analysis.

20 And the KRRC has also completed its own  
analysis,

21 including refining the dam removal plans, taking a further  
22 look at sediments and various elements, refining the  
23 restoration plans and things like that. So, I think what  
24 you're hearing here -- the point that I'm trying to make is

25 that there is a significant body and we're hoping that the



1 FERC staff, when you're thinking of environmental  
2 compliance, that you lean on this -- we're encouraging you  
3 to, especially given that the Secretarial determination had  
4 peer review, the guidance document also had peer review.

5           The Bureau of Reclamation, according to their  
6 peer review policy, it appointed an independent peer review  
7 board and that is available too. I believe, I'm not sure  
if  
8 the guidance document and the peer review is in the FERC  
9 record, but it will be very soon.

10           MS. CORDALIS: We plan to submit that to the  
11 record.

12           MR. BELCHIK: Yeah, see what I got next. Okay,  
13 so next I want to shift to a little bit about, and help you  
14 understand some of the new thinking and information about  
15 fish disease and sediment movement, specifically how it  
16 relates to the Lower Klamath Hydroelectric Project, so our  
17 next slide please.

18           I will start with just the basic lifecycle and I  
19 apologize if you guys already know this, but Ceratanova  
20 shasta, formerly Ceratomyxosis shasta -- there's a new name  
21 for it now, is a Myxosporean single-cell parasite disease  
22 that affects juvenile and adult fish and it's capable of  
23 inflicting heavy losses to migrating juvenile salmon, both  
24 Chinook and Coho salmon and steelhead to a level that does  
25 affect the population.



1                   And I'll be providing some references for that,  
2                   next slide please. So, in the years 2006 through '16,  
which  
3                   covers this table, but continuing on to '17, '18 and even  
4                   '19, this C. shasta disease rates have inflicted heavy  
5                   losses.

6                   So, when you look at the 2014 and '15, which  
were  
7                   drought years, we see 81 and 91 per sample rate percentage  
8                   of fish that were affected by C. shasta. Most of these  
fish  
9                   are going to die. I mean let's put it simple right here,  
10                  you lost a whole bunch of your fish when they are only less  
11                  than 6 inches long and they never made it out to the ocean  
12                  here.

13                  So, when we look at the -- so, the source for  
14                  this table is the Myxosporean Parasite annual updates, but  
15                  there's also other work that talks about the affects of the  
16                  population dynamics for other species, and next slide --  
17                  will just bring us up to date for what happened this year.

18                  So, despite the fact that we had fairly high  
19                  flows and deep flows, we still have a Myxosporean outbreak  
20                  in the Klamath River. I don't think this shows a lack of  
21                  connection between the deep flushing flows of sediment  
22                  movement. I think it shows that it would have been much,  
23                  much worse had we not had that.

24                  So, let's talk a little bit about the deep

25 flushing flows here, next slide please.

1 MS. CORDALIS: Sorry about that.

2 MR. BELCHIK: That's okay, so a couple years ago  
3 in response to the heavy losses, we prepared a document and  
4 we -- being the Disease Technical Advisory Team, which  
5 consists of technical experts from the Yurok group, Hoopa  
6 Valley Tribe and the Klamath Tribes, prepared a document  
7 that outlined the lifecycle of the C. shasta disease, and  
8 recommended six different management actions to counteract  
9 this disease.

10 We also looked at a variety of other actions  
that

11 we went through in there that were basically considered but  
12 eliminated, either due to feasibility costs or like for  
13 example in the case of people had suggested dewatering the  
14 river to kill the excessive ecological ramifications,  
15 unintended consequences.

16 The guidance document was based on four  
17 foundational technical memoranda from our federal partners.  
18 There's a geomorphic analysis that looked at the sediment  
19 movement in the river and the flows, polychaete technical  
20 memo because the disease has an altering host, polychaete  
21 worms, the C. shasta spore memo that talked about the spore  
22 distribution and the relationship between spores and fish  
23 and also the fish infection memo, which focused on the fish  
24 themselves, population dynamics.

25  
document

Each one of these memos is a stand-alone

1 that was prepared at the request of the Tribes by federal  
2 agencies who then provided their own peer review. So, the  
3 guidance document was peer reviewed by the Bureau of  
4 Reclamation, and each of the four foundational memos had  
5 its' own peer review process by independent peer reviewers,  
6 not by someone that we knew or anything, so pretty nerve  
7 wracking to have people look at your work like that.

8 But we will provide that. We got very good  
9 reviews and so like foundationally well-based in logic and  
10 the available data and things like that and we'll provide  
11 that peer review document to you also.

12 So, I want to focus -- next slide please, on the  
13 flows here. This is a figure from the geomorphic memo here  
14 and these bar graphs represent the amount of days above  
15 certain threshold flows. So, for example blue is surface  
16 flushing. So, if the flow in Iron Gate was about 6,000  
CFS,  
17 you got a blue bar, and so if you look all the way to the  
18 left you could see it's had about 53 days above 6,000 CFS  
19 and then another number of days above the deep flushing  
20 flows which is about 9,000 and then there's armor  
21 disbursements at 11,250 and then there's  
22 geomorphically-effected flows which are about 15,000 flows.

23 And when you look across the years here from '64  
24 through '16, you could see quite easily that there's been a  
25 dramatic reduction in the number of flows. We had a period





of 1 in the late 90's, and then it all stopped. There's a lot  
2 reasons for this, but the main reason is an emphasis on  
3 filling Upper Klamath Lake, which is the source water for  
4 the Klamath River.

5 There's been an emphasis in getting that lake as  
6 full as possible for the benefit of some additional  
7 endangered species that reside in the lake -- the cuktoo  
and 8 the schwam, otherwise known as the suckers -- endangered  
9 suckers in Upper Klamath Lake.

10 We fully support the restoration of the cuktoo  
11 and the schwam, but the impacts to downriver have been  
12 pretty significant, next slide please. Because what  
happens 13 when you have those flows as you saw on the left part of  
the 14 graph where there's five flows, but the dams have  
15 interrupted the sediment flow, then you get down cutting on  
16 rivers.

17 And I'm sure this is familiar to you because  
18 you've worked with hydro projects before and you've seen  
19 this before, but the rivers carry more than just water,  
they 20 carry sediment and nutrients and other things too, and when  
21 you have high flows without the sediment replenishment,  
then 22 all the moveable sediment gets moved out and only the

23 courser sediment is left and as a consequence of that is  
24 that the amount of flow necessary to move the sediment and  
25 control the polychaete worms and then control the disease

1 has risen over time.

2           It now takes 6,000 just to move the surface of  
3 the water. With the hydrology, the recurrence intervals  
4 suggest that that should occur about at 3,000 CFS is what  
it  
5 should take. This means that the presence of the dams and  
6 the interruption of the sediment has increased the amount  
of  
7 water necessary to control the C. shasta disease, and as a  
8 consequence of that combined with the decrease in the  
higher  
9 flows, the fish disease problem has spiraled out of control  
10 and is now at the point where it's just wiping out the runs  
11 in the Upper Klamath River.

12           And we're starting to see it. We're starting to  
13 see the returns come low on this and so what I'm trying to  
14 give you a picture of is that our scientific understanding  
15 of it has advanced to the point where we're starting to  
16 understand the mechanism by which this happens.

17           So, FERC reached the conclusion in the 2007 EIS,  
18 that the dams are exacerbating the fish disease problem and  
19 the removal would help that. And now we're understanding  
20 the exact mechanism by which that happens, next slide  
21 please.

22           So, this next slide is a picture of the  
23 intermediate host and what we're focused on now is  
24 controlling the intermediate host in order to control this

25 disease.

1                   MR. MYERS: Mike, the individual -- those are  
2 actual worms that live on the rocks?

3                   MR. BELCHIK: Yeah, so what you're seeing here  
4 is the tubes built by these polychaete worms. The worms  
are  
5 clear, like glass, they're about the size of an eyelash and  
6 they coat the rocks in the Upper Klamath River because  
7 there's no sediment movement.

8                   They could withstand high water velocities just  
9 fine. I mean you can blast them with water. They really  
10 need to be sandblasted off those rocks is what ends up  
11 happening. And as I explained before, the amount of water  
12 necessary to sandblast these guys off here is steadily  
13 rising over time to the point right now, where it's  
14 difficult to deliver the amount of water.

15                  It has impacts to the lake, to the farms, and to  
16 the river, needing to provide these high flows. In early  
17 2016, we had a series of large storms that provided  
18 hydrologic back-up and we were able to receive some pretty  
19 high flows.

20                  This is literally the exact same rock here,  
21 before and after the flows. You can see the left side of  
22 the rock and the right side of the rock. This picture, I  
23 need to give credit to Oregon State University, who's been  
24 doing a lot of research on this for that.

25                  But there's -- it's not just the polychaete



1 worms, there's other factors too, next slide please. So,  
2 these are some of the things you guys have found here that  
3 the hydrologic project contributes to C. shasta.

4 One of the contributing factors is the toxic  
5 algae blooms on the river. So, not only are they  
6 inherently toxic with the microsystem, but the algae is  
food  
7 for the worms. These are filter feeders, they live on the  
8 bottom, they attach to the rocks and they filter feed and  
9 algae is food for them.

10 As I explained before, the dams interrupt the  
11 sediment budget and that has required that the sediment  
12 stays stationary under most ordinary flows now and that has  
13 allowed the worms to explode their populations.

14 Iron Gate Hatchery creates high densities of  
15 Chinook carcasses because now the fish can't pass the dams.  
16 So, in order to complete its lifecycle, the adults take the  
17 C. shasta back up and carry it back up, re-infect the  
worms.

18 So, when you have a naturally high concentration  
19 of spawners and carcasses, that helps perpetuate the  
20 lifecycle, especially when that occurs right over the  
21 highest concentration of worms in the river.

22 And so, what you're seeing is all of this has  
put  
23 together the cause of runaway reaction here that is  
24 decimating to salmon on the Klamath River here. So, I want

25 to now talk about the third topic which is Spring Chinook



1 and some of the other species, next slide please.

2                   So, Spring Chinook -- I want to talk about  
3 reviving the lost run of Spring Chinook, which is a pretty  
4 ambitious goal here, but Spring Chinook, unlike other  
5 salmon, unlike the Fall run of Chinook, they run in April,  
6 May and June. The adults run up- river. They need cold  
7 water hauled in for the summer and then they are there on  
8 the spawning rounds right during the Fall, they don't need  
9 to wait for the first rains or anything.

10                   This gives them an advantage because they are  
11 spawned first, but the disadvantage is they need stable  
12 areas of cold water all summer to hold in. There were  
13 Spring Chinook in the Upper Klamath, in fact it was the  
14 dominant run in the Upper Klamath and there's new genetics  
15 work.

16                   So, bullet number 2 talks about the new genetics  
17 work, and as a matter of fact, scientists from U.C. Davis  
18 have isolated the specific gene that is -- that causes the  
19 different in run timing. Using that work, you can go back  
20 and analyze old samples from Upper Klamath -- archeological  
21 samples, even from thousands of years ago and then sure  
22 enough, there are Springers, that's what was up there.

23                   It wasn't all Springers, there's Fall run too,  
24 but it's clear that that was at least a major component, if  
25 not the dominant component. And at its heart, the dam



1 removal is a fish restoration project. And the goal is  
2 ambitious, it's to bring back this lost Spring Chinook run.

the

3 And we've had meetings with the scientists in  
4 basin and with U.S. Davis, to talk about how to revive this  
5 lost lineage and what genetics, what stock might work and  
6 how can we help this happen.

fish

7 Bringing back the Spring run helps stabilize  
8 populations in the face of climate change because it  
9 represents genetic diversity in that the fish have more  
10 genetic variability and thus are able to handle more  
diverse  
11 conditions. And also, it has geographic diversity. So, if  
12 a calamity like say a large flood or a rain or snow event  
13 happens in the lower basin, it's less likely to affect the  
14 entire basin -- parts of elements of the run are able to  
15 survive these catastrophic occurrences and that brings  
16 resiliency to the fish, next slide please.

of

17 This is information that I think you already  
18 have, but I just want to emphasize how much habitat is  
19 available above the dams, and I have a graphic that will  
20 show this even better in the next slide here, but as part  
21 the Secretarial determination work, the Department of  
22 Interior did a fish population modeling.

23 And so, the graph in the lower left is -- I lost

24     someone here but that's okay.

25                     MR. MYERS:   It's still very interesting.

1                   MR. BELCHIK: It shows ocean and tribal harvest  
2 here expected under dam removal conditions. There's a  
3 number of assumptions that went into this model. I don't  
4 know about the exact numbers, but it's clear that the fish  
5 modeling -- the fish experts from the federal government  
6 have concluded that dam removal will result in  
7 significantly higher harvest opportunities for both tribal  
8 and ocean fisheries.

9                   And the area on the right is just meant to show  
10 you all the miles of habitat that will become available to  
11 the fish. And next slide please -- so, on this slide I  
want  
12 to talk to you about securing the long-term future of the  
13 salmon. So, I work for the Yurok Tribe and my mission, as  
14 stated in the preamble to their Constitution and as given  
to  
15 me by the Council, is to secure the long-term future of the  
16 salmon.

17                   And like it or not, we are already living in a  
18 time of climate change and it's already happening. We've  
19 had a couple years where we know, we've lived long enough  
to  
20 see it. 2015 had about 4% of average snow, it never snowed  
21 in the mountains that year.

22                   And this is what we're looking at in the future.  
23 So, if we look at the next -- if you click again, those of

24 you who are following on PowerPoint, these circles  
represent

25 areas of cold water that stay through the summer. These  
are

1 water that's important for Spring Chinook and everything.

2 If you look at the blue circles up on the upper  
3 right, those represent the large cascade springs that are  
4 available to fish in the Upper Klamath Basin -- areas like  
5 the Headwaters of the Wood which is over 400 CFS, it just  
6 pops right out of the ground, full-size river from one  
7 spring.

8 Spring Creek, Lower Williamson, the Pelican Bay  
9 area of Upper Klamath Lake and the J.C. Boyle Springs.  
10 These are areas that will remain stable and are incredibly  
11 valuable to the fisheries. The very large circle in the  
12 middle is the Trinity Alps Snow Pack and there's also  
Shasta  
13 River.

14 And then the two circles at the bottom -- one is  
15 the Yellow Bully Spring-Pack on the south fork of the Snow  
16 Pack and the lower right circle is the Cold Water Dam  
outlet  
17 at Trinity Lake. And then all the way to the ocean is the  
18 Maritime Fog Belt and the temperate rain forest area which  
19 just stays cold just because of climate to the weather  
here.

20 So, when we put the dam in, at dam set one  
21 there's a red rectangle there, we lost all the upper  
22 springs. Now, they're still there, it's just the fish  
can't  
23 get to them and the cold water can't make it down river

24 because it goes through the reservoirs, so effectively  
25 they're gone for the fish.



1                   If we roll climate change forward, we lose the  
2   Snow Pack areas and here's what we're left with. We're  
left  
3   with the Spring complex called Big Springs on the Shasta  
4   River. We're left with Cold Water Outlet for Trinity Lake  
5   and we're left with the Maritime Fog Belt, which is  
expected  
6   to possibly remain stable in the face of climate change  
7   although that's not even certain.

8                   If we take the dam out, I just put one big red  
9   bar, it represents all four of those dams, we at least  
bring  
10   back those areas on the Upper Klamath. And the Yurok Tribe  
11   sees this as vital to ensuring the future of the salmon  
runs  
12   is to allow access. So, we can't bring that cold water  
down  
13   to the fish. We need to get the fish up to that area.

14                  So, I just wanted to emphasize how important  
this  
15   is for the long-term viability and survival of the salmon  
16   runs here in a way that's just pretty graphic and easy to  
17   understand here, next slide.

18                  With the Klamath -- the other thing is that with  
19   the dams in place, it elevates the early Fall water  
20   temperatures. This is why we lost the Springers that  
21   existed, even with Copco down there, there were Springers  
22   below Copco dam until Iron Gate was put in in the early

23 '60's as a re-regulating dam, the Springers only lasted  
24 about 10 more years and by the late '70's they were all  
gone  
25 from the Upper Klamath.

1                   Because Copco had several cold water creeks,  
2     including Jenny and Fall Creeks, or Jenny and Camp Creeks  
at  
3     or below it, they were able to survive just based on a  
small  
4     amount of thermal refuge area, but when Iron Gate got put  
5     in, the nearest cold water was Clear Creek over 20 miles  
6     down river and it just wasn't big enough and the run  
7     disappeared -- it didn't take long after Iron Gate dam.

8                   There is no way to correct this thermal feature  
9     of the dams here and believe me, PacifiCorp tried. I went  
10    through all the meetings, even in their license application  
11    they admit there just isn't enough cold water to do a low  
12    water dam release, it has no oxygen, and there's just not  
13    enough feet, it's not enough storage.

14                  MR. MYERS: Let's go back real quick Mike, when  
15    you were explaining how quickly the drop-off for the Spring  
16    run happened after the installation of Iron Gate dam. When  
17    you're talking 10 years, that's two full lifecycles for a  
18    salmon -- two and one-half lifecycles.

19                  Yeah, earlier when I was talking about the  
20    concern about where we're at now and the need to move  
21    quickly now, this is how quickly that you can lose a run  
22    because they're based on cycles and if you know, the dam  
was  
23    put in for five years and then got took out, no issue with  
24    salmon bring back, the Springers come back and they're

25 fine.

1 But the prolonged negative impacts, salmon just  
2 are not built to take prolonged negative impacts, they  
don't  
3 operate like that. Other species have a better survival  
4 rate, they live longer, they have the process with salmon  
5 are like they're built to take short bursts of negative  
6 impacts, not prolonged.

7 Yeah, in the 10 years it's two cycles of salmon  
8 run, and they're completely decimated.

9 MR. BELCHIK: Yeah, and I also -- I wanted to  
10 take a look and I had a slide where I was supposed to talk  
11 about this earlier, about the ecological impacts of this.  
12 So, when you look at Coho salmon for example, Coho salmon  
13 have a three-year lifecycle and so you know, fish run in  
14 cycles, and so we have two pretty weak cohorts and then  
15 every third year you get a decent run of Coho back.

16 And most of those, through the Shasta and Scott,  
17 predominantly Scott River, but we're losing the Coho right  
18 now. The numbers of fish in the low years are getting to  
19 the point where we're running into genetic bottleneck  
issues  
20 here. We don't have enough to preserve the genetic  
21 diversity to keep the species from running into the future.  
22 When you look at the Fall Chinook, the current biological  
23 opinion that governs the operations of the Klamath Project  
24 -- the irrigation project, now also includes southern

25     resident killer whales.

1           That's because the species that are depending on  
2 the salmon are starting to feel the impact. They're not  
3 going to be the first species that we see listed, because  
4 the salmon keeps their downward decline. We're going to  
5 start to see the other species that depend on them start to  
6 go downhill too.

7           So, I just wanted -- there was a point where I  
8 was supposed to say these things are all related and the  
9 fish that have actually made it to the ESA list are the  
ones

10 that are in very serious trouble. But the other ones that  
11 aren't listed yet are headed there too, right now.

12           And we're just going to end up with a lab of  
13 endangered species that we're trying to prop up one at a  
14 time, when in fact we should be looking at the whole system  
15 and the ecological function of the system itself.

16           And so, this brings me to my last slide where  
17 what I want to do is just sort of summarize the things that  
18 I wanted -- that I was saying earlier and the three main  
19 points here that I wanted to say is that the existing  
record

20 is robust and includes many elements of the existing that  
21 have rigorous peer view attached to them, specifically the  
22 Secretarial determination and the guidance document and the  
23 foundational documents that support the guidance document,  
24 all have their own peer group process that are available

25 for you guys to look at.



the 1           The new information on the disease shows that  
2           interruption of the sediment supply from the dams has  
3           exacerbated the disease issue, caused a runaway reaction  
4           that is now affecting the populations of the salmon and the  
5           amount of water necessary to control this disease has risen  
6           over time as a result of the dam's sediment interruption.

7           And then finally, the Spring Chinook, the new  
8           genetics and the ability and the hope that we have of  
9           providing this run in what would be the largest fish  
10          restoration project in U.S. history is there now. And we  
11          think that's significant new information that should be  
12          taken into account.

fishery 13           MR. MYERS: And Mike, this is the largest  
14          restoration and it is true, but this is also a restoration  
15          of the indigenous peoples and coastal communities.

the 16           MS. CORDALIS: Mike, can we maybe get back to  
17          slide about the C. shasta infection rates? And while  
18          we're --

19           UNIDENTIFIED SPEAKER: Am I going too fast?

20           MS. CORDALIS: No, you're good.

21           MR. BELCHIK: The one with the table?

22           MS. CORDALIS: Yeah, C2.

23           UNIDENTIFIED SPEAKER: Is this them right here?

24           MS. CORDALIS: Go back to the last one. And so,

25 I mentioned earlier how the Tribe fishery has been closed

1 over the last three years. That's because the runs that  
2 were returning as adults were the baby fish that were taken  
3 out, killed by the high C. shasta in 2014 and 2015.

4 So, C. shasta is directly impacting in a very  
5 negative way, the tribe's fisheries and there's a direct  
6 correlation between the runs that are subject to high fish  
7 disease as babies, and then the closure of the Tribe's  
8 fishery as those fish return as adults.

9 And so, the longer we allow the river to operate  
10 like this, the longer we allow it to be sick. So, the more  
11 our Tribe's fishing interest are harmed, but really the  
12 closer to get to extinction. There was a biological  
opinion  
13 for the Coho just completed in April.

14 And one of the things that it noted was that the  
15 Coho are on track for extinction. So, you know, then that  
16 kind of gets to you know, well what can you do, right? And  
17 from the Tribe's perspective, if you look at it in terms of  
18 mitigation, a healthy river is the best mitigation, right?

19 And getting dams out is a key component of  
making  
20 the river healthy again. And frankly, from the Tribe's  
view  
21 of this, from a you know, scientifically formed  
perspective,  
22 we can't restore the river without the dams coming out. We  
23 just can't. They are too harmful to the system as a whole,

24 so the dams have to come out for us to restore the river,  
25 yeah.

1                   Are there any questions about the technical  
2 components before we move to the next agenda item? No?

3                   MR. MYERS: Any questions Larry?

4                   MR. FLOWERS: No.

5                   MS. CORDALIS: Okay, well so, we'll turn to the  
6 next agenda item. You know, I think we hit on the urgency  
7 of this which goes to the current plan. We are -- the

Yurok

8 Tribe is heavily involved in the implementation of the plan  
9 of hydroelectric settlement agreement and also working with  
10 the KRRC.

11                   We have the utmost confidence in the KRRC. We  
12 believe the KRRC is the right entity to complete the full  
13 project removal in a way that minimizes risks to our  
14 complete satisfaction. Collectively, as a basin, the  
15 signatories to the KHSA, which involve all of the major  
16 players, the state, PacifiCorp, the Tribes, NGOs, all of

the

17 entities that have significant interest in the river and  
18 dams, have spent a lot of time and energy coming up with a  
19 plan that we feel best accomplishes dam removal and  
20 protects the interest of the stakeholders.

the

21                   And that plan is the KHSA, that plan is the work  
22 that the KRRC has done in pulling together resources to  
23 ensure project removal. Specifically, we understand the  
24 Commission is interested in the cost and the risk

25 management. To those points, first we would urge the

1 Commission to look at the financial aspect of this project  
2 in a comprehensive way.

and

3               You know, we know there have been 450 million  
4 various surcharges and bonds available, but in addition to  
5 that, the KRRC has pooled various surety bonds, insurance  
6 and also has transferred some of the risk of the project to  
7 some of the cooperating businesses, the folks that will do  
8 the actual removal of the dams, the construction work and  
9 then the insurance risk mitigation entities.

that

10              So, we urge you to look at that plan. We're not  
11 going to get into the plan now. The KRRC will do that, the  
12 BOC has been doing that. I think it's sufficient for us in  
13 our short time here today, to just note that we support  
14 plan and also, we urge you to look at that plan  
15 comprehensively.

It

16              Don't just look at the 450 -- look at the whole  
17 package as one. Because what they've done is top notch.  
18 is really an industry standard for combining various  
19 resources to get you from what looks like 450 million  
20 available, to a much larger amount through pooling those  
21 resources of insurance, surety bonds and transfer of risks  
22 to other entities.

23              So, I think that is that point there. The next

has 24 one is with respect to risk management. The Yurok Tribe  
25 evaluated and reviewed other dam removal projects involving



1 Tribal Nations across the country, L-Law is an example of  
2 that.

3 From our perspective, the plan that the  
4 stakeholders -- the parties to the KHSA, the KRRC, the plan  
5 that we've all put together really is top notch. I don't  
6 know how else to say it. We feel it is -- it will be a  
7 successful project. The dams will be removed. There are  
8 some protections built into the KHSA to ensure that.

9 Specifically, I wanted to highlight for the  
10 Commission that if in an unlikely scenario that dam removal  
11 results in costing more money than what we have available  
to  
12 us, that would then trigger under the KHSA a meet and  
confer  
13 process amongst the parties where we would sit down and say  
14 here's where we are, we need to find more money and then  
the  
15 parties will go out and do that.

16 We have a long history of working together and  
17 solving problems. And in the unlikely event that dam  
18 removal is beyond our existing resources, we would find  
19 more. I have no doubt in that.

20 Also, with respect to the risk  
21 management and looking at other Tribal projects, it's clear  
22 to us that the comprehensive package which again, we're not  
23 going to get into, is sufficient to protect the potential  
24 risks, protect the public, from any sort of outlying

25 liabilities or and workman's project, that kind of a thing.

1                   So, you know, I can't over stress the confidence  
2     that the Tribe has in one -- the ability for the group,  
3     meaning the KHSA stakeholders as well as the KRRC to get  
the  
4     job done and do it in a good way that is in the best  
5     interest of the public.

6                   To that note, you know, we started earlier  
7     mentioning how the federal government, how the Tribe's  
8     responsibility to the Yurok Tribe, to protect our fishery,  
9     to protect our federally preserved rights and that trust  
10    responsibility falls on FERC Commission and staff.

11                  And from our perspective, exercising that trust  
12    responsibility by removing the dams is the highest exercise  
13    of that trust responsibility. We cannot, as the Yurok  
14    Tribe, physically remove those dams.

15                  We can't issue the regulatory permits to do  
that,  
16    but you all can, right? That is in your hands and we  
really  
17    see you as -- we all see you all as partners in that plan  
of  
18    restoring the river and healing the river and fixing  
19    historical wrongs, right?

20                  And so, what we've tried to demonstrate is that  
21    this is the most important thing to us, and we can't do it  
22    alone, but we can do it together. And I think that's the  
23    approach that all of the basin stakeholders have taken is

24 collectively, our intent for this river is to restore it to  
25 its former glory and to rebuild the standard around to make

will           1    the water clean again, to rebuild that habitat and that  
                 2    not only make all of our communities in the basin  
                 3    sustainable, but then also it helps, you know the orca's  
                 4    that are starving right now.

look           5                It helps the ocean fisheries and so, when we  
                 6    at management of this country's natural resources, and  
where           7    we all as a nation should be moving, it is towards  
                 8    restoration in areas where we can do it, right? And the  
                 9    Klamath is one of those areas. We don't have a lot of  
                10   development, right?

                11               It's not like the Columbia River for example.  
                12   It's not like the Snake River. We are on a river system  
                13   where there are four dams and then there's an irrigation  
                14   project on top. But that area, for the most part is wild,  
                15   right? It's wild.

                16               MR. MYERS: Absolutely.

                17               MS. CORDALIS: It's a place where people want to  
water,         18   come and recreate. You know, they want to get on the  
                19   and they want to float down it. They want to fish, they  
                20   want to camp, they want to hike. Right now, they can't do  
                21   that. In about three weeks the toxic blue green algae  
                22   blooms are going to explode, and pretty much from that last  
                23   dam all the way down to my village, will be toxic and  
people

24 won't get in the river, right?

25 And there's no fish to catch. So, collectively

1 when we look at managing our country's natural resources,  
2 the Klamath is the place to preserve as the crown jewel of  
3 salmon country. That's what we all want it to be and the  
4 KHSA is our plan in how to get there.

5 And so, all we need you guys to do is to act  
now,  
6 right? Act now and do whatever review you need to do to  
7 finish this transfer and then if we need to notice the  
8 surrender applications, let's get that going as quickly as  
9 possible because time is money, but more importantly time  
is  
10 the extinction of these fish and this river.

11 So, the longer we wait the more damage it's  
12 caused, so we really just need you guys to move as quickly  
13 as you can and we are your partner in that, so however we  
14 can help you move quickly on those applications, we are  
15 here.

16 MR. MYERS: Absolutely, I think one of the  
things  
17 I wanted to hit on is the confidence we have with the KRRC  
18 is the confidence about a mistrust. I think you've done a  
19 really good job explaining the importance the river has.  
To  
20 hand over that responsibility to a third party or to  
another  
21 entity, was very difficult for us as a Tribe, and for us as  
22 Tribal members to have another corporation come in and  
drive

are           23    them with the dam removal, so I think we looked at -- we  
              24    probably some of KRRC's worst credit council, because we  
              25    look at every single detail they do.



1                   We look at each of their contractors they bring  
2                   on. We look at the process, because it is that important  
to  
3                   us. And so, the confidence that we are showing today on  
4                   KRRRC isn't because we brought them on and we trust them  
5                   overnight and we're off to a great run, so fabulous.

6                   It's because we have thoroughly vetted them  
7                   because we understand the impact they will have on our  
8                   communities. So, we can now say confidently that we have a  
9                   trust in KRRRC to admit the project, and they have the  
10                  capacity to do so. But that is over a very long period of  
11                  ensuring that that was actually a true honest statement  
that  
12                  we could make.

13                  I think that as our part that Miss Cordalis did  
14                  very well explaining the Tribal trust obligations, the  
15                  timeliness, but I also just want to hit on the even if  
16                  everything else that we said didn't resonate or was lost, I  
17                  think I will make this quote that PacifiCorp and I'm  
reading  
18                  off the one because it's correct, "PacifiCorp remains fully  
19                  committed to the successful implementation of the KHSA  
which  
20                  will result in the removal of the lower four Klamath River  
21                  dams, coupled with customer protections," -- a direct quote  
22                  from PacifiCorp.

23                  And I think at the end of the day this is a

24 project that the owners want to see happen. And there is  
25 some amount of responsibility that has to be shown to the

1 corporation on their behalf as well, and I will let them  
2 speak for themselves, but I also want to highlight that  
this  
3 is not just a Tribe -- a Tribal Board, but that PacifiCorp  
4 as a corporation, as a partner with the Tribe, also  
supports  
5 the KHSA removal of the four dams. Questions?

6 CHAIR POLARDINO: You guys have any questions?  
7 Thank you so much.

8 MR. MYERS: Thank you for having us. Do we ask  
9 for questions on the phone or is that --?

10 CHAIR POLARDINO: Is there any Tribal members  
11 from the Yurok Tribe who want to make any statements?

12 MS. CORDALIS: Hearing none, I have a couple  
13 Tribe points just to ask. I know the Commission was  
14 interested in the timing of hatcheries and dam removal, if  
I  
15 understand that correctly.

16 So, I think the Commission was interested in for  
17 the timing of your -- I want to check maybe I have that  
18 wrong.

19 MR. GILBERT: No, I think of course that would  
be  
20 an interest we'd have, I'm not sure that we particularly  
21 have questions about it. I mean I'm not knowledgeable  
about  
22 it, I'm not a biologist.

23 MS. CORDALIS: Yeah, okay. I think the only

24 point we wanted to make there is that, you know, the  
25 mitigation measure is a healthy river and so if it comes

time                   1     down to the hatchery not being fully operational by the  
2     that the dams are removed, we would urge you to go forward  
3     with dam removal and have the -- I'm sure there would be a  
4     Hatcheries Management Plan, but don't allow that delay to  
5     somehow stall dam removal.

6                   MR. BELCHIK: This is my correct contact  
7     information.

8                   MS. ESPY: Oh, great, we'll correct that,  
thanks.

9                   MR. BELCHIK: It's not correct in there.

10                  MS. CORDALIS: So, I guess my question then is  
in  
11     terms of timing and process, how quickly do you anticipate  
12     taking action on the transfers application?  
13                  MS. ESPY: I mean that's really hard to speak to  
14     because we don't know what sort of filings we're going to  
15     get at the end of July.  
16                  MS. GILBERT: And also, even once we get the  
17     filing and review it, we are prohibited by our regulations  
18     from announcing when the Commission might take action. So,  
19     all we can say is we're -- we'll be actively reviewing it  
20     and acting as quickly as possible because we have no  
21     interest in delay, but we can't -- we can't project a  
22     timeframe because the regulations don't allow us to.  
23                  MS. CORDALIS: Which we appreciate. I think one  
24     of the challenges is that in the implementation of the KHSA

25 in getting all the various you know, contracts and whatnot

1 together, and then putting a timeline together for the  
2 overall project, it's difficult to move forward without  
3 knowing what FERC's timeframe might be. And I know you  
4 can't -- so, I'll discuss that, and you know, that will be  
5 okay, fair enough.

6 Have you all thought more about assuming we move  
7 forward to a surrender, have you considered your approach  
to  
8 the NEPA analysis?

9 MS. GILBERT: That's certainly under  
10 consideration, but again until we review the information  
and  
11 know what direction the Commission is heading, we can't say  
12 too much about that either. It's certainly something we're  
13 thinking about and discussing.

14 MS. CORDALIS: Okay, what is an average timeline  
15 under similar circumstances for processing surrender  
16 applications?

17 MS. GILBERT: I don't know that I -- I don't  
know  
18 if we have a typical.

19 MS. CORDALIS: Yeah.

20 MS. GILBERT: It depends on the size of the  
21 project and the complexity of the issues.

22 MS. CLAROS: They're all -- so I threw out a  
23 number as a length of time, but you're thinking down the  
24 wrong path.

25

MS. CORDALIS: Okay.



1 MS. CLAROS: So, depending on what they're going  
2 to do down there, we can't get that.

3 MS. CORDALIS: Okay, is there any other  
4 information from the Yurok Tribe that would help your  
5 process?

6 MS. GILBERT: Well obviously what you presented  
7 today is very helpful information and if any of the  
8 follow-up filings that you intend to make, we are  
definitely  
9 interested in.

10 CHAIR POLARDINO: I would suggest Amy, also to  
11 put the PowerPoint file of PowerPoint for our records as  
12 well.

13 MS. CORDALIS: Okay.

14 MR. BELCHIK: Should we turn that into an Adobe  
15 Acrobat?

16 CHAIR POLARDINO: A PDF document.

17 MR. BELCHIK: Yes, yes.

18 CHAIR POLARDINO: That would be helpful.

19 MR. BELCHIK: We will lose the animation on  
that.

20 CHAIR POLARDINO: That's okay.

21 MR. BELCHIK: That climate change one, I think.

22 CHAIR POLARDINO: That's okay.

23 MS. GILBERT: Right, well we do have the  
24 transcript describing, so that people -- I think with the

25 two together side by side can probably figure that out.

1                   MR. BELCHIK:   Okay.   You don't have any more  
2                   questions for us, alright.

3                   CHAIR POLARDINO:   Did you guys have any concerns  
4                   about archeological issues that you need a private, some  
5                   sort of separate congregation with regards to that or --

6                   MR. MYERS:   That was actually, I was wondering  
if  
7                   that was something you wanted to talk about today.   I think  
8                   if maybe we could get just a two-minute break real quick,  
we  
9                   can talk out in the hall real fast and then we can go from  
10                  there, do you guys mind?

11                  MS. GILBERT:   That would be fine.   In fact, the  
12                  only question would be is this just a sort of a general  
13                  discussion that would not need to be private or would it  
14                  involve protected information under the National Historic  
15                  Preservation Act that is the location of the cultural --

16                  MR. MYERS:   Yes.

17                  MS. GILBERT:   Significant --

18                  MR. MYERS:   No, it would -- I think that's what  
19                  we want to talk about.

20                  MS. GILBERT:   Practices, or anything like that.

21                  MR. MYERS:   It would be under NHP.

22                  MS. GILBERT:   Okay.

23                  MS. CORDALIS:   We're okay, so then we would  
24                  probably wrap up the public portion of this.

25

MS. GILBERT: I think we would plan to then end

1 the call and if you have Tribal representatives who would  
2 need to participate, we could reinitiate the call with  
them.

3 MR. MYERS: I think --

4 MS. GILBERT: Or, we would continue with just  
the  
5 people here.

6 MS. CORDALIS: I think we're okay with just  
7 terminating the call.

8 MS. GILBERT: Okay.

9 MS. CORDALIS: Okay.

10 MS. GILBERT: Great. That makes it easy.

11 CHAIR POLARDINO: Okay, just to remind people on  
12 the phone that the transcript will be available to on  
FERC's  
13 e-library system three days after the meeting. You can  
14 comment on the proceeding itself, or on the meeting for our  
15 Commission records as well.

16 Does anybody else have any questions, concerns,  
17 whatnot before I end the call? Alright, on behalf of our  
18 Commission staff members, I would say thank you to the  
Yurok  
19 Tribe for being here and making the trip out and thank you  
20 for all of you who are participating or on the phone, okay,  
21 thank you.

22 (Break 2:39 p.m. - 2:46 p.m.)

23

24

25

## 1 CERTIFICATE OF OFFICIAL REPORTER

2

3 This is to certify that the attached proceeding  
4 before the FEDERAL ENERGY REGULATORY COMMISSION in the  
5 Matter of:

6 Name of Proceeding: Klamath and Lower Klamath  
7 Projects

8

9

10

11

12

13

14

15 Docket No.: P-2082-062/P-14803-000

16 Place: Washington, D.C.

17 Date: Tuesday, July 9, 2019

18 were held as herein appears, and that this is the original  
19 transcript thereof for the file of the Federal Energy  
20 Regulatory Commission, and is a full correct transcription  
21 of the proceedings.

22

23

24 Larry Flowers

25 Official Reporter







Document Content(s)

Errata Form for p-2082-062 and p-14803-000- public.DOC.....	1-1
070919TeleConferenceRevised.TXT.....	2-130

## **APPENDIX D      CONSULTATION CORRESPONDENCE**

**OFFICE OF HISTORIC PRESERVATION  
DEPARTMENT OF PARKS AND RECREATION**

P O BOX 942896  
SACRAMENTO, CA 94296-0001  
(916) 653-6624 Fax (916) 653-9824  
calshpo@ohp.parks.ca.gov



28 May, 2003

Reply To: FERC030505A

Michael Strickler  
Hydro Resources Project Manager  
PacifiCorp  
825 N.E. Multnomah, Suite 1500  
Portland, Oregon 97232

**Re: Iron Gate Hydroelectric Project (FERC No. 2082), Modification of Dam Crest**

Dear Mr. Strickler:

Thank you for your letter dated May 2, 2003 regarding proposed modification of the Iron Gate Hydroelectric Project on the Klamath River near Hornbrook, California. PacifiCorp owns and operates the Iron Gate Hydroelectric facility as part of the Energy Regulatory Commission (FERC) Licensed Klamath Project, FERC Project Number 2082.

You have provided me with the results of your efforts to determine for the benefit of FERC, whether the above undertaking may affect historic properties. You have done this, and are consulting with me, in order to enable FERC to comply with Section 106 of the National Historic Preservation Act and implementing regulations codified at 36 CFR Part 800.

You state that the Iron Gate Dam was completed in 1962 and therefore does not meet the 50-year-minimum age criteria for eligibility for listing on the National Register (NR). Although this statement is factual, applying the 50-year criterion without qualification may run the risk of overlooking a potentially exceptional property. In this case, however, I have concluded that the evidence that you provided demonstrates that the Iron Gate Hydroelectric Project does not possess exceptional importance and does not otherwise meet the requirements for eligibility under Criteria Consideration G for properties that have achieved significance within the last fifty years. I will assume that FERC has made this determination unless I hear to the contrary from them within 15 calendar days after you have furnished them with a copy of this letter.

You also state that the scope of the project will only alter the crest of the non-historic Iron Gate Dam and spillway. Recent cultural survey did not find any cultural sites or materials in any of the areas proposed for construction, and no other ground disturbing activities or alterations are planned to the surrounding buildings or grounds. You are requesting my concurrence in your determination that the Iron Gate Dam is not eligible for the NR and in a finding that this undertaking will have no adverse effect on historic properties.

I have reviewed the documentation furnished and have the following comments:

- 1) The steps taken to identify historic properties that may be affected by this undertaking are satisfactory.
- 2) I concur with your recommendation to FERC that there are no historic properties within the Area of Potential Effects (APE).
- 3) Since there are no historic properties within the APE, FERC could request concurrence on a finding of "no historic properties affected" [36 CFR §800.4(d)(1)] instead of a finding of "no adverse effect".
- 4) In order to expedite closure of this consultation I will assume that FERC has made this finding unless I hear to the contrary from them within 15 calendar days after you have furnished them with a copy of this letter.
- 5) I would not object to an official finding by FERC that there are no historic properties that may be affected by this undertaking.

Thank you for considering historic properties during project planning. If you have any questions, please contact Andrea Galvin at (916) 653-4533 or agalv@ohp.parks.ca.gov.

Sincerely,

Dr. Knox Mellon  
State Historic Preservation Officer

May 3, 2018

Julianne Polanco  
State Historic Preservation Officer  
Office of Historic Preservation  
1725 23rd Street, Ste. 100  
Sacramento, CA 95816

**RE: Initiation of Informal Consultation for the Lower Klamath Project (FERC No. 14803)**

Dear Ms. Polanco,

Klamath River Renewal Corporation (KRRC) and PacifiCorp request the initiation of informal consultation with the California Office of Historic Preservation regarding the Lower Klamath Project (Project; FERC No. 14803) and your comments on the preliminary Area of Potential Effects (APE) defined for the Project by AECOM, our technical representative. Informal consultation is being requested under a November 10, 2016, "Notice of Applications Filed With the Commission" (Attachment 1) issued by the Federal Energy Regulatory Commission (FERC) which designated PacifiCorp and KRRC as the Commission's non-federal representative for carrying out informal consultation to help facilitate FERC's compliance with Section 106 of the National Historic Preservation Act (54 U.S.C § 300101 et seq.) and the Advisory Council's regulations at 36 C.F.R. § 800.2(c)(4). KRRC and PacifiCorp (Proponents) have submitted to FERC a License Surrender Application (LSA) for the Project. FERC considers review of the LSA an "undertaking" (36 C.F.R § 800.16(y)) and thus subject to Section 106 as implemented in 36 C.F.R. Part 800.

The Project seeks the decommissioning and removal of four dam developments (Iron Gate, Copco No. 1 and No. 2, and J.C. Boyle), located on the Klamath River, which are currently owned and operated by PacifiCorp. The J.C. Boyle development is located in Klamath County, Oregon, with the other three developments located in Siskiyou County, California. The purpose of the project is to achieve a free flowing river condition and full volitional fish passage through the reaches of the Klamath River currently impacted by the four dams.

This letter provides a summary of the Project's administrative background, a status update on informal consultation efforts conducted to date, a brief Project description, and a written definition of the preliminary APE, accompanied by maps. Your comments on the preliminary APE are requested at this time to help focus KRRC's and PacifiCorp's informal consultation efforts [36 C.F.R. § 800.2(c)(4)] with agencies, tribes, and other interested parties, as well as to focus that dialogue in more meaningful content for FERC's subsequent formal consultation process.

### Administrative Background

KRRC is a 501(c)(3) organization created by the Klamath Hydroelectric Settlement Agreement (KHSa), as amended in 2016, to decommission the four dam developments owned by PacifiCorp (see the attached APE map book for overview and detail maps showing the project location). PacifiCorp is a leading western U.S. energy services provider and the largest grid owner-operator in the West. For the Lower Klamath Project, KRRC is the transferee, while PacifiCorp is the transferor.

KRRC and PacifiCorp jointly filed a combined license amendment and license transfer application with FERC on September 23, 2016. The license amendment asked FERC to administratively remove the four dam developments from the Klamath Hydroelectric Project license (No. 2082). The transfer amendment asked that the four developments be administratively placed into a new license for the Lower Klamath Project (No. 14803). On March 15, 2018, FERC granted the license amendment application and deferred the license transfer, pending receipt of required additional information. On April 16, 2018, PacifiCorp filed a motion asking FERC to change the effective date for the new Lower Klamath license so splitting the license happens concurrently with the license transfer. PacifiCorp will continue to operate each of the four developments proposed as the Lower Klamath Project until the Commission approves the License Transfer Application and KRRC accepts the license.

KRRC filed a separate license surrender application on September 23, 2016 for Project No. 14803 that, if approved, would allow KRRC to decommission the four facilities. Under the amended KHSa, KRRC would oversee dam removal activities, which, if approved, are expected to begin in 2020 with dam removal occurring in 2021. PacifiCorp would continue to operate the dams until they are decommissioned.

### Consultation Status

KRRC and its technical representative, AECOM, have formed a Cultural Resources Working Group (CRWG) to compile information to assist FERC in its Section 106 compliance efforts. KRRC invited the participation of the representatives of California Office of Historic Preservation; Oregon State Historic Preservation Office; US Army Corps of Engineers; USDI Bureau of Reclamation; Klamath Falls and Redding Field Offices of the USDI Bureau of Land Management; USDA Klamath National Forest; and PacifiCorp. To date, the CRWG has participated in three teleconference calls where: a Project overview was provided (September 2017), a preliminary Area of Potential Effects was discussed (December 2017), and preliminary work plans for 2018 were reviewed (March 2018).

KRRC has also initiated informal consultation with Indian tribes. KRRC sent letters to 25 Indian tribes native to or currently residing in northern California and southern Oregon requesting their participation in the informal consultation process. Eight Indian tribes (Karuk Tribe, Klamath Tribes, Modoc Tribe of Oklahoma, Quartz Valley Indian Rancheria, Shasta Indian Nation, Shasta Nation, Cher' Ae Heights of the

Trinidad Rancheria, and Yurok Tribe) have confirmed their interest in participating in the informal consultation process. A Project introduction meeting with the participating Indian Tribes was held on April 6, 2018 in Yreka, California.

FERC conducted scoping meetings in January and February 2018 with six federally recognized Indian Tribes regarding the KRRC and PacifiCorp license amendment and transfer application. The tribes invited to the meetings include the Hoopa Valley Tribe, Karuk Tribe, Klamath Tribes, Modoc Tribe of Oklahoma, Quartz Valley Indian Rancheria, and Yurok Tribe.

As KRRC advances consultation with federal, state, and local agencies and Indian tribes, we will also be soliciting input about which other consulting parties may have knowledge or an interest in historic properties in the Project area. This outreach will include contacting local-level government entities, historical societies and museums, and other groups with a focus on historic preservation, history, and archaeology. We welcome suggestions from your office on additional entities that we should consider contacting.

#### Project Summary

The proposed Project includes the decommissioning and removal of four dam developments (Iron Gate, Copco No. 1 and No. 2, and J.C. Boyle) on the Klamath River. In September 2017, KRRC prepared a technical support document for the California State Water Resources Control Board (SWRCB) and the Oregon Department of Environmental Quality (ODEQ) for their use in preparing Clean Water Act Section 401 Water Quality Certifications required before FERC can issue a final surrender order for the Project. This document<sup>1</sup> also provided technical and field information for use in preparation of an Environmental Impact Report (EIR) consistent with the California Environmental Quality Act (CEQA). An Administrative Draft version of a Definite Plan<sup>2</sup> for Decommissioning was provided to the SWRCB in January 2018, providing an update on schedule and additional technical information. KRRC is currently preparing the Definite Plan for submittal to FERC in June 2018.

The year prior to removal of the dams and hydropower facilities, improvements to the diversion tunnels at Iron Gate Dam and Copco No. 1 dam, City of Yreka water supply line and intake, Iron Gate and Fall Creek fish hatcheries, roads and bridges, and flood mitigation features will be built (currently planned for 2020). Prior to dam removal, the water surface elevation in each reservoir will be drawn down as low as possible to facilitate accumulated sediment evacuation and to create a dry work area for facility removal activities.

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<sup>1</sup> Available at:

[https://www.waterboards.ca.gov/waterrights/water\\_issues/programs/water\\_quality\\_cert/docs/lower\\_klamath\\_ferc14803/1\\_3\\_18\\_krrc\\_updated\\_submittal.pdf](https://www.waterboards.ca.gov/waterrights/water_issues/programs/water_quality_cert/docs/lower_klamath_ferc14803/1_3_18_krrc_updated_submittal.pdf)

<sup>2</sup> Available at:

[https://www.waterboards.ca.gov/waterrights/water\\_issues/programs/water\\_quality\\_cert/docs/lower\\_klamath\\_ferc14803/1\\_3\\_18\\_krrc\\_updated\\_submittal.pdf](https://www.waterboards.ca.gov/waterrights/water_issues/programs/water_quality_cert/docs/lower_klamath_ferc14803/1_3_18_krrc_updated_submittal.pdf)

In general, drawdown will begin on January 1 of the drawdown year (currently planned for 2021), and will extend through March 15 of the same year. After drawdown is accomplished, remaining reservoir sediments will be stabilized to the extent feasible and dam and hydropower facility removal will begin in the same year. Full reservoir area restoration will also be accomplished and will begin after drawdown, and extend throughout the year, and possibly extend into the subsequent year. Vegetation establishment could extend several years.

Other key project components include measures to reduce Project related effects to cultural, aquatic, and terrestrial resources; and development of a recreation plan for existing and possibly new developments.

Changes or refinements to the Project description, resulting from new information, updated analysis, or new project components, will be incorporated into future correspondence and documents provided to your office and discussed during CRWG meetings.

#### Contact Information

If you have any questions or would like any additional information, please contact me, Mark Bransom, at the number or e-mail listed below, or Elena Nilsson, AECOM cultural resources lead, at [elena.nilsson@aecom.com](mailto:elena.nilsson@aecom.com) (530-893-9675 ext. 1231).

Thank you for your support of this effort. We look forward to continuing our work with you.

Best regards,



Mark Bransom,  
Executive Director, KRRC

[mark@klamathrenewal.org](mailto:mark@klamathrenewal.org)  
415-820-4441

#### Attachments

1. FERC Notice of Applications Filed with the Commission
2. Preliminary APE Description
3. Preliminary APE Map Set



## Attachment 1

### FERC Notice of Applications Filed with the Commission

UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION

PacifiCorp  
Klamath River Renewal Corporation

Project No. 2082-062  
Project No. 2082-063  
Project No. 14803-000  
Project No. 14803-001

NOTICE OF APPLICATIONS FILED WITH THE COMMISSION

(November 10, 2016)

Take notice that the following hydroelectric applications have been filed with the Commission and are available for public inspection:

- a. Types of Applications: Application for Amendment and Partial Transfer of License;  
Application for Surrender of License
- b. Project Nos.: 2082-062 and 14803-000 (amendment and transfer application);  
2082-063 and 14803-001 (surrender application)
- c. Date Filed: September 23, 2016
- d. Applicants: For license amendment and transfer:  
PacifiCorp (transferor) and  
Klamath River Renewal Corporation (transferee)  
  
For license surrender:  
Klamath River Renewal Corporation
- e. Name of Projects: Klamath Project (P-2082)  
  
Lower Klamath Project (P-14803)
- f. Locations: Klamath Project - on the Klamath River in Klamath County, Oregon, and on the Klamath River and Fall Creek in Siskiyou County, California. The project includes about 477 acres of federal lands administered by the Bureau of Reclamation and the Bureau of Land Management.

Project No. 2082-062, *et al.*

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Lower Klamath Project - on the Klamath River in Klamath County, Oregon, and Siskiyou County, California. The project would include about 395 acres of federal lands administered by the Bureau of Land Management.

g. Filed Pursuant to: Federal Power Act, 16 USC 791a-825r.

h. Applicants Contact: Sarah Kamman, Vice President and General Counsel, PacifiCorp, 825 NE Multnomah Street, Suite 2000, Portland, OR 97232, (503) 813-5865, [sarah.kamman@pacificorp.com](mailto:sarah.kamman@pacificorp.com)

Michael Carrier, President, Klamath River Renewal Corporation, 423 Washington Street, 3<sup>rd</sup> Floor, San Francisco, CA 94111, (415) 820-4441, [michael@klamathrenewal.org](mailto:michael@klamathrenewal.org)

i. FERC Contacts: Amendment and Transfer: Steve Hocking, (202) 502-8753, [Steve.Hocking@ferc.gov](mailto:Steve.Hocking@ferc.gov)

Surrender: John Mudre: (202) 502-8902, [john.mudre@ferc.gov](mailto:john.mudre@ferc.gov)

j. Description of Amendment and Transfer Request: The applicants request that the Commission transfer the J.C. Boyle, Copco No. 1, Copco No. 2, and Iron Gate developments of the existing Klamath Project No. 2082 from PacifiCorp to the Klamath River Renewal Corporation (Renewal Corporation) and create a new project, the Lower Klamath Project, for the transferred developments with the Renewal Corporation as the sole licensee. PacifiCorp requests that the license for Project No. 2082 be amended to delete references to the four transferred developments. The applicants state that they will make a supplemental filing on or before March 1, 2017, demonstrating the legal, technical, and financial capabilities of the Renewal Corporation to perform its responsibilities as transferee. Applicants further request that the Commission act on the amendment and transfer application by December 31, 2017, and allow the Renewal Corporation six months from the issuance date of the order approving transfer to submit proof of its acceptance of license transfer.

k. Description of Surrender Request: The Renewal Corporation's request to surrender and decommission the Lower Klamath Project, including removal of the project dams is contingent upon a Commission order amending PacifiCorp's existing Klamath Project (P-2082) license to create a new project, the Lower Klamath Project, and transferring the Lower Klamath Project to the Renewal Corporation, as described in item (j), above. The Lower Klamath Project, as envisioned by the Renewal Corporation, would consist of the J.C. Boyle, Copco No. 1, Copco No. 2, and Iron Gate developments of the existing Klamath Project No. 2082, and the Renewal Corporation would be the sole licensee. The

Project No. 2082-062, *et al.*

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Renewal Corporation requests that the Commission not act on this request until it is ready to accept license transfer and states that it will file, by December 31, 2017, its decommissioning plan to serve as the basis for Commission staff's environmental and engineering review of the surrender application. Because only a licensee may file to surrender a license and the Commission does not accept contingent applications, the surrender application is deemed to be filed by both PacifiCorp and the Renewal Corporation. *See* 18 C.F.R. §§ 6.1 and 4.32(j). Therefore, while action on the amendment and transfer application is pending, the Commission will maintain both applications in the dockets for both project numbers. If the Commission approves the transfer and the Renewal Corporation accepts the license, following which the Renewal Corporation would become the sole licensee, the surrender proceeding would continue solely in Project No. 14803.

l. With this notice, we are initiating informal consultation with: (a) the U.S. Fish and Wildlife Service and NOAA Fisheries under section 7 of the Endangered Species Act and the joint agency implementing regulations at 50 C.F.R. Part 402; (b) NOAA Fisheries under section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act and implementing regulations at 50 CFR § 600.920; and (c) the California and Oregon State Historic Preservation Officers, as required by section 106 of the National Historic Preservation Act, and the implementing regulations of the Advisory Council on Historic Preservation at 36 C.F.R. Part 800.

m. With this notice, we are designating PacifiCorp and the Renewal Corporation as the Commission's non-federal representative for carrying out informal consultation, pursuant to section 7 of the Endangered Species Act, section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act, and section 106 of the National Historic Preservation Act and the Advisory Council's regulations at 36 C.F.R. § 800.2(c)(4).

n. Locations of the Applications: Copies of the applications are available for inspection and reproduction at the Commission's Public Reference Room, located at 888 First Street, NE, Room 2A, Washington, DC 20426, or by calling (202) 502-8371. These filings may also be viewed on the Commission's website at <http://www.ferc.gov/docs-filing/elibrary.asp>. Enter the docket number excluding the last three digits in the docket number field to access the document. You may also register online at <http://www.ferc.gov/docs-filing/esubscription.asp> to be notified via email of new filings and issuances related to this or other pending projects. For assistance, call 1-866-208-3676 or e-mail [FERCOnlineSupport@ferc.gov](mailto:FERCOnlineSupport@ferc.gov), for TTY, call (202) 502-8659. Copies are also available for inspection and reproduction at the addresses in item (h), above.

o. Individuals desiring to be included on the Commission's mailing list for these proceedings should so indicate by writing to the Secretary of the Commission.

Project No. 2082-062, *et al.*

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p. Additional Information: We are not requesting comments at this time. After receiving the applicants' supplemental filings on or before March 1, 2017, for the license transfer and December 31, 2017, for the surrender, the Commission will issue notices requesting comments, protests, and motions to intervene.

Kimberly D. Bose,  
Secretary

## Attachment 2

### Preliminary Area of Potential Effects Description



# Preliminary APE for the Lower Klamath Project License Surrender Application (FERC Project No. 14803)

## 1.0 INTRODUCTION

### 1.1 Regulatory Context for Establishing an APE

The implementing regulations of the NHPA, require that the federal agency determine if its undertaking has the potential to cause effects on historic properties<sup>3</sup> (36 CFR 800.3(a)). This is accomplished in part by determining and documenting the Area of Potential Effects (APE) (36 CFR 800.4(a)(1)). The APE means the “geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist.” Furthermore, the APE “is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking” (36 CFR 800.16(d)). Once an APE is defined, the scope of identification efforts within the APE can be determined. This document is intended to provide guidance to facilitate APE consultations.

### 1.2 APE, Study Area, Project Area, and FERC Project Boundary

The APE is distinct and different from other project-defined “areas” that are often referred to in discussion. For example, background research on known archaeological sites may encompass a broader geographic area referred to as the “**Study Area**.” The study area for cultural resources<sup>4</sup> may be larger than the APE and is designed to allow for the retrieval of information about known sites, site types, buildings, structures, objects, districts, ethnographic landscape features, land use patterns from prehistoric and historic eras, as well as Traditional Cultural Properties (TCPs) and Indian Sacred Sites.<sup>5</sup> Background research may include resources from outside this area, particularly broader ethnographic and historic overviews that provide context for the resources identified in the Study Area. To date, KRRC has completed an updated records search for a Study Area that includes the length of the Klamath River from its origin at the southern end of Upper Klamath Lake, in Oregon, to the mouth of the river at the Pacific Ocean. This Study Area comprises a 0.5-mile wide zone extending either side of the reservoir shorelines (J.C. Boyle, Copco Lake, and Iron Gate Reservoir) or from the center point of the Klamath River in areas where the river remains flowing.

The “**Project Area**” is also distinct from the APE. For this discussion, the Project Area refers specifically to the *Project Limits of Work and Access* as defined on maps included with the project’s California Environmental Quality Act (CEQA) and California and Oregon Section 410 Water Quality

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<sup>3</sup> 36 CFR 800.16 defines a historic property as any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria.

<sup>4</sup> Cultural resources are those tangible and intangible aspects of human cultural systems, both past and present, that are valued by or representative of a given culture, or that contain information about a culture.

<sup>5</sup> The definition of an Indian Sacred Site is governed by Executive Order 13007 of May 24, 1996. The order defines an Indian Sacred Site as: Any specific, discrete, narrowly delineated location on federal land that is identified by an Indian tribe, or Indian individual determined to be an appropriately authoritative representative of an Indian religion, as sacred by virtue of its established religious significance to, or ceremonial use by, an Indian religion; provided that the tribe or appropriately authoritative representative of an Indian religion has informed the agency of the existence of such a site. It is the Tribe or the traditional religious practitioner of the Tribe, not the federal government that identifies a sacred site.

Certifications Technical Support Document (KRRRC 2017). The preliminary APE (defined below) includes the entirety of the Project Area.

Lastly, the “**FERC Project Boundary**” which includes the geographic extent of the Klamath Hydropower Project (FERC #2082) included the geographic area a licensee must own or control on behalf of its licensed hydropower projects and is likewise distinct from the APE. Due to FERC’s jurisdiction, the FERC Project Boundary for the Lower Klamath Project (FERC Project No. 14803) is wholly included within the preliminary APE.

**Table 1. Area Terms Ordered According to Diminishing Size.**

Term	Description
Study Area	<ul style="list-style-type: none"> <li>• Larger than APE to better understand cultural context.</li> <li>• The length of the Klamath River from the highest reach of the J.C. Boyle Reservoir downstream to Humbug Creek (83 river miles) and a 0.5-mile wide zone extending on either side of the reservoir shorelines (J.C. Boyle, Copco Lake, and Iron Gate Reservoir) or from the center point of the Klamath River in areas where the river remains flowing.</li> </ul>
Area of Potential Effects (APE)	<ul style="list-style-type: none"> <li>• The geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist (36 CFR 800.16(d)). (See Project-specific definition below).</li> </ul>
Project Area	<ul style="list-style-type: none"> <li>• Sometimes referred to as the “direct APE.” Also called the “Project Limits of Work and Access” as defined on maps included with the 2017 “Klamath River Renewal Project Technical Support Document” (KRRRC 2017).</li> </ul>
FERC Project Boundary	<ul style="list-style-type: none"> <li>• The jurisdictional limits of the FERC hydroelectric license and located entirely within the APE. For this Project, the FERC Project Boundary refers to the limits of the Lower Klamath Project (FERC Project No. 14803).</li> </ul>



### 1.3 Previous Iterations of the APE

Previous FERC license applications, National Environmental Policy Act (NEPA) Environmental Impact Statements (EIS), California Environmental Quality Act (CEQA) Environmental Impact Reports (EIR), and Section 106 of the National Historic Preservation Act (Section 106) compliance reports, related to the relicensing, operation, and/or decommissioning of the Klamath Hydroelectric Project (FERC Project No. 2082) have produced varying definitions of the APE. This is primarily due to the varying scopes of the projects.

The 2004 PacifiCorp relicensing project involved all eight of the Klamath Hydroelectric Project developments, including the decommissioning of the East Side and West Side developments, the removal of the Keno development, and continued operations of the J. C. Boyle, Copco No. 1, Copco No. 2, Iron Gate, and Fall Creek developments. In contrast, the later 2012 Klamath Facilities Removal focused exclusively on the removal of four of PacifiCorp's Klamath River developments - J.C. Boyle, Copco No. 1, Copco No. 2, and Iron Gate – and did not consider the remaining Klamath Hydroelectric Project developments (East Side, West Side, Keno, and Fall Creek). Table 2 summarizes the APEs identified in previous Klamath Hydroelectric Project cultural resources studies.

**Table 2. Summary of Klamath River Project Previous APE Iterations.**

Reference	APE Description
PacifiCorp 2004 (License Application Exhibit E Page 6-33; PacifiCorp 2004:121-122)	<ul style="list-style-type: none"> <li>• <u>PacifiCorp APE</u>: All lands within the FERC Project boundary under the existing license, all lands within the PacifiCorp proposed FERC Project boundary for the new license, and river reaches below each Project development. Included proposed Project hydropower facilities, recreation sites, proposed wildlife enhancement lands, and river reaches between Project developments.</li> <li>• Cultural Resources Working Group (CRWG) APE: Included the FERC Project boundary, riparian and hydrologically connected areas along Project-affected reaches, and culturally sensitive lands within the Klamath River Canyon from ridgetop to ridgetop (rim to rim).</li> <li>• <u>PacifiCorp and CRWG Compromise</u>: Field Inventory Corridor (FIC) studied instead of an APE. FIC covered the area between the outlet of Upper Klamath Lake (River Mile [RM] 254.7) downstream to approximately 1 mile southwest of the Iron Gate dam (RM 189.2).</li> <li>• Downriver tribes (Karuk and Yurok) felt the APE should be more broadly defined to extend from Iron Gate down to the mouth of the Klamath River (at the Pacific Ocean) due to potential Project effects on salmon fisheries and other (non-archaeological) cultural resources along the Klamath River corridor.</li> </ul>
PacifiCorp 2006 Revised APE (FERC 2007 EIS/EIR (Page 3-539)	<ul style="list-style-type: none"> <li>• Based on proposal to decommission East Side and West Side developments and to remove Keno development from the project.</li> <li>• Excluded Keno reservoir, the Klamath River from Keno reservoir to the head of J.C. Boyle reservoir, and the river</li> </ul>

Reference	APE Description
	reach from just below J.C. Boyle powerhouse to the Oregon-California state line.
FERC 2007 EIS/EIR (Page 3-551)	<ul style="list-style-type: none"> <li>Entirety of the APE as delineated by PacifiCorp in its October 2004 draft HPMP and that portion of the Klamath River reach from Iron Gate to the mouth.</li> </ul>
Bureau of Reclamation 2012 EIS/EIR (Section 3.13.1 Area of Analysis)	<ul style="list-style-type: none"> <li>The Klamath River from the outlet at Keno Dam to the river's outlet at the Pacific Ocean and extending outward for 0.5 miles from each bank of the river, plus a 0.5-mile-wide corridor from the high water mark surrounding each of the four reservoirs, and all four dams and associated facilities.</li> </ul>

PacifiCorp's 2004 APE designated for the relicensing project included all proposed hydropower developments, recreation sites, proposed wildlife enhancement lands, and river reaches between the various Klamath Hydroelectric Project developments. This covered all lands within the FERC Project boundary under the existing license, all lands within the PacifiCorp proposed FERC Project boundary for the new license, and river reaches below each Project development. The archaeological survey conducted for the PacifiCorp relicensing study focused on a broader "field inventory corridor" (FIC) based on input from the Cultural Resource Working Group, including the tribes, who felt the APE should be considerably larger than the FERC Project boundary. The FIC comprised the area between the outlet of Upper Klamath Lake (River Mile [RM] 254.7) downstream to approximately 1 mile southwest of the Iron Gate dam (RM 189.2), as river geomorphology studies indicated little to no effect on downstream river bank erosion beyond Interstate 5 for the project as then defined. Therefore, the 2004 APE extended a short distance downstream from Iron Gate dam to just below the Iron Gate fish hatchery.

FERC's 2007 Final Environmental Impact Statement (FEIS) for the hydroelectric facility relicensing followed the extent of the 2004 APE and reported that PacifiCorp subsequently proposed another APE (March 2006). In a revised Historic Properties Management Plan (HPMP), PacifiCorp defined a revised APE that reflected its proposal to decommission the East and West Side developments and to remove Keno development from the project. This revised APE also excluded Keno Reservoir, the Klamath River to the head of J.C. Boyle Reservoir, and the river reach from just below the J.C. Boyle powerhouse to the Oregon-California state line. The FEIS stated that neither the Oregon nor the California SHPO had concurred with either the 2004 or the 2006 versions of the APE. The APE at that time essentially conformed to PacifiCorp's proposed project boundary, and the FEIS analysis noted that the 2004 version was generally consistent with the customary minimum APE. The revised 2006 version, however, excluded lands that FERC would need to consider as part of the APE and thus assess how historic properties would be affected. The 2007 FEIS stipulated that the APE would appropriately encompass (1) the entirety of the 2004 APE as delineated by PacifiCorp in the 2004 Draft HPMP and (2) that portion of the Klamath River reach from Iron Gate Dam to the mouth. The expanded APE was justified by the potential for effects on riparian vegetation that could result in destabilized shorelines and subsequent erosion of archaeological sites. The expansion would also allow FERC to consider potential project effects on TCPs, specifically on the Klamath Cultural Riverscape in which the totality of natural environment is a contributing element.

Finally, in 2012, the Bureau of Reclamation (BOR) and the California Department of Fish and Game completed the Klamath Facilities Removal Environmental Impact Statement/Environmental Impact Report (EIS/EIR) that offered another version of the APE. This version largely built on the 2007 FERC definition and offered an “Area of Analysis” that extended along the Klamath River from Keno Dam downstream to the Pacific Ocean and included a half-mile-wide buffer around this extent. The Klamath Facilities Removal APE offered the broadest geographic area yet considered for potential impacts on cultural resources and incorporated the concept of a FIC into the Area of Analysis.

In defining the preliminary APE for the Klamath River Renewal Project (see below), each of these related APEs was considered to provide a balanced definition that reflects APE boundaries defined in previous environmental documents, as well as those informally discussed in the CRWG meetings.

## 2.0 PRELIMINARY APE FOR THE LOWER KLAMATH PROJECT LICENSE SURRENDER APPLICATION

Defining an APE provides both the lead federal agency and consulting parties with a basis for understanding the geographic extent of anticipated impacts of the proposed project, which is necessary to determine whether the project may adversely affect historic properties. The different types of potential effects that may be caused by dam decommissioning have resulted in defining an Area of Direct Impacts (ADI) within the preliminary APE that delineates where there are anticipated direct physical impacts, particularly areas subject to ground disturbance such as dam facility removal and reservoir restoration activities. The ADI corresponds with the “Project Area” or the *Project Limits of Work and Access* as discussed in other documents. The distinction of an ADI also helps inform discussions regarding level of effort for cultural resources surveys and NRHP eligibility evaluations.

The preliminary APE is defined as a 0.5-mile wide area on each side of the Klamath River and the current reservoir limits, extending from the upper reach of J.C. Boyle Reservoir (RM 228) in Oregon, to the river mouth at the Pacific Ocean (RM 0), in California. Attachment 3 provides the location of the preliminary APE. This geography represents a complex array of natural and cultural features that collectively represent what has been termed a cultural riverscape associated with significant patterns of events in the traditional histories of the Yurok, Karuk, Hupa, Shasta, and Klamath Tribes (King 2004). This riverscape may include known archaeological or historical sites, TCPs, Sacred Sites, natural features of cultural importance, wildlife, the waterway itself, and other features. The riverscape has been defined as a place that meets the eligibility criteria and retains sufficient integrity for inclusion on the NRHP (King 2004). Although the Oregon and California SHPOs have not concurred with this NRHP eligibility recommendation, the riverscape concept is a useful construct for ensuring that the current Project considers the possibility of indirect effects within the river canyon area outside of the ADI. The Klamath Riverscape concept also acknowledges the crucial and significant role that the river and its environs play in the lifeway practices of multiple Indian tribes.

The preliminary APE is largely consistent with the APE’s defined by FERC (2007) and BOR (2012) (see Table 2). FERC’s 2007 APE encompassed the entirety of the APE delineated by PacifiCorp in their October 2004 HPMP <sup>6</sup> and that portion of the Klamath river reach from Iron Gate dam to the mouth. The BOR’s 2012 APE included the Klamath River from the outlet at Keno Dam to the river’s outlet at the Pacific Ocean.

This project’s preliminary APE similarly extends along the Klamath River to its mouth at the Pacific Ocean, but excludes a 26-mile stretch from the northern end of J.C. Boyle Reservoir (RM 228) to

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<sup>6</sup> All lands within the FERC Project boundary under the existing license, all lands within the PacifiCorp proposed FERC Project boundary for the new license, and river reaches below each Project development.

Upper Klamath Lake (RM 254). This northernmost area has been omitted from the preliminary APE for a number of reasons: (1) it is outside the FERC jurisdictional boundary for the Lower Klamath Project (FERC No. 14803); (2) as currently understood, the northernmost area would not be affected by the undertaking (i.e., the water levels upriver from the northern end of J.C. Boyle Reservoir won't change and/or the downriver dam removals would not trigger changes to these upriver facilities either directly or operationally); and (3) other upriver hydroelectric facilities (Link River Dam and Keno Dam) would remain part of the Klamath Hydroelectric Project (FERC No. 2082) and continue operations under existing licenses, permits, and/or agreements between private entities and/or federal agencies.

The preliminary APE encompasses a Traditional Cultural Property (TCP) composed of seven locations in the Big Bend, Oregon area identified by Klamath Tribes consultants for the FERC relicensing project (Deur 2003). Other TCPs were identified by the Klamath Tribes consultants upstream (outside) of the preliminary APE, on the Klamath River, north of J.C. Boyle Reservoir, and in the Sprague River, Williamson River, Wood River, and Upper Klamath Lake basin. The preliminary APE also comprises the locations of TCPs and Sensitive Cultural Resources (SCRs) identified by the Shasta Nation for the FERC relicensing project (Daniels 2006).

In defining the APE, it is not necessary to know if effects will occur, only that they may occur based on KRRC's current analysis of the proposed actions. To ensure the consideration of possible downstream effects on the river below Iron Gate Dam, as well as within the river reaches between J.C. Boyle Reservoir and Copco Lake, a geographically broad APE is proposed. This APE also allows for consideration of potential direct and indirect effects on the surrounding cultural landscape, the potentially NRHP-eligible Klamath Riverscape and other identified TCPs, Sacred Sites, and historic districts located within the Klamath River Canyon.

The potential for direct or indirect impacts in areas outside the Klamath River Canyon is considered unlikely. For example, while the removal of water from the J.C. Boyle, Copco No. 1, Copco No. 2, and Iron Gate reservoirs may result in indirect visual impacts due to the unnatural looking unvegetated ring around the former reservoirs, this impact does not necessarily expand beyond the historic properties located along the river corridor and its immediate environs, which comprises a varied topography that ranges from steep canyons to low hills that limit the potential for indirect effects. Given the visual and auditory screening imposed by these land forms and the nature of the facilities, the project is not expected to result in auditory, atmospheric, or other indirect changes that may affect cultural resource locations beyond the preliminary APE boundary.

## 2.1 Area of Direct Impacts (ADI)

The ADI defined within the preliminary APE includes two primary components that largely correspond geographically to the *Project Limits of Work and Access* as presented in the project's California Environmental Quality Act (CEQA), California, and Oregon 410 Water Quality Certifications Technical Support Document (KRRC 2017), with the inclusion of a few isolated areas. Attachment 3 includes maps showing the location of the proposed ADI components. The ADI may be updated to reflect ongoing changes in project engineering, such as the specific location of disposal areas and access roads, as well as information learned through the tribal consultation process.

Within Oregon, the ADI comprises the *Project Limits of Work and Access* associated with the decommissioning of J.C. Boyle Dam and its associated facilities. ADI lands include discontinuous areas located between the upper reach of the J.C. Boyle Reservoir (RM 228) and RM 220, as shown on Attachment 3, Sheets 1-4. The ADI within California encompass a roughly continuous, 33-mile long area located between the eastern end of Copco Lake (RM 204) and Humbug Creek (RM 171), as shown on Attachment 3, Sheets 11-23.

The two primary components of the ADI include:

1. Existing dam facility sites, associated reservoirs and water conveyance systems, and features related to the original components of the Klamath Hydroelectric Project (FERC No. 2082).
2. Project components outside of the immediate reservoir and facility areas, including disposal areas, staging areas, access roads, former recreation areas, culvert and bridge replacement areas, road improvement areas, and unique isolated components, such as bridges (pedestrian and railroad), transmission lines, and substations that will likely need to be removed, raised, or monitored. This component would also include any new recreation sites developed along the river. It also includes lands below Iron Gate dam to Humbug Creek within the projected altered 100-year floodplain.

Secondary components of the ADI are listed below. This list is subject to change as project planning advances.

- In Oregon, J.C. Boyle Dam and Reservoir, including intake structure, spillway, dam, timber bridge, fish ladder, canal headgate, and the warehouse, shed, and residential buildings. Downstream from the dam, the J.C. Boyle work area includes the canal, forebay, spillway, scour hole, tunnel, penstocks, powerhouse, and substation. This area is inclusive of staging areas, temporary access roads, and fill and disposal areas.
- In California, Copco No. 1 Dam and reservoir, abutment/intake structure, penstocks, powerhouse, diversion tunnel, switchyard, and the residential and maintenance buildings, associated staging and disposal areas, and temporary access roads.
- In California, Copco No. 2 Dam, including embankments and abutment walls, conveyance tunnel to wood-stave penstock, overflow spillway tunnel, penstock, control center building, powerhouse, maintenance buildings, Copco Village, and associated staging areas, fill areas, and temporary access roads. The Daggett Road Bridge downstream from the village is also scheduled for replacement.
- In California, Iron Gate Dam and reservoir, diversion tunnel, intake structure, spillway, penstock/intake structure, fish holding facilities, power house, aerator, residential building, the Iron Gate Fish Hatchery, and associated fill, disposal, staging areas, and temporary access roads. The Lakeview Road Bridge is also scheduled for replacement, as is the City Yreka water supply pipeline, which crosses the Klamath River near the upstream end of the reservoir impounded behind Iron Gate Dam.

Non-reservoir area components of the ADI include features such as buildings, structures, and pedestrian and railroad bridges between Iron Gate Reservoir and Humbug Creek, in California, that may be affected by the altered 100-year flood plain. In Oregon and California, non-reservoir area components include roads that will be altered to account for increase project-related transport; culvert and bridge replacement areas; and proposed recreation areas and existing recreation areas that may be impacted due to adjustments required to access a river instead of a reservoir environment.

Humbug Creek, in California, is selected as a preliminary downstream boundary for the ADI based on the potential for structures above this point on the river to be within the altered 100-year floodplain following the removal of the dams. River areas below Humbug Creek are likely subject to less flooding (and less scour potential) from dam removal. There are an estimated 45 structures located in the altered 100-year floodplain between Iron Gate Dam and Humbug Creek with an additional 10 structures located near the altered floodplain. These structures should be subject to document review and potential National Register evaluation (including survey) as it is reasonable to anticipate effects on these properties directly resulting from dam removal and subsequent changes to the flood plain dynamics.

### 2.1.1 Level of Effort Discussion

The delineation of the ADI helps inform the level of identification efforts and methodologies to be employed to identify, evaluate, and treat historic properties. Within the ADI, historic properties identification efforts will focus on archival research, records searches, and literature review (largely completed for this area); pedestrian inventory of previously unsurveyed areas; gathering information from ethnographic research; consultation with tribes regarding TCPs, Indian Sacred Sites, and other areas of concerns; and consultation with other consulting parties. Each cultural resource identified within the ADI will be evaluated for National Register eligibility, and eligible resources (individual historic properties and/or historic districts) that are determined to be adversely affected by the project will require the development of mitigation measures that may include data recovery, site monitoring, Historic American Buildings Survey/Historic American Engineering Record (HABS/HAER) recordation, public interpretation, or other creative mitigation measures decided through ongoing consultation among interested parties. Many of these treatment considerations are captured in the 2017 CEQA Technical Support Document (KRRRC 2017) and in previous HPMPs, and effects analyses from earlier documentation involving the Klamath River Dams (BOR 2012; Cardno ENTRIX 2012; FERC 2007; and PacifiCorp 2004) and will be considered during consultation.

Outside the ADI, historic properties identification efforts will focus on archival research, records searches, and literature review. Known archaeological and built environment sites, as well as TCPs, Indian Sacred Sites, historic districts, and cultural landscapes will be identified to facilitate ongoing consultation and consideration of potential direct and indirect effects. Presently, no pedestrian field survey is recommended and no NRHP eligibility determinations are planned outside of the ADI.

## 3.0 REFERENCES

Bureau of Reclamation (BOR)

2012 U.S.D.I. Bureau of Reclamation and California Department of Fish and Game. Klamath Facilities Removal Final EIS/EIR.

Cardno ENTRIX

2012 Klamath Secretarial Determination Cultural Resources Report. Prepared for the Bureau of Reclamation.

Daniels, Brian I.

2006 Shasta Nation TCP Study. Klamath Hydroelectric Project FERC No. 2082. Submitted to PacifiCorp, Portland, Oregon.

Deur, Douglas

2003 Summary Report: Traditional Cultural Properties and Sensitive Resource Study – Klamath Tribes. Klamath Hydroelectric Project FERC No. 2082. Submitted to PacifiCorp, Portland, Oregon.

Federal Energy Regulatory Commission (FERC)

2007 Federal Energy Regulatory Commission. Final Environmental Impact Statement for Hydroelectric License, Klamath Hydroelectric Project FERC Project No. 2087-027, Oregon and California.

King, Thomas F.

2004 First Salmon: The Klamath Cultural Riverscape and the Klamath River Hydroelectric Project. Prepared for the Klamath River Intertribal Fish and Water Commission.

Klamath River Renewal Corporation (KRRRC)

2017 Klamath River Renewal Project California Environmental Quality Act (CEQA) and California and Oregon 401 Water Quality Certifications Technical Support Document.

PacifiCorp

2004 Cultural Resources Final Technical Report and Associated Confidential Appendices. Klamath Hydroelectric Project FERC No. 2082. PacifiCorp, Portland, Oregon.

## Attachment 3

### Preliminary Area of Potential Effects Map Set



May 3, 2018

Dennis Griffin  
State Archaeologist  
State Historic Preservation Office  
725 Summer St. NE, Suite C  
Salem, OR 97301

**RE: Initiation of Informal Consultation for the Lower Klamath Project (FERC No. 14803)**

Dear Mr. Griffin,

Klamath River Renewal Corporation (KRRC) and PacifiCorp request the initiation of informal consultation with the Oregon State Historic Preservation Office regarding the Lower Klamath Project (Project; FERC No. 14803) and your comments on the preliminary Area of Potential Effects (APE) defined for the Project by AECOM, our technical representative. Informal consultation is being requested under a November 10, 2016, "Notice of Applications Filed With the Commission" (Attachment 1) issued by the Federal Energy Regulatory Commission (FERC) which designated PacifiCorp and KRRC as the Commission's non-federal representative for carrying out informal consultation to help facilitate FERC's compliance with Section 106 of the National Historic Preservation Act (54 U.S.C § 300101 et seq.) and the Advisory Council's regulations at 36 C.F.R. § 800.2(c)(4). KRRC and PacifiCorp (Proponents) have submitted to FERC a License Surrender Application (LSA) for the Project. FERC considers review of the LSA an "undertaking" (36 C.F.R § 800.16(y)) and thus subject to Section 106 as implemented in 36 C.F.R. Part 800.

The Project seeks the decommissioning and removal of four dam developments (Iron Gate, Copco No. 1 and No. 2, and J.C. Boyle), located on the Klamath River, which are currently owned and operated by PacifiCorp. The J.C. Boyle development is located in Klamath County, Oregon, with the other three developments located in Siskiyou County, California. The purpose of the project is to achieve a free flowing river condition and full volitional fish passage through the reaches of the Klamath River currently impacted by the four dams.

This letter provides a summary of the Project's administrative background, a status update on informal consultation efforts conducted to date, a brief Project description, and a written definition of the preliminary APE, accompanied by maps. Your comments on the preliminary APE are requested at this time to help focus KRRC's and PacifiCorp's informal consultation efforts [36 C.F.R. § 800.2(c)(4)] with agencies, tribes, and other interested parties, as well as to focus that dialogue in more meaningful content for FERC's subsequent formal consultation process.

### Administrative Background

KRRC is a 501(c)(3) organization created by the Klamath Hydroelectric Settlement Agreement (KHSa), as amended in 2016, to decommission the four dam developments owned by PacifiCorp (see the attached APE map book for overview and detail maps showing the project location). PacifiCorp is a leading western U.S. energy services provider and the largest grid owner-operator in the West. For the Lower Klamath Project, KRRC is the transferee, while PacifiCorp is the transferor.

KRRC and PacifiCorp jointly filed a combined license amendment and license transfer application with FERC on September 23, 2016. The license amendment asked FERC to administratively remove the four dam developments from the Klamath Hydroelectric Project license (No. 2082). The transfer amendment asked that the four developments be administratively placed into a new license for the Lower Klamath Project (No. 14803). On March 15, 2018, FERC granted the license amendment application and deferred the license transfer, pending receipt of required additional information. On April 16, 2018, PacifiCorp filed a motion asking FERC to change the effective date for the new Lower Klamath license so splitting the license happens concurrently with the license transfer. PacifiCorp will continue to operate each of the four developments proposed as the Lower Klamath Project until the Commission approves the License Transfer Application and KRRC accepts the license.

KRRC filed a separate license surrender application on September 23, 2016 for Project No. 14803 that, if approved, would allow KRRC to decommission the four facilities. Under the amended KHSa, KRRC would oversee dam removal activities, which, if approved, are expected to begin in 2020 with dam removal occurring in 2021. PacifiCorp would continue to operate the dams until they are decommissioned.

### Consultation Status

KRRC and its technical representative, AECOM, have formed a Cultural Resources Working Group (CRWG) to compile information to assist FERC in its Section 106 compliance efforts. KRRC invited the participation of the representatives of California Office of Historic Preservation; Oregon State Historic Preservation Office; US Army Corps of Engineers; USDI Bureau of Reclamation; Klamath Falls and Redding Field Offices of the USDI Bureau of Land Management; USDA Klamath National Forest; and PacifiCorp. To date, the CRWG has participated in three teleconference calls where: a Project overview was provided (September 2017), a preliminary Area of Potential Effects was discussed (December 2017), and preliminary work plans for 2018 were reviewed (March 2018).

KRRC has also initiated informal consultation with Indian tribes. KRRC sent letters to 25 Indian tribes native to or currently residing in northern California and southern Oregon requesting their participation in

the informal consultation process. Eight Indian tribes (Karuk Tribe, Klamath Tribes, Modoc Tribe of Oklahoma, Quartz Valley Indian Rancheria, Shasta Indian Nation, Shasta Nation, Cher' Ae Heights of the Trinidad Rancheria, and Yurok Tribe) have confirmed their interest in participating in the informal consultation process. A Project introduction meeting with the participating Indian Tribes was held on April 6, 2018 in Yreka, California.

FERC conducted scoping meetings in January and February 2018 with six federally recognized Indian Tribes regarding the KRRC and PacifiCorp license amendment and transfer application. The tribes invited to the meetings include the Hoopa Valley Tribe, Karuk Tribe, Klamath Tribes, Modoc Tribe of Oklahoma, Quartz Valley Indian Rancheria, and Yurok Tribe.

As KRRC advances consultation with federal, state, and local agencies and Indian tribes, we will also be soliciting input about which other consulting parties may have knowledge or an interest in historic properties in the Project area. This outreach will include contacting local-level government entities, historical societies and museums, and other groups with a focus on historic preservation, history, and archaeology. We welcome suggestions from your office on additional entities that we should consider contacting.

#### Project Summary

The proposed Project includes the decommissioning and removal of four dam developments (Iron Gate, Copco No. 1 and No. 2, and J.C. Boyle) on the Klamath River. In September 2017, KRRC prepared a technical support document for the California State Water Resources Control Board (SWRCB) and the Oregon Department of Environmental Quality (ODEQ) for their use in preparing Clean Water Act Section 401 Water Quality Certifications required before FERC can issue a final surrender order for the Project. This document<sup>1</sup> also provided technical and field information for use in preparation of an Environmental Impact Report (EIR) consistent with the California Environmental Quality Act (CEQA). An Administrative Draft version of a Definite Plan<sup>2</sup> for Decommissioning was provided to the SWRCB in January 2018, providing an update on schedule and additional technical information. KRRC is currently preparing the Definite Plan for submittal to FERC in June 2018.

The year prior to removal of the dams and hydropower facilities, improvements to the diversion tunnels at Iron Gate Dam and Copco No. 1 dam, City of Yreka water supply line and intake, Iron Gate and Fall Creek fish hatcheries, roads and bridges, and flood mitigation features will be built (currently planned for 2020).

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<sup>1</sup> Available at:

[https://www.waterboards.ca.gov/waterrights/water\\_issues/programs/water\\_quality\\_cert/docs/lower\\_klamath\\_ferc14803/1\\_3\\_18\\_krrc\\_updated\\_submittal.pdf](https://www.waterboards.ca.gov/waterrights/water_issues/programs/water_quality_cert/docs/lower_klamath_ferc14803/1_3_18_krrc_updated_submittal.pdf)

<sup>2</sup> Available at:

[https://www.waterboards.ca.gov/waterrights/water\\_issues/programs/water\\_quality\\_cert/docs/lower\\_klamath\\_ferc14803/1\\_3\\_18\\_krrc\\_updated\\_submittal.pdf](https://www.waterboards.ca.gov/waterrights/water_issues/programs/water_quality_cert/docs/lower_klamath_ferc14803/1_3_18_krrc_updated_submittal.pdf)

Prior to dam removal, the water surface elevation in each reservoir will be drawn down as low as possible to facilitate accumulated sediment evacuation and to create a dry work area for facility removal activities. In general, drawdown will begin on January 1 of the drawdown year (currently planned for 2021), and will extend through March 15 of the same year. After drawdown is accomplished, remaining reservoir sediments will be stabilized to the extent feasible and dam and hydropower facility removal will begin in the same year. Full reservoir area restoration will also be accomplished and will begin after drawdown, and extend throughout the year, and possibly extend into the subsequent year. Vegetation establishment could extend several years.

Other key project components include measures to reduce Project related effects to cultural, aquatic, and terrestrial resources; and development of a recreation plan for existing and possibly new developments.

Changes or refinements to the Project description, resulting from new information, updated analysis, or new project components, will be incorporated into future correspondence and documents provided to your office and discussed during CRWG meetings.

#### Contact Information

If you have any questions or would like any additional information, please contact me, Mark Bransom, at the number or e-mail listed below, or Elena Nilsson, AECOM cultural resources lead, at [elena.nilsson@aecom.com](mailto:elena.nilsson@aecom.com) (530-893-9675 ext. 1231).

Thank you for your support of this effort. We look forward to continuing our work with you.

Best regards,



Mark Bransom,  
Executive Director, KRRC

[mark@klamathrenewal.org](mailto:mark@klamathrenewal.org)  
415-820-4441

#### Attachments

1. FERC Notice of Applications Filed with the Commission
2. Preliminary APE Description
3. Preliminary APE Map Set

## Attachment 1

### FERC Notice of Applications Filed with the Commission

UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION

PacifiCorp  
Klamath River Renewal Corporation

Project No. 2082-062  
Project No. 2082-063  
Project No. 14803-000  
Project No. 14803-001

NOTICE OF APPLICATIONS FILED WITH THE COMMISSION

(November 10, 2016)

Take notice that the following hydroelectric applications have been filed with the Commission and are available for public inspection:

- a. Types of Applications: Application for Amendment and Partial Transfer of License;  
Application for Surrender of License
- b. Project Nos.: 2082-062 and 14803-000 (amendment and transfer application);  
2082-063 and 14803-001 (surrender application)
- c. Date Filed: September 23, 2016
- d. Applicants: For license amendment and transfer:  
PacifiCorp (transferor) and  
Klamath River Renewal Corporation (transferee)  
  
For license surrender:  
Klamath River Renewal Corporation
- e. Name of Projects: Klamath Project (P-2082)  
  
Lower Klamath Project (P-14803)
- f. Locations: Klamath Project - on the Klamath River in Klamath County, Oregon, and on the Klamath River and Fall Creek in Siskiyou County, California. The project includes about 477 acres of federal lands administered by the Bureau of Reclamation and the Bureau of Land Management.



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Lower Klamath Project - on the Klamath River in Klamath County, Oregon, and Siskiyou County, California. The project would include about 395 acres of federal lands administered by the Bureau of Land Management.

- g. Filed Pursuant to: Federal Power Act, 16 USC 791a-825r.
- h. Applicants Contact: Sarah Kamman, Vice President and General Counsel, PacifiCorp, 825 NE Multnomah Street, Suite 2000, Portland, OR 97232, (503) 813-5865, [sarah.kamman@pacificorp.com](mailto:sarah.kamman@pacificorp.com)  
  
Michael Carrier, President, Klamath River Renewal Corporation, 423 Washington Street, 3<sup>rd</sup> Floor, San Francisco, CA 94111, (415) 820-4441, [michael@klamathrenewal.org](mailto:michael@klamathrenewal.org)
- i. FERC Contacts: Amendment and Transfer: Steve Hocking, (202) 502-8753, [Steve.Hocking@ferc.gov](mailto:Steve.Hocking@ferc.gov)  
  
Surrender: John Mudre: (202) 502-8902, [john.mudre@ferc.gov](mailto:john.mudre@ferc.gov)
- j. Description of Amendment and Transfer Request: The applicants request that the Commission transfer the J.C. Boyle, Copco No. 1, Copco No. 2, and Iron Gate developments of the existing Klamath Project No. 2082 from PacifiCorp to the Klamath River Renewal Corporation (Renewal Corporation) and create a new project, the Lower Klamath Project, for the transferred developments with the Renewal Corporation as the sole licensee. PacifiCorp requests that the license for Project No. 2082 be amended to delete references to the four transferred developments. The applicants state that they will make a supplemental filing on or before March 1, 2017, demonstrating the legal, technical, and financial capabilities of the Renewal Corporation to perform its responsibilities as transferee. Applicants further request that the Commission act on the amendment and transfer application by December 31, 2017, and allow the Renewal Corporation six months from the issuance date of the order approving transfer to submit proof of its acceptance of license transfer.
- k. Description of Surrender Request: The Renewal Corporation's request to surrender and decommission the Lower Klamath Project, including removal of the project dams is contingent upon a Commission order amending PacifiCorp's existing Klamath Project (P-2082) license to create a new project, the Lower Klamath Project, and transferring the Lower Klamath Project to the Renewal Corporation, as described in item (j), above. The Lower Klamath Project, as envisioned by the Renewal Corporation, would consist of the J.C. Boyle, Copco No. 1, Copco No. 2, and Iron Gate developments of the existing Klamath Project No. 2082, and the Renewal Corporation would be the sole licensee. The

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Renewal Corporation requests that the Commission not act on this request until it is ready to accept license transfer and states that it will file, by December 31, 2017, its decommissioning plan to serve as the basis for Commission staff's environmental and engineering review of the surrender application. Because only a licensee may file to surrender a license and the Commission does not accept contingent applications, the surrender application is deemed to be filed by both PacifiCorp and the Renewal Corporation. *See* 18 C.F.R. §§ 6.1 and 4.32(j). Therefore, while action on the amendment and transfer application is pending, the Commission will maintain both applications in the dockets for both project numbers. If the Commission approves the transfer and the Renewal Corporation accepts the license, following which the Renewal Corporation would become the sole licensee, the surrender proceeding would continue solely in Project No. 14803.

l. With this notice, we are initiating informal consultation with: (a) the U.S. Fish and Wildlife Service and NOAA Fisheries under section 7 of the Endangered Species Act and the joint agency implementing regulations at 50 C.F.R. Part 402; (b) NOAA Fisheries under section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act and implementing regulations at 50 CFR § 600.920; and (c) the California and Oregon State Historic Preservation Officers, as required by section 106 of the National Historic Preservation Act, and the implementing regulations of the Advisory Council on Historic Preservation at 36 C.F.R. Part 800.

m. With this notice, we are designating PacifiCorp and the Renewal Corporation as the Commission's non-federal representative for carrying out informal consultation, pursuant to section 7 of the Endangered Species Act, section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act, and section 106 of the National Historic Preservation Act and the Advisory Council's regulations at 36 C.F.R. § 800.2(c)(4).

n. Locations of the Applications: Copies of the applications are available for inspection and reproduction at the Commission's Public Reference Room, located at 888 First Street, NE, Room 2A, Washington, DC 20426, or by calling (202) 502-8371. These filings may also be viewed on the Commission's website at <http://www.ferc.gov/docs-filing/elibrary.asp>. Enter the docket number excluding the last three digits in the docket number field to access the document. You may also register online at <http://www.ferc.gov/docs-filing/esubscription.asp> to be notified via email of new filings and issuances related to this or other pending projects. For assistance, call 1-866-208-3676 or e-mail [FERCOnlineSupport@ferc.gov](mailto:FERCOnlineSupport@ferc.gov), for TTY, call (202) 502-8659. Copies are also available for inspection and reproduction at the addresses in item (h), above.

o. Individuals desiring to be included on the Commission's mailing list for these proceedings should so indicate by writing to the Secretary of the Commission.



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p. Additional Information: We are not requesting comments at this time. After receiving the applicants' supplemental filings on or before March 1, 2017, for the license transfer and December 31, 2017, for the surrender, the Commission will issue notices requesting comments, protests, and motions to intervene.

Kimberly D. Bose,  
Secretary

## Attachment 2

### Preliminary Area of Potential Effects Description

# Preliminary APE for the Lower Klamath Project License Surrender Application (FERC Project No. 14803)

## 1.0 INTRODUCTION

### 1.1 Regulatory Context for Establishing an APE

The implementing regulations of the NHPA, require that the federal agency determine if its undertaking has the potential to cause effects on historic properties<sup>3</sup> (36 CFR 800.3(a)). This is accomplished in part by determining and documenting the Area of Potential Effects (APE) (36 CFR 800.4(a)(1)). The APE means the “geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist.” Furthermore, the APE “is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking” (36 CFR 800.16(d)). Once an APE is defined, the scope of identification efforts within the APE can be determined. This document is intended to provide guidance to facilitate APE consultations.

### 1.2 APE, Study Area, Project Area, and FERC Project Boundary

The APE is distinct and different from other project-defined “areas” that are often referred to in discussion. For example, background research on known archaeological sites may encompass a broader geographic area referred to as the “**Study Area**.” The study area for cultural resources<sup>4</sup> may be larger than the APE and is designed to allow for the retrieval of information about known sites, site types, buildings, structures, objects, districts, ethnographic landscape features, land use patterns from prehistoric and historic eras, as well as Traditional Cultural Properties (TCPs) and Indian Sacred Sites.<sup>5</sup> Background research may include resources from outside this area, particularly broader ethnographic and historic overviews that provide context for the resources identified in the Study Area. To date, KRRC has completed an updated records search for a Study Area that includes the length of the Klamath River from its origin at the southern end of Upper Klamath Lake, in Oregon, to the mouth of the river at the Pacific Ocean. This Study Area comprises a 0.5-mile wide zone extending either side of the reservoir shorelines (J.C. Boyle, Copco Lake, and Iron Gate Reservoir) or from the center point of the Klamath River in areas where the river remains flowing.

The “**Project Area**” is also distinct from the APE. For this discussion, the Project Area refers specifically to the *Project Limits of Work and Access* as defined on maps included with the project’s California Environmental Quality Act (CEQA) and California and Oregon Section 410 Water Quality

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<sup>3</sup> 36 CFR 800.16 defines a historic property as any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria.

<sup>4</sup> Cultural resources are those tangible and intangible aspects of human cultural systems, both past and present, that are valued by or representative of a given culture, or that contain information about a culture.

<sup>5</sup> The definition of an Indian Sacred Site is governed by Executive Order 13007 of May 24, 1996. The order defines an Indian Sacred Site as: Any specific, discrete, narrowly delineated location on federal land that is identified by an Indian tribe, or Indian individual determined to be an appropriately authoritative representative of an Indian religion, as sacred by virtue of its established religious significance to, or ceremonial use by, an Indian religion; provided that the tribe or appropriately authoritative representative of an Indian religion has informed the agency of the existence of such a site. It is the Tribe or the traditional religious practitioner of the Tribe, not the federal government that identifies a sacred site.

Certifications Technical Support Document (KRRRC 2017). The preliminary APE (defined below) includes the entirety of the Project Area.

Lastly, the “**FERC Project Boundary**” which includes the geographic extent of the Klamath Hydropower Project (FERC #2082) included the geographic area a licensee must own or control on behalf of its licensed hydropower projects and is likewise distinct from the APE. Due to FERC’s jurisdiction, the FERC Project Boundary for the Lower Klamath Project (FERC Project No. 14803) is wholly included within the preliminary APE.

**Table 1. Area Terms Ordered According to Diminishing Size.**

Term	Description
Study Area	<ul style="list-style-type: none"> <li>• Larger than APE to better understand cultural context.</li> <li>• The length of the Klamath River from the highest reach of the J.C. Boyle Reservoir downstream to Humbug Creek (83 river miles) and a 0.5-mile wide zone extending on either side of the reservoir shorelines (J.C. Boyle, Copco Lake, and Iron Gate Reservoir) or from the center point of the Klamath River in areas where the river remains flowing.</li> </ul>
Area of Potential Effects (APE)	<ul style="list-style-type: none"> <li>• The geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist (36 CFR 800.16(d)). (See Project-specific definition below).</li> </ul>
Project Area	<ul style="list-style-type: none"> <li>• Sometimes referred to as the “direct APE.” Also called the “Project Limits of Work and Access” as defined on maps included with the 2017 “Klamath River Renewal Project Technical Support Document” (KRRRC 2017).</li> </ul>
FERC Project Boundary	<ul style="list-style-type: none"> <li>• The jurisdictional limits of the FERC hydroelectric license and located entirely within the APE. For this Project, the FERC Project Boundary refers to the limits of the Lower Klamath Project (FERC Project No. 14803).</li> </ul>

### 1.3 Previous Iterations of the APE

Previous FERC license applications, National Environmental Policy Act (NEPA) Environmental Impact Statements (EIS), California Environmental Quality Act (CEQA) Environmental Impact Reports (EIR), and Section 106 of the National Historic Preservation Act (Section 106) compliance reports, related to the relicensing, operation, and/or decommissioning of the Klamath Hydroelectric Project (FERC Project No. 2082) have produced varying definitions of the APE. This is primarily due to the varying scopes of the projects.

The 2004 PacifiCorp relicensing project involved all eight of the Klamath Hydroelectric Project developments, including the decommissioning of the East Side and West Side developments, the removal of the Keno development, and continued operations of the J. C. Boyle, Copco No. 1, Copco No. 2, Iron Gate, and Fall Creek developments. In contrast, the later 2012 Klamath Facilities Removal focused exclusively on the removal of four of PacifiCorp's Klamath River developments - J.C. Boyle, Copco No. 1, Copco No. 2, and Iron Gate – and did not consider the remaining Klamath Hydroelectric Project developments (East Side, West Side, Keno, and Fall Creek). Table 2 summarizes the APEs identified in previous Klamath Hydroelectric Project cultural resources studies.

**Table 2. Summary of Klamath River Project Previous APE Iterations.**

Reference	APE Description
PacifiCorp 2004 (License Application Exhibit E Page 6-33; PacifiCorp 2004:121-122)	<ul style="list-style-type: none"> <li>• <u>PacifiCorp APE</u>: All lands within the FERC Project boundary under the existing license, all lands within the PacifiCorp proposed FERC Project boundary for the new license, and river reaches below each Project development. Included proposed Project hydropower facilities, recreation sites, proposed wildlife enhancement lands, and river reaches between Project developments.</li> <li>• Cultural Resources Working Group (CRWG) APE: Included the FERC Project boundary, riparian and hydrologically connected areas along Project-affected reaches, and culturally sensitive lands within the Klamath River Canyon from ridgetop to ridgetop (rim to rim).</li> <li>• <u>PacifiCorp and CRWG Compromise</u>: Field Inventory Corridor (FIC) studied instead of an APE. FIC covered the area between the outlet of Upper Klamath Lake (River Mile [RM] 254.7) downstream to approximately 1 mile southwest of the Iron Gate dam (RM 189.2).</li> <li>• Downriver tribes (Karuk and Yurok) felt the APE should be more broadly defined to extend from Iron Gate down to the mouth of the Klamath River (at the Pacific Ocean) due to potential Project effects on salmon fisheries and other (non-archaeological) cultural resources along the Klamath River corridor.</li> </ul>
PacifiCorp 2006 Revised APE (FERC 2007 EIS/EIR (Page 3-539)	<ul style="list-style-type: none"> <li>• Based on proposal to decommission East Side and West Side developments and to remove Keno development from the project.</li> <li>• Excluded Keno reservoir, the Klamath River from Keno reservoir to the head of J.C. Boyle reservoir, and the river</li> </ul>

Reference	APE Description
	reach from just below J.C. Boyle powerhouse to the Oregon-California state line.
FERC 2007 EIS/EIR (Page 3-551)	<ul style="list-style-type: none"> <li>Entirety of the APE as delineated by PacifiCorp in its October 2004 draft HPMP and that portion of the Klamath River reach from Iron Gate to the mouth.</li> </ul>
Bureau of Reclamation 2012 EIS/EIR (Section 3.13.1 Area of Analysis)	<ul style="list-style-type: none"> <li>The Klamath River from the outlet at Keno Dam to the river's outlet at the Pacific Ocean and extending outward for 0.5 miles from each bank of the river, plus a 0.5-mile-wide corridor from the high water mark surrounding each of the four reservoirs, and all four dams and associated facilities.</li> </ul>

PacifiCorp's 2004 APE designated for the relicensing project included all proposed hydropower developments, recreation sites, proposed wildlife enhancement lands, and river reaches between the various Klamath Hydroelectric Project developments. This covered all lands within the FERC Project boundary under the existing license, all lands within the PacifiCorp proposed FERC Project boundary for the new license, and river reaches below each Project development. The archaeological survey conducted for the PacifiCorp relicensing study focused on a broader "field inventory corridor" (FIC) based on input from the Cultural Resource Working Group, including the tribes, who felt the APE should be considerably larger than the FERC Project boundary. The FIC comprised the area between the outlet of Upper Klamath Lake (River Mile [RM] 254.7) downstream to approximately 1 mile southwest of the Iron Gate dam (RM 189.2), as river geomorphology studies indicated little to no effect on downstream river bank erosion beyond Interstate 5 for the project as then defined. Therefore, the 2004 APE extended a short distance downstream from Iron Gate dam to just below the Iron Gate fish hatchery.

FERC's 2007 Final Environmental Impact Statement (FEIS) for the hydroelectric facility relicensing followed the extent of the 2004 APE and reported that PacifiCorp subsequently proposed another APE (March 2006). In a revised Historic Properties Management Plan (HPMP), PacifiCorp defined a revised APE that reflected its proposal to decommission the East and West Side developments and to remove Keno development from the project. This revised APE also excluded Keno Reservoir, the Klamath River to the head of J.C. Boyle Reservoir, and the river reach from just below the J.C. Boyle powerhouse to the Oregon-California state line. The FEIS stated that neither the Oregon nor the California SHPO had concurred with either the 2004 or the 2006 versions of the APE. The APE at that time essentially conformed to PacifiCorp's proposed project boundary, and the FEIS analysis noted that the 2004 version was generally consistent with the customary minimum APE. The revised 2006 version, however, excluded lands that FERC would need to consider as part of the APE and thus assess how historic properties would be affected. The 2007 FEIS stipulated that the APE would appropriately encompass (1) the entirety of the 2004 APE as delineated by PacifiCorp in the 2004 Draft HPMP and (2) that portion of the Klamath River reach from Iron Gate Dam to the mouth. The expanded APE was justified by the potential for effects on riparian vegetation that could result in destabilized shorelines and subsequent erosion of archaeological sites. The expansion would also allow FERC to consider potential project effects on TCPs, specifically on the Klamath Cultural Riverscape in which the totality of natural environment is a contributing element.

Finally, in 2012, the Bureau of Reclamation (BOR) and the California Department of Fish and Game completed the Klamath Facilities Removal Environmental Impact Statement/Environmental Impact Report (EIS/EIR) that offered another version of the APE. This version largely built on the 2007 FERC definition and offered an “Area of Analysis” that extended along the Klamath River from Keno Dam downstream to the Pacific Ocean and included a half-mile-wide buffer around this extent. The Klamath Facilities Removal APE offered the broadest geographic area yet considered for potential impacts on cultural resources and incorporated the concept of a FIC into the Area of Analysis.

In defining the preliminary APE for the Klamath River Renewal Project (see below), each of these related APEs was considered to provide a balanced definition that reflects APE boundaries defined in previous environmental documents, as well as those informally discussed in the CRWG meetings.

## 2.0 PRELIMINARY APE FOR THE LOWER KLAMATH PROJECT LICENSE SURRENDER APPLICATION

Defining an APE provides both the lead federal agency and consulting parties with a basis for understanding the geographic extent of anticipated impacts of the proposed project, which is necessary to determine whether the project may adversely affect historic properties. The different types of potential effects that may be caused by dam decommissioning have resulted in defining an Area of Direct Impacts (ADI) within the preliminary APE that delineates where there are anticipated direct physical impacts, particularly areas subject to ground disturbance such as dam facility removal and reservoir restoration activities. The ADI corresponds with the “Project Area” or the *Project Limits of Work and Access* as discussed in other documents. The distinction of an ADI also helps inform discussions regarding level of effort for cultural resources surveys and NRHP eligibility evaluations.

The preliminary APE is defined as a 0.5-mile wide area on each side of the Klamath River and the current reservoir limits, extending from the upper reach of J.C. Boyle Reservoir (RM 228) in Oregon, to the river mouth at the Pacific Ocean (RM 0), in California. Attachment 3 provides the location of the preliminary APE. This geography represents a complex array of natural and cultural features that collectively represent what has been termed a cultural riverscape associated with significant patterns of events in the traditional histories of the Yurok, Karuk, Hupa, Shasta, and Klamath Tribes (King 2004). This riverscape may include known archaeological or historical sites, TCPs, Sacred Sites, natural features of cultural importance, wildlife, the waterway itself, and other features. The riverscape has been defined as a place that meets the eligibility criteria and retains sufficient integrity for inclusion on the NRHP (King 2004). Although the Oregon and California SHPOs have not concurred with this NRHP eligibility recommendation, the riverscape concept is a useful construct for ensuring that the current Project considers the possibility of indirect effects within the river canyon area outside of the ADI. The Klamath Riverscape concept also acknowledges the crucial and significant role that the river and its environs play in the lifeway practices of multiple Indian tribes.

The preliminary APE is largely consistent with the APE’s defined by FERC (2007) and BOR (2012) (see Table 2). FERC’s 2007 APE encompassed the entirety of the APE delineated by PacifiCorp in their October 2004 HPMP <sup>6</sup> and that portion of the Klamath river reach from Iron Gate dam to the mouth. The BOR’s 2012 APE included the Klamath River from the outlet at Keno Dam to the river’s outlet at the Pacific Ocean.

This project’s preliminary APE similarly extends along the Klamath River to its mouth at the Pacific Ocean, but excludes a 26-mile stretch from the northern end of J.C. Boyle Reservoir (RM 228) to

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<sup>6</sup> All lands within the FERC Project boundary under the existing license, all lands within the PacifiCorp proposed FERC Project boundary for the new license, and river reaches below each Project development.

Upper Klamath Lake (RM 254). This northernmost area has been omitted from the preliminary APE for a number of reasons: (1) it is outside the FERC jurisdictional boundary for the Lower Klamath Project (FERC No. 14803); (2) as currently understood, the northernmost area would not be affected by the undertaking (i.e., the water levels upriver from the northern end of J.C. Boyle Reservoir won't change and/or the downriver dam removals would not trigger changes to these upriver facilities either directly or operationally); and (3) other upriver hydroelectric facilities (Link River Dam and Keno Dam) would remain part of the Klamath Hydroelectric Project (FERC No. 2082) and continue operations under existing licenses, permits, and/or agreements between private entities and/or federal agencies.

The preliminary APE encompasses a Traditional Cultural Property (TCP) composed of seven locations in the Big Bend, Oregon area identified by Klamath Tribes consultants for the FERC relicensing project (Deur 2003). Other TCPs were identified by the Klamath Tribes consultants upstream (outside) of the preliminary APE, on the Klamath River, north of J.C. Boyle Reservoir, and in the Sprague River, Williamson River, Wood River, and Upper Klamath Lake basin. The preliminary APE also comprises the locations of TCPs and Sensitive Cultural Resources (SCRs) identified by the Shasta Nation for the FERC relicensing project (Daniels 2006).

In defining the APE, it is not necessary to know if effects will occur, only that they may occur based on KRRC's current analysis of the proposed actions. To ensure the consideration of possible downstream effects on the river below Iron Gate Dam, as well as within the river reaches between J.C. Boyle Reservoir and Copco Lake, a geographically broad APE is proposed. This APE also allows for consideration of potential direct and indirect effects on the surrounding cultural landscape, the potentially NRHP-eligible Klamath Riverscape and other identified TCPs, Sacred Sites, and historic districts located within the Klamath River Canyon.

The potential for direct or indirect impacts in areas outside the Klamath River Canyon is considered unlikely. For example, while the removal of water from the J.C. Boyle, Copco No. 1, Copco No. 2, and Iron Gate reservoirs may result in indirect visual impacts due to the unnatural looking unvegetated ring around the former reservoirs, this impact does not necessarily expand beyond the historic properties located along the river corridor and its immediate environs, which comprises a varied topography that ranges from steep canyons to low hills that limit the potential for indirect effects. Given the visual and auditory screening imposed by these land forms and the nature of the facilities, the project is not expected to result in auditory, atmospheric, or other indirect changes that may affect cultural resource locations beyond the preliminary APE boundary.

## 2.1 Area of Direct Impacts (ADI)

The ADI defined within the preliminary APE includes two primary components that largely correspond geographically to the *Project Limits of Work and Access* as presented in the project's California Environmental Quality Act (CEQA), California, and Oregon 410 Water Quality Certifications Technical Support Document (KRRC 2017), with the inclusion of a few isolated areas. Attachment 3 includes maps showing the location of the proposed ADI components. The ADI may be updated to reflect ongoing changes in project engineering, such as the specific location of disposal areas and access roads, as well as information learned through the tribal consultation process.

Within Oregon, the ADI comprises the *Project Limits of Work and Access* associated with the decommissioning of J.C. Boyle Dam and its associated facilities. ADI lands include discontinuous areas located between the upper reach of the J.C. Boyle Reservoir (RM 228) and RM 220, as shown on Attachment 3, Sheets 1-4. The ADI within California encompasses a roughly continuous, 33-mile long area located between the eastern end of Copco Lake (RM 204) and Humbug Creek (RM 171), as shown on Attachment 3, Sheets 11-23.



The two primary components of the ADI include:

1. Existing dam facility sites, associated reservoirs and water conveyance systems, and features related to the original components of the Klamath Hydroelectric Project (FERC No. 2082).
2. Project components outside of the immediate reservoir and facility areas, including disposal areas, staging areas, access roads, former recreation areas, culvert and bridge replacement areas, road improvement areas, and unique isolated components, such as bridges (pedestrian and railroad), transmission lines, and substations that will likely need to be removed, raised, or monitored. This component would also include any new recreation sites developed along the river. It also includes lands below Iron Gate dam to Humbug Creek within the projected altered 100-year floodplain.

Secondary components of the ADI are listed below. This list is subject to change as project planning advances.

- In Oregon, J.C. Boyle Dam and Reservoir, including intake structure, spillway, dam, timber bridge, fish ladder, canal headgate, and the warehouse, shed, and residential buildings. Downstream from the dam, the J.C. Boyle work area includes the canal, forebay, spillway, scour hole, tunnel, penstocks, powerhouse, and substation. This area is inclusive of staging areas, temporary access roads, and fill and disposal areas.
- In California, Copco No. 1 Dam and reservoir, abutment/intake structure, penstocks, powerhouse, diversion tunnel, switchyard, and the residential and maintenance buildings, associated staging and disposal areas, and temporary access roads.
- In California, Copco No. 2 Dam, including embankments and abutment walls, conveyance tunnel to wood-stave penstock, overflow spillway tunnel, penstock, control center building, powerhouse, maintenance buildings, Copco Village, and associated staging areas, fill areas, and temporary access roads. The Daggett Road Bridge downstream from the village is also scheduled for replacement.
- In California, Iron Gate Dam and reservoir, diversion tunnel, intake structure, spillway, penstock/intake structure, fish holding facilities, power house, aerator, residential building, the Iron Gate Fish Hatchery, and associated fill, disposal, staging areas, and temporary access roads. The Lakeview Road Bridge is also scheduled for replacement, as is the City Yreka water supply pipeline, which crosses the Klamath River near the upstream end of the reservoir impounded behind Iron Gate Dam.

Non-reservoir area components of the ADI include features such as buildings, structures, and pedestrian and railroad bridges between Iron Gate Reservoir and Humbug Creek, in California, that may be affected by the altered 100-year flood plain. In Oregon and California, non-reservoir area components include roads that will be altered to account for increase project-related transport; culvert and bridge replacement areas; and proposed recreation areas and existing recreation areas that may be impacted due to adjustments required to access a river instead of a reservoir environment.

Humbug Creek, in California, is selected as a preliminary downstream boundary for the ADI based on the potential for structures above this point on the river to be within the altered 100-year floodplain following the removal of the dams. River areas below Humbug Creek are likely subject to less flooding (and less scour potential) from dam removal. There are an estimated 45 structures located in the altered 100-year floodplain between Iron Gate Dam and Humbug Creek with an additional 10 structures located near the altered floodplain. These structures should be subject to document review and potential National Register evaluation (including survey) as it is reasonable to anticipate effects on these properties directly resulting from dam removal and subsequent changes to the flood plain dynamics.

### 2.1.1 Level of Effort Discussion

The delineation of the ADI helps inform the level of identification efforts and methodologies to be employed to identify, evaluate, and treat historic properties. Within the ADI, historic properties identification efforts will focus on archival research, records searches, and literature review (largely completed for this area); pedestrian inventory of previously unsurveyed areas; gathering information from ethnographic research; consultation with tribes regarding TCPs, Indian Sacred Sites, and other areas of concerns; and consultation with other consulting parties. Each cultural resource identified within the ADI will be evaluated for National Register eligibility, and eligible resources (individual historic properties and/or historic districts) that are determined to be adversely affected by the project will require the development of mitigation measures that may include data recovery, site monitoring, Historic American Buildings Survey/Historic American Engineering Record (HABS/HAER) recordation, public interpretation, or other creative mitigation measures decided through ongoing consultation among interested parties. Many of these treatment considerations are captured in the 2017 CEQA Technical Support Document (KRRRC 2017) and in previous HPMPs, and effects analyses from earlier documentation involving the Klamath River Dams (BOR 2012; Cardno ENTRIX 2012; FERC 2007; and PacifiCorp 2004) and will be considered during consultation.

Outside the ADI, historic properties identification efforts will focus on archival research, records searches, and literature review. Known archaeological and built environment sites, as well as TCPs, Indian Sacred Sites, historic districts, and cultural landscapes will be identified to facilitate ongoing consultation and consideration of potential direct and indirect effects. Presently, no pedestrian field survey is recommended and no NRHP eligibility determinations are planned outside of the ADI.

## 3.0 REFERENCES

Bureau of Reclamation (BOR)

2012 U.S.D.I. Bureau of Reclamation and California Department of Fish and Game. Klamath Facilities Removal Final EIS/EIR.

Cardno ENTRIX

2012 Klamath Secretarial Determination Cultural Resources Report. Prepared for the Bureau of Reclamation.

Daniels, Brian I.

2006 Shasta Nation TCP Study. Klamath Hydroelectric Project FERC No. 2082. Submitted to PacifiCorp, Portland, Oregon.

Deur, Douglas

2003 Summary Report: Traditional Cultural Properties and Sensitive Resource Study – Klamath Tribes. Klamath Hydroelectric Project FERC No. 2082. Submitted to PacifiCorp, Portland, Oregon.

Federal Energy Regulatory Commission (FERC)

2007 Federal Energy Regulatory Commission. Final Environmental Impact Statement for Hydroelectric License, Klamath Hydroelectric Project FERC Project No. 2087-027, Oregon and California.

King, Thomas F.

2004 First Salmon: The Klamath Cultural Riverscape and the Klamath River Hydroelectric Project. Prepared for the Klamath River Intertribal Fish and Water Commission.

Klamath River Renewal Corporation (KRRRC)

2017 Klamath River Renewal Project California Environmental Quality Act (CEQA) and California and Oregon 401 Water Quality Certifications Technical Support Document.

PacifiCorp

2004 Cultural Resources Final Technical Report and Associated Confidential Appendices. Klamath Hydroelectric Project FERC No. 2082. PacifiCorp, Portland, Oregon.

## Attachment 3

### Preliminary Area of Potential Effects Map Set

June 7, 2018

Julianne Polanco  
State Historic Preservation Officer  
Office of Historic Preservation  
1725 23<sup>rd</sup> Street, Suite 100  
Sacramento, CA 95816-7100

Re: Response to Letter Dated June 1, 2018: Initiation of Consultation and Preliminary Area of Potential Effect, Lower Klamath Project (FERC NO. 14803) Siskiyou County, CA – SHPO File # FERC\_2018\_0507\_001

Dear Ms. Polanco,

Thank you for providing your written comments on the Klamath River Renewal Corporation's (KRRC) request for initiation of consultation and presentation of the preliminary area of potential effect (APE) for the Lower Klamath Project (FERC No. 14803) located in Siskiyou County, California and Klamath County, Oregon. This letter serves as confirmation that KRRC has received your comments. The input you have provided will assist with project compliance with Section 106 of the National Historic Preservation Act of 1966 (54 U.S.C. 306108) as implemented in 36 CFR Part 800. In addition, your comments will help KRRC further refine the APE and address concerns. They will also serve as a foundation for future Section 106 consultation through the Cultural Resources Working Group (CRWG) and will be shared with participating federal agencies, tribes, and consulting parties.

If you have any questions or comments, or would like any additional information, please contact me, Mark Bransom, at the phone number or e-mail listed below, or Elena Nilsson, AECOM cultural resources lead, at [elena.nilsson@aecom.com](mailto:elena.nilsson@aecom.com) (530-893-9675).

Sincerely,



Mark Bransom,  
Executive Director, KRRC

[mark@klamathrenewal.org](mailto:mark@klamathrenewal.org)  
415-820-4441

Cc: Kathleen Forrest, California SHPO  
Brendon Greenaway, California SHPO  
Jessica Gabriel, Oregon SHPO  
Dennis Griffin, Oregon SHPO  
Jeanne Goetz, Klamath National Forest  
Eric Ritter, BLM  
Russ Howison, PacifiCorp  
Elena Nilsson, AECOM

July 23, 2018

Dennis Griffin  
State Archaeologist  
State Historic Preservation Office  
725 Summer Street NE, Suite C  
Salem, OR 97031

Re: Response to Letter Dated June 28, 2018: Initiation of Consultation and Preliminary Area of Potential Effects (APE), Lower Klamath Project (FERC NO. 14803) Siskiyou County, CA and Klamath County, OR – SHPO Case No. 17-1370

Dear Mr. Griffin,

Thank you for providing your written comments on Klamath River Renewal Corporation's (KRRRC) request for initiation of consultation and presentation of the preliminary APE for the Lower Klamath Project (FERC No. 14803) located in Siskiyou County, California, and Klamath County, Oregon. This letter serves as confirmation that KRRRC has received your comments. The input you have provided will assist with project compliance with Section 106 of the National Historic Preservation Act of 1966 (54 U.S.C. 306108) as implemented in 36 CFR Part 800. In addition, your comments will help KRRRC further refine the APE and address concerns. They will also serve as a foundation for future Section 106 consultation through the Cultural Resources Working Group (CRWG) and will be shared with participating federal agencies, tribes, and consulting parties.

If you have any questions or comments, or would like any additional information, please contact me, Mark Bransom, at the phone number or e-mail listed below, or Elena Nilsson, AECOM cultural resources lead, at [elena.nilsson@aecom.com](mailto:elena.nilsson@aecom.com) (530-893-9675).

Sincerely,



Mark Bransom,  
Executive Director, KRRRC

[mark@klamathrenewal.org](mailto:mark@klamathrenewal.org)  
415-820-4441

cc: Elena Nilsson, AECOM







Oregon  
Kate Brown, Governor

Parks and Recreation Department  
State Historic Preservation Office  
725 Summer St NE Ste C  
Salem, OR 97301-1266  
Phone (503) 986-0690  
Fax (503) 986-0793  
[www.oregonheritage.org](http://www.oregonheritage.org)



June 28, 2018

Mr. Mark Bransom  
Klamath River Renewal Corp  
, OR

RE: SHPO Case No. 17-1370  
FERC 14803, KRRC Lower Klamath Project,  
Removal of dams Oregon and California  
Multiple locations, Klamath County

Dear Mr. Bransom:

Our office has recently received a letter from your agency requesting concurrence regarding your Area of Potential Effect (APE) boundaries for the project referenced above. Upon review of your letter/ document, our office has a few comments regarding the boundaries of the project's APE and ADI, as defined in your letter. Our questions include:

1. Section 2.0 - The proposed APE is said to encompass a TCP composed of seven locations in the Big Bend, Oregon area. I do not believe that this TCP has ever been formally recognized or evaluated and our office would like additional information regarding the history, location and extent of this property in order to understand how the proposed project will both encompass the TCP and may impact this property. Deur's 2003 report earmarked seven general areas along the river, downstream from Big Bend but the description of each of these areas is not well defined nor have they been discussed in any detail. They are said to include major villages and trading centers, the east and west canyon rims, area ridges and gathering areas important to the Klamath people. How does your office feel that the proposed APE can adequately encompass this TCP with so little documentation? Before our office is able to understand the extent and applicability of this property in relation to the proposed activity, we would like to receive additional documentation regarding the extent of the Big Bend sensitive areas and hear from the Klamath Tribes to insure that the areas of concern are indeed all included within the proposed APE. You may have detailed maps that show the extent of the TCP and the APE but the aerial photos submitted to our office are not clear enough for us to confirm the extent of the APE with regards to noted feature areas.

2. Section 2.0 - You state that the geographically broad APE being proposed is considering the "potential direct and indirect effects on the surrounding cultural landscape, the potentially NRHP-eligible Klamath Riverscape and other identified TCPs, Sacred Sites, and historic districts located within the Klamath River Canyon." None of the TCP documents that our office received during the earlier Klamath Dam license renewal process (circa 2003-2004) have ever been discussed or reviewed. How are we to know the potential direct and indirect effects on these properties, and more importantly, how is your office insuring that the APE is including all of the above since such discussions have never occurred regarding the reports and their extent? These type of documents are often left vague on purpose with later discussions refining boundaries and potential impacts. I do not believe that such discussions have ever occurred for your agency to base the APE on. At a minimum, the APE should seek formal tribal approval from all associated groups to insure that it does include all potential direct and indirect effects on these properties. Our office can be involved in later discussions as to how these properties might be affected by the proposed project when further discussions ensue, as long as the tribes find that the APE is sufficient as drafted.

3. Area of Direct Impact (ADI) - The description of the ADI appears to be pretty inclusive of the lands that should be within this area. However, the maps included in Attachment 3 are not very clear in demarcating these areas. The colors used to demarcate the ADI and PacifiCorp lands are very close. We suggest that you make these colors more contrasting in future reports and correspondence. Please be sure to include topographic maps for the APE along with future consultations. Solely relaying on aerial photos is difficult to follow over time and can be confusing given the ever changing landscape in the area and the differing aerial photo layers that reviewing offices may have.

4. We concur with California SHPO's comment that the project related effects to both aquatic and terrestrial resources and activities associated with the recreation plan need to be clearly stated as being included within the APE.

5. All potentially historic structures affected by the undertaking, directly or indirectly, must be included within the boundaries submitted to our office for concurrence. Should additional built environment resources be impacted during any phase of the project, an amended APE would be necessary.

Our office looks forward to discussing this project with your agency in the future. If you have any questions or comments regarding this letter, please do not hesitate to contact me. In order to help us track your project accurately, please be sure to reference the SHPO case number above in all correspondence.

Sincerely,

A handwritten signature in dark ink, appearing to read "Dennis Griffin", is written over a light gray background.

Dennis Griffin, Ph.D., RPA  
State Archaeologist  
(503) 986-0674  
dennis.griffin@oregon.gov

cc: Elena Nilsson, AECOM



September 28, 2018

Mr. Mark Bransom  
Klamath River Renewal Corp  
, OR

RE: SHPO Case No. 17-1370  
FERC 14803, KRRC Lower Klamath Project,  
Removal of dams Oregon and California  
Multiple locations, Klamath County

Dear Mr. Bransom:

Thank you for the opportunity to review your Appendix L: Cultural Resources Plan associated with the above project. Our office has reviewed your document and we have the following comments:

- 1). Previously Recorded Cultural Resources (Chapter 6:36-37) – Since this section is primarily relying on information completed many years ago, along with your discussion of previously identified archaeological sites and their eligibility, it would be good to include a table of all of these archaeological sites here along with such eligibility status (including agency recommendation, FERC determination and SHPO concurrence). If determined eligible, under what criterion? If determined not eligible, did the past evaluation consider site eligibility under all four criteria (A through D)? Early archaeological studies tended to focus only on Criterion D and we are curious if a wider review was conducted at the time of previous determinations. Perhaps this table could also note where the project lies with the larger APE (e.g., liable to be directly affected, indirectly or likely no effect). You provide a nice table (6-5) for the built environment but nothing for archaeological sites.
- 2). Isolated Finds (Chapter 6:37) – This summary states that there have been 108 isolates previously identified in Oregon. Have any of these had probing conducted around them to insure that they are indeed isolate locations of cultural material?
- 3). Archaeological Districts (Chapter 6:41) – Your summary mentions work on the development of an earlier archaeological district within Oregon that included four groups of multiple sites. Does KRRC plan on picking up on this earlier study and reintroducing this district nomination?
- 4). Klamath River Canyon Archaeological District (Chapter 6:42) – Your report mentions a publication written by McCutcheon and Dabbling in 208. This reference is missing from your bibliography and I don't believe that it has ever been shared with the Oregon SHPO. Has this document been sent to our office in the past? If not, is this something that we can expect to see or is it going to be reanalyzed?
- 5). TCPs (Chapter 6:46-47) – Oregon SHPO looks forward to future consultation with KRRC and the Klamath Tribes on the various earlier identified TCP locations within Oregon, as well as the Klamath Cultural Riverscape that was earlier introduced that focused on the Klamath River. Such discussions will assist our office in understanding the true extent and impact of the proposed project on the Klamath River. Knowing little about what this discussion will entail, at this time we are unsure if this research and consultation would be considered a viable mitigation topic for the proposed project or simply part of the research that is needed

in order to complete the discussions on the proposed dam removals.

6). Pre-removal Resource Inventory (Chapter 6:48) - We were unable to find a copy of Figure 5.2-1(C) that depicts the disposal sites associated with the removal of the J.C. Boyle Dam. Could you forward our office a copy of this Figure?

7). Archaeological Inventory (Chapter 6:50) – Oregon SHPO’s Field Guidelines were updated in 2013. Please reference the most current field guidelines in all future documents.

8). Site Definition (Chapter 6:50) – Oregon SHPO’s definition of a feature as being a product of patterned cultural activity within a surface area reasonable to that activity is not based on density measurement. It stems more from a recognition that a feature may exist and that its components are not random (e.g., one camas oven, hearth, peeled tree). Each of these examples would be considered a feature, therefore a site, and you would not need to find multiple numbers of such features in order to be recognized as a site.

9). Archaeological Evaluation (Chapter 7:55) – In future eligibility discussions regarding both archaeological sites and TCPs, please be sure to include a discussion of eligibility based on all four criteria (A-D) rather than simply Criterion D for archaeological sites and Criterion A for TCPs as is often done in past studies.

10). Historic Properties Management Plan (Chapter 8) – Please be sure to include a section on future reporting that references future reports will consider Oregon’s SHPO Reporting Guidelines. We want to be sure that all future reports include all components that are needed in order for our office to complete our review in a timely way.

11). References (Chapter 9:69) – As noted above, the reference for McCutcheon and Dabling 208 is missing from this section. Could you also send us a copy of Cardno Entrix’s 2012 Klamath Secretarial Determination Cultural Resource report? A copy of this document could not be found and we are interested in refreshing ourselves on this earlier determination study in order to recall where discussions have been left off when last this project was discussed with our office.

Thank you again for the opportunity to review your Cultural Resources Plan and our office looks forward to discussing the above project as it moves forward toward completion.

Sincerely,

A handwritten signature in dark ink, appearing to read "Dennis Griffin". The signature is fluid and cursive, with a large initial "D" and a stylized "G".

Dennis Griffin, Ph.D., RPA  
State Archaeologist  
(503) 986-0674  
dennis.griffin@oregon.gov

cc: Elena Nilsson, AECOM



**DEPARTMENT OF PARKS AND RECREATION  
OFFICE OF HISTORIC PRESERVATION**

Lisa Ann L. Mangat, Director

Julianne Polanco, State Historic Preservation Officer

1725 23rd Street, Suite 100, Sacramento, CA 95816-7100

Telephone: (916) 445-7000 FAX: (916) 445-7053

calshpo.ohp@parks.ca.gov www.ohp.parks.ca.gov

September 28, 2018

In reply refer to: FERC\_2018\_0507\_001

Mr. Mark Bransom  
Executive Director  
Klamath River Renewal Corporation  
423 Washington Street  
San Francisco, CA 94111

RE: Section 106 Consultation, Appendix L of Definite Plan, Lower Klamath Project  
(FERC No. 14803) Siskiyou County, CA

Dear Mr. Bransom:

The State Historic Preservation Officer (SHPO) received, on August 30, 2018, the letter continuing consultation on behalf of the Federal Energy Regulatory Commission (FERC) for the above-referenced project in order to comply with Section 106 of the National Historic Preservation Act of 1966 and its implementing regulations found at 36 CFR § 800. The Klamath River Renewal Corporation (KRRC) has been delegated Section 106 consultation authority by the Federal Energy Regulatory Commission (FERC), pursuant to FERC's November 10, 2016 *Notice of Applications Filed With the Commission* and 36 CFR § 800.2(c)(4). Included with the KRRC's letter was a copy of the *Definite Plan for the Lower Klamath Project, Appendix L—Cultural Resources Plan* (Appendix L), prepared in June 2018.

The undertaking seeks the decommissioning and removal of the Iron Gate, Copco No. 1, Copco No. 2, and J.C. Boyle developments, located on the Klamath River and currently owned by PacificCorp. The J.C. Boyle development is located in Klamath County, Oregon, and is not within the jurisdiction of the California SHPO. The remaining three developments are located in Siskiyou County, California. The purpose of the undertaking is to achieve a free flowing river condition and full volitional fish passage through the reaches of the Klamath River currently impacted by the four dams by removing the facilities.

The KRRC and PacificCorps jointly filed a combined license amendment and license transfer application with FERC, requesting FERC to administratively remove the four dam developments from the Klamath Hydroelectric Project license (FERC No. 2082). KRRC filed a separate license surrender application for Project No. 14803 that would

allow KRRC to decommission the four facilities.

The KRRC has requested the SHPO's review and comment of Appendix L. After reviewing the information submitted with your letter, the following comments are offered:

- Section 6.1.4, Ethnographic Information and TCPs
  - A substantial amount of identification and analysis has been previously prepared for the Klamath Cultural Riverscape, including an eligibility determination. Any additional work on this would appear to be part of the identification efforts for the undertaking, rather than mitigation.
  - Documentation should discuss in detail why the Riverscape study could not be completed as part of the identification efforts, but the Historical Landscape Analysis discussed in Section 6.1.5—a new analysis that is likely to cover a very large area as well—could be completed as part of the identification effort.
  - Additionally, I encourage you to review the decision of the State of California Court of Appeals for the *Madera Oversight Coalition, Inc, v. County of Madera* in regards to any mitigation developed for the purposes of the California Environmental Quality Act (CEQA).
- Section 6.2.4, General Inventory and Resource Recordation Methods
  - Built Environment HABS/HAER/HALS Recordation can be an important mitigation, as stated in the document. However, it is appropriate as one of a suite of mitigation when the historic property in question is significant under National Register Criterion C. If a property is significant under one of the other Criteria, HABS/HAER/HALS would not be appropriate mitigation. Mitigation should always be determined in consultation with the consulting parties.
- Section 7.2, Evaluation of Historic Built Environment Resources: The document states that two historical resources reports will be prepared, for hydroelectric and non-hydroelectric resources. It is not clear why the preparation of two documents is necessary, and the California SHPO recommends that only one document be prepared.
- Section 8.1, Historic Properties Management Plan and Programmatic Agreement
  - The project has anticipated the preparation of a Programmatic Agreement. FERC's current template Programmatic Agreement will not be sufficient to address the complexities of this undertaking. The SHPO looks forward to working with FERC and KRRC to develop an appropriate agreement document.
- The SHPO recommends that FERC and the KRRC keep the Advisory Council on Historic Preservation (ACHP) apprised of the ongoing consultation as the undertaking moves forward.

Mr. Mark Bransom  
September 28, 2018  
Page 3 of 3

FERC\_2018\_0507\_001

The opportunity to comment on Appendix L of the Definite Plan is appreciated and I look forward to continuing this consultation with you. Please direct any questions or concerns that you may have to Kathleen Forrest, Historian, at 916-445-7022 or [Kathleen.Forrest@parks.ca.gov](mailto:Kathleen.Forrest@parks.ca.gov).

Sincerely,



Julianne Polanco  
State Historic Preservation Officer

Cc: Jessica Gabriel, Oregon SHPO  
Dennis Griffin, Oregon SHPO  
Jeanne Goetz, Klamath National Forest  
Eric Ritter, BLM  
Elena Nilsson, AECOM



Oregon  
Kate Brown, Governor

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October 1, 2018

Mr. Mark Bransom  
Klamath River Renewal Corp  
, OR

RE: SHPO Case No. 17-1370  
FERC 14803, KRRC Lower Klamath Project,  
Removal of dams Oregon and California  
Multiple locations, Klamath County

Dear Mr. Bransom:

Thank you for providing our office an opportunity to comment on Appendix L of the Definite Plan for the Lower Klamath Project. Our comments below pertain only to the historic, built environment. Comments regarding archaeological resources have already been provided by Dennis Griffin, Oregon State Archaeologist (letter dated September 28, 2018).

1. Regarding the proposal to update the existing evaluations is an important piece of the consultation process. In addition to updating and submitting eligibility determination forms to our office, please be sure to account for relevant elements of the Klamath Project that have been demolished, altered, or otherwise affected by federal undertakings since 2003, when the resources were last identified. Bureau of Reclamation's Sacramento office should have these records available. For example, Flume C, a large, concrete flume that represented a highly significant feature of the system, has been replaced, and consultation with our office resolved the adverse effect through mitigation.
2. We look forward to reviewing the draft Historic Properties Management Plan for the Klamath Project, once it becomes available.
3. We look forward to consulting on the Area of Potential Effect (APE), once the preliminary APE has been determined. Please be sure to include areas that may be indirectly affected by the project in any way, in addition to areas affected directly. This may include areas far outside of direct impacts, such as canals, laterals and sub-laterals that may be retired as a result of dam removal, as well as properties that may suffer deferred or unfulfilled maintenance due to loss of use through the retirement of pieces of the system. We appreciate, for example, the inclusion of properties that may be affected by the reintroduction of seasonal flooding and the re-definition of the 100-year flood zone (p.33), and encourage similar forward-thinking considerations when defining the APE.
4. When consulting the online Historic Sites Database for records regarding historic built resources, please bear in mind that the database does not represent a complete record of past consultations with our office. Any properties within the APE should be evaluated and considered during the review process, regardless of the presence or absence of records of past consultation.
5. We concur that using a 45-year age standard for consideration, rather than a 50-year age standard, is appropriate, in order to account for properties that may become 50 years old during the consultation process, prior to implementation of the project. If it appears that the project will take longer than 5 years to complete, we recommend expanding that standard to ensure that all properties are properly accounted for.



6. When considering visual impacts to properties, we recommend against using lack of visibility due to intervening vegetation as means to eliminate these from consideration. Vegetation should only rarely be used for such determinations, and only when there is a high likelihood that this condition will not change, i.e., a forest is between the resource and the source of impacts. Thin lines or swaths of trees, deciduous trees generally, or sections of trees that may be scheduled for harvest will all fail to sustain the standard of blocked visibility too readily (via seasonal changes, timber harvest, or routine cutting/thinning independent of the project) to be a meaningful basis for visibility analysis.

7. When reporting results of built environment surveys, inventories, or re-surveys, please consult with the Oregon SHPO to obtain a subset of the Oregon Historic Sites Database to update existing records and to create new records for adding to the Master database, which we maintain in Salem. Using this tool will dramatically increase review efficiency and facilitate up-to-date record keeping at our office.

8. When considering potential mitigation measures for historic, built resources, please bear in mind that documentation through HABS/HAER/HALS or otherwise is generally considered to be a baseline measure by our office, and is almost always paired with further stipulations designed to project the data to the public in some form, or to inform further mitigation of some type. In some cases, documentation may be deemed to be sufficient, however, this will be comparatively rare, and suitable only for minor structures with marginal eligibility.

9. Because the Klamath Project as a complete resource spans Oregon and California SHPO jurisdictions, please be sure to provide both our office and California SHPO with data related to resources in the opposite state for the purposes of allowing the two SHPOs to fully understand the resource as a whole. Even though the Oregon and California SHPOs will be consulting directly on resources that occur in our states, respectively, consulting agencies must have a full comprehension of the system in its entirety, in order to properly evaluate any individual element within it.

We look forward to further consultation on this project. If you have any questions regarding any of the above, please feel free to contact our office.

Sincerely,



Jason Allen, M.A.  
Historic Preservation Specialist  
(503) 986-0579  
jason.allen@oregon.gov

cc: Elena Nilsson, AECOM

November 15, 2018

Julianne Polanco  
State Historic Preservation Officer  
Office of Historic Preservation  
1725 23rd Street, Ste. 100  
Sacramento, CA 95816

**RE: Submittal of Revised Area of Potential Effects, Lower Klamath Project, Siskiyou County, California (SHPO No: FERC \_2018\_0507\_001)**

Dear Ms. Polanco,

On May 3, 2018, Klamath River Renewal Corporation (KRRC) submitted to your office a written definition of the preliminary Area of Potential Effects (APE) for the Lower Klamath Project, accompanied by maps. At that time, KRRC requested your comments on the preliminary APE to help focus KRRC's and PacifiCorp's consultation efforts [36 C.F.R. § 800.2(c)(4)] with agencies, tribes, and other interested parties, as well as to focus that dialogue in more meaningful content for FERC's subsequent consultation process. On June 1, 2018, KRRC received your comments on the preliminary APE. Based on your comments and those of other agencies and tribes participating in the project's Cultural Resources Working Group (CRWG), KRRC has prepared a revised APE definition and map set, which are attached to this letter.

On behalf of KRRC, AECOM is transmitting the revised APE information to you and requesting your comments as part of regulatory requirements under Section 106 of the National Historic Preservation Act of 1966 (NHPA) as codified in 36 CFR Part 800.

If you have any questions, or would like any additional information regarding the Project, please contact me at 530-893-9675 ext. 1231, or by e-mail at [elena.nilsson@aecom.com](mailto:elena.nilsson@aecom.com).

Thank you for your support of this effort. We look forward to continuing our work with you.

Best regards,

Elena Nilsson  
Principal Archaeologist

cc: Mark Bransom, KRRC

Enclosure



Oregon  
Kate Brown, Governor

Parks and Recreation Department  
State Historic Preservation Office  
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December 4, 2018

Mr. Mark Bransom  
Klamath River Renewal Corp  
, OR

RE: SHPO Case No. 17-1370  
FERC 14803, KRRC Lower Klamath Project,  
Removal of dams Oregon and California  
Multiple locations, Klamath County

Dear Mr. Bransom:

Our office recently sat in on the meeting that addressed the revised APE boundaries for the above project. However, while comparing the discussion during that meeting to the maps that have been provided to our office, we noted other areas were being discussed that will add to the proposed APE. Such areas include possible rafting locations and campground areas that may be made available directly below the J.C. Boyle Dam, as well as a new rafting access point and parking area may be established in the area of Frain Ranch (albeit across the river from the ranch itself). Due to the extreme sensitivity of these areas and the damage that has been ongoing to significant cultural sites near Frain Ranch in the past, we believe that project related indirect effects could occur to lands along the eastern banks of the Klamath River in this and possibly other areas, and we want to be sure that these lands are considered during any future discussions. Our office looks forward to future discussions are held regarding potential direct and indirect project effects.

In noting that rafting access locations may be proposed in the future, a second look at previous archaeological surveys will also be needed before our office would agree that surveys conducted over 15 years ago would still be considered valid for the current proposed activity. In listening in on the conversation during our last meeting, this assumption seemed to be taken for granted and there are many factors that need to be examined when one hopes to use old survey data for compliance concerns with future projects. Visibility at the time of the initial survey, nature of proposed impacts, degree of subsurface probing or testing that accompanied the earlier investigation, all are components to be considered when deciding if a new survey will be needed along stretches of the river that could be impacted (either directly or indirectly) by the proposed removal of the four Klamath River Dams. We recall that portions of the lands within the earlier proposed Hydro relicensing project along the Klamath River, that was being considered prior to deciding that the dams should be removed rather than relicensed, were slated to be surveyed but we don't think this ever occurred (e.g., BLM lands along the Klamath River in Oregon, Spring Creek diversion and several tributaries and access roads within the earlier FERC boundary). If any of these lands remain in the current project APE that could be affected, a survey of these lands will probably also be required.

In an earlier letter to your office we highlighted the lack of past consultation with our office regarding any of the earlier reported TCP locations that the various Tribes have stated exist along the river. This holds true today and we are looking forward to hearing from you regarding their number, composition, extent, integrity and possible effect. We believe that this information will be necessary before our office is able to understand and concur on project effects. Has a determination of eligibility for these properties yet been made? If so, when should our office expect a letter requesting concurrence? If not, when do you expect such determinations to be made?

Our office has recently added a new built-environment staff person who will be taking over the review of

potential effects to historic properties from the proposed dam removal. Her name is Tracy Swartz. Can you send any pertinent documents that outline the full scope of activities that are being proposed to the existing dam and downriver structures? This would kindly be appreciated!

Our office looks forward to future consultation regarding the above project. If you have any questions or comments regarding this letter, please do not hesitate to contact me. In order to help us track your project accurately, please be sure to reference the SHPO case number above in all correspondence. This letter refers to archaeological resources only. Comments pursuant to a review for above-ground historic resources will be sent separately.

Sincerely,

A handwritten signature in black ink, appearing to read "Dennis Griffin". The signature is fluid and cursive, with the first name "Dennis" being more prominent than the last name "Griffin".

Dennis Griffin, Ph.D., RPA  
State Archaeologist  
(503) 986-0674  
dennis.griffin@oregon.gov

cc: Mike Kelly, AECOM



# Oregon

Kate Brown, Governor

## Parks and Recreation Department

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December 13, 2018

Mr. Mark Bransom  
Klamath River Renewal Corp  
, OR

RE: SHPO Case No. 17-1370  
FERC 14803, KRRC Lower Klamath Project,  
Removal of dams Oregon and California  
Multiple locations, Klamath County

Dear Mr. Bransom:

Thank you for the opportunity to review the proposed Area of Potential Effects (APE) for the project noted above. The Oregon SHPO concurs that the APE for above-ground architectural resources is sufficient for the scope and scale of the undertaking. A separate letter addressing the adequacy of the APE for archaeological resources was sent on December 4, 2018.

We look forward to continued consultation on this project. Please contact me with any further questions or comments.

Sincerely,

Tracy Schwartz  
Historic Preservation Specialist  
(503) 986-0677  
[tracy.schwartz@oregon.gov](mailto:tracy.schwartz@oregon.gov)

cc: Mike Kelly, AECOM



**DEPARTMENT OF PARKS AND RECREATION  
OFFICE OF HISTORIC PRESERVATION**

Armando Quintero, Director

Julianne Polanco, State Historic Preservation Officer

1725 23rd Street, Suite 100, Sacramento, CA 95816-7100

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September 23, 2020

In reply refer to FERC\_2018\_0507\_001

Mr. Mark Bransom  
Executive Director  
Klamath River Renewal Corporation  
423 Washington Street  
San Francisco, CA 94111  
VIA EMAIL/FERC E-file

RE: Section 106 Consultation for the Lower Klamath Project, Phase II Evaluation Plan

Dear Ms. Bransom,

The State Historic Preservation Officer (SHPO) received your consultation letter on August 3, 2020 pursuant to Section 106 of the National Historic Preservation Act of 1966 (54 U.S.C. § 300101), as amended, and its implementing regulation found at 36 CFR § 800. The Klamath River Renewal Corporation (KRRC), non-federal representative for the Federal Energy Regulatory Commission (FERC) is continuing consultation with the SHPO regarding the above referenced project. At this time, KRRC is requesting SHPO comments on its revised document: *Lower Klamath Project Phase II Archaeological Research Design and Testing Plan* (AECOM, July 2020).

Follow up email correspondence on September 2, 2020 between my staff and Principal Archaeologist Michael Kelly of AECOM clarified that consultation with Tribal parties on the document is ongoing. This letter is to inform you that I withhold comment until consultation on the plan has been completed with Tribes and the public. In addition, I request a summary of comments received once available. If you have any questions or concerns, please contact Brendon Greenaway at (916) 445-7036 or [Brendon.Greenaway@parks.ca.gov](mailto:Brendon.Greenaway@parks.ca.gov).

Sincerely,

Julianne Polanco  
State Historic Preservation Officer

Electronic cc:

Michael S. Kelly  
Principal Archaeologist, AECOM

Ranzetta, Kirk

---

From: Eric Ritter <eritter@blm.gov>  
Sent: Monday, July 16, 2018 1:41 PM  
To: Araxi Polony; Nilsson, Elena; Neel, Alden; Anmarie.Medin@parks.ca.gov; Greenaway, Brendon@Parks; Heather Schultz; Jennifer Mata  
Subject: Re: [EXTERNAL] Re: Request for Comments on Lower Klamath Project (FERC No. 14803)

Follow Up Flag: Flag for follow up  
Flag Status: Completed

I see that on Attachment 3, Sheet 8 of 23 you have not earmarked the BLM lands with important National Register of Historic Places sites. I don't see those sites as having a direct effect from the dam removal other than construction-related traffic using the flats. I also believe that there would be direct effects to the Klamath River corridor between Copco Dam and the upper end of Iron Gate Reservoir. One such scenario would be high flows/debris from dam removal/flood events, etc. And what is the rationale for not having the Klamath River from the mouth of Humbug Creek to its mouth at Requa not being subject to direct effects? Eric Ritter

On Wed, Jul 11, 2018 at 3:43 PM Araxi Polony <[araxi@klamathrenewal.org](mailto:araxi@klamathrenewal.org)> wrote:

Mr. Ritter,

Apologies – please find the Preliminary Area of Potential Effects Map Set (Attachment 3) attached here for your reference.

Best,

Araxi

Araxi Polony, [Klamath River Renewal Corporation](#)  
Administrative Assistant  
Cell: 510-730-5534 | Office: 510-679-6928  
[araxi@klamathrenewal.org](mailto:araxi@klamathrenewal.org)  
[www.klamathrenewal.org](http://www.klamathrenewal.org)

---

From: Araxi Polony  
Sent: Wednesday, July 11, 2018 3:06:35 PM  
To: [eritter@blm.gov](mailto:eritter@blm.gov)  
Subject: Request for Comments on Lower Klamath Project (FERC No. 14803)

Dear Mr. Ritter,

Please find attached Klamath River Renewal Corporation's letter requesting your comments on the preliminary Area of Potential Effects (APE) defined for the Lower Klamath Project (Project; FERC No. 14803).

In addition, the Preliminary Area of Potential Effects Map Set (Attachment 3) is attached here for your reference. The FERC Notice of Applications File with the Commission (Attachment 1) and Preliminary Area of Potential Effects Description (Attachment 2) are embedded in the letter.

Please let me know if you have any questions.

Best,

Araxi

Araxi Polony, [Klamath River Renewal Corporation](#)  
Administrative Assistant  
Cell: 510-730-5534 | Office: 510-679-6928  
[araxi@klamathrenewal.org](mailto:araxi@klamathrenewal.org)  
[www.klamathrenewal.org](http://www.klamathrenewal.org)



Ranzetta, Kirk

---

From: Ranzetta, Kirk  
Sent: Tuesday, December 04, 2018 2:16 PM  
To: 'Vehmas, Lisa'  
Cc: Nilsson, Elena; Stacey Leigh; Joseph Giliberti  
Subject: RE: [EXTERNAL] Re: Klamath River Dam Removal Project

Thank you Lisa for the quick response. Greatly appreciated. Feel free to contact myself or Elena Nilsson if you all should have any questions.

All the best.

Regards,

Kirk Ranzetta

From: Vehmas, Lisa [mailto:lvehmas@usbr.gov]  
Sent: Tuesday, December 04, 2018 2:13 PM  
To: Ranzetta, Kirk  
Cc: Nilsson, Elena; Stacey Leigh; Joseph Giliberti  
Subject: Re: [EXTERNAL] Re: Klamath River Dam Removal Project

Kirk - We haven't been involved from the 106 end since the Sec Determination process ended and the settlement agreement expired. We don't think we need to be involved, but am looping in Stacey Leigh who is the regional Cultural Resources lead right now. Also cc'd is Joe Giliberti, Reclamation's Federal Preservation Officer (the new Tom Lincoln) just in case other questions outside the region arise.

Lisa

On Tue, Dec 4, 2018 at 2:27 PM Ranzetta, Kirk <[kirk.ranzetta@aecom.com](mailto:kirk.ranzetta@aecom.com)> wrote:

Hi Lisa,

I am contacting you on behalf of the Klamath River Renewal Corporation who is currently preparing FERC documents in its efforts to decommission the four dams along the Klamath River in Oregon and California. I am currently working with the larger project team and facilitating Section 106 (NHPA) consultation. Over the past few months we have convened a Cultural Resources Working Group and been making progress in terms of describing the APE for the project, methods for field investigations for cultural resources, etc. In looking through the Advisory Council for Historic Preservation's website, I noticed on there that BOR was listed as the involved agency for that project. I just wanted to confirm that this was a holdover from the Secretarial Determination process as the individual who is listed as the contact for BOR (Tom Lincoln) has apparently retired and the information on the ACHP website does not present any of the most recent project developments and processes.

Could you confirm that this information is old? And also, will the BOR be a part of the Section 106 consultation process as FERC proceeds with considering the decommissioning application? The USFS and BLM have been active participants in the CRWG thus far. Thanks for your help!

Regards,

Kirk

**Kirk Ranzetta**

**Senior Architectural Historian**

Direct: 1-503.478.1629 Cell: 1-503.853.6354

[Kirk.Ranzetta@aecom.com](mailto:Kirk.Ranzetta@aecom.com)

**AECOM**

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--

Lisa A. Vehmas  
Manager, Environmental Compliance Division  
Policy & Administration

Bureau of Reclamation  
303.445.2925 (desk)  
303.248.6762 (cell)

UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION

PacifiCorp  
Klamath River Renewal Corporation

Project No. 2082-062  
Project No. 2082-063  
Project No. 14803-000  
Project No. 14803-001

NOTICE OF APPLICATIONS FILED WITH THE COMMISSION

(November 10, 2016)

Take notice that the following hydroelectric applications have been filed with the Commission and are available for public inspection:

- a. Types of Applications: Application for Amendment and Partial Transfer of License;  
Application for Surrender of License
- b. Project Nos.: 2082-062 and 14803-000 (amendment and transfer  
application);  
2082-063 and 14803-001 (surrender application)
- c. Date Filed: September 23, 2016
- d. Applicants: For license amendment and transfer:  
PacifiCorp (transferor) and  
Klamath River Renewal Corporation (transferee)  
  
For license surrender:  
Klamath River Renewal Corporation
- e. Name of Projects: Klamath Project (P-2082)  
  
Lower Klamath Project (P-14803)
- f. Locations: Klamath Project - on the Klamath River in Klamath County,  
Oregon, and on the Klamath River and Fall Creek in Siskiyou  
County, California. The project includes about 477 acres of  
federal lands administered by the Bureau of Reclamation and  
the Bureau of Land Management.

Lower Klamath Project - on the Klamath River in Klamath County, Oregon, and Siskiyou County, California. The project would include about 395 acres of federal lands administered by the Bureau of Land Management.

- g. Filed Pursuant to: Federal Power Act, 16 USC 791a-825r.
- h. Applicants Contact: Sarah Kamman, Vice President and General Counsel, PacifiCorp, 825 NE Multnomah Street, Suite 2000, Portland, OR 97232, (503) 813-5865, [sarah.kamman@pacificorp.com](mailto:sarah.kamman@pacificorp.com)  
  
Michael Carrier, President, Klamath River Renewal Corporation, 423 Washington Street, 3<sup>rd</sup> Floor, San Francisco, CA 94111, (415) 820-4441, [michael@klamathrenewal.org](mailto:michael@klamathrenewal.org)
- i. FERC Contacts: Amendment and Transfer: Steve Hocking, (202) 502-8753, [Steve.Hocking@ferc.gov](mailto:Steve.Hocking@ferc.gov)  
  
Surrender: John Mudre: (202) 502-8902, [john.mudre@ferc.gov](mailto:john.mudre@ferc.gov)
- j. Description of Amendment and Transfer Request: The applicants request that the Commission transfer the J.C. Boyle, Copco No. 1, Copco No. 2, and Iron Gate developments of the existing Klamath Project No. 2082 from PacifiCorp to the Klamath River Renewal Corporation (Renewal Corporation) and create a new project, the Lower Klamath Project, for the transferred developments with the Renewal Corporation as the sole licensee. PacifiCorp requests that the license for Project No. 2082 be amended to delete references to the four transferred developments. The applicants state that they will make a supplemental filing on or before March 1, 2017, demonstrating the legal, technical, and financial capabilities of the Renewal Corporation to perform its responsibilities as transferee. Applicants further request that the Commission act on the amendment and transfer application by December 31, 2017, and allow the Renewal Corporation six months from the issuance date of the order approving transfer to submit proof of its acceptance of license transfer.
- k. Description of Surrender Request: The Renewal Corporation's request to surrender and decommission the Lower Klamath Project, including removal of the project dams is contingent upon a Commission order amending PacifiCorp's existing Klamath Project (P-2082) license to create a new project, the Lower Klamath Project, and transferring the Lower Klamath Project to the Renewal Corporation, as described in item (j), above. The Lower Klamath Project, as envisioned by the Renewal Corporation, would consist of the J.C. Boyle, Copco No. 1, Copco No. 2, and Iron Gate developments of the existing Klamath Project No. 2082, and the Renewal Corporation would be the sole licensee. The

Renewal Corporation requests that the Commission not act on this request until it is ready to accept license transfer and states that it will file, by December 31, 2017, its decommissioning plan to serve as the basis for Commission staff's environmental and engineering review of the surrender application. Because only a licensee may file to surrender a license and the Commission does not accept contingent applications, the surrender application is deemed to be filed by both PacifiCorp and the Renewal Corporation. *See* 18 C.F.R. §§ 6.1 and 4.32(j). Therefore, while action on the amendment and transfer application is pending, the Commission will maintain both applications in the dockets for both project numbers. If the Commission approves the transfer and the Renewal Corporation accepts the license, following which the Renewal Corporation would become the sole licensee, the surrender proceeding would continue solely in Project No. 14803.

l. With this notice, we are initiating informal consultation with: (a) the U.S. Fish and Wildlife Service and NOAA Fisheries under section 7 of the Endangered Species Act and the joint agency implementing regulations at 50 C.F.R. Part 402; (b) NOAA Fisheries under section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act and implementing regulations at 50 CFR § 600.920; and (c) the California and Oregon State Historic Preservation Officers, as required by section 106 of the National Historic Preservation Act, and the implementing regulations of the Advisory Council on Historic Preservation at 36 C.F.R. Part 800.

m. With this notice, we are designating PacifiCorp and the Renewal Corporation as the Commission's non-federal representative for carrying out informal consultation, pursuant to section 7 of the Endangered Species Act, section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act, and section 106 of the National Historic Preservation Act and the Advisory Council's regulations at 36 C.F.R. § 800.2(c)(4).

n. Locations of the Applications: Copies of the applications are available for inspection and reproduction at the Commission's Public Reference Room, located at 888 First Street, NE, Room 2A, Washington, DC 20426, or by calling (202) 502-8371. These filings may also be viewed on the Commission's website at <http://www.ferc.gov/docs-filing/elibrary.asp>. Enter the docket number excluding the last three digits in the docket number field to access the document. You may also register online at <http://www.ferc.gov/docs-filing/esubscription.asp> to be notified via email of new filings and issuances related to this or other pending projects. For assistance, call 1-866-208-3676 or e-mail [FERCOnlineSupport@ferc.gov](mailto:FERCOnlineSupport@ferc.gov), for TTY, call (202) 502-8659. Copies are also available for inspection and reproduction at the addresses in item (h), above.

o. Individuals desiring to be included on the Commission's mailing list for these proceedings should so indicate by writing to the Secretary of the Commission.

Project No. 2082-062, *et al.*

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p. Additional Information: We are not requesting comments at this time. After receiving the applicants' supplemental filings on or before March 1, 2017, for the license transfer and December 31, 2017, for the surrender, the Commission will issue notices requesting comments, protests, and motions to intervene.

Kimberly D. Bose,  
Secretary

Document Content(s)

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FEDERAL ENERGY REGULATORY COMMISSION

WASHINGTON, D.C. 20426

July 14, 2017

OFFICE OF ENERGY PROJECTS

Project Nos. 2082-063 and 14803-001—  
Oregon and California  
Klamath Hydroelectric Project  
PacifiCorp

Ms. Sarah Kamman  
Vice President and General Counsel  
PacifiCorp  
825 NE Multnomah Street, Suite 2000  
Portland, OR 97232

Mr. Michael Carrier, President  
Klamath River Renewal Corporation  
423 Washington Street, 3rd Floor  
San Francisco, CA 94111

**Reference: Klamath Hydroelectric Project—Request for Additional Information**

Dear Ms. Kamman and Mr. Carrier:

On September 23, 2016, PacifiCorp and the Klamath River Renewal Corporation (Renewal Corporation) filed a joint application for a license transfer and license amendment for the Klamath Hydroelectric Project (P-2082). On the same day, the Renewal Corporation filed an Application for surrender of the license.<sup>1</sup> The amendment/transfer application requests that the Commission amend the license for the project by removing the J.C. Boyle, Copco No. 1, Copco No. 2, and Iron Gate developments from the license and transferring them from PacifiCorp to the Renewal Corporation, thereby creating a new project, the Lower Klamath Project (FERC No. 14803), with the Renewal Corporation as the sole licensee. The surrender application states that it was made in accordance with the amended Klamath Hydroelectric

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<sup>1</sup> As explained in the Commission's November 10, 2016 public notice of the applications, pending Commission action on the license amendment and transfer request, the surrender application is deemed to be filed by both PacifiCorp and the Renewal Corporation.

Settlement Agreement (amended KHSA)<sup>2</sup> to decommission and remove the Lower Klamath Project developments.

The surrender application relies heavily on information contained in the U.S. Department of the Interior and the California Department of Fish and Game's<sup>3</sup> 2012 Klamath Facilities Removal Final Environmental Impact Statement/Environmental Impact Report (EIS/EIR)<sup>4</sup> and earlier studies that the EIS/EIR cites as the basis for most of the analyses in the EIS/EIR. Various factors that could influence some of the economic and environmental effects of the proposed surrender and decommissioning have changed since 2012 when the EIS/EIR was prepared. Additionally, the EIS/EIR effects analysis and recommendations were based on the assumption that certain restoration activities contained in the now-expired Klamath Basin Restoration Agreement (KBRA) would be implemented. Because it is not clear which, if any, of the KBRA's restoration activities will be conducted, it is not clear which of the EIS/EIR's conclusions and recommendations remain applicable. Therefore, based on our preliminary review of the September 23, 2016 surrender application, additional information is needed for Commission staff's analyses of the proposed surrender.

Pursuant to Section 4.32(g) of the Commission's regulations, please include the additional information requested in the enclosed schedule A with the supplemental information you plan to file as described in the surrender application.<sup>5</sup> Within 5 days of receipt of this letter, please provide a copy of this letter and the enclosed schedule A to all agencies with whom you will consult in response to this request. Then, when you file the requested information with the Commission, you also should provide exact copies of the filings to those agencies.

If the submission of any additional information causes any other part of the surrender application to be inaccurate, please revise that part and refile it by the due date. Also, please be aware that further requests for additional information may be sent to you at any time before final action on your application is taken.

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<sup>2</sup> The amended KHSA was executed on April 6, 2016.

<sup>3</sup> Now the California Department of Fish and Wildlife (California DFW).

<sup>4</sup> U.S. Department of the Interior and California Department of Fish and Game. 2012. Klamath Facilities Removal Final Environmental Impact Statement/Environmental Impact Report Volume I. State Clearinghouse # 2010062060. December 2012.

<sup>5</sup> The surrender application states that this supplemental information will be filed by December 31, 2017.

The Commission strongly encourages electronic filing. Please file the requested information using the Commission's eFiling system at <http://www.ferc.gov/docs-filing/efiling.asp>. For assistance, please contact FERC Online Support at [FERCOnlineSupport@ferc.gov](mailto:FERCOnlineSupport@ferc.gov), (866) 208-3676 (toll free), or (202) 502-8659 (TTY). In lieu of electronic filing, please send a paper copy to: Secretary, Federal Energy Regulatory Commission, 888 First Street, NE, Washington, D.C. 20426. Please put the docket numbers, P-2082-063 and P-14803-001, on the first page of your response.

If you have any questions regarding this letter or the contents of your required contents of the surrender application, please contact John Mudre at (202) 502-8902 or at [john.mudre@ferc.gov](mailto:john.mudre@ferc.gov).

Sincerely,

Timothy Konnert, Chief  
West Branch  
Division of Hydropower Licensing

Enclosure: Schedule A—Additional Information

cc: Mailing List  
Public Files

## Schedule A

Project Nos. 2082-063 and 14803-001

**ADDITIONAL INFORMATION**

The following is a list of additional information needs identified during staff's preliminary review of the application for license surrender and decommissioning of the proposed Lower Klamath Project (i.e., the existing J.C. Boyle, Copco No. 1, Copco No. 2, and Iron Gate developments and appurtenant features of the Klamath River Project No. 2082). Please file the requested information by December 31, 2017. The requested information may be incorporated into an amended surrender application, a decommissioning plan, or any accompanying environmental analyses, as appropriate.

**Initial Statement**

1. The Initial Statement, pursuant to section 4.51(a) of the Commission's regulations, states that: "Applicant [(Klamath River Renewal Corporation)] will today file requests for water quality certification with Oregon Department of Environmental Quality (Oregon DEQ) and the California Water Resources Control Board (California Water Board), for the purpose of this License Surrender Application." On October 21, 2016, the California Water Board filed a copy of its letter acknowledging receipt of your application on September 23, 2016. Please file documentation as to when Oregon DEQ received your application.

**Exhibit B**

2. Exhibit B of the surrender application indicates that PacifiCorp is voluntarily operating Project No. 2082 as described in the 2011–2014 Klamath Hydroelectric Settlement Agreement (KHSa) Implementation Reports. The amended KHSa<sup>6</sup> includes an update on the implementation status of all interim measures for both the original KHSa and the Habitat Conservation Plan along with a timetable for those not yet completed. According to that update, as of the amended KHSa's effective date (April 6, 2016), interim measures 7 (funding), 9, 11 (studies), 13, 17, and 21 had been fully implemented, but the other interim measures were in varied states of completion. Please file an updated status report and implementation schedule

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<sup>6</sup> Ady District Improvement Company, et al. 2016. Klamath Hydroelectric Settlement Agreement. February 18, 2010, amended April 6, 2016, pages E2-1 through E2-6.

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for the interim measures in the amended KHSA and the Habitat Conservation Plan<sup>7</sup> so staff has a thorough understanding of their status.

**Exhibits C and D**

3. The surrender application includes (as Exhibit E.3) the “Detailed Plan for Dam Removal – Klamath River Dams, Klamath Hydroelectric Project, FERC License No. 2082, Oregon – California” (Detailed Plan) prepared by the U.S. Bureau of Reclamation in 2012. Although this plan provides substantial information on the planned approach for permitting, implementing, and remediating the removal of project facilities, section 7.2.1 of the amended KHSA indicates that the Detailed Plan will be superseded by a “Definite Plan for Facilities Removal” (Definite Plan), which will be consistent with the Commission’s requirements for surrender and include consideration of prudent cost overrun management tools, such as performance bonds. Please revise exhibit E.3 to replace the Detailed Plan with the Definite Plan.
4. The surrender application proposes the simultaneous removal of the four lower dams with the dewatering periods<sup>8</sup> scheduled to minimize sediment release into downstream areas during critical times for important aquatic species and life stages (e.g., anadromous fish spawning, rearing, and in- and out-migration). The schedule indicates that the deconstruction period, including dewatering and facilities removal, would occur over about 20 months.<sup>9</sup> The EIS/EIR prepared in support of the original KHSA<sup>10</sup> states

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<sup>7</sup> PacifiCorp. 2012. PacifiCorp Klamath Hydroelectric Project Interim Operations Habitat Conservation Plan for Coho Salmon. Prepared by PacifiCorp Energy, Inc., Portland, OR. Submitted to the National Marine Fisheries Service, Arcata Area Office, Arcata, CA. February 16, 2012. Available at: [http://www.westcoast.fisheries.noaa.gov/habitat/conservation\\_plans/pacificorps\\_energy\\_hcp.html](http://www.westcoast.fisheries.noaa.gov/habitat/conservation_plans/pacificorps_energy_hcp.html). Accessed July 5, 2012.

<sup>8</sup> The dewatering period is the time from when water releases intended to drain the reservoir begin to when the dam is sufficiently removed such that it no longer retains water.

<sup>9</sup> EIS/EIR, page 2-35.

<sup>10</sup> U.S. Department of the Interior and California Department of Fish and Game. 2012. Klamath Facilities Removal Final Environmental Impact Statement/Environmental Impact Report Volume I. State Clearinghouse # 2010062060. December 2012.

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that the deconstruction period drawdown length could vary depending on water year type, with longer drawdowns occurring during wet years and shorter drawdowns during dry years.<sup>11</sup> To reduce the uncertainty regarding the length of time over which flows with high suspended sediment concentrations would occur and potentially negatively affect aquatic resources, please provide the following information:

- a. Your proposed measures for ensuring that reservoir dewatering is completed by the end of February to avoid high suspended sediment concentration after March 15.
- b. An assessment of the extent to which a wet year would extend the reservoir dewatering period, the potential effects on downstream environmental resources of deconstruction implementation during a wet year, and the increase in the cost of deconstruction, if it occurred in a wet year. In addition, please provide a detailed discussion of the process and rationale that would be used to determine if any adjustments to the dewatering schedule are needed to minimize the release of sediment during the previously identified critical times for important species and life stages.

**Exhibit E***Agreements and Biological Opinions*

5. The Upper Klamath Basin Comprehensive Agreement (UKBCA),<sup>12</sup> which was signed April 18, 2014, was developed in concert with the original KHSA and the Klamath Basin Restoration Agreement (KBRA) to provide a “comprehensive solution” for water, fishery, and power issues in the Klamath River Basin. We understand that progress was made in implementing the UKBCA’s water use and riparian programs during 2014 and 2015. Publicly available documents describe some of this progress, although the complete and current status of implementing the UKBCA is unclear. To ensure that

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<sup>11</sup> EIS/EIR, page 2-33.

<sup>12</sup> Signatories to the UKBCA include the State of California, California Department of Fish and Wildlife, California Natural Resources Agency, State of Oregon, Oregon Department of Environmental Quality, Oregon Department of Fish and Wildlife, Oregon Water Resources Department, Klamath Water Users Association, American Rivers, California Trout, Trout Unlimited, National Marine Fisheries Service, U.S. Department of the Interior, and Sustainable Northwest.

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Commission staff has a thorough understanding of the effects of the UKBCA on water availability, please provide a status report documenting the current schedule and status for implementation of the measures described in the UKBCA.

6. The EIS/EIR's evaluations for the Full Facilities Removal of Four Dams and the Partial Facilities Removal of Four Dams (Alternatives 2 and 3, respectively) incorporated the KBRA as a connected action. Since the KBRA was terminated at the end of 2015, Commission staff needs an update on which KBRA actions will be conducted and when they will be implemented. The Fifth Annual Report for the Klamath Settlement Agreements,<sup>13</sup> which was released less than 2 months before the KBRA's termination at the end of December 2015, provides the status of implementation of KBRA measures at that time. For each action in the KBRA, please describe the likelihood of it being implemented, the responsible party, any potential limitations on implementation, and the schedule for implementation. Also, please revise any EIS/EIR conclusions and recommendations that were based on the assumption that the KBRA would be implemented.
7. The original KHSA was predicated on passage of federal legislation. Because no federal legislation was enacted, to implement the KHSA measures, the States of Oregon and California, the United States Departments of the Interior (Interior) and Commerce, and PacifiCorp amended the KHSA on April 6, 2016. Subsequently, Interior, the National Marine Fisheries Service (NMFS), and other KBRA and UKBCA signatory parties signed the 2016 Klamath Power and Facilities Agreement (KPFA) to address the interests of irrigators in the upper basin. Our understanding is that congressional authorizations are required for the federal agency parties to fully participate in certain actions supported in the KPFA. Therefore, please file a list of the KPFA's activities that require congressional authorization to enable implementation, along with the status of receiving each congressional authorization.
8. The biological opinions incorporated into the EIS/EIR have not been finalized. The EIS/EIR assumed implementation of the U.S. Fish and Wildlife

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<sup>13</sup> Klamath Basin Coordinating Council. 2015. Fifth Annual Report Implementing the Klamath Basin Settlement Agreements. November.

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Service's (FWS's) 2008 biological opinion<sup>14</sup> for suckers and NMFS's 2010 biological opinion<sup>15</sup> for coho salmon. In 2012, NMFS and FWS released a joint preliminary biological opinion<sup>16</sup> for all species listed under the Endangered Species Act, which addressed the effects of dam removal as described in the Detailed Plan, but did not include implementation of the KBRA as part of the proposed action.

To ensure that Commission staff has an understanding of the current status of the various biological opinions pertaining to the proposed removal of the Klamath River dams under the amended KHSA and of operation of Reclamation's Klamath Irrigation Project, please provide an update of the current status of the relevant biological opinions.

*Geology and Soils*

9. The EIS/EIR predicts response of the channel bed elevation between J.C. Boyle Dam and the Pacific Ocean to removal of the four dams with implementation of the KBRA, based on the results of several extensive modeling efforts, including broad-scale one-dimensional models (SRH-1D and DREAM-1) and a two-dimensional model of Copco No. 1, which draw on prior studies of the Klamath River system. The analyses<sup>17</sup> generally predict

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<sup>14</sup> FWS. 2008. Biological/conference opinion regarding the effects of the Bureau of Reclamation's proposed 10-year Operation Plan (April 1, 2008–March 31, 2018) for the Klamath Project and its effects on the endangered Lost River and shortnose suckers. U.S. Fish and Wildlife Service, Klamath Falls Fish and Wildlife Office, Klamath Falls, OR, and Yreka Fish and Wildlife Office, Yreka, CA.

<sup>15</sup> NMFS. 2010. Biological opinion on the operation of the Klamath Project between 2010 and 2018. Prepared for U.S. Bureau of Reclamation. Prepared by NMFS, Southwest Region. March 15, 2010.

<sup>16</sup> NMFS and FWS. 2012. Joint preliminary biological opinion on the proposed removal of four dams on the Klamath River. NMFS, Southwest Region and FWS, Region 8. November 2012.

<sup>17</sup> Refer to pages 9-33 to 9-37 of Technical Report No. SRH-2011-02. Reclamation. 2011. Hydrology, hydraulics and sediment transport studies for the Secretary's Determination on Klamath River dam removal and basin restoration. Prepared for Mid-Pacific Region, US Bureau of Reclamation, Technical Service Center, Denver, CO.



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that two years following removal of the dams a channel will be cut through the dam-stored sediments and the maximum aggradation (1.1 to 1.6 feet depending on water year type during dam removal) will occur in the reach between Bogus Creek and Willow Creek. Predicted aggradation is 0.6 to 0.9 foot for Willow Creek to Cottonwood Creek, and less than 0.25 foot downstream of Cottonwood Creek, which is 8 miles downstream of Iron Gate Dam. Although the EIS/EIR states that 2-year SRH-1D simulations estimate “up to 1 foot of reach-averaged deposition of fine and coarse sediment between Iron Gate Dam and Bogus Creek (RM 189.8),” Figure 3.3-15 in the EIS/EIR and Appendix F of the EIS/EIR indicate degradation, not aggradation, in this reach.<sup>18</sup> To resolve this conflicting information, please revise the text and/or Figure 3.3-15 to clarify whether aggradation or degradation is expected to occur in the Iron Gate Dam to Bogus Creek reach.

10. Although the EIS/EIR and supporting studies address the effects of dam removal on general streambed elevation and the storage of sediment in bars and channel fringes between J.C. Boyle Dam and the Pacific Ocean, modeling is not sufficient to evaluate whether the release of dam-stored sediment would aggrade at tributary mouths and form obstacles/barriers to the upstream and/or downstream migration of trout and salmon. Please describe whether and where any such effects are expected and how long such effects would persist. Please also include a proposed approach for monitoring and mitigating any impacts that such obstacles/barriers would have on fish populations downstream of Iron Gate Dam.
11. The conclusion in the EIS/EIR that channel morphology will be restored quickly following dam removal is based on the results of broad-scale, one-dimensional models; a focused, two-dimensional model of Copco No. 1; and flume experiments conducted by Stillwater Sciences in 2008. The conclusions of the models were expressed in general terms. As a result, the time frame for the expected persistence of deposited sediments in pool habitats, which are holding habitat for salmonids, is unclear. Please provide the rationale and assumptions used in estimating the time for reestablishment of pool depths in the reach between Iron Gate Dam and Willow Creek and the establishment of pools in the currently impounded reservoir reaches. In addition, provide a proposed monitoring plan and mitigation measures to address reestablishment of pools to support ESA-listed species after year one of deconstruction.

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<sup>18</sup> Refer to pages 3.3-108 and 3.3-109 of the EIS/EIR and page F-17 of Appendix F to the EIS/EIR.

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12. The effects of removing the dams on channel response in the vertical direction is evaluated in the Technical Report No. SRH-2011-02, which includes an evaluation of impacts to infrastructure.<sup>19</sup> This infrastructure evaluation is limited to bridges, culverts, and a pipeline near the river and reservoirs between J.C. Boyle Dam and Iron Gate Dam, and does not appear to address potential lateral migration of the channel on infrastructure and private property downstream of Iron Gate Dam. Please provide an assessment of potential damage to infrastructure/property due to channel wandering.
13. Technical Report No. SRH-2011-02 includes an evaluation of sediment transport under the dam removal alternative, which includes both one-dimensional and two-dimensional modeling.<sup>20</sup> The two-dimensional model (SRH-2D) was applied to Copco No. 1 to assess erosion patterns that may occur during reservoir dewatering and to verify the assumptions inherent in the one-dimensional simulations. However, when the SRH-2D model was used to predict sediment erosion and deposition processes during the Elwha Dam removal, Reclamation concluded that the model did not simulate delta channel processes accurately.<sup>21</sup> Reclamation's subsequent model improvements successfully simulated the vertical and lateral erosion processes of the delta for dam removal, although Reclamation found that the improved model still missed some of the details of delta erosion. Please provide an evaluation of the extent to which these model limitations may have affected the two-dimensional modeling for the Klamath Dam removals.
14. Section 3.2.5 of the EIS/EIR states that "while the Alternatives Formulation Report identified the option of mechanical sediment removal as mitigation for sediment erosion impacts associated with removal of the Four Facilities, subsequent analysis found this measure to be infeasible (Lynch 2011)." So we understand options for mitigating sediment erosion impacts associated with dam removal, please file a copy of Lynch (2011).

*Water Quantity*


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<sup>19</sup> Refer to pages 10-1 to 10-25 of Technical Report No. SRH-2011-02.

<sup>20</sup> Refer to pages 9-3 to 9-92 of Technical Report No. SRH-2011-02.

<sup>21</sup> Reclamation. 2014. Modeling of delta erosion during Elwha Dam removal with SRH-2D. Prepared by Yong G. Lai. Peer reviewed by Jennifer Bountry. Technical Report No. SRH-2014-31.

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15. Since preparation of the EIS/EIR, a number of actions and other factors may have changed water availability conditions, including: increased groundwater pumping in the upper Klamath Basin,<sup>22</sup> retirement of irrigated agriculture lands, improvements in estimating evapotranspiration from wetlands around Upper Klamath Lake,<sup>23</sup> changes in Klamath Irrigation Project operation, changes in Lewiston Dam operations,<sup>24</sup> and the Oregon Water Resources Department's completion of Phase One of the Klamath River Basin Adjudication of water rights in the Klamath Basin.<sup>25</sup> Because an accurate understanding of the water available to support anadromous fishes is crucial to evaluating the response of salmonids to dam removal, please update the information provided in the EIS/EIR to reflect any changes in the availability of water for release to the Klamath River under the current environmental and regulatory regime.
16. Simultaneous dewatering of the reservoirs would increase river flows during the high-flow period over naturally-occurring levels. To facilitate Commission staff's evaluation of the effect of reservoir dewatering on flooding, please provide simulated Klamath River flows at the USGS gages below Iron Gate Dam, near Seiad Valley, at Orleans, and near Klamath for normal and wet water year types that includes flow contributions from reservoir dewatering.

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<sup>22</sup> Gannett, Marshall W. and Katherine H. Breen. 2015. Groundwater levels, trends, and relations to pumping in the Bureau of Reclamation Klamath Project, Oregon and California. U.S. Geological Survey Open-File Report 2015-1145.

<sup>23</sup> Stannard, David I., Marshall W. Gannett, Danial J. Polette, Jason M. Cameron, M. Scott Waibel, and J. Mark Spears. 2013. Evapotranspiration from marsh and open-water sites at Upper Klamath Lake, Oregon, 2008–2010. U.S. Geological Survey Scientific Investigations Report 2013–5014.

<sup>24</sup> Refer to [https://www.usbr.gov/mp/nepa/nepa\\_base.cfm?location=ncao](https://www.usbr.gov/mp/nepa/nepa_base.cfm?location=ncao).

<sup>25</sup> Refer to <http://www.oregon.gov/owrd/pages/adj/index.aspx>.

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*Water Quality*

17. To support our review of the proposed surrender and decommissioning, please provide the current status of any required state or federal permit applications related to water quality,<sup>26</sup> including: Clean Water Act section 401 water quality certifications, section 402 National Pollutant Discharged Elimination System permits, section 404 dredge and fill permits, California DFW section 1602 California streambed alteration permits, and any required water quality permits under the Hoopa Valley Tribe Water Quality Control Plan.
18. Several studies concerning water quality have become available since preparation of the EIS/EIR. These studies include baseline monitoring of water quality and algae communities, an evaluation of the effectiveness of turbine venting at Iron Gate Dam in increasing DO concentrations, and evaluation of several methods for reducing nutrient concentrations in project waters.<sup>27,28</sup> New guidelines for posting public health advisories for toxic algae blooms<sup>29,30</sup> have also been released. To ensure that Commission staff has an accurate understanding of the environmental baseline, please provide up-to-date information on water quality data trends, the status of contaminants in sediments and biota, and algae in the Klamath River Basin. The information for algae should include characterization of the dominant algal species within the Klamath River Basin, and the potential limiting factors for blue-green algae and associated nuisance algal blooms.

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<sup>26</sup> See list of regulations in table 6.1 of the EIS/EIR.

<sup>27</sup> PacifiCorp Energy. 2014. Klamath Hydroelectric Settlement Agreement Implementation Report, FERC Project No. 2082. June 2014.

<sup>28</sup> Otten, Timothy G., Joseph R. Crosswell, Sam Mackey, and Theo W. Dreher. 2015. Application of molecular tools for microbial source tracking and public health risk assessment of a *Microcystis* bloom traversing 300 km of the Klamath River. *Harmful Algae* 46:71-81.

<sup>29</sup> Oregon Health Authority. 2016. Oregon Harmful Algae Bloom Surveillance (HABS) Program Public Health Advisory Guidelines Harmful Algae Blooms in Freshwater Bodies. May 2016.

<sup>30</sup> Yurok Tribe. 2016. 2016 Posting Guidelines for Public Health Advisories.

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19. Appendix E of the EIS/EIR provides an analysis of the potential effects of suspended sediment resulting from dam removal on certain fish species (fall and spring runs of Chinook salmon, coho salmon, summer and fall/winter runs of steelhead, Pacific lamprey, and green sturgeon). Daily time series of suspended sediment concentrations were developed using the median and 10-percent (referred to as “worst case” for the Proposed Action) exceedance values for each day of the year based on output from the SRH-1D 2.4 sediment transport model, which was run for water years 1961 through 2008. Although this appendix provides figures that display time series for the median and 10-percent exceedance suspended sediment concentrations, it does not provide information on suspended sediment concentrations, lake levels, or river flows that would occur with less than a 10 percent frequency. To provide for a comprehensive understanding of the simulated timing for each year’s drawdown, along with the resulting simulated river flows and simulated suspended sediment concentration values, please provide in Excel format the entire dataset for stream flows, reservoir water elevations, and simulated suspended sediment concentrations used for water years 1961 through 2008.
20. The EIS/EIR<sup>31</sup> states that suspended sediment concentrations would begin to decline in late March of the deconstruction year and would continue declining through that year’s early summer during normal to dry years, but that a wet year may prolong the dewatering of reservoirs and result in high suspended sediment concentrations for a longer period of time. Because the dewatering is scheduled for late fall-winter to minimize effects on aquatic biota, extending the duration of high suspended sediment concentrations beyond that period has the potential to have adverse effects on life stages of sensitive species present in the river at the time.<sup>32</sup> In order to provide Commission staff with adequate information to evaluate the risks associated with a prolonged dewatering period in a wet year, please provide an assessment of the potential adverse effects on water quality and aquatic resources that would result from high suspended sediment concentrations continuing after mid-March of the deconstruction year.

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<sup>31</sup> On page 3.3-102 of the EIS/EIR.

<sup>32</sup> Sensitive life stages present in spring are out-migrating smolts, adult green sturgeon, and in-migrating steelhead and spring-run Chinook adults. In the summer, rearing juvenile salmonids, green sturgeon adults, and in-migrating spring-run Chinook salmon adults.

## Schedule A

Project Nos. 2082-063 and 14803-001

21. The EIS/EIR evaluates contaminant concentrations in sediment and aquatic biota<sup>33</sup> based on research conducted during or before 2011 to determine whether sediment mobilization caused by dam removal had the potential to adversely affect aquatic biota and consumers of aquatic biota, including humans. While Camp Dresser & McKee (CDM) (2011)<sup>34</sup> was conducting its evaluation, the freshwater sediment screening levels being used were under review and were subsequently finalized. Since CDM's 2011 evaluation, the U.S. Army Corps of Engineers (Corps),<sup>35</sup> Northwest Regional Sediment Evaluation Team (RSET),<sup>36</sup> and U.S. Environmental Protection Agency (EPA)<sup>37</sup> have revised screening levels for both fresh and marine sediments. Please confirm whether the contaminant screening levels used in the EIS/EIR still represent the accepted criteria for evaluating risks to the freshwater or marine environment posed by sediment resulting from the removal of the Klamath River dams and for fish consumption. If newer criteria are more appropriate, please provide a reassessment of the effects of sediment contaminants on aquatic biota using the currently-accepted criteria. Also, please provide a proposed monitoring and mitigation plan to manage contamination risks caused by dam removal.

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<sup>33</sup> On pages 3.2-33 to 3.2-36 of the EIS/EIR.

<sup>34</sup> CDM. 2011. Screening-level evaluation of contaminants in sediments from three reservoirs and the estuary of the Klamath River, 2009-2011. Prepared with assistance from Stillwater Sciences. Prepared for U.S. Department of the Interior, Klamath Dam Removal Water Quality Sub Team. September 2011.

<sup>35</sup> Corps. 2016. Dredged material evaluation and disposal procedures user manual. Prepared by the Dredged Material Management Office, Corps, Seattle District. August 2016.

<sup>36</sup> RSET. 2016. Sediment evaluation framework for the Pacific Northwest. Prepared by the RSET Agencies. July 2016.

<sup>37</sup> EPA. 2016. EPA risk assessment, regional screening levels (RSLs)—Generic tables (May 2016) web page. Available at: <https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables-may-2016>. Accessed February 3, 2017.

## Schedule A

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22. A 2012 USGS report<sup>38</sup> summarized available information concerning contaminants in the Klamath River basin and identified data gaps. One of the conclusions of the report was that “the myriad of ecological stressors on the basin’s resources can complicate predicting the trajectory and success of restoration efforts, thus it is important to inventory those stressors and identify critical data gaps prior to implementing actions.” Given that the report was published in 2012, please provide relevant information from any subsequent studies concerning contaminants in the aquatic environment to allow us to adequately evaluate the potential effects of dam removal.

*Aquatic Resources*

23. Our November 10, 2016 Notice of Applications Filed With the Commission in this proceeding designated PacifiCorp and the Renewal Corporation as the Commission’s non-federal representative for carrying out informal consultation, pursuant to section 7 of the Endangered Species Act, section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act. To allow us to assess compliance with these regulations and support our environmental analysis, please provide an update on the status of these consultations, as well as the status of any pending state or federal permit applications<sup>39</sup> related to aquatic resources, including records of correspondence with relevant permitting agencies.
24. In order for staff to evaluate the current state of aquatic resources that could potentially be impacted by dam removal, please provide available information developed after publication of the EIS/EIR concerning: 1) the population status of spring and fall Chinook salmon, coho salmon, and steelhead; and 2) advancements in understanding of fish diseases, specifically the myxozoan parasites *Ceratonova shasta*<sup>40</sup> and *Parvicapsula minibicornis*, and fish disease outbreaks as they relate to survival of salmonids in the Klamath River Basin.

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<sup>38</sup> Eagles-Smith, C.A. and B.L. Johnson. 2012. Contaminants in the Klamath basin: historical patterns, current distribution, and data gap identification. U.S. Geological Survey Administrative Report. 88p.

<sup>39</sup> See list of regulations in table 6.1 of the EIS/EIR.

<sup>40</sup> Formerly *Ceratomyxa shasta*.

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25. The Secretarial Overview Report<sup>41</sup> states that the migration of fall-run adult Chinook salmon could be seasonally blocked in the summer by the combination of warm water and low dissolved oxygen in the Keno impoundment. Implementation of the Total Maximum Daily Load (TMDL) standards for this reach (ODEQ, 2010)<sup>42</sup> pursuant to section 303(d) of the Clean Water Act, the original KHSA's Interim Measures, and a restoration component of the KBRA are intended to reduce the severity of this water quality barrier. Nonetheless, the report notes that the seasonal trap and haul of migrating fall-run adult Chinook around Keno Reach "is an envisioned component" of the KBRA in some years following dam removal, until water quality improves. Please provide an update on the status of implementing the TMDLs<sup>43,44</sup> and interim measures related to water quality to further our assessment of expected water quality improvements and associated potential effects on salmonid restoration. Also, in the absence of the KBRA, how would the planned Keno water quality restoration and trap and haul programs be implemented?

*Threatened and Endangered Species*

26. Please provide information on any species, aquatic or terrestrial, that have been listed or proposed for listing under the federal or state Endangered Species Act since release of the EIS/EIR, as well as any previously-listed species that are now known to occur in the project area. Please also include any new designated or proposed critical habitat.

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<sup>41</sup> Refer to page 114 of the Klamath Dam Removal Overview Report for the Secretary of the Interior, An Assessment of Science and Technical Information. Version 1.1. March 2013.

<sup>42</sup> ODEQ. 2010. Upper Klamath and Lost River subbasins total maximum daily load and water quality management plan. December 2010.

<sup>43</sup> North Coast Regional Water Quality Control Board. 2010. Final staff report for the Klamath River total maximum daily loads addressing temperature, dissolved oxygen, nutrient, and microcystin impairments in California the proposed site specific dissolved oxygen objectives for the Klamath River in California and the Klamath River and Lost River Implementation Plans. March 2010.

<sup>44</sup> Oregon Department of Environmental Quality. 2010. Upper Klamath and Lost River subbasins total maximum daily load and water quality management plan. December 2010.



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*Socioeconomic Resources*

27. Should the Definite Plan contain elements that differ in a significant way from those described in the Detailed Plan, provide an analysis of the potential effects of those differences on socioeconomic resources including: commercial fishing; sport fishing; whitewater boating; regional economics (including Siskiyou County employment, labor income, and output); and tribal demographics and socioeconomic conditions so that we may consider them in our environmental review.

*Cultural Resources*

28. Our November 10, 2016 Notice of Applications Filed With the Commission in this proceeding designated PacifiCorp and the Renewal Corporation as the Commission's non-federal representative for carrying out informal consultation, pursuant to section 106 of the National Historic Preservation Act and the Advisory Council's regulations at 36 C.F.R. § 800.2(c)(4). To allow us to ensure compliance with section 106 of the National Historic Preservation Act, as amended, please provide the status of all consultation completed, including consultation with the California State Historic Preservation Office, Interior, affected Indian Tribes, the U.S. Forest Service, and others regarding: (a) the identification and National Register of Historic Places evaluation of all cultural resources that would be affected by the proposed action, including archaeological sites, historic-era sites and structures, and historic dams and associated structures; and (b) measures to avoid, minimize, or mitigate adverse effects to all eligible properties. Please include the current status of the development of a Historic Properties Management Plan that would specify all management, treatment, protection, and mitigation measures for resources eligible for listing in the National Register of Historic Places.
29. Similarly, please also provide the status of all consultation with affected Indian Tribes and other tribal organizations with regard to the identification and National Register of Historic Places evaluation of Traditional Cultural Properties (TCPs), the Klamath Tribe's proposed Klamath Riverscape as a cultural landscape or TCP; and the management, disposition, and treatment of human remains.

Document Content(s)

P-2082-063Letter.DOCX.....1-17

UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION

PacifiCorp and  
Klamath River Renewal Corporation

Project Nos. 14803-001  
2082-063

NOTICE OF APPLICATION FOR SURRENDER OF LICENSE, SOLICITING  
COMMENTS, MOTIONS TO INTERVENE, AND PROTESTS

(December 16, 2020)

Take notice that the following hydroelectric application has been filed with the Commission and is available for public inspection:

- a. Application Type: Surrender of Project License
- b. Project No: 14803-001 and 2082-063
- c. Date Filed: September 23, 2016, and supplemented June 29, 2018; July 29, 2019; February 28, 2020; and November 17, 2020
- d. Applicant: PacifiCorp and Klamath River Renewal Corporation
- e. Name of Project: Lower Klamath Hydroelectric Project
- f. Location: The project is located on the Klamath River in Klamath County, Oregon and Siskiyou County, California. The project includes federal lands managed by the U.S. Bureau of Land Management.
- g. Filed Pursuant to: Federal Power Act, 16 USC 791a - 825r
- h. Applicant Contact: Mark Bransom, Chief Executive Officer, Klamath River Renewal Corporation, 2001 Addison Street, Suite 317, Berkeley, CA 94704, (415) 820-4441, [info@klamathrenewal.org](mailto:info@klamathrenewal.org)

Sarah Kamman  
Vice President and General Counsel, PacifiCorp  
825 NE Multnomah Street, Suite 2000, Portland, OR 97232,  
(503) 813-5865, [sarah.kamman@pacificorp.com](mailto:sarah.kamman@pacificorp.com)

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- i. FERC Contact: Diana Shannon, (202) 502-6136, [diana.shannon@ferc.gov](mailto:diana.shannon@ferc.gov)
- j. Deadline for filing comments, motions to intervene, and protests: **February 15, 2021**

The Commission strongly encourages electronic filing. Please file comments, motions to intervene, and protests using the Commission's eFiling system at <http://www.ferc.gov/docs-filing/efiling.asp>. Commenters can submit brief comments up to 6,000 characters, without prior registration, using the eComment system at <http://www.ferc.gov/docs-filing/ecomment.asp>. You must include your name and contact information at the end of your comments. For assistance, please contact FERC Online Support at [FERCOnlineSupport@ferc.gov](mailto:FERCOnlineSupport@ferc.gov), (866) 208-3676 (toll free), or (202) 502-8659 (TTY). In lieu of electronic filing, you may submit a paper copy. Submissions sent via the U.S. Postal Service must be addressed to: Kimberly D. Bose, Secretary, Federal Energy Regulatory Commission, 888 First Street NE, Room 1A, Washington, DC 20426. Submissions sent via any other carrier must be addressed to: Kimberly D. Bose, Secretary, Federal Energy Regulatory Commission, 12225 Wilkins Avenue, Rockville, Maryland 20852. The first page of any filing should include docket numbers P-14803-001 and P-2082-063. Comments emailed to Commission staff are not considered part of the Commission record.

The Commission's Rules of Practice and Procedure require all intervenors filing documents with the Commission to serve a copy of that document on each person whose name appears on the official service list for the project. Further, if an intervenor files comments or documents with the Commission relating to the merits of an issue that may affect the responsibilities of a particular resource agency, they must also serve a copy of the document on that resource agency.

k. Description of Request: The Klamath River Renewal Corporation (Renewal Corporation) and PacifiCorp request to surrender the license for and decommission the Lower Klamath Project No. 14803 (project). Decommissioning activities would include the full removal of the J.C. Boyle, Copco No. 1, Copco No. 2 and Iron Gate dams, located on the mainstem Klamath River in Klamath County, Oregon and Siskiyou County, California.

On July 16, 2020, the Commission issued an order approving a partial transfer of the license for the project from PacifiCorp to PacifiCorp and the Renewal Corporation as co-licensees. In the amended surrender application filed on November 17, 2020, PacifiCorp and the Renewal Corporation indicated that they will not be accepting co-licensee status. PacifiCorp and the Renewal Corporation state that they intend to file a new transfer application by January 16, 2021, requesting that the Lower Klamath Project be transferred from PacifiCorp to the Renewal Corporation and the states of California

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and Oregon, for the purposes of license surrender and decommissioning the four developments.

Also included in the November 17 filing was a Memorandum of Agreement entered into by PacifiCorp, the Renewal Corporation, the Karuk Tribe, the Yurok Tribe, and the states of California and Oregon indicating the parties' support for the new transfer proposal to be filed by January 16, 2021.

With PacifiCorp's consent and technical support, the Renewal Corporation will act as the proponent of the surrender application and is authorized to act as the Commission's non-federal representative in ongoing consultations.

l. Locations of the Application: This filing may be viewed on the Commission's website at <http://www.ferc.gov> using the "eLibrary" link. Enter the docket number excluding the last three digits in the docket number field to access the document. You may also register online at <http://www.ferc.gov/docs-filing/esubscription.asp> to be notified via email of new filings and issuances related to this or other pending projects. For assistance, call 1-866-208-3676 or e-mail [FERCOnlineSupport@ferc.gov](mailto:FERCOnlineSupport@ferc.gov), for TTY, call (202) 502-8659. Agencies may obtain copies of the application directly from the applicant.

m. Individuals desiring to be included on the Commission's mailing list should so indicate by writing to the Secretary of the Commission.

n. Comments, Protests, or Motions to Intervene: Anyone may submit comments, a protest, or a motion to intervene in accordance with the requirements of Rules of Practice and Procedure, 18 CFR 385.210, .211, .214, respectively. In determining the appropriate action to take, the Commission will consider all protests or other comments filed, but only those who file a motion to intervene in accordance with the Commission's Rules may become a party to the proceeding. Any comments, protests, or motions to intervene must be received on or before the specified comment date for the particular application.

o. Filing and Service of Documents: Any filing must (1) bear in all capital letters the title "COMMENTS", "PROTEST", or "MOTION TO INTERVENE" as applicable; (2) set forth in the heading the name of the applicant and the project number of the application to which the filing responds; (3) furnish the name, address, and telephone number of the person commenting, protesting or intervening; and (4) otherwise comply with the requirements of 18 CFR 385.2001 through 385.2005. All comments, motions to intervene, or protests must set forth their evidentiary basis. Any filing made by an

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intervenor must be accompanied by proof of service on all persons listed in the service list prepared by the Commission in this proceeding, in accordance with 18 CFR 385.2010.

Kimberly D. Bose,  
Secretary.

Document Content(s)

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Name	Affiliation	Phone Number (work)	Phone Number (r	Email	Address
Cindy Heitzman, Director	California Preservation Foundation	415.495.0349 x200		<a href="mailto:cheitzman@californiapreservation.org">cheitzman@californiapreservation.org</a>	101 The Embarcadero, Suite 120, San Francisco, CA 94105
Lisa Gioia, Museum Director	Siskiyou County Museum/Historical Society	530.842.3836		<a href="mailto:SCMuseum@co.siskiyou.ca.us">SCMuseum@co.siskiyou.ca.us</a>	910 South Main Street, Yreka, CA 96097
Todd Kepple, Museum Manager	Klamath County Museum/Historical Society			<a href="mailto:tkepple@klamathcounty.org">tkepple@klamathcounty.org</a>	1451 Main Street, Klamath Falls, OR 97601
William Gates, Interim Director	Southern Oregon Historical Society		5417736536	<a href="mailto:bill.gates@sohs.org">bill.gates@sohs.org</a>	160 N. Central, Medford, OR 97501
Peggy Moretti	Restore Oregon			<a href="mailto:info@restoreoregon.org">info@restoreoregon.org</a>	1130 SW Morrison Street, Suite 318, Portland, OR 97205
Steve Baker	City of Yreka	530.841.2321		<a href="mailto:sbaker@ci.yreka.ca.us">sbaker@ci.yreka.ca.us</a>	701 Fourth Street, Yreka, CA 96097
Terry Barber	County of Siskiyou, CA	530.842.8005		<a href="mailto:tbarber@co.siskiyou.ca.us">tbarber@co.siskiyou.ca.us</a>	1312 Fairlane, Yreka, CA 96097
Elizabeth Nielsen	County of Siskiyou, CA	530.842.8012	530.598.2776	<a href="mailto:enielsen@co.siskiyou.ca.us">enielsen@co.siskiyou.ca.us</a>	1312 Fairlane, Yreka, CA 96097
Klamath County Commissioners Office	County of Klamath, OR	541.883.5100		<a href="mailto:bocc@klamathcounty.org">bocc@klamathcounty.org</a>	305 Main St #224, Klamath Falls, OR 97601



Klamath Section 106 Consultation Contact List				
Organization	Status	Contact Name/Office	Address	Phone and email
Oregon SHPO	Consulting Party, CRWG Member	Dennis Griffin (State Archaeologist) and Tracy Schwartz	Oregon Heritage, Oregon Parks and Recreation Department, 725 Summer St. NE, Suite C, Salem OR 97301	(503) 986-0690; dennis.griffin@oregon.gov & tracy.schwartz@oregon.gov (503) 986-0677
California SHPO	Consulting Party, CRWG Member	Julianne Polanco (SHPO); Kathleen Forrest (Architectural Review); Anmarie Medin (CRM), Brendon Greenway (Associate State Archaeologist)	1725 23rd Street, Suite 100, Sacramento, CA 95816	(916) 445-7000; brendon.greenaway@parks.ca.gov; anmarie.medin@parks.ca.gov; kathleen.forrest@parks.ca.gov
Six Rivers National Forest (USFS)		Heritage Program Resources Manager Jeannie Goetz (Klamath Forest Archaeologists/Heritage Program Resources Manager)	1330 Bayshore Way, Eureka, CA 95501	(707) 442-1721
Klamath National Forest (USFS)	Consulting Party, CRWG Member	Eric Ritter and Aldon Neel, Redding (Northern California District Office)	1711 South Main Street, Yreka, CA 96097	(530) 841-4488; jgoetz@fs.fed.us
Bureau of Land Management (BLM) Redding	Consulting Party, CRWG Member		6640 Lockheed Drive, Redding, CA 96002	(530) 224-2100; eritter@blm.gov; aneel@blm.gov
Bureau of Land Management (BLM) Klamath US Army Corps of Engineers (USACE) Bureau of Indian Affairs (BIA) Bureau of Reclamation (BoR) National Park Service (NPS) Redwood NP Federal Energy Regulatory Commission (FERC)	Consulting Party, CRWG Member Consulting Party, CRWG Member    Lead Federal Agency	Laird Naylor, Klamath Falls Field Office Cameron Purchio, Eureka Field Office	2795 Anderson Ave. Bldg 25, Klamath Falls, OR 97603 601 Startare Dr # 100, Eureka, CA 95501   1111 Second Street, Crescent City, CA 95531	(541) 885-4139; lnaylor@blm.gov (707) 443-0855; cameron.r.purchio@usace.army.mil   (707) 465-7335
Other Interested Parties				
Del Norte County Historical Society	Potential Interested Party		577 H Street, Crescent City, CA 95531	(707) 464-3922
Humboldt County Historical Society	Potential Interested Party		703 8th Street, Eureka, CA 95501	(707) 445-4342; info@humboldthistory.org
Siskiyou County Museum	Potential Interested Party	Lisa Gioia, Director	910 South Main Street, Yreka, CA 96097	(530) 842-3836; SCMuseum@co.siskiyou.ca.us
Klamath County Museum	Potential Interested Party	Todd Kepple, Museum Manager	1451 Main Street, Klamath Falls, OR 97601	(541) 882-1000; tkepple@klamathcounty.org
Southern Oregon Historical Society	Potential Interested Party		106 North Central Avenue, Medford, OR 97501	(541) 773-6536
Restore Oregon	Potential Interested Party	Peggy Moretti, Exec. Dir.	1130 SW Morrison Street, Suite 318, Portland, OR 97205	(503) 243-1923; info@restoreoregon.org
Oregon Heritage Commission	Potential Interested Party			
California Preservation Foundation	Potential Interested Party	Cindy Heitzman, Exec. Dir.	5 Third Street, Suite 424, San Francisco, CA 94103	(415) 495-0349; cpf@californiapreservation.org
State Historical Resources Commission (CA)	Potential Interested Party	Twila Willis-Hunter, OHP	1725 23rd Street, Suite 100, Sacramento, CA 95816	calshpo@parks.ca.gov
Local Governments (w/jurisdiction)				
City of Yreka				
Klamath County				
Siskiyou County				
Del Norte County				
Humboldt County				

Date Sent	Date Received	Comments
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## **APPENDIX E      CULTURAL RESOURCES WORKING GROUP MEETING MINUTES**

## Meeting Minutes

Subject	Klamath River Restoration Project Cultural Resources Working Group (CRWG) Project Introduction Meeting
Date	September 5, 2017
Time	1:00-2:30 pm PST
Location	WebEx
Attendees	Klamath River Renewal Corporation (KRRRC): Mark Bransom AECOM: Mike Kelly, Elena Nilsson, Kirk Ranzetta, Seth Gentzler, Shannon Leonard, Stephanie Butler CDM Smith: Kate Stenberg PacifiCorp: Russ Howison U.S. Forest Service (USFS): Jeanne Goetz California Office of Historic Preservation (CA OHP): Kathleen Forrest Oregon Office of Historic Preservation (OR OHP): Dennis Griffin, Jessica Gabriel Bureau of Land Management (BLM): Eric Ritter
Distribution	CRWG

### Purpose

To provide an overview of the Klamath River Restoration Project and introduce participants of the cultural resources working group (CRWG).

### Introductions

Elena Nilsson (AECOM) and Mark Bransom (KRRRC) welcomed the group. The CRWG team members provided brief introductions. The Bureau of Reclamation (BOR) has declined the invitation to participate in the CRWG at this time. Four returning group members from the PacifiCorp Relicensing Project CRWG (Russ Howison, PacifiCorp; Dennis Griffin, OR OHP; Eric Ritter, BLM; Kirk Ranzetta, AECOM) can provide historical perspective for the Klamath River Renewal Project (Project).

### Project Background

Seth Gentzler, AECOM Project Manager, provided a general overview of PacifiCorp's Klamath Hydroelectric Project (KHP) and the current Project. The KHP is PacifiCorp owned and operated, and includes eight facilities. Four of the facilities are part of the Project, consisting of J.C. Boyle, Copco No. 1, Copco No. 2, and Iron Gate.

A historical background of the various projects related to the KHP was provided, including built dates of the dams (1902-1962); PacifiCorp's 50-year license and 2004 re-license efforts; 2000-2007 studies for Federal Energy Regulatory Commission (FERC) relicensing, resulting in a 2007 Environmental Impact Statement (EIS); and the 2010 Klamath Basin Restoration Agreement (KBRA) and Klamath Hydroelectric Settlement Agreement (KHSA). The KHSA laid out steps to remove the dams and to provide river restoration and identified information needs, and specific questions that should be addressed with new studies and analyses, prior to the Secretary of the Department of the Interior (DOI) making a determination on removal of the Four Facilities (Secretarial Determination).

In 2012, the BOR, as lead federal agency, and California Department of Fish and Game (CDFG), as lead state agency, developed an EIS/EIR to analyze the potential impacts to the environment from the proposed removal of four PacifiCorp dams pursuant to the National Environmental Quality Act (NEPA) and the California Environmental Quality Act (CEQA). The EIS/EIRs environmental assessments were outlined in a 2012 BOR technical study, referred to as the Detailed Plan for Dam Removal (Detailed Plan). The plan addressed full and partial dam removal, as well as four mitigation measures for cultural resources.

In 2013, the BOR also prepared an Overview Report for the SOI to provide a summary of key findings from the Federal technical studies to inform the Secretary in making a decision about dam removal. Congressional action was required to pass legislation to endorse dam removal. The dam removal project was put on hold because Congress did not enact the legislation.

To move the project forward, in 2016 an amended KHSa (Amended KHSa) was signed to remove the need for Congressional authorization, and to pursue dam removal through the FERC license surrender process. The KRRC was established as the dam removal entity (DRE) to implement the Project. Currently, the KRRC is comprised of 12 Board Members, including tribal representatives, and 3 vacancies. In September 2016, KRRC submitted a license amendment and a surrender application to the FERC to remove the four facilities. In November 2016, FERC designated KRRC and PacifiCorp as the representative for carrying out informal consultation pursuant to Section 106 of the National Historic Preservation Act.

Since March 2017, AECOM has been conducting project management and field reconnaissance surveys of the river corridor, including for cultural and biological resources. Geological surveys and visual inspections will be conducted soon. Regulatory and permitting is currently being reviewed by CDM Smith.

The State Water Resources Control Board (SWRCB), as the California Environmental Quality Act (CEQA) lead, is preparing an Environmental Impact Report (EIR) as part of the water quality certification for the Project. SWRCB has requested additional information from KRRC regarding the Project, and the KRRC's technical representative, AECOM, is preparing responses. FERC also has requested additional information as part of the NEPA process and surrender applications.

### **Project Overview**

Elena Nilsson provided a Project overview, focused on previous cultural resources studies conducted for relicensing and dam removal studies, and also discussed Project goals. The goals of the Project are to remove the four dams (Copco No. 1, Copco No. 2, Fall Creek, and Iron Gate) and associated works to achieve a free flowing river, volitional fish passage, and a restored project area.

J.C. Boyle Dam and Powerhouse were built between 1956-1958 in Oregon. A number of associated buildings and structures (i.e., fish ladder, dam, spillways, powerhouse) are part of the built environment. The J.C. Boyle Reservoir area was not surveyed for cultural resources before dam construction because it was mostly in private holdings. Some survey work was completed downstream of the reservoir, and 12 sites were identified along the reservoir's margins, mostly pre-contact Native American village sites.

Copco No. 1 Dam is first dam on the river in California, and construction was completed in 1918 and the dam enlarged in 1922. A number of historic structures are associated with the dam, including penstock, diversion tunnel, powerhouse, and ancillary buildings. There were no cultural

studies done in advance of the dam construction. Eight archaeological sites have been identified along the shoreline, and the potential exists for submerged Shasta Indian village sites to occur within the Copco Lake reservoir.

Copco No. 2 Dam is a diversion dam that began operation in 1925. Like Copco 1, there is a complex of historic buildings associated with the dam, including a powerhouse, spillway, wood-stave penstock, and the Copco village complex (housing structures) that currently functions as a PacifiCorp operation center.

The Iron Gate Dam is the last retention development on the river in California and was completed in 1962. Associated buildings and structures include a powerhouse, spillways, and fish hatchery. The Iron Gate reservoir is the only reservoir that had a pre-inundation cultural resources survey, which was completed by the University of Oregon in the early 1960s. One precontact village site – CA-SIS-326 - was excavated before inundation. In addition, eight other cultural sites have been identified bordering the reservoir's shoreline. As with Copco Lake, the potential exists for submerged Shasta Indian village sites to occur within the Iron Gate Reservoir.

### **Schedule**

A project schedule is provided on page 29 of the PowerPoint presentation. In general, Copco No. 1 drawdown will begin in November 2019, and the other dam drawdowns will follow shortly after. The sediment release is scheduled for January 1, 2020. Should permitting cause delays, the project will be delayed to the following year (work needs to start in January of any given year).

### **Previous Cultural Studies**

#### **1. 2002-2004 FERC Relicensing Cultural Resources Studies.**

PacifiCorp consultants (CH2M Hill and HRA) completed a records search, pedestrian survey, tribal ethnographic/riverscape reports, historic context and determination of eligibility for the KHP, and draft Historic Properties Management Plan (HPMP). Monthly CRWG meetings were conducted. The Area of Potential Effects (APE) was not delineated before field work; however, the CRWG developed a "fieldwork inventory corridor", which extended 65 miles along the river corridor from upper Klamath Lake downstream to the Iron Gate Dam area. The field inventory, which began in 2002, focused on areas that had not been previously surveyed for cultural resources.

In 2003, an APE was delineated by PacifiCorp; and in 2004, surveys were conducted in areas not previously covered. Because of the survey, 302 archaeological resources were identified, including 172 archaeological sites (PacifiCorp 2004). National Register of Historic Places (NRHP) eligibility recommendations were provided for precontact and historic-period sites, but the CA and OR State Historic Preservation Officers (SHPOs) did not finalize the recommendations. Five precontact archaeological districts and one historic archaeological district were also identified; the NRHP eligibility of these districts was not finalized.

- Dennis Griffin (OR OHP) indicated that not all BLM lands in Oregon were not previously surveyed during the PacifiCorp relicensing project.

PacifiCorp prepared a historic context statement (Kramer 2003a) and determination of eligibility (Kramer 2003b) for the seven hydroelectric facilities comprising the KHP. A historic district, comprised of the Link River, Keno, J.C. Boyle, Copco No. 1, Copco No. 2, and Fall Creek facilities, was recommended NRHP-eligible under Criterion A for its association with the industrial and economic development of southern Oregon and northern California. The NRHP eligibility of

the district has not been finalized. The Iron Gate facility was excluded from the district because it had been previously determined Not Eligible for listing in the NRHP by the State of California.

PacifiCorp sponsored four tribal ethnographic studies prepared by the Klamath (Deur 2003), Shasta (Daniels 2003), Karuk (Salter 2003), and Yurok (Sloan 2003) tribes to address traditional and contemporary use of the Klamath River corridor. Traditional cultural properties (TCPs) were identified.

The Klamath Cultural Riverscape was identified, which focused on the inter-relatedness of natural and cultural aspects of the Klamath River. A draft regulatory analysis of the riverscape was prepared in 2003 by Dr. Thomas Gates Yurok Tribal Historic Preservation Officer (THPO). The following year, an integrated report was prepared from the four ethnographic studies (King 2004). The integrated report identified the entire length of the river as a cultural and ethnographic landscape for the tribes. The Klamath Riverscape was recommended NRHP-eligible; however, the report and eligibility determination was not submitted to the California or Oregon SHPO offices for review and concurrence.

PacifiCorp also prepared a draft Historic Properties Management Plan (HPMP) for management, treatment, protection, and mitigation measures for NRHP-eligible resources; however, the management plan was not finalized. The draft HPMP will be revised as part of the current Project.

2. 2012 BOR Secretarial Determination, Cultural Resources Report.

CARDNO Entrix completed the cultural resources work for the BOR EIR/EIS study. The records search was updated for a project corridor between the Upper Klamath Lake and Pacific Ocean, but no new survey was conducted. The 2004 NRHP recommendations prepared by PacifiCorp were used for the BOR study. CARDNO Entrix provided NRHP eligibility recommendations for any new sites identified during the records search and not included in the previous PacifiCorp study.

3. 2012 BOR Detailed Plan.

Four cultural resources mitigation measures were outlined in the BOR EIS/EIR and were also outlined in the Detailed Plan. These mitigation measures will frame the current KRRP work, and the project wants to confirm that these measures are still valid in 2017; and if not, what measures would be appropriate. The measures are:

- CHR-1: Klamath Hydroelectric Project. Focuses on the 4 hydroelectric facilities and includes updating the 2003 Determination of Eligibility (Kramer 2003b) and reaching a consensus on the determination. Historic American Building Survey/Historic American Engineering Record (HABS/HAER) would be conducted under this measure.
- CHR-2: Archaeological Resources. Focuses on steps to resolve impacts to archaeological resources, identify and evaluate resources, and develop plans for Section 106 compliance (e.g., Inadvertent Discovery Plan, Treatment Plan, and Memorandum of Understanding).
- CHR-3: TCPs, Cultural Landscapes, and Klamath Riverscape. Focuses on resolving impacts to TCPs and the riverscape, identifying and evaluating these resources, conducting additional ethnographic research, and developing a Cultural Resources Management Plan (CRMP) for the riverscape, if eligible.
- CHR-4: Treatment of Human Remains. Resolving impacts on Native American burials through ongoing tribal consultation for the treatment, disposition, and management of human remains exposed or impacted from dam removal and develop a Plan of Action and Inadvertent Discovery Plan.

**Next Steps for Section 106 Process**

Kirk Ranzetta provided an overview of the next steps envisioned in the Section 106 process. These steps include:

1. Define the APE for the Project
2. Tribal identification and participation in the CRWG
3. NRHP eligibility for built environment resources, archaeological resources, and TCP/ethnographic landscapes. Includes fieldwork to identify resources.
4. Memorandum of Agreement for HABS/HAER documentation of built environment resources. This work has to be done prior to any work on the dams.
5. Programmatic Agreement and preparation of associated plans
6. CRWG communications protocol and recordkeeping

Many of the documents discussed above are published on the KRRC website:

<http://www.klamathrenewal.org/resources/>.

The current project is issued under FERC docket no. P-14803; all pre-2016 documents related to the Klamath River Project are under FERC docket no. 2082.

**Questions and Answers**

- Kathleen Forrest, CA SHPO. What was the legal hook for the four mitigation measures and how were they determined?  
Response: The mitigation measures were outlined in the 2012 BOR EIS/EIR; however, a formal Record of Decision was not completed. The mitigation measures were developed through the NEPA process and were close to a final decision, but FERC is currently doing a new NEPA process and will be revising the 2012 document. There also is a CA CEQA process to develop a revised EIS. Because the project has not changed, the project anticipates building on or revising the existing mitigation measures through the CRWG.
- Kathleen Forrest, CA SHPO. While the mitigation measures are reasonable and there are no objections, CA SHPO is concerned about HABS/HAER documentation being the only mitigation measure for the built environment. CA SHPO would like to request a summary of how the consulting parties arrived at the HABS/HAER mitigation measure if moving forward with it.
- Jessica Gabriel, OR SHPO. OR SHPO may not have received the 2012 documentation and will need full list of properties, eligibility recommendations, and effects before concurring with mitigation measures. In addition to HABS/HAER, recommend public outreach or public interpretation to allow the resources to be available to the community. Would also like a summary of previous consultation on mitigation measures.
- Kirk Ranzetta, AECOM. What other types of mitigation has the CA SHPO used on comparable projects?  
Response: CA SHPO is looking for something that is useful to the community and driven by the consulting parties.

**Future Meetings**

Next meeting will be in October 2017. The group will continue to have WebEx meetings, with a possible in person meeting further into the project.



Pending Action Items:**AECOM**

- Review 2012 documentation and contact BOR to understand how the HABS/HAER mitigation measures (CHR-1) was developed. Provide a summary of consultation to the CA and OR SHPOs.

The meeting ended at 2:30 pm.

**References Cited**

Daniels, Brian I.

2003 Preliminary Shasta TCP Study. On file, PacifiCorp, Portland, Oregon.

Deur, Douglas

2003 Traditional Cultural Properties and Sensitive Resource Study. On file, PacifiCorp, Portland, Oregon.

Gates, Thomas

2003 Ethnographic Riverscape: Regulatory Analysis. On file, PacifiCorp, Portland, Oregon.

King, Thomas F.

2004 First Salmon: The Klamath Cultural Riverscape and the Klamath River Hydroelectric Project. Prepared for the Klamath River Intertribal and Fish Commission. On file, PacifiCorp, Portland, Oregon.

Kramer, George

2003a Historic Context Statement: Klamath Hydroelectric Project, FERC No. 2082. On file, PacifiCorp, Portland, Oregon.

2003b Request for Determination of Eligibility: Klamath Hydroelectric Project, FERC No. 2082. On file, PacifiCorp, Portland, Oregon.

PacifiCorp

2004 Final Technical Report Klamath Hydroelectric Project (FERC Project No. 2082) Cultural Resources. On file, PacifiCorp Portland, Oregon.

Salter, John

2003 White Paper On Behalf of the Karuk Tribe of California: A Context Statement Concerning the Effect of the Klamath Hydroelectric Project on Traditional Resource Uses and Cultural Patterns of the Karuk People within the Klamath River Corridor. On file, PacifiCorp, Portland, Oregon.

Sloan, Kate

2003 Ethnographic Riverscape: Klamath River Yurok Tribe Ethnographic Inventory. Draft report prepared for PacifiCorp by Yurok Tribe Culture Department under contract #P13342 in conjunction with FERC Project No. 2082. On file, PacifiCorp, Portland, Oregon.

## Meeting Minutes

Subject	Klamath River Renewal Project Cultural Resources Working Group (CRWG) Proposed Area of Potential Effects (APE) Meeting
Date	December 14, 2017
Time	1:00-2:30 pm PST
Location	WebEx
Attendees	AECOM: Elena Nilsson, Kirk Ranzetta, Burr Neely, Shannon Leonard, Stephanie Butler CDM Smith: Kate Stenberg PacifiCorp: Russ Howison Bureau of Land Management (BLM): Eric Ritter, Alden Neel, Laird Naylor California Office of Historic Preservation (CA OHP): Kathleen Forrest, Anmarie Medin, Brendon Greenaway Oregon State Historic Preservation Office (OR SHPO): Dennis Griffin, Jessica Gabriel
Distribution	CRWG

### PURPOSE

To provide an overview and initial definition of the proposed Klamath River Renewal Project (Project) area of potential effects (APE).

### REGULATORY CONTEXT AND PROJECT DEFINITIONS

Burr Neely (AECOM) provided a general overview of the regulatory context for establishing the Project APE. The APE is influenced by the nature of the undertaking, and the APE may be different for different kinds of effects. Ultimately, the Federal Energy Regulatory Commission (FERC) will determine the APE with input provided by the cultural resources working group (CRWG) consultation meetings.

Three project-defined areas were discussed. The *Study Area* is a broader geographic area that is typically larger than the APE and is used to help frame the literature review and cultural/ethnographic context. The Klamath River Renewal Corporation (KRCC) has initiated an updated records search for the Study Area, which includes a 0.5-mile wide zone extending on either side of the reservoir shorelines, beginning at the southern end of Upper Klamath Lake, Oregon and extending to Humbug Creek, California. Once the APE is formally defined, the Study Area will be expanded, as needed, to cover the APE in more detail, and the background research will be updated.

The *Project Area* refers to the Project Limits of Work and Access (LOW), as currently defined in the KRCC California Environmental Quality Act (CEQA), California, and Oregon 410 Water Quality Certifications Technical Support Document.

The *FERC Project Boundary* refers to the jurisdictional boundary of the Klamath Hydroelectric Project (FERC Project No. 2082).

**DAM REMOVAL COMPARATIVE CONTEXT**

The Elwha River Restoration Project and the Condit Dam Removal Project, both in the State of Washington, were reviewed to provide contextual information regarding APEs defined for previous dam removal. On the Elwha River in the Olympic Peninsula, mitigation measures were included for both downstream and upstream effects to cultural resources from the facility removal. The project also took into account access to archaeological sites that were currently inundated post-dam removal.

For the Condit Hydroelectric Project, located along the White Salmon River, a historic properties management plan (HPMP) was developed that outlined stipulations for managing impacts on archaeological and built environment resources. The project's APE included the reservoirs above the dam and downstream from the Condit dam to its mouth at the confluence of the Columbia River.

**PREVIOUS APEs FOR KLAMATH RIVER EIS/EIRS**

The APEs developed in support of the EIS/EIRs prepared for the FERC Klamath Hydroelectric Project Relicensing (2007) and Klamath Dam Removal (2012) studies were reviewed to provide background information and a summary.

In 2004, PacifiCorp developed an APE through a relicensing application that included the FERC project boundary under the existing license (FERC #2082) and all lands within the proposed boundary for the new license, including the proposed hydropower facilities, recreation sites, wildlife enhancement lands, and river reaches between project developments.

The Cultural Resources Working Group (CRWG) formed for the PacifiCorp relicensing effort developed a broader APE that included the FERC project boundary, as well as the culturally sensitive lands within the Klamath River Canyon (ridgetop to ridgetop).

The PacifiCorp APE and the CRWG APE evolved into a compromise that was referred to as the Field Inventory Corridor (FIC). The FIC was studied rather than an APE, and it covered the area between the outlet of the Upper Klamath Lake downstream to 1 mile southwest of the Iron Gate dam (RM 189.2). Cultural resources surveys and evaluations were conducted within the FIC.

Downriver tribes, such as the Karuk and Yurok, felt the APE should be more broadly defined to include the area extending downstream from Iron Gate Dam to the mouth of the Klamath River at the Pacific Ocean due to project effects on salmon fisheries and other cultural resources along the Klamath River corridor.

In 2006, PacifiCorp revised the APE based on the proposal to decommission East and West Side developments and to remove the Keno development from the project. The revised 2006 APE excluded the Keno reservoir, the Klamath River from the reservoir to the J.C. Boyle reservoir, and the river reach from below J.C. Boyle powerhouse to the Oregon-California state line.

In 2007, during the FERC EIS/EIR relicensing process, FERC established the APE as the area delineated by PacifiCorp in 2004, as well as the river reach from Iron Gate to the river's mouth at the Pacific Ocean.

In 2012, the Bureau of Reclamation's (BOR) Area of Analysis for the Klamath Dam Removal EIS/EIR established an APE that extended from the outlet at Keno Dam to the Pacific Ocean. The APE extended outward for 0.5 miles from each bank of the Klamath River, plus a 0.5-mile-wide corridor from the high water mark surrounding the four reservoirs (J.C. Boyle, Copco 1, Copco 2, and Iron Gate) and all four dams and associated facilities. This APE represented the broadest area studied.

#### Comments/Questions:

- Eric Ritter (BLM-Redding Field Office) indicated that previous FERC projects (e.g., Oroville) considered more than one APE, such as an APE for the Tribes. Is this being considered for the current Project?  
Response: There may be different APEs for different types of effects that may be encountered during the course of the Project.
- Elena Nilsson (AECOM) requested confirmation that none of the previous APEs were concurred upon by Oregon or Californian SHPO.  
Response: Dennis Griffin (OR SHPO) responded that the CRWG did approve two APEs; one APE was for Traditional Cultural Properties (TCPs) and one was for the river. All the BLM lands were not surveyed. Dennis will review previous project notes to confirm that the APEs received concurrence.

#### PROPOSED PROJECT APE

The proposed APE for the Project begins at RM 233, at the upper reach of the J.C. Boyle Reservoir, encompassing a 0.5-mile area on either side of the Klamath River downstream to its mouth at the Pacific Ocean (RM 0). This proposed APE is consistent with previous agency APE definitions (e.g., FERC, BOR). Within the proposed APE, a Subarea 1 has been developed, reflecting Project's LOW where direct impacts may likely occur.

The proposed APE incorporates the concept of the Klamath Cultural Riverscape (Gates 2003; King 2004) and the "rim-to-rim" APE developed by the 2004 PacifiCorp CRWG. The Riverscape was also recorded a specific historic property, which allowed consideration of potential effects on cultural practices, TCPs, Indian Sacred Sites, and Archaeological and Historical Sites/Districts that extended beyond the river and facility boundaries. In general, there is a distinct difference between the NRHP-eligible Riverscape and the proposed APE.

By defining a proposed Project APE, a sense for the level of effort needed for cultural resources compliance can be determined. The entire APE would be subject to a literature review and identification of known cultural resources (e.g., sites, TCPs, sacred sites). However, it is not intended that fieldwork would be required throughout the entire APE for identification purposes. Subarea 1 would be the focus of fieldwork, identification/evaluation reports, and mitigation measures, as direct impacts on sites may occur in this area.

#### Comments/Questions:

- Dennis Griffin (OR SHPO). How would indirect effects be addressed?  
Response: Indirect effects (e.g., setting, noise, atmospheric) would be assessed within the broader APE. However, a 100% field survey from rim-to-rim to the mouth of the river would not be recommended.  
Dennis Griffin commented that other indirect effects could potentially damage archaeological sites. Changes to recreational areas, such as campgrounds and access areas, along the Klamath River could impact archaeological sites.
- Eric Ritter (BLM-Redding Field Office) commented that the rim-to-rim concept does not seem applicable in California and inquired how the rim-to-rim will be defined within this landscape.  
Response: The proposed APE would include an arbitrary 0.5-mile buffer zone and would not just be based on topography.
- Anmarie Medin (CA OHP). Would it be appropriate for the proposed APE not to extend to Mt. Shasta because the nature of the work would not affect the characteristics that would qualify Mt. Shasta for eligibility?  
Response: The project proponent will review this when considering the likely reach of the Project on indirect effects.

- Russ Howison (PacifiCorp) clarified that when PacifiCorp filed the license application they did not have concurrence from either Oregon or California SHPO at the time the license was filed. However, it is possible that once FERC determined an APE, OR SHPO may have concurred with FERC. If OR SHPO submitted a concurrence letter, it would have been when FERC was processing the license application. Also, on the Riverscape Study, Oregon and California SHPOs did not concur on the eligibility recommendation of the Klamath Cultural Riverscape, and it was unclear if FERC concurred with the eligibility of the Riverscape. PacifiCorp recommends discussing the Riverscape and eligibility recommendation with FERC.
- Dennis Griffin (OR SHPO) indicated that the CRWG did not come to a consensus about the value of the Riverscape study. Dr. King has been working with other Tribes on a similar type of Riverscape for other rivers since the 2004 study (e.g., Alaska); consequently, additional data regarding a Riverscape concept may be available for review.

### **SUBAREA 1 COMPONENTS**

The existing dam facilities and other types of components associated with proposed Subarea 1 were reviewed. Within Subarea 1, existing facilities within the J.C. Boyle Area, Copco No. 1 Area, Copco No. 2 Area, and the Iron Gate Area will be subject to demolition. In addition, the alteration to the 100-year floodplain and associated impacts to existing buildings and structures downstream of the dam facilities were discussed. Some roads will be improved or subject to road surface maintenance throughout the Project.

#### **Comments/Questions:**

- Are the access routes included to the main highways?  
Response: Most of the existing highways will not be modified, and there will be smaller connector routes to the Project area. There are a minimal number of new access roads proposed for the Project. Many of the routes are existing roads that will be improved or restored. Existing gravel roads that are not proposed for improvements are not included in Subarea 1 but may be part of the broader APE.
- Eric Ritter (BLM-Redding Field Office) inquired if there is a consideration for leaving some of the historic components rather than demolition.  
Response: The intent of the Project is to remove the facilities and associated built features; however, based on resource evaluations and costs, the Project may allow certain structures, such as the powerhouses, to remain in place (referred to as a “partial removal option”).

### **OVERVIEW OF PROPOSED APE MAPS**

An overview figure depicting the proposed APE extending from the upper reach of the J.C. Boyle Reservoir to the Pacific Ocean was reviewed (on-screen) with the CRWG. The figure also illustrated Subarea 1 components and the FERC Project Boundary (which in some areas may be wider than the 0.5-mile buffer). Additional maps showing areas within the APE, such as the J.C. Boyle Reservoir Area, Copco Lake Area, Iron Gate Reservoir/100-Year Floodplain, were also reviewed and discussed.

#### **Comments/Questions:**

- Eric Ritter (BLM-Redding Field Office). How will the cultural resources study coordinate with the environmental justice and socioeconomic assessments of the Project, specifically in regards to the private properties over 50 years in age on the 100-year floodplain?  
Response: This portion of the Project is still in the developmental stages; however, the studies will coordinate on the 53 structures that have been identified downriver of Iron Gate Dam. Age and eligibility of these structures have not been assessed.
- Anmarie Medin (CA OHP) requested that a narrative be included with the submittal of the final APE that discusses why or why not certain elements were included within the APE.

- Anmarie Medin (CA OHP). Is there a plan for consulting with the tribes on the APE?  
Response: There have been a number of parallel tribal outreach processes that have occurred with state agencies and FERC requesting tribal input on the license amendment. Prior to initiating non-formal consultation with the tribes, KRRC has been waiting on the FERC process to determine which tribes have expressed interest in the project. Currently, four federally-recognized tribes, consisting of the Karuk, Yurok, Hoopa, and Klamath, have requested consultation with FERC. KRRC is sending out letters to five tribes (Karuk, Yurok, Hoopa, Shasta, and Klamath) who have expressed interest in participating in the process. There will also be an invitation to participate in the CRWG and a request to initiate informal consultation in February 2018.
- Kathleen Forrest (CA OHP). Is there any overlap between the current Project and the Klamath Irrigation District?  
Response: There is not an overlap, but there is some coordination on the Section 7 consultation for Endangered Species.
- Eric Ritter (BLM-Redding Field Office). Are you considering potential subsurface archaeological sites that were under terraces (sub-lakes)?  
Response: AECOM is compiling mapsets that include current sediment depths within the reservoirs (new bathymetric surveys will be conducted in January), as well as historic landscape features and ethnographic village information. The goal is to have a reservoir-specific historic landscape document that can be reviewed by the CRWG.

## CONCLUSION

**Historic District vs. Multiple Property Approach for Dam Facilities:** The approach to the evaluation of the dam facilities was briefly discussed, particularly if the approach should be as an integrated historic district (either as one district with four complexes or individual districts for each of the four dams) or as a multiple property nomination. Kathleen Forrest (CA OHP) and Jessica Gabriel (OR SHPO) suggested that the historic district approach would be appropriate, and the facilities should be considered as one historic district. Some of the built resources may also be individually eligible.

**Tribal Participation in the CRWG:** As discussed, invitations letters will be sent to the Klamath, Shasta, Karuk, Hoopa, and Yurok Tribes and THPOs for a February 2018 meeting to initiate non-formal consultation and invite participation in the CRWG.

**Next CRWG Meeting:** A meeting in March 2018 may occur with the CRWG, tribes, and THPOs. In addition, another CRWG may be proposed for late January/early February 2018. The goal is to have monthly meetings with the CRWG.

**Technical Reports:** The KRRC has prepared CEQA and California and Oregon 401 Water Quality Certifications Technical Support Document. The document contains the latest technical and field information:

- [https://www.waterboards.ca.gov/waterrights/water\\_issues/programs/water\\_quality\\_cert/lo wer\\_klamath\\_ferc14803.shtml](https://www.waterboards.ca.gov/waterrights/water_issues/programs/water_quality_cert/lo wer_klamath_ferc14803.shtml)
- [https://www.waterboards.ca.gov/waterrights/water\\_issues/programs/water\\_quality\\_cert/d ocs/lower\\_klamath\\_ferc14803/20170929\\_krrc\\_tech\\_report.pdf](https://www.waterboards.ca.gov/waterrights/water_issues/programs/water_quality_cert/d ocs/lower_klamath_ferc14803/20170929_krrc_tech_report.pdf)

Written comments and feedback regarding the APE should be provided to Elena (elena.nilsson@aecom.com) by January 19, 2018.

The meeting ended at 2:30 pm.



## Meeting Minutes

Subject	Lower Klamath Project Cultural Resources Working Group (CRWG) Meeting
Date	March 15, 2018
Time	11:00-12:00 pm PST
Location	WebEx
Attendees	KRRC: Araxi Polony AECOM: Elena Nilsson, Kirk Ranzetta, Burr Neely, Mike Kelly, Shannon Leonard, Stephanie Butler CDM Smith: Kate Stenberg PacifiCorp: Russ Howison Bureau of Land Management (BLM): Eric Ritter, Alden Neel, Laird Naylor California Office of Historic Preservation (CA OHP): Kathleen Forrest, Anmarie Medin Oregon State Historic Preservation Office (OR SHPO): Dennis Griffin, Jessica Gabriel
Distribution	CRWG

### TRIBAL CONSULTATION UPDATE

In January 2018, 25 tribes (Chairperson and THPOs) received letters from KRRC requesting participation in the consultation process and a Project Introduction Meeting. The Native American Heritage Commission (NAHC) and the Oregon Commission on Indian Services (CIS) provided lists of appropriate tribes to consult. Mailing lists for the FERC scoping meeting and the State of California Natural Resources Agency list were also consulted.

As of March 2018, 8 Tribes have accepted to participate in consultation. Those tribes include: Karuk Tribe, Klamath Tribes, Modoc Tribe of Oklahoma, Quartz Valley Rancheria, Shasta Indian Nation, Shasta Nation, Cher'Ae Heights of the Trinidad Rancheria, and the Yurok Tribe.

A project introduction meeting has been scheduled in Yreka, California for April 6, 2018. The meeting will review previous studies conducted; describe the FERC informal consultation process and current project goals; provide an overview of the Cultural Resources Working Group (CRWG) and invite the tribes to participate in the group; and ask the tribes how they would like to participate on tribe-specific informal consultation.

### Comments/Questions:

- Eric Ritter (BLM-Redding Field Office): Did AECOM follow-up with phone calls to the Tribes after mailing the letter?  
Response: There were several rounds of tribal outreach. AECOM called the 25 Tribes, including both the Chairperson and the THPOs/Cultural Director, and sent an email to all tribal participants.

### FERC SCOPING MEETINGS WITH THE TRIBES

In October 2017, FERC invited participation of federally-recognized Tribes in the proceedings for the license amendment to remove the four dams from the Klamath Hydroelectric Project, and then also on the application to transfer the four dams from PacifiCorp to KRRC, creating the Lower Klamath Project.

This transmission is confidential and intended solely for the person or organization to whom it is addressed. It may contain privileged and confidential information. If you are not the intended recipient, you should not copy, distribute or take any action in reliance on it.

In January and February 2018, FERC held public scoping meeting with six federally-recognized tribes, consisting of the Hoopa Valley Tribe, Karuk Tribe, Klamath Tribes, Modoc Tribe of Oklahoma, Quartz Valley Rancheria, and Yurok Tribe. FERC's main objective was to identify any concerns with the amendment and transfer application proceedings; it was not to initiate Section 106 consultation. Transcripts are available in the FERC docket for the project or upon request.

**Comments/Questions:**

- Kathleen Forrest (CA OHP): Did the Modoc Tribe of Oklahoma participate previously?  
Response: The Modoc Tribe did not participate in the 2004 CRWG effort.  
Was there also a working group for the 2012 study?  
Response: There was not a 2012 CRWG because it was just an update to documents.
- Anmarie Medin (CA OHP): Does that also apply to the Quartz Valley Rancheria?  
Russ Howison (PacifiCorp): The Quartz Valley was involved in the relicensing work in 2004, as well as the Resighini Rancheria, which is at the mouth of the Klamath. The Resighini Rancheria may have opted to have the Yurok Tribe represent their interests since they are closely affiliated.
- Kathleen Forrest (CA OHP): Can you provide an update on other, non-tribal consulting parties that have been contacted regarding the project?  
Response: The team has reached out to the tribes and the current participants in the CRWG. Recommendations from the CRWG as to other groups to include in the outreach at this point are encouraged.  
Were there other parties involved in the relicensing?  
Response: They were primarily federal and state agencies and tribes.  
Kathleen recommends that outreach be extended to local historical societies and any other local jurisdictions or groups that might be interested. Jessica Gabriel (OR SHPO) also recommends contacting Restore Oregon.

**PROJECT SCHEDULE**

The Project is currently in the FERC License Transfer and Surrender process, the California and Oregon 401 Water Quality Certification process, and other environmental permitting (e.g., Section 106; biological assessments), as well as the FERC NEPA process. Construction will likely begin in 2020, with the dam drawdowns occurring in January 2021 and dam removal in summer 2021.

**2018 CULTURAL RESOURCES WORK PLAN**

The work plan includes an ongoing consultation process with tribes and agencies. A data gap analysis is also being prepared to determine if there are areas that have not been previously surveyed or archaeological sites that need to be assessed. The precontact and historic contexts are being updated, and field planning has been initiated. The field investigations will include a site records update and archaeological inventory; hydro facilities update and built environment survey; and archaeological testing and evaluation, in consultation with the CRWG. HABS/HAER mitigation will also be conducted in advance of dam decommissioning.

**MOA FAST TRACK CONCEPT**

Impacts to the hydroelectric facilities may begin in 2019; and as a result, the team would like to develop a plan that would allow initiation of some of the HABS/HAER mitigation documentation. This would not be the only mitigation.

As part of the fast track process, a hydro facilities specific report with eligibility recommendations would be prepared and provided to the CRWG for review and concurrence. Once concurrence was received, a Memorandum of Agreement (MOA) would be developed, and the HABS/HAER mitigation fieldwork would be initiated. If the project schedule is delayed, the MOA fast track plan may not be necessary.



Other 2018 submittals will include consultation requests with descriptions of the APE and associated maps; technical reports for the hydro facilities, non-hydro, and archaeology with eligibility recommendations; Phase II research design and evaluation report; MOA or Programmatic Agreement (PA) with a Historic Properties Management Plan (HPMP).

**Comments/Questions:**

- Dennis Griffin (OR SHPO): Discussions on the APE occurred in December 2017; however, the OR SHPO office has not received a formal APE to concur with. Prior to any field investigations, APE concurrence needs to be received.  
Kathleen Forrest (CA OHP): Because formal consultation has not been initiated with the CA OHP, mitigation cannot be discussed at this point.  
Response: The team will provide formal submittal of the APE; however, the submittal has been delayed to incorporate tribal input on the APE. Based on these discussions, the APE description and maps, along with an initiation of consultation, will be submitted to the CRWG now. If the APE needs to be adjusted based on tribal input, the APE would be revised and resubmitted to the CRWG.
- Dennis Griffin (OR SHPO): The 2004 negotiations were for relicensing and the entire river shed was being considered for investigations, and a smaller APE for dam removal was not approved. As such, SHPO would like to see where the current decommissioning activities will take place.
- Kathleen Forrest (CA OHP): The MOA fast track schedule may be feasible. The MOA will be important to consider adverse effects. The full scope of effects will need to be understood in order to develop the MOA. In addition, NPS standards should be implemented during HABS/HAER documentation.
- Kirk Ranzetta (AECOM): NPS will provide a letter of stipulation when HABS/HAER is proposed for mitigation, and they typically prefer to have a MOA in hand. The letter of stipulation usually provides the level of effort that is required with input from the consulting parties. A PA will take longer, and the team does not want to miss the opportunity to document the resources.

**COMMUNICATIONS PROTOCOL**

A draft communications protocol has been developed; the protocol will be circulated for review and input once the tribes and FERC are involved in the CRWG.

**NEXT STEPS**

The next CRWG meeting may occur in late April or early May. A monthly meeting may be conducted during the field season to provide regular updates.

**AECOM ACTION ITEMS**

1. Letter of request initiating consultation with the Oregon and California SHPOs, along with an APE description and maps, will be submitted.
2. Tribal Introduction Meeting will occur on April 6.
3. A CRWG will be scheduled for the end of April/early May.

## Meeting Minutes

Subject	Klamath River Renewal Project KRRRC Informal Consultation Cultural Resources Working Group (CRWG) Meeting
Date	August 14, 2018
Time	1:00-4:00 pm PST (Tribal Caucus 9:00am – 12:00pm)
Location	Best Western Miners Inn, Yreka, CA
Attendees	<i>In person:</i> Klamath River Renewal Corporation (KRRRC): Mark Bransom AECOM: Elena Nilsson, Shannon Leonard, Mike Kelly, Burr Neely, Kirk Ranzetta, Sarah McDaniel CDM Smith: Kate Stenberg Karuk Tribe: Josh Saxon, Alex Watts-Tobin, Craig Tucker Klamath Tribes: Perry Chocktoot, Clay Dumont, Betty Blackwolfe, Janice Miller Modoc Tribe of Oklahoma: Blake Follis Quartz Valley Indian Reservation: Crystal Robinson Shasta Indian Nation: Janice Crowe Shasta Nation: Roy Hall, Jr., Betty Hall, Dean McBroom, Jim Prevatt Yurok Tribe: Frankie Joe Myers, Rosie Clayburn BLM-Redding: Eric Ritter USFS-Klamath NF: Jeanne Goetz, Jason Coats Congressman Doug LaMalfa's Office: Erin Ryan  <i>Via telephone:</i> CA SHPO: Kathleen Forrest, Brendan Greenaway OR SHPO: Dennis Griffin Shasta Indian Nation: Sami Jo Difuntorum, James Sarmiento
Prepared	August 23, 2018
Prepared by	AECOM
Distribution	KRRRC Informal Tribal Consultation Group

### MEETING OBJECTIVE

To introduce and discuss cultural resources issues associated with the Klamath River Renewal Project (Project) with the Cultural Resources Working Group (CRWG), through informal consultation with Klamath River Renewal Corporation (KRRRC) and its technical team, AECOM.

### INTRODUCTIONS

Mark Bransom, KRRRC CEO, Elena Nilsson, AECOM Principal Archaeologist, and Kirk Ranzetta, AECOM Senior Architectural Historian, welcomed the group. The CRWG provided brief introductions.

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**PROJECT OVERVIEW**

Shannon Leonard, AECOM Project Manager, provided a general overview of PacifiCorp's Klamath Hydroelectric Project (KHP) and the current Project. In 2006, PacifiCorp's operating license for the hydropower project expired; and in 2010, parties agreed to the Klamath Basin Restoration Agreement (KBRA) and Klamath Hydroelectric Settlement Agreement (KHSa). Federal funding was not initially provided; and as a result, renegotiations occurred and an amended KHSa was signed in 2016. Currently, the KRRC is implementing the amended KHSa and pursuing dam decommissioning.

KRRC has initiated the process for transferring the license from PacifiCorp to KRRC. In September 2016, KRRC submitted a license amendment and a surrender application to the FERC to remove the four facilities. In March 2018, FERC issued its first decision on those applications, which was an agreement to split the license into two. They are both owned by PacifiCorp. The surrender order and the transfer order to KRRC are both pending. A draft Environmental Impact Report (EIR), as well as the California and Oregon water quality certifications, will be submitted by the State Water Resources Control Board (SWRCB). In addition, KRRC submitted a Definite Plan to FERC on June 28, 2018. FERC has not initiated the NEPA process on the surrender.

The goals of the Project are to remove the four dams (Copco No. 1, Copco No. 2, J.C. Boyle, and Iron Gate) and associated works to achieve a free flowing river, volitional fish passage, and restored reservoir areas. There are a number of project components that must be completed prior to dam removal and reservoir drawdown, consisting of the City of Yreka intake and pipeline replacement; temporary construction access improvements; permanent road, bridge, and culvert improvements; downstream flood control improvements; hatchery (Iron Gate and Fall Creek) and dam modifications; dam and hydropower facility removal; reservoir restoration; and recreation planning to provide additional recreational activities.

**TRIBAL CAUCUS UPDATE**

The Tribal Caucus met in the morning, prior to the CRWG meeting. Perry Chocktoot (Klamath Tribes) summarized the meeting topics for the CRWG.

**Comments/Questions:**

- The overall theme of the discussion was "Tribal inclusiveness" and the need to form a Tribal Committee to ensure there is Tribal input from all Tribes, on every issue.
- Participation and training: The consensus is for each Tribe to participate in the various aspects of the Project (monitoring, mitigation, etc.). Training of Tribal staff will be needed.
- Funding: Question was raised about funding for a Tribal Committee and long-term oversight activities.
- Mitigation documentation and monitoring agreements: The Tribes intend to address each archaeological site on a case-by-case basis, and will determine whether rehabilitation is appropriate in conjunction with elders.
- Tribal Resolution: There was discussion of the Klamath Tribe bringing a resolution to the Tribal Council regarding the Shasta groups and their contribution to this Project.
- Law Enforcement: There is a need for a strong law enforcement presence in this area due to looting by the general public. The group is discussing ideas on how to implement an effective law enforcement presence and to keep it on-going for a number of years. There is also a need to prevent the general public from obtaining knowledge about cultural sites, and to implement a "zero-tolerance" policy for construction workers if found within designated avoidance areas, for example.

- Human Remains: The CRWG needs to begin discussions about the hundreds of documented submerged graves. No removal will be allowed.
- Inadvertent Discovery Plan (IDP): The Tribes are in the process of drafting a Tribal-only IDP for Human Remains. This will focus on spiritual and ceremonial elements and therefore excludes non-tribal persons, and will be in addition to the typical “boilerplate” IDP/Monitoring Plan.

## **PROJECT STATUS UPDATE**

After presenting the Project Overview, Shannon Leonard, AECOM Project Manager, continued to discuss details about recent Project activities and plans.

### *Submittal of Definite Plan and FERC Engagement*

The Definite Plan for the Lower Klamath Project, which includes Appendix L for Cultural Resources, was submitted to FERC on June 28, 2018, and is available online: <http://www.klamathrenewal.org/definite-plan/>. Hardcopies were distributed at the meeting. The FERC Surrender Order is still pending, and the FERC NEPA process has not started. Therefore, consultation with the CRWG is still “informal” at this time.

#### **Comments/Questions:**

- Blake Follis (Modoc Tribe of Oklahoma): When are comments on the Definite Plan due?  
Response: The FERC docket is currently open for comments (see website at [ferconline.ferc.gov/quickcomment.aspx](http://ferconline.ferc.gov/quickcomment.aspx); enter P-2082-062 to specify the project) or cultural resources comments can be emailed directly to [Elena.Nilsson@aecom.com](mailto:Elena.Nilsson@aecom.com). Comments should be provided ideally within 30 days although an end date for receipt of comments is not known.

### *Hatchery Modifications*

Modifications at Fall Creek and Iron Gate Hatcheries will include ground disturbance. A new settling pond is needed near Fall Creek Hatchery; three potential areas are being looked at, but there are cultural resources concerns at each. The team briefly reviewed options for types of pond construction.

#### **Comments/Questions:**

- General discussion: What is the extent of current wildfires near hatcheries? What are the effects? What will happen to the hatcheries after the dams are removed?
- Craig Tucker (Karuk Tribe): Iron Gate Hatchery was built as mitigation for the Iron Gate Reservoir, so won't be needed after the dam is removed.
- Perry Chocktoot (Klamath Tribes): Hatchery fish are genetically inferior to native fish.
- General discussion: Recommend monitoring at hatcheries during ground-disturbing construction. Use modeling to define High Probability Areas.
- Dean McBroom (Shasta Nation): Confirm no archaeological sites are depicted on this presentation and that discussions do not disclose where sites are when describing potential impacts to sites.

### *City of Yreka Intake and Pipeline Replacement,*

The cultural team is working with engineering team to re-route the pipeline away from cultural sites to avoid impacts. Relocation of the 24-inch water supply pipeline at upper end of Iron Gate Reservoir must be completed prior to reservoir drawdown and dam removal.

**Comments/Questions:**

- James Sarmiento (Shasta Indian Nation): Even with site avoidance, we recommend pre-construction assessment of HDD bore entrance and exit pits for water lines, and monitoring.

*Recreation Plan and Restoration*

Restoration of the reservoir, removal of campgrounds, and development of new recreation facilities is being assessed in conjunction with recreation and tourism groups and Federal, Local, Tribal stakeholders. Plans will restore former recreation sites to native habitat. The cultural team is working with the restoration team to try and avoid/minimize impacts to cultural sites, and KRRC will continue to integrate restoration and recreation discussions with the CRWG.

**Comments/Questions:**

- General discussion: Define what is “native habitat” proposed for restoration and who will be deciding this? How will Tribal input be integrated into the restoration and recreation plans? What are the impacts to village sites? The plans must consider restoration of villages. Is there a way to get rid of the sulphur smell, for example? Tribes want to provide input and have a stake in these plans, from the development process through implementation.

*Seed Collection Program*

Seeds are being collected from the Project area for revegetation of reservoir areas. KRRC (through a subcontractor) has conducted surveys to identify specific areas for target native species. No ground disturbance is occurring. A Native plant seed list was included on the PowerPoint slide.

**Comments/Questions:**

- General discussion: Who decides what plants are appropriate for reseeding? It is very important to consult with elders in the restoration and native plant use. The Tribes request distribution of the native plants list for further consideration and input (i.e., it is at first glance missing important plants such as tobacco and bear grass). The CRWG definitely wants to provide input into the seed collection program.
- Frankie Joe Myers (Yurok Tribe): A cultural landscape is present. Many species around village sites were different than today so you need to consult with tribes for appropriate types of vegetation. The natural world of today is different than what was there traditionally, and we don't want you to create hodgepodge of species. Our people managed the land. KRRC botanists may use a European mindset versus a tribal perspective; randomly throwing seeds out was not a traditional pattern. Consider the harvesting of seeds by those who traditionally collect them now, then those Tribal collectors could replant the seeds, allowing the Tribes to buy into this process collaboratively.

**APE DISCUSSION**

Burr Neely, AECOM Senior Cultural Resources Specialist, presented an overview of the APE. The APE is currently defined as extending from J.C. Boyle to the mouth of the river at the ocean, extending 0.5 mile along each side of the reservoir or river. Preliminary comments have been received from CA and OR SHPOs, BLM Redding, and Karuk THPO. The comments express concern for inclusion of TCPs, cultural landscapes, sacred sites, and historic districts, and concern that the APE is expansive enough to include flood mitigation measures, restoration activities, and a depth of disturbance (vertical APE).

A geoarchaeology analysis is underway to help address vertical APE (i.e., determining depth of sediments before encountering the archaeological sites). The geoarchaeological analysis is expected to be completed over the next couple of months, and includes reviewing depth of known

cultural deposits; sediment load over time via bathymetry studies; geological studies regarding rim stability; and rate of drawdown to minimize rate of erosion. The bathymetry study is currently being conducted using a boat and sonar equipment, and will produce a map set.

**Comments/Questions:**

- General Discussion: Will there be a separate APE for Tribal Resources? Will the Tribal Caucus be working on the APE? Tribes need to participate in surveys.
- Roy Hall, Jr. (Shasta Nation): What about the sites Tribes keep confidential, are they included? Tribes do not want to disclose this information because these places are deeply spiritual. Discussion: Tribal Caucus can discuss further and let Project Team know how or what information, if any, is to be provided to adjust the preliminary APE, without needing to disclose specific site locations.
- Perry Chocktoot (Klamath Tribes): Visual impacts need to be addressed to spiritual sites especially. Religious ceremonies are still held today; people watched this river turn into a reservoir, now they are going to be watching the reservoir turn back into a river. This needs to be captured in the data, with points of perspective and a visual analysis; this was a city street of our New York and a major trade route. These are the cities where we lived and died. This is not a disposable area, has great significance to tribal elders who still remember the special sites, and is not ancient history, but very current and close to us. People we know are buried here. The rock feature complex in this area is so vast. Our religion is very private and we won't disclose the details to outsiders.
- General discussion: Who is doing the geoarchaeological and bathymetry work, and how will results be shared with the CRWG? Response: AECOM is doing the geoarchaeological work and will share the findings as soon as they are available.

**REVIEW OF 2017-2018 FIELD STUDIES**

After the APE discussion, Burr Neely (AECOM) summarized the 2017-2018 field studies that have occurred to date. Appendix L of the *Definite Plan* provides an updated records search, a review of ethnographic reports, and extensive historic land use research of land currently inundated. There are currently 485 sites in the Preliminary APE and approximately 70 sites in the ADI (Area of Direct Impact). There are also around 105 "Unrecognized Sites" (that is, sites that are probable based on archival research but that have not yet been formally recorded) around or inundated by the reservoirs.

AECOM has conducted initial site visits to assess current conditions in order to plan for future survey and site evaluation work at previously documented archaeological sites, and is updating recordation of all hydroelectric buildings and structures. Goal is 100% inventory of unsurveyed and new areas such as access roads, borrow and disposal areas, fish-hatchery-related actions (4 new sites identified to date). Current work is focused on 29 sites located on PacifiCorp land; 20 sites have been updated so far. No digging has occurred; these have been site visits only. The team has noticed evidence of erosion and expanded areas of exposed artifacts at some sites. There is no access yet to sites on private land.

**Comments/Questions:**

- General discussion: Who is conducting this fieldwork? The team needs to reach out to the experts in the room, reach out to tribal individuals to participate in fieldwork. site updates, etc. Ensure people who are experts in NW archaeology. Indigenous people have connection to the land and need to be included in these studies.
- Frankie Joe Myers (Yurok Tribe): When was this site visit (in reference to the slideshow photographs of a site with pin flags)? Response: June 2018.

## **APPROACH TO SITE EVALUATIONS**

Burr Neely (AECOM) introduced the topic of site evaluation methods, but time only allowed for a brief discussion and the following CRWG meeting will need to revisit this topic. There are no clear NRHP eligibility determinations for any of the 70 sites in the ADI. Part of the current site update process is to reconcile different NRHP eligibility recommendations and provide current site conditions. The CRWG will need to discuss methods for site evaluation.

### **Comments/Questions:**

- General discussion: Are you considering digging holes? You don't have to; you can take our word for it that these sites are eligible. ? Response: No digging has occurred and is not planned at this time, further discussion and involvement with CRWG is needed.
- Betty Hall (Shasta Nation): My daughter is an experienced archaeologist and some archaeologists won't acknowledge certain materials—they say it's not an artifact, but we know it is. This is very frustrating and happens frequently.
- Tribal comment: how many sites do we want to walk through eligibility process because some of the sites get registered and then some of worst disturbances occur by "professional archaeologists"—the less you know the better off we are. Response: AECOM recommends keeping two categories: "recognized" and "unrecognized" sites so that the ones that are already known are managed one way, but "unrecognized" are managed separately, pending CRWG discussions.
- Eric Ritter (BLM-Redding): Where is the discussion about landscapes and historic districts? Response: AECOM is aware that the 2003 PacifiCorp study had multiple districts proposed. We are looking through the districts and will discuss more at next meeting.
- Perry Chocktoot (Klamath Tribes): OR SHPO comment letter addresses TCPs and districts. Rock feature phenomenon around here is very eligible for a Multiple Property nomination.
- Dean McBroom (Shasta Nation): What security measures are there to protect what's been found so far during survey? Response: AECOM has internally secure project files. Tribal caucus to discuss protection at next meeting.
- Tribal comment: are artifacts moving down river? AECOM response: Artifact movement is a factor we are attempting to address on site-by-site basis; geoarchaeological work is in progress.
- Eric Ritter (BLM-Redding): How is the study addressing Environmental Justice issues when you don't have access to private property? Response: KRRRC is making a reasonable and good faith effort to obtain access, and will continue to do so.

## **NEXT STEPS**

Elena Nilsson (AECOM) briefly presented the preliminary document preparation schedule.

- The Draft Cultural Resource Survey and Resource Update Report and Historic Built Environment Draft Evaluation Report are anticipated to be completed in November 2018.
- The Programmatic Agreement (PA) and Inadvertent Discovery Plan (IDP) are scheduled for December 2018.
- A Preliminary NRHP Evaluation Report, Looting and Vandalism Protection Plan, Historic Properties Management Plan, and Cultural Resources Monitoring Plan are planned for spring and summer 2019.

### **Comments/Questions:**

- Kathleen Forrest (CA SHPO): What template will you be using for the FERC PA? This is a unique project and the usual templates may not apply; the Project will need more than just a



template ending with an HTMP. We recommend you start engaging with FERC now.

Response: We are not at that point in the process yet; should SHPO or KRRC reach out to FERC?

## **LOGISTICS AND PLANNING**

Continuation of Tribal Caucus and CRWG Meetings is proposed monthly. Doodle polls will be sent out for September and October meetings. Alternate meeting locations can be discussed further, but for now the consensus seems to be Yreka.

### **Comments/Questions:**

- General: A preference for in-person meetings (versus telephone) was expressed.
- Blake Follis (Modoc Tribe of Oklahoma): We would like to request that the Team make a Gantt chart and insert due dates for reviews so Tribes can organize meetings and schedule comments to be provided.

The meeting ended at 4:00.



## Meeting Minutes

Subject	Klamath River Renewal Project KRRRC Informal Consultation Cultural Resources Working Group (CRWG) Meeting
Date	September 18, 2018
Time	1:00-4:00 pm PST (Tribal Caucus 10:00am – 12:00pm)
Location	Best Western Miners Inn, Yreka, CA
Attendees	<i>In person:</i> Klamath River Renewal Corporation (KRRRC): Mark Bransom AECOM: Mike Kelly, Burr Neely, Brian Person, Kirk Ranzetta, Sarah McDaniel CDM Smith: Kate Stenberg Karuk Tribe: Josh Saxon, Craig Tucker Klamath Tribes: Perry Chocktoot, Jai Matthew Jackson, Mandy Roberson Quartz Valley Indian Reservation: Crystal Robinson Shasta Indian Nation: Janice Crowe, Sami Jo Difuntorum, James Sarmento Shasta Nation: Donald Boat, Betty Hall, James Prevatt Yurok Tribe: Rosie Clayburn USFS-Klamath NF: Jeanne Goetz, Jason Coats  <i>Via telephone:</i> AECOM: Elena Nilsson, Shannon Leonard OR SHPO: Dennis Griffin Modoc Tribe of Oklahoma: Blake Follis PacifiCorp: Russ Howison BLM-Redding: Alden Neel
Prepared	October 20, 2018
Prepared by	AECOM
Distribution	KRRRC Informal Tribal Consultation Group

### MEETING OBJECTIVE

To continue informal consultation between cultural resources stakeholders with the Klamath River Renewal Corporation (KRRRC) and its technical team, AECOM. Specifically, this month's meeting was focused on project updates, the regulatory process, and further refinement of the Area of Potential Effect (APE).

### INTRODUCTIONS

After an opening prayer by James Prevatt (Shasta Nation), Brian Person, AECOM meeting facilitator, and Mark Bransom, KRRRC CEO, provided a brief introduction. KRRRC put forth and briefly summarized meeting guidelines, as sent with the meeting invite, to clarify how CRWG meetings will be conducted and moderated. Brian reiterated that if sensitive information needs to be disclosed and discussed outside this meeting, it will only be discussed to extent that is

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necessary to address concerns or questions raised. Brian asked if there were any comments on the August meeting's minutes.

**Comments/Questions:**

- Craig Tucker (Karuk Tribe): The meeting guidelines don't outline the meeting purpose. KRRC needs to state the purpose of these meetings and provide clarity. Why are we here? Is it to debate about dam removal? Develop a mitigation plan? You need to make sure everybody is on the same page so time is being used efficiently.
- Sami Jo Difuntorum (Shasta Indian Nation): We request a correction to the August meeting notes, under "Tribal Caucus Update," second bullet ("*Participation and training: The consensus is for each Tribe to participate in the various aspects of the Project (monitoring, mitigation, etc.). Training of Tribal staff will be needed.*") The correction should reflect that Tribal consensus has not been reached. The Tribes are still working toward a consensus.

**TRIBAL CAUCUS UPDATE**

The Tribal Caucus met in the morning, prior to the CRWG meeting. Perry Chocktoot (Klamath Tribes) summarized the meeting topics for the CRWG.

**Comments/Questions:**

- Perry Chocktoot (Klamath Tribes): Tribal caucus discussions were centered around how the group can reach a consensus. The steps to reach a consensus have not been gone through. Why are we here, what is our goal? We didn't get to the meat and bones of mitigation. We are struggling with how to move forward effectively, how to reach consensus. The Tribal Caucus meeting would benefit from a third-party facilitator/dispute mediator.
- Mark Bransom (KRRC): KRRC will provide you with whatever additional needs we can. Give us a list of individuals who you would like to use as a mediator.

**PROJECT UPDATE**

Mike Kelly, AECOM Principal Archaeologist, provided an update on project design and schedule.

*Field Work and Tribal Monitoring*

No field work is being scheduled until there is a plan for tribal monitoring in place. KRRC is requesting that the tribes put together a plan that outlines which tribes will send a representative for which locations. The Tribal Monitoring Plan is needed before field work recommences in early spring.

*Water Quality Gage Upgrades*

Water quality gages will include rock anchors and equipment upgrades. All are proposed at existing sites except for one (Seiad Valley), which will be moved from the left bank to the right bank. A map showing the gage locations was presented in the PowerPoint.

**Comments/Questions:**

- Sami Jo Difuntorum (Shasta Indian Nation): Is this list comprehensive? These are the only gages being proposed?
- Shannon Leonard (AECOM): We are pretty certain these gages will be part of the monitoring program.

*Fall Creek Hatchery Update*

The August CRWG meeting discussed the need for hatchery modification at Fall Creek, specifically for a new settling pond, where three potential areas were being looked at, each with

cultural resources concerns. Since the last meeting, the project design has been modified so that the existing footprint can be used, and the new proposed settling pond should not affect any known sites. However, this area is a reported village, and although there have been no archaeological finds to date, an identification investigation is needed.

**Comments/Questions:**

- Sami Jo Difuntorum (Shasta Indian Nation): This is very good news. We are glad to hear this.

**REGULATORY RECAP**

Mike Kelly (AECOM) discussed the current state of regulatory consultation. FERC is not currently engaged, and as such the CRWG and KRRC will be advancing Section 106 consultation through these monthly meetings. The CRWG mission is to develop alternatives and recommendations for addressing cultural, historical, and archaeological resources for the relicensing process. The CRWG will address and document consultation requirements for FERC, lay groundwork for adverse effects, and review, advise, and participate on Section 106 steps. Confidentiality will be a priority, but some discussions may need to include site specifics.

**AREA of POTENTIAL EFFECT DISCUSSION**

Burr Neely, AECOM Senior Cultural Resources Specialist, provided a recap of the general comments that were received from the SHPOs and Tribes regarding consideration of Traditional Cultural Properties (TCPs) and landscapes/riverscapes; visual impacts; the built environment; fish, wildlife, and restoration sites; and effects of a free-flowing river. Mapping the APE is a priority, and a map book has been produced.

There has also been progress toward establishing a vertical APE. Geoarchaeological work is underway and will help delineate areas of subsurface disturbance (e.g., cut-and-fill areas) and maximum depths of disturbance, and attempt to develop a reservoir sediment depth model based on pre-dam historic topographic mapping and geotechnical data. The model will be used to identify those areas where the project may impact the pre-dam historic ground surface. The KRRC team is digitizing geologic maps to show where the project will impact landforms with potential to contain buried archaeological resources. Bathymetric data and reported site locations will also be used in this analysis.

The CRWG discussed how bathymetry data is obtained and used, how much water will be released and what sites are most likely to be affected and how. Looting and vandalism of unprotected sites by recreationalists continues to be a primary concern, and time was spent trying to understand how recreational use is currently managed, and could be managed in the future in a manner that helps prevent looting and vandalism. Several CRWG members requested that a viewshed modeling and high points analysis be considered in the delineation of the APE.

**Comments/Questions:**

- Perry Chocktoot (Klamath Tribes): KRRC needs to address the current protections of cultural resources right now, as well as after the dams are removed. For example, destruction of Big Boulder Village. It would show a good faith effort for KRRC to provide protective elements *now*. Looters are actively digging at these sites. It is hard for the tribes to have confidence in any of this while being robbed of our cultural heritage, our ancestors. At this point, any measure would be better than nothing.

- Donald Boat (Shasta Nation): In reference to limiting the amount of people able to loot and vandalize sites: would it be possible to establish a boat permit process like on the Rogue River?
- Craig Tucker (Karuk Tribe): At the Rogue River there is a lottery process limiting the number of camper and commercial use permits during certain times of the year. After October 15, anyone can use the river. There could be a system like that on the Klamath River. For example, you could have to show that you pack out your waste; you could train people on what is proper care and stewardship in and around cultural sites.
- Russ Howison (PacifiCorp): There is a permit process on the Klamath for commercial permits and for private overnights. I don't know if a day trip permit with a waiting list is used.
- Craig Tucker (Karuk Tribe): It depends on the reach.
- James Prevatt (Shasta Nation): We need to teach commercial outfitters where they can and can't put in and take out. They need to know only the places they *can* pull up—they don't need to know why (to avoid cultural sites).
- Mike Kelly (AECOM): This group will have the ability to comment on the recreation plan.
- Craig Tucker (Karuk Tribe): American Whitewater reached out to me. This group will need to be integrated into discussions on river recreation. An example, there is a Yurok village site at a state park that allows for active ceremonies to take place. This is a benefit to the tribe because they have a nice facility to use for their ceremonies but it is for general public use too. A win-win.
- Jeanne Goetz (USFS-Klamath NF): The Klamath National Forest does issue permits, and we work around ceremonies. Permitting depends on who is managing the land. Most landings are at archaeological sites.
- Craig Tucker (Karuk Tribe): How will the Civil War Tribal Cemetery site be protected? That should be included in the Tribal Monitoring Plan.
- Betty Hall (Shasta Nation): I read through these KRRC reports [*Definite Plan*] and regarding flood mitigation measures, one place says one thing and another says another about the amount that the river will rise once the dams are removed. How do we know which is right?
- Shannon Leonard (AECOM): The project will affect flows, flooding downstream of Iron Gate. Structures affected are mostly in the floodplain, but some are out. Mitigation will depend on what the property owner wants: e.g., elevate the building, build small berms around it. Reclamation modeling studies indicate that during a 100-year event, following dam removal the water surface elevation increases approximately 18 inches immediately below Iron Gate, to less than 6 inches at Humbug Creek (about 18 miles away), then the rise is not much different downstream of that point.
- Betty Hall (Shasta Nation): But you don't know the depth during a flood. Marks on the rocks show tremendous amounts of water, in just in one flood event. It's a lot of water, not just a foot.
- Perry Chocktoot (Klamath Tribes): We're not talking about a cataclysmic event, but a controlled release. KRRC can't base their assumptions on a catastrophic event.
- Burr Neely (AECOM): That reach where the models show flooding is already included in the APE. We are communicating with hydrologists for the archaeological analysis and will continue to pass that information along to the CRWG as it becomes available.
- Sami Jo Difuntorum (Shasta Indian Nation): I would like to request an electronic map book of the APE.
- Craig Tucker (Karuk Tribe): Why is the APE not topographically defined?
- Burr Neely (AECOM): The intent is to capture the viewshed, e.g., rim to rim topography.
- Craig Tucker (Karuk Tribe): Why not 100-year floodplain? What does it mean for mitigation regarding loss of eligibility for a viewshed versus where direct impacts for where access points, new infrastructure, etc. will be?

- Burr Neely (AECOM): Those are included in our defined “Area of Direct Impacts.” We are also trying to address the riverscape and the concerns folks have on broader viewpoints.
- Perry Chocktoot (Klamath Tribes): Places where people go to pray, where there were skirmishes, or slaves went, where people drew power from. The flooding after the dams were built impacted traditional practitioners. Now the flooding is being taken away, and there will be another set of impacts to traditional practitioners. I’m glad you’re considering visual impacts.
- Jeanne Goetz (USFS-Klamath NF): A viewshed modeling and high points analysis was completed for Medicine Lake as an example.
- General: Several people responded in agreement. The CRWG is requesting a viewshed analysis.
- Rosie Clayburn (Yurok Tribe): I would like to request shapefiles.
- A General discussion about the vertical APE and how bathymetry works ensued. How much sediment has accumulated since the dams were built, can the post-dam renewal area be modeled with archaeological sites overlain? Will drainage lead to exposure of sites, how and which ones? In response, AECOM will present the geoarchaeological and bathymetry results to the CRWG in a separate session, as the results of these studies are still being finalized and are expected in October 2018, along with LIDAR.

## **AGREEMENT DOCUMENT DISCUSSION**

Kirk Ranzetta, AECOM Senior Architectural Historian, explained that there is a potential for ACHP involvement (John Eddins), explained the use of Programmatic Agreements (PAs), and how this process differs when FERC is involved because FERC is the final decision maker but not initially involved in the day-to-day activities. Kirk discussed the PA process and the need for a Historic Properties Management Plan (HPMP). FERC has agreement templates that would be used.

### **Comments/Questions:**

- Perry Chocktoot (Klamath Tribes): Is there talk of FERC delegating to another agency?
- Kirk Ranzetta (AECOM): No.
- Perry Chocktoot (Klamath Tribes): If we are a concurring party it means we agree, versus consulting party.
- Betty Hall (Shasta Nation): What is “consultation?” It’s meaningless, In the Dictionary it means nothing. It’s dead.
- Kirk Ranzetta (AECOM): We try to integrate discussions in this CRWG, to make it a two-way street conversation.
- Perry Chocktoot (Klamath Tribes): What about Traditional Cultural Properties in the Klamath Canyon? These were identified in the past but not concurred with or moved forward with the SHPOs.
- Dennis Griffin (OR SHPO): There were 3-4 TCP reports by the tribes; those TCPs were not reviewed by our office because the project/dam relicensing was dropped.
- Perry Chocktoot (Klamath Tribes): TCPs are a heightened consultation piece. Isn’t the land manager responsible for following through even if a project is dropped? It is very important to get these eligible TCPs listed.
- Russ Howison (PacifiCorp): For the relicensing, an inventory was done, recommendations were made, and the findings were submitted to FERC, but there were a couple of problems in closing the loop: 1. The APE for relicensing was never settled. Both SHPOs couldn’t comment until the APE was resolved. 2. FERC stopped all further processing of the relicensing. Now is the time to reengage.
- Craig Tucker (Karuk Tribe): Is there a map of the proposed TCPs?
- Russ Howison (PacifiCorp): Yes, in the cultural resources report filed with FERC.

- Betty Hall (Shasta Nation): Appendix L of the Definite Plan (June 2018) references ethnographic studies [Section 6.1.5]. I would like to see the ethnographic reports.
- James Prevatt (Shasta Nation): No cultural sites should be shown on maps like happened in the FERC Relicensing process. That was a mistake and those were deleted from the computer right then, when that happened.
- Betty Hall (Shasta Nation): Highlight the confidentiality.
- Craig Tucker (Karuk Tribe): Can you explain the difference between federally-recognized and non-recognized tribes? No disrespect is meant; we just all need to be clear on what this means in the 106 process.
- Kirk Ranzetta (AECOM): Federally recognized tribes have a specific role in 36 CFR Part 800. Non-federally recognized tribes are more like Consulting Parties and can sign documents like the PA as a Consulting Party.
- Betty Hall (Shasta Nation): The Shasta Nation is a sovereign nation. Grass Valley is Shasta. Relatives and history ties us to these areas.
- Jeanne Goetz (USFS-Klamath NF): The USFS tries to include everybody in gathering input. For example we've had the Karuk as signatories on a PA and Shasta Nation as concurring; we try to include everybody.
- Donald Boat (Shasta Nation): The Shasta Nation is treated like a step child. That's how we feel.
- Mike Kelly (AECOM): Our goal is to listen to everyone in this room. That's the purpose of the CRWG, so that you can all provide input.
- James Prevatt : Add "Tribal laws" in addition to "federal, state, and local laws" to slide 25: HPMP Principles"
- General discussion: if pushing for clean energy, why are the dams being removed? Because they have outlived their useful lifespan and are no longer cost efficient to upgrade and maintain.

## **SCHEDULE**

The FERC NEPA process starts once the transfer order is issued for work on the surrender application. Several documents are proposed for the end of 2018 and early 2019.

### *Agreement Document Schedule*

- PA – December 2018
- IDP – December 2018
- Looting and Vandalism Prevention Plan (LVPP) – March 2019
- Cultural Resources Monitoring Plan (CRMP) - June 2019
- Historic Properties Management Plan (HPMP) – June 2019
- Treatment of Human Remains (to be provided by Tribes)

## **ACTION ITEMS**

Sarah McDaniel, AECOM Senior Archaeologist, summarized a list of action items:

- The Tribal Caucus has requested an impartial facilitator. KRRC will assist with providing one. The Tribes will need to communicate if they have a particular person in mind.
- AECOM is to help clarify purpose of each Tribal Caucus/CRWG meeting to help focus the discussion.

- A Tribal Monitoring Plan is needed and will be used for planning next stages of field work. AECOM is requesting identification of who would want to provide a tribal monitor in which areas/sites.
- APE Discussion: AECOM will distribute electronic and/or hardcopy maps and shapefiles to the CRWG with the proposed APE. The CRWG needs to identify high points for a Project viewshed analysis, and any adjustments to APE boundary. AECOM will provide maps within next 2 weeks; request review and comments by the next CRWG meeting. Let us know what format is preferred; otherwise electronic maps will be emailed.
- Recreation Discussion: CDM Smith will determine who manages rivers with multiple land managers. Is it NPS? This is relevant to discussion of recreation plan and site protection e.g., permitting/lottery system for rafters.
- Protection: Tribes would like to see KRRC make a good faith effort in protection of sites that are being looted and vandalized currently, not just after dams are removed.
- Geoarchaeology: AECOM will schedule a geoarchaeologist to speak to the CRWG. This will help with the vertical APE and understanding which sites would be affected and how. Bathymetry modeling and LIDAR is expected to be finalized in Oct.
- Hydrology: Further work on modeling for pre- and post- dam removal is underway and this information will be shared with the group, possibly as part of the geoarchaeology expert discussion.
- TCPs: Evaluation of previously identified TCPs needs to be completed.

The meeting ended at 3:50.



## Meeting Minutes

Subject	Klamath River Renewal Project KRRC Cultural Resources Working Group (CRWG) Meeting
Date	October 29, 2018
Time	1:00-4:00 pm PST (Tribal Caucus 10:00am – 12:00pm)
Location	Best Western Miners Inn, Yreka, CA
Attendees	<i>In person:</i> Klamath River Renewal Corporation (KRRC): Mark Bransom AECOM: Mike Kelly, Burr Neely, Brian Person, Jay Rehor, Sarah McDaniel CDM Smith: Kate Stenberg Karuk Tribe: Craig Tucker, Alex Watts-Tobin Klamath Tribes: Perry Chocktoot, J. Jackson, Mandy Roberson Shasta Indian Nation: Janice Crowe, Frank Crowe, Sami Jo Difuntorum Shasta Nation: Donald Boat, Roy Hall Jr., Betty Hall, James Prevatt USFS-Klamath NF: Jeanne Goetz  <i>Via telephone:</i> Quartz Valley Indian Reservation: Crystal Robinson  AECOM: Shannon Leonard, Kirk Ranzetta CA SHPO: Kathleen Forrest OR SHPO: Dennis Griffin BLM-Klamath Falls: Sarah Boyco Yurok Tribe: Rosie Clayburn, Frankie Myers
Prepared	November 16, 2018
Prepared by	AECOM
Distribution	KRRC Cultural Resources Working Group (CRWG)

### MEETING OBJECTIVE

To continue consultation between cultural resources stakeholders with the Klamath River Renewal Corporation (KRRC) and its technical team, AECOM. Specifically, this month's meeting was focused on project updates, finalization of the Area of Potential Effects (APE) inclusive of a visual impacts analysis, and an indepth discussion of hydrological and geoarchaeological studies to better understand impacts to cultural resources.

### INTRODUCTIONS

After an opening prayer by Perry Chocktoot (Klamath Tribes), Brian Person, AECOM meeting facilitator, called for opening statements.

### TRIBAL CAUCUS UPDATE



The Tribal Caucus met in the morning, prior to the CRWG meeting. Brian Person (AECOM) facilitated the Tribal Caucus meeting and summarized those discussions for the CRWG. Sarah McDaniel (AECOM) took meeting notes only if requested by an individual as “for the record” and these are to be distributed by AECOM to the Tribal Caucus separate from the CRWG meeting notes.

Overall, the Tribal Caucus concentrated on discussing the merits of the project and on the topic of protecting cultural resources. To help focus the meeting purpose, KRRC recently sent a letter to the Shasta Nation with the objective of acknowledging their position of non-support for the project and soliciting their engagement in cultural resources issues in this meeting forum under the assumption that the dams would be removed, and that a different forum could be used to object to the project. The Shasta Nation voiced their concerns about the letter during the Tribal Caucus.

The Tribal Caucus is working on preparation of an Inadvertent Discovery Plan (IDP) and Monitoring Plan. Some caucus members agreed to share their individual tribal plans used for other projects so that the CRWG can collectively review and edit, and be prepared to discuss in detail at the November 2018 CRWG meeting.

**Comments/Questions:**

- Perry Chocktoot (Klamath Tribes): Emotions run high, especially with issues regarding the federal government. PacifiCorp needs to be clear and we need to work together to get this done. We need to make an IDP and Monitoring Plan that is all-inclusive because we have a shared history. I can't tell you [KRRC] how to move forward if a group isn't willing to move this forward. The Klamath Tribes are willing to move this forward.
- Roy Hall, Jr. (Shasta Nation): The Tribal Caucus developed into a free-for-all. The Klamath say it's their territory, we say it's ours. We don't need everybody discussing our sacred sites. KRRC has an agenda moving forward no matter how we feel.
- Sami Jo Difuntorum (Shasta Indian Nation): We are planning to distribute the example IDP/Monitoring Plan documents electronically so it's more productive and everyone can offer comments back and forth.

**PROJECT UPDATES**

Mike Kelly, AECOM Principal Archaeologist, reviewed the September action items and asked if there were any corrections to last month's meeting notes. No corrections were requested.

*September Action Item Review*

A slide was presented showing the current status of action items. In summary, as requested by the Tribes, a facilitator was provided for the Tribal Caucus; the APE was refined based in part on a viewshed analysis and circulated for review; no KRRC jurisdiction for law enforcement was identified, although Oregon State Parks rangers have agreed to increase patrols on State Park lands; the Monitoring Plan is still pending Tribal input; the requested hydrology/geoarchaeology reviews are complete and are being presented as part of the current CRWG meeting; and recreation planning is still underway and will be on the November meeting agenda.

*Recreation Plan Update*

American Whitewater recreationalists and outfitters recently set up a recreation field visit; Mike Kelly (AECOM) was one of the attendees. The whitewater group is soliciting ideas for how to work with the Tribes and for stewardship of cultural resources, especially if there are any at proposed new landings. KRRC is planning to schedule a recreation presentation for the November 2018 CRWG meeting.

In clarification of last month's meeting question about who regulates rafting permits and regulations, KRRRC determined that on federal lands, BLM, USFS, and NPS require permits for commercial recreation activities. NPS does not regulate permits for rafters outside of National Parks, and an agreement that designates a river as Wild and Scenic gives the state authority to manage recreation.

**Comments/Questions:**

Perry Chocktoot (Klamath Tribes): Those rafters stop at some of the most sensitive areas, where they shouldn't be at. The general public shouldn't be there.

Craig Tucker (Karuk Tribe): We're expanding areas for their opportunities.

**FINALIZATION OF THE AREA OF POTENTIAL EFFECTS**

Burr Neely, AECOM Senior Cultural Resources Specialist, provided an overview of the newly completed visual analysis requested by the CRWG in September 2018. The visual analysis focuses on the Klamath River Watershed, is a bare earth analysis (no vegetation), and is shown as a "heat index" gradient of high versus low visibility. Examples were presented on PowerPoint slides. Several mountain peaks outside of the APE are shown as having viewshed visibility; however, many high places along the river corridor are included within the APE.

**Comments/Questions:**

- Kathleen Forrest (CA SHPO): CA SHPO needs a hard copy in order to provide formal comments; we can't accept electronic submissions.
- Betty Hall (Shasta Nation): The prior SHPO letter recommends adding topographic maps—has this been addressed?
- Burr Neely (AECOM): Yes, copies of the revised maps were distributed via email to the CRWG last week. AECOM will provide a hardcopy of these maps to the Shasta Nation.

***Reservoir and Rim Stability***

Shannon Leonard, AECOM Assistant Project Manager, provided an overview of rim stability (i.e., for larger landslides) based on studies that were made during a reservoir drawdown. The study steps included a geologic desktop study, a geologic reconnaissance, field investigations and laboratory testing, slope stability analyses, and mapping of areas of potential impacts. Appendix E of the Definite Plan has more detail.

In summary, for Iron Gate Reservoir, no large landslides are anticipated but shallower landslides are likely to occur in the shallow surficial deposits that characterize the reservoir area and along its rim. For JC Boyle Reservoir, large landslides are less likely and no stability problems were identified. For Copco Reservoir, minor slides beneath the reservoir surface are possible during drawdown and larger, deeper slides are possible along submerged higher bluffs along the original Klamath River channel but these would not affect the reservoir rim. PowerPoint slide 18, Copco Dam Slope Failure Analysis Overview Map, provided the locations of potentially unstable slopes. Additional field data collection is underway.

**Comments/Questions:**

- Perry Chocktoot (Klamath Tribes): Will high water post-dam removal cause a problem for bank stability, for example, after a large storm event?
- Shannon Leonard (AECOM): That has not yet been analyzed. There are a lot of rocks and bedrock along these channels, so I would guess conditions would be similar conditions to what they were prior to the dam going in.

- Perry Chocktoot (Klamath Tribes): How soon will there be stability after dam removal?
- Shannon Leonard (AECOM): Vegetation would help stabilize remaining sediment and the vegetation plan calls for early pioneer seeding as quickly as possible.
- Roy Hall Jr. (Shasta Nation): The weather is difficult to predict around here (i.e., need to consider this in terms of the reseeding plan).

#### *Reservoir and Rim Stability*

Shannon Leonard, AECOM Assistant Project Manager, provided an overview of flood hydrology. The Bureau of Reclamation estimated the flood control benefits of the reservoirs. PowerPoint slide 21 provided a hydrograph charting a 100-year flood event with the dams in, compared to an estimated 100-year flood event with the dams out. There was a general discussion around this hydrograph, which is based on the 1964 flood that had 29,400 cubic feet per second (cfs) when the dams were in place. The analysis shows that there may be an approximate 7% increase in water volume (33,800 cfs) with the dams out.

Slide 22 provided a map of the Klamath River Watershed illustrating the projected flow magnitude, using 100-year statistics (Slide 23) for gage river flows. Slide 23 showed a graph of the “100-year Flood Water Surface Elevation Downstream of Iron Gate,” with current data for “dams in” and projected date for “dams out.” The “dams in” line and “dams out” lines overlap each other such that both appear as a single red line in this graph. (This means that below Humbug Creek there isn’t much of a difference.)

#### **Comments/Questions:**

- Craig Tucker (Karuk Tribe): Great slides! So, if there is a 100-year flood at Upper Klamath Lake, whether it floods or not isn’t relevant because at Iron Gate it’s only 31,000 cfs (5%) but once you get to the mouth it’s at 570,000 cfs.
- Alex Watts-Tobin (Karuk Tribe): Is it safe to say that the leveling out at lower end of Humbug is at 0.4 ft. and it’s negligible after that?
- Shannon Leonard (AECOM): The model isn’t accurate enough to get any more detail.
- Craig Tucker (Karuk Tribe): Was sediment modeling taken into account?
- Shannon Leonard (AECOM): Yes, part of the 18-inch increase at the upper end is related to sediment.
- Burr Neely (AECOM): That’s why the APE for direct impacts is above Humbug Creek and below Humbug Creek is considered for indirect impacts.

#### **GEOARCHAEOLOGY REVIEW**

Jay Rehor, AECOM Senior Geoarchaeologist, provided an overview of georachaeology as a landscape evolutionary approach to understand where archaeological sites are likely to be located both horizontally across the landscape and vertically (i.e., how deeply they may be buried). Buried and submerged resources were considered by looking at the pre-dam ground surface through bathymetry data, historic maps, and a sediment depth model. Project-related ground disturbances were added to this model, and samples of resource site types overlain to give an idea of where the project has the potential to impact known and suspected cultural resources, and to what potential depth they might be encountered. There is an inherent error of +- 5-10 feet in the historic ground surface model. Next steps include completing the geomorphic sensitivity model to the Area of Direct Impacts, working with the design team to minimize impacts in areas of high sensitivity, and developing identification protocol for high sensitivity areas with potential impacts.

**Comments/Questions:**

- Craig Tucker (Karuk Tribe): How many acres of High Probability Areas are within the direct APE?
- Jay Rehor (AECOM): The analysis is still in progress.
- Roy Hall Jr. (Shasta Nation): Once you add sites to this model, you can't share it with this group. Those sites are confidential.
- Craig Tucker (Karuk Tribe): As discussed in a previous meeting, please address impacts to the Civil War Cemetery. According to the Water Board there is concern that tribes said two graves would need to be removed. We need to address this and advocate if needed.
- Perry Chocktoot (Klamath Tribes): I am very concerned that previous site forms and maps are being circulated. These are only to be used on a need-to-know basis. I want to bring this to both SHPOs' attention because the general public has these. These are for professional archaeologists and tribal representatives only.

**DOCUMENT PREPARATION AND SCHEDULE**

Mike Kelly (AECOM) presented the proposed Section 106 timeline and a table with dates that deliverables will be due (Slides 49 to 51). Suggested monthly meeting topics were also presented. November's meeting will include review of the Recreation and Restoration Plans, and introduction of the Phase II Study Plan.

*Document Schedule (the following dates are when the first Draft is due to KRRC)*

- Phase II Study Plan – January 2019
- PA – January 2019
- IDP – January 2019
- Looting and Vandalism Prevention Plan (LVPP) – March 2019
- Cultural Resources Monitoring Plan (CRMP) - March 2019
- Historic Properties Management Plan (HPMP) – May 2019
- Treatment of Human Remains (to be provided by Tribes) – June 2019

**Comments/Questions:**

- Alex Watts-Tobin (Karuk Tribe): I assume the Tribes will draft the PA so we can have input, rather than receive this from an agency?
- Mike Kelly (AECOM): The idea is to write as a collaborative effort as opposed to a redline review. We hope to get agreement, and this is why we need input on the Tribal Monitoring Plan and IDP. But the intention is to circulate the Draft PA amongst this group.
- Kathleen Forrest (CA SHPO): FERC's typical procedure of deferring to the HPMP isn't going to work. We won't accept their template for this project.
- Mike Kelly (AECOM): We're taking that into account; thank you for providing the example documents.
- Perry Chocktoot (Klamath Tribes): Has KRRC settled on a construction firm yet?
- Mark Bransom (KRRC): Not yet. The prime contractor will determine work performance, and then bid out 5% for other teams including tribal teams, and another 5% for local preference. The contractor assumes risk and delivery of work. KRRC will have other direct contracts with other opportunities for tribal contracts. In evaluating the RFP, we will ask bidders for additional details on how they will outreach procurement opportunities to tribal entities, and about past successes, etc.
- Perry Chocktoot (Klamath Tribes): The monitoring will have 100% tribal involvement.
- Mike Kelly (AECOM): The Phase II work needs to be scheduled as early as possible next spring. We need to focus on the IDP and Monitoring Plans.

## ACTION ITEMS

- *Recreation Planning:* AECOM and KRRC will try to schedule American Whitewater representatives attending an upcoming CRWG meeting. The purpose would be to collaborate with proposed recreation planning so that cultural resources concerns can be taken into account.
- *Tribal IDPs/Monitoring Plan:* The Tribal Caucus will distribute examples of Inadvertent Discovery Plans and Monitoring Plans amongst the tribes and be prepared to discuss at the next Tribal Caucus.
- *Finalization of APE:*
  - Consulting Parties/CRWG will review and comment on revised October 2018 APE draft.
  - KRRC will send a formal consultation letter and hardcopies of the revised APE to CA SHPO.
  - AECOM will send a hardcopy of the revised APE to the Shasta Nation.
  - AECOM will provide maps within next 2 weeks; request review and comments by the next CRWG meeting.
- *Distribute PowerPoint:* AECOM will distribute the October PowerPoint presentation to the CRWG via email. AECOM will also send a hardcopy to the Shasta Nation.
- *Impacts Analysis:* The Civil War Cemetery is of concern and the CRWG needs to understand potential impacts.

The meeting ended at 4:00 pm.

## Meeting Minutes

Subject	Klamath River Renewal Project KRRC Cultural Resources Working Group (CRWG) Meeting
Date	November 29, 2018
Time	1:00-4:00 pm PST (Tribal Caucus 10:00am – 12:00pm)
Location	Best Western Miners Inn, Yreka, CA
Attendees	<i>In person:</i>  AECOM: Mike Kelly, Burr Neely, Elena Nilsson, Brian Person, Sarah McDaniel BLM-Redding: Eric Ritter Karuk Tribe: Craig Tucker, Alex Watts-Tobin Klamath River Renewal Corporation (KRRC): Mark Bransom Quartz Valley Indian Reservation: Crystal Robinson Shasta Nation: Roy Hall Jr., Betty Hall Siletz Tribe: Robert Kentta USFS-Klamath NF: Jeanne Goetz, Jason Coats Yurok Tribe: Rosie Clayburn  <i>Guest Speakers:</i> American Whitewater: Bill Cross CDM Smith: Chris Park, Terichael Office  <i>Via telephone:</i> AECOM: Shannon Leonard BLM-Klamath Falls: Sarah Boyco, Heidi Anderson BLM-Redding: Bill Kuntz CA SHPO: Kathleen Forrest, Brendan Greenaway Klamath Tribes: Jan Jackson, Mandy Roberson OR SHPO: Jason Allen, Dennis Griffin PacifiCorp: Russ Howison Shasta Indian Nation: Janice Crowe, Sami Jo Difuntorum, James Sarmento
Prepared	February 14, 2019
Prepared by	AECOM
Distribution	KRRC Cultural Resources Working Group (CRWG)

### MEETING OBJECTIVE

To continue consultation between cultural resources stakeholders with the Klamath River Renewal Corporation (KRRC) and its technical team, AECOM. Specifically, this month's meeting was focused on discussion of the Recreation Plan and the Phase II Study Plan strategy.

## **SCHEDULE AND MEETINGS**

After introductions, Brian Person, AECOM meeting facilitator, began by going over the proposed Section 106 timeline. In order to meet the compressed schedule, KRRC solicited CRWG opinions regarding continuing Tribal Caucus meetings and CRWG meetings in person. A CRWG meeting has not been set up for December due to inclement weather considerations and the holidays.

*Document Schedule (the following dates are when the first Draft is due to KRRC)*

- Phase II Study Plan – January 2019
- IDP – January 2019
- PA – February 2019
- Looting and Vandalism Prevention Plan (LVPP) – March 2019
- Cultural Resources Monitoring Plan (CRMP) - March 2019
- Historic Properties Management Plan (HPMP) – May 2019
- Treatment of Human Remains (to be provided by Tribes) – June 2019

### **Comments/Questions:**

- Alex Watts-Tobin (Karuk Tribe): I'm in favor of continuing the Tribal Caucus groups given the schedule. We need to discuss these things in person.

## **TRIBAL CAUCUS UPDATE**

The Tribal Caucus met in the morning, prior to the CRWG meeting. Brian Person (AECOM) facilitated the Tribal Caucus meeting and summarized those discussions for the CRWG.

The Tribal Caucus discussed the Proposed Meeting Guidelines and specific items regarding the Inadvertent Discovery Plan (IDP) and Monitoring Plan. Ideas were presented on how to move these documents forward. The Tribal Caucus is requesting assistance from KRRC to help the CRWG share these documents amongst themselves.

## **OCTOBER MEETING MINUTES AND ACTION ITEM REVIEW**

Mike Kelly, AECOM Principal Archaeologist, reviewed the October action items and asked if there were any corrections to last month's meeting notes. No corrections were requested.

A slide was presented showing the current status of action items. The items included:

- October presentation distribution – distributed November 1, 2018
- APE distribution – submitted November 15, 2018
- Recreation planning – included on current agenda
- Finalization of APE – no additional comments received
- Civil War Cemetery consideration – research is ongoing but indicates this far from the ADI and therefore not likely to be affected
- IDP and Monitoring Plans – plans are in preparation

### **Comments/Questions:**

- Craig Tucker (Karuk Tribe): How far is the Civil War Cemetery from the APE?
- Elena Nilsson (AECOM): The Civil War Cemetery is in Parcel A lands (to be kept by PacifiCorp), and is 5 miles outside the ADI, below J.C. Boyle.
- Alex Watts-Tobin (Karuk Tribe): This is well above the 100-year floodplain, about 5 miles upstream, and I don't see impacts being an issue.



## RECREATION PLAN UPDATE

Representatives from CDM Smith (Chris Park and Terichael Office) and American Whitewater (Bill Cross) joined the meeting to discuss the status of recreation planning and to solicit input from the CRWG regarding stewardship of cultural resources, especially if there are any at proposed new launches. Chris Park led the discussion and presented slides summarizing the current status of the Draft Recreation Plan (submitted to FERC in the *Definite Plan* as Appendix Q, June 2018). The loss of late summer boating on the Hell's Corner Reach and loss of recreation facilities at the three reservoirs are considered impacts. Maps were presented showing the proposed locations of eight proposed rafting access points: Keno, Highway 66 Crossing; Below J.C. Boyle; Across from Frain Ranch; Copco Valley; Fall Creek Boat Launch; Camp Creek; and Iron Gate Hatchery.

### Comments/Questions:

- General comment: When will the Recreation Plan be completed, and will it be mailed out?
- Chris Park (CDM Smith): The Final Recreation Plan is planned for submission to FERC in early 2019.
- Craig Tucker (Karuk Tribe): Which access points are new?
- Betty Hall (Shasta Nation): Are these new maps? I request that they be mailed to me.
- Mandy Roberson (Klamath Tribes): Are the whitewater landings in or out of archaeological sites? Have you been working with the archaeologists in siting these?
- Mike Kelly (AECOM): Yes, these locations do avoid all known sites within the ADI. As the geoarchaeology analysis moves forward these locations will be further considered. The team is looking at larger areas to allow for flexibility.

### *Keno Launch*

- Craig Tucker (Karuk Tribe): Is Keno outside the APE?
- Burr Neely (AECOM): Yes.
- Craig Tucker (Karuk Tribe): There is a kayak surf wave at Keno in the project area; shouldn't the recreation group be weighing in with the biological resources team?
- Robert Kennta (Siletz Tribe): Will there be a closure during winter?
- Chris Park (CDM Smith): Yes, but we want to move the gate close to the campground or keep it open year-round.
- Dennis Griffin (OR SHPO): Has this area ever been surveyed?
- Elena Nilsson (AECOM): My recollection is yes, in 2003-2004 by PacifiCorp, but we'll double check.
- Craig Tucker (Karuk Tribe): This is also an important bass fishing site.

### *Highway 66 Launch*

No comments.

### *Below J.C. Boyle Launch*

- Alex Watts-Tobin (Karuk Tribe): Are there plans to improve Topsy Grade? That is not a good road.
- Chris Park (CDM Smith): Road improvements are not currently part of the Recreation Plan. Some stakeholders don't want upgrades and some do.
- Eric Ritter (BLM – Redding): Topsy Grade is a historic road and there are archaeological values that would need to be considered if road improvements are planned.

### *Frain Ranch Launch*

- Chris Park (CDM Smith): Hell's Corner begins at Frain Ranch. J.C. Boyle boat Ramp to Dam is extremely steep and challenging, with Class 4 whitewater.



- Alex Watts-Tobin (Karuk Tribe): Frain Ranch has been singled out as subject to cultural resources damage and looting and is a potential candidate for law enforcement so damage doesn't accrue. This needs to be considered if this site is developed.
- Chris Park (CDM Smith): What's being proposed has a limited footprint and includes access to the river, parking pads, and grading a new boat ramp and parking area. Oregon says vault toilets are needed. California has no interest in vault toilets, just the ramp.
- Alex Watts-Tobin (Karuk Tribe): That needs to be discussed with relevant Tribes with knowledge of the sacred sites in this area. A port-a-potty is preferred over a vault toilet.

#### *Copco Valley Launch*

- Eric Ritter (BLM – Redding): Whoever is going to own that land, aren't they going to want a say-so in how it's being used?
- Craig Tucker (Karuk Tribe): I think having a recreational facility will be enticement for whoever takes over as land manager.
- Robert Kennta (Siletz Tribe): Do you have an idea of how much sediment has accumulated here?
- Elena Nilsson (AECOM): We do have the data, and that analysis will be done. We know that deeper sediments (10-12 ft.) are closer to the original channel, with less sediment (2-3 ft.) at the shoreline/Copco Road.
- Robert Kennta (Siletz Tribe): It will be really silty, too. Makes me think it will require hauling a lot of rock to make the parking pads stable enough. How will feasibility factor into site selection? Unless the silt is going to be removed?
- Eric Ritter (BLM – Redding): Have you done historic research to see if these deep alluvial terraces would have been ranch land?
- Elena Nilsson (AECOM): Yes, we have looked at historic maps to determine locations of ranches and other features. At the meeting last month we went over how we will be doing additional screening for cultural resources with this data in the future.
- Chris Park (CDM Smith): Given uncertainties in the reservoir drawdown, we may need alternate sites as described in the Recreation Plan.
- Betty Hall (Shasta Nation): Wave action is going to be swift in some places. They tell me we don't have to worry about graves being washed away, but I don't know that they are considering our sacred burial sites.
- Brian Person (AECOM): How long until we know about feasibility and engineering for roads?
- Shannon Leonard (AECOM): When the contractor is on board, we will get the first design packages and preliminary engineering at the site.

#### *Fall Creek Launch*

- Crystal Robinson (Quartz Valley Indian Reservation): Could this launch be in an area of thermal refuge? I have biological concerns about habitat for salmon at Fall Creek.
- Alex Watts-Tobin (Karuk Tribe): This is close to the proposed Yreka Pipeline crossing.
- Eric Ritter (BLM – Redding): Is Fall Creek a potentially anadromous stream after dam removal? What would the effect be if so?
- Sami Jo Difuntorum (Shasta Indian Nation): There is a really high density of cultural resources in that entire stretch of river. Our preference is to stay away from these areas. Where we have a village, there is a high probability for burials.
- Crystal Robinson (Quartz Valley Indian Reservation): Creek mouths in general are a bad location for biological as well as cultural resource issues.
- Bill Cross (American Whitewater): We have some latitude to move if there is a problem with a specific spot.

### *Camp Creek Launch*

- Craig Tucker (Karuk Tribe): This is a popular area for drift boats, too. Have you had a conversation with fishermen?
- Chris Park (CDM Smith): We've attempted to engage the angling community, but they are not as active as the whitewater community so far.
- Craig Tucker (Karuk Tribe): Does PacifiCorp have a contractual agreement to ensure access?
- Russ Howison (PacifiCorp): We're open to it but we're not committing at this time.
- Eric Ritter (BLM – Redding): Didn't PacifiCorp move the Stateline take-out?
- Russ Howison (PacifiCorp): Camping was moved, not the take-out. Currently this area gets little use since Access 6 is in use.

### *Iron Gate Hatchery*

- Eric Ritter (BLM – Redding): Brush Creek has anadromous fish – is there tribal concern regarding fisheries?
- Crystal Robinson (Quartz Valley Indian Reservation): Upstream is better than downstream. Big springs should be avoided too (e.g., below J.C. Boyle).
- Craig Tucker (Karuk Tribe): Fishermen can stack up here. Has there been an evaluation of the biology of coldwater areas?
- Alex Watts-Tobin (Karuk Tribe): I suggest moving this upstream to the footprint of the dam.
- Janice Crowe (Shasta Indian Nation): We don't want any of these near our cultural sites. We recommend cultural sensitivity training as part of the permitting process.
- Craig Tucker (Karuk Tribe): Isn't there already ground disturbance at the dam or hatchery? Why not use the already paved parking lots for boats to minimize impact, versus creating a new impact somewhere else.
- Robert Kennta (Siletz Tribe): And avoid the coldwater refuge areas. If the houses here are going to be demolished, could that already-disturbed area be used for this development?
- Craig Tucker (Karuk Tribe): I get frustrated when we have to talk about "mitigation" in the Recreation Plan – we've created a gold mine. The Plan needs to point out the improved water quality and increased opportunities for guided fishing trips. This is great for recreation and commercial operations.
- Unidentified Telephone Participant (Bill Kuntz?): What about hiking trails?
- Chris Park (CDM Smith): We looked at some but ruled them out in the Draft Plan because of land ownership challenges.
- Unidentified Telephone Participant (Bill Kuntz?): Will the land at Jenny Creek connect to Siskiyou National Monument?
- Eric Ritter (BLM – Redding): It depends on who gets the land. There are lots of unknowns. BLM California might consider trails.

## **PHASE II STUDY PLAN**

Burr Neely (AECOM) presented the outline for the upcoming Phase II Plan. The purpose of the research design is to guide summer 2019 archaeological field investigations and establish criteria for determinations of site eligibility. There are about 40 sites in the ADI.

### **Comments/Questions:**

- Eric Ritter (BLM – Redding): There are about 40 sites in Parcel B lands, but hundreds on Parcel A that we can't get to—how are you going to take this into account?
- Elena Nilsson (AECOM): To explain: Parcel A lands include "ranch lands", some scattered at J.C. Boyle and upper Copco Lake, and these are not for transfer. Parcel B lands are the majority of the ADI; there is a potential for effect and these lands are subject to transfer to

KRRC and State agencies—it's the land under the reservoirs and dams. We have completed the record search and have a database for all sites in the reach to use when focusing down on the 40 within the ADI.

- Roy Hall, Jr. (Shasta Nation): What about current submerged sites?
- Burr Neely (AECOM): There will be a separate Plan to deal with the inundated sites. The Phase II Study Plan is for all the sites we can get to first. We know at this time it may not be feasible to look at all of a site, in some cases it might just be a sliver.
- Roy Hall, Jr. (Shasta Nation): Is this excavation?
- Burr Neely (AECOM): Yes, with tribal participation.
- Eric Ritter (BLM – Redding): I assume from past talks, that tribes assume prehistoric sites are eligible? What does SHPO think about that approach?
- Brendan Greenaway (CA SHPO): It depends on if the sites can be avoided. If so, it can be assumed that the site is eligible; otherwise we will want to see an evaluation.
- Dennis Griffin (OR SHPO): I concur. Avoidance is preferred, but we have to know how the site is being affected and what the direct impacts will be.
- Roy Hall, Jr. (Shasta Nation): Even if there is not a direct impact, there is increased risk for pot hunting.
- Robert Kennta (Siletz Tribe): We need to know an adequate boundary, too.
- Alex Watts-Tobin (Karuk Tribe): The Karuk Advisory Board does not support subsurface testing just to detect site boundaries and buffers.
- Rosie Clayburn (Yurok Tribe): The Yurok does not do subsurface testing either on our lands, and that has worked well for us.
- Robert Kennta (Siletz Tribe): What about place names and translations of those? E.g., plant gathering areas and other environmental considerations. Have these been considered?
- Burr Neely (AECOM): That is part of the context update that is needed. There are the 2004 PacifiCorp Ethnographic Reports. Should we use a redacted version to respect confidentiality? We are looking for your feedback for an appropriate approach given the sensitivity.
- Mike Kelly (AECOM): We plan to have details on sites in relation to the shoreline, with general descriptions in the report.
- Rosie Clayburn (Yurok Tribe): We're okay with that, but other Tribes may need chapters in different areas; maybe redact others for different Tribes. We will need to have a discussion using territorial maps.
- Mike Kelly (AECOM): We can meet with individual tribes to get your input.
- Elena Nilsson (AECOM): Maybe we can break it up into reservoir areas.
- Robert Kennta (Siletz Tribe): I have museum photos from back east- showing 18 feet below surface from the Klamath River area. I will try to find the references and get those to you.
- Eric Ritter (BLM – Redding): Do the SHPOs want informal review of some of these methods in the Phase II Study Plan?
- Brendan Greenaway (CA SHPO): We will wait to do a formal review.
- Alex Watts-Tobin (Karuk Tribe): I took the APE and ADI to the Karuk Advisory Board. They are happy with the ADI, and noted that the APE is an indirect impact. I asked if we could consider impacts a "net positive", i.e., it is just as good as a river versus a reservoir? The answer was no, not always. They want that noted.
- Rosie Clayburn (Yurok Tribe): There are many benefits: access to fishing goes up, we can go swimming, have ceremonial uses with less toxicity. We want it noted that we consider the project to have positive indirect impacts.

## CLOSING REMARKS

- Craig Tucker (Karuk Tribe): I want to make sure we're getting fisherman access. I'm offering to help. Duck hunting maybe should be considered too as part of the Recreation Plan, not just commercial rafters. Can I get a list of people you talked to?
- Crystal Robinson (Quartz Valley Indian Reservation): I would like to see a biological overlay with the Recreation Plan. The plan needs to address flexibility until dams are removed. We won't know all areas until we can see it as a river.
- Craig Tucker (Karuk Tribe): I'm troubled by the informal letter-based agreements. There is no permanency, no legal obligations. The Recreation Plan should commit PacifiCorp to ensure public access.
- Eric Ritter (BLM – Redding): What about new rapids? Will there be tribal fishing areas?
- Craig Tucker (Karuk Tribe): Tribal fishing rights won't be discussed here.
- Janice Crowe (Shasta Indian Nation): We would like to go on the record stating that any Recreation Plan decisions will adversely affect cultural resources.

## ACTION ITEMS

- *Tribal Caucus notes:* Brian to correct October notes and distribute to Tribal Caucus by December 3<sup>rd</sup>.
- *Facilitate document sharing.* KRRRC to assist with establishing a method of document sharing amongst the Tribal Caucus.
- *Set up in-person Tribal Caucus meetings for January and February.* AECOM to send out Doodle poll for location and day preferences.
- *Schedule individual discussions.* AECOM to contact Tribes for individual meetings to discuss the Phase II Plan and other deliverables.
- *Circulate Phase II Study Plan.* AECOM to send out first draft of the plan to the CRWG in January.
- *Recreation Planning:*
  - Provide biological overlay (e.g., thermal refugia, spawning areas, big springs). Consider upstream as better than downstream at stream crossings. Consider stream crossings and springs as generally bad locations due to cultural resources.
  - Provide list of what whitewater commercial outfitters were contacted. Ensure sample includes a variety of outfitters and anglers (and possibly duck hunters?).
  - Craig Tucker (Karuk Tribe) may like to collaborate with gathering angler input to ensure access for them and understand drift boat use.
  - Address comment on whether the plan can commit PacifiCorp legally to ensure public access.
  - Address feasibility of having cultural sensitivity training as part of the permitting process.
  - AECOM to verify survey coverage at Keno Dam.
  - Focus recreation developments on locations that have existing disturbances from dam/fisheries/residences.
  - Use of vault toilets should be approached with the Tribes. Port-a-potty may be better option.

- Any road improvements will also need to consider cultural resources.
- *Distribute PowerPoint:* AECOM will distribute the November PowerPoint presentation to the CRWG via email. AECOM will also send a hardcopy to the Shasta Nation.

The meeting ended at 4:00 pm.

## Meeting Minutes

Subject	Klamath River Renewal Project KRRRC Cultural Resources Working Group (CRWG) Meeting
Date	February 19, 2019
Time	1:00-3:00 pm PST
Location	Teleconference
Attendees	AECOM: Mike Kelly, Burr Neely, Elena Nilsson, Brian Person, Sarah McDaniel CA SHPO: Kathleen Forrest CDM Smith: Kate Stenberg OR SHPO: Tracy Schwartz PacifiCorp: Russ Howison Karuk Tribe: Craig Tucker Quartz Valley Indian Reservation: Crystal Robinson Shasta Nation: Roy Hall Jr., Betty Hall Shasta Indian Nation: Janice Crowe, Sami Jo Difuntorum, James Sarmento
Prepared	April 8, 2019
Prepared by	AECOM
Distribution	KRRRC Cultural Resources Working Group (CRWG)

### MEETING OBJECTIVE

To continue consultation between cultural resources stakeholders with the Klamath River Renewal Corporation (KRRRC) and its technical team, AECOM. Specifically, the telephone meeting was focused on providing an overview of the Draft Phase II Study Plan being distributed to the CRWG this month.

### SCHEDULE AND MEETINGS

After introductions, Mike Kelly (AECOM Principal Archaeologist) reviewed the proposed Section 106 timeline.

*Document Schedule (the following dates are when the first Draft is due to KRRRC)*

- Phase II Study Plan – February 28, 2019 to CRWG; request comments from CRWG March 22, 2019; Final due in April
- IDP – to CRWG March 2019
- PA – to CRWG March 2019
- Cultural Resources Monitoring Plan (CRMP) – to CRWG March 2019
- Looting and Vandalism Prevention Plan (LVPP) – to CRWG May 2019
- Historic Properties Management Plan (HPMP) – to CRWG July 2019
- Treatment of Human Remains (to be provided by Tribes) – August 2019

### NOVEMBER MEETING MINUTES AND ACTION ITEM REVIEW

Brian Person (AECOM meeting facilitator), reviewed the November action items and asked if there were any corrections to the Tribal Caucus or CRWG meeting notes. For project updates: the SWRCB's Lower Klamath Project Draft EIR was published on December 27, 2018, inclusive of AB-52 Mitigation measures. Comments on the Draft EIR are due by February 26, 2019.

The Draft EIR is available at:

[https://www.waterboards.ca.gov/waterrights/water\\_issues/programs/water\\_quality\\_cert/lower\\_klamath\\_ferc14803\\_deir.html](https://www.waterboards.ca.gov/waterrights/water_issues/programs/water_quality_cert/lower_klamath_ferc14803_deir.html)

The current status of action items include:

- November presentation distribution – distributed December 6, 2018
- Distribution of Tribal Caucus notes –distributed December 3, 2018
- Facilitate document sharing – under investigation
- Set up January and February 2019 Tribal Caucus meetings – polls were circulated with no appropriate dates identified; set the current conference call
- IDP and Monitoring Plans – plan preparation is underway

**Comments/Questions:**

- Sami Jo Difuntorum (Shasta Indian Nation): I'd like to note there was no Tribal Caucus meeting today. Are the notes from the Tribal Caucus that AECOM sent out on December 3, 2018 and January 30, 2019 the same?
- Brian Person (AECOM): Yes.
- No corrections were requested.

**PHASE II STUDY PLAN: GENERAL RESEARCH METHODS**

Elena Nilsson (AECOM Principal Archaeologist) summarized the Phase II Study Plan that has been drafted and will be circulated to the CRWG by February 29. The General Research Methods were the focus of the conversation, specifically, how they were developed on a site-by-site basis for 49 archaeological sites on the PacifiCorp Parcel B lands. These sites are unevaluated and potentially eligible for the National Register of Historic Places. Two of the 49 sites lack data potential and are not included in the Phase II Study. Of the 47 sites with data potential, 8 are historic-period rock features or linear resources to be evaluated through research and 39 are precontact, historic-period and/or multiple component resources that are proposed for subsurface testing.

**Comments/Questions:**

- Kathleen Forrest (CA SHPO): There are two sites you are not testing; are you submitting them for concurrence?
- Elena Nilsson (AECOM): Yes.
- Roy Hall, Jr. (Shasta Nation): Did you do any comparison of burial sites in the drawdown area, and how they might be affected?
- Elena Nilsson (AECOM): We did not call out burials in the Phase II plan.
- Roy Hall, Jr. (Shasta Nation): So that's unknown.
- Elena Nilsson (AECOM): Yes, each site has a different "life"— different reservoirs will have different amounts of silt accumulation and deflation. Background studies give us some information, but you're right in that there will be different scenarios during the drawdown at different sites.
- Betty Hall (Shasta Nation): Sami Jo's write up mentions there could be cremations. Our people did not do that. Also, you mention determining eligibility for the NRHP. Often we say sites are eligible, but they never get listed. Why is that? There are lots of good sites up there that are eligible.
- Elena Nilsson (AECOM): To get a site listed, there is a nomination process, but often that nomination form never gets filled out. There are a few sites in the Stateline that have been listed by BLM.
- Mike Kelly (AECOM): Whether a site is listed or eligible, the protection status is the same.



- Craig Tucker (Karuk Tribe): The Karuk got a site listed in 2015--a ceremonial area outside Orleans.
- Betty Hall (Shasta Nation): The Karuk used our Treaty. At the Quartz Valley Reservation, Shasta and Karuk were both on the Reservation. My father had an assignment there, and I grew up there since I was 4 years old until I got married. My father would care for Karuk children. There was no comparison between our people and the Karuk that were there. There were protocols between the tribes that were understood.
- Craig Tucker (Karuk Tribe): I was just trying to be helpful and give an example, Ms. Hall.
- Mike Kelly (AECOM): Thank you for sharing your stories. We would like to hear more when we visit for individual tribal consultation.
- Betty Hall (Shasta Nation): Page 1,008 of the State Water Board Draft EIR. What's happening? This doesn't provide for investigation under Section 106?
- Elena Nilsson (AECOM): Their program didn't call for Section 106 compliance for sites. Ours is different.
- Mike Kelly (AECOM): The Shasta Nation would need to send comments on the EIR to the State Water Board.
- Betty Hall (Shasta Nation): You make it sound easy. We met with the State Water Board and discussed how sediment is going to flow down the river. But they didn't know how much. I'm apprehensive about wave action.
- Elena Nilsson (AECOM): This is a very unusual project because of the unknown reservoir actions. We will all be learning together and adjusting as we're out there. We can change and move forward with the CRWG, because this is not going to be a "standard" Phase II investigation.

## GENERAL FIELD METHODS

Elena Nilsson (AECOM) discussed proposed archival research proposed for 17 archaeological sites as well as general field methods that will be used on the currently exposed (not inundated) portions of sites on Parcel B lands that will have direct impacts from project activities. Hand excavation will occur at 39 sites. Water screening is proposed where there is heavy sedimentation because it gives better recovery. Excavations will be conducted following state guidelines. Surface reconnaissance and collection, subsurface excavation, treatment of human remains identified during testing, and field documentation were discussed.

- Surface reconnaissance (survey at 3-meter intervals) will occur at all 39 sites.
- Surface Reconnaissance Units (SRUs) (2-meter long segments; GPS and collect artifacts) will be placed in the reservoir drawdown zone at 6 sites.
- Surface Collection Units (SCUs) (2x2 meter blocks; GPS and collect artifacts) will be used in site areas less prone to erosion /water fluctuation at 19 sites.
- Subsurface Excavation will occur at 39 sites, including:
  - Shovel Probes (SPs) (30 cm diameter): 4 to 55 per site at 36 sites
  - Shovel Test Units (STUs) (50 x 50 cm): 8 to 55 per site at 36 sites
  - Excavation Units (EUs) (1x1 and 1x2 meters): 2 to 6 per site at 37 sites
  - Auger Bores (ABs) (15 cm diameter bucket) will be used at the base level of select STUs and EUs
- Total excavation volumes will be 5-6 cubic meters per site on average. Many sites are very large because of erosion.

If any human remains are encountered, work will stop near the location and the Inadvertent Discovery Plan (IDP) steps will be followed. Field documentation will include photographs and written records and notes. Artifacts will be placed in plastic bags and transported for processing to the AECOM laboratory in Chico, California. Curation protocols are to be determined in consultation with the CRWG. Specialized studies including radiocarbon dating, tephra (ash)



analysis, obsidian studies, geomorphology and sedimentology, and paleoethnobotanical analyses may be undertaken.

**Comments/Questions:**

- Roy Hall (Shasta Nation): You overlooked an important item. You need to identify which Tribe is going to respond to inadvertent discoveries. This is our area, not any splinter groups. You need to make a decision. All laws must be followed.
- Mike Kelly (AECOM): We recognize this is something that still needs to be worked out among the CRWG and procedures will be included in the IDP.
- Roy Hall (Shasta Nation): You're inviting as many parties as possible and that is not going to work. Don't invite any Tribes—being of Shasta blood but being recognized with Siletz for example—is borderline criminal. Think about what you're doing in relation to the Tribes and our relationships. We don't appreciate other Tribes making decisions for us.
- Elena Nilsson (AECOM): All of that will be important for the IDP.
- Roy Hall (Shasta Nation): Under CEQA?
- Elena Nilsson (AECOM): No, under the NHPA federal nexus. The State Water Board is CEQA.
- Sami Jo Difuntorum (Shasta Indian Nation): When you recover artifacts, will monitors be present? What is the decision for ultimate disposition; where will they go? I agree with Roy that not everybody should have input to what are Shasta artifacts.
- Elena Nilsson (AECOM): Yes to the tribal monitors. Regarding artifacts, that's where we need direction from the CRWG.
- Sami Jo Difuntorum (Shasta Indian Nation): You'll be having conversations with individual Tribes?
- Elena Nilsson (AECOM): Yes.

**INADVERTENT DISCOVERY PLAN**

Burr Neely (AECOM Cultural Resources Specialist) presented a few slides introducing the IDP, which provides basic protocols to follow in the event cultural resources or human remains are unexpectedly encountered. Protocol discussion topics include: the need for different protocols depending on the location and type of discovery; the designation of a Project Cultural Resource Specialist to ensure the IDP is appropriately implemented; protocols during drawdown activities where work stoppage may not be immediately possible; CRWG representative contact information to be included; and feedback regarding the notification process.

**Comments/Questions:**

Kathleen Forrest (CA SHPO): Have you engaged with the Native American Heritage Commission? Have you considered designating Most Likely Descendants (MLDs) in advance of the project?

Burr Neely (AECOM): No, we haven't engaged them yet.

Kathleen Forrest (CA SHPO): I recommend you engage them sooner rather than later.

Burr Neely (AECOM): Our intent is to do that well in advance of an inadvertent discovery.

James Sarmiento (Shasta Indian Nation): NAHP doesn't normally predesignate MLDs. You have to go through the process when there is an inadvertent discovery. You need to contact them to learn what the process is.

## SHPO MEETINGS

The previous week, AECOM met with CA and OR SHPOs for a discussion on project status and planning for steps moving forward. No questions or comments were raised.

## ACTION ITEMS

The meeting's follow-up action items are provided in the following table:

**Action Items Table for February 2019**

Action Item	KRRC/AECOM Action	CRWG/Tribal Action
February 2019 presentation distribution	Circulate presentation (including hardcopy to Shasta Nation)	-
Facilitate document sharing	Look into ftp site or similar mechanism	-
April in-person Tribal Caucus/CRWG meeting and tour	Send out Doodlepoll and emails to CRWG	Respond to AECOM Doodlepoll re: location and day preferences
Phase II Study Plan	Distribute to CRWG by Feb. 28, 2019	Comments due back to KRRC/AECOM by March 22, 2019
Individual Tribal Consultation	Schedule meetings for March	Provide dates/times to AECOM
IDP and Monitoring Plans	Incorporate CRWG protocol into draft plans	Provide draft plans to AECOM

The call ended at 3:00 pm.

## Meeting Minutes

### Klamath River Renewal Project KRRC Cultural Resources Working Group (CRWG) Meeting

Date	April 25, 2019
Time	1:00-4:00 pm PST (Tribal Caucus 10:00am – 12:00pm)
Location	Best Western Miners Inn, Yreka, CA
Attendees	<i>In person:</i>  AECOM: Mike Kelly, Burr Neely, Elena Nilsson, Brian Person, Sarah McDaniel BLM-Redding: Eric Ritter CA SHPO: Kathleen Forrest, Brendan Greenaway, Juli Polanco Karuk Tribe: Alex Watts-Tobin Klamath Tribes: Perry Chocktoot OR SHPO: Tracy Schwartz PacifiCorp: Russ Howison Quartz Valley Indian Reservation: Crystal Robinson Shasta Nation: Roy Hall Jr., Betty Hall, Carl Hall, Dean McBroom, James Prevatt Shasta Indian Nation: Janice Crowe, Frank Crowe Siletz Tribe: Robert Kentta USFS-Klamath NF: Jeanne Goetz, Jason Coats Yurok Tribe: Rosie Clayburn  <i>Via telephone:</i> AECOM: Shannon Leonard, Kirk Ranzetta 2 unidentified
Prepared	June 4, 2019
Prepared by	AECOM
Distribution	KRRC Cultural Resources Working Group (CRWG)

### MEETING OBJECTIVE

To continue consultation between cultural resources stakeholders with the Klamath River Renewal Corporation (KRRC) and its technical team, AECOM. This month's meeting was focused on discussion of the Monitoring and Inadvertent Discovery Plan.

### SITE VISIT SUMMARY

After introductions, Brian Person, AECOM meeting facilitator, began by going over the site tour that occurred the day before (April 24, 2019). The tour was well attended. Besides those present

for this CRWG meeting, attendees for the site tour included additional representatives from PacifiCorp, AECOM, KRRC, CDM Smith, River Design Group, Oregon SHPO, and the BLM Lakeview District. The site tour itinerary included stops at J.C. Boyle Dam; Iron Gate Dam, Hatchery, and Powerhouse; and Copco 1 and Copco 2 Dams and Powerhouses.

**Comments/Questions:**

- Perry Chocktoot (Klamath Tribes): Yesterday brought back memories of seeing the removal of the Chiloquin Dam as it was falling apart. What came to my mind was the life expectancy of these dams. Looking at those antiquated dams yesterday—their time is done. These need to come down. There's rebar sticking out and these are just dinosaurs. This is my personal view.
- Roy Hall (Shasta Nation): I hauled in a new generator not long ago. These dams are in good shape, and we wouldn't be hauling in new equipment if they were in a state of decay. Let's leave that discussion to the engineers. That's my view.
- Alex Watts-Tobin (Karuk Tribe): The numbers are in from PacifiCorp: it will cost more money to relicense them for 50 years than to take them out now.
- Crystal Robinson (Quartz Valley Indian Reservation): I'm amazed at how deep the canyon is. The Dam at Copco 2 looks solid, like it could be there for 500 years...it was great to see it in person. It's going to be beautiful once it's a free-flowing river again.

**TRIBAL CAUCUS UPDATE**

The Tribal Caucus met in the morning, prior to the CRWG meeting. Brian Person (AECOM) facilitated the meeting. The Tribal Caucus primarily discussed the Looting and Vandalism Prevention Plan (LVPP). The group decided that the role of the Tribal Caucus should continue, in addition to individual tribal consultation between KRRC and the Tribes.

**PROJECT UPDATE**

Mike Kelly (AECOM) provided a project update. KRRC just signed a contract with Kiewit Corporation as the selected contractor for dam removal. In his opinion, of the three bidders, Kiewit had the best approach for consideration of cultural resources. In the contract there is an opportunity for public outreach regarding dam deconstruction. Kiewit will be offering opportunities for local involvement. Kiewit was also the company that worked on the Oroville Dam most recently.

**Comments/Questions:**

- Perry Chocktoot (Klamath Tribes): I hope they will be responsible for working with the CRWG. We don't want them to trump our capabilities.
- Mike Kelly (AECOM): No, they will have to implement the plans we put together here.
- Roy Hall (Shasta Nation): Shouldn't our CRWG plans be done before Kiewit makes their plans? I'm concerned because our concerns aren't met yet. We have had no feedback on anything concrete, and I don't want them to get ahead.
- Mike Kelly (AECOM): We forwarded your concerns to the legal team. We will follow up with them and ask that they provide a response.
- Brian Person (AECOM): I'd like to point out that the design stage is a lengthy process and hasn't begun yet. If the decommissioning is approved, it would begin January 2021.
- Roy Hall (Shasta Nation): We have no assurance that you're taking our considerations seriously.
- Mike Kelly (AECOM): The permitting is still ongoing, and concerns regarding the removal process should be directed toward the California Water Board under the EIR process. In these meetings, we need to stay focused on cultural resources planning.

- Elena Nilsson (AECOM): Authorization of the project is contingent upon FERC approval.
- Roy Hall (Shasta Nation): Protection measures need to be in place prior to any removal.
- Mike Kelly (AECOM): The Programmatic Agreement (PA) will include protective measures decided upon by this group. This process will continue up to and through decommissioning.
- Roy Hall (Shasta Nation): I'm just concerned about the timeline and don't want to be put off. We're still waiting for a response from the KRRRC attorneys regarding our concerns.
- Mike Kelly (AECOM): I know a letter is being prepared. We will follow up on the status of the response with the KRRRC legal team.

### **SCHEDULE UPDATE**

*Document Schedule (the following dates are when the draft is due to the CRWG)*

- Phase II Study Plan – April 2019
- IDP – May 2019
- PA – May 2019
- Monitoring Plan - May 2019
- Looting and Vandalism Prevention Plan (LVPP) – June 2019
- Historic Properties Management Plan (HPMP) – November 2019
- Treatment of Human Remains (to be provided by Tribes) – November 2019

### **PHASE II STUDY PLAN**

Mike Kelly (AECOM) provided an update on the Phase II Study Plan, which is going to be distributed next week to the CRWG. Ethnographic sections were redacted from the version to be circulated. Site location information was also redacted. The unredacted version will go to the agencies. The expectation is that FERC will be engaged by the time the final draft is ready.

#### **Comments/Questions:**

- Tracy Schwartz (OR SHPO): The ACHP has been contacted; will they be engaged when FERC is? So, will there be more drafts after that?
- Mike Kelly (AECOM): Yes, once FERC is engaged we'll see more drafts.
- Juli Polanco (CA SHPO): This schedule is aggressive. We will need to see meaningful consultation--that's very important for the Tribes and the public. If that happens when FERC is involved, that's fine, but meaningful consultation is something our office takes very seriously. That's a general comment. If FERC engages in October 2019, what's the timeline you have in mind?
- Mike Kelly (AECOM): January 2021, or about 1 year for additional consultation.
- Julianne Polanco (CA SHPO): Because the client has such an aggressive schedule, it's very important that these documents you're preparing are advanced. That's critical to our timely review. Is there an overall schedule of CEQA/NEPA and this? That might be a question for KRRRC—but to have a schedule showing input opportunities for the public would be helpful.
- Mike Kelly (AECOM): We weren't heavily with the California Water Board DEIR process.
- Eric Ritter (BLM): At the end of January, the Hoopa Valley Tribe won a lawsuit...is that being brought into this discussion?
- Mike Kelly (AECOM): KRRRC is taking that into account.
- Perry Chocktoot (Klamath Tribes): At some point we want government-to-government consultation.

## **MONITORING AND INADVERTENT DISCOVERY PLAN**

Burr Neely (AECOM) presented an overview of the draft Monitoring and Inadvertent Discovery Plan (MIDP), which has two main sections: a comprehensive discussion for monitoring protocols, and a section with steps to take in the event of a cultural resources or human remains discovery situation. For now, these documents are combined into one plan. The MIDP acknowledges the need for Tribal Representatives to be present throughout the decommissioning process. The first half of the MIDP has a draft language for roles and responsibilities, qualifications and training (including Tribal training programs for which CRWG input is needed), monitoring locations and how these will be delineated, and types of activities to be monitored. The second half of the MIDP is focused on discovery protocols (stop, secure, notify, support, document, proceed). Exceptions must be made for certain situations; for example, once started, the drawdown cannot be interrupted; safety concerns may also present a challenge. The MIDP needs feedback from CRWG members.

### **Comments/Questions:**

- Perry Chocktoot (Klamath Tribes): This needs to be a very comprehensive plan.
- Burr Neely (AECOM): The plan will be part of the Programmatic Agreement (PA) and Historic Properties Management Plan (HPMP). These are mitigation measures in the CEQA DEIR and will be part of the FERC process.
- Perry Chocktoot (Klamath Tribes): What about the Looting and Vandalism Prevention Plan (LVPP)? Will looters be prosecuted under state or federal law if this is a federal project?
- Juli Polanco (CA SHPO): It will depend on the landowner. Is most of the project on state land?
- Perry Chocktoot (Klamath Tribes): The state penalties are just a slap on the hand. If you keep this under the state, there's essentially no penalties for violators.
- James Prevatt (Shasta Nation): This is our aboriginal homeland. That takes precedence over anything else.
- Juli Polanco (CA SHPO): It would be good to have the attorneys review these documents. You don't want to have agreement documents with measures that don't align with the laws and regulations.
- Eric Ritter (BLM): What about including penalties for transporting cultural items across federal lands?
- Perry Chocktoot (Klamath Tribes): It would be better to get them for trespassing. There are greater penalties for that.
- James Prevatt (Shasta Nation): One case, where babies were taken from their graves, the people got some time because it was a federal case. But the state doesn't care. They think we're just dumb old Indians. We're not dumb--and just some of us are old!
- Perry Chocktoot (Klamath Tribes): We need an airtight law enforcement presence for a long, long period of time.
- Elena Nilsson (AECOM): Parcel B lands will be transferred to California or other entities during decommissioning, and then there may be a flip in ownership. This will have implications for any long-term provisions.
- Crystal Robinson (Quartz Valley Indian Reservation): Let's push for federal land ownership--like BIA, BLM--to ensure protections.
- Roy Hall (Shasta Nation): This is Indian Land. It always has been and always will be. No one else has the right to say how it should be. It's up to us. The original ownership is Tribal.
- Kathleen Forrest (CA SHPO): When will land ownership be determined?

- Elena Nilsson (AECOM): It's my understanding that the California Resources Agency is doing outreach for the California side. But it's contingent on the FERC license surrender decisions. There may be some flexibility.
- Eric Ritter (BLM): Any future federal land ownership would involve Congress and would be a very complicated process.
- Russ Howison (PacifiCorp): The land transfer will be active when the surrender order is active. That's when PacifiCorp hands over the keys, the land is transferred and KRRC begins deconstruction.
- Tracy Schwartz (OR SHPO): What about in Oregon?
- Elena Nilsson (AECOM): That would be the Department of State Lands.
- Crystal Robinson (Quartz Valley Indian Reservation): How can we advocate regarding the transfer of lands?
- Elena Nilsson (AECOM): The California Natural Resources Agency—we have the name of the person doing the outreach, Brady Moss. We'll get that contact information out to the group.
- Perry Chocktoot (Klamath Tribes): Your PowerPoint slide 11 says KRRC is the "project proponent and FERC Section 106 delegate." FERC cannot delegate their Section 106 responsibility.
- Mike Kelly (AECOM): That is meant to refer to a temporary situation between PacifiCorp/KRRC until FERC gets involved.
- Juli Polanco (CA SHPO): Perhaps clarifying the slide would be helpful.
- Roy Hall (Shasta Nation): Regarding Tribal monitoring, would the Tribes be paid the prevailing wage? Under a contract?
- Burr Neely (AECOM): There would be a payment mechanism in place.
- Eric Ritter (BLM): There is a need for monitors for historic resources as well.
- Perry Chocktoot (Klamath Tribes): The Klamath Tribes provides monitors to work on both pre-contact and historic sites, as well as SOI-qualified anthropologists. Regarding the Cultural Resources Monitoring Plan, the on-site monitors will need to keep daily, weekly/monthly logs, have daily tailgate meetings, and wear PPE. These are just some of the provisions that need to be in the MIDP.
- Crystal Robinson (Quartz Valley Indian Reservation): Are you going to have training in order to take someone who doesn't know how to monitor, to being able to monitor? Quartz Valley doesn't have many people already qualified to do this.
- Perry Chocktoot (Klamath Tribes): We give 40-hour training and a test before issuing a certification for someone to be a cultural resources monitor. We do that with our own Tribes, but it's open to everyone.
- Rosie Clayburn (Yurok Tribe): We do training for our monitors too. To be a Yurok monitor, a person must be certified by the Yurok Tribe. Maybe we could do a collective training. This would be a good topic for the next Tribal Caucus.
- Alex Watts-Tobin (Karuk Tribe): We also do our own training, and we have some members who identify as Shasta.
- James Prevatt (Shasta Nation): The duration of long-term monitoring has to be forever. With constant ongoing training. Not just for a few years. Any bodies that are found need to be kept right there and not moved. There will be no desecration of graves. If they find one, leave it alone! This is our tradition, our religion, our life—past and future.
- Eric Ritter (BLM): It would be helpful to include scenarios in the IDP—for example, if I'm working in area x, what's the plan?
- Perry Chocktoot (Klamath Tribes): We'll need to do contractor awareness training for Kiewit. A "zero tolerance policy" is needed. If they're found outside their construction zone, that's



grounds for termination. Their workers must be sensitive—no negativity towards the monitors, no racial harassment like calling us “chief” or making “war cries” or calling us “Indian givers.”

- Eric Ritter (BLM): The MIDP needs to consider items of cultural patrimony too. Need to draw out NAGPRA with some detail.
- Tracy Schwartz (OR SHPO): In Oregon, we have strict guidelines on who can and can’t do surveys. Also, our permitting process needs to be built into the MIDP.
- Burr Neely (AECOM): We are also considering some scenarios where “stop work” can be done. Dewatering is the most challenging scenario. As we learned on our field trip yesterday, there will be a 4 to 6-week period where we won’t be able to get down because of safety concerns when the “pudding-like” sediment is released and settles as the water recedes. But, this could also protect any sites that might be submerged.
- Elena Nilsson (AECOM): We are beginning a submerged resource report through a GIS exercise. Monitors would have access to this information during the drawdown—it will show what resource is where, and potentially how deep, based on historic maps and geoarchaeological information.
- Perry Chocktoot (Klamath Tribes): This is going to be the largest dam removal in US history! We’re going to have to learn as we go. Don’t rule out any type of monitoring--air, ground. But safety should always be first! We don’t want anyone to slip on the slime and slide 30 feet into a deep hole for example. Maybe look to the Everglades region as an example of how to treat safety in this sort of environment?

## SHASTA NATION PRESENTATION

Betty Hall gave a presentation on the history and lineage of the Shasta Nation, including use areas and villages. Ms. Hall shared her family history that includes Chief Ike, some genealogy of the Shasta Nation, and historical research she has conducted. She stated that her father started the Quartz Valley Indian Reservation, and that there were Indian allotments at Hamburg, California. She shared posters she has assembled that illustrate ancestors, treaties including Treaty Q, a schedule of Indian Land Cessations, and a map of ceded areas. She spoke of the genocide that happened after the treaty.

## ACTION ITEMS

Action Item	KRRC/AECOM Action	CRWG/Tribal Action
April 2019 presentation distribution	Circulate presentation (including hardcopy to Shasta Nation)	April 29, 2019
KRRC Attorney Response to Shasta Nation	Check in to see when KRRC attorneys intend to respond to Shasta Nation letter	Letter in progress; to be delivered prior to June CRWG meeting
Schedule June meeting	Send out Doodle poll and emails to CRWG	Respond to AECOM Doodle poll re: location and day preferences
Monitoring/Inadvertent Discovery Plan	Distribute to CRWG by May 17, 2019	Comments due back to KRRC/AECOM by June 3, 2019
Individual Tribal Consultation (Phase II Plan, IDP)	Schedule meetings for June	Provide dates/times to AECOM
Provide acronym list	Provide list with terms commonly used in the documents and meetings	To be prepared for June CRWG meeting



Action Item	KRRC/AECOM Action	CRWG/Tribal Action
KRRC Attorney consultation	Ask KRRC legal dept. what LVPP jurisdiction can be. Agreement documents must align with cultural resource laws	June 12, 2019
Land transfer plan	Brady Moss is the appropriate CA contact regarding land transfer process and how CRWG members can provide input	
Provide timeline	Need to obtain timelines and overall schedule for public input opportunities (CEQA/NEPA, etc.)	
Define Tribal training certifications		Provide draft language regarding individual Tribal training/approval requirements for a monitor to AECOM

The meeting ended at 4:00 pm.

Lower Klamath Project Area Tour Attendees – April 24, 2019

Name	Organization	Contact No.	Email
Russ Howison	Pacificorp	503-913-3634	russ.howison@pacificorp.com
Mike Kelly	AECOM	503-475-2426	mike.s.kelly@aecom.com
Elena Nilsson	AECOM	530-521-9935	elena.nilsson@aecom.com
Burr Neely	AECOM	907-978-9684	burr.neely@aecom.com
Kirk Ranzetta	AECOM	503-853-6354	kirk.ranzetta@aecom.com
Shoshana Jones	AECOM	503-243-3107	shoshana.jones@aecom.com
Sarah McDaniel	AECOM	360-624-4285	sarah.mcdaniel@aecom.com
Brian Person	AECOM/Facilitation	208-386-5000	brian.person@aecom.com
Dave Meurer	KRRC	530-941-3155	dave@klamathrenewal.org
Wendy George	KRRC Board		wendy@klamathrenewal.org
Scott Wright	River Design Group	541-738-2920	swright@riverdesigngroup.net
Kate Stenberg	CDM Smith	425-495-5095	stenbergkj@cdmsmith.com
Julianne Polanco	CA SHPO	916-445-7000	julianne.polanco@parks.ca.gov
Kathleen Forrest	CA SHPO	916 445-7022	kathleen.forrest@parks.ca.gov
Brendan Greenaway	CA SHPO	916-445-7036	brendon.greenaway@parks.ca.gov
Christine Curran	OR SHPO	503-986-0684	christine.curran@oregon.gov
Tracy Schwartz	OR SHPO	503-986-0677	tracy.schwartz@oregon.gov
Jason Coats	USFS	530-905-3717	jacoats@fs.fed.us
Don Holstrom	BLM	541-974-5851	dholmstr@blm.gov
Perry Chocktoot	Klamath Tribe	541-783-2764 x 107	perry.chocktoot@klamathtribes.com
Sami Jo Difuntorum	Shasta Indian Nation	530-643-2463	samijodif@yahoo.com
Janice Crow	Shasta Indian Nation	530-244-2742	twocrowes63@att.net
Frank Crowe	Shasta Indian Nation	530-244-2742	twocrowes63@att.net
James Sarmento	Shasta Indian Nation		jd.sarmiento@gmail.com
Betty Hall	Shasta Nation	530-468-2314	shastanation@hotmail.com
Roy Hall	Shasta Nation	530-468-2314	shastanation@hotmail.com
Jim Prevatt	Shasta Nation	530-468-2314	shastanation@hotmail.com
Alex Watts-Tobin	Karuk Tribe	530-627-3446 x 3015	atobin@karuk.us
Vikki Preston	Karuk Tribe	530-627-3446	
Craig Tucker	Karuk Tribe	916-207-8294	craig@suitsandsigns.com
Rosie Clayburn	Yurok Tribe	707-482-1350 x 1309	rclayburn@yuroktribe.nsn.us
Crystal Robinson	Quartz Valley	530-468-5907 x 318	crystal.robinson@qvir-nsn.gov
Rachel Sundberg	Trinidad Rancheria	707-677-0211	rsundberg@trinidadrancheria.com

## Tour Itinerary

Start	End	Elapsed	Location/Activity
6:00	6:15	0:15	Meet at Yreka Holiday Inn Express; depart for Ashland
7:00	7:15	0:15	Alternate Meet at Ashland Hills Hotel parking lot, Ashland
7:15	8:15	1:00	Drive to J.C. Boyle Dam via Ashland, St. Hwy 66
8:15	9:00	0:45	Tour J.C. Boyle Dam
9:00	9:15	0:15	Drive to J.C. Boyle Powerhouse
9:15	10:00	0:45	Tour J.C. Boyle Powerhouse
10:00	11:15	1:15	Return to Ashland
11:15	12:15	1:00	Drive Ashland-Iron Gate Dam/Hatchery
12:15	1:00	0:45	Meet CA participants/Lunch at Iron Gate Hatchery
1:00	1:30	0:30	Drive Iron Gate-Copco 1
1:30	2:15	0:45	Tour Copco 1 dam, powerhouse and Copco 2 dam
2:15	2:30	0:15	Drive to Copco 2 Village
2:30	3:00	0:30	Tour Copco 2 Powerhouse
3:00	3:20	0:20	Drive Copco 2 Village to Iron Gate
3:20	4:00	0:40	Tour Iron Gate Powerhouse
4:00	5:30	1:30	Return to Yreka/Ashland

## Meeting Minutes

### Klamath River Renewal Project KRRC Cultural Resources Working Group (CRWG) Meeting

Date	June 12, 2019
Time	1:00-3:30 pm PST (Tribal Caucus 10:00am – 12:00pm)
Location	Best Western Miners Inn, Yreka, CA
Attendees	<i>In person:</i>  AECOM: Mike Kelly, Elena Nilsson, Brian Person, Stephanie Butler BLM-Redding: Eric Ritter Quartz Valley Indian Reservation: Crystal Robinson Shasta Nation: Roy Hall Jr., Betty Hall, Don Boat Shasta Indian Nation: Janice Crowe Yurok Tribe: Rosie Clayburn CDM Smith: Kate Stenberg, Chris Park, Terichael Office  <i>Via telephone:</i> AECOM: Burr Neely, Shannon Leonard Klamath Tribes: Perry Chocktoot OR SHPO: Dennis Griffin PacifiCorp: Russ Howison
Prepared by	AECOM
Distribution	KRRC Cultural Resources Working Group (CRWG)

### MEETING OBJECTIVE

To continue consultation between cultural resources stakeholders with the Klamath River Renewal Corporation (KRRC) and its technical team, AECOM. This month's meeting was focused on discussion of the Recreation Plan. The status of the Phase II Study Plan and the Monitoring and Inadvertent Discovery Plan were also briefly discussed.

### TRIBAL CAUCUS SUMMARY

The Tribal Caucus met in the morning, prior to the CRWG meeting. Brian Person (AECOM) facilitated the meeting, and five tribal members attended. The Tribal Caucus discussed the Recreation Plan and areas of common concern among the Tribes. It was strongly suggested that there should be a permitting process for whitewater rafting that would limit the whitewater traffic and provide less disruption of tribal resources on the river. An education component should also be part of the permitting process. The group also discussed the Phase II monitoring and how the Tribes and KRRC are going to fulfill their requirements. Individual discussions with the Tribes will continue in regards to the monitoring.

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## **PROJECT UPDATE**

Shannon Leonard and Mike Kelly (AECOM) provided a project update. Ongoing biological and cultural surveys will hopefully occur later this summer. For regulatory processes, the draft CEQA document has been released, and the State Board is in the process of revising the document. A final CEQA document will likely be released by the end of this year or early next year. A submittal to FERC is due at the end of July that will provide additional project costs and risks. A USACE 404 permit application has been submitted, and KRRC will provide additional information to the Corps about the field surveys this summer, as well as the project design. A draft Biological Assessment has been shared with USFWS and NMFS. A MOU has been executed with Klamath County, and a similar document will be prepared with Siskiyou County.

KRRC has hired Kiewit, and they are working with Knight Piesold as the prime engineer and with RES as the restoration designer. They are moving towards a 60 percent design by the end of the year.

Prior to drawdown, they are several project components that need to be completed, such as road improvement and bridge upgrades; pipeline replacement in the City of Yreka; hatchery modifications; and downstream flood control improvements. After drawdown, the dams can be removed, and habitat and recreation can be restored.

The Phase II Study Plan was submitted to the CRWG on May 3, and comments have been received from OR SHPO and CA SHPO. The final draft will be finalized by the end of July. The Monitoring and Inadvertent Discovery Plan is being reviewed by KRRC and AECOM, and will likely be submitted by the end of June for review. The Programmatic Agreement and the Looting and Vandalism Plan will be submitted to the CRWG in August. Draft HPMP and Human Remains Treatment Plans will be circulated in November.

### **Comments/Questions:**

- Eric Ritter (BLM): How does Kiewit's design relate to the removal process that is in the definite plan and how does it fit into the FERC license relinquishment?
- Shannon Leonard (AECOM): KRRC hired Kiewit as the design-build contractor, and Kiewit will take the information from the definite plan and prepare the engineering and construction designs in order to execute the project. FERC would likely not require final design in order to assess impacts of the project; the 60 percent design will likely be used to support their approvals. FERC is also interested in the cost of the project because KRRC has a limited amount of funding.
- Eric Ritter (BLM): Has Siskiyou County approved the project where they are willing to go forward with a MOU? And, what happens if the County does not agree to the project?
- Shannon Leonard (AECOM): No, the County has not entered into a MOU yet. FERC has the authority to supersede local authority. This route is not preferred, which is why the project proponent is trying to execute a MOU.
- Eric Ritter (BLM): Is the Phase II Study Plan specifically for PacifiCorp sites?
- Mike Kelly (AECOM): Yes, those are the only sites that KRRC has access to.
- Elena Nilsson (AECOM): The Plan covers the sites in the area of direct impact (ADI) where there may be ground disturbance and affects to those sites. The other sites are outside the ADI. Direct impacts will occur to sites within the reservoir pool, with the exception of Fall Creek Hatchery.

- Eric Ritter (BLM): Historic homes may be affected that no longer have a lakeshore.
- Elena Nilsson (AECOM): If it is an archaeological site that has been recorded, touches the ADI, and is on PacifiCorp land, it is covered in the Phase II Plan. Access has not been granted outside of PacifiCorp parcels. Phase II work on private lands is not permitted at this time.
- Mike Kelly (AECOM): The Built Environment Team will be assessing structures for visual or indirect impacts where access is not required (reconnaissance level inventory of historic structures).
- Eric Ritter (BLM): There will be impacts to sites other than those on PacifiCorp lands.
- Betty Hall (Shasta Nation): What about the sites below the dams?
- Mike Kelly (AECOM): Those sites will be part of a subsequent analysis and part of the mitigation phase of the project. Currently, sites associated with the reservoirs will be evaluated for impacts. KRRC is starting to contact landowners to gain access to private lands downstream.
- Eric Ritter (BLM): Is the Klamath River considered navigable?
- Kate Stenberg (CDM Smith): They are a lot of agencies with different areas of jurisdiction. The CA FWS regulates up to the riparian zone, and they have jurisdiction. The CA State Lands Commission is not involved (not occupying the riverbed and not sovereign waters). The Corps is involved because they are looking where fill will be placed in the mainstem river and tributaries. Up to RM 38, the Klamath River is traditionally Navigable.

## **RECREATION PLAN UPDATE**

Chris Park (CDM Smith) provided an update on the recreation plan. A draft recreational plan was released with broad conceptual plans of where potential recreation sites might be located. Since the draft recreation plan was completed, a larger amount of detail has been included in the plan to better inform decision makers and the public about what KRRC is proposing to do and how the recreation sites will affect scenic quality. The revised draft also includes information on the existing scenic quality along the river, as well as details about where the recreation sites will be located and their preliminary conceptual designs.

Whitewater users are concerned about their commercial access to the river. As a result, KRRC is implementing a flow study to evaluate what stretches will be useful during expected average flows after dam removal. KRRC is trying to design the recreational sites for rafters, the fishing community, and passive recreationalists. Both commercial rafters and Tribes are concerned about what sections of the river will be useable and what times of the year.

Eight river access sites are proposed. They have already been refined and shifted based on feedback that has been received from the stakeholders, as well as known cultural and biological sensitivity. The sites are a work in progress, and some of the sites already need to be shifted slightly due to cultural concerns.

Site1 Keno Dam: It is the furthest upstream site, and following dam removal, will be owned and managed by the Bureau of Reclamation. Due to interest of this site by recreational users, KRRC has developed conceptual designs for the site but KRRC will not implement as part of the Recreation Plan. Due to biological and cultural concerns, Alternative A is most feasible.

Site 2 Highway 66 Bridge Crossing in OR: Recreational users at Keno could get out at this location, and this section of the river is expected to transition to a gradual gradient for the next mile or so. Recreational use may include canoeing, flatwater boaters, and fishing users.

Site 3 Moonshine Falls: This site is immediately downstream of the existing JC Boyle site. It is a put in location for water users that would like to access the bypassed reach of the Klamath River. It will be advanced whitewater (Class IV and V rapids). The site is on a fairly steep slope, and a trail is proposed down to the river, as well as a slide and lynch system to lower the boats into the river.

Site 4 Turtle Camp: This site has already shifted based on feedback from the last recreation webinar. It has shifted upstream to an existing BLM dispersed camping site. Due to cultural concerns, the conceptual design will need to be revised to avoid a resource of concern.

Site 5 Copco Valley: Within a proposed restoration area, so there is not a lot of flexibility in the layout until that reservoir restoration is underway. There will be a new parking and an access trail down to the river.

Site 6 Copco No. 2 Powerhouse: There are two alternatives or layouts for the proposed site, and part of the decision on the layout will be dependent on what happens to the Copco No. 2 Powerhouse (The building itself may not be demolished.). The two alternatives are currently upstream of the existing Fall Creek Day Use Area in highly disturbed areas. Revegetation would occur to better control the number of people on site, and a ramp would be developed down to the river's edge.

Site 7 Camp Creek: Access is from Copco Road, and it is proposed within the existing reservoir footprint, so there is some uncertainty to the exact layout of the site. It is not being proposed for commercial use and will be used for fishing access and passive recreation use with access down to river.

Site 8 Iron Gate Hatchery: The site is downstream of the existing hatchery. The site has been shifted upstream since the last meeting due to a request to move it from the bridge crossing and a spawning area at the confluence.

#### Next Steps of the Recreation Plan:

The final recreation plan is underdevelopment, and the sites are being refined. Comments on the plan are requested by June 28. Another webinar is planned for late August in regards to the revised conceptual designs.

#### Comments/Questions:

- Betty Hall (Shasta Nation) expressed concern in regards to the flow of the river and the usability of the river.
- Perry Chocktoot (Klamath Tribes): There is more to recreation than rafting the canyon, and part of the problem will be due to hiking, camping, and fishing and potential looting of cultural sites. Once the dams are removed and the recreational areas are identified, it will be really important to "police" the canyon. Looting is currently still going on today, and the new camping sites and access roads post-dam removal will cater to the looters.
- Mike Kelly (AECOM): The Looting and Vandalism Protection Plan is one of the near future deliverables that KRRC will work on to prepare, in collaboration with CRWG.
- Chris Park (CDM Smith) would like to reference the Looting and Vandalism Plan in the Recreation Plan. Because of the looting concern, KRRC is proposing that the 8 proposed

recreational sites are day-use areas. No new camping sites are being proposed. Although, it is recognized that this does not fully resolve concern in regards to looting and vandalism.

- Eric Ritter (BLM): Has BLM agreed to the Turtle Camp Recreation Site as it will increase maintenance costs?
- Chris Park (CDM Smith): No, BLM has not agreed to this site yet.
- Roy Hall (Shasta Nation): Are there any identified cultural areas within the proposed Copco Valley recreation site?
- Elena Nilsson (AECOM): It is anticipated that remnants of the Ward Bridge across the historic river corridor. There are also some ranch lands encompassed in this area, but there are no structures or buildings depicted on the historic maps. When the reservoir waters come down, there may be cultural features that are exposed. Currently, there is no known site in the area.
- Crystal Robinson (Quartz Valley Indian Reservation): The development of the proposed recreational sites is to mitigate for the loss of recreation through the removal of the reservoirs. How did you choose the number of sites? I think fewer sites are better, but what is needed to fully mitigate the loss of the reservoir recreation sites?
- Chris Park (CDM Smith): The mitigation was identified in the 2012 EIS/EIR. The goal is to identify a recreation site both upstream and downstream ends of each of the four reservoirs. During meetings, the whitewater groups requested 20 sites. Since the request, KRRC has worked with these groups to identify which sites are the most important to them, as KRRC does not have the funding to develop their initial request and there are significant concerns with many of their sites.
- Perry Chocktoot (Klamath Tribes): Regarding Site 6 Copco No. 2 Powerhouse, hopefully the fish passage will not be disturbed.
- Chris Park (CDM Smith): That is our understanding of the requirements. The only uncertainty is to the powerhouse structure upslope from the river.
- Eric Ritter (BLM): How would the hydrology change in terms of the eddy at the Iron Gate Hatchery site?
- Chris Park (CDM Smith): There is some question about how sediment might accumulate in the upper portion of the eddy following dam removal, but there are steps that the project can take in its configuration, such as rock barriers, to protect the eddy. It will still be an eddy, but the footprint may be reduced to some extent.
- Eric Ritter (BLM): The plan does not discuss recreational trails or interpretative signage. Who is doing this analysis?
- Chris Park (CDM Smith): We are not proposing any new trail systems along the river due to the number of landowners that control different sections of the river, and the KRRC was not equipped to implement in terms of a trail system. The final plan does discuss the amenities at each of the eight site, as well as the interpretative signage.
- Eric Ritter (BLM): Are any of these interpretative signs going to include input from the Tribes and other community groups?
- Chris Park (CDM Smith): The interpretative signs are not being developed now so interest from the Tribes and other groups would be excellent for the final Recreation Plan.
- Crystal Robinson (Quartz Valley Indian Reservation): Are any of the eight sites not a threat to cultural or biological resources, already have ground disturbance, and are ideal for the boaters? Those are the sites that could be supported, and do any of these three factors line up at any of the eight sites?
- Chris Park (CDM Smith): We have tried to identify sites that serve the recreation stakeholders interests while addressing any biological and cultural concerns. The biological concerns are easier to avoid than the cultural concerns.
- Perry Chocktoot (Klamath Tribes): As the outreach continues, we will want to make sure the Recreation Plan mentions another plan that will protect cultural sites.



**CULTURAL RESOURCES PLAN UPDATE AND SECTION 106 OUTREACH**

Mike Kelly (AECOM) provided an update on the Phase II Study Plan and Inadvertent Discovery Plan (IDP). The Phase II Study Plan was provided to the CRWG on May 3, 2019. Comments have been received by the Oregon and California SHPOs. The comment period has been extended to June 19, 2019, and the comments will be distributed after June 19. Fieldwork is anticipated Fall 2019.

The Monitoring and Inadvertent Discovery Plan is currently under review by KRRC and AECOM Project Management. The CRWG should receive a draft by June 28, 2019.

KRRC is currently preparing letters for distribution to local jurisdictions, historical societies, counties, and other potentially interested parties under the Section 106 outreach. Information on historic roads and trails may be collected from the historical societies to enhance the data collection effort.

**Comments/Questions:**

- Roy Hall (Shasta Nation): The project is putting issues out to all the Tribes, but it is not necessary.
- Mike Kelly (AECOM): It is a requirement of Section 106 to consult with all of the Tribes who are federally recognized up and down the river. Lists of the Tribes that should be consulted have been provided by FERC, the Native American Heritage Commission, and LCIS to KRRC/AECOM.
- Elena Nilsson (AECOM): When we initially sent out letters about the project, we sent letters to the Native American Heritage Commission and the Oregon Legislative Commission of Indian Services asking them if they could provide a list of Tribes that was appropriate for the area. A list was provided by these agencies of the appropriate Tribes to contact. The Tribes that responded back with interest in the Project are part of the CRWG. FERC separately contacted Tribes to discuss their thoughts on the process, but not the cultural component yet. They have had meetings with the federally recognized Tribes about a year and half ago. These meetings were not under Section 106; FERC has not initiated Section 106 consultation yet. KRRC and PacifiCorp have been asked by FERC to be the federal representative for Section 106. The project proponent cannot be in direct communication with FERC in regards to the CRWG.
- Mike Kelly (AECOM): KRRC/PacifiCorp is not in the position to decide which Tribes to consult with. The list of Tribes is provided to the project proponent, and we are asked to reach out to those specific Tribes.
- Crystal Robinson (Quartz Valley Indian Reservation): How different are the monitoring plans from the different Tribes?
- Mike Kelly (AECOM): Not very different. The documents are pretty standard.
- Crystal Robinson (Quartz Valley Indian Reservation): Then it becomes a question of which Tribes to contact?
- Mike Kelly (AECOM): Yes, that will be in part resolved when we come to a consensus as to who will be monitoring where. Protocols still need to be determined for inadvertent discoveries. We do not intend to exclude any Tribes from the monitoring.
- Crystal Robinson (Quartz Valley Indian Reservation): Does the State have a map that shows who to contact in the event of an inadvertent discovery?
- Mike Kelly (AECOM): They primarily use the map in the Handbook of North American Indians (vol. 8).

- Brian Person (AECOM): During the tribal caucus, monitoring of the Phase II investigations was discussed. The Klamath Tribes position is that their ancestors were indigenous to entire river corridor. And, it is understood that the Shasta disputes that. The Shasta Nation and the Shasta Indian Nation have asserted that Copco and below is the area of their ancestry and where their rights need to be protected. More than one Tribe will likely be represented during the monitoring. Specifics of the monitoring will need to be resolved.
- Crystal Robinson (Quartz Valley Indian Reservation): Is there a framework that can be used for the monitoring and inadvertent discoveries (i.e., State process, map)?
- Mike Kelly (AECOM): During a meeting with the Heritage Commission, guidance was specifically requested on inadvertent discovery protocols; however, none was provided.
- Betty Hall (Shasta Nation): Each Tribe should provide monitors and conduct monitoring on their own territory.
- Roy Hall (Shasta Nation): This may take a few years to clear up in court.
- Eric Ritter (BLM): In this process, who is the ultimate decision maker?
- Mike Kelly (AECOM): At this point, the ultimate decision maker in this process is KRRC and PacifiCorp, until FERC engages.
- Roy Hall (Shasta Nation): All inclusive monitoring will not be an acceptable alternative. Documents and tribal elders provide evidence that Shasta can document the river.
- Mike Kelly (AECOM): The Heritage Commission noted that they typically defer to established tribal territories in human remains discovery situations. The Handbook includes Shasta Nation and Shasta Indian Nation territory, including the project area.
- Roy Hall (Shasta Nation): The Shasta Nation can submit another packet of documents that establishes the Shastas on the Klamath River up to Lake Ewauna.
- Brian Person (AECOM): At this stage in the process, there are two Tribes that the project has obligations to. The best solution is to accommodate both Tribes by not excluding the other.
- Eric Ritter (BLM): The anthropology is pretty clear that this is Shasta territory, and there was interaction between different groups, including Klamath Tribes, up and down the river.
- Roy Hall (Shasta Nation): According to the constitution, Native American lands can only be taken by treaty. Our land was never taken by treaty; we never signed a treaty and have unextinguished land title to our lands. We are sovereign.
- Mike Kelly (AECOM): We intend to continue to not differentiate between federally recognized and non-federally recognized tribes.
- Crystal Robinson (Quartz Valley Indian Reservation): Quartz Valley recognizes Shasta territory along the river, and being that there are three separate sovereign nations for Shasta, all three share similar ideas on ancestral lands.
- Eric Ritter (BLM): For the Recreation Plan, will comments be taken into consideration and incorporated in the final Plan?
- Mike Kelly (AECOM): We will share any concerns so that they can be incorporated into the Plan.
- Eric Ritter (BLM): In terms of territories and language groups, *California Indian Languages* by Victor Golla is recommended. The book describes changes in territory from a linguist prospective.

## ACTION ITEMS

Action Item	KRRC/AECOM Action	CRWG/Tribal Action
June 2019 presentation distribution	Circulate presentation and maps (including hardcopy to Shasta Nation)	June 17, 2019

Action Item	KRRC/AECOM Action	CRWG/Tribal Action
Distribute Section 106 Deliverable Schedule	Circulate deliverable schedule table to CRWG	July 2019
Monitoring/Inadvertent Discovery Plan	Distribute Plan to CRWG by June 28, 2019	Comments due back TBD
Phase II Study Plan	Comments will be distributed after June 19, 2019.	Comments due back on June 19, 2019.
Recreation Plan	Maps of the site locations will be distributed to the CRWG by KRRC/AECOM.	Comments on the Recreation Plan and site locations are due on June 28, 2019.
Prepare Local Jurisdiction Letters	Prepare and distribute letters to local jurisdictions and historical society	July 5, 2019

The meeting ended at 3:30 pm.

## Meeting Minutes

	Klamath River Renewal Project KRRC Cultural Resources Working Group (CRWG) Meeting
Date	July 30, 2019
Time	1:00-4:00 pm PST (Tribal Caucus 10:00am – 12:00pm)
Location	Best Western Miners Inn, Yreka, CA
Attendees	<i>In person:</i>  AECOM: Mike Kelly, Elena Nilsson, Brian Person, Shoshana Jones, Sarah McDaniel, Kirk Ranzetta, Andrew York BLM-Redding: Eric Ritter Karuk Tribe: Scott Quinn, Alex Watts-Tobin KRRC: Mark Bransom OR SHPO: Tracy Schwartz Shasta Nation: Carl Hall, James Prevatt Shasta Indian Nation: Janice Crowe, Frank Crowe USFS-Klamath NF: Jeanne Goetz Yurok Tribe: Rosie Clayburn  <i>Via telephone:</i> BLM: Sara Boyko, Heidi Anderson CA SHPO: Amanda Blosser PacifiCorp: Russ Howison
Prepared	August 28, 2019
Prepared by	AECOM
Distribution	KRRC Cultural Resources Working Group (CRWG)

### MEETING OBJECTIVE

To continue consultation between cultural resources stakeholders with the Klamath River Renewal Corporation (KRRC) and its technical team, AECOM. This month's meeting was focused on continuing discussion of the Phase II Study Plan and on providing an overview of the Monitoring and Inadvertent Discovery Plan (MIDP).

### UPDATES

After introductions, Brian Person, AECOM meeting facilitator, began by going over the Action Items Review from the June meeting and upcoming deliverable dates.

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**SCHEDULE UPDATE**

*Document Schedule (the following dates are when the draft is due to the CRWG)*

- Phase II Study Plan – Final Draft due July 31, 2019
- Monitoring and Inadvertent Discovery Plan (MIDP) – 1<sup>st</sup> Draft due July 31, 2019
- Programmatic Agreement (PA) – 1<sup>st</sup> Draft due August 5, 2019
- Looting and Vandalism Prevention Plan (LVPP) – 1<sup>st</sup> Draft due September 6, 2019
- Historic Properties Management Plan (HPMP) – November 2019
- Treatment of Human Remains (to be provided by Tribes) – November 2019

**TRIBAL CAUCUS UPDATE**

The Tribal Caucus met in the morning, prior to the CRWG meeting. Brian Person (AECOM) facilitated. The Tribal Caucus discussed monitoring; the effectiveness of drone technology and use during the drawdown, with a focus on sites of tribal interest; and what to do if damage is observed during the drawdown. The Civil War Cemetery was discussed, and a warning against disturbing tribal artifacts. The group discussed recreation plan development and how the drawdown might elevate site visibility, and the positives and negatives of a Wild and Scenic River designation in terms of protecting cultural resources.

The Looting and Vandalism Prevention Plan (LVPP) is next in line for distribution. Members expressed the need for provisions for limiting access, preventing damage to sites, patrols, consequences, use of drone technology, and fencing.

One of the main topics was the review of the draft Phase II Plan. Several tribes voiced opposition to excavation proposed under the Phase II Plan.

The group discussed proposed Historic American Engineering Record (HAER) documentation for the dams and how such documentation needs to account for the negatives of the dams, for example decimating fish species and other impacts, as well as the benefits.

**Comments/Questions:**

- Alex Watts-Tobin (Karuk): I would like to emphasize the Phase II disconnect. Also, the ethnographic study section for the Karuk will need to be rewritten.
- Mike Kelly (AECOM): Regarding the Phase II Plan, this has been in place for some time and this group reviewed the SHPO comments previously, so I'm not sure where the disconnect came from. We need additional discussion.
- Alex Watts-Tobin (Karuk): There is consensus in the Tribal Caucus—none of the Tribes represented here support excavation testing, especially on the scale per the Oregon SHPO. There are other ways to address eligibility.
- Carl Hall (Shasta Nation): How it is written now isn't going to work for anybody. We're willing to talk. Recall the discussions we had about this last time in our one-on-one consultation meeting?
- Elena Nilsson (AECOM): Yes, and we followed up with the SHPOs. Their view is that we need to do some level of Phase II excavations to meet Section 106 requirements.
- Mike Kelly (AECOM): Oregon SHPO has treatment and guideline procedures, and after their review they requested we expand what we had originally proposed to excavate. It is difficult to determine site boundaries without excavation.
- Carl Hall (Shasta Nation): What about previous archaeological investigations that have already been done?
- Mike Kelly (AECOM): Those consisted of surface survey only, which is not enough information for full characterization of most of the sites.

- Alex Watts-Tobin (Karuk): When other archaeologists have come into Karuk territory to shovel test, we have said no to them too. There has been high quality and extensive archaeological work upriver as compared to downriver. I expect you have a pretty good handle on many of these 38 sites already.
- Elena Nilsson (AECOM): There are still some aspects we don't know about, like depth, or whether there are intact deposits.
- James Prevatt (Shasta Nation): We need to see how deep and where the holes are proposed.
- Mike Kelly (AECOM): Typically, we would go in cardinal directions working our way from the outside toward the site. Half of the units would be outside boundaries to help establish the boundaries, with some units inside the site to determine depth.
- James Prevatt (Shasta Nation): Would ground penetrating radar (GPR) or other types of x-ray equipment work?
- Mike Kelly (AECOM): That is more useful for burials and features, but not for general site characterization.
- James Prevatt (Shasta Nation): I'm concerned you're going to encounter a body.
- Mike Kelly (AECOM): If we did, we would immediately stop. There is no intent to excavate human remains.
- James Prevatt (Shasta Nation): Some Shasta sites are within the ADI, and no one besides us can know where or what sites are—we can't divulge that information. Sacred and ceremonial sites.
- Mike Kelly (AECOM): There are some TCP studies from 15 years ago, and OR SHPO asked us to see if these are still good and to move forward. If we know approximately where these are, we can avoid them.
- Alex Watts-Tobin (Karuk): We have a cultural monitoring program, for example, for infrastructure work. Finds are documented, but it is important that the artifact goes back in the dirt where it was found. By our protocols, things found go back in the ground.
- Mike Kelly (AECOM): We could try and propose that approach.
- Eric Ritter (BLM): Could you assume that a site is significant, and add a buffer based on GPR/soil chemistry or another non-invasive method?
- Mike Kelly (AECOM): If we assume eligibility, later in the process we have lots of adverse effects that we otherwise would be able to avoid. So that approach leads to additional concerns.
- Eric Ritter (BLM): Maybe you can do it for some sites, though, even if not for all. Maybe that's a compromise.
- Elena Nilsson (AECOM): We will need CA and OR SHPO input to see if that will work. And FERC, although they're still not on board yet.
- Eric Ritter (BLM): Who does the decision lie with?
- Elena Nilsson (AECOM): PacifiCorp and KRRC until FERC engages.
- Mark Bransom (KRRC): We are hopeful that FERC will engage by the end of the year. This is all good input and suggestions, but we are constrained. Let's get this group and the SHPOs talking about this issue now—I'm hopeful this will lead to resolution. Let's get a meeting arranged ASAP.
- Rosie Clayburn (Yurok): The meeting will need Tribes, SHPOs, AECOM, and KRRC. I want to clarify this is a BIG disconnect. These are tribal resources that are completely connected to people today. The project has damaged sites, and it's hard to balance tribal focus of dam removal and on cultural resources. We're willing to roll up our sleeves and bring everyone to the table. The Yurok are the first THPO in California; we're experienced, and we know we need to get this done by working together.

**BUILT ENVIRONMENT UPDATE**

Shoshana Jones and Kirk Ranzetta (AECOM) provided an update on the historic built resources within the ADI. These include hydroelectric facilities: dams, powerhouses, water conveyances, employee housing, a school, other operations buildings, fish management, and transportation. In 2003, previous field surveys and evaluations of the Klamath River Hydroelectric Project District were completed. Survey updates are now required to account for such things as: demolished, overlooked, and miscounted resources; resources that have since reached the age of 50; and a lack of data for non-hydroelectric resources. Historic themes include early exploration and settlement, mining, agriculture/ranching, logging, transportation, hydropower, fish management, and recreation. Upcoming fieldwork is planned for the Fall Creek Hatchery, hydro transmission lines, and non-hydro bridges and culverts within the ADI. Mitigation ideas are being sought; some include: HABS/HAER; potential for adaptive re-use of the buildings; relocation for residential/commercial re-use; grants to benefit local repositories; scholarship programs for regional students.

**Comments/Questions:**

- Alex Watts-Tobin (Karuk): It is interesting there was a school at Fall Creek. Regarding the slide of Klamath Hot Springs, I don't believe that was in the ADI; but maybe was in the larger APE? For the record, it is very interesting to read stories of the hotel and hot springs. About 4 miles upstream from Copco Lake, it was popular in the 1880s-1900s until Copco was constructed. It was popular because there were SO many fish.
- Eric Ritter (BLM): For historic context, consider adding "Euroamerican" to your "Settlement" and add "Tribal" and other peoples to this discussion. You could add "Surveys/Engineering" and later "Post-Dam Settlement" related to recreation, development of the dams and residences as themes.
- Tracy Schwartz (OR SHPO): What type of form will you be using?
- Shoshana Jones (AECOM): We are planning to record Oregon resources on OR SHPO database forms, and California resources on CA SHPO forms, then attach each to the other state's resources.
- Amanda Blosser (CA SHPO): Regarding your request to learn more context about hatcheries, there are examples of hatcheries with early design in California--for example at the Oroville Dam.
- Kirk Ranzetta (AECOM): Is there historic context at the state level for hatcheries?
- Amanda Blosser (CA SHPO): There are water resources in California. I've seen some come in, for example Fish and Game had some come in, but nothing standardized. I could try to find and email some documents.
- Scott Quinn (Karuk): Klamath Dam had fish racks, and remnants are still there.
- Tracy Schwartz (OR SHPO): A University of Oregon student wrote a thesis on a fish hatchery, and we have a copy.
- Eric Ritter (BLM): Other examples of hatcheries: 1870s at Bear Lake, Battle Creek and mouth of the Sacramento River. Have you considered making mitigation recommendations for buildings to remain preserved for use as clubs, recreation, fishing, etc.?
- Alex Watts-Tobin (Karuk): The potentials for re-use are good ideas. You could also consider doing mega Digi-pixel photography to piece together very detailed photographs. If museum displays are created, there should be a language included regarding what the effects of the dams were; how abundant fish were in that area.
- Kirk Ranzetta (AECOM): That could definitely be folded into larger interpretive displays.
- Eric Ritter (BLM): There is also some good 3D modeling technology to consider. Check out the Getty Museum for examples.



- Alex Watts-Tobin (Karuk): It would be good to have a 3D model of the river, before and after decommissioning.
- Tracy Schwartz (OR SHPO): I appreciated the thought you've put into this so far. The public benefit for the local community is important. We haven't concurred on adverse effects yet. What is the timeline for the report?
- Kirk Ranzetta (AECOM): ETA is soon. We would like to get in additional fieldwork first for identification and evaluation but could separate them into two reports depending on if you want more or less.
- Tracy Schwartz (OR SHPO): We would prefer it all at one time if possible but can be flexible.
- Amanda Blosser (CA SHPO): Same with us. We can talk about phasing if we need to.
- Kirk Ranzetta (AECOM): We have fieldwork scheduled for next month, so will plan to get SHPOs the full report.
- Eric Ritter (BLM): Have you considered disposal of historic debris? And integrating construction camps and dumps?
- Kirk Ranzetta (AECOM): Yes, and if there are areas of crossover between built environment and archaeology, we will coordinate on documentation. We're already coordinating the historic contexts.
- Tracy Schwartz (OR SHPO): What about other consulting parties? Who else wants to participate?
- Kirk Ranzetta (AECOM): We sent letters to about 10 parties. Not much response so far, but we'll follow up with an email with the presentation.
- Shoshana Jones (AECOM): The president of the Siskiyou County Historical Society is definitely interested.
- Kirk Ranzetta (AECOM): We're also reaching out to a Landscape Architect from the USFS in Yreka to include in these discussions.
- James Prevatt (Shasta Nation): Have you reached out to Josephine and Jackson County Historical Societies? There is Shasta land up there too.
- Scott Quinn (Karuk): Your last slide [slide 38], "scholarships to encourage study in history, engineering, cultural resources, geography, fish biology, etc." as potential mitigation; you should also add "anthropology." Also, for any interpretive displays, there should be an effort to include the effect of the dams as well as dam decommissioning on Tribes and NGOs; this would be important to include.

## **CLOSING REMARKS**

The group reiterated the need to have a collective meeting between the CA and OR SHPO archaeological representatives (who were not in attendance for the current meeting), KRRC, and Tribes as soon as possible to resolve disagreement over Phase II excavation requirements. There was also a brief discussion regarding land ownership. Mark Bransom (KRRC) confirmed that Parcel B lands in the 2016 Settlement Agreement will go to the State of California, or a possible third party as designated by the State.



## ACTION ITEMS

Action Item	KRRC/AECOM Action	CRWG/Tribal Action
July 2019 presentation distribution	Circulate presentation (including hardcopy to Shasta Nation)	
Resolve Phase II eligibility—need for testing	Set up meeting with SHPOs and Tribes	Respond to doodle poll and attend meeting

The meeting ended at 4:00 pm.

## Meeting Minutes

### Klamath River Renewal Project KRRC Cultural Resources Working Group (CRWG) Meeting

Date	September 5, 2019
Time	1:00-4:00 pm PST (Tribal Caucus 10:00am – 12:00pm)
Location	Best Western Miners Inn, Yreka, CA
Attendees	<i>In person:</i>  AECOM: Mike Kelly, Elena Nilsson, Brian Person, Sarah McDaniel, Kirk Ranzetta BLM-Redding: Eric Ritter Karuk Tribe: Scott Quinn, Anna Powell, Alex Watts-Tobin Klamath Tribes: Les Anderson, Perry Chocktoot KRRC: Mark Bransom Shasta Nation: Betty Hall, James Prevatt USFS-Klamath NF: Jeanne Goetz Yurok Tribe: Rosie Clayburn  <i>Via telephone:</i> BLM: Sara Boyko CDM Smith: Ben Swann CA SHPO: Brendan Greenaway OR SHPO: Dennis Griffin, Tracy Schwartz Shasta Indian Nation: Janice Crowe Karuk Tribe: Craig Tucker
Prepared	October 4, 2019
Prepared by	AECOM
Distribution	KRRC Cultural Resources Working Group (CRWG)

### MEETING OBJECTIVE

To continue consultation between cultural resources stakeholders with the Klamath River Renewal Corporation (KRRC) and its technical team, AECOM. This month's meeting was focused on review of: the Monitoring and Inadvertent Discovery Plan (MIDP), the Phase II Evaluation Program, the Fall Creek Hatchery improvements plan, and language included in the upcoming draft Programmatic Agreement (PA).

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## UPDATES

After introductions, Brian Person, AECOM meeting facilitator, began by going over the Action Items Review from the July meeting and upcoming deliverable dates.

### SCHEDULE UPDATE

#### *Document Schedule*

- Phase II Study Plan – Final Draft is in process of revision based on CRWG input
- Monitoring and Inadvertent Discovery Plan (MIDP) – comments on draft needed from CRWG by September 30, 2019
- Programmatic Agreement (PA) – comments on draft needed from CRWG by September 30, 2019
- Looting and Vandalism Prevention Plan (LVPP) – 1<sup>st</sup> Draft due to CRWG September 30, 2019
- Historic Properties Management Plan (HPMP) – 1<sup>st</sup> Draft due to CRWG January 2019
- Treatment of Human Remains (to be provided by Tribes) – November 2019

### TRIBAL CAUCUS UPDATE

The Tribal Caucus met in the morning, prior to the CRWG meeting. Brian Person (AECOM) facilitated. The Tribal Caucus discussed the Phase II Study Plan which is in the process of being revised to reduce the amount of proposed excavation based on CRWG input. The Tribal Caucus members are in collective agreement that no excavation should occur. Past projects were cited where eligibility and impacts could be discussed without the need for additional testing. The Klamath Tribes has an inadvertent discovery plan they will share to assist with the draft MIDP. The Tribal Caucus also discussed the Recreation Plan.

#### **Comments/Questions:**

- Scott Quinn (Karuk Tribe): I think it would be more effective if tribes wrote individually to the SHPOs regarding no excavation for Phase II evaluation.
- Craig Tucker (Karuk Tribe): Regarding the Recreation Plan, it would be a good idea to have a pamphlet to educate recreators, like we discussed in the Tribal Caucus.
- Perry Chocktoot (Klamath Tribes): And they need to note protocols, like using public facilities for calls of nature, because that's normally how they come across these sites. They need to stay out of the shell middens.
- Craig Tucker (Karuk Tribe): They could require a "pack it in, pack it out" policy for recreation access; that means everything, including human waste.
- Eric Ritter (BLM): The BLM issues permits out of Oregon. There are all sorts of complications with permitting and who would run it.

### PHASE II EVALUATION PLAN UPDATE

There was general discussion regarding tribal opposition to any excavation work within the archaeological sites to evaluate them for NRHP eligibility, and the need for KRRC and the Project to comply with Section 106 of the NHPA in evaluating sites and determining impacts. KRRC, AECOM, OR and CA SHPO representatives, and John Eddins of the ACHP (responsible for FERC projects) had an initial call on August 15, 2019. The ACHP intends to have a conversation with FERC, who is not yet engaged in this process.

#### **Comments/Questions:**

- Mike Kelly (AECOM): We need to get guidance from the ACHP and FERC to help navigate this issue. KRRC is required to implement Section 106, including assessments for eligibility.

- Mark Bransom (AECOM): KRRRC appreciates all of the hard work this group has done, and I have a deep respect for the tribal members working through these different issues. For now, we are a non-federal designee of FERC. You may not care about Section 106, but I have to. We need to find a way to navigate this process. We all want to provide for the protection of these sensitive sites, and I'm confident we can get there. I have to balance regulatory requirements with concerns brought up here. We are planning for dam removal, and I think it will take place. Be thinking about how we can do things today to prepare for when we see dam removal underway. For example, if we can avoid an inadvertent discovery situation that's what we want. We're open to using such methods as dogs and alternate approaches. I welcome your input: 1) what technologies or approaches are feasible and appropriate; 2) what other prior experiences do you have that can help inform our approach? This impasse needs to be resolved. Thank you for sharing your experience; it's meaningful and helpful.
- Rosie Clayburn (Yurok Tribe): Regarding the revised in-preparation Phase II Plan, how close did you incorporate SHPO comments for additional excavation?
- Elena Nilsson (AECOM): We made changes and are preparing a revised draft, but there are a lot of comments and it is not ready to be distributed, pending additional discussions.
- Mike Kelly (AECOM): I think from our previous discussions with Dennis Griffin, he understands the need for a reduced level of effort.
- Dennis Griffin (OR SHPO): Many of the sites proposed for testing need additional data for possible mitigation, not necessarily for eligibility.
- Perry Chocktoot (Klamath Tribes): Ruby Pipeline is a good example of where we did not excavate sites, we just called them all eligible.
- Dennis Griffin (OR SHPO): I have no problem with the eligibility discussion, but how do you address the adverse effect? You can cap sites. But if there are remaining portions of sites, that's another thing.
- Mike Kelly (AECOM): We currently don't have a good handle on depth or boundaries for sites that are just visible from the surface.
- Perry Chocktoot (Klamath Tribes): They're overdue for maintenance and monitoring. Just do some Phase I work.
- Elena Nilsson (AECOM): We did visit them.
- Perry Chocktoot (Klamath Tribes): Were the tribes involved?
- Elena Nilsson (AECOM): No.
- Perry Chocktoot (Klamath Tribes): That's a big problem.
- Elena Nilsson (AECOM): We saw most boundaries expand, which is a change in the 15 years since they were last visited or recorded. That's why we're unsure of site boundaries, maybe they're expanding through erosion.
- Perry Chocktoot (Klamath Tribes): Erosion happens all the time, to all sites.
- Mike Kelly (AECOM): But we need to be prepared to plan for impacts and mitigation.
- Dennis Griffin (OR SHPO): Sometimes it's easier to assume sites are eligible. With minimal testing to make sure a new site isn't being exposed.

## RESTORATION PLAN

Mike Kelly explained that the restoration plan needs input for the types of native plants that would be appropriate for planting, and where; i.e., are there any tribally important areas for particular plant species that should be considered. Feedback is needed as soon as possible.

### Comments/Questions:

- Scott Quinn (Karuk): In easy-access areas, basket materials like willow would be good.
- Perry Chocktoot (Klamath Tribes): Bear grass, tule, cat tail—there's a whole list.

- Scott Quinn (Karuk): Just riparian, or upslope too?
- Elena Nilsson (AECOM): The current reservoir footprint.
- Eric Ritter (BLM): Also, roads and construction zones, too.
- Jeanne Goetz (USFS): I know KRRC's botanist has contacted the USFS.
- Elena Nilsson (AECOM): The KRRC Definite Plan appendix also has information on species.
- Alex Watts-Tobin (Karuk): Is the Definite Plan susceptible to input by the Tribes at this point?
- Mark Bransom (KRRC): Yes, definitely.
- Les Anderson: Is the plan adoptable based on mortality?
- Mark Bransom (KRRC): Yes.

## **INTRODUCTION TO LOOTING AND VANDALISM (LVPP) PLAN OUTLINE**

Mike Kelly provided an overview of the LVPP which is still in draft form and needs to be reviewed by KRRC before distribution to the CRWG. Some of the draft possible protection measures were briefly discussed, and would be expected to vary on a site-by-site basis. One difficulty is that AECOM has not found an example of an LVPP for guidance. The CRWG was asked to provide any examples they may have seen or used in the past.

### **Comments/Questions:**

- Perry Chocktoot (Klamath Tribes): Patrolling should be mandatory, not "possible." Consider establishing a phone number that anyone could call in an area with cell coverage. Like a "see something, say something" campaign or that old image of a criminal-looking looter that you used to see on those anti-looting posters. Come up with a number that goes to law enforcement in this canyon. Don't make known the set schedule for patrols; that has to fluctuate based on maybe holidays or high-use periods. Have something that bites. This canyon is going to need managed for a long while.
- Sarah McDaniel (AECOM): The LVPP is currently written to span the period that KRRC is responsible for managing. Once KRRC ceases to exist, we can't project how that will work with unknown future landowners.
- Perry Chocktoot (Klamath Tribes): That's a big problem. This needs to be long-term.
- Sarah McDaniel (AECOM): I think there may be some mechanism on how to ensure that happens after KRRC's involvement, but we need this group to brainstorm that and get attorney input on how that can happen. For now, it's being written for while KRRC is the responsible party.
- Scott Quinn (Karuk Tribe): As far as creating longevity, maybe something like if a future landowner wants the Parcel B lands, they have to accept the LVPP conditions.
- Jeanne Goetz (USFS): What about a tribal site stewardship program?
- Perry Chocktoot (Klamath Tribes): we have to be careful on who to involve. Some BLM and USFS employees have some of the largest artifact collections! Be very careful on who we involve.
- Eric Ritter (BLM): We attempt to educate people, including our own employees, in training.
- Les Anderson (Klamath Tribes): From a tribal perspective, the tribes here should have that stewardship.
- Eric Ritter (BLM): KRRC also needs to deal with how to deal with indirect effects: trampling, garbage dumping, ORV trails, etc.

## **PARCEL B LANDS**

There was a brief discussion on where Parcel B lands, which will be handed over by KRRC.

Elena Nilsson (AECOM) pointed out the KHSA 7.6.1 defines Parcel B lands. Basically, these are the lands that are around the reservoirs and inundated lands. Parcel A lands include 11,000 acres

owned by PacifiCorp that are not directly associated with the Klamath Hydroelectric Project, like the ranchlands between J.C. Boyle and Copco. PacifiCorp will be retaining the Parcel A lands.

## **MONITORING AND INADVERTENT DISCOVERY PLAN (MIDP)**

The MIDP had been distributed to the CRWG but few comments had been received to date. A brief discussion followed.

### **Comments/Questions:**

- Alex Watts-Tobin (Karuk): I would like to reiterate that humans can't safely access the drawdown area. We have partnered with a group at U.C. Davis that has high definition drone technology well suited for monitoring the sites during drawdown.
- Perry Chocktoot (Klamath Tribes): A lot of tribes have this technology.
- Alex Watts-Tobin (Karuk): Yes, but it needs to be very detailed and high scale. Their battery technology allows for 2,500 acres per day.
- Eric Ritter (BLM): Page 56 of the MIDP states that impacts involved with moving several structures from Iron Gate to Humbug Creek. Do previous plans cover this?
- Mike Kelly (AECOM): No, we don't have access yet and that's not part of Parcel B lands as those lands are private. We did a windshield reconnaissance and recognize the need; we're not ignoring it and will make sure this is covered in future documentation.
- Elena Nilsson (AECOM): We have conducted record searches for this areas.

## **FALL CREEK HATCHERY UPDATE**

Ben Swann (CDM Smith) provided an update regarding the proposed Fall Creek Site Modifications. He discussed hatchery production and presented photographs of the locations of modifications, and of the current Upper Raceway, Lower Raceway, and Diversion Points.

### **Comments/Questions:**

- Mike Kelly (AECOM): We did not find any surface evidence of prehistoric sites at the Fall Creek area during the 2018 field visit.
- Perry Chocktoot (Klamath Tribes): What about consulting with Tribes?
- Mike Kelly (AECOM): We have talked about it and know it's an extremely sensitive location. We're working with Ben and team to limit improvements at the hatchery. The first step is to confirm a lack of subsurface deposits, and we know there will be a need for monitoring.
- Jim Prevatt (Shasta Nation): Coho were brought in from Japan in the late 1800s or early 1900s. They're not from here. I keep hearing they're going to resurrect the Coho. The only place they've ever known is the hatchery!
- Perry Chocktoot (Klamath Tribes): Fish studies at PSU show differently.
- Ben Swann (CDM): Coho is a controversial subject but is beyond KRRC's work objective to get into that. Our objective is the disturbed footprint of the old facilities.
- Perry Chocktoot (Klamath Tribes): Will you set on septic/sewage system? That could run sludge on the fish areas, whereas another line would have more protective measures?
- Ben Swann (CDM): Given the 8-year lifespan of the project, high water still wouldn't allow sludge into the creek.
- Perry Chocktoot (Klamath Tribes): Are you treating it before it goes into the settling pond?
- Ben Swann (CDM): An unlined pond would discharge into the creek. The California State Water Board has requirements the pond must meet. There is a plan to put in a cascade. Not adding enough to change oxygen or temperature, but we will be monitoring it nonetheless.

- Mark Bransom (KRRC): The hatchery has 8 years of funding from PacifiCorp. Beyond that is the responsibility of Fish and Wildlife.
- Eric Ritter (BLM): Fall Creek has private lands—what are their water rights?
- Ben Swann (CDM): PacifiCorp is the primary water right holder along Fall Creek. There are three primary holders: City of Yreka, PacifiCorp, and the California Department of Fish and Wildlife.
- Kirk Ranzetta (AECOM): There also could be an adverse effect to the hatchery as a historic property that may need to be mitigated.

## PROGRAMMATIC AGREEMENT (PA)

Kirk Ranzetta, AECOM Architectural Historian, provided an introductory overview of the PA, including the purpose, overall structure, FERC's expectations, standard language, and typical sections. FERC uses a Historic Property Management Plan (HPMP) template following the 2002 Guidelines.

### Comments/Questions:

- Perry Chocktoot (Klamath Tribes): Tribes are considered "Consulting Parties" instead of "Concurring Parties" to keep us from objecting.
- Alex Watts-Tobin (Karuk): Invited signatories have certain rights.
- Perry Chocktoot (Klamath Tribes): FERC can't delegate consultation.
- Kirk Ranzetta (AECOM): FERC's PAs for hydro projects are very minimal. The priority of this effort is to come to agreement where we can so FERC can focus on the bigger issues. The reason we need a PA is because it is regional in scope, the effects are not fully determined, and KRRC as a non-federal party has been delegated major responsibilities.
- Perry Chocktoot (Klamath Tribes): Was this enacted under the Clean Energy Act—George Bush in 1997?
- Alex Watts-Tobin (Karuk): I think it was under Clinton?
- Kirk Ranzetta (AECOM): In 2002 they published Guidelines for HPMPs. These documents include what other agencies would typically put as stipulations in their PAs.
  - "Signatories" include SHPOs, ACHP, and FERC.
  - "Invited Signatories" are not included. Why? Because when FERC is dealing with the Federal Power Act they won't allow inclusion of the licensee because they could back out.
  - "Concurrence by Others" is used and includes BLM, USFS, USACE, Tribes, local governments, etc.
- Tracy Schwartz (OR SHPO): ACHP involvement is "pending", correct? When will letters go out?
- Kirk Ranzetta (AECOM): They are involved and will likely have a letter announcing engagement soon.
- Tracy Schwartz (OR SHPO): Has the USFS delegated FERC as the lead agency?
- Kirk Ranzetta (AECOM): No, they manage the lands. We'll need to double check if they are considering this an undertaking versus as a land manager. They're still working out if they will participate in the PA or not.
- Brendan Greenaway (CA SHPO): Are you planning to use the FERC template PA?
- Kirk Ranzetta (AECOM): Yes, with appropriate revisions to account for a number of projects in Oregon where the template has been modified. We're trying to anticipate changes.
- Brendan Greenaway (CA SHPO): This is not a standard undertaking like relicensing. And because the USFS and BLM have land in the APE, they also have 106 responsibilities.
- Perry Chocktoot (Klamath Tribes): This is rough for the Tribes: we're always Consulting Parties. What if we don't agree, and what if we don't sign?



- Kirk Ranzetta (AECOM): FERC will continue to consult.
- Les Anderson (Klamath Tribes): Are the BLM and USFS going to start holding other meetings for consultation?
- Jeanne Goetz (USFS): I don't foresee that.
- Eric Ritter (BLM): I'm not sure about Oregon.
- Jeanne Goetz (USFS): The PA refers to the APE, but what about the ADI (which has less USFS land)?
- Kirk Ranzetta (AECOM): The PA will apply to the entire APE.
- Perry Chocktoot (Klamath Tribes): You need to take into account visual impacts.
- Alex Watts-Tobin (Karuk Tribe): The APE includes Karuk Tribal Trust lands, and we should be a main signatory.
- Rosie Clayburn (Yurok Tribe): The Karuk and Yurok would have to be signatories because we're both in the APE.
- Scott Quinn (Karuk): Would the PA commit CDFW to operating fisheries/hatcheries?
- Kirk Ranzetta (AECOM): No, it only pertains to cultural resources.
- Scott Quinn (Karuk): Fish ARE cultural resources. CDFW and Oregon Fish and Wildlife could be signatories too?
- Jeanne Goetz (USFS): We had an example of a PA where the Karuk were a concurring party and other tribes were invited signatories.
- Perry Chocktoot (Klamath Tribes): Hasn't there already been one surrender at JC Boyle that's been in the headlines lately?
- Mark Ransom (KRRRC): ODEQ issuance of water quality certification, but that is not part of FERC. In CA, for water quality certification the EIR is currently underway.
- Perry Chocktoot (Klamath Tribes): Your slide about Swan Lake lifted my hackles [note: this refers to PowerPoint Slide 25, which cites Swan Lake as a recent FERC PA example]. I don't agree in any way, shape, or form. This area is filled with religious alters, burials, and they're protecting NOTHING. This is heartache for the Klamath Tribes.
- Kirk Ranzetta (AECOM): We will make sure we're not adopting anything from that agreement that could be troublesome.
- Tracy Schwartz (OR SHPO): Be sure to add a "Whereas" clause for other consulting parties like CLGs and historical societies.
- Eric Ritter (BLM): Is there EIS interplay? Who is writing that?
- Kirk Ranzetta (AECOM): FERC. As soon as "notice" is given for the surrender proceeding, they will initiate NEPA. We expect they will initiate that sooner rather than later. But the PA needs to be signed before that.
- Perry Chocktoot (Klamath Tribes): Will there be public hearings?
- Mark Bransom (KRRRC): Yes, but we don't know the dates or process yet.
- Eric Ritter (BLM): Given the current administration and the hurrying up these days, I'm not sure of the review process.
- Alex Watts-Tobin (Karuk Tribe): We'll be getting an ethnographic statement to you. That EIS public document should NOT contain sensitive information about any resources or locations.
- Scott Quinn (Karuk Tribe): You will need to look at grazing impacts, too.
- Eric Ritter (BLM): There are a lot of cattle along the river. Look at open range along the river.

## **CLOSING REMARKS**

Next steps include review of the draft "Whereas" statements within 30 days. The next CRWG meeting will present PA Stipulations.



Rosie Clayburn requested that the next meeting be moved to Medford in order to accommodate those who drive long distances to attend the Yreka meetings.

#### ACTION ITEMS

Action Item	KRRC/AECOM Action	CRWG/Tribal Action
Sept 2019 presentation distribution	Circulate presentation (including hardcopy to Shasta Nation)	-
List of cultural plants needed for Restoration Plan	-	- Provide list of culturally important plants as soon as possible. - Describe which areas they were in traditionally and/or where they should be considered for replanting
Schedule Oct and Nov meetings	Send out Doodlepoll and emails to CRWG	Respond to AECOM Doodlepoll re: day preferences
Monitoring/Inadvertent Discovery Plan Comments	Draft MIDP was distributed to CRWG in late August	Comments due back to KRRC/AECOM by <u>October 5, 2019</u>
Provide IDP examples to AECOM	-	Provide any examples of Tribal IDPs to AECOM as soon as possible
Provide LVPP examples to AECOM	-	Provide any examples of LVPPs to AECOM as soon as possible
Parcel B maps and description needed	Circulate electronic version of maps/description (hardcopy to Betty)	-
Programmatic Agreement Comments	Edit draft PA "Whereas" clauses per meeting discussion	Comments due back to KRRC/AECOM by <u>October 5, 2019</u>
APE versus ADI per FERC signatory process	Investigate how FERC treats signatory parties (all tribes in APE are signatories, versus only ADI?)	-
USFS and BLM and FERC process	-	Confer on how the 106 process for the BLM and USFS will proceed in conjunction with FERC

The meeting ended at 4:00 pm.

## Meeting Minutes

	Klamath River Renewal Project KRRC Cultural Resources Working Group (CRWG) Meeting
Date	October 29, 2019
Time	1:00-4:00 pm PST (Tribal Caucus 10:00am – 12:00pm)
Location	Holiday Inn Express, Yreka, CA
Attendees	<p><i>In person:</i></p> <p>AECOM: Mike Kelly, Kirk Ranzetta, Brian Person, Stephanie Butler BLM-Redding: Eric Ritter CDM Smith: Kate Stenberg Karuk Tribe: Scott Quinn, Alex Watts-Tobin Klamath Tribes: Les Anderson Quartz Valley Indian Reservation: Crystal Robinson Shasta Nation: Betty Hall, Jim Prevatt USFS Klamath NF: Jeanne Goetz</p> <p><i>Via telephone:</i></p> <p>AECOM: Sarah McDaniel BLM-Klamath Falls: Sarah Boyco Klamath Tribes: Perry Chocktoot OR SHPO: Dennis Griffin, Tracy Schwartz PacifiCorp: Russ Howison Yurok Tribe: Rosie Clayburn</p>
Prepared by	AECOM
Distribution	KRRC Cultural Resources Working Group (CRWG)

### MEETING OBJECTIVE

To continue consultation between cultural resources stakeholders with the Klamath River Renewal Corporation (KRRC) and its technical team, AECOM. This month's meeting was focused on discussion of the Programmatic Agreement and the Looting and Vandalism Protection Plan. The status of the Phase II evaluation program and the Monitoring and Inadvertent Discovery Plan were also briefly discussed.

### REVIEW OF ACTION ITEMS FROM THE SEPTEMBER 2019 TRIBAL CAUCUS AND CRWG MEETING

Individual meetings with the Tribes are ongoing to discuss the review of the Phase II Evaluation Plan, as well as any other project concerns. To date, three meetings have occurred, and additional meetings will be scheduled with the Klamath, Shasta Indian Nation, and Karuk Tribes.

No information has been received on culturally important plant species that should be included in the Recreation Plan, with the exception of those discussed during the CRWG meeting.

No written comments have been received on the Monitoring and Inadvertent Discovery Plan from any of the tribes. The comment period will be extended to November 15. A final draft of the Plan is on hold pending receipt of tribal comments.

Comments have been received from BLM and Oregon SHPO on the PA. Additional information on FERC and other federal agency responsibilities for the PA has not been obtained.

**Comments/Questions:**

- Eric Ritter (BLM): Are culturally important plants (cultivars, orchard crops) associated with historic homesteads and ranches in the Klamath River valley being considered? Studies have been conducted on the cultivars.  
Mike Kelly (AECOM): Those resources have likely not been taken into consideration, but prior studies can be reviewed.

**TRIBAL CAUCUS SUMMARY**

The Tribal Caucus met in the morning, prior to the CRWG meeting. During the Tribal Caucus, Rosy Clayburn (Yurok Tribe) emphasized that tribal ordinances should be included in both the Monitoring and Inadvertent Discovery Plan and the Looting and Vandalism Protection Plan. There was general concern about long-term funding and law enforcement, particularly after transfer of Parcel B lands. There will be potential for greater exposure and access to cultural resources post-project, so how will they be protected over the long term. Federal funding (e.g., USFS, BLM) and other funding sources will need to provide for necessary law enforcement. The Looting and Vandalism Plan discusses the See and Say program, which will need to be followed up on post-project.

A recommendation was provided that as a condition of the transfer of Parcel B lands, there could be restrictions on any subsequent transfers on the nature of land use that would help protect tribal and cultural assets.

Signage was also discussed, specifically the concern that signs warning against tampering and looting may label cultural resources within the vicinity. Instead, signs should be placed at defined entrance points with general warnings.

Modifications to the Phase II Plan were discussed. The Phase II effort has been scaled back in terms of the level of ground surface disturbance. Artifact analysis and curation will still need to be resolved. There was some discussion if artifacts can be analyzed without removal from the site; and if removal is necessary, can the artifacts be put back in the exact location as originally discovered.

The overlay of Kiewit's design was discussed and how it does not necessarily consider the avoidance of known sites. AECOM will meet with Kiewit to discuss this concern.

**PROJECT UPDATE**

Mike Kelly (AECOM) provided a project update. The comment period for the Monitoring and Inadvertent Discovery Plan has been extended to November 15, and any comments, such as the inclusion of tribal ordinances, should be submitted.

The Phase II Evaluation Plan is currently being revised to minimize impacts to sites, and individual meetings with tribes are being conducted to reach a consensus on the level of effort. Fieldwork will occur in Spring 2020.

Ethnographic summaries have been submitted to each tribe, and feedback has been requested.

A revised draft of the Recreation Plan was sent out to the consulting parties, and comments are requested on this plan.

Comments on the Looting and Vandalism Protection Plan are requested at the end of the month. The Human Remains Treatment Plan and the Historic Properties Management Plan (HPMP) will be the next documents to be prepared. The HPMP will not be finalized until the evaluations have been completed. Input from the tribes will be required for the Human Remains Treatment Plan.

**Comments/Questions:**

- Dennis Griffin (OR SHPO): Are the documents that require review submitted to SHPO via Go Digital?  
Mike Kelly (AECOM): The Monitoring and Inadvertent Discovery Plan has been submitted electronically (August 2019) to SHPO, however, the Looting and Vandalism Protection Plan will be submitted within the next few days.

**LOOTING AND VANDALISM PROTECTON PLAN**

Mike Kelly (AECOM) provided a general summary of the Looting and Vandalism Protection Plan (LVPP). The Plan is a working draft that was designed to generate discussion and new ideas. The Plan includes: 1) law and regulations that pertain to the protection of cultural/tribal/historic resources; 2) a training program for construction personnel and monitors; 3) summary of known resources within the project area; 4) site protection measures; 5) procedures for responding to looting and vandalism; 6) post-decommissioning; and 7) contact information.

Examples of site protection measures include periodic monitoring during decommissioning and law enforcement and security both during and after decommissioning. Visits to specific sites would occur to monitor changes in site conditions, which would include evidence of erosion and looting/vandalism. Surveillance cameras may be used, which are already in place for fire protection. Access restrictions are being reviewed, both temporary during construction and long term for protection.

Post-decommissioning options include land transfer considerations, continuation of the LVPP procedures, endowments and site stewardship programs, and education programs.

**Comments/Questions:**

- Eric Ritter (BLM): Is the LVPP for the APE or ADI? There may be potential indirect effects that should be covered in the Plan.  
Mike Kelly (AECOM): The Plan is for the ADI. Indirect effects are not covered in detail in the Plan due to access and other issues, but it will be taken into consideration in the revised LVPP.
- Les Anderson (Klamath Tribe): What is your tribal stewardship program? Will drones be used? Will there be a maintenance and monitoring form?  
Mike Kelly (AECOM): Stewardship is part of the Plan and we are looking for additional suggestions and ideas. Drones are also described in the Plan, especially during

decommission activities, as well as an observation form (as well as another form for project-related impacts).

Les Anderson (Klamath Tribe): Will there be funding available for restoration of a site that is impacted by erosion?

Kirk Ranzetta (AECOM): If a site is actively impacted by the new river course, then it would be subject to the HPMP, and it would be determined if maintenance or restoration would be used to arrest whatever erosion may be occurring at the site. A number of mitigation measures could be proposed in the HPMP, and KRRC would have to implement the measures once the license order is received. And, KRRC would have to demonstrate sufficient funds.

- Eric Ritter (BLM): Funding for local sheriff's department needs to be taken into consideration.
- Betty Hall (Shasta Nation): Lands should be transferred back to the Shasta.

Alex Watts-Tobin (Karuk Tribe): Tribal entities are eligible to receive rights to land transfers.

- Brian Person (AECOM): Can lands be transferred to a private interest and not one of the two states?

Kate Stenberg (CDM Smith): There must be a public interest to it, so a non-profit group might be able to make that case.

- Crystal Robinson (Quartz Valley Indian Reservation): The site protection measures may interplay with the Restoration Plan because there may be some ways that restoration can protect further erosion of a site.

Brian Person (AECOM): The Plan addresses erosion resistance measures.

## **PROGRAMMATIC AGREEMENT**

### **Review of Comments on the Whereas Statements**

Kirk Ranzetta (AECOM) provided an update on the review of the Whereas Statements in the Programmatic Agreement (PA), as well as a review of comments received from BLM and SHPO. Specific comments on the Whereas Statements of the PA are discussed below.

Sarah Boyco (BLM) commented that the districts should be referred to by their formal names. Revisions were made and the PA now refers to the Redding District, the Klamath Falls Resource Area, and the Lakeview District, as opposed to calling them all districts.

Tracy Schwartz (OR SHPO) asked if BLM, USFS, and the Corps delegated FERC as the lead federal agency for the project. No changes have been proposed because these agencies have not provided in writing that they concede to FERC. It is also uncertain if the USFS and BLM have a Section 106 undertaking related to this project or if purview is strictly within existing resource management plans and the granting of archaeological permits. It needs to be determined if the agency's role in the project needs to be more specific or if the current Whereas Statements sufficiently define it.

Tracy Schwartz (OR SHPO) makes a statement about rewording a Whereas Statement that the Commission is consulted with the Oregon and California SHPOs. Tracy suggests just stating that the Commission is consulted with the Oregon and California SHPOs pursuant to 36 CFR 800 and are signatories to the PA (and cut out some of the references).

Tracy Schwartz (OR SHPO) asked since the BLM, USFS, and Corps are going to participate in the PA and have responsibilities under the agreement, why wouldn't they be an invited signatory. In the past, FERC has expressed the desire to keep the signatories as narrow as possible, particularly because of the Federal Power Act. They don't want to provide other federal agencies terminating authority over an agreement. They also don't want the applicant to have terminating

authority over an agreement. When FERC enters the process, it is suggested to inquire about the invited signatories to the agreement. Also, because the APE extends through tribal lands, shouldn't the THPOs of the respective tribal governments also be signatories to the agreement, particularly when the SHPOs are signatories.

The Confederated Tribes of Siletz Indians and the Resighini Rancheria were inadvertently omitted from the consulting party list in the Whereas Statement. Those tribes have been added to the statement.

A Whereas Statement will also be added that outlines what other consulting parties have been contacted to part of the consultation process. This includes: City of Yreka, Siskiyou County, Klamath County, California Preservation Foundation, Siskiyou County Museum, Klamath County Museum, Southern Oregon Historical Society, and Restore Oregon.

Another Whereas Statement has been added in regards to FERCs public outreach under NEPA/Section 106 process.

Tracy Schwartz (OR SHPO) inquired about the involvement of the Advisory Council on Historic Preservation (ACHP). The ACHP has not submitted a letter indicating that they are officially participating in consultation, but they have participated in calls for the CRWG. AECOM will ask the ACHP when that letter might be forthcoming.

Dennis Griffin (OR SHPO) inquired about the completion of the HPMP within six months of the order issuance. AECOM indicated the HPMP schedule is just a goal, and components of the HPMP will be reviewed during CRWG meetings.

Dennis Griffin (OR SHPO) commented about the IDP and the curation and collection of artifacts, particularly the distinction of different land owners (federal, non-federal public, private) when developing a collection and curation plan.

**Comments/Questions:**

- Eric Ritter (BLM): There isn't a Redding District Office; it is a Field Office. There is also an entire new structure for BLM for Region 10.
- Kate Stenberg (CDM Smith): BLM does have an undertaking. There will be some work near JC Boyle and there are some FERC activities that go a little outside of the FERC boundary (BLM ROW) and other direct actions that BLM needs to consider. No changes to a RMP.
- Tracy Schwartz (OR SHPO): When are we planning to engage FERC?  
Kirk Ranzetta (AECOM)/Kate Stenberg (CDM Smith): FERC is technically involved, and they are reviewing the transfer application, which transfers the ownership of the dams from PacifiCorp to KRRC. Once the FERC has reviewed the transfer application and are comfortable with KRRC's funds for dam removal, they will then review the surrender application. When FERC does that, they will begin the NEPA and Section 106 process, including formal consultation. It is anticipated that FERC will decide on the transfer order in early spring.

**Review of Standard Provisions of the PA**

Within a FERC PA, the HPMP is the most important document, as it describes the consultation process for identification and evaluation of historic properties and for the resolution of adverse effects.

The interim treatment of historic properties is the 6-month period between when the PA is initiated and when the HPMP will be accepted by the consulting parties. FERC will write in the PA that the Commission will follow Section 106 during those 6 months, under 36 CFR 800.4-7.

Coordination with other federal reviews: This provision may/may not be in the PA after FERC is involved. The provision is in the PA to provide flexibility in case another federal agency comes into the process and decides to use the PA for Section 106 compliance (e.g., the Corps).

FERC's dispute resolution process: Anyone involved in the project can file a complaint about Section 106 compliance to FERC (the Commission). FERC will take that complaint and distribute it to the other consulting parties and signatories, and then they will consult on it to see if they can gain resolution on it. If there isn't a resolution, the issue is forwarded to the ACHP, and the ACHP will respond within 30 days and will provide FERC with their perspective on the matter. FERC will take the ACHP's position into account and then the process moves forward. Change may or may not happen through the dispute resolution process.

Amendment of the Programmatic Agreement: Any consulting party or signatory can propose an amendment to the PA; however, all the signatories (FERC, ACHP, OR SHPO, CA SHPO, and any other signatory) must agree on the amendment. The amendment is filed with the ACHP.

Termination of the Programmatic Agreement: Only a signatory of the PA may elect to terminate the agreement.

Duration of the PA: FERC will make the time period consistent with however long they are involved with the project. When signs off that KRRRC has no further responsibilities under the Federal Power Act for the decommissioning process, the PA would likely end. At minimum, the duration would be 10 years.

Effective Date: The effective date of the PA will be when all the signatories sign the agreement and when the license surrender order is filed by FERC.

Execution of this Programmatic Agreement in Counterparts: An agency can sign one page and it can be added to the agreement.

### **Review of HPMP Outline**

The purpose of the HPMP is to ensure the identification and evaluation of historic properties, and if there is a potential for adverse effects, to ensure that those adverse effects are resolved. A HPMP may include measures to avoid resources, minimize impacts, or provide treatment measures if an adverse effect can't be avoided. In addition, the HPMP is the conduit for consultation.

The current "signatories" of the PA include FERC, OR SHPO, CA SHPO, and the ACHP. The consulting parties and the other federal agencies involved in the project can also sign the agreement as a "concurring party". By signing as a concurring party, the party is agreeing to the contents of the PA, but it doesn't commit those organizations or governments to do anything within the confines of the PA.

FERC has published guidelines on what a HPMP is required to contain, including the project location and description; regulatory context; cultural context (precontact, ethnographic, and historic periods); previous cultural resources studies, known cultural resources, and data gaps;



delineation of the APE and the ADI (area of direct impacts); identification of historic properties, including NRHP, state, and local significance.

The HPMP will describe the different project effects, including erosion; looting and vandalism; access; and demolition of the structures. Any pre-construction activities may be identified in this section of the HPMP, as well as the decommissioning process (i.e., demolition of the dams and construction of access road) and the post-decommissioning and restoration activities. Recreational use and the potential for looting and vandalism would be identified within the HPMP and the potential for effects.

Once project effects have been identified, measures to avoid, minimize, or mitigate any adverse impacts would be described in the HPMP. The consulting parties would be able to provide input on the types of mitigation at both the site-specific level and more broad creative mitigation. Types of resources that may have avoidance, minimization, or mitigation measures may include archaeological resources, traditional cultural properties, tribal cultural resources, and historic structures.

Management measures for historic properties: FERC will be interested in how KRRC will manage the coordination and protection of cultural resources once pre-construction and decommissioning activities occur. Construction personnel and cultural awareness training, as well as confidentiality provisions to protect known cultural resources under Section 304, would be outlined in this section. Archaeological site protection measures, a plan for collection and curation, and protocols for inadvertent discoveries would be outlined. There will also be opportunities for interpretation and public education.

Consultation will be a critical part of the agreement. There will be a consultation period for identification and evaluation of historic properties, and consultation will occur during the development of mitigation measures to resolve adverse effects.

Implementation Procedures: KRRC would prepare annual reports to show progress over the 10-year period. There is typically an annual meeting to touch base on the PA and the HPMP.

**Comments/Questions:**

- Eric Ritter (BLM): Are the tribes a concurring party?  
Kirk Ranzetta (AECOM): Correct. However, if FERC determines that the APE is extending through tribal lands, then several tribes could potentially be signatories.
- Scott Quinn (Karuk Tribe): Is there any risk when signing the PA?  
Kirk Ranzetta (AECOM): Litigation is usually with the lead federal agency. The federal agency is ultimately responsible for all decisions.
- Crystal Robinson (Quartz Valley Indian Reservation): Who decides the consulting parties?  
Kirk Ranzetta (AECOM): Any organization or agency who has been approached by the KRRC with an interest in cultural resources is being considered a consulting party.
- Jim Prevatt (Shasta Nation): Why wouldn't the major tribes in the area be a signatory?  
Kirk Ranzetta (AECOM): It has to do with the definition of Native American tribes in Section 106, as well as having a THPO. When the HPMP is negotiated, there will be many opportunities for the consulting parties, including the tribes, SHPOs, and ACHP, to provide their opinions to FERC. FERC will have to consider any comments.
- Jeanne Goetz (USFS)/Mike Kelly (AECOM): The level of protection is the same for a cultural resource that has been determined eligible for listing in the NRHP and one that has been listed on the National Register.



- Eric Ritter (BLM): Is the previous HPMP prepared by PacifiCorp being considered?  
AECOM: Yes.
- Eric Ritter (BLM): Will the HPMP be good until the lands are transferred to the state?  
Kirk Ranzetta (AECOM): The HPMP will be applicable for the duration of FERC's involvement and/or if another agency decides to use the PA for their own compliance.
- Kate Stenberg (CDM Smith): Is there a way for the Corps to adopt a portion of the agreement?  
Kirk Ranzetta (AECOM): The Corps could join in to the PA and state the limits of their jurisdiction and authority (i.e., the permit area for the Corps could be the limits). The Corps could also choose to be independently responsible for Section 106.
- Eric Ritter (BLM): Because PacifiCorp will still own land, will they also have some oversight?  
Mike Kelly (AECOM)/Russ Howison (PacifiCorp): PacifiCorp will be retaining the Parcel A lands, but those are outside of the FERC boundary. There will be cultural resources within the indirect APE that may be on Parcel A lands, and PacifiCorp would have a role in that process.
- Tracy Schwartz (OR SHPO): FERC may be releasing a new PA template.

#### GOALS FOR NEXT MEETING

- Content and Implementation of the HPMP
- Interim Treatment of Historic Properties
- Phase II Decisions and Scheduling

#### ACTION ITEMS

Action Item	KRRC/AECOM Action	CRWG/Tribal Action
Looting and Vandalism Protection Plan	AECOM to submit to Oregon SHPO via Go Digital	Review Plan by end of the month
Monitoring/Inadvertent Discovery Plan	Comments will be distributed after November 15, 2019	Comments due back November 15, 2109
Recreation Plan	Comments will be distributed after XXXXXX.	Comments on the Recreation Plan are due on XXXXXX.
Historic Property Historic Management Plan	HPMP stipulations will be distributed XXXXX.	Review stipulation within 30 days of submittal to CRWG.

The meeting ended at 4:00 pm.

## Meeting Minutes

Klamath River Renewal Project KRRRC Cultural Resources Working Group (CRWG) Meeting	
Date	December 12, 2019
Time	10:00-11:30 am PST
Location	Teleconference
Attendees	AECOM: Mike Kelly, Kirk Ranzetta, Elena Nilsson, Sarah McDaniel, Stephanie Butler BLM-Klamath Falls: Sara Boyco BLM-Redding: Eric Ritter CA SHPO: Brendan Greenaway CDM Smith: Kate Stenberg Karuk Tribe: Alex Watts-Tobin KRRRC: Mark Bransom OR SHPO: Tracy Schwartz PacifiCorp: Russ Howison USFS Klamath NF: Jeanne Goetz Yurok Tribe: Rosie Clayburn
Prepared by	AECOM
Distribution	KRRRC Cultural Resources Working Group (CRWG)

### MEETING OBJECTIVE

To continue consultation between cultural resources stakeholders with the Klamath River Renewal Corporation (KRRRC) and its technical team, AECOM. This month's meeting was focused on continued review of the Programmatic Agreement.

### REVIEW OF OCTOBER 2019 MEETING AND ACTION ITEMS

KRRRC requested comments as soon as possible on the Recreation Plan. No comments have been received from the CRWG.

KRRRC requested comments on the Monitoring and Inadvertent Discovery Plan. The comment period was extended to November 15. A final draft of the Plan is on hold pending receipt of comments.

Comments have been received from BLM and Oregon SHPO on the PA. Additional information on FERC and other federal agency responsibilities for the PA has not been obtained.

### PROJECT UPDATES

Mike Kelly (AECOM) provided a project update:

This transmission is confidential and intended solely for the person or organization to whom it is addressed. It may contain privileged and confidential information. If you are not the intended recipient, you should not copy, distribute or take any action in reliance on it.

- The comment period for the Monitoring and Inadvertent Discovery Plan was extended to November 15; no input has been received from Tribes.
- Ethnographic summaries have been submitted to each Tribe; no input has been received from Tribes.
- The Phase II Evaluation Plan is currently being revised to minimize impacts to sites. KRRC is meeting with Tribes individually to reach a consensus on the level of effort. Fieldwork will occur in Spring 2020. The Phase II Plan has been revised to minimize impacts to sites.
- Comments on the Looting and Vandalism Protection Plan were requested by November 23. Comments have been received by OR SHPO.
- FERC Status Report. In early 2020, KRRC plans to submit a report to advise FERC on the current status of consultation.
- CRWG Meetings and Tribal Caucus: Starting in January 2020, KRRC will transition from hosting monthly Tribal Caucus and CRWG meetings to individual tribal and agency meetings. Several tribes have requested this.

**Comments/Questions:**

- Mark Bransom (KRRC): The Status Report will be submitted to FERC in early 2020. Although the report will be broad and include other matters leading toward FERC's consideration in addition to cultural resources, it will include cultural resources topics.
- Rosie Clayburn (Yurok): Is there anything you need from us for the status report?
- Mark Bransom (KRRC): Comments on these outstanding reports would be helpful to help with FERC's engagement.
- Rosie Clayburn (Yurok): I'm okay with moving away from Tribal Caucus, but the CRWG meetings include agencies and I feel those are helpful because we can hear SHPO comments and don't want to be isolated into our little bubbles. Can we still do that?
- Mark Bransom (KRRC): We can consider a variety of approaches—like as needed CRWG meetings, or written correspondence-- to give folks opportunity to stay connected.

**PROGRAMMATIC AGREEMENT****Review of Standard Provisions**

Kirk Ranzetta (AECOM) provided an update on the review of the Standard Provisions in the Programmatic Agreement (PA). Accomplishments to date include:

- Completed Review of Whereas Statements
- Review of BLM and OR SHPO Comments
- Review of Standard Provisions of the PA
- Review of HPMP Structure and Content

Kirk noted that the number of provisions have been modified by FERC in consultation with Oregon and California SHPOs for recent projects. Some examples include Prospect No. 3 Hydroelectric Relicensing - Oregon (2019), Lassen Lodge Hydroelectric Project - California (2019) and Swan Lake North Pumped Storage Hydroelectric Project - Oregon (2019). These projects serve as recent examples and help inform how to approach the standard provisions to this surrender license process. KRRC is modifying the standard FERC agreement documents given OR and CA SHPO concerns by using similar language presented in these recent approved FERC PAs.

Stipulation III. Interim Treatment of Historic Properties. This outlines the process for complying with Section 106 for the gap between the Surrender Order issuance and HPMP approval. The interim treatment of historic properties is the 6-month period between when the PA is initiated and

when the HPMP will be accepted by the consulting parties. FERC will write in the PA that the Commission will follow Section 106 during those 6 months, under 36 CFR 800.4-7.

Stipulation IV. Coordination with Other Federal Reviews. This provision would allow a federal agency to accept the PA and integrate it into its Section 106 decisional process. This provision may/may not be in the PA after FERC is involved. The provision is in the PA to provide flexibility in case another federal agency comes into the process and decides to use the PA for Section 106 compliance (e.g., the Corps).

Stipulation V. Dispute Resolution. Objections can be filed by any federal agency, ACHP, Tribes, SHPO, or License Applicant to FERC. FERC will take that complaint and distribute it to the other consulting parties and signatories, and then they will consult on it to see if they can gain resolution on it. If there isn't a resolution, the issue is forwarded to the ACHP, and the ACHP will respond within 30 days and will provide FERC with their perspective on the matter. FERC will take the ACHP's position into account and then the process moves forward. Change may or may not happen through the dispute resolution process.

Stipulation VI. Amendment to the PA. Any consulting party or signatory can propose an amendment to the PA; however, all the signatories (FERC, ACHP, OR SHPO, CA SHPO, and any other signatory) must agree on the amendment. The amendment is filed with the ACHP.

Stipulation VII. Termination of the PA. If any signatory determines that the PA terms can't be carried out, continue consultation and attempt amendment. If no resolution is reached, the agreement is terminated and FERC can either execute a new PA or consult with the ACHP. Only a signatory of the PA may elect to terminate the agreement.

Stipulation VIII. Duration of the Agreement. Addresses the duration of the surrender order and the temporal limits of FERC's oversight responsibilities. FERC will make the time period consistent with however long they are involved with the project. When signs off that KRRC has no further responsibilities under the Federal Power Act for the decommissioning process, the PA would likely end. At minimum, the duration would be 10 years.

Stipulation IX. Effective Date. The effective date of the PA will be when all the signatories sign the agreement and when the license surrender order is filed by FERC.

Stipulation X: Execution of this PA in Counterparts. Allows for signatures to be collected individually on different pages.

The current "signatories" of the PA include FERC, OR SHPO, CA SHPO, and the ACHP. The consulting parties and the other federal agencies involved in the project can also sign the agreement as a "concurring party". By signing as a concurring party, the party is agreeing to the contents of the PA, but it doesn't commit those organizations or governments to do anything within the confines of the PA.

#### **Comments/Questions**

- Brendan Greenaway (CA SHPO): We haven't seen the draft of the PA yet.
- Kirk Ranzetta (AECOM): We haven't formally submitted it but circulated an earlier draft. Just to clarify, we are not asking for formal comments yet.
- Eric Ritter (BLM): Under Stipulation VI (Amendment to the PA), are non-federally recognized tribes able to amend the PA?

- Kirk Ranzetta (AECOM): Yes, there is language for “any party.”
- Brendan Greenaway (CA SHPO): Typically parties that can amend are not Consulting Parties but are Invited Signatories and Signatories have amendment termination rights per the regulations.
- Kirk Ranzetta (AECOM): I don’t think FERC because of the Federal Power Act doesn’t like to have “Invited Signatories”, including the Applicant. The problem is it may allow the Applicant to terminate the PA—basically, allow a back-door for the Applicant to get out of the relicense or surrender, so that ‘s why FERC maintains that role for Invited Signatories.
- Brendan Greenaway (CA SHPO): The problem is that FERC has a large role. It’s something to be mindful of and we’ll comment on it.
- Tracy Schwartz (OR SHPO): Has the ACHP reviewed the first draft?
- Kirk Ranzetta (AECOM): They will look at this draft version. Jon Eddins didn’t provide comments on the earlier version.
- Eric Ritter (BLM) and Rosie Clayburn (Yurok): Does Kiewit have anyone on board with a cultural resources background? And if so, when will we start engaging with them?
- Mike Kelly (AECOM): Yes, we will be in including them in future meetings. We haven’t met yet but will be soon.
- Tracy Schwartz (OR SHPO): Where do built environment resources fall into this timeline?
- Kirk Ranzetta (AECOM): There will be a report, separate from the Phase II archaeological report due to delays with the Phase II evaluation. The report is underway. Also, we’ve reached out other consulting parties as part of the consultation process, including City of Yreka, Siskiyou County, Klamath County, California Preservation Foundation, Siskiyou County Museum, Klamath County Museum, Southern Oregon Historical Society, and Restore Oregon. No response yet, but we’ll follow up again.
- Tracy Schwartz (OR SHPO): I think that’s important, thank you.
- Brendan Greenaway (CA SHPO): When will we see a draft of the PA?
- Kirk Ranzetta (AECOM): KRRC is reviewing the current draft, but we will circulate it in a week or so.
- Alex Watts-Tobin (Karuk): I have extra comments on the LVPP that I would like to share. What is the update on Phase II?
- Mike Kelly (AECOM): We are currently making revisions to the Phase II plan by minimizing impacts to sites. We will prepare a Status Report to FERC and KRRC will be making a decision on how to move forward very soon.
- Eric Ritter (BLM): OR SHPO commented, are there comments from CA SHPO?
- Brendan Greenaway (CA SHPO): Yes, we will be sure to comment when it is available.
- Rosie Clayburn (Yurok): We did provide comments on the ethnographic summary. Do you need me to resend?
- Elena Nilsson (AECOM): Yes, please resend.
- Alex Watts-Tobin (Karuk): I’ll give you comments on the Karuk ethnography in the next few days. The analysis is too prone to quoting anthropologists rather than native peoples.

#### ACTION ITEMS

Action Item	KRRC/AECOM Action	CRWG/Tribal Action
CA SHPO needs Draft PA	AECOM to submit to CA SHPO	-
Distribute Powerpoint	AECOM to email meeting Powerpoint to CRWG	-
Comment on Draft PA	-	Provide comments
Comment on LVPP	-	Provide comments

Action Item	KRRC/AECOM Action	CRWG/Tribal Action
Comment on Ethnographies	-	Rosie stated she will resend. Alex stated he will send.

The meeting ended at 11:30 am.

#### **NEXT STEPS**

- Complete draft documents
- Prepare Status Report for FERC in early 2020
- Schedule individual Tribal meetings in early 2020
- Reach final decision on Phase II evaluation approach
- Implement Phase II evaluation

## **APPENDIX F      CULTURAL RESOURCES WORKING GROUP PRESENTATIONS**



# Klamath River Renewal Project

Cultural Resources Working Group

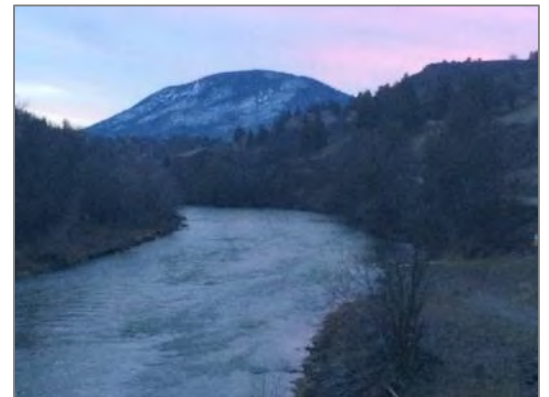
Project Introduction Meeting

September 5, 2017



# Agenda

1. Introductions
2. Background & KRRC Overview
3. AECOM's Role
4. Lower Klamath Project Overview
5. Review of Previous Cultural Resources Studies
6. Next Steps



# Introductions

1



# CRWG - Invited Participants

Organization	Representative
KRRC	Mark Bransom
PacifiCorp	Russ Howison
AECOM	Elena Nilsson, Mike Kelly, Kirk Ranzetta, Seth Gentzler, Shannon Leonard
CDM Smith	Ben Swann and Kate Stenberg
CA Office of Historic Preservation	Anmarie Medin, Kathleen Forrest, and Brendon Greenaway
OR Office of Historic Preservation	Dennis Griffin, Ian Johnson, and Jessica Gabriel
Corps of Engineers	Cameron Purchio, Eureka Field Office
Bureau of Land Management	Eric Ritter and Aldon Neel, Redding Laird Naylor, Klamath Falls
U.S. Forest Service	Jeannie Goetz, Klamath National Forest



Office of Historic Preservation



Nature  
HISTORY  
Discovery



US Army Corps  
of Engineers.



# Background & KRRC Overview



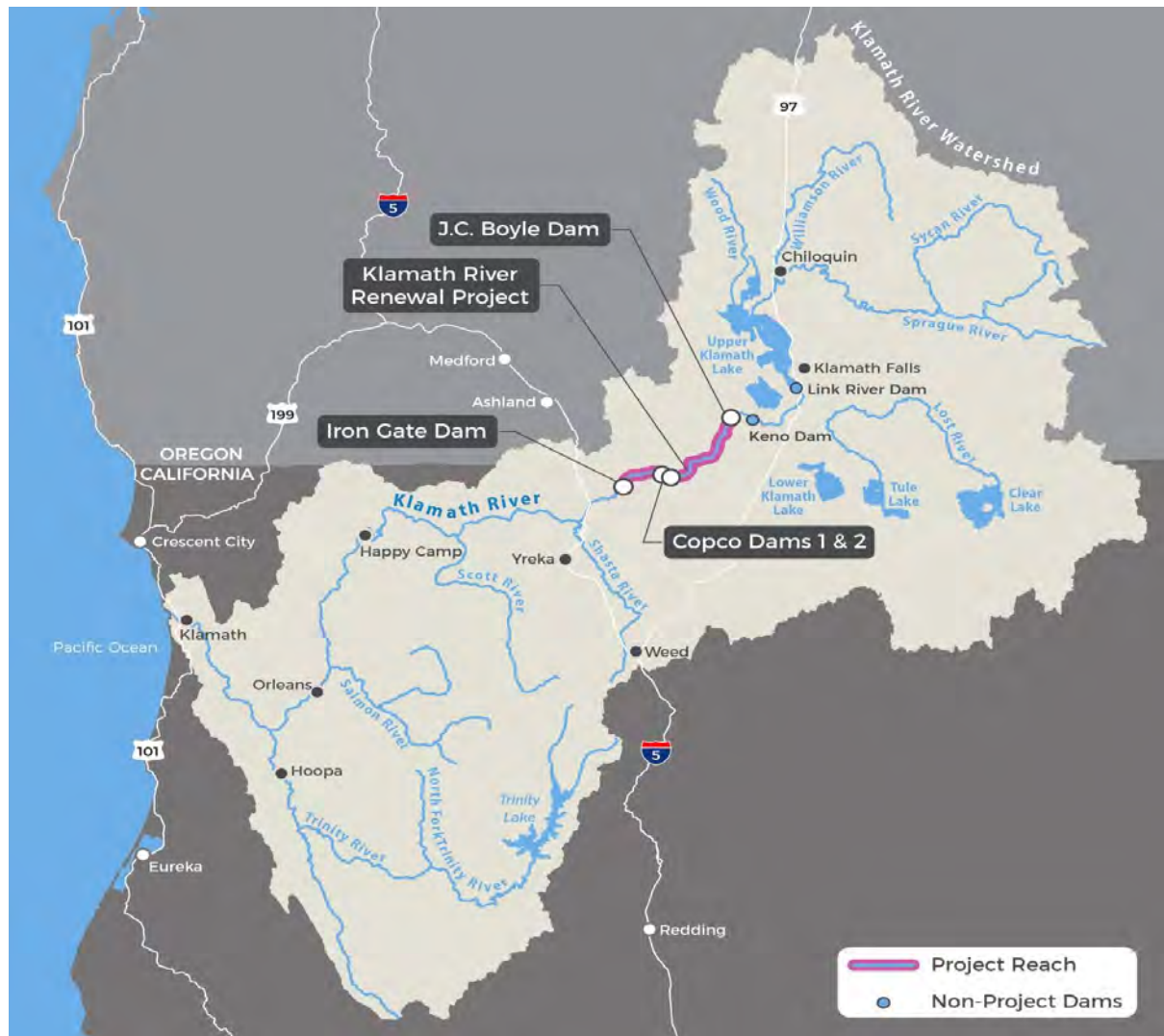
## Background

- PacifiCorp operates the Klamath Hydroelectric Project (FERC No. 2082)
  - located on the upper Klamath River in Klamath County (south-central Oregon) and Siskiyou County (north-central California).
- The Klamath Hydroelectric Project consists of eight developments, seven of which are on the Klamath River between river mile (RM) 190 and RM 254.

Oregon	California
East Side	<b>Copco No. 1</b>
West Side	<b>Copco No. 2</b>
Keno	Fall Creek
<b>J. C. Boyle</b>	<b>Iron Gate</b>



# Background



## *Background*

- Klamath Hydroelectric Project developments were constructed by the California Oregon Power Company (COPCO) and its various pioneer predecessors between 1902 and 1962 and are now owned and operated by PacifiCorp.
- PacifiCorp's 50-year license for the Klamath Hydroelectric Project was set to expire in March 2006.
  - 2004 PacifiCorp filed License Application with FERC
- 2000-2007 FERC Relicensing Studies for Klamath Hydroelectric Project (No. 2082)
- 2010 Klamath Basin Restoration Agreement (KBRA) signed to help provide Basin-wide, long-term solutions to overstressed water supplies and water quality concerns in the Klamath Basin, including impacts to basin fisheries (expired 2015).

## Background

- 2010 Klamath Hydroelectric Settlement Agreement (KHSA), a companion agreement to the KBRA, laid out the steps and criteria for removing the lower four Klamath River dams – J.C. Boyle, Copco No. 1, Copco No. 2, and Iron Gate.
  - Free-flowing river from Keno Dam (Oregon) to the ocean
  - Volitional fish passage to upper basin
  - Improve flow variability, water quality, sediment transport
- KHSA and KBRA were signed by a broad range of over 40 basin stakeholder groups, including tribal communities.
- The KBRA expired in 2015 due to inaction in the U.S. Congress

### Klamath Settlement





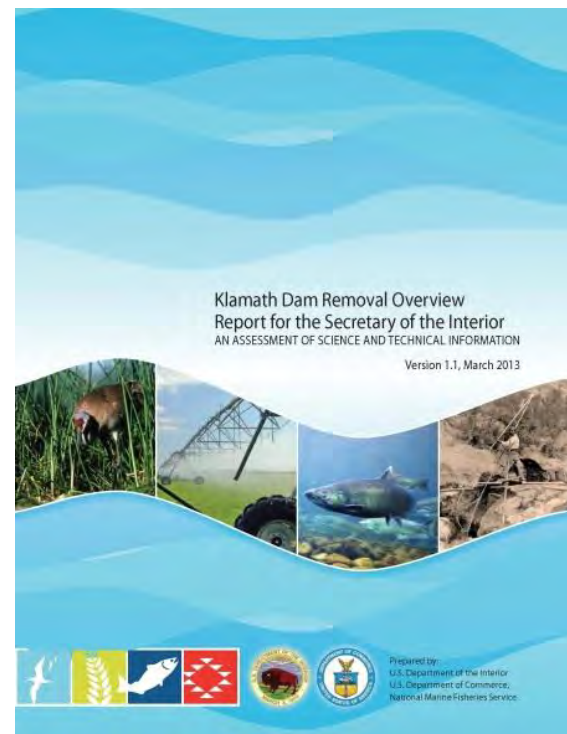
## Background

- 2012 Bureau of Reclamation and California Department of Fish & Game EIS/EIR analyzed potential environmental impacts from dam removal under the KHSA.
  - Inform a decision by the Secretary of the Interior as to whether
    - 1) dam removal would advance restoration of the salmonid fisheries of the Klamath Basin,
    - 2) was in the interest of Tribes, local communities, and the general public.
- 2012 Detailed Plan for Dam Removal prepared by Bureau of Reclamation.
  - Addressed full dam removal and partial dam removal and provided most probable cost estimates
  - Includes four primary mitigation measures for cultural resources (to be discussed later in this presentation)



## Background

- 2013 Overview Report for the Secretary of the Interior prepared by US Dept. of Interior (BOR) and Commerce, National Marine Fisheries Service.
- Congressional action required to pass legislation authorizing a Secretarial Determination, which would result in either the removal of the dams, or require PacifiCorp to continue its application for a new hydropower license for the dams.
- Congress did not enact the legislation.



## Background

- April 2016 Amended KHSA
  - Signed by federal, state, and local governments, PacifiCorp, two Tribal nations (Karuk and Yurok), and nine conservation and fishing groups.
  - Removed KBRA and added Klamath Power and Facilities Agreement (KPFA)
  - Requires PacifiCorp and the dam removal entity (KRRC) to seek approval from the FERC to transfer ownership to KRRC and decommission four dams on the Klamath River.
  - If approved, the KHSA will lead to one of the largest river restoration efforts in the nation, beginning with decommissioning of four dams in 2020.



**Signing ceremony photograph**

(Source: Dailykos.com; April 7, 2016)

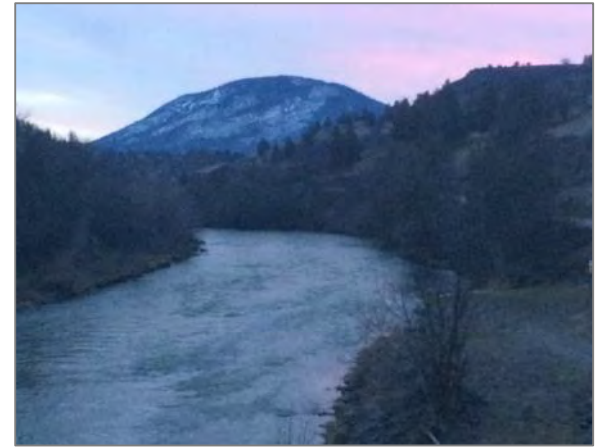
## Background

- September 2016: PacifiCorp and KRRC filed concurrently with FERC.
  1. License Amendment to amend and partially transfer the license for the Klamath Hydroelectric Project (FERC No.2082)
    - Application for a new license for the Lower Klamath Project (FERC No. 14803) includes the J.C. Boyle, Copco No.1, Copco No. 2, and Iron Gate developments.
  2. Surrender Application for the license for the Lower Klamath Project (No. 14803) pursuant to the Amended KHSA
- November 2016: FERC designated KRRC and PacifiCorp as the Commission's non-federal representative for carrying out informal consultation, pursuant to Section 106 of the NHPA and the ACHP regulations.

# KRRC Overview

## Management:

- KRRC Launched in July 2016.
  - Governance, IRS filings, banking, budgets, etc.
  - Website: [www.klamathrenewal.org](http://www.klamathrenewal.org)
- The Corporation is funded through:
  - Funding agreement with Oregon PUC, finalizing with California PUC
  - Bond funds from California
- 14 appointed Board members with backgrounds in natural resources, environmental law, watershed restoration, and including appointees designated by the Yurok and Karuk Tribes.





# AECOM's Role

3



## Technical Representative – Role

## AECOM Work Categories:

1. Project Management
2. Field Studies
  - **Cultural Resources**
  - Biological Resources
3. Engineering and Design
4. Regulatory and Permitting
5. Contractor Procurement



# Project Overview

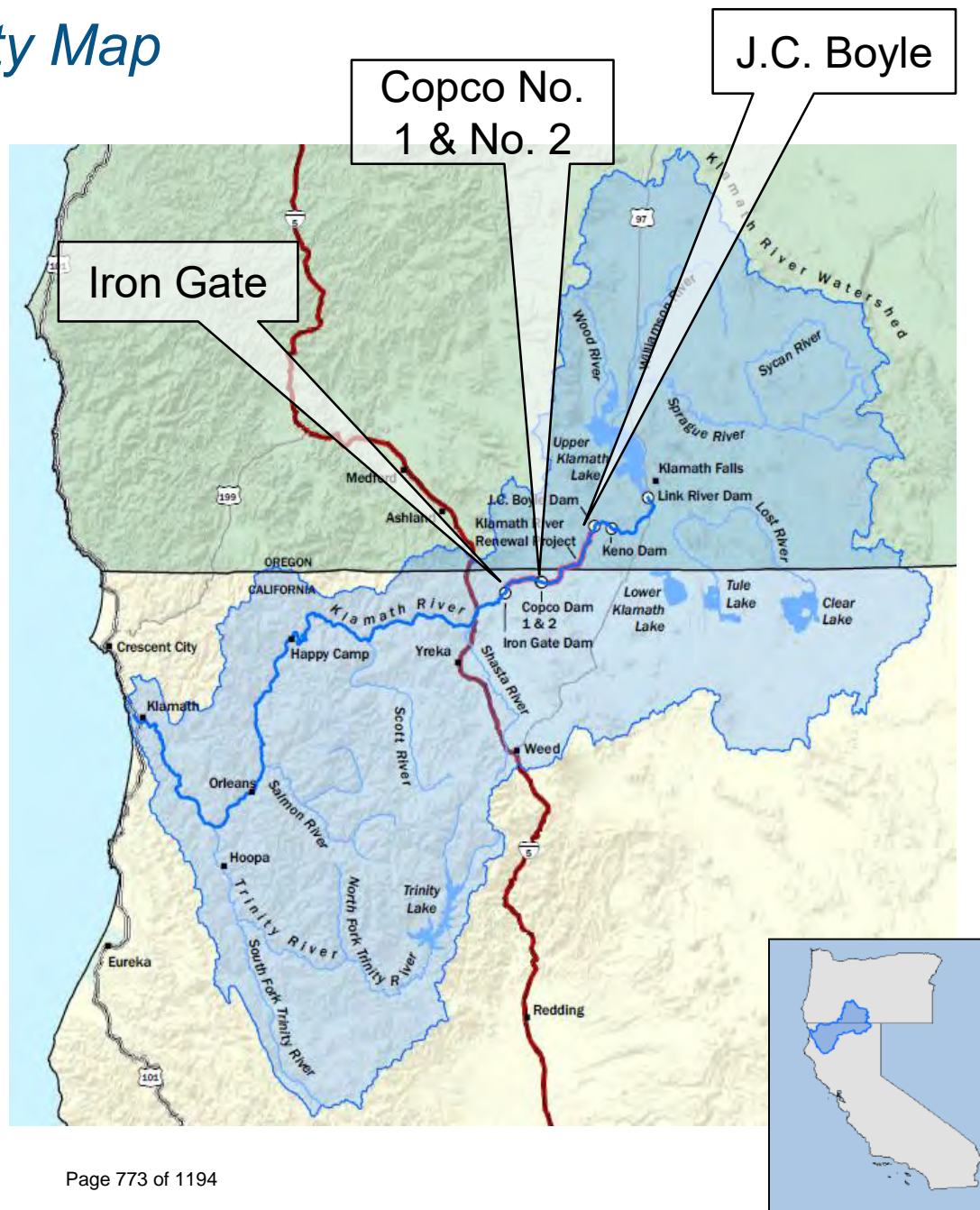
4





## Project Overview - Vicinity Map

- Lower Klamath Project site includes dams and appurtenant works, including hydropower facilities at:
  - Iron Gate Dam
  - Copco No. 1 Dam
  - Copco No. 2 Dam
  - J.C. Boyle Dam
- Facilities currently owned and operated by PacifiCorp



# Project Overview

## Project Goals:

- Facilities removal of Iron Gate Dam, Copco No. 1 Dam, Copco No. 2 Dam, J.C. Boyle Dam, and appurtenant works, including hydropower facilities
- Achieve free-flowing condition and volitional fish passage
- Fully remediate and restore project area
- Implement measures to avoid or minimize adverse downstream impacts
  - Water Quality
  - Flood Control
  - Water Supply





## Project Overview

### J.C. Boyle Dam & Powerhouse, Oregon (built 1956-1958):

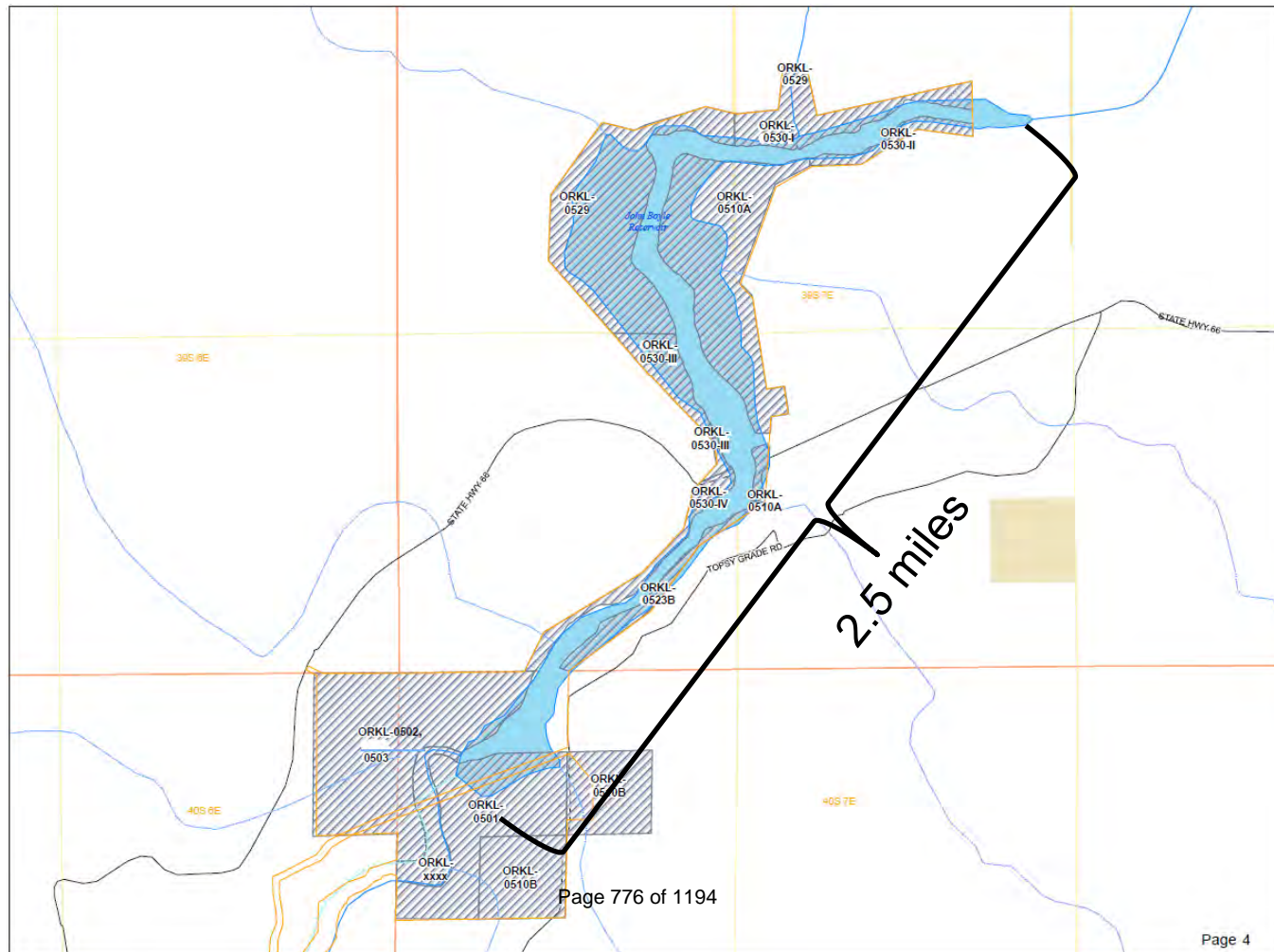
- 2,630 ac-ft reservoir
- Combination embankment (68') & concrete (23') dam
- Gated spillway
- Intake structure
- Diversion culvert
- Water conveyance system (2.5 miles)
- Fish ladder
- Forebay & tunnel
- Powerhouse



# Project Overview

## J.C. Boyle Reservoir, Oregon:

- 2,630 ac-ft reservoir





## Project Overview

### Copco No. 1 Dam & Powerhouse, CA (built 1912-1918):

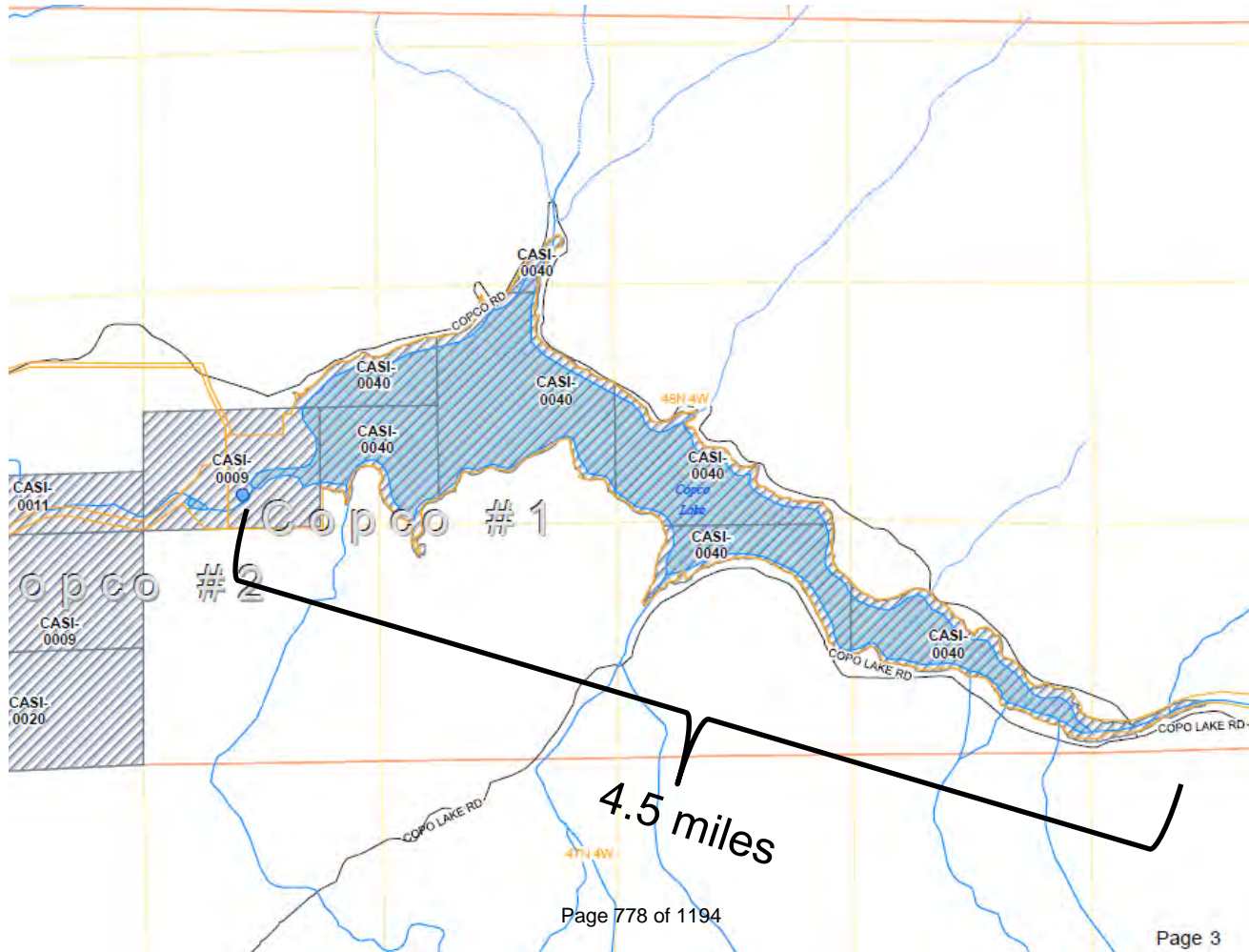
- 40,000 ac-ft reservoir
- Concrete gravity arch dam (135')
- Gated spillway
- Diversion tunnel (sealed)
- Intake structure
- Powerhouse
- Additional structures



# Project Overview

## Copco No. 1 Reservoir:

- 40,000 ac-ft reservoir



## Project Overview

### Copco No. 2 Dam & Powerhouse, CA (built 1924-1925):

- 70 ac-ft reservoir
- Concrete gravity diversion dam (33') with embankment section
- Gated spillway
- Water conveyance system (1 mile)
- Powerhouse
- Remnant cofferdam
- Additional structures

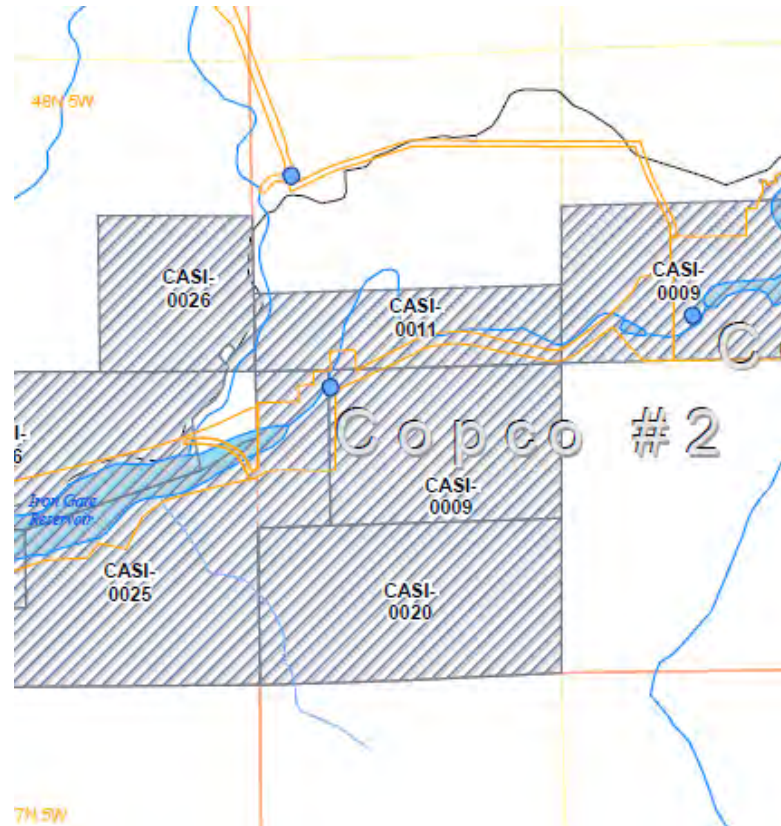




## Project Overview

### Copco No. 2 Reservoir:

- 70 ac-ft reservoir





## Project Overview

### Iron Gate Dam & Powerhouse, CA (built 1962):

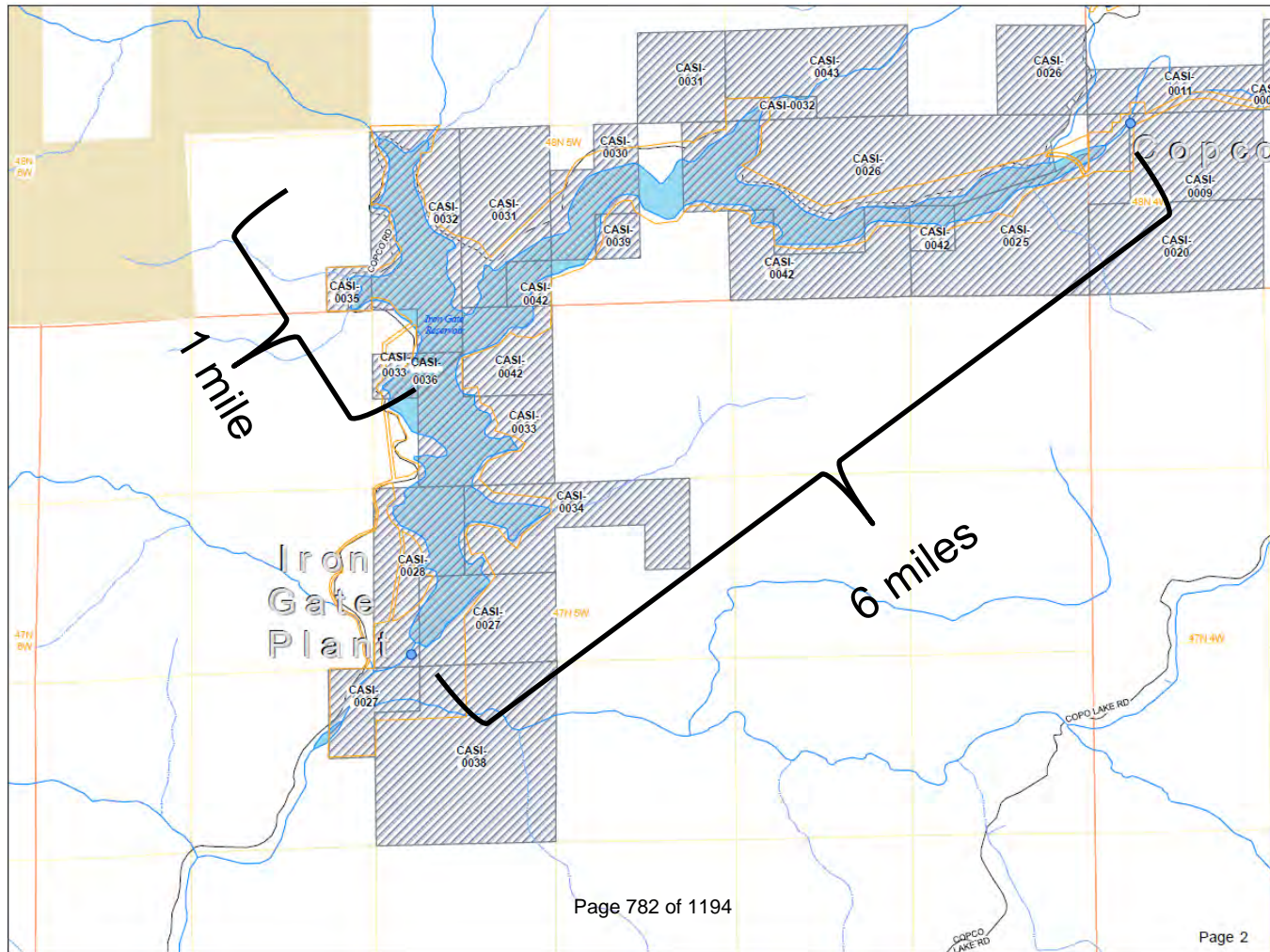
- 53,800 ac-ft reservoir
- Embankment dam (189')
- Spillway
- Diversion tunnel
- Intake structure
- Powerhouse
- Fish hatchery
- Additional structures



# Project Overview

## Iron Gate Reservoir:

- 53,800 ac-ft reservoir





# *Project Overview*

## Sediment Management:

- Natural release of sediment via controlled drawdown
- Begin sediment release January 1
- Create free-flowing river by December 31 of same year



## *Project Overview – Schedule*

Date	Task
September 2017	CEQA Support Report to SWRCB (EIR)
December 2017	Definite Plan for Decommissioning Submittal to FERC
Mid-2018	Select Contractor or Design-Builder
Fall 2018	Submit Regulatory Permit Applications
2019	Begin Construction of Dam Modifications & Mitigation Projects
November 2019	Begin Copco No. 1 Drawdown and Removal
January 2020	Begin Sediment Mobilization

# Review of Previous Cultural Resources Studies

5



# Cultural Resources Studies

- 2002 – 2004 FERC Relicensing
- 2012 Bureau of Reclamation/CA Fish and Game Dam Removal EIS/EIR
- 2012 Bureau of Reclamation Detailed Plan

# FERC Relicensing

2002-2004 Cultural Resources Studies

## *Cultural Resources Studies Background*

### FERC RELICENSING (2000-2007)

- 2002-2004 Cultural Resources Studies undertaken by PacifiCorp consultants, including CH2M Hill and HRA.
  - Cultural Resources Working Group
  - Pedestrian inventory of 'Field Inventory Corridor'
  - Tribal Ethnographic Reports: Klamath, Shasta, Karuk, Yurok
  - Ethnographic Riverscape
  - Klamath Hydroelectric Project
    - Historic Context Statement
    - Request for Determination of Eligibility
  - Draft Historic Property Management Plan (HPMP)



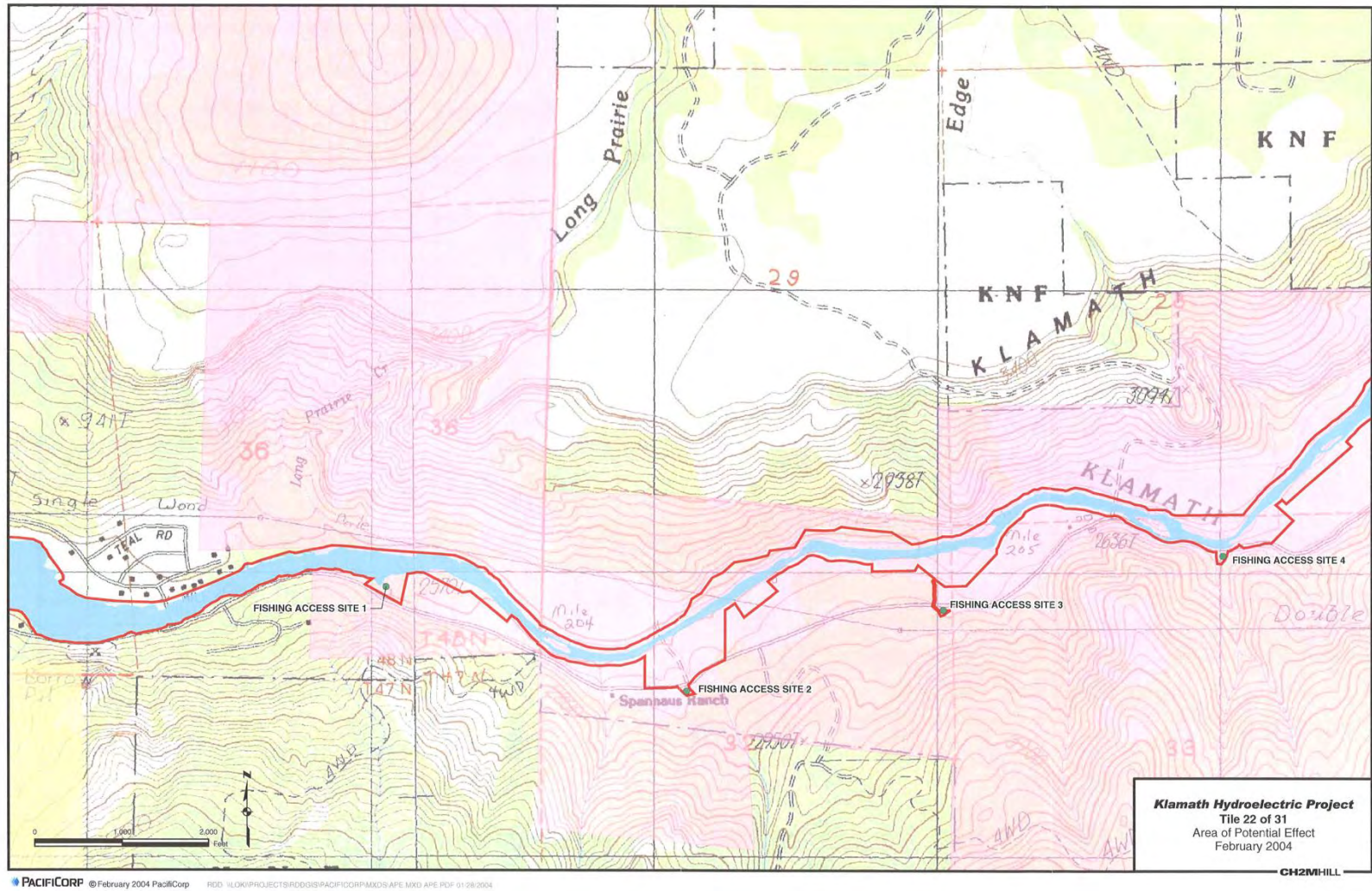
## *FERC Relicensing CRWG*

- Collaborative process between PacifiCorp, tribes, and resource agency stakeholders.
- PacifiCorp hosted monthly CRWG meetings.
- CRWG participated in developing and reviewing
  - Field inventory corridor
  - Inventory work plan
  - Scope of tribal ethnographic study contracts
  - Area of Potential Effects (APE)
- CRWG participated in a field trip and site reconnaissance to understand potential effects of erosion and impacts to Project-related cultural resources.

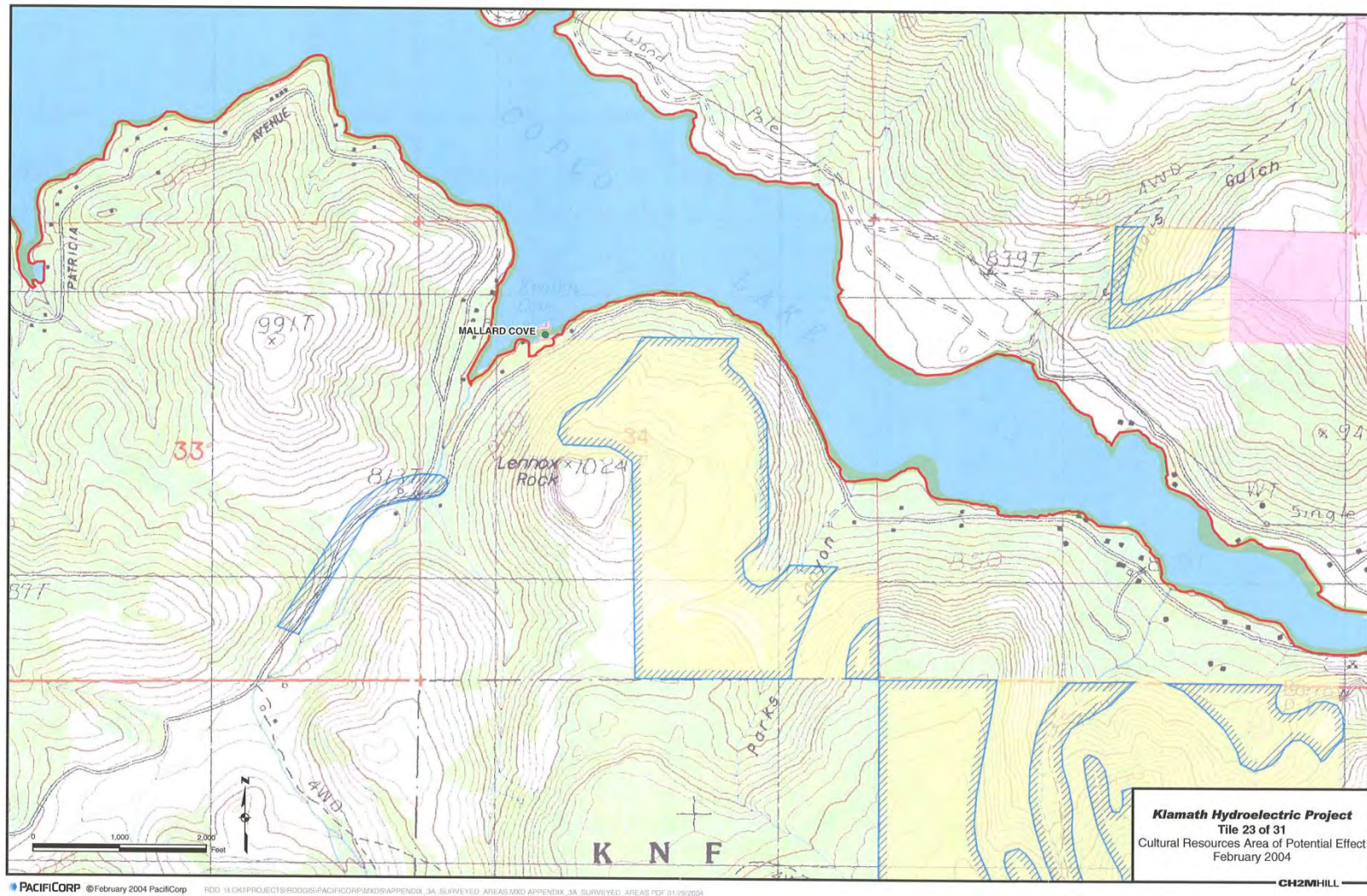
## *Field Inventory Corridor (FIC) and Area of Potential Effects*

- Because of uncertainties and disagreement among tribes and agency stakeholders regarding how far Project effects would extend, an APE was not delineated before archaeological pedestrian surveys began.
- Field inventory corridor (FIC) delineated in consultation with the CRWG.
  - Area between the outlet of Upper Klamath Lake (RM 254.7) downstream to approximately 1 mile southwest of the Iron Gate dam (RM 189.2).
  - Variable width along the corridor
  - Surveys conducted by CH2M Hill and HRA
- Following final determination of the proposed Project, the APE was delineated in December 2003.
  - Additional survey conducted in June 2004 for areas not previously covered

# PacifiCorp APE – River Reach between J.C. Boyle and Copco

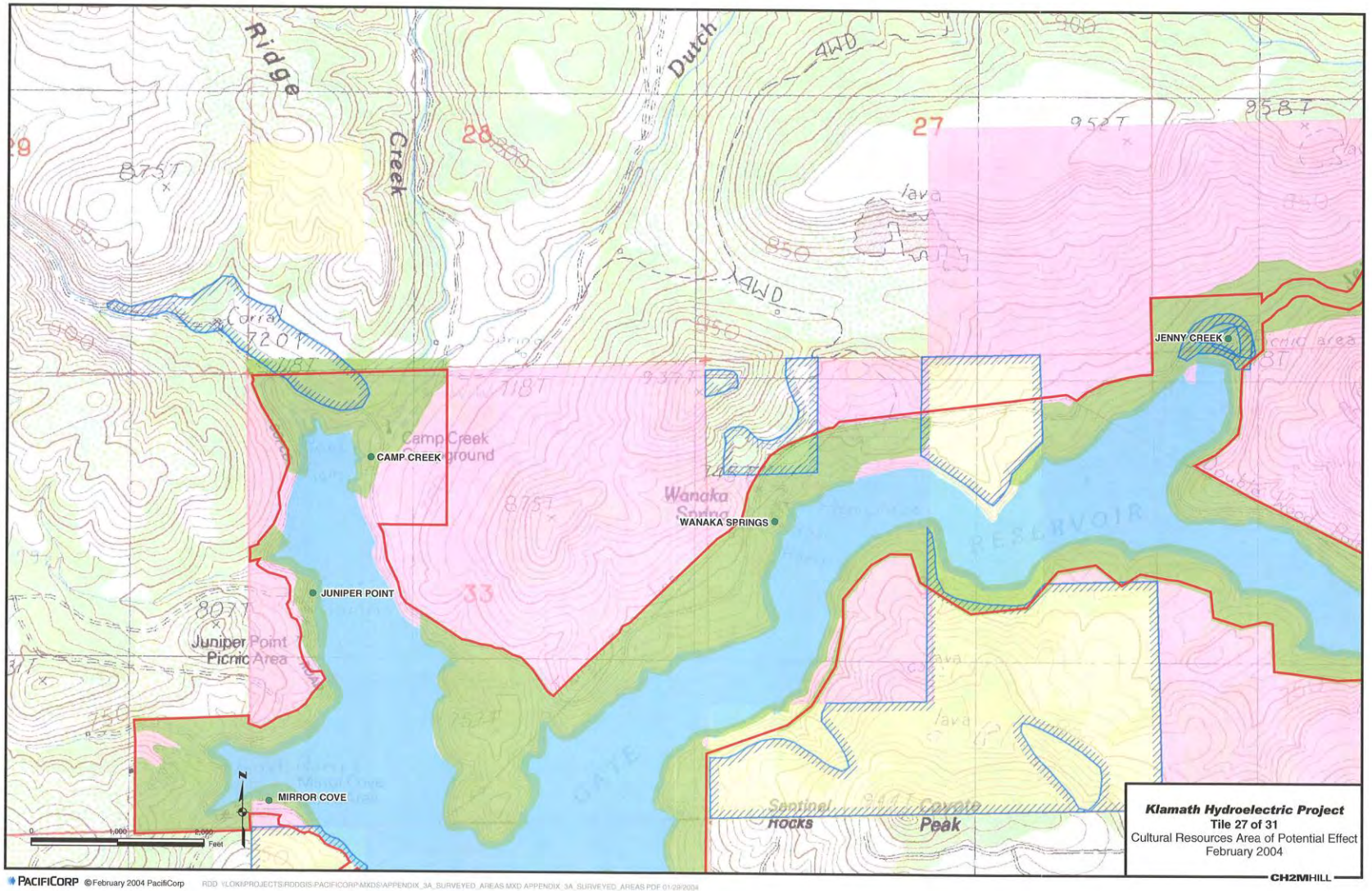








# PacifiCorp APE - Iron Gate Reservoir





## *PacifiCorp Survey Results: 2002-2004*

Resource Type	Prehistoric	Historic	Multiple	Total
Sites	118	39	15	172
Isolated Finds	157	3	-	160
Total	275	42	15	302



Housepit Village



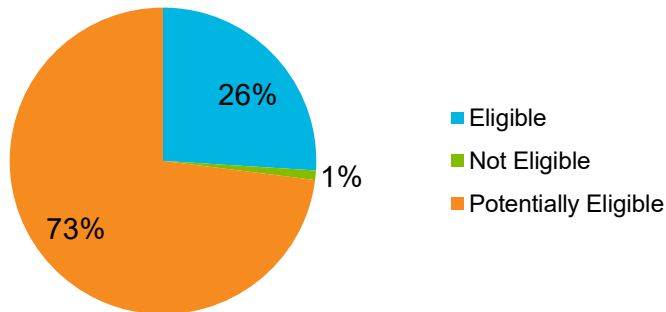
Beswick Hotel Bunk House  
Photo by J. Carter (2004)

# Prehistoric Sites and Site Components

## Site Types

1. Open-air Flaked Stone only
2. Open-air Flaked and Ground Stone
3. Village or Temporary Habitation with Housepits
4. Village or Temporary Habitation without Housepits
5. Special Use Sites - Burials, Rockshelters, Pictographs, Quarries

## NRHP Recommendation



Upper Klamath Area - Rain Rock



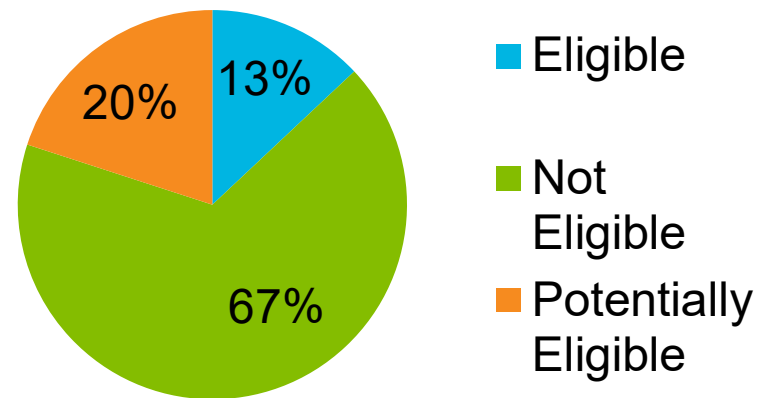
Upper Klamath Area - Rock Shelter

Photographs courtesy of Joanne Mack

## Historic-Period Sites

Historic-Period Themes
Agriculture
Cemetery
Commercial
Education
Logging
Public Utilities
Trash Scatters

### NRHP Recommendation



- The National Register eligibility of the prehistoric and historic-period archaeological sites has not been finalized.



## Archaeological Districts

- PacifiCorp's consultants identified potential National Register Districts encompassing five areas of multiple prehistoric sites and one area with multiple historic-period sites.

District Type	Area
Prehistoric	Link River area and mouth of Upper Klamath Lake, OR
	Teeter's Landing, OR
	Spencer Creek/mouth of upper Klamath River Canyon, OR
	Near Frain Ranch, OR
	Fall Creek Villages, near Copco Lake, CA
Historic	Frain Ranch, OR

- The National Register eligibility of these potential districts has not been finalized.

# Klamath River Hydroelectric Historic District (KHHD)

- The proposed District (P-47-004015) includes the seven hydroelectric facilities and various diversion dams; support structures; linear elements such as flumes, canals, and tunnels; and other related buildings and structures.
- Period of significance 1903-1958
- A historic context statement and Determination of Eligibility was developed.
- Recommended eligible under Criterion A for its association with the industrial and economic development of southern Oregon and northern California.
- The National Register eligibility of the district has not been finalized.

## KLAMATH HYDROELECTRIC PROJECT

[FERC No. 2082]

REQUEST FOR DETERMINATION OF ELIGIBILITY



Copco No.  
1, c1915  
PacifiCorp  
Archives  
Photo

for PacifiCorp, Portland, OR

Prepared by George Kramer, M.S., HP  
Preservation Specialist  
Under contract to  
CH2M-Hill  
Corvallis, OR

## *FERC Relicensing – Tribal Ethnographic Studies (2003)*

Tribe	Author
Klamath Tribe	Douglas Deur, Consulting Anthropologist
Shasta Nation	Brian Daniels, Consulting Anthropologist
Karuk Tribe	John Salter, Consulting Anthropologist
Yurok Tribe	Kate Sloan, Yurok Tribal Archaeologist

- Review of ethnographic information, archival documents, and existing oral histories.
- New oral history interviews to provide contemporary views of the traditional cultural importance of the Klamath River.
- Traditional Cultural Properties Identified.

# *FERC Relicensing – Klamath Cultural Riverscape*

- Concept centered on inter-relatedness of natural and cultural aspects of the Klamath River
  - Draft regulatory analysis prepared in 2003 by Dr. Thomas Gates, Yurok THPO
- The Klamath River Inter-Tribal Fish and Water Commission incorporated information from the tribal ethnographic studies, in addition to information provided by the Hoopa Valley Tribe, into an integration report prepared by Dr. Thomas King in 2004.
- The entire length of the river was identified as a type of cultural or ethnographic landscape, termed the Klamath Riverscape, due to the relationship between the Klamath Tribes, Shasta, Karuk, Hoopa, and Yurok Tribes and the river and its resources.

## *First Salmon:*

### **The Klamath Cultural Riverscape and The Klamath River Hydroelectric Project**



By Thomas F. King  
for the  
Klamath River Intertribal Fish and Water Commission  
March 25, 2004

# *FERC Relicensing – Klamath Cultural Riverscape*

- Cultural character includes:
  - Natural and cultural elements such as the river itself
  - Anadromous and resident fish
  - Other wildlife and plants
  - Cultural sites, uses, and perceptions of value by the tribes
- Recommended eligible for the National Register based on its association with broad patterns of tribal environmental stewardship, spiritual life, and relationships between humans and the non-human world.
- The Klamath Cultural Riverscape report and eligibility determination has not been submitted by a Federal agency to the Oregon and California SHPOs for National Register eligibility concurrence.



## *FERC Relicensing – Historic Property Management Plan (HPMP)*

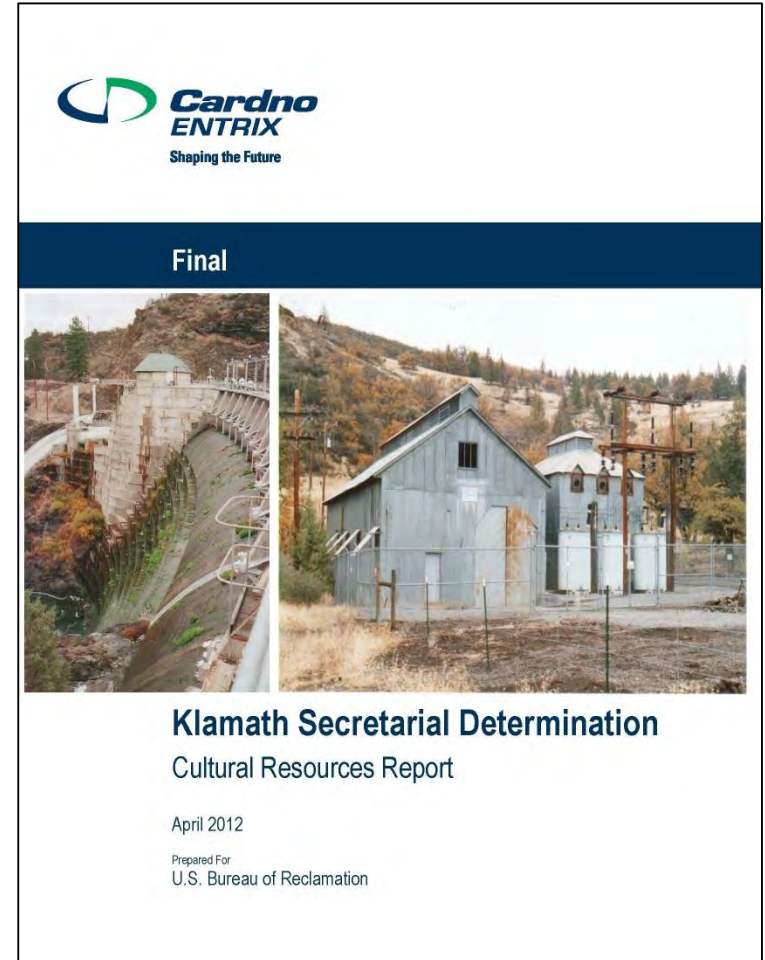
- PacifiCorp prepared a Draft HPMP to address relicensing but it was not finalized. Proposed measures included:
  - Maintain historic hydroelectric facility integrity
  - Protect archaeological resources
  - Protect Traditional Cultural Properties
- The Draft HPMP will be amended and revised for the Lower Klamath Project to reflect dam removal
  - Management, treatment, protection, and mitigation measures for National Register eligible resources.

# Bureau of Reclamation and CA Fish and Game EIS/EIR and Secretarial Determination

2012 Cultural Resources Study

# 2012 Bureau of Reclamation Secretarial Determination

- Cardno ENTRIX updated the records search for the Klamath River corridor between Upper Klamath Lake and the Pacific Ocean.
- No new cultural resources survey conducted.
- Used existing information and NRHP recommendations from 2004 PacifiCorp report for FERC Relicensing study.



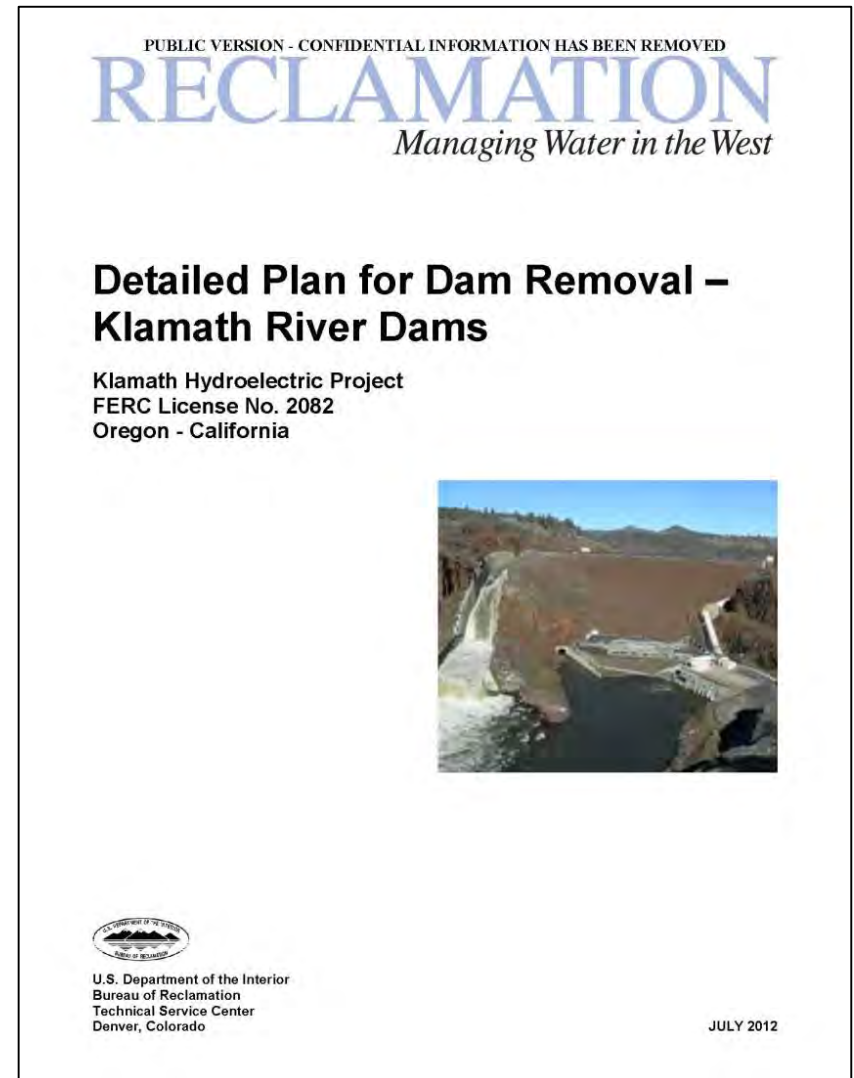


# Bureau of Reclamation Detailed Plan

## 2012 Cultural Resources Mitigation Measures

# 2012 Bureau of Reclamation Detailed Plan

- Addressed two alternatives:
  - Full dam removal
  - Partial dam removal
- Includes detailed dam removal plans:
  - Removal limits
  - Reservoir drawdown and streamflow diversion plans
  - Proposed demolition methods and schedule
  - Recreation facilities removal
  - Reservoir restoration
  - Construction cost estimates



# Detailed Plan - Mitigation Measure CHR-1

## Klamath Hydroelectric Project

- Outline an approach for addressing avoidance, minimization, and mitigation measures for the removal of the dams and other dam-related facilities listed or eligible for the National Register.
- Update the Klamath Hydroelectric Project Request for Determination of Eligibility (Kramer 2003) to include Iron Gate as a historic property.
- Reach a consensus on the eligibility determination for KHHD, contributing elements, and other dam facilities; and
- Documentation of the KHHD, including the four dams and associated facilities and structures, in accordance with the NPS HABS/HAER/HALS standards.

## Detailed Plan - Mitigation Measure CHR-2

### Archaeological Resources

- Outline an approach for addressing known historic properties (non-KHHD historic properties) and cultural resources within the APE and as yet unidentified historic properties and cultural resources.
- Identify and evaluate cultural resources for eligibility; develop measures to avoid, minimize, or mitigate adverse effects to historic properties; and
- Develop Plans:
  - Historic Context and Research Design
  - Treatment Plans
  - Programmatic Agreement
  - Inadvertent Discovery Plan
  - Site Monitoring Plan
  - Cultural Resources Monitoring Plan
  - Memorandum of Understanding regarding consultations and involvement of Indian tribes, Native American organizations, and other interested parties.

## Detailed Plan - Mitigation Measure CHR-3

### TCPs, Cultural Landscapes, and Klamath Cultural Riverscape

- Outline an approach for identifying and evaluating TCPs and cultural landscapes for eligibility for listing on the National Register and/or California Register, and seeking ways to avoid, minimize or mitigate adverse effects to such resources.
- Conduct further research, including ethnographic research, and consultation with consulting and interested parties to identify and evaluate the potential eligibility for listing on the National Register identified TCPs or the Klamath Cultural Riverscape, as a landscape or TCP; and
- Develop a Cultural Resources Management Plan for the Klamath Cultural Riverscape if it is found eligible for listing on the National Register.

## Detailed Plan - Mitigation Measure CHR-4

### Treatment of Human Remains

- Add stipulations and appendices to cover exposure, management, disposition, and treatment of human remains.
- Consult with Indian Tribes and other Indian organizations on identification, treatment, disposition, and management of prehistoric or historic human remains exposed and/or impacted by the dam removal, developing protocols or agreement documents as needed.
- Identify and consult with appropriate individuals and parties on identification and disposition of historic era human remains; and
- Prepare and implement a Plan of Action and Inadvertent Discovery Plan for the management, consultation, treatment, and disposition of human remains.

# Next Steps

6



## Next Steps

Priority Task	Description
1. Definition of the APE	<ul style="list-style-type: none"> <li>Primary topic for CRWG Meeting in October</li> <li>Geographic extent</li> <li>Direct vs. Indirect APE</li> </ul>
2. Tribal Participation in the CRWG	<ul style="list-style-type: none"> <li>CA NAHC Commission List identified 30 contact groups in CA between stateline and river mouth</li> <li>OR Commission on Indian Affairs – Klamath Tribe</li> <li>Bureau of Indian Affairs participation in CRWG</li> </ul>
3. NRHP Eligibility	<ul style="list-style-type: none"> <li>Identify and provide information that SHPOs need to reach eligibility decisions for archaeological sites, dam complexes, and downriver resources</li> </ul>
4. Memorandum of Agreement (MOA)	<ul style="list-style-type: none"> <li>Develop MOA for HABS/HAER documentation of built environment resources</li> </ul>
5. Programmatic Agreement (PA)	<ul style="list-style-type: none"> <li>Identify process for streamlining PA development to meet Project schedule</li> <li>Begin preparation of treatment plans, inadvertent discovery plan, site monitoring plan, cultural resources management plan</li> </ul>
6. CRWG Communications Protocol and Recordkeeping	<ul style="list-style-type: none"> <li>AECOM to develop a draft protocol and circulate to CRWG before the next group meeting</li> </ul>



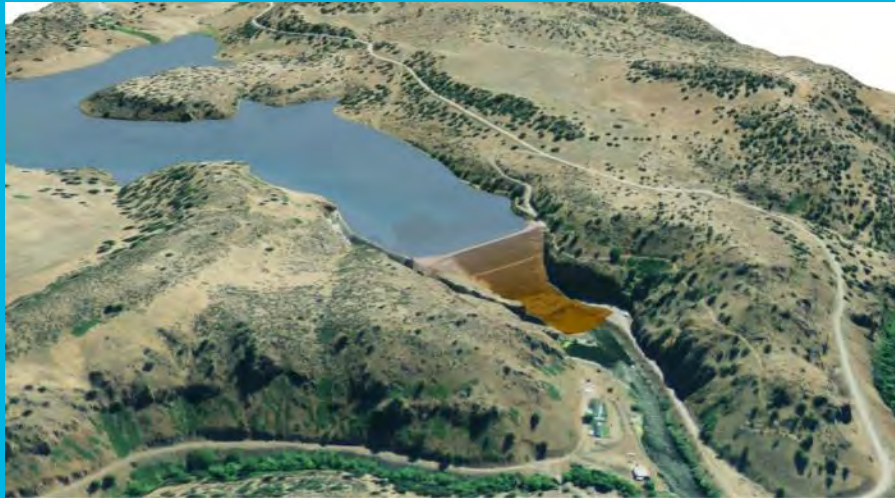
## Previously Defined APEs

Reference	Description
<p>PacifiCorp 2004</p> <p>(License Application Exhibit E Page 6-33)</p>	<ul style="list-style-type: none"> <li>• All proposed Project hydropower facilities, recreation sites, proposed wildlife enhancement lands, and river reaches between Project developments.</li> <li>• Fieldwork Inventory Corridor – rim to rim.</li> </ul>
<p>PacifiCorp 2006 Revised APE</p> <p>(FERC 2007 EIS/EIR (Page 3-539)</p>	<ul style="list-style-type: none"> <li>• Based on proposal to decommission East Side and West Side developments and to remove Keno development from the project.</li> <li>• Excluded Keno reservoir, the Klamath River from Keno reservoir to the head of J.C. Boyle reservoir, and the river reach from just below J.C. Boyle powerhouse to the Oregon-California state line.</li> </ul>
<p>FERC 2007 EIS/EIR</p> <p>(Page 3-551)</p>	<ul style="list-style-type: none"> <li>• Entirety of the APE as delineated by PacifiCorp in 2004 and that portion of the Klamath River reach from Iron Gate to the mouth.</li> </ul>
<p>Bureau of Reclamation 2012 EIS/EIR</p> <p>(Section 3.13.1 Area of Analysis)</p>	<ul style="list-style-type: none"> <li>• The Klamath River from the outlet at Keno Dam to the river's outlet at the Pacific Ocean and extending outward for 0.5 miles from each bank of the river, plus a 0.5-mile-wide corridor from the high water mark surrounding each of the four reservoirs, and all four dams and associated facilities.</li> </ul>

## *Visit the KRRC Website for Document Links*

- <http://www.klamathrenewal.org/resources/>
  - Klamath River Dam Removal Fact Sheet
  - 2016 Amended KHSA
  - KRRC Bylaws
  - Department of Interior Klamath Restoration Website
    - 2012 Environmental Impact Statement
  - KRRC License Surrender Application to FERC including Exhibits – September 23, 2016
  - PacifiCorp/KRRC License Transfer Application to FERC including Exhibits – September 23, 2016
  - Detailed Plan for Dam Removal Parts 1 and 2
  - Klamath Dam Removal Overview Report for the Secretary of the Interior
- FERC Docket # P-14803
- All pre-2016 FERC documents associated with Docket # P-2082

# Questions and Answers





# Klamath River Renewal Project

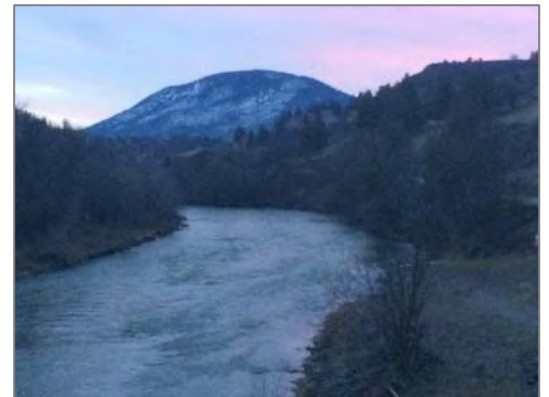
Cultural Resources Working Group

Proposed Area of Potential Effects Meeting

December 14, 2017

# Agenda

1. Introductions
2. Review of September 2017 CRWG meeting minutes
3. Proposed Area of Potential Effects (APE)
4. Questions and Answers
5. Concluding Remarks





# Introductions

1



# CRWG - Participants

Organization	Representative
KRRC	Mark Bransom
PacifiCorp	Russ Howison
AECOM	Elena Nilsson, Mike Kelly, Kirk Ranzetta, Burr Neely, Seth Gentzler, Shannon Leonard
CDM Smith	Kate Stenberg
CA Office of Historic Preservation	Anmarie Medin, Kathleen Forrest, and Brendon Greenaway
OR Office of Historic Preservation	Dennis Griffin and Jessica Gabriel
Bureau of Land Management	Eric Ritter and Aldon Neel, Redding Laird Naylor, Klamath Falls
U.S. Forest Service	Jeannie Goetz, Klamath National Forest



Office of Historic  
Preservation



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**HISTORY**  
*Discovery*



**US Army Corps  
of Engineers.**



# Review of September 2017 Meeting Minutes





# Proposed Area of Potential Effects

3



# APE Definition and Terms

Term	Description
Area of Potential Effects (APE)	<ul style="list-style-type: none"> <li>The geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist (36 CFR 800.16(d)).</li> <li>Determined by lead federally agency (FERC) through consultation</li> </ul>
Study Area	<ul style="list-style-type: none"> <li>Broad area for literature review, prehistoric and historic context, ethnographic regions that may cover much larger areas outside of the APE</li> <li>The length of the Klamath River from the highest reach of the J.C. Boyle Reservoir downstream to Humbug Creek (83 river miles) and a 0.5-mile wide zone extending on either side of the reservoir shorelines (J.C. Boyle, Copco Lake, and Iron Gate Reservoir) or from the center point of the Klamath River in areas where flowing river exists.</li> </ul>
Project Area	<ul style="list-style-type: none"> <li>Sometimes referred to as the “direct APE”. Also called the “Project Limits of Work and Access” as defined on maps included with the 2017 “Klamath River Renewal Project CEQA and California and Oregon 401 Water Quality Certifications Technical Support Document” (AECOM 2017).</li> </ul>
FERC Project Boundary	<ul style="list-style-type: none"> <li>The jurisdictional limits of FERC. Located entirely within the APE. For this Project, the FERC Project Boundary refers to the limits of the Klamath Hydroelectric Project (FERC Project No. 2082).</li> </ul>

# Comparative Context

## Elwha River Restoration Project, Olympic Peninsula, Washington



*Mitigation Measures for downstream effects*

*Consideration of Historic Buildings, Archaeological Sites, and Cultural Practices*

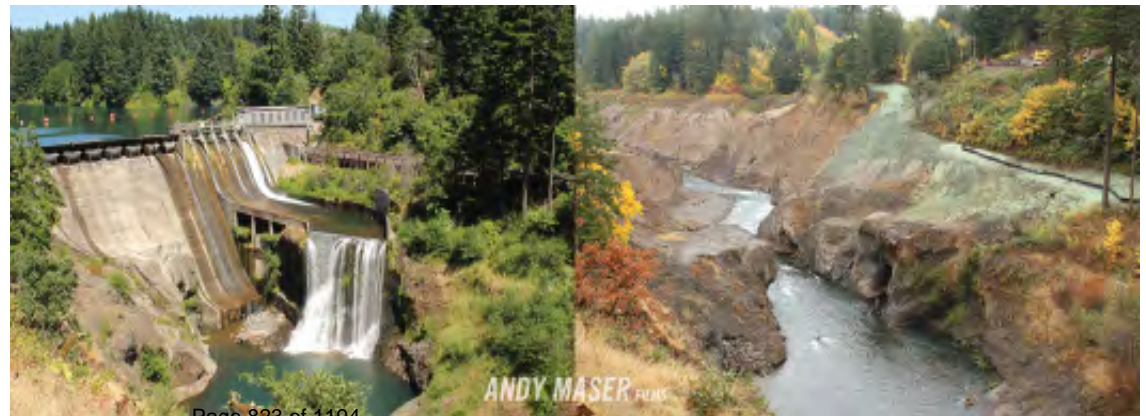
*Acknowledgement of access to archaeology sites post-dam removal*

## Condit Dam Removal Project, Washington

*Historic Properties Management Plan*

*Included canyon downstream to mouth*

*Consideration of Adverse Effects on Setting*



## Previous APEs

Reference	APE Description
<p>PacifiCorp 2004</p> <p>(License Application Exhibit E Page 6-33; PacifiCorp 2004:121-122)</p>	<ul style="list-style-type: none"> <li>• <u>PacifiCorp APE</u>: All lands within the FERC Project boundary under the existing license, all lands within the PacifiCorp proposed FERC Project boundary for the new license, and river reaches below each Project development. Included proposed Project hydropower facilities, recreation sites, proposed wildlife enhancement lands, and river reaches between Project developments.</li> <li>• <u>Cultural Resources Working Group (CRWG) APE</u>: Included the FERC Project boundary, riparian and hydrologically connected areas along Project-affected reaches, and culturally sensitive lands within the Klamath River Canyon from ridgetop to ridgetop (rim to rim).</li> <li>• <u>PacifiCorp and CRWG Compromise</u>: Field Inventory Corridor (FIC) studied instead of an APE. FIC covered the area between the outlet of Upper Klamath Lake (River Mile [RM] 254.7) downstream to approximately 1 mile southwest of the Iron Gate dam (RM 189.2).</li> <li>• Downriver tribes (primarily Karuk and Yurok) felt the APE should be more broadly defined to extend from Iron Gate down to the mouth of the Klamath River (at the Pacific Ocean) due to potential Project effects on salmon fisheries and other (non-archaeological) cultural resources along the Klamath River corridor (PacifiCorp 2004:121-122).</li> </ul>

## Previous APEs, continued

Reference	APE Description
PacifiCorp 2006 Revised APE  (FERC 2007 EIS/EIR (Page 3-539)	<ul style="list-style-type: none"><li>• Based on proposal to decommission East Side and West Side developments and to remove Keno development from the project.</li><li>• Excluded Keno reservoir, the Klamath River from Keno reservoir to the head of J.C. Boyle reservoir, and the river reach from just below J.C. Boyle powerhouse to the Oregon-California state line.</li></ul>
FERC 2007 EIS/EIR (Page 3-551)	<ul style="list-style-type: none"><li>• Entirety of the APE as delineated by PacifiCorp in 2004 and that portion of the Klamath River reach from Iron Gate to the mouth.</li></ul>
Bureau of Reclamation 2012 EIS/EIR (Section 3.13.1 Area of Analysis)	<ul style="list-style-type: none"><li>• The Klamath River from the outlet at Keno Dam to the river's outlet at the Pacific Ocean and extending outward for 0.5 miles from each bank of the river, plus a 0.5-mile-wide corridor from the high water mark surrounding each of the four reservoirs, and all four dams and associated facilities.</li></ul>



# *Proposed Area of Potential Effects*

- APE
  - Upstream end J.C. Boyle Reservoir (RM 233) to Pacific Ocean (RM 0)
  - Consistent with Previous Agency APE Definitions (FERC, BOR)
  - **Subarea 1** defined as limits of work and access where direct impacts are likely to occur
- “Riverscape” Concept
  - Based on King (2004), using data compiled for Klamath River Intertribal Fish and Water Commission by or on behalf of the Yurok, Karuk, Shasta, and Hupa Tribes
  - Capture idea of “rim-to-rim” within the proposed APE
  - “Riverscape” report and evaluation of a Specific Property
  - Landscape level perspective allows consideration of potential effects on cultural practices, Traditional Cultural Properties (TCPs), Indian Sacred Sites, and Archaeological and Historical Sites/Districts (including linear features)
- Level of Effort
  - Entire APE subject to literature review, identification of known resources
  - Subarea 1: Focus of fieldwork, identification/evaluation reports, and mitigation measures

## Subarea 1 Components

- Existing Dam Facilities and Other Components:
  - J.C. Boyle Area
    - Reservoir, Dam (and features, such as fish ladder, spillway gates), Disposal Site, Diversion Pipe, Timber Bridge, North and South Residences, Warehouse and Storage Shed, Canal (including head gate, forebay, and spillway), Surge Tank, Penstocks, Powerhouse, Substation, Maintenance Building, and Staging Areas, Access Routes (removal and restoration), and Recreation Area Removal.
  - Copco No. 1 Area
    - Copco Lake, Dam (and features), Powerhouse, Building, North and South Residences, Maintenance Building, Disposal Site, Staging Area, Cut Area, Switchyard, Recreation Facilities, Temporary Barge Access Improvement Area, and Culverts.
  - Copco No. 2 Area
    - Dam, Wood-Stave Penstock, Powerhouse, Control Building, Maintenance Building, Copco Village (~15 Structures and Water Tank), Daggett Road Bridge, Staging Areas, and Fill Areas.
  - Iron Gate Area
    - Reservoir, Dam (and features), Powerhouse, Fish Ladder and Fish Holding Facilities, Aerator, Spillway Fill, Residences, Storage Barn, Fish Hatchery, Cut and Fill Areas, Staging Area, Disposal Site, City of Yreka water supply pipeline, Lakeview Road Bridge, Recreation Facilities, Bridges, Access Routes, and Culverts.

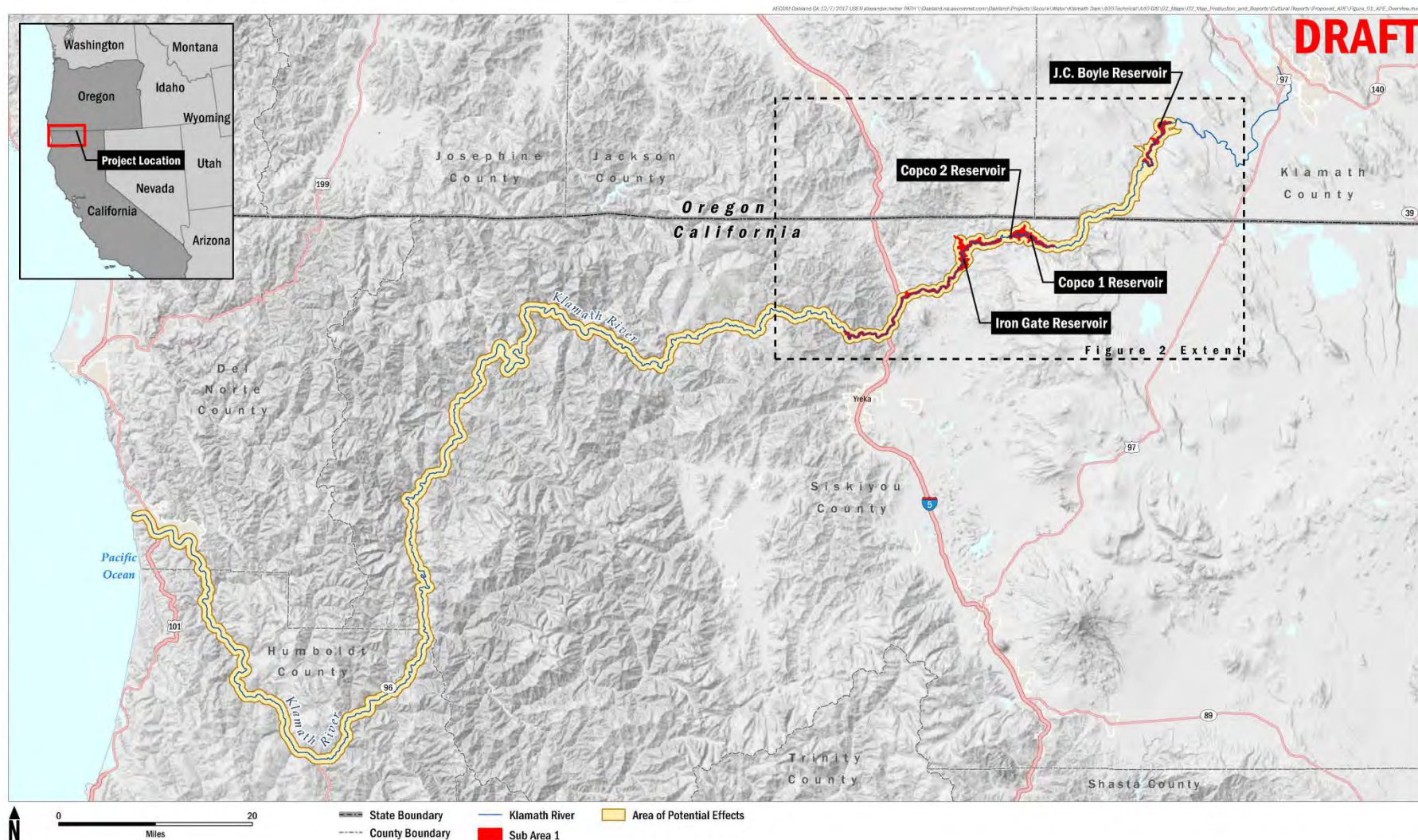
## *Subarea 1 Components, Continued.*

- **Isolated Areas**

- Altered 100-Year Floodplain (determined by FEMA, in progress)
  - Downstream Structures
    - ~53 existing structures in 100-year floodplain between Iron Gate Dam and Humbug Creek
    - Central Oregon and Pacific Railroad Bridge (between Ager Road Bridge and Cottonwood Creek)
    - Pedestrian Bridge #1 (Cedar Gulch) and #2 (near Klamath River County Estates)
- Some roads will be improved (reggraded, widened) or subject to road surface maintenance at various phases throughout the project for the purpose of construction access and road rehabilitation.

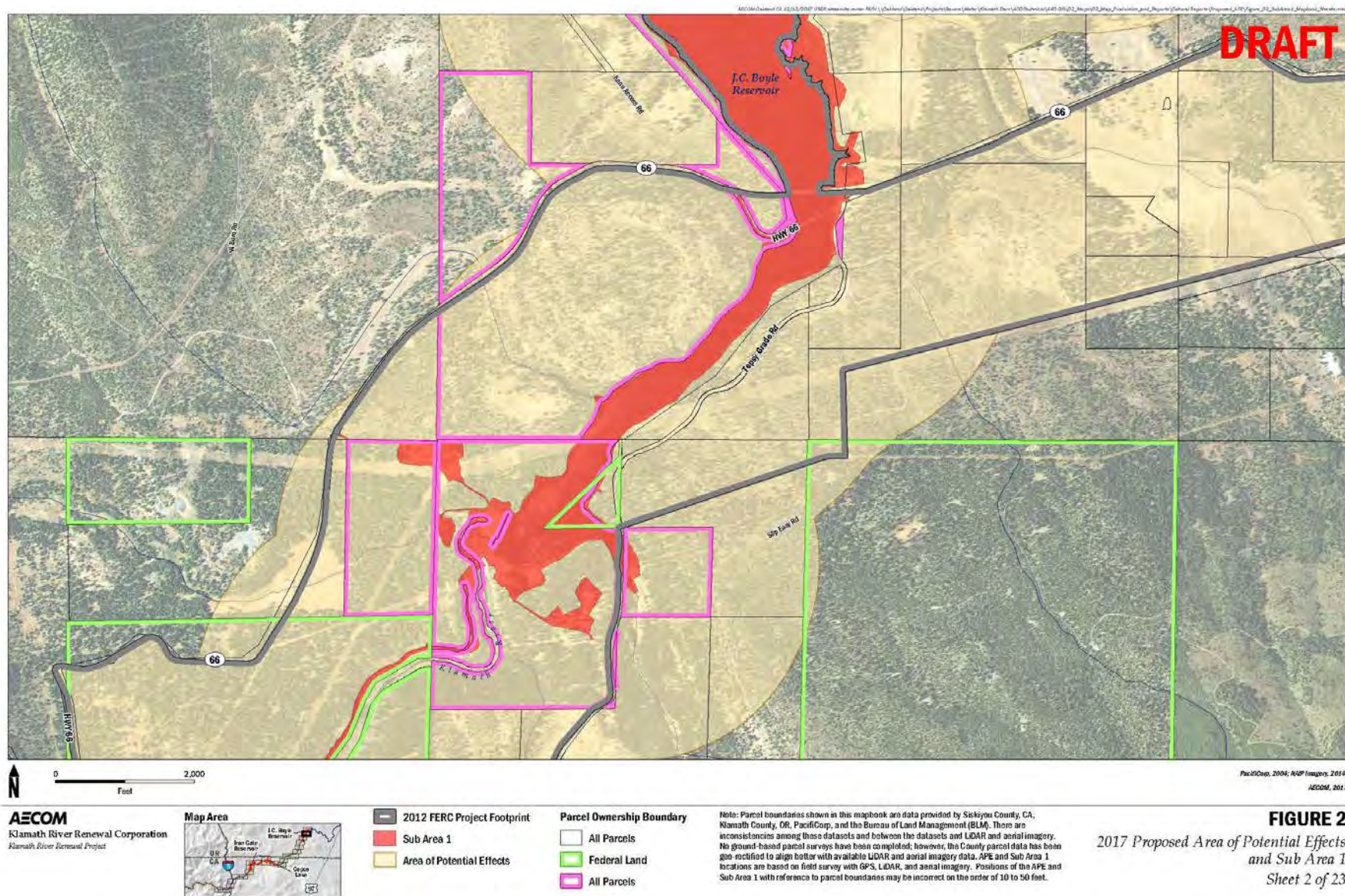


# Proposed APE, Area Overview



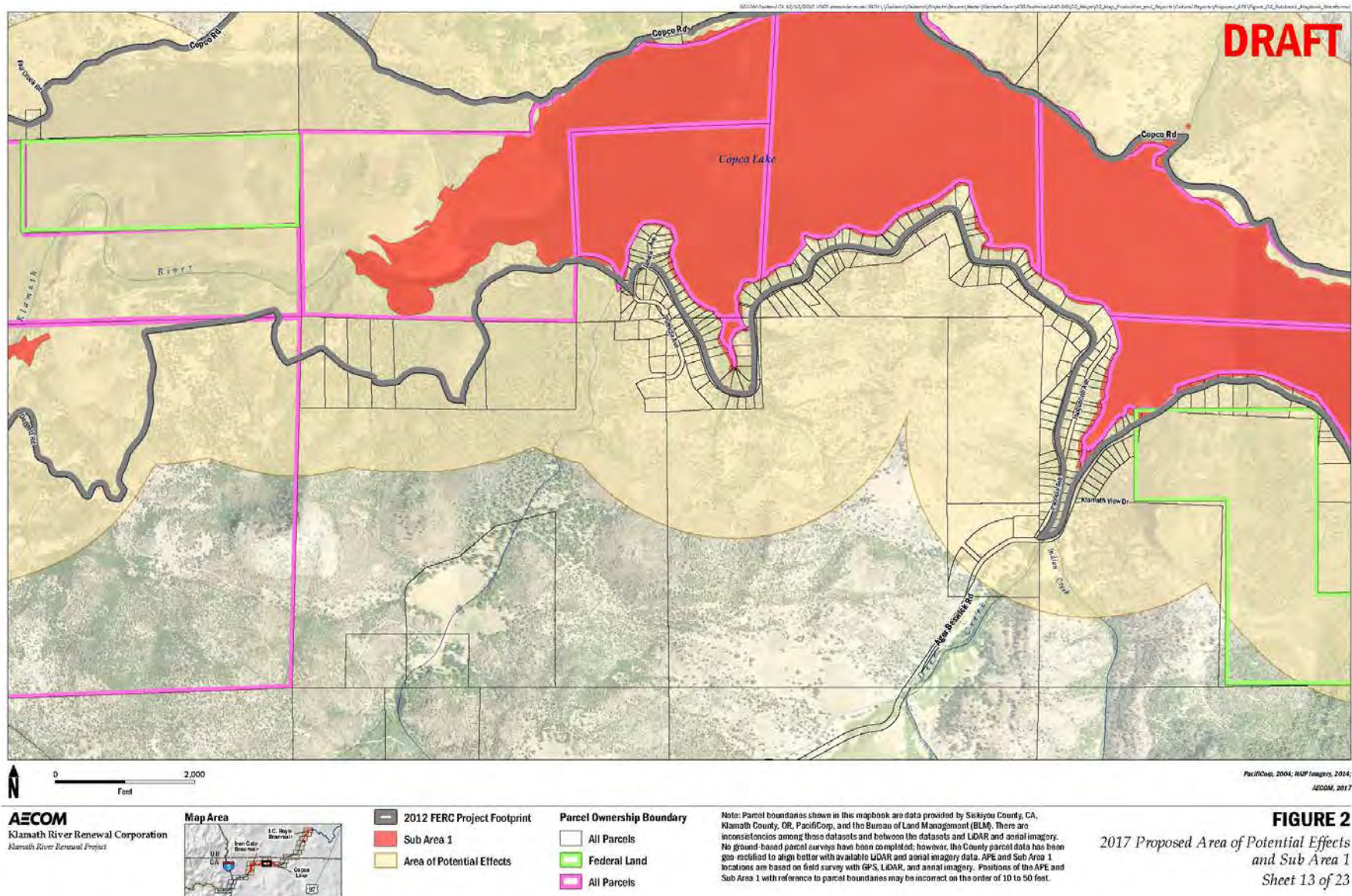


# Proposed APE, J.C. Boyle Reservoir Area Example





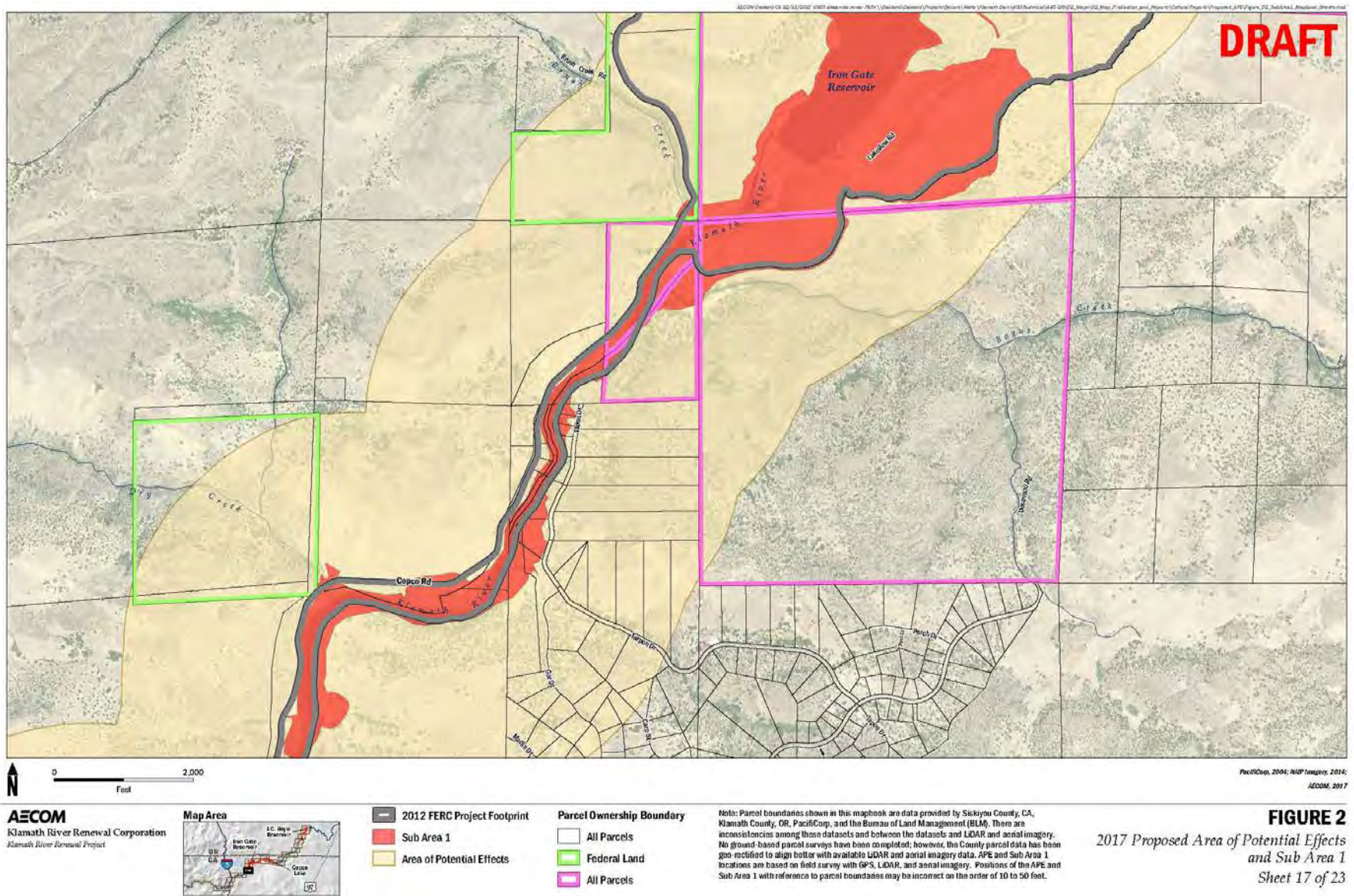
# Proposed APE, Copco Lake Area Example



**FIGURE 2**  
2017 Proposed Area of Potential Effects  
and Sub Area 1  
Sheet 13 of 23

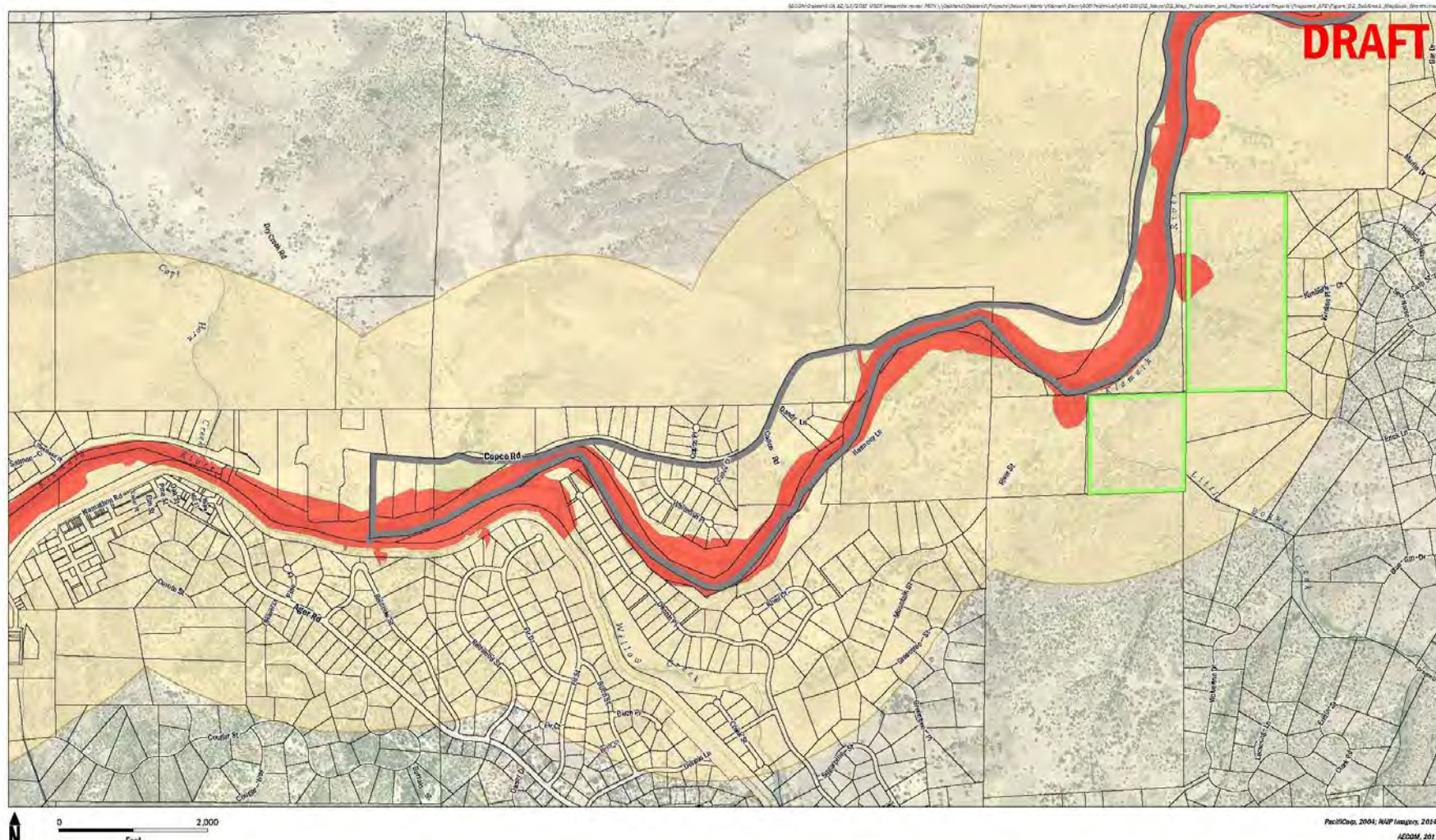


# Proposed APE, Iron Gate Reservoir and Altered 100-Year Floodplain Area Example





# Proposed APE, Altered 100-Year Floodplain Area Example



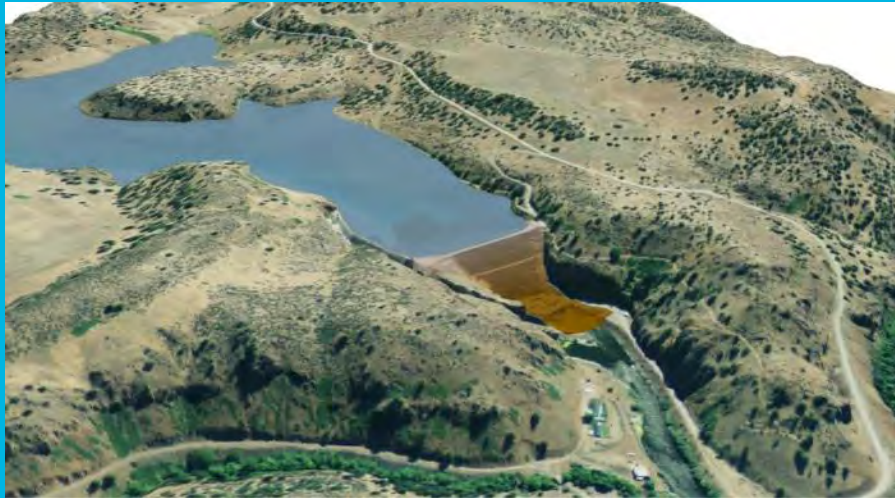
**AECOM**  
Klamath River Renewal Corporation  
Klamath River Renewal Project



**FIGURE 2**  
2017 Proposed Area of Potential Effects  
and Sub Area 1  
Sheet 18 of 23



# Questions and Answers



## Concluding Remarks and Discussion

- Historic District vs. Multiple Property Approach for Dam Facilities
- Tribal Participation in the CRWG
  - Invitation letter being sent to Klamath, Shasta, Karuk, Hoopa, and Yurok Tribes and THPOs for a February 2018 meeting to initiate non-formal consultation and invite participation in the CRWG
- Next CRWG meeting
  - Late January/early February 2018
  - Possible in-person CRWG meeting in March 2018 to include tribes and THPOs
  - Frequency of meetings
- KRRRC has prepared a CEQA and California and Oregon 401 Water Quality Certifications Technical Support Document for California State Water Resources Control Board (SWRCB) and Oregon Department of Environmental Quality (ODEQ) that contains latest available technical and field information:
  - Existing feature descriptions, field and technical assessments, reservoir drawdown & diversion plan, dam removal plans, reservoir and other restoration, other project components, and mitigation measures
  - [https://www.waterboards.ca.gov/waterrights/water\\_issues/programs/water\\_quality\\_cert/lower\\_klamath\\_ferc14803.shtml](https://www.waterboards.ca.gov/waterrights/water_issues/programs/water_quality_cert/lower_klamath_ferc14803.shtml)
  - [https://www.waterboards.ca.gov/waterrights/water\\_issues/programs/water\\_quality\\_cert/docs/lower\\_klamath\\_ferc14803/20170929\\_krrc\\_tech\\_report.pdf](https://www.waterboards.ca.gov/waterrights/water_issues/programs/water_quality_cert/docs/lower_klamath_ferc14803/20170929_krrc_tech_report.pdf)

## ***Concluding Remarks and Discussion***

- Please provide comments regarding the APE to Elena by January 19, 2018 ([elena.nilsson@aecom.com](mailto:elena.nilsson@aecom.com))
- Comments will be compiled and distributed to the CRWG by January 26, 2018





# Klamath River Renewal Project

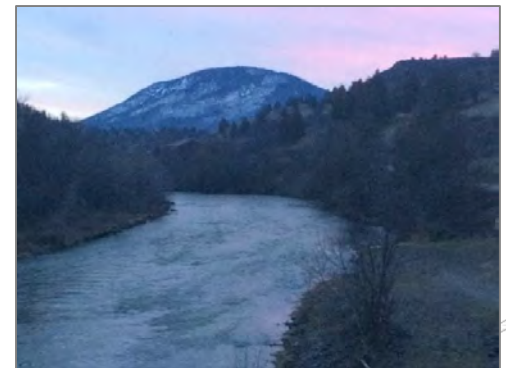
Cultural Resources Working Group Meeting

March 15, 2018



# Agenda

1. Introductions
2. Minutes Review
3. Tribal Consultation Update
4. Project Timeline
5. MOA and Submittals Discussion
6. Communications Protocol
7. Questions and Next Steps





# 1 – Introductions

# CRWG - Invited Participants

Organization	Representative
KRRC	Mark Bransom
PacifiCorp	Russ Howison
AECOM	Elena Nilsson, Mike Kelly, Kirk Ranzetta, Burr Neely, Seth Gentzler, and Shannon Leonard
CDM Smith	Kate Stenberg
CA Office of Historic Preservation	Anmarie Medin, Kathleen Forrest, and Brendon Greenaway
OR Office of Historic Preservation	Dennis Griffin and Jessica Gabriel
Bureau of Land Management	Eric Ritter and Alden Neel, Redding Laird Naylor and Sara Boyko, Klamath Falls
U.S. Forest Service	Jeannie Goetz, Klamath National Forest



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**HISTORY**  
*Discovery*





## 2 – Review of December 2017 Meeting Minutes





# 3 – Tribal Consultation Update

# Tribal Consultation Update

- **January 2018**
  - KRRC sent letters to 25 Tribes (Chairperson and THPOs) in northern California and southern Oregon requesting participation in informal consultation and a Project Introduction Meeting
    - Native American Heritage Commission (NAHC), Oregon Indian Commission, FERC mailing list, State of CA Natural Resources Agency list
- **March 2018**
  - 8 Tribes have accepted:
    - Karuk Tribe, Klamath Tribes, Modoc Tribe of Oklahoma, Quartz Valley Rancheria, Shasta Indian Nation, Shasta Nation, Cher'Ae Heights of the Trinidad Rancheria, and Yurok Tribe
- **Project Introduction Meeting - April 6, 2018 in Yreka, California**
  - Review Project and previous cultural resources studies conducted
  - FERC informal consultation process and current goals
  - Overview of Cultural Resources Working Group (CRWG) and invite participation
  - Next steps for tribe-specific informal consultation

# FERC Scoping Meetings with Tribes

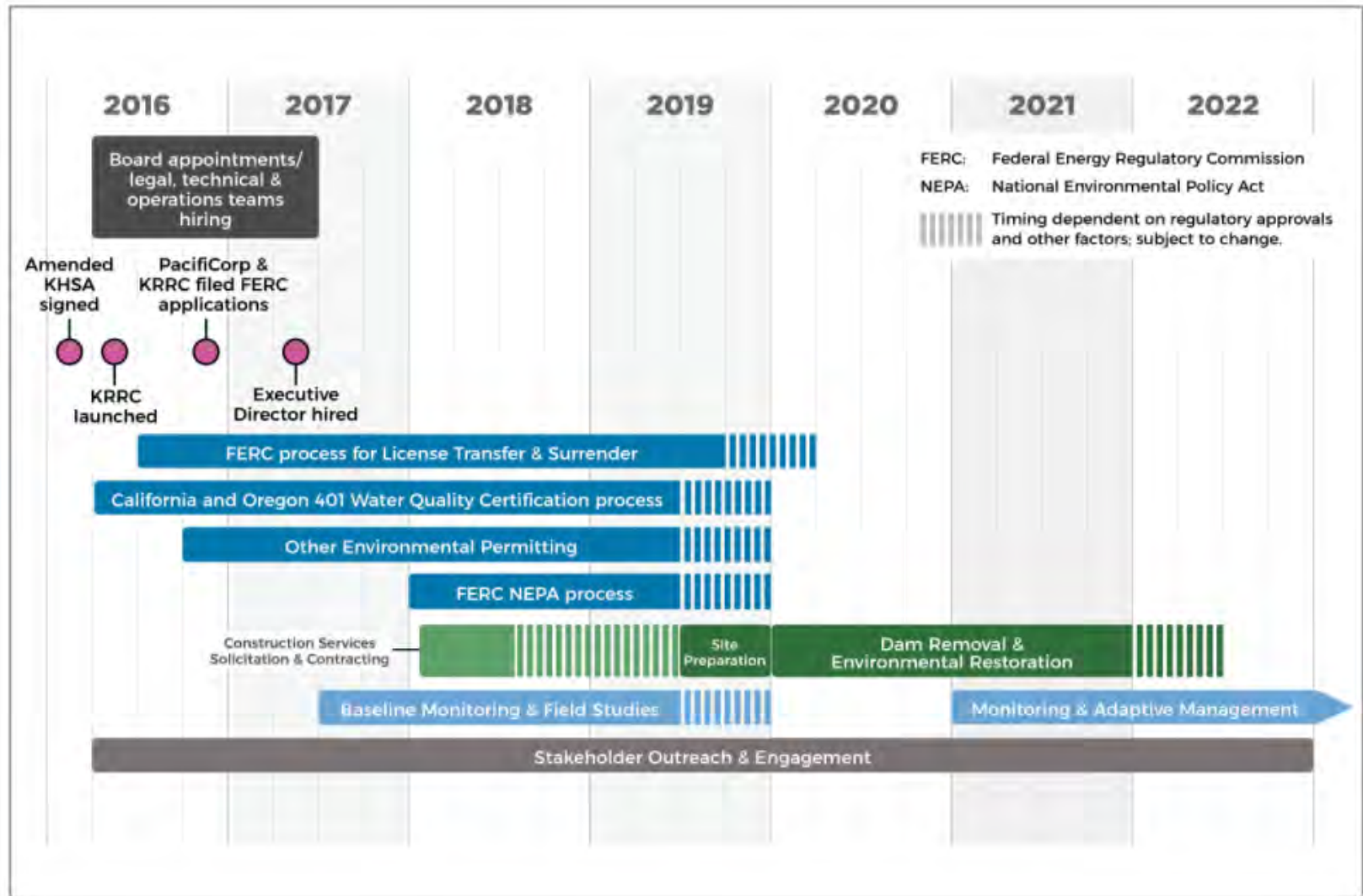
- **FERC invited participation of federally-recognized Tribes in proceedings for:**
  - license amendment to remove 4 dams from the Klamath Hydroelectric Project (FERC #2082)
  - application to transfer the 4 dams from PacifiCorp to KRRC, creating the Lower Klamath Project (FERC #14803)
- **FERC meetings held in January and February 2018**
  - Hoopa Valley Tribe, Karuk Tribe, Klamath Tribes, Modoc Tribe of Oklahoma, Quartz Valley Rancheria, and Yurok Tribe
  - Meeting transcripts are available in the FERC Docket, or AECOM has pdf versions.
- **FERC Staff:**
  - Elizabeth Molloy, Tribal Liaison
  - Jennifer Polardino, Historian
  - Frank Winchell, Anthropologist/Archaeologist (2004 PacifiCorp CRWG)
  - Elizabeth McCormick, Office of General Council





# 4 – Project Timeline

# Project Timeline



# 2018 Near-Term Cultural Resource Work Plan

- **Tribal Consultation and CRWG Meetings (on-going)**
- **Current Activities (March/April)**
  - Detailed Data Gap Analysis
  - Expanded records search
  - Updated Context Statements
  - Field Planning
- **Field Investigations (April-Dec)**
  - Archaeology inventory and site records update
  - Hydro facilities update and built environment survey
  - Phase II Testing/Evaluation
- **HABS/HAER Fieldwork (Sept)**
  - Field Photography, Historic Report and Drawings/Plans
- **Reporting and Analysis (Sept-Dec)**
- **Ongoing Reporting and Planning (Jan-March 2019)**



# 5 – MOA and Submittals Discussion



# MOA and Submittals Discussion

- **MOA Fast Track Concept**
  - Create fast track for HABS/HAER mitigation based on current project timeline
    - Hydro facilities specific report/eligibility recommendations, concurrence review, MOA, initiate mitigation fieldwork
    - Targeted MOA ensures clarity of resources and level of effort agreement among all parties
    - Not only mitigation – Still Develop Programmatic Agreement (PA)
    - *If project schedule shifts, may not need fast track, build mitigation into PA*
- **2018 Submittals and Process Discussion**
  - APE description (with maps)
  - Technical reports for Hydro Facilities, Non-Hydro, and Archaeology
    - Will include eligibility recommendations for review and concurrence
    - Update and resubmit previous and new evaluations
  - Phase II Research Design
  - Phase II Evaluation Report
  - MOA (possibly) and Programmatic Agreement (PA)



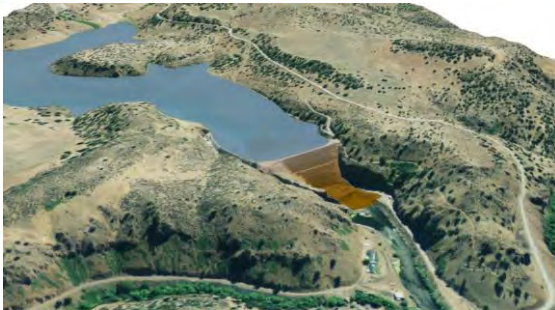
## 6 – Communications Protocol

# Communications Protocol

- Follow up on previous CRWG action item
- Draft communications protocol developed
- FERC and Tribal Involvement



# 7 – Questions and Next Steps



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# Next Steps

- **Next meeting in late April/early May**
  - Work schedule and deliverables
- **CRWG meeting schedule – monthly?**
  - Participation expectations



# Lower Klamath Project

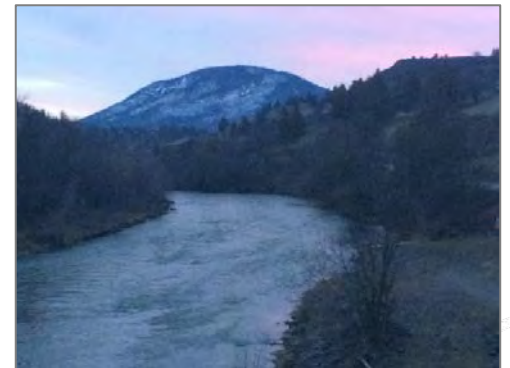
## Cultural Resources Working Group Meeting

August 14, 2018



# Meeting Agenda

1. Introductions
2. Project Status Report
3. APE Discussion
4. Review of 2017-2018 Fieldwork
5. Approach to Site Evaluations
6. Next Steps





# Introductions



# Project Status Report

# Project Status Topics

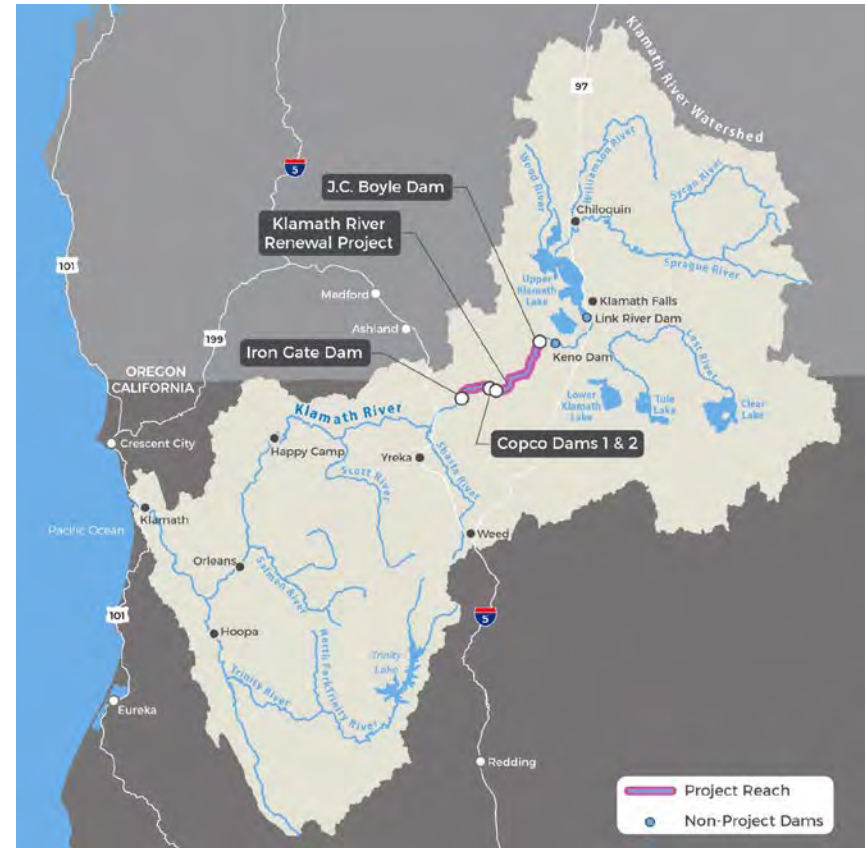
- **Project Overview**
- **Tribal Caucus**
- **Submittal of Definite Plan and FERC Engagement**
- **Update on Project Planning Components:**
  - Hatchery Modifications
  - City of Yreka Intake and Pipeline Replacement
  - Recreation Plan
  - Seed Collection
  - Restoration Plan

# Project Overview



# Project Map

- Project site includes dams and associated hydropower facilities at:
  - Iron Gate Dam
  - Copco No. 1 Dam
  - Copco No. 2 Dam
  - J.C. Boyle Dam
- Facilities are currently owned and operated by PacifiCorp





# Project Overview

## Goals:

- Facilities removal of 4 dams and appurtenant works, including hydropower facilities
- Achieve free-flowing condition and volitional fish passage
- Fully remediate and restore project area
- Implement measures to avoid or minimize adverse downstream impacts on
  - Water Quality
  - Flood Control
  - Water Supply

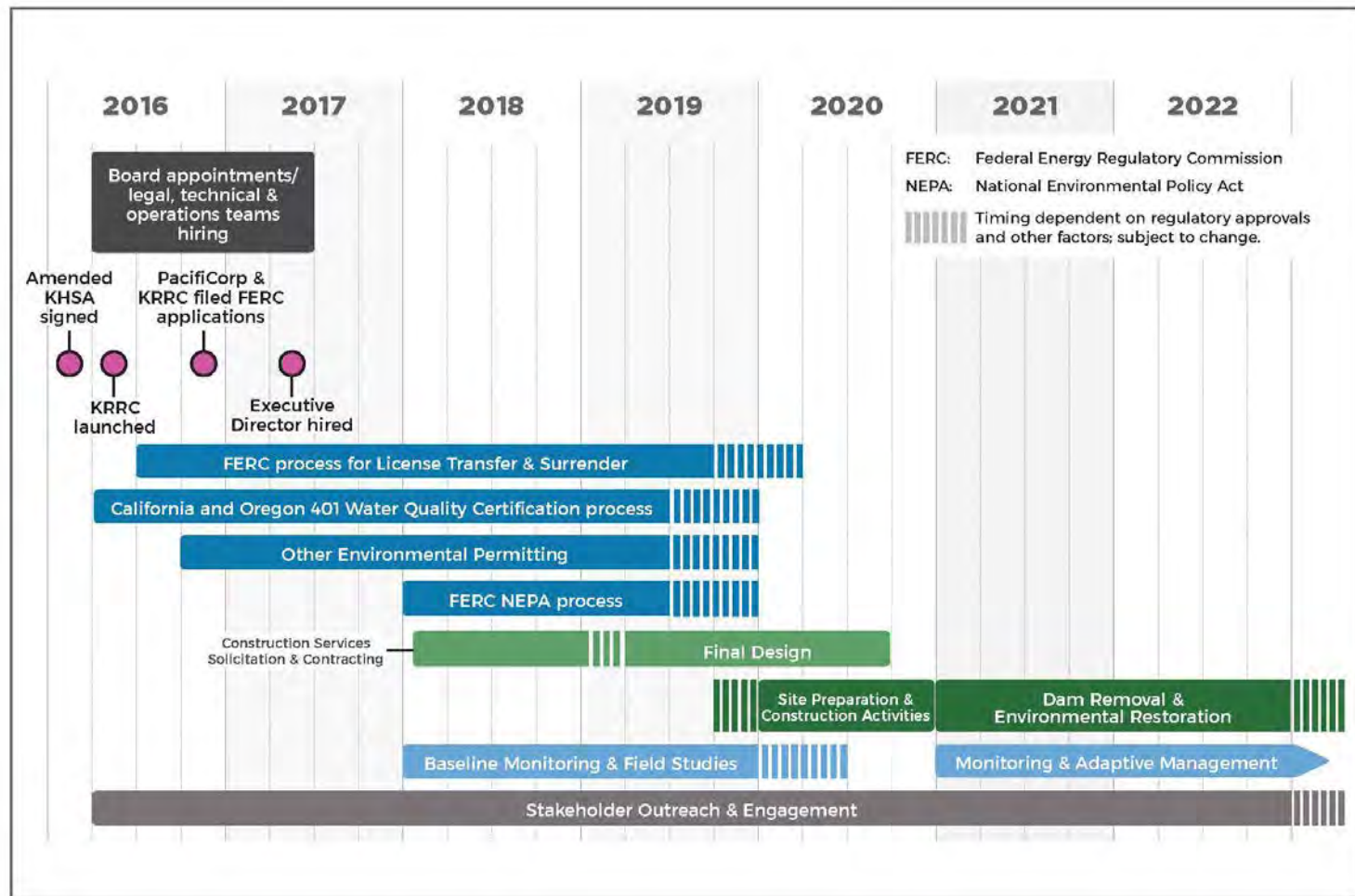


# Regulatory Approvals

<http://www.klamathrenewal.org/regulatory/>

Milestone	Status
KRRC applications to Federal Energy Regulatory Commission (FERC) and States in 2016	Submitted September 2016
FERC Transfer Order	3/15/18 Amendment to split license, and deferred decision on transfer; 5/14/18 stayed the initial request; transfer order still pending
FERC Surrender Order	Order still pending
Draft Environmental Impact Report (EIR) under California Environmental Quality Act (CEQA)	Draft expected fall 2018
CA & OR Draft Water Quality Certifications	June and July 2018
KRRC “Definite Plan” sent to FERC	June 28, 2018
KRRC will issue RFQ for dam removal and other activities; Final OR Water Quality Certification	September 2018
FERC National Environmental Policy Act (NEPA) process	Has not started
Tribal consultations	Ongoing

# Project Schedule



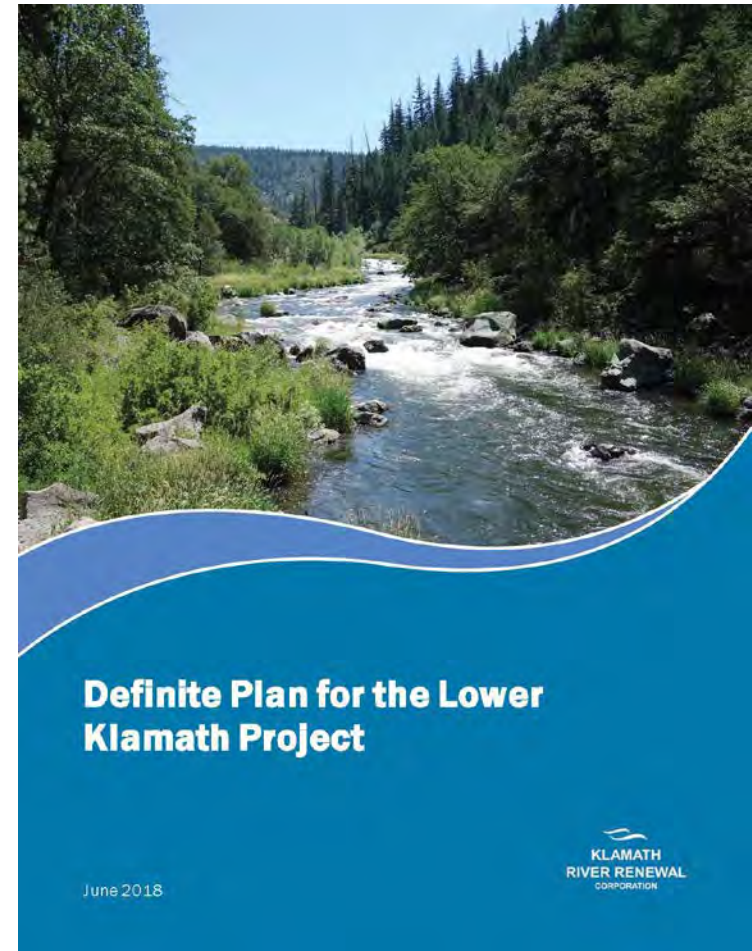
# Tribal Caucus

# Definite Plan and FERC Engagement



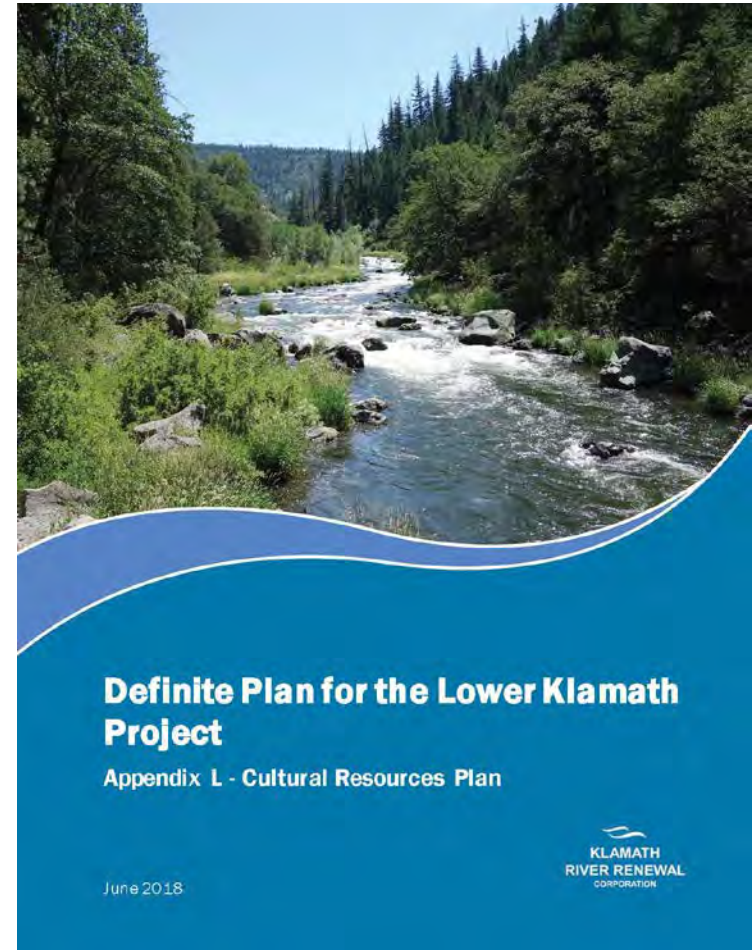
# Definite Plan

- KRRC filed the Definite Plan with FERC on June 28, 2018
- Plan provides comprehensive analysis and detail on project design, deconstruction, reservoir restoration, and other post deconstruction activities.
- KRRC also filed responses to FERC's requests for additional information, including requests in FERC's March 15, 2018 order, as a part of its regulatory review and approval process.



# Appendix L - Cultural Resources Plan

- Framework for understanding the cultural resources studies that KRRC has completed, those that are currently ongoing, and others that are anticipated to achieve regulatory requirements under Section 106 of the NHPA
- Provides responses to FERC's 2017 Additional Information Requests (AIR) regarding the status of consultation
  - to identify and evaluate cultural resources and develop measures to avoid, minimize, or mitigate potential adverse effects to historic properties;
  - with affected federally recognized and non-federally recognized tribes
- Lays out how KRRC intends to coordinate federal Section 106 compliance with State of California requirements under California Assembly Bill (AB) 52.



# Project Components Update



# Hatchery Modifications

## Iron Gate Hatchery

- Iron Gate hatchery will continue operations for Chinook smolt
- Riparian water right on Bogus Creek will be registered
- Bogus Creek water diversion will be evaluated under CEQA and in consultation with NMFS and CDFW
- Water supply modifications would occur on the current hatchery footprint

## Fall Creek Hatchery

- Hatchery will reopen for coho and Chinook yearling production
- New circular tanks in the current hatchery footprint
- New settling pond and discharge point for Fall Creek is being evaluated



# Iron Gate Hatchery Modifications

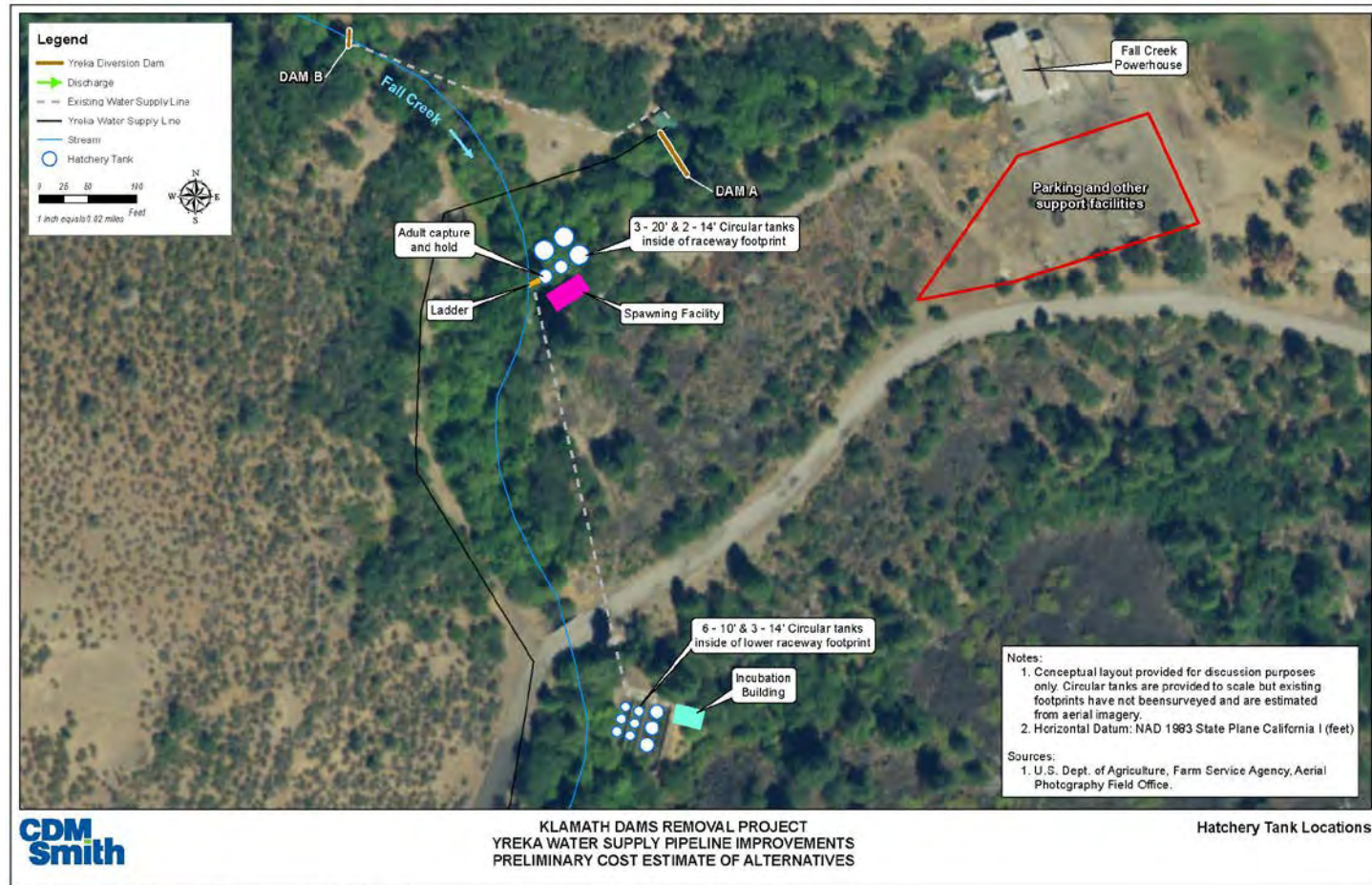


# Iron Gate Hatchery – Cultural Resources

- Reported ethnographic village as noted by Merriam (1907); location of an ethnohistoric period ranch
- IGH surveyed for cultural resources in 2003 by PacifiCorp, but no cultural site was noted. Extensive disturbance (leveling, excavation, and fill material) when hatchery was constructed in the 1960s
- Hatchery modifications will include subsurface disturbance and have the potential to reveal buried cultural deposits if they still exist.
- Hatchery built environment is also being evaluated for the NRHP.



# Fall Creek Hatchery Modifications – Powerhouse Area

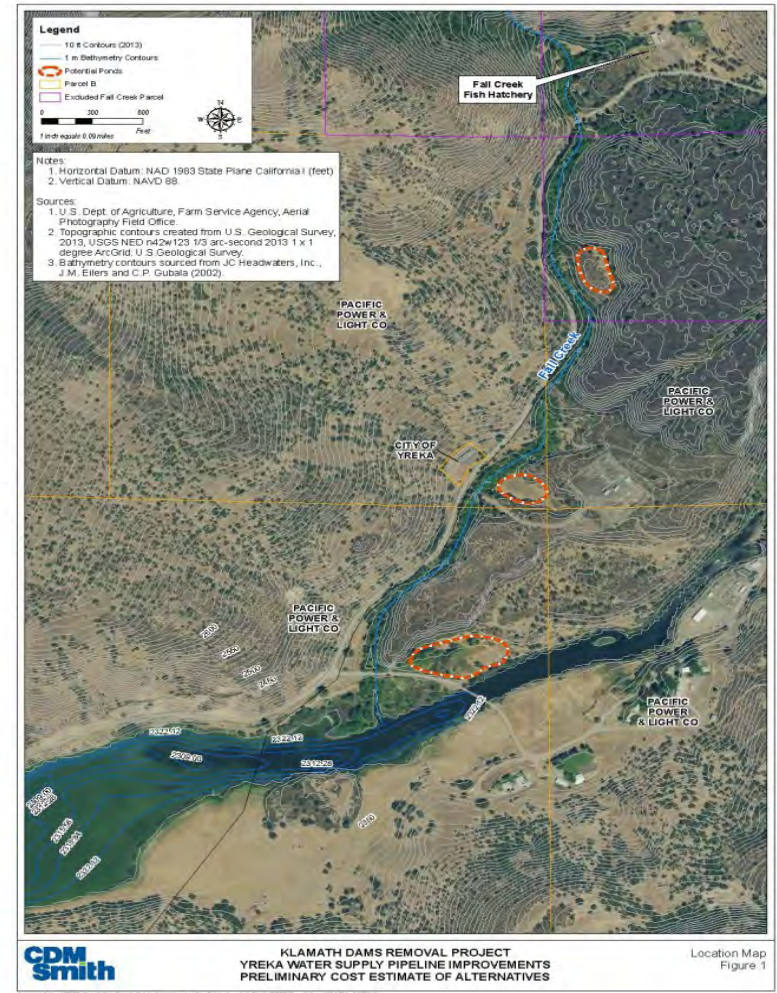


# Fall Creek Hatchery Powerhouse Area– Cultural Resources

- Reported ethnographic village location as noted by Merriam (1907)
- Area surveyed for cultural resources in 2003 by PacifiCorp, but no village site was noted
- Extensive disturbance (leveling, excavation, and fill material) when hatchery and powerhouse were constructed
- Fall Creek powerhouse and hatchery complex were recommended NRHP-eligible as part of Klamath Hydroelectric District
  - Original hatchery raceways will be modified/expanded
  - No planned effects to the Fall Creek powerhouse

# Fall Creek Hatchery Modifications – Settling Pond

- Three pond locations are currently being studied along Fall Creek
  - Locations correspond with prehistoric sites recommended NRHP-eligible
  - Central pond location is preferred due to proximity to creek and slope
- Pond (100 x 100 ft. max. dimension) would exist for 8 years and then be removed
- Engineering options are being examined to lessen effects to the resource



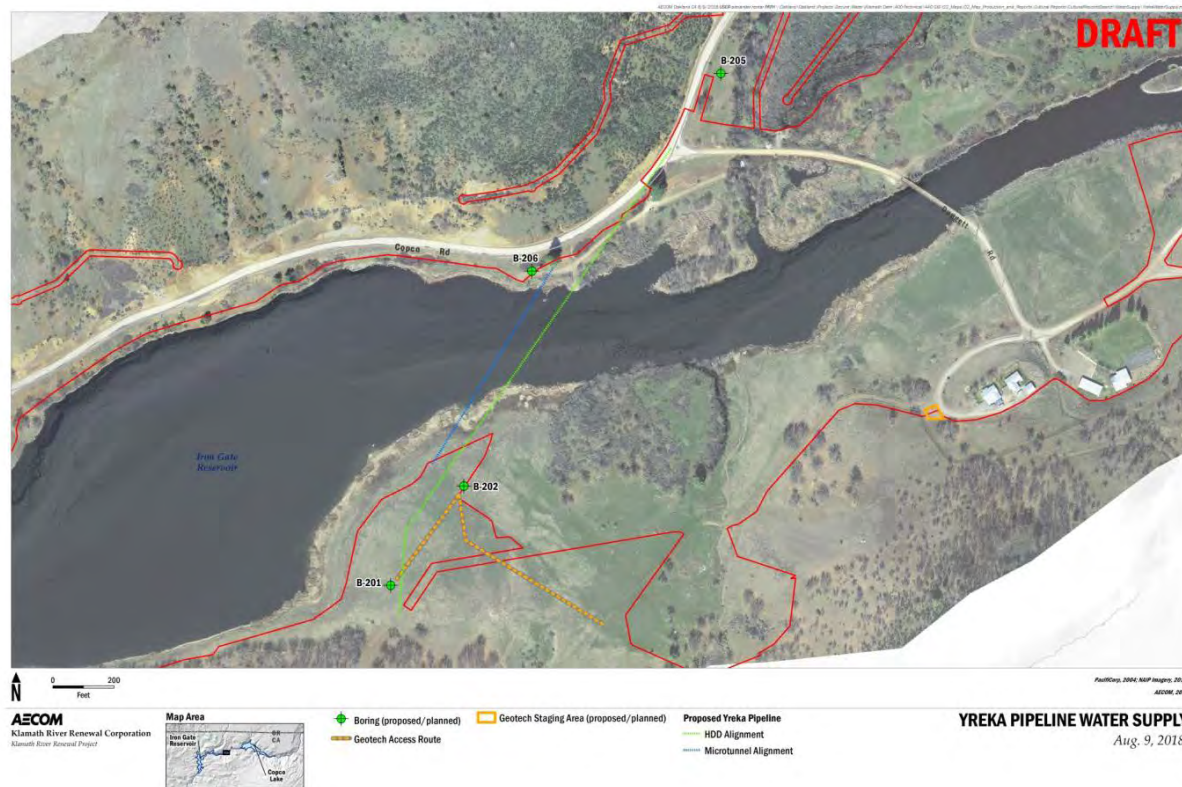


# Settling Pond Options

Option	Excavated Pit	Pit Depth	Build Embankment	Pit Lining	Comment
1 - Excavated Unlined Settling Pond	Yes	4-5 ft.	Yes – use excavated material	Unlined to allow leaching	No pumping
2 - Unlined Embankment Settling Pond	No, pit at grade	N/A	Yes, 4-5 ft. tall of imported material	Unlined to allow leaching	No pumping
3 - Lined Embankment Settling Pond	No, pit at grade	N/A	Yes, 4-5 ft. tall of imported material	Lined, no leaching	Pump truck to collect solids and transport to IGH
4 - Above Ground Tank Series	No, use above ground tanks	N/A	No	Lined, no leaching	Pump truck to collect solids and transport to IGH

# City of Yreka Intake and Pipeline Replacement

- Relocate 24-inch water supply pipeline at upstream end of Iron Gate Reservoir (currently considering 4 options)
- Potentially install new fish screens at existing diversion facility
- Must be completed prior to reservoir drawdown and dam removal





# City of Yreka Pipeline – Cultural Resources

- Three recorded prehistoric and/or historic-period archaeological sites (NRHP-eligible) in pipeline vicinity.
- Cultural team has been working with engineering team to re-route the pipeline away from the recorded boundaries (surface) to avoid effects to the sites
- Pipeline replacement activities will be subject to provisions in cultural resources monitoring plan (CRMP)

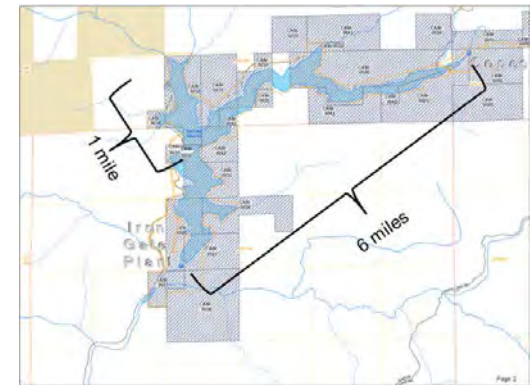
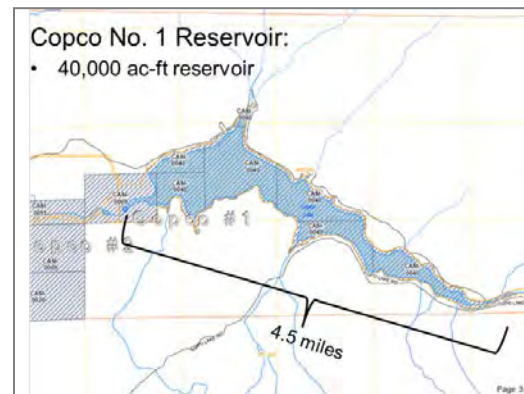
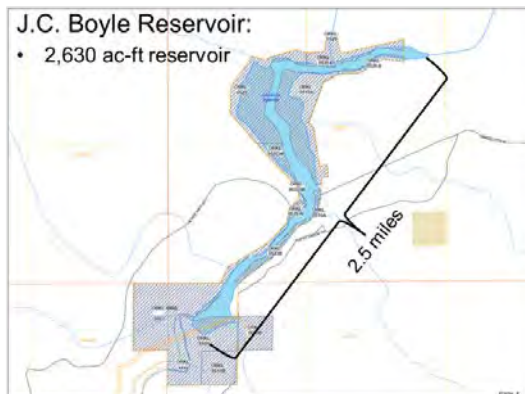
# Recreation Plan and Restoration

- Developing Recreation Plan through stakeholder process with Federal, Tribal, State, County, and recreation and tourism groups
- Seeking input on new and enhanced/existing recreation facilities to mitigate for impact to year-round Hells Canyon rafting corridor
- Plan may include additional boating and fishing access and other new recreation features
- Will restore former recreation sites to native habitats
- Cultural team is working with Recreation Team to assess potential effects



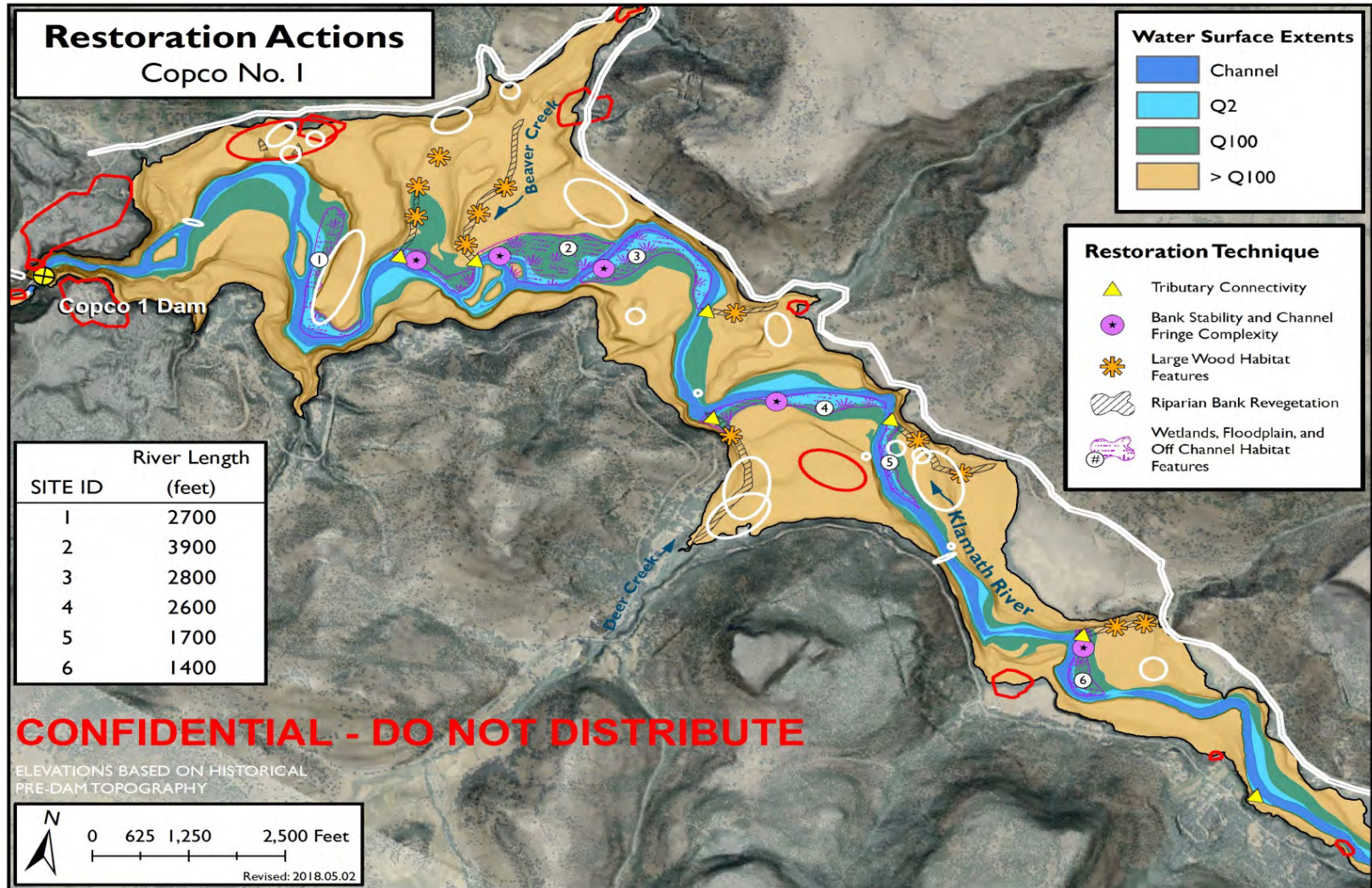
# Reservoir Restoration

- Stabilize remaining accumulated reservoir sediments (as appropriate)
- Fully restore reservoir areas to native habitats





# Reservoir Restoration – Copco Lake

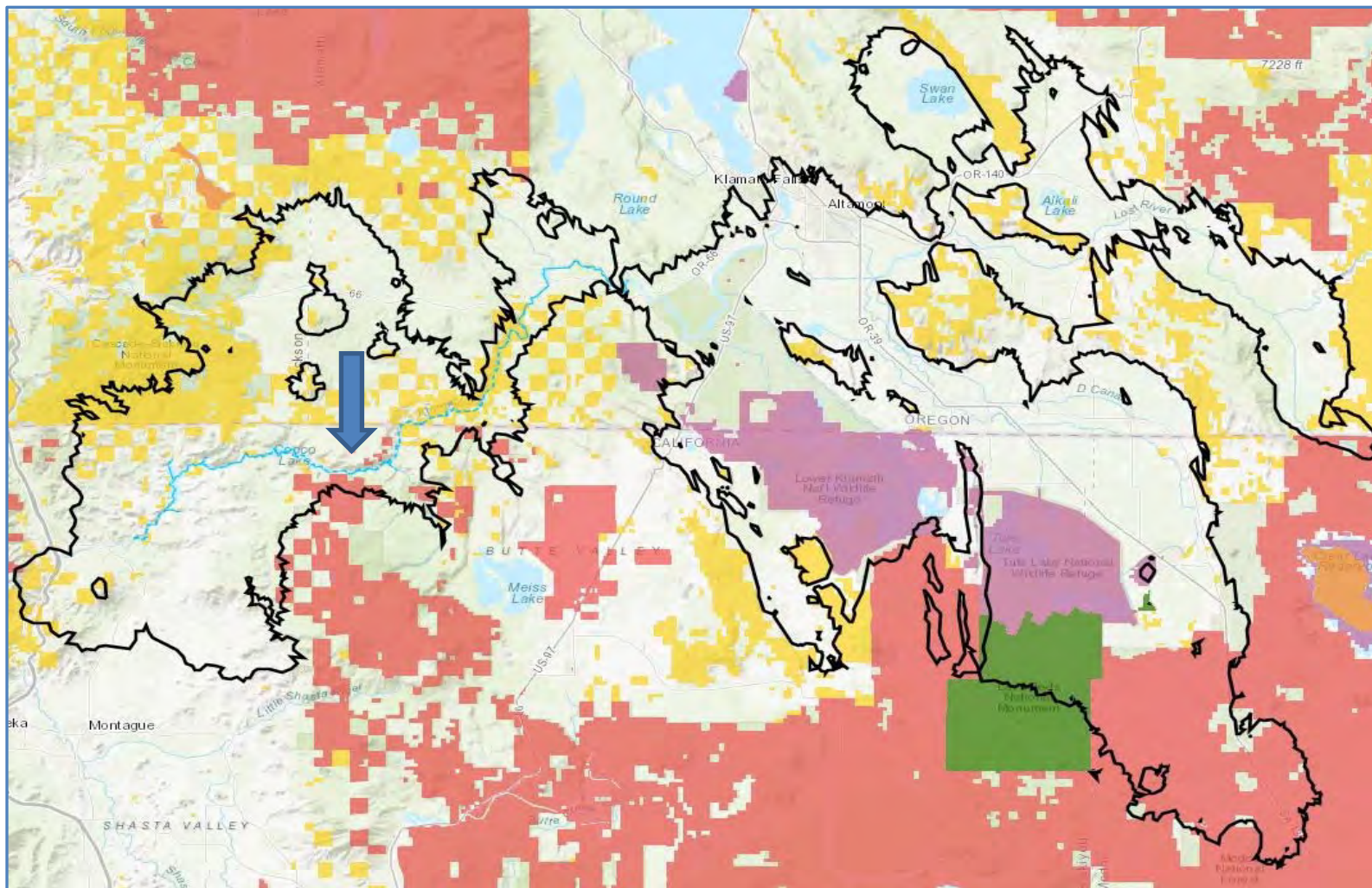


# Seed Collection Program

- Resource agencies requiring the use of ecotypic seed (seed collected within the Project area watershed) for revegetation of the reservoir areas.
- The seeds will be collected, propagated, and stored for dispersal in the drawdown areas.
- The KRRC, through a separate contractor, has conducted reconnaissance surveys to identify specific areas for seed collection of target native species.
- KRRC subcontractor will conduct seed collection over multiple years
- Use existing roads for access
- Pedestrian overland access to seed crop location
- No ground disturbance at seed collection location



# Seed Collection Areas



# Native plant seed species to be collected - Contemporary tribal collection areas?

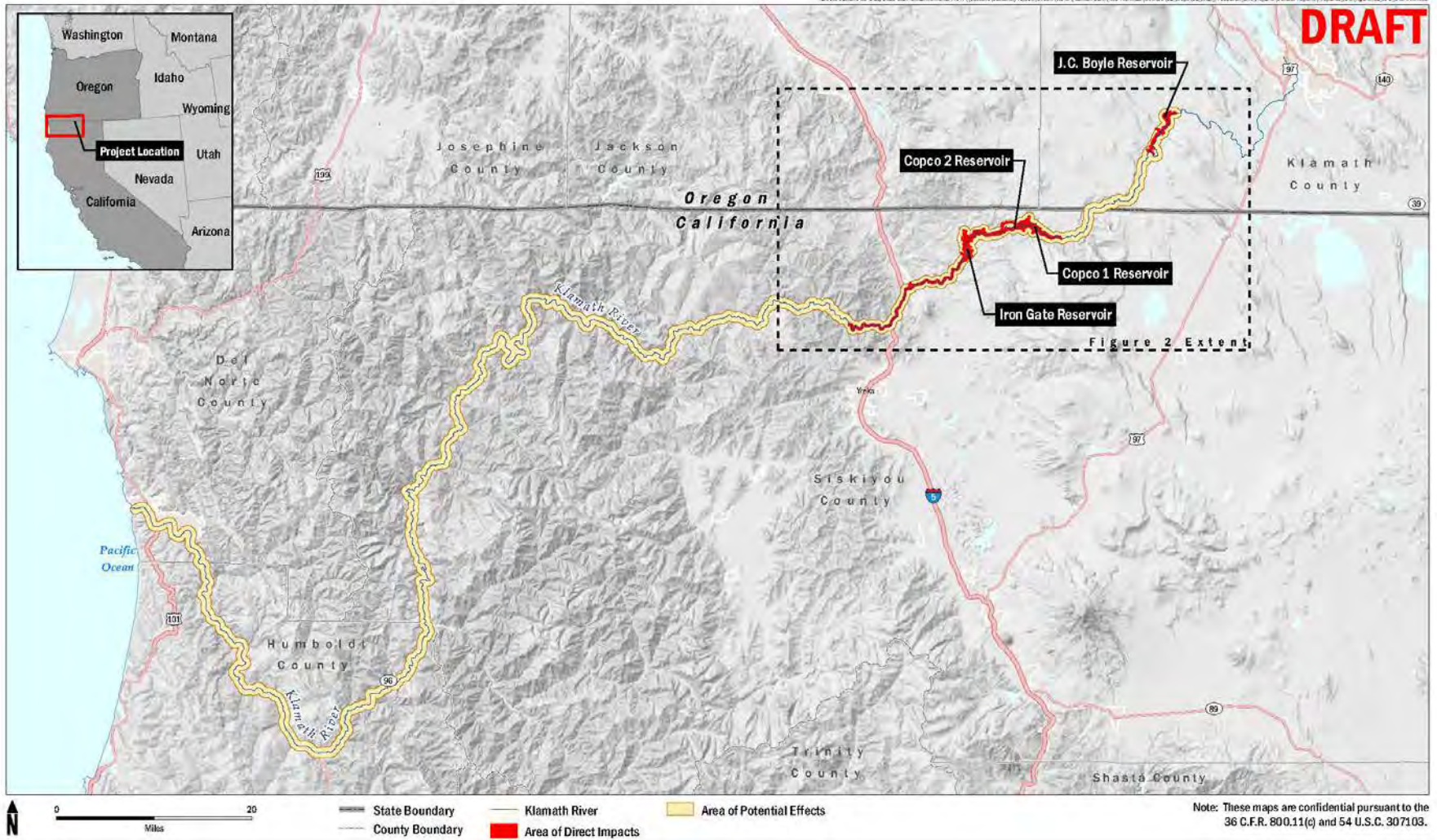
- *Achillea millefolium* var. *lanulosa* common yarrow
- *Acmispon americanus* Spanish lotus
- *Agrostis exarata* spike bentgrass
- *Artemisia douglasiana* mugwort
- *Bidens frondosa* devil's beggartick
- *Bromus carinatus* California brome
- *Carex nebrascensis* Nebraska sedge
- *Carex pellita* woolly sedge
- *Carex praeegracilis* clustered field sedge
- *Carex stipata* awlfruit sedge
- *Croton setiger* turkey mullein
- *Deschampsia cespitosa* tufted hairgrass
- *Deschampsia danthonioides* annual hairgrass
- *Distichlis spicata* saltgrass
- *Elymus spicatus* bluebunch wheatgrass
- *Elymus cinereus* Great Basin wildrye
- *Elymus elymoides* squirreltail grass
- *Elymus glaucus* blue wildrye
- *Elymus triticoides* creeping wildrye
- *Ericameria nauseosa* var. *leiosperma* common rabbitbrush
- *Euthamia occidentalis* western goldenrod
- *Hordeum brachyantherum* ssp. *b* Meadow barley
- *Hordeum brachyantherum* ssp. *c* California barley
- *Juncus balticus* Baltic rush
- *Juncus effusus* var. *pacificus* common rush
- *Juncus ensifolius* sword-leaved rush
- *Juncus occidentalis* western rush
- *Juncus xiphioides* iris-leaved rush
- *Koeleria macrantha* junegrass
- *Leersia oryzoides* rice cutgrass
- *Lupinus argenteus* silvery lupine
- *Lupinus microcarpus* var. *densiflorus* golden lupine
- *Lupinus microcarpus* var. *microcarpus* chick lupine
- *Muhlenbergia richardsonis* mat muhly
- *Paspalum distichum* knotgrass
- *Phacelia heterophylla* var. *virgata* varied leaf phacelia
- *Poa secunda* ssp. *sandbergii* Sandberg's bluegrass
- *Puccinellia lemmonii* Lemmon's alkali grass
- *Puccinellia nuttalliana* Nuttall's alkali grass
- *Rumex californicus* California dock
- *Stipa lemmonii* Lemmon's needlegrass
- *Stipa occidentalis* var. *o.* western needlegrass
- *Xanthium strumarium* rough cocklebur



# APE Discussion



# Preliminary APE



**AECOM**  
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Klamath River Renewal Project

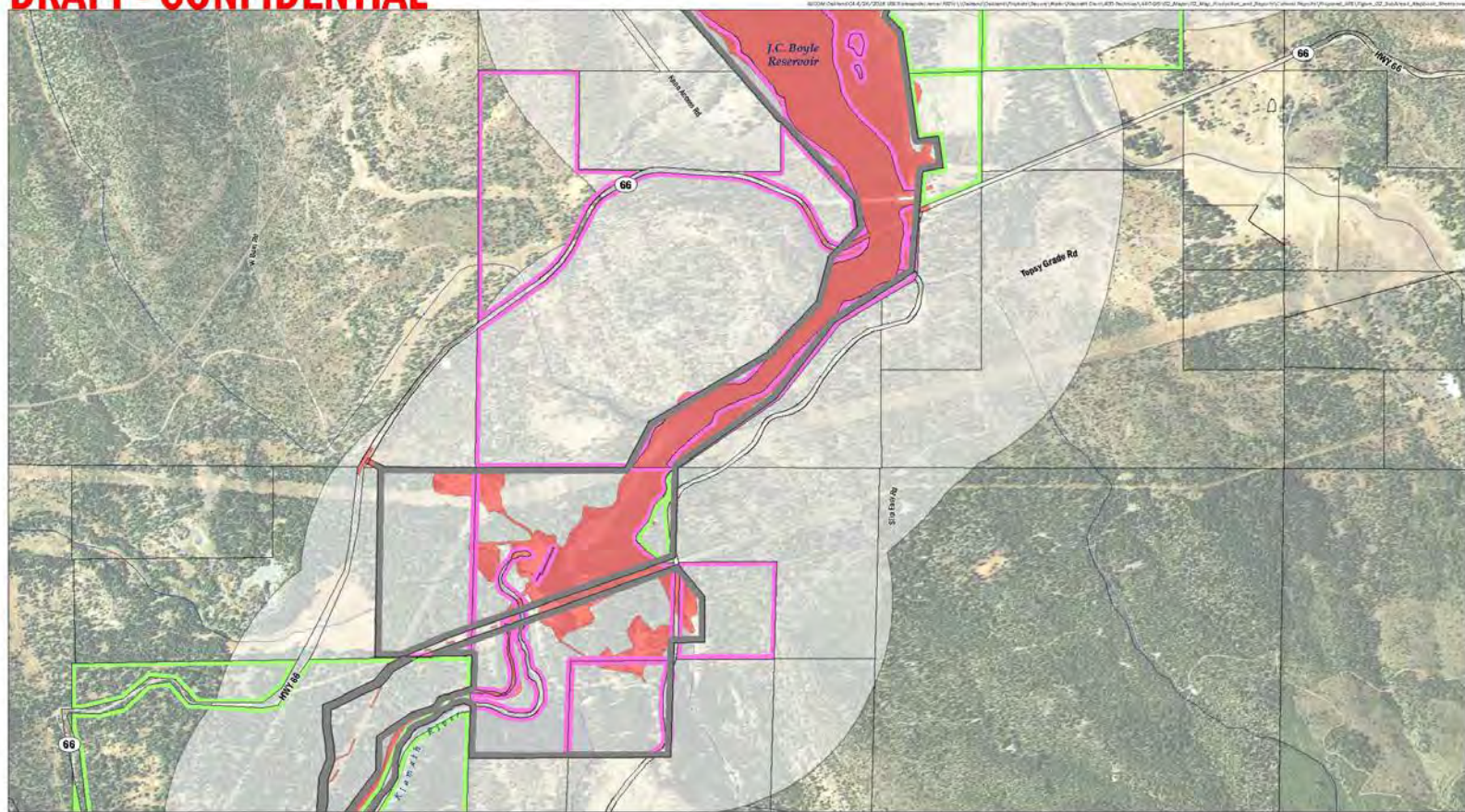
**FIGURE 1**  
2018 Proposed Area of Potential Effects





# Preliminary APE – JC Boyle Reservoir Area

**DRAFT - CONFIDENTIAL**



PacifiCorp, 2011; AEP Imagery, 2014;  
AECOM, 2017

**AECOM**  
Klamath River Renewal Corporation  
Klamath River Renewal Project



- 2012 FERC Project Footprint
- Area of Direct Impacts
- Area of Potential Effects

- Parcel Ownership Boundary
- All Parcels
- PacifiCorp
- Public Land

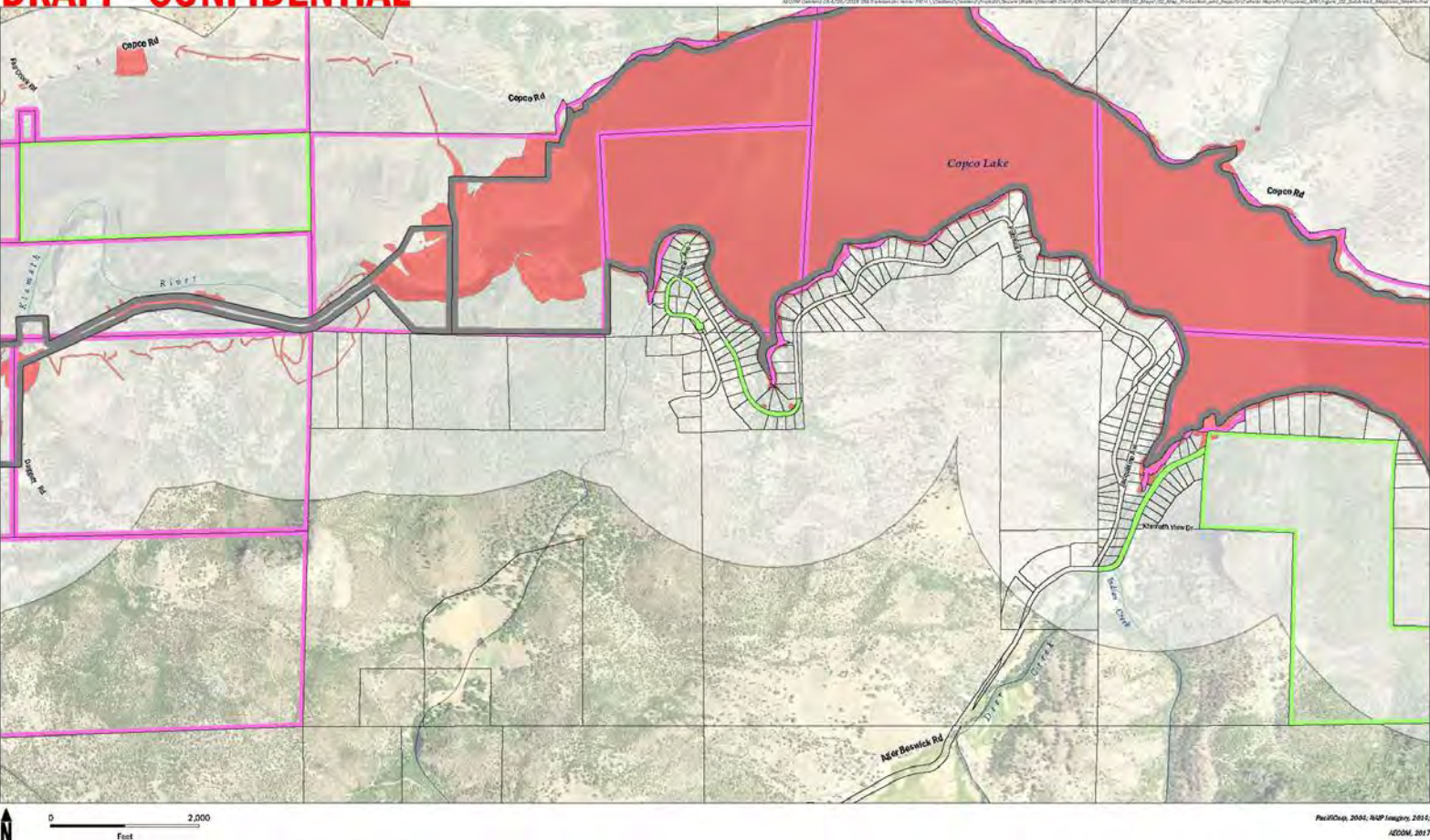
**Notes:**  
These maps are confidential pursuant to the 36 C.F.R. 800.11(c) and 54 U.S.C. 307103.  
Parcel boundaries shown in this mapbook are data provided by Siskiyou County, CA, Klamath County, OR, PacifiCorp, and the Bureau of Land Management (BLM). There are inconsistencies among these datasets and between the datasets and LiDAR and aerial imagery. No ground-based parcel surveys have been completed; however, the County parcel data has been geo-rectified to align better with available LiDAR and aerial imagery data. APE and Sub Area 1 locations are based on field survey with GPS, LiDAR, and aerial imagery. Portions of the APE and Sub Area 1 with reference to parcel boundaries may be incorrect on the order of 10 to 50 feet.

**ATTACHMENT 3**  
2018 Preliminary Area  
of Potential Effects  
Sheet 2 of 23



# Preliminary APE – Copco Lake Area

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Klamath River Renewal Corporation  
Klamath River Renewal Project



- 2012 FERC Project Footprint
- Area of Direct Impacts
- Area of Potential Effects
- Parcel Ownership Boundary
  - All Parcels
  - PacifiCorp
  - Public Land

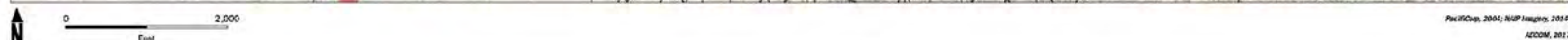
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**ATTACHMENT 3**  
2018 Preliminary Area  
of Potential Effects  
Sheet 13 of 23





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**Notes:**  
These maps are confidential pursuant to the GPS, C.G.R. 800.11(c) and 54 U.S.C. 307103.  
Parcel boundaries shown in this mapbook are data provided by Siskiyou County, CA, Klamath County, OR, PacifiCorp, and the Bureau of Land Management (BLM). There are inconsistencies among these datasets and between the datasets and UOAR and aerial imagery. No ground-based parcel surveys have been completed; however, the County parcel data has been re-rectified to align better with available LDOAR and aerial imagery data. APE and Sub Area 1 sections are based on data surveying with GPS, C.G.R. 800.11(c) and 54 U.S.C. 307103 and Sub Area 1 with reference to parcel boundaries may not incommensurate on the order of 10 to 50 feet.

**ATTACHMENT 3**  
2018 Preliminary Area  
of Potential Effects  
Sheet 17 of 23



# Preliminary APE – Downstream of Iron Gate Reservoir

**DRAFT - CONFIDENTIAL**



0 2,000  
Foot

**AECOM**  
Klamath River Renewal Corporation  
Klamath River Renewal Project



Area of Direct Impacts  
Area of Potential Effects

Parcel Ownership Boundary  
All Parcels

**Notes:**  
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- Parcel boundaries shown in this mapbook are data provided by Siskiyou County, CA, Klamath County, OR, PacificCorp, and the Bureau of Land Management (BLM). There are inconsistencies among these datasets and between the datasets and LiDAR and aerial imagery. No ground-based parcel surveys have been completed; however, the County parcel data has been geo-referenced to align better with available LiDAR and aerial imagery data. APE and Sub Area 1 locations are based on field survey with GPS, LiDAR, and aerial imagery. Positions of the APE and Sub Area 1 with reference to parcel boundaries may be incorrect on the order of 10 to 50 feet.

PacificCorp, 2014; NIP Imagery, 2014;  
AECOM, 2017

**ATTACHMENT 3**  
2018 Preliminary Area  
of Potential Effects  
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# Comments Received on Preliminary APE

Originator	Comment No.	Comment
OR SHPO	1	The proposed APE is said to encompass a TCP composed of seven locations in the Big Bend, Oregon area. This TCP has ever been formally recognized or evaluated.
	2	The proposed APE includes the "potential direct and indirect effects on the surrounding cultural landscape, the Klamath Riverscape and other identified TCPs, Sacred Sites, and historic districts located within the Klamath River Canyon." These documents received during the 2003-2004 license renewal process have not been reviewed.
	3	Maps are not very clear; please include topographic maps.
	4	Effects to aquatic and terrestrial resources and activities associated with the recreation plan need to be clearly included within the APE.
CA SHPO	5	All potentially historic structures affected by the undertaking must be included within the boundaries of the APE.
	6	Measures to reduce effects to aquatic and terrestrial and activities associated with the recreation plan must be included in FERC's 106 analysis and the APE.
	7	Flood mitigation measures planned to be built in 2020 should be discussed further and included in the APE.
	8	An analysis and discussion on the potential effects of a free-flowing river on historic properties should be included in the APE.
	9	The APE should explicitly include areas of fish, wildlife, and other restoration activities.
	10	The APE should include a discussion of the depth of disturbance (vertical APE), especially within the Area of Direct Impact (ADI).

<b>CA SHPO</b>	11	Waters above J. C Boyle are not currently included in the APE. If the currently unevaluated Klamath Riverscape TCP is present in this area, the APE should be expanded to include it.
	12	SHPO recommends visual simulation studies to examine potential visual effects to historic properties from unvegetated rings around former reservoirs.
	13	Explain the division between primary and secondary components of the Area of Direct Impact.
	14	Please consider adding topographic maps to enable reviewers to better understand the proposed project.
	15	Dams and other facilities proposed for removal should be shown on all maps.
	16	The term “informal consultation” is inappropriate for use within the FERC Section 106 process.
<b>BLM Redding</b>	17	BLM lands with important NRHP sites have not been marked, but should not be directly affected by dam removal other than construction-related traffic.
	18	There would be direct effects to the Klamath River corridor between Copco Dam and the upper end of Iron Gate Reservoir, including high flows/debris from dam removal and flood events.
	19	What is the rationale for not having the Klamath River from the mouth of Humbug Creek to its mouth at Requa not being subject to direct effects?
<b>Karuk THPO</b>	20	Agree with Preliminary APE extending from JC Boyle Reservoir to Pacific Ocean

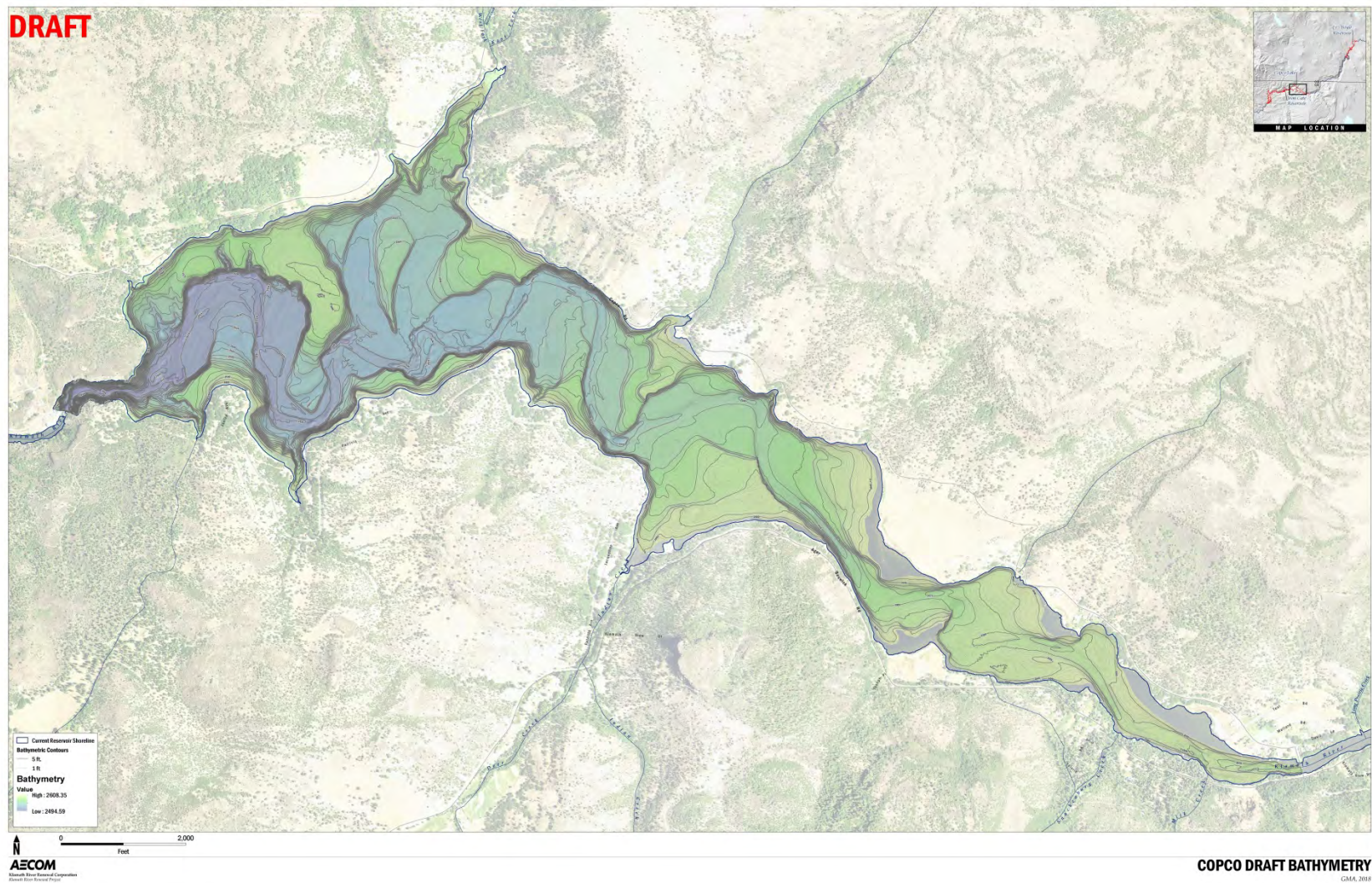


# Review of 2017-2018 Field Studies

# Data Gap Analysis

- Appendix L of the Definite Plan provides a detailed review of the records search update completed by KRRRC and offers the most current summary of background research covering the project's preliminary APE. Highlights of the Appendix include:
  - Updated records search to incorporate results from 2012 to present (2018) and expanded area downstream from Humbug Creek to the Pacific Ocean (in progress);
  - Review of ethnographic reports for the identification of TCPs; and
  - Extensive archival research to assess site potential within each reservoir with an emphasis on analyzing historic land use of currently inundated areas.
- Defining gaps in previous survey coverage within the Area of Direct Impact (ADI).
- Identifying historic built environment resources in addition to dams and related buildings or structures.

# Bathymetric Map – Copco Lake



# Field Studies

- Goal is 100% inventory of previously unsurveyed and added areas of the ADI, primarily new access roads and areas where boundaries of project components changed. Fieldwork also includes proposed access roads, borrow and disposal areas, and the proposed locations for fish-hatchery related actions (e.g., settling ponds, water intakes).
  - 4 new sites identified
- The ADI is larger than the limits of work. It incorporates all sites that intersect with the limits of work boundaries, and includes lands below Iron Gate Dam to Humbug Creek within the 100-year flood boundary. Much of the downriver lands are private and have not been surveyed for the project.
- Site visits to assess current conditions and compare with site records from previous surveys to inform survey planning and site evaluation work.
- Revisiting and updating recordation of all buildings and structures associated with the hydroelectric facilities to assess changes since 2004 documentation.



# Summary Information on Known Sites in the APE and ADI:

- 485 Sites in the Preliminary APE (JC Boyle to Pacific Ocean)
- All sites have not yet been categorized
- Some records are still outstanding, with possible additions yet to come from Tribal and USFS records.
- Current total of 70 previously recorded sites in the ADI
- 17 Sites in Oregon
- 53 Sites in California
- KRRC can only access Parcel B lands at this time
- 49 Sites on Parcel B lands
- “Unrecognized sites” were defined during archival research, particularly around or inundated by each reservoir (n=105).

# Previously Recorded Sites in the ADI

Resource Type	Component Type				
	Prehistoric	Historic	Multiple	Ethnographic	Total
Archaeological Site	35	16	4		55
Ethnographic/TCP	4		2**	3	9
Built Environment		6*			6
Totals	39	22	6	3	70

\* Includes single site number for Klamath Hydroelectric District (47-004015) and individual sites numbers for Copco I, Copco II, and Fall Creek Powerhouse. No numbers assigned to other hydro-related buildings and structures.

\*\* Includes one multi/ethnographic site (47-002403: Sardine Village; Wahn-Nim'pah)

## Site Record Updates

- Site records for the 70 previously recorded sites in the Area of Direct Impacts planned for updates
- Current work is focused on 29 sites located on PacifiCorp land; no access yet to sites on private land (largely downriver of Iron Gate Dam)
- 20 sites updated so far; work is on-going
- Key observations include changes since 2003 site recordations or updates – new disturbances; site boundary updates; constituent inventory.

# Site Update Discussion

- Exposed lakeshore site.
- Note low cut bank at right. Artifacts are concentrated in the cobbles that now blanket the shore, indicating that cultural sediments have been eroded, leaving heavier materials concentrated on the surface.





## Site Update Discussion

- Collapsed rock wall feature, extending an undetermined distance into Copco Lake.
- Artifacts visible in exposed gravel near water's edge.



# Site Update Discussion

- Large amounts of soil eroding from the creek bank near Iron Gate Reservoir
- Cultural strata are visible in the cut bank.





# Site Update Discussion

- Iron Gate Reservoir area. Note the tree stumps in the water. Artifacts were visible in the water.
- Small patches of midden soil are visible along the river bank.



# Site Update Discussion

- Cut tree stump with no exposed roots, indicating that little to no soil erosion has occurred in the submerged portion of this site.
- Note stumps on level landform extending into reservoir.





# Site Update Discussion

- Artifacts visible on gravel bar and in the water in the Copco Lake area.
- Edge of spring-fed drainage in foreground. Roots are within spring-fed drainage and are holding soil in place.



# Site Update Discussion

- Exposed lakebed.
- This was an agricultural field in the 1860s.
- Artifacts are concentrated closer to the shoreline, where cobbles are exposed on the surface.





# Site Update Discussion

- Steep river bank at site along reservoir shoreline.
- Exposed roots of cut tree stumps provide evidence of topsoil erosion.
- Artifacts are exposed on rocky surface and cut bank of high water line.



# Approach to Site Evaluations



# NRHP Eligibility

- **Eligible/Treated as Eligible**

- Previous Determinations of Eligibility
- Multiple artifact classes, diagnostic artifacts, features, evidence of subsurface deposit
- Site extent cannot be determined (i.e., inundated or partially inundated)

- **Non Eligible**

- Heavily impacted or destroyed
- Limited artifacts, no diagnostic artifacts or features, no subsurface component
- Historic debris with no association or context

# Current NRHP Eligibility Status of Sites in the ADI

- The current database includes NRHP eligibility recommendations derived from site records and previous reports. In some cases, the recommendation in a report does not match the site record, and vice versa.
- There are 6 descriptors for NRHP eligibility status. It remains unclear what distinguishes a potentially eligible site from one that appears eligible.
- There are no clear NRHP eligibility determinations for any of the 70 sites in the ADI
- Part of the site update process is to reconcile different NRHP eligibility recommendations and to provide additional data regarding current site conditions. In some cases, additional data may result in changes to previous recommendations.

NRHP Recommendation	No. of Sites
Eligible (not concurred, but recommended)	14
Unevaluated/Not Evaluated/Undetermined	18
Potentially Eligible	20
Appears Eligible	9
May be eligible with further research	1
Not eligible	8

# Site Evaluation Discussion



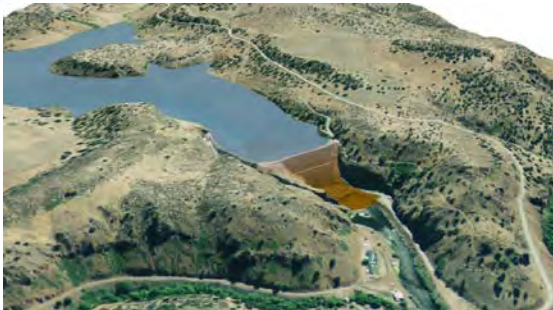
# Site Evaluation Discussion







# Next Steps



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# Preliminary Document Preparation Schedule

Report / Document	Date for 1 <sup>st</sup> Draft
Survey and Resource Update Report	November 2018
Historic Built Environment Draft Evaluation Report – Hydro Resources only	November 2018
Programmatic Agreement (PA)	December 2018
Inadvertent Discovery Plan (IDP)	December 2018
Preliminary NRHP Evaluation Report – Archaeological and Non-hydro resources (based on existing info)	March 2019
Looting and Vandalism Protection Plan (LVPP)	March 2019
Historic Properties Management Plan (HPMP)	June 2019
Cultural Resources Monitoring Plan (CRMP)	June 2019

# Tribal Caucus and CRWG Meetings

- Preference is for monthly meetings
- September and October 2018 Doodle polls sent out
- Continue with tribal caucus before CRWG meeting?
- Preference for in-person vs. teleconference meetings?
- Alternate meeting locations – Redding, Medford?

# KRRC Website

- Project Background and Updates
- Resources:
  - Definite Plan and Appendices
  - Project brochures and fact sheets
  - Quarterly newsletter
  - Public notices
  - Project maps

[www.klamathrenewal.org](http://www.klamathrenewal.org)





# Discussion



# Lower Klamath Project

## Cultural Resources Working Group Meeting

**AECOM**

**September 18, 2018**

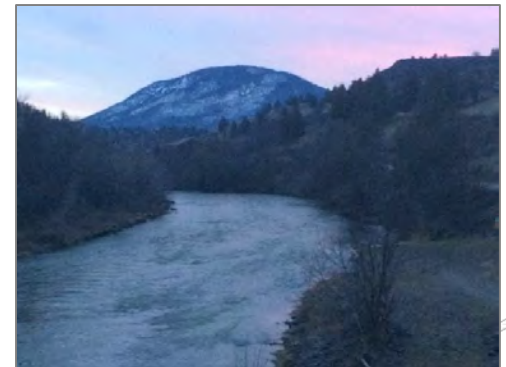
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**KLAMATH  
RIVER RENEWAL  
CORPORATION**



# Meeting Agenda

- **Introductions**
  - Facilitation and Ground Rules
- **Project Updates**
  - Caucus Report
  - Water Quality Gages
  - Hatchery Review
- **Regulatory Process Recap**
  - Mission of CRWG
  - Regulatory Steps
- **APE Review**
  - Revised Boundary Option
  - Map Book Orientation
  - Vertical APE and Geoarchaeology
- **Agreement Documents**
  - Agency Engagement
  - PA Preparation
  - HPMP
  - Agreement Document Schedule
- **Closing Remarks and Discussion**
- **Action Item Review**





# Introductions



# Project Updates

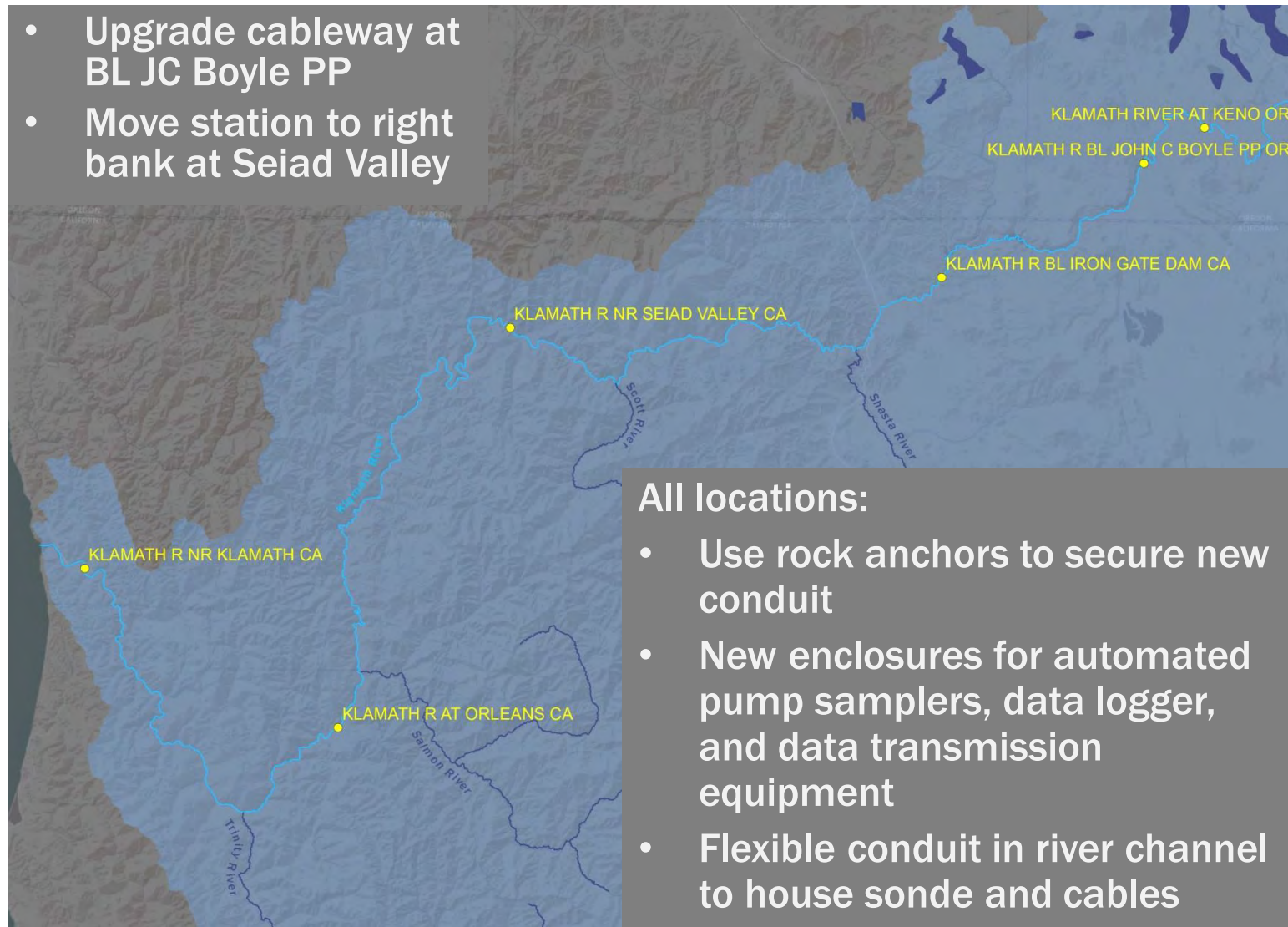
# Project Update Topics

- **Comments on August Meeting Minutes?**
- **Tribal Caucus**
  - Update from Working Group?
- **Update on Project Components**
  - Fieldwork and Tribal Monitoring
    - Tribal Monitoring Plan
  - Water Quality Gages
  - Hatchery Modifications



# Water Quality Gage Upgrades

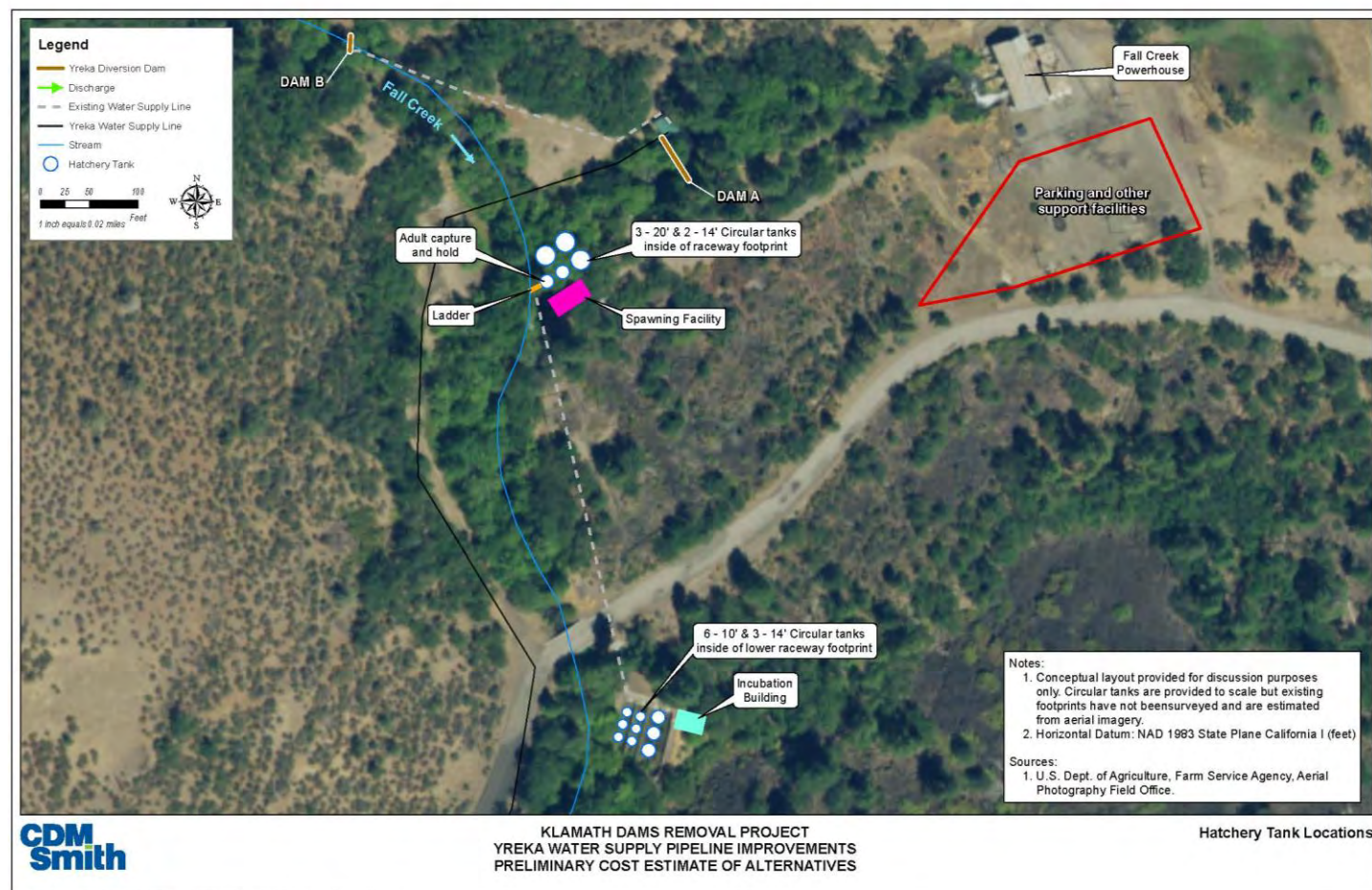
- Upgrade cableway at BL JC Boyle PP
- Move station to right bank at Seiad Valley



## All locations:

- Use rock anchors to secure new conduit
- New enclosures for automated pump samplers, data logger, and data transmission equipment
- Flexible conduit in river channel to house sonde and cables

# Fall Creek Hatchery Modifications – Powerhouse Area







# Regulatory Recap

# Regulatory Recap

- **FERC's NHPA Responsibilities**
  - **Compliance with Section 106**
    - **APE Delineation, Identification, Evaluation, Assess Adverse Effects**
  - **Consultation**
- **CRWG Mission**
  - **Develop recommendations to address cultural, historical, and archaeological resources for the project permitting process**
    - **Contribute to primary compliance documents prepared by KRRC, including PA and HPMP**
    - **Lay groundwork for FERC's consideration of adverse effects**
    - **Review, advise, and participate in Section 106 Process**
    - **Recognize and meet project schedule, including draft Agreement Documents (based on consultation) by mid-2019**
- **Maintain Confidentiality of Sensitive Cultural Discussions and Data**

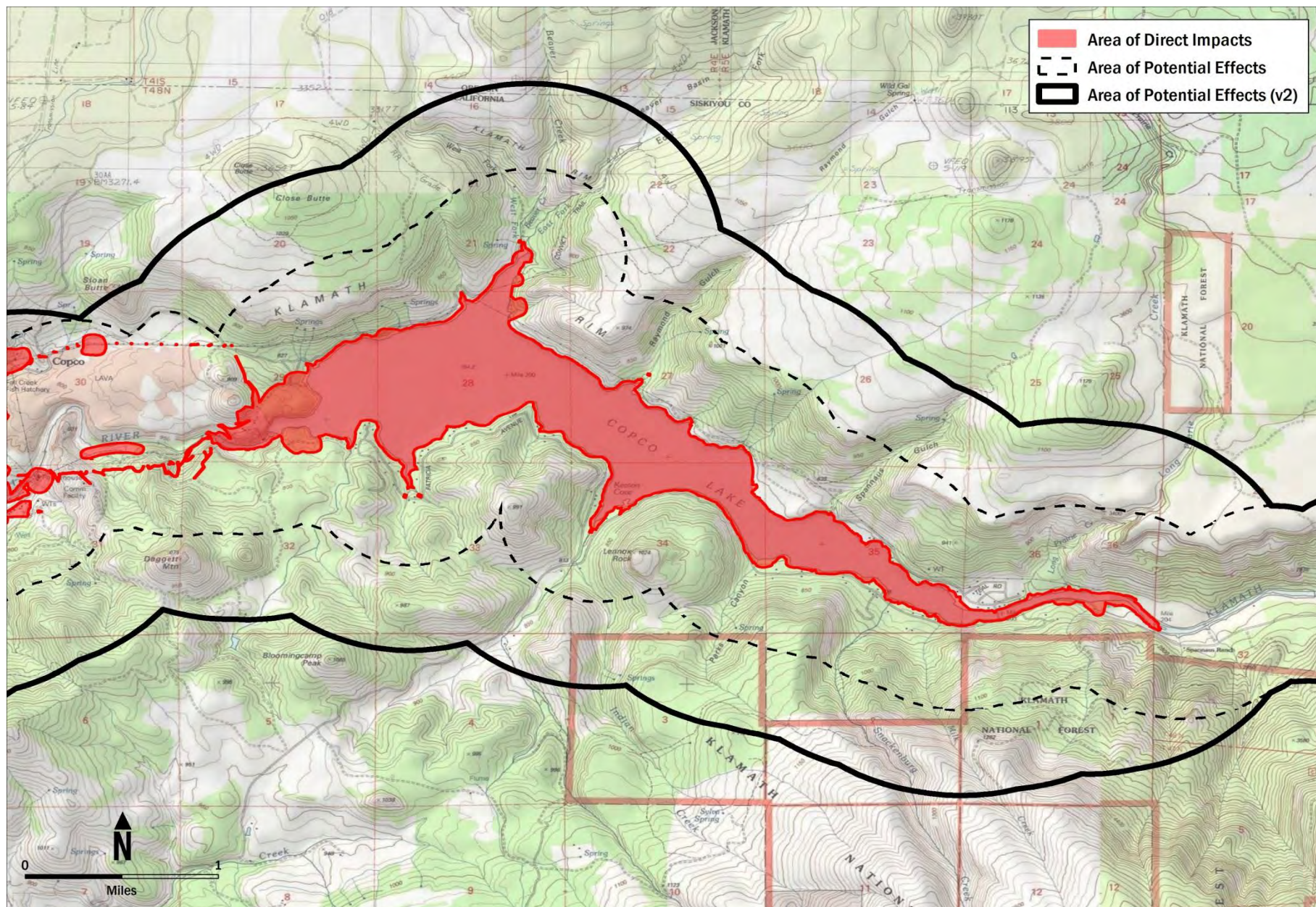


# APE Discussion

# General APE Comments

- Inclusion of TCPs, Landscapes, and Riverscapes
- Visual Impacts
- Mapping
- Built Environment
- Fish, Wildlife, and Restoration Impacts
- Effects of a Free-Flowing River
- Vertical APE and Geoarchaeology Discussion





# APE Mapbook Review



# Geoarchaeology Review

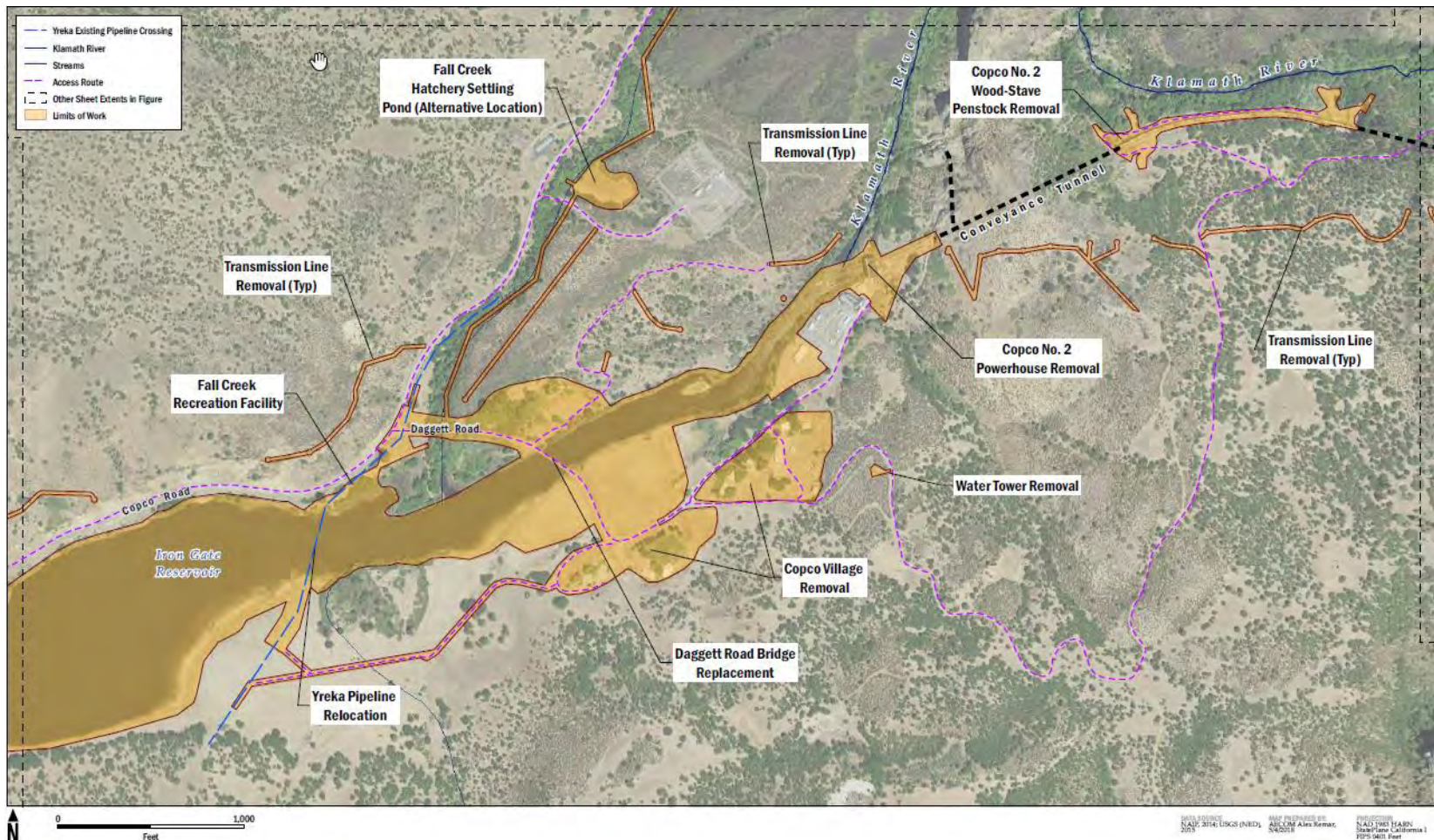
- **Sensitivity Analysis**
  - Delineate areas of subsurface disturbance (e.g. cut-and-fill areas)
  - Assign maximum depths of disturbance (maps and tables)
  - Develop reservoir sediment depth model, based on pre-dam historic topographic mapping, geotechnical data, and current bathymetry
  - Overlay with the vertical APE data to identify those areas where the project may impact the pre-dam historic ground surface

# Geoarchaeology Cont.

- **Sensitivity Analysis**
  - Digitize existing Quaternary geologic mapping
  - Quaternary geologic mapping will show where project will impact landforms that are young enough to reasonably contain buried archaeological resources
  - Utilize bathymetric data and reported site locations from archival research to evaluate site location potential



# Disturbance



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Klamath River Renewal Project




Note: Limits of work features that exist as small islands and/or narrow linear corridors are associated with project transmission line removal

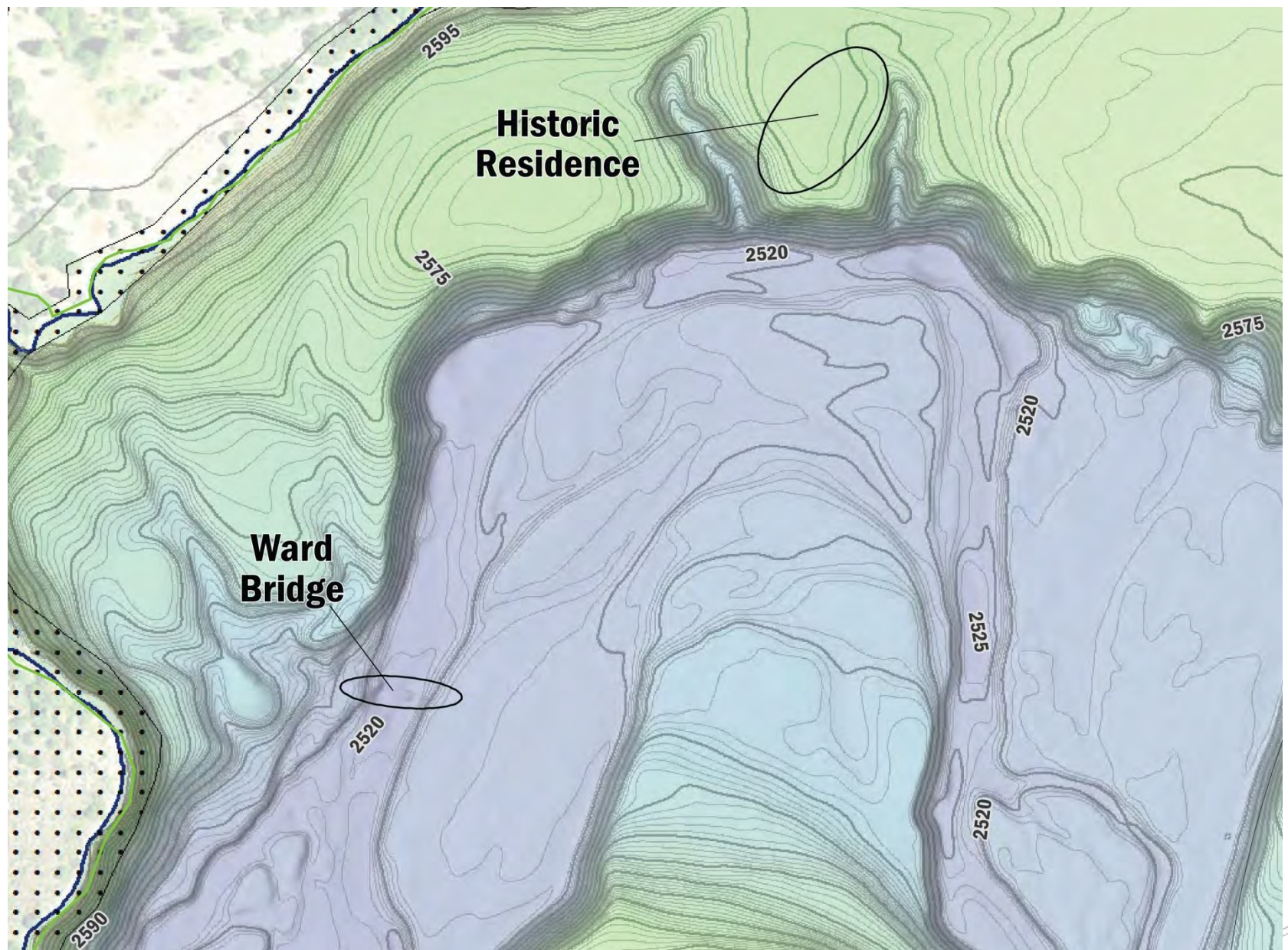
**FIGURE 5.1-1**

Project Limits of Work and Access  
Sheet 14 of 23

# Sample Disturbance Table

			Aprox. Max. Depth of Disturbance	Notes1 (from Engineer)	Notes #2 (from Engineer)
1		Project Activity			
2		Transmission - Access routes	2	Vertical disturbance only applies to removal of transmission poles/towers and regrading of access routes as needed Assume 6 feet burial for 50-foot poles (rough rule of thumb: 10% of pole +2 feet); Assume new line construction will require similar depths for install of new poles/towers	
3		Transmission - Pole demolition	7	If selected, Alternative 1 crossing involves micro-tunneling approx. 30 ft below current IG reservoir to EL 2280 (Def Plan Appendix C, Fig 7.5-3)	Existing waterline depth to Dams A and B is roughly 8-10 feet
4		Yreka Pipeline relocation	30	Where applicable, possibly down to 3-ft for removal of existing building foundations (eg. JCB and Copco Staging Areas)	
5		Staging Areas	1 to 3		
6		Cut Areas			
7		1) JCB Dam Embankment Removal	64	Removal of embankment down to original river bed EL (approx. EL 2483.5)	Depth taken from Dam crest EL
8		2) JCB Powerhouse Cut Areas	5	Excavation down to approx. 5 feet below existing grade for backfill material	
9		3) CP1 Dam Removal	150	Removal of concrete down to 20 feet below existing river bed EL (approx. EL 2463)	Depth taken from Dam crest EL
10		4) CP2 Dam Removal	13	Removal of earth embankment portion down typical depth of 13 feet to EL 2483.5	Depth taken from Dam crest EL
11		5) CP1 Cofferdam Borrow Site	5 to 20	No design has been done yet; depth could vary between 5 to 20 feet	
12		6) IG Dam Embankment Removal	437	Removal of embankment down to original river bed EL (approx. EL 2483.5)	Depth taken from Dam crest EL
13		Cut/Fill Areas			
14		1) DS JCB Dam Embankment	64	I suggest working with River Design Group for depths needed for restoration Max excavation of 10 feet for backfill of JCB Forebay after concrete removal (Def Plan Appendix C, Fig 5.2-11)	The cut/fill polygon downstream of the dam embankment will depend on the restoration
15		2) JCB Forebay Regrade	10		
16		Disposal Sites, Scour hole fill, spillway fill			
17		1) JCB Disposal Site	1	Minimal disturbance for clearing of disposal site Max excavation of 15 feet at DS portion of area along Klamath River for rock cover	
18		2) JCB Scour Hole Backfill	15	Minimal disturbance for clearing of disposal site; Additional depth for building foundation removal (estimate 3 ft depth)	
19		3) CP Disposal Site	1 to 3	Minimal disturbance for clearing of disposal site	
20		4) IG Disposal Site	1		
21		Demolition			
22		1) JCB Powerhouse	23	Removal of concrete down to EL 3324 (Turbine springline EL)	Depth from top of concrete EL
23		2) JCB Powerhouse Maintenance Bldg	5		





# Agreement Documents

# Agreement Document Discussion

- **Agency Engagement**
  - Potential for ACHP Involvement – John Eddins
- **PA Preparation**
  - Examples/Comments from CA SHPO
  - Consultation Process within the agreement documents
- **HPMP**
  - Outline based on ACHP Comments, FERC agreement templates, other examples

# ACHP Involvement

- **The ACHP consults with and comments to federal agency officials on undertakings**
  - The ACHP will typically enter consultation when an undertaking:
    - Has substantial impacts to historic properties
    - Presents important questions of policy or interpretation
    - Has the potential for presenting procedural problems
    - Presents issues of concern to Indian tribes

# PA Rationale

- **Use of Programmatic Agreements (36 CFR 800.14(b)(1))**
  - (i) When effects on historic properties are multi-State or regional in scope
  - (ii) When effects on historic properties cannot be fully determined prior to approval of undertaking
  - (iii) When nonfederal parties are delegated major decision-making responsibilities



# PA Contents

- **Whereas Statements (Undertaking, APE, Tribes, Federal Agencies, Tribes, Consulting parties, non-federal partners, etc.)**
- **Stipulations:**
  - I. HPMP
  - II. Dispute Resolution
  - III. Amendment and Termination of PA



# HPMP (FERC Guidance; 2001)

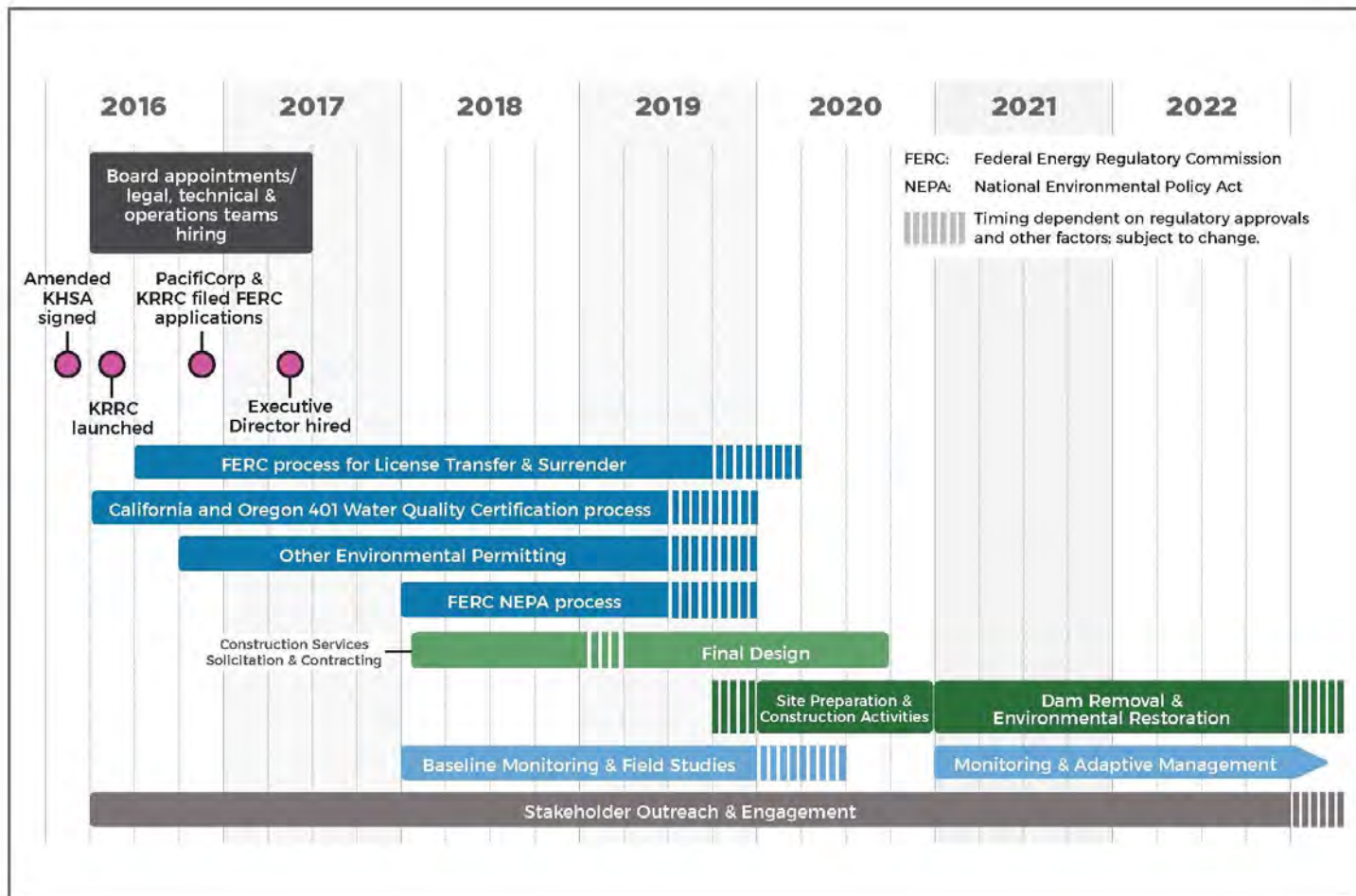
- **Contents**

- Overview (scope of the plan; how it will be used)
- Background Information (project description; historic context, completed surveys; known historic properties)
- Project Management and Preservation Goals
- Project Effects/Mitigation/Management Measures
- Implementation Procedures

# HPMP Principles (13)

- **Responsive to Purpose & Scope of Project**
- **Based on studies to predict project effects and should allow for additional studies**
- **Goals & targets (budget, staff, performance)**
- **Management priorities & decision making process for considering effects early in project planning**
- **Coordination with other plans**
- **Appropriate level of consultation before decisions**
- **Consider other federal, state, and local laws**
- **Access to information; avoid jargon; flexibility; periodic reporting**

# Project Schedule

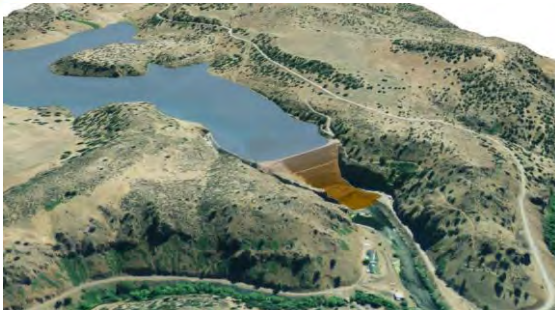


# Proposed Section 106 Timeline

Project Component	2018		2019				2020			2021				2022			
Environ. Permitting																	
Final Design																	
Dam Removal and Restoration																	
Phase II Study Plan																	
PA	Draft		Final														
IDP	Draft		Final														
LVPP	Draft			Final													
Monitoring Plan	Draft			Final													
HPMP	Draft			Final													
Human Remains Plan			Draft		Final												
Phase II Evaluation																	
Phase III Mitigation																	
Monitoring																	



# Closing Remarks and Action Item Review



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# Lower Klamath Project

## Cultural Resources Working Group Meeting

**AECOM**

November 29, 2018

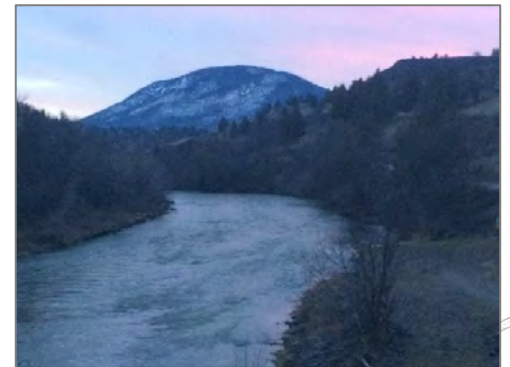
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**KLAMATH  
RIVER RENEWAL  
CORPORATION**



# Meeting Agenda

- **Introductions**
- **Meeting Objectives**
- **Project Schedule**
- **Project Updates**
  - Tribal Caucus Report
  - October Meeting Minutes and Action Item Review
- **Recreation Planning**
  - Plan Review
  - Recreation Discussion
- **Phase II Study Plan**
  - Purpose and Structure
  - Approach to Evaluation of Eligibility
  - Monitoring Protocols
- **Closing Remarks and Discussion**
- **Action Item Review**





# Introductions



# Meeting Objectives

- **Provide overview of recreation planning strategy**
- **Highlight upcoming document preparation and review schedule**
- **Focus on structure, content, and evaluation strategy for Phase II Study Plan**
- **Establish procedures for review and finalization of Phase II Study Plan**

# Project Schedule

# Proposed Section 106 Timeline

Project Component	2018		2019			2020			2021				2022			
Environ. Permitting																
Final Design																
Dam Removal and Restoration																
Phase II Study Plan	Draft															
Programmatic Agreement	Draft			Final												
Inadvertent Discovery Plan	Draft			Final												
Monitoring Plan	Draft			Final												
Looting and Vandalism Plan	Draft				Final											
Historic Props Mgmt Plan	Draft				Final											
Human Remains Plan			Draft		Final											
Phase II Evaluation																
Phase III Mitigation																
Monitoring																

# Deliverable Review Periods

	Draft to KRRC	Draft to CRWG for Review	Receive Comments from CRWG	Final
Phase II Study Plan	January 26, 2019	February 11, 2019	March 12, 2019	April 1, 2019
Inadvertent Discovery Plan	January 26, 2019	March 29, 2019	June 3, 2019	October 14, 2019
Programmatic Agreement	February 22, 2019	March 29, 2019	June 3, 2019	October 14, 2019
Monitoring Plan	March 15, 2019	March 29, 2019	July 1, 2019	November 1, 2019
Looting and Vandalism Protection Plan	March 15, 2019	May 15, 2019	July 1, 2019	December 6, 2019
Historic Properties Management Plan	May 10, 2019	July 1, 2019	August 30, 2019	March 13, 2020
Human Remains Treatment Plan	June 24, 2019	August 5, 2019	October 14, 2019	March 13, 2020



# Project Updates

# Project Update Topics

- **Tribal Caucus Report**
- **Comments on October Meeting Minutes**
- **October Action Item Review**
- **Draft EIR Update – Expected to be published by December 21, inclusive of AB52 Mitigation Measures**

# November Action Items

Action Item	CRWG/Tribal Action	KRRC/AECOM Action	Status
October presentation distribution		KRRC to circulate presentation to participants	Distributed November 1
APE Distribution		Formal written/electronic submittal to CA and OR SHPOs	Submitted by AECOM on behalf of KRRC on November 15
Recreation planning		Collaborate with whitewater advocates	Presentation on current agenda
Finalization of APE	Provide any additional comments by November meeting	Finalize document	No additional comments received
Civil War cemetery		Identify and address potential impacts	Research ongoing
IDP and Monitoring Plans	Provide draft plans	Incorporate tribal protocols into draft plans	Plan preparation underway





# Recreation Planning

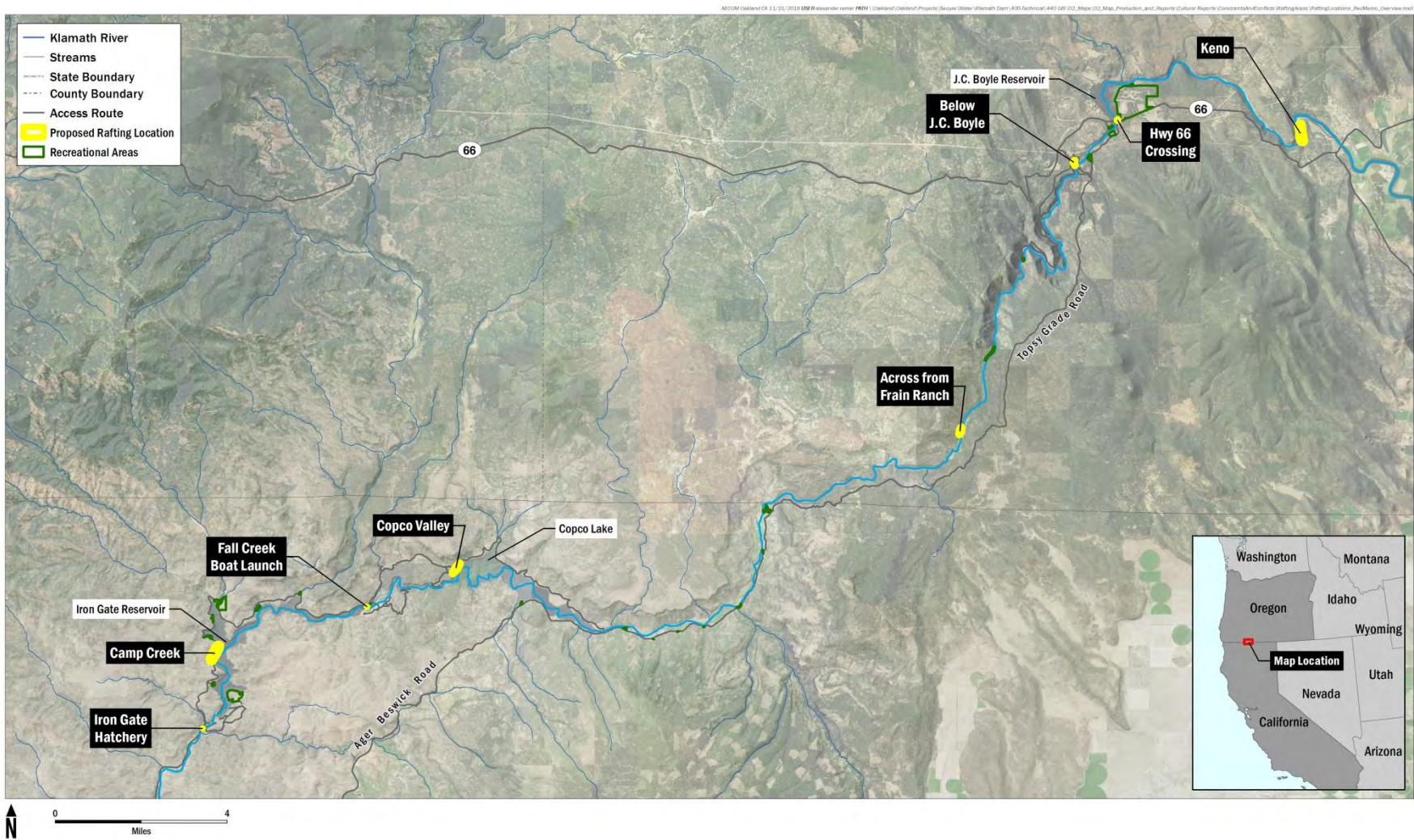
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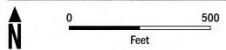
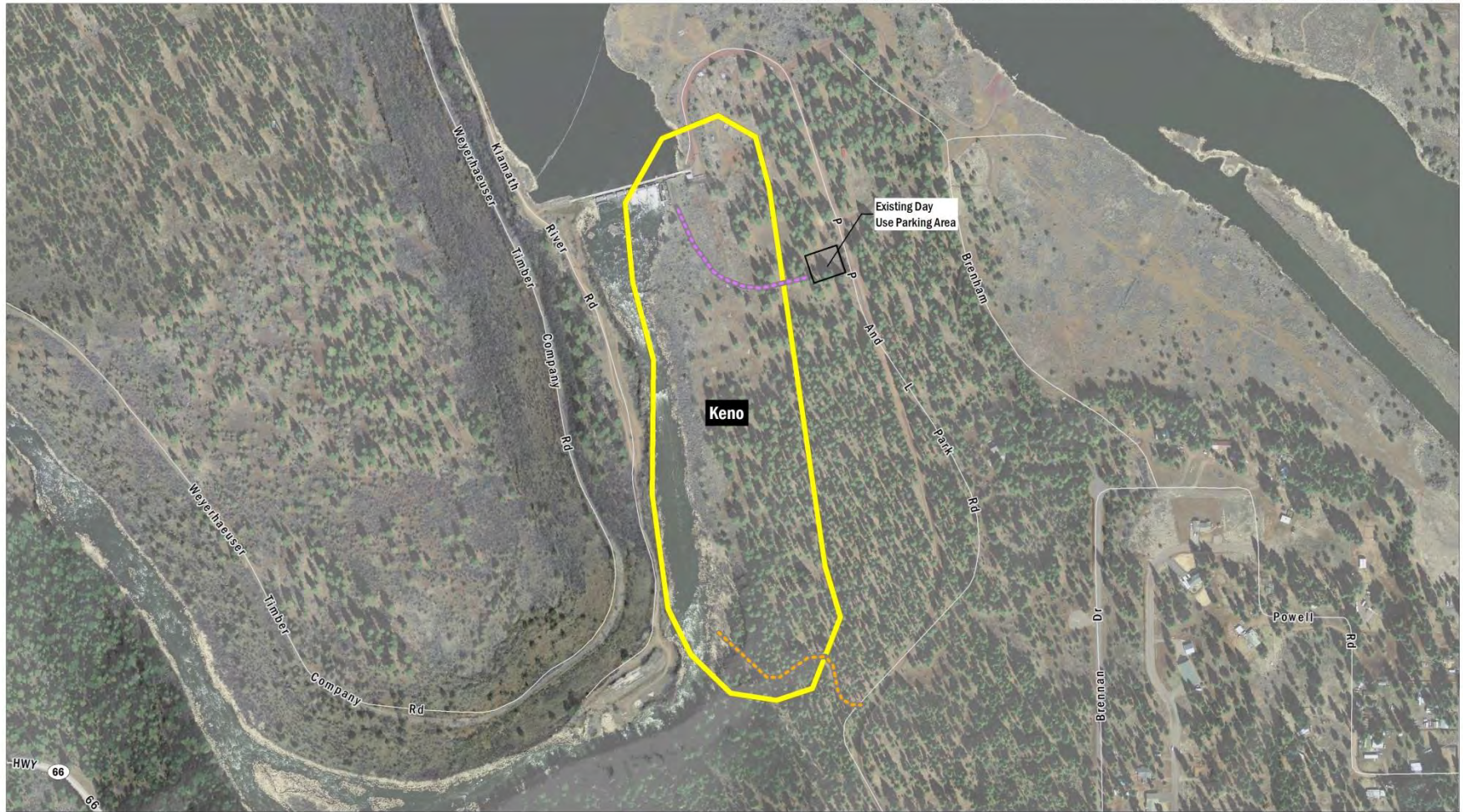


# Recreation Plan Development

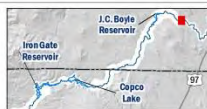
- **DOI determined in the 2012 EIS/R**
  - Loss of late summer boating on the Hell's Corner Reach was a “significant impact”
  - Loss of recreation facilities at the three reservoirs was a “permanent impact”
- **Draft Recreation Plan**
  - Stakeholder Outreach (Spring 2018)
    - Meetings and calls with stakeholders
    - Identification of additional recreation opportunities
    - Collection of feedback from stakeholders and tribes on potential sensitive areas that should be avoided (biological, cultural, etc.)
    - Prioritize avoidance and protection of cultural resources
  - Presented a preliminary screening of recreation opportunities
  - Draft Recreation Plan submitted to FERC in Definite Plan as Appendix Q (June 2018)







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Klamath River Renewal Project



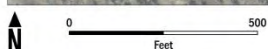
- Proposed Trail to Keno Wave
- Left Bank Put-In
- Proposed Rafting Location

## PROPOSED LOCATIONS OF RAFTING ACCESS POINTS

Keno  
Sheet 1 of 8







**AECOM**  
Klamath River Renewal Corporation  
Klamath River Renewal Project



- Proposed Rafting Location
- ▨ Recreational Areas
- Recreational Points**
  - Camping
  - Day Use

## PROPOSED LOCATIONS OF RAFTING ACCESS POINTS



Hwy 66 Crossing  
Sheet 2 of 8






**AECOM**  
Klamath River Renewal Corporation  
Klamath River Renewal Project



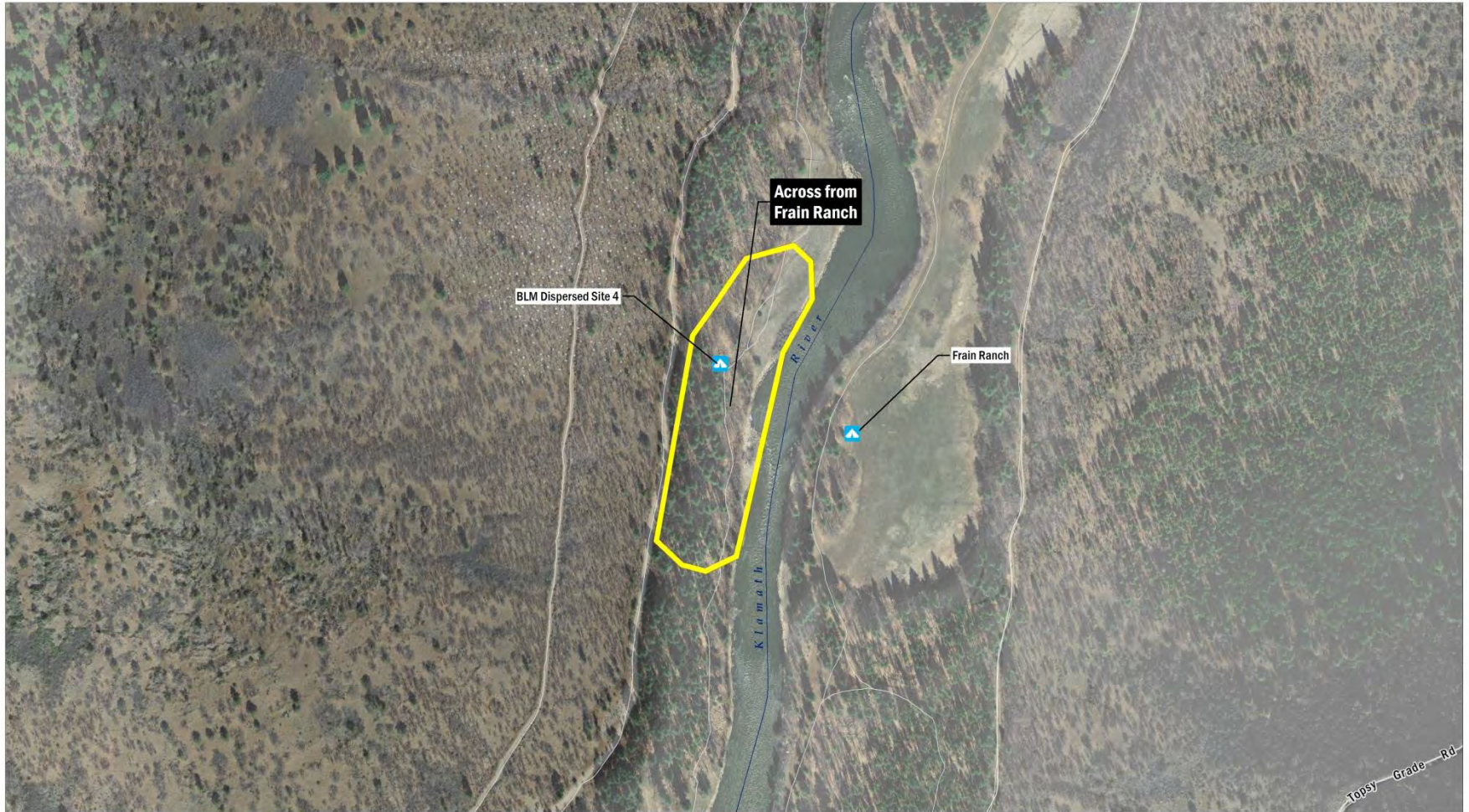
 Proposed Rafting Location  
 Recreational Areas

**Recreational Points**  
 Camping

## PROPOSED LOCATIONS OF RAFTING ACCESS POINTS

*Below J.C. Boyle  
Sheet 3 of 8*





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Klamath River Renewal Corporation  
Klamath River Renewal Project



- Proposed Rafting Location
- Recreational Points**
  - Camping

## PROPOSED LOCATIONS OF RAFTING ACCESS POINTS

Across from Frain Ranch  
Sheet 4 of 8











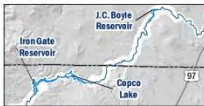
 **Proposed Rafting Location**






**Recreational Points**  
 **Camping**

### PROPOSED LOCATIONS OF RAFTING ACCESS POINTS

Camp Creek  
Sheet 7 of 8





-  Proposed Rafting Location
-  Recreational Areas
- Recreational Points**
-  Day Use
-  Boat Ramp
-  Hatchery

Iron Gate Hatchery  
Sheet 8 of 8

# Recreation Plan Discussion

- **Final Recreation Plan planned for completion and submission to FERC early 2019**

# Phase II Study Plan

## **1. Purpose and Scope of Document**

- 1. Archaeological resources (not built environment)**
- 2. Research Design to guide summer 2019 archaeological field investigations**
- 3. Establish criteria for determinations of site eligibility**

## **2. Project Background**

- 1. Project Scope (Description, FERC role, etc.)**
- 2. APE definition (ADI as focus of Phase II Studies)**

## **3. Previous Studies**

- 1. Summary of Previous Work**
- 2. Known Sites in the ADI**

## **4. Site Updates**

- 1. Updated site descriptions**
- 2. Current site conditions**

## **5. Research Design**

- 1. Criteria for determining NHRP eligibility**
- 2. Determination of sites requiring additional fieldwork**
- 3. Research Design that informs 5.1 and 5.2**
- 4. Site Specific Evaluation Strategy**

## **6. Post Dam Removal Survey**

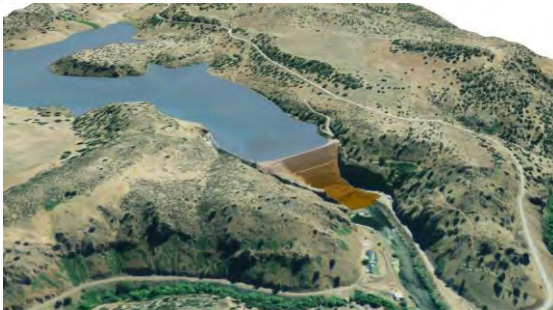
- 1. Survey and evaluation in currently inundated areas**
- 2. Confirmation of sites identified through research**



# Monitoring and Discovery Protocols



# Closing Remarks and Action Item Review



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# Lower Klamath Project

## Cultural Resources Working Group Meeting

**AECOM**

February 19, 2019

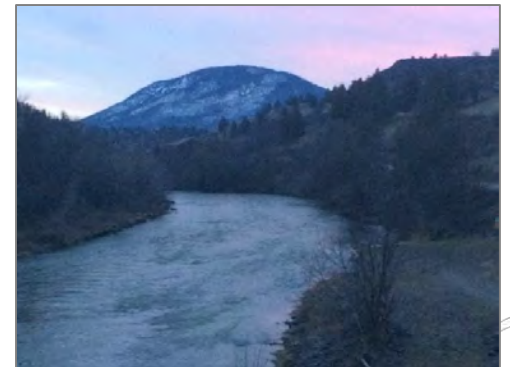
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RIVER RENEWAL  
CORPORATION**



# Meeting Agenda

- **Introductions**
- **Meeting Objectives**
- **Project Schedule**
- **Project Updates**
  - **November 2018 Meeting Minutes and Action Item Review**
- **Phase II Study Plan**
  - **Overview of Research Methods**
- **Inadvertent Discovery Plan**
- **SHPO Meetings**
- **Closing Remarks and Discussion**
- **Action Item Review**





# Introductions

# Meeting Objectives

- **Provide an update and overview of Phase II Study Plan**
  - Brief overview of Plan contents
  - Discussion of proposed general research methods for archival research, fieldwork, laboratory work, and specialized studies
  - Establish procedures for review and finalization of Phase II Study Plan
- **Provide an overview of the Inadvertent Discovery Plan**
- **Highlight upcoming document preparation and review schedule**
- **Schedule individual tribal meetings**

# Project Schedule

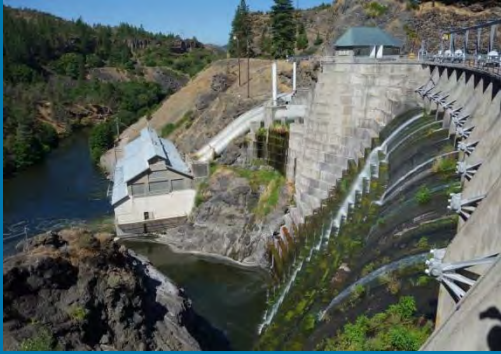
# Proposed Section 106 Timeline

Project Component	2018		2019			2020			2021				2022				
Environ. Permitting																	
Final Design																	
Dam Removal and Restoration																	
Phase II Study Plan	Draft																
Programmatic Agreement	Draft			Final													
Inadvertent Discovery Plan	Draft			Final													
Monitoring Plan	Draft			Final													
Looting and Vandalism Plan	Draft				Final												
Historic Props Mgmt Plan	Draft				Final												
Human Remains Plan			Draft		Final												
Phase II Evaluation																	
Phase III Mitigation																	
Monitoring																	

# Deliverable Review Periods

	Draft to KRRC	Draft to CRWG for Review	Receive Comments from CRWG	Final
Phase II Study Plan	January 26, 2019	February 28, 2019	March 22, 2019	April 12, 2019
Inadvertent Discovery Plan	February 18, 2019	March 29, 2019	June 3, 2019	October 14, 2019
Programmatic Agreement	February 28, 2019	March 29, 2019	June 3, 2019	October 14, 2019
Monitoring Plan	March 15, 2019	March 29, 2019	July 1, 2019	November 1, 2019
Looting and Vandalism Protection Plan	March 15, 2019	May 15, 2019	July 1, 2019	December 6, 2019
Historic Properties Management Plan	May 10, 2019	July 1, 2019	August 30, 2019	March 13, 2020
Human Remains Treatment Plan	June 24, 2019	August 5, 2019	October 14, 2019	March 13, 2020





# Project Updates



# Project Update Topics

- **Comments on November 2018 Meeting Minutes**
- **November 2018 Action Item Review**
- **SWRCB's Lower Klamath Project Draft EIR published on December 27, 2018, inclusive of AB52 Mitigation Measures**
  - **Comments on the Draft EIR are due by 12:00 pm (noon) on February 26, 2019**
  - **The Draft EIR is available online at:**
  - [https://www.waterboards.ca.gov/waterrights/water\\_issues/programs/water\\_quality\\_cert/lower\\_klamath\\_ferc14803\\_deir.html](https://www.waterboards.ca.gov/waterrights/water_issues/programs/water_quality_cert/lower_klamath_ferc14803_deir.html)

# November Action Items

Action Item	CRWG/Tribal Action	KRRC/AECOM Action	Status
November presentation distribution		KRRC to circulate presentation	Distributed November 1
Distribution of Tribal Caucus notes		AECOM to distribute to tribal representatives	Distributed on December 3, 2018
Facilitate sharing of documents		AECOM to look into ftp site or similar mechanism	Under investigation
Set up January and February Tribal Caucus meetings		Polls circulated; no appropriate dates identified	Conference call set for February 19
Civil War cemetery		Identify and address potential impacts	As discussed at November meeting, no further action items are planned due to the elevation and distance from the ADI; no project impacts are anticipated
IDP and Monitoring Plans	Provide draft plans	Incorporate tribal protocols into draft plans	Plan preparation underway



# Phase II Study Plan

# Phase II Study Plan Overview

Today's discussion focuses on General Research Methods  
proposed for the Phase II NRHP Evaluation

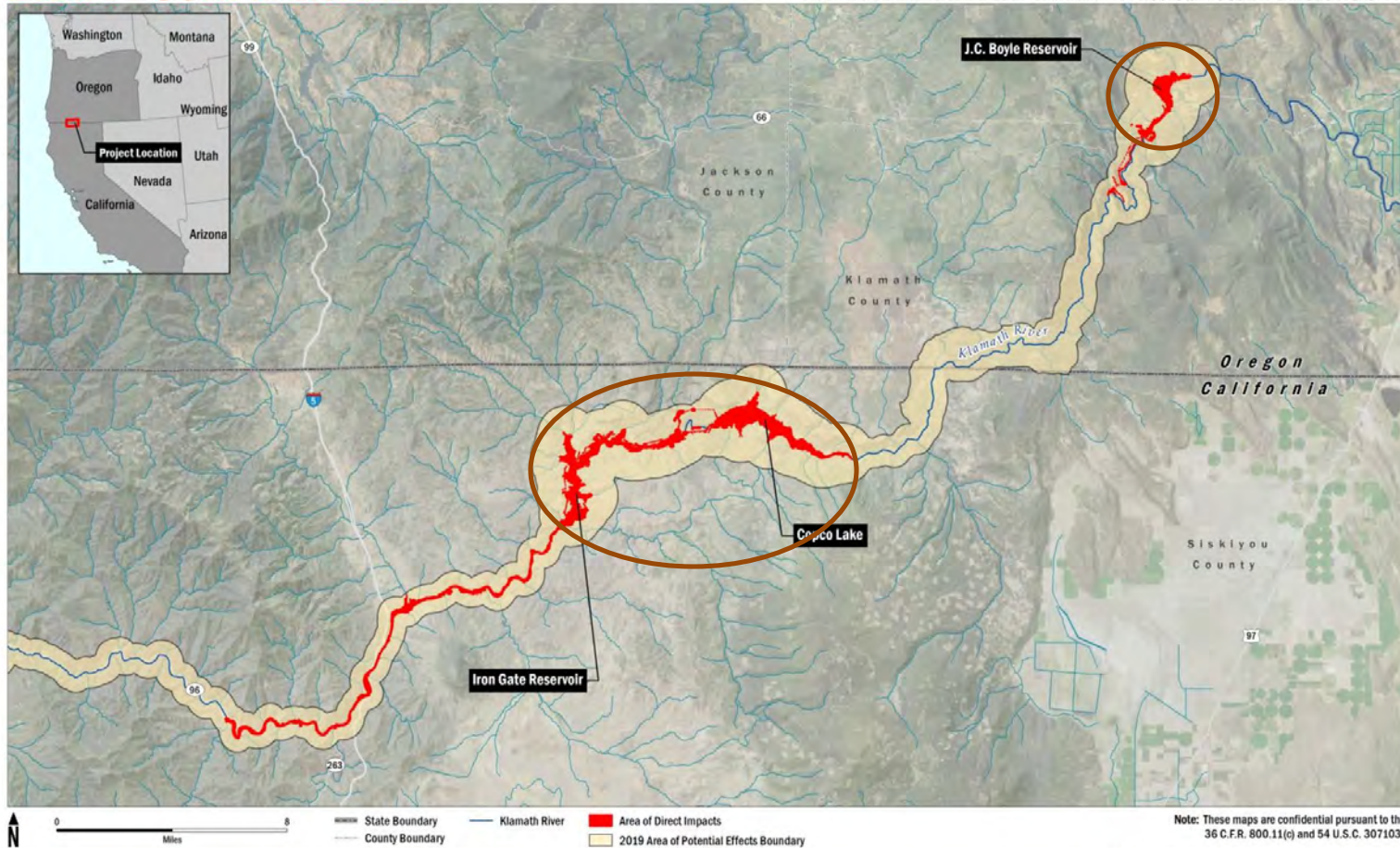
- Emphasis on archaeological sites, not built environment resources
- 49 sites located in the ADI on PacifiCorp Parcel B lands whose NRHP status is unevaluated or potentially eligible
  - 27 Precontact: rockshelters, villages and camp sites, and lithic scatters
  - 11 Multiple component: precontact and historic-period remains
  - 11 Historic-period: rock features and alignments (ditches and walls), homestead, Copco 1 dam construction camp, and abandoned railroad grade

Reservoir	Precontact	Multiple	Historic	Total
J.C. Boyle	14	4	0	18
Copco Lake	6	3	3	12
Iron Gate	7	4	8	19
TOTAL	27	11	11	49



# Area of Direct Impacts (ADI)

**DRAFT - CONFIDENTIAL**



**AECOM**  
Klamath River Renewal Corporation  
Klamath River Renewal Project

**2019 AREA OF POTENTIAL EFFECTS**  
Overview

# Phase II Study Overview

- **2 sites lack data potential and are not included in Phase II study**
  - 1 precontact site consisting of a bedrock milling feature (not in its original location)
  - 1 historic-period refuse scatter that lacks integrity
- **47 sites have the potential for Project effects and are advanced for Phase II NRHP eligibility evaluations.**
  - 8 sites consist of historic-period rock features or linear resources (irrigation ditches, rock walls) that would be evaluated through archival research
  - 39 sites consist of precontact, historic-period, and/or multiple component resources that are proposed for subsurface testing.

# Proposed Phase II Sites for Subsurface Testing by Component Type

Reservoir	Precontact Rockshelter	Precontact Village	Precontact Artifact or Lithic Scatter	Historic-Period	TOTAL
J.C. Boyle	2	8	7	0	17
Copco Lake	0	3	6	2	11
Iron Gate	0	4	6	1	11
TOTAL	2	15	19	3	39

# General Research Strategy

- **Research methods and procedures focus on interrelated components to provide assessment of NRHP eligibility and proposed project-related effects.**
  - 1) Archival Research
  - 2) Fieldwork: Surface Reconnaissance and Subsurface Testing
  - 3) Treatment of Human Remains
  - 4) Fieldwork Documentation
  - 5) Laboratory Methods
  - 6) Specialized Studies



# Research Plan Considerations

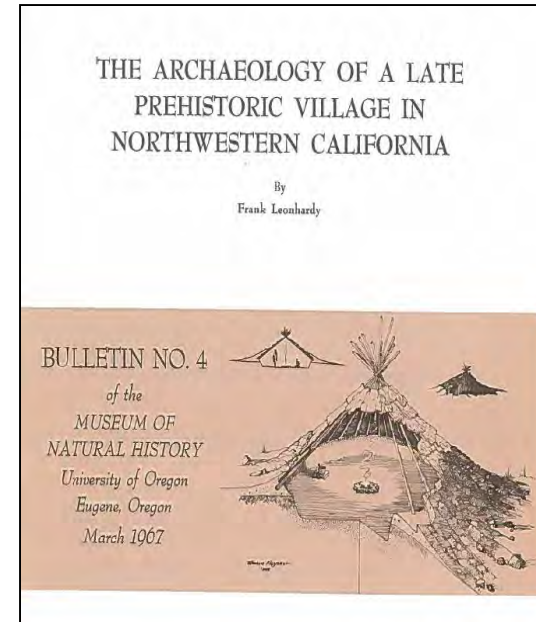
- *Field review* of sites in 2017 and 2018
- *Potential project effects* (e.g., disposal sites, drawdown zone erosion, recreation, etc.)
- *Emphasis* on direct impact areas
- *Research values and research potential* each site currently holds
- *PacifiCorp Parcel B land restriction*; no work on private land
- *Reservoir drawdown zone*: devise methods based on feasibility of work
- *Site size* may be magnified due to sediment erosion and translocation of artifacts in the reservoir drawdown zone
- *Preservation* of cultural materials in water-logged (inundated) sediments

# Research Plan Considerations, cont.

- *Previous research methods* employed during archaeological site testing work conducted in the Upper Klamath River area (1950s to 2000s) and depths of cultural deposits
- *Oregon OHP guidelines* for conducting field archaeology (2016) and recording and evaluating linear cultural resources (2013)
- *Limitations for site testing volume*
  - Programmatic Agreement between US Forest Service, California OHP, and Advisory Council
  - Programmatic Agreement between BLM, California OHP, and Advisory Council
- *Input from the CRWG*

# Archival Research

- **17 Phase II archaeological sites**
- **4 precontact sites previously excavated by the University of Oregon**
  - 35KL13, 35LK14, and 35KL15 in the J.C. Boyle Reservoir area
  - CA-SIS-326 in the Iron Gate Reservoir area
  - Review field notes, further descriptive analysis of the artifact assemblages, and select specialized studies (e.g., obsidian source and hydration, faunal analysis) to arrive at a well-informed NRHP assessment.
- **13 sites with historic-period components**
  - 1 in Klamath County, 12 in Siskiyou County
  - Linear resources (irrigation ditches and rock walls) or other rock features



# Surface Reconnaissance Procedures

- All 39 sites
- Identify surface artifacts, artifact concentrations, and cultural features to aid in the assessment of site and locus boundaries
- Survey using controlled transects with a maximum 3-meter (m) spacing
- Collection of temporally and functionally diagnostic artifacts
- Cultural features will be recorded, mapped, and photographed.



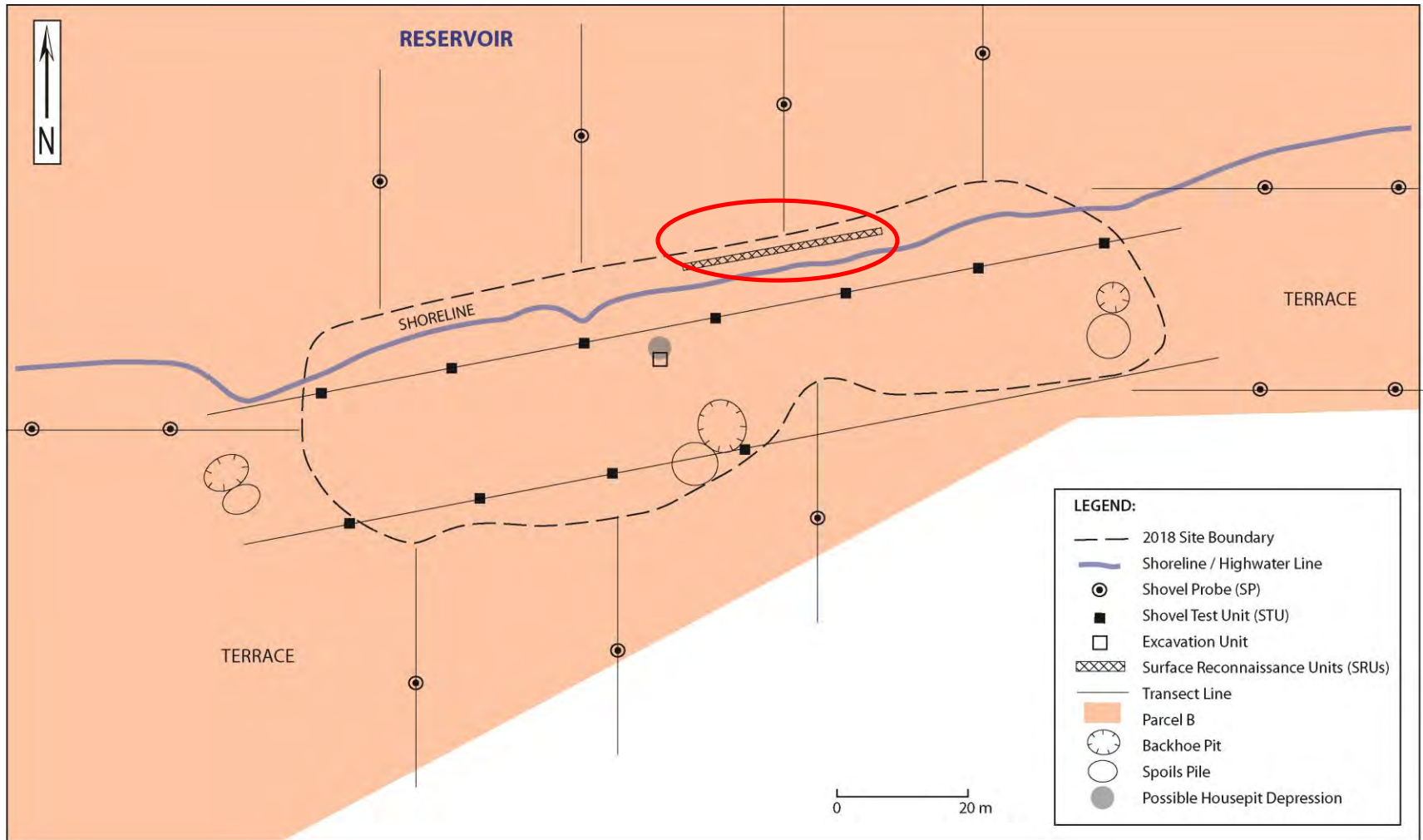


# Surface Reconnaissance Units (SRUs)

- Focused on precontact surface artifacts in reservoir drawdown zone
- Most surface artifacts are concentrated within a narrow gravel strip (rocky wake zone) and mud flats at the reservoir edge, bordering the low water line.
- Rocky wake zone: if exposed during site testing, area will be divided into 2 m long segments (SRU). All surface artifacts collected as a group.
- Mud flats: Debitage and tools outside the rocky wake zone will be collected and individually provenienced.
- For some sparse artifact scatter sites, SRUs may provide the only information recovered from the sites.
- Programmed for 6 sites, total of 135 SRUs



# Surface Reconnaissance Unit Example

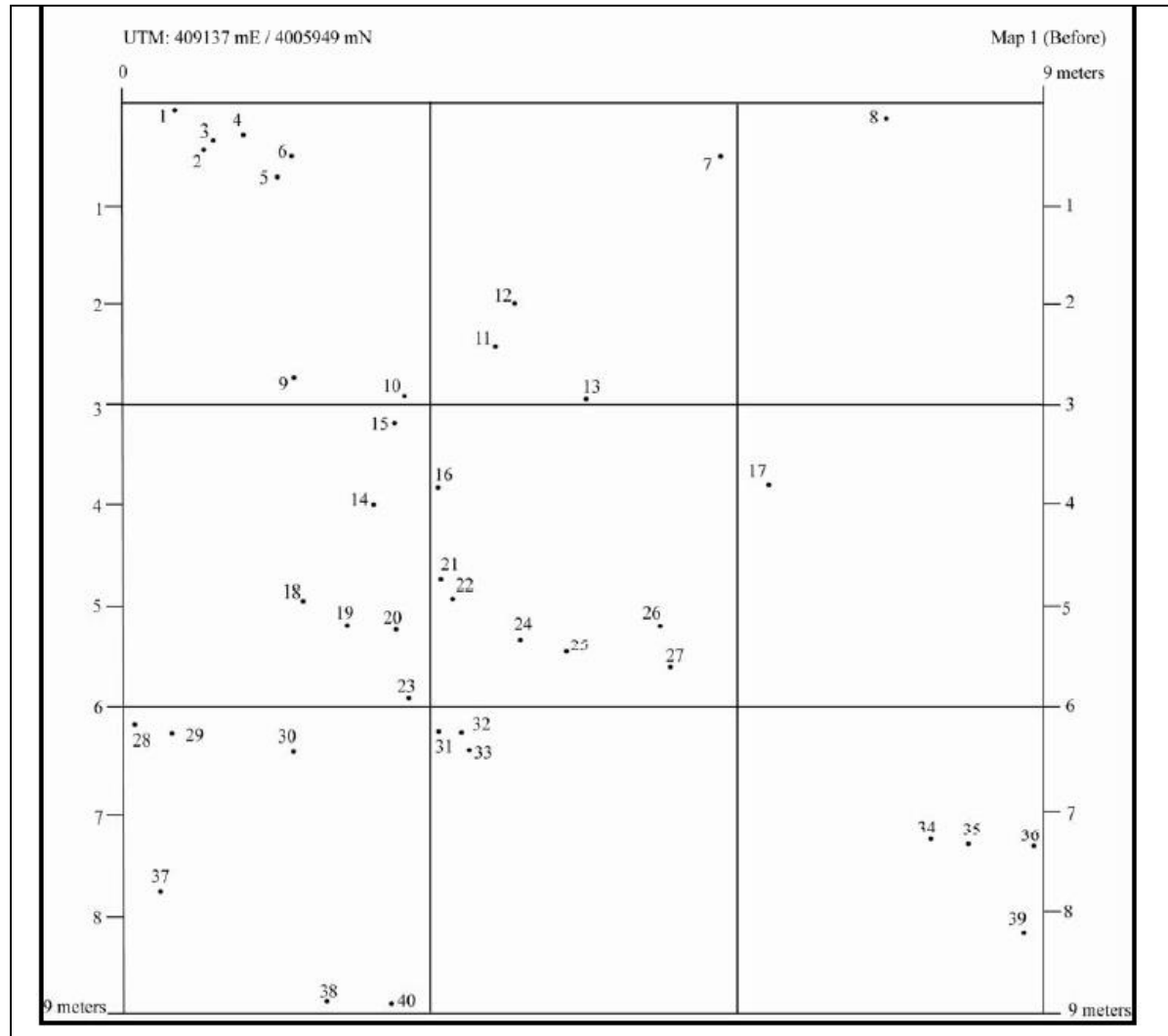


# Surface Collection Units (SCUs)– Reservoir and non-reservoir sites

- Used in site areas that have been less prone to erosion and fluctuating water levels and where cultural deposits are more intact.
- Provide information regarding:
  - surface artifact distribution
  - intrasite patterning
  - lithic technology and manufacturing
  - additional samples for specialized studies such as obsidian source and hydration analysis
- SCUs will measure 2-x-2 m, with units placed within artifact concentrations and/or other areas of interest.
- All surface artifacts will be GPS point-provenienced and/or hand-plotted onto a unit-specific base map and collected
- Programmed at 19 sites, total of 45 SCUs



# Surface Collection Unit Example





# Subsurface Excavation

- **Hand excavation at 39 sites**
  - Shovel Probes (SPs)
  - Shovel Test Units (STUs)
  - Excavation Units (EUs)
  - Auger Bores (ABs)
- **Includes drawdown and non-drawdown zones**
- **Wet and/or dry screening through 1/8-inch hardware mesh**

Reservoir	Precontact	Multiple	Historic	TOTAL
J.C. Boyle	13	4	0	17
Copco	6	3	2	11
Iron Gate	7	3	1	11
TOTAL	26	10	3	39



**Reservoir drawdown and non-drawdown zones**

# Shovel Probes (SPs)

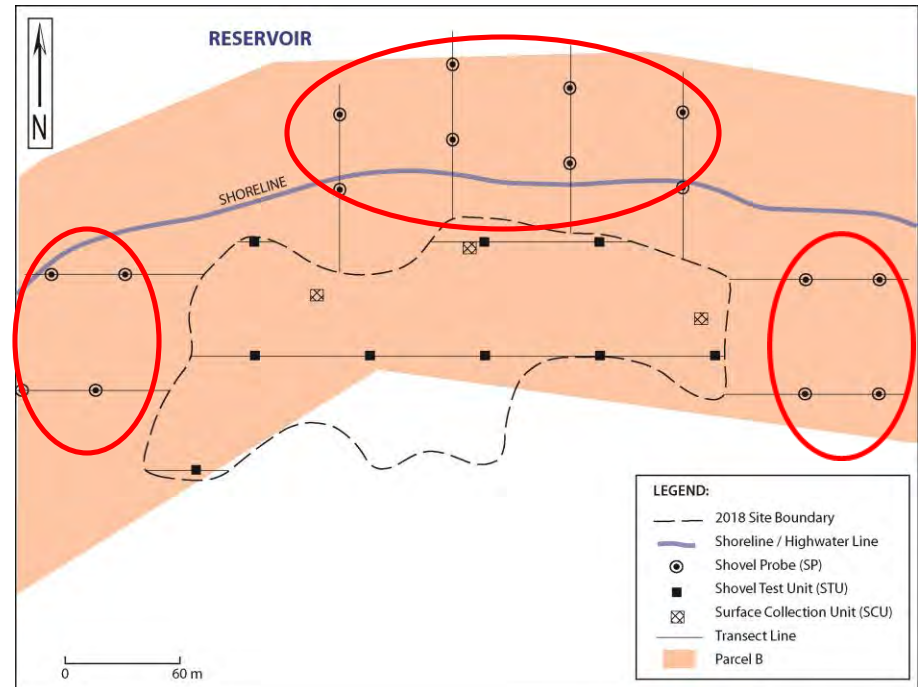
- Site boundary delineation and refinement
- Focused outside the recorded site boundary
- The spatial limits of the Phase II sites have not been previously assessed in relation to the location of proposed Project impacts.
- To enhance Project-wide consistency, shovel probing will follow the Oregon SHPO guidelines
- Preliminary information on:
  - Depth and distribution of subsurface cultural materials
  - Sediment characteristics
  - Feasibility of excavation in drawdown zone
- Transect lines will be established outside a recorded or newly defined site boundary within non-inundated areas of a site and only on PacifiCorp Parcel B lands.



Shovel probe unit example

# Shovel Probes, continued

- **SPs will be oriented along cardinal directions**
  - 20 m intervals on sites less than 50 m across
  - 30 m intervals for sites more than 50 m across
- **SPs will be excavated from beyond the anticipated site boundary towards the anticipated interior.**
- **SPs will continue until two consecutive negative probes are encountered.**
- **SPs will measure 30 cm in diameter and excavated in 10 cm levels to sterile subsoil (i.e., after two sterile 10-cm levels) or 100 cm below surface (cmbs), whichever comes first.**



- Programmed at 36 sites with precontact components, total of 650 probes
- No. of probes based on site size and Parcel B area: range from 4 to 55 SPs per site
- Average estimated depth is 80 cm below surface (cmbs)

# Shovel Test Units (STUs)

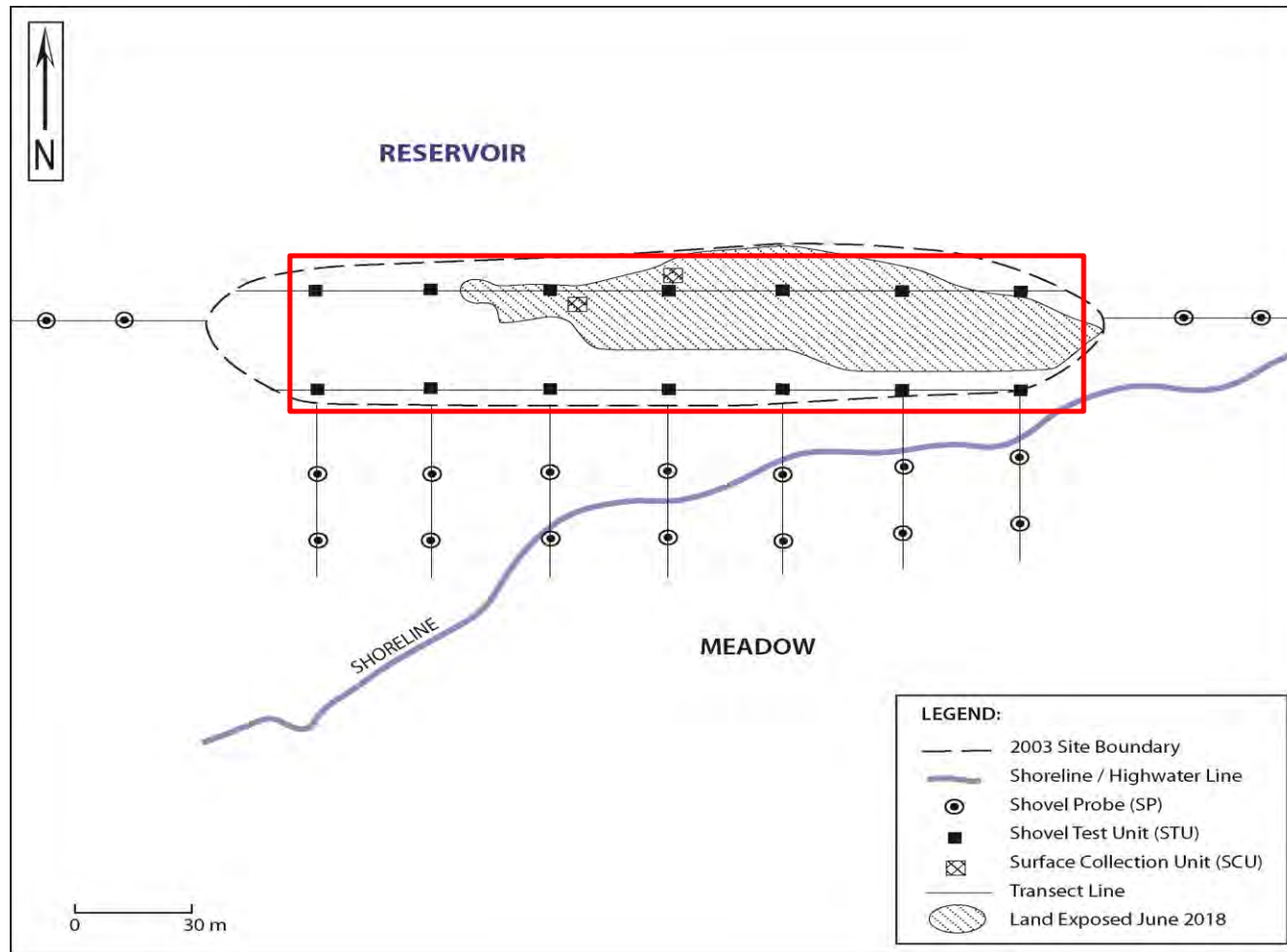
- Excavated inside the site boundary, in areas of artifact concentrations, and along transect lines and intervals established for each site based on site size
- Provide information on
  - Distribution, depth, and research value of subsurface archaeological materials
  - Sediment characteristics
  - Subsurface integrity
  - Translocated vs. in situ deposits
- 50 x 50 cm units excavated in 10 cm levels
- The number of STUs will be based on site size (m<sup>2</sup>) and Parcel B area.

Site Size (m <sup>2</sup> )	Transect Interval	STU Interval	No. of STUs	No. of Sites
< 1,000	10 m	10 m	8-12	7
1,000 – 5,000	20 m	20 m	8-18	11
5,000– 10,000	30 m	30 m	8-18	6
10,000– 50,000	30 m	30 m	8-34	9
> 50,000	30 m	30 m	40-55	3

- STUs programmed at 36 sites
- Average estimated depth is 80 cmbs



# Shovel Test Unit Layout Example



# Excavation Units (EUs)

- Provide a larger sample from areas that exhibit the greatest potential for subsurface archaeological materials.
- Used to examine different areas of the site and cultural features to assist in NRHP evaluation, impacts assessment, and planning for mitigation measures.
- Standard measure 1 x 1 m or 1 x 2 m in size
- Excavated to a minimum of 10 cm below culturally sterile soil in arbitrary 10 cm levels unless natural strata are discerned and can be followed.

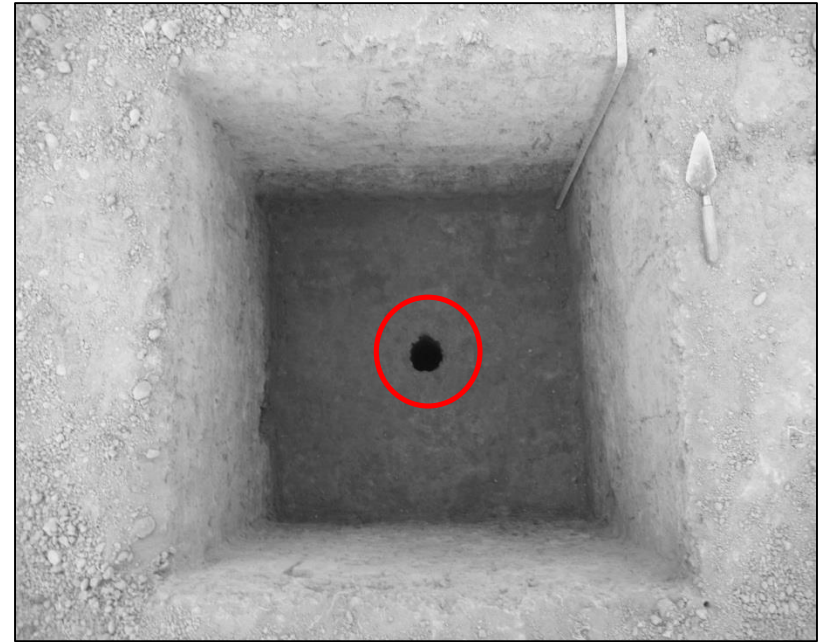


1-x-1 m EU example

- Programmed at 37 sites
- No. of EUs ranges from 2 to 6 per site based on site size and number of features present and includes reserve units
- Average estimated depth is 60 cmbs

# Auger Bores (ABs)

- Used at base level of select STUs and EUs to ensure that no cultural deposits are present below their excavated depths
- Hand-augering using a 15 cm diameter bucket bored to a minimum depth of 50 cm below the base level unit



Auger bore at base on unit

# Proposed Excavation Volume Summary

Unit Type	No. of Sites	No. of Units	Estimated Depth	Estimated Volume (m <sup>3</sup> )	Maximum Volume Per Site
Shovel Probes	36	650	80 cmbs	36.79	1.02
Shovel Test Units	36	564	80 cmbs	112.88	3.13
Excavation Units	37	112	60 cmbs	67.20	1.81
Total					5.96

- Shovel probes include areas outside the current site boundary
- Estimated depth and maximum volume will vary by site and exposure of drawdown zone and feasibility of excavation within it



# Treatment of Human Remains

- Should human remains or items of cultural patrimony be encountered, or situations of a sensitive or controversial nature arise, work at the specific location will stop and all excavations will cease near the find.
- Subsequent procedures will follow those outlined in the Project's Inadvertent Discovery Plan (IDP).

# Field Documentation

- **Photographic and written documentation**
  - Field specimen logs from surface collection
  - SPs and ABs logs, unit level records for STUs and EUs
  - Site sketch maps
  - Feature records
  - Stratigraphic profile drawings of subsurface excavation units
  - General field notes
  - Photographic documentation (digital color images)
    - General site photographs taken before, during, and at the completion of excavations
    - Unit stratigraphic profiles
    - Cultural features

# Laboratory Methods

- Recovered cultural materials will be placed in plastic bags that separate material types and grouped in paper level bags labeled according to site, date, unit, level, excavators, and contents
- All bags will be checked into the field lab and secured on a daily basis
- After each field rotation, artifacts and other samples will be transported for processing (washed and catalogued) to the AECOM laboratory in Chico, California
- Curation: Repositories to meet federal guidelines (36 CFR Part 79)
  - Oregon Sites: University of Oregon Museum of Natural and Cultural History
  - California Sites: TBD

# Specialized Studies

- Radiocarbon Dating
- Tephra Analysis
- Obsidian Geochemistry and Hydration
- Geomorphology and Sedimentology
- Paleoethnobotanical Analysis
- Assemblage Analyses
  - Flaked Stone Artifacts
  - Ground Stone Artifacts
  - Ceramic Artifacts
  - Small Finds
  - Faunal Remains
  - Freshwater Mussel Shell
  - Historic-period Artifacts

# Inadvertent Discovery Plan

# Inadvertent Discovery Plan (IDP)

- **Purpose of Document**

- Provide basic protocols to follow in the event of encountering cultural resources or human remains
- Tribal monitoring will be covered in separate document
- IDP will work in concert with other plans (e.g., looting and vandalism prevention plan, archaeological monitoring plan).

# IDP, continued

- **Plan begins with legal summary and examples of cultural resources**
- **Applies to all ground-disturbing activity**
  - Does not apply to archaeological survey or site testing
  - Does apply to construction/deconstruction actions
- **Protocols divided into two primary sections**
  - Cultural Resources
  - Human Remains

# IDP Protocol Discussion Topics

- **Protocols for each are different**
  - Human remains involve notification of coroners office, state police, Commission on Indian Services (OR)/Native American Heritage Commission (CA)
- **Designation of a project Cultural Resource Specialist by project proponent**
- **Protocols during drawdown activities where work stoppage may not be immediately possible**



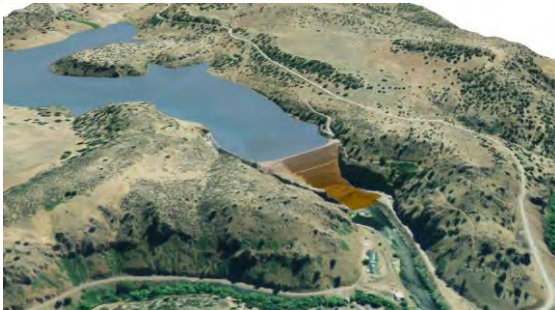
# SHPO Meetings

# SHPO Meetings

- **AECOM met with CA SHPO on February 12 and OR SHPO on February 13**
- **General review of project status**
- **Planning for steps moving forward**



# Closing Remarks and Action Item Review



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# Next Steps

- **Redacted vs. non-redacted Draft Phase II Plan**
- **February 28, 2019 – KRRC submits Draft Phase II Plan to CRWG for review**
- **March 22, 2019 - CRWG submits comments on Draft Phase II Plan to KRRC**
- **Individual tribal meetings to be scheduled for March**
- **In person Tribal Caucus and CRWG meeting in April in Yreka, CA**
  - Week of April 22 to April 26 or April 30 to May 2
  - Project area tour





# Lower Klamath Project

## Cultural Resources Working Group Meeting

**AECOM**

April 25, 2019

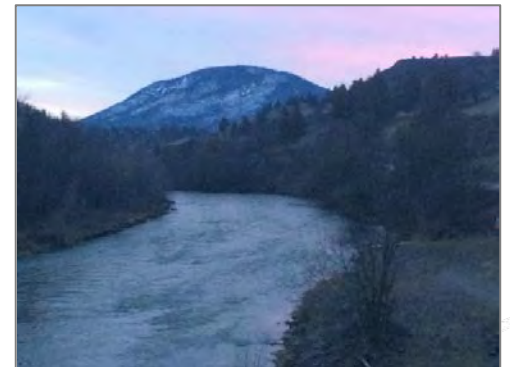
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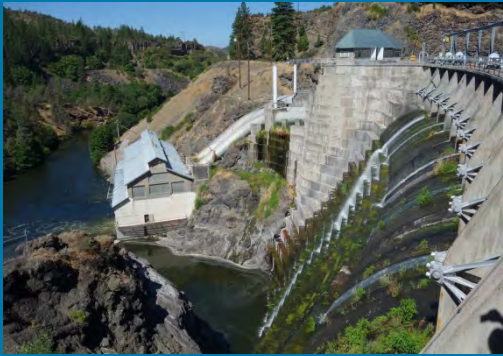
  
**KLAMATH  
RIVER RENEWAL  
CORPORATION**



# Meeting Objectives

- **Introductions**
- **February Meeting Minutes Review**
- **Project Updates**
  - Site Visit Review
  - Project Schedule Review
  - Action Items
  - Phase II Plan Review Schedule
- **Individual Tribal Consultation Meetings**
- **Inadvertent Discovery and Monitoring Plan (IDMP)**
- **Shasta Nation Presentation**
- **Action Item Review and Additional Discussion**





# Introductions



# Project Updates



# Project Update Topics

- **Site Visit Review**

# Deliverable Review Periods

	Draft to KRRC	Draft to CRWG for Review	Receive Comments from CRWG	Final Draft
<b>Phase II Study Plan</b>	January 26, 2019/ April 3, 2019	April 25, 2019	May 24, 2019	June 28, 2019
<b>Inadvertent Discovery Plan</b>	March 21, 2019	May 17, 2019	June 14, 2019	October 18, 2019
<b>Programmatic Agreement (Prelim Draft)</b>	March 21, 2019	May 17, 2019	June 14, 2019	October 18, 2019
<b>Monitoring Plan</b>	May 10, 2019	May 17, 2019	June 14, 2019	October 18, 2019
<b>Looting and Vandalism Protection Plan</b>	June 14, 2019	June 28, 2019	July 26, 2019	October 18, 2019
<b>Historic Properties Management Plan</b>	November 15, 2019	November 27, 2019	January 17, 2019	March 6, 2020
<b>Human Remains Treatment Plan</b>	November 15, 2019	November 27, 2019	January 17, 2019	March 6, 2020

# Action Items

Action Item	CRWG/Tribal Action	KRRC/AECOM Action	Status
February 2019 presentation distribution	Circulate presentation (including hardcopy to Shasta Nation)	February 2019 presentation distribution	Distributed February 22
Facilitate document sharing	Look into ftp site or similar mechanism	Options reviewed	Current distribution methods determined best to ensure maintenance of confidentiality
Set up April in-person Tribal Caucus/CRWG meeting and tour	Send out Doodle poll and emails to CRWG	Respond to AECOM Doodle poll re: location and schedule preferences	Scheduled for April 23 and 24
Phase II Study Plan	Distribute to CRWG	Comments due back to KRRC/AECOM three weeks after receipt	Plan distributed April 19
Individual Tribal Consultation	Schedule meetings for March	Provide dates/times to AECOM	Meetings held with Yurok, Shasta Nation and Shasta Indian Nation
IDP and Monitoring Plans	Incorporate CRWG protocol into draft plans	Provide draft plans to AECOM	Drafts in progress; anticipated xxx

# Cultural Resources Monitoring and Inadvertent Discovery Plan

# Introduction

- **Regulatory Context**
  - Relationship with PA and HPMP
  - Federal and State law
  - CEQA mitigation measures
- **Two Sections**
  - Cultural Resources Monitoring
  - Inadvertent Discovery Protocols

# Cultural Resources Monitoring

- **Plan Purpose**
  - Legal/regulatory requirements
  - High potential for encountering currently unknown cultural resources
  - Avoid and minimize adverse effects during ground disturbing activity
  - Acknowledges need for Tribal Representatives
    - Not a contract for services

# Cultural Resources Monitoring, Cont.

- **Roles and Responsibilities**
  - **FERC**
    - Lead federal agency
  - **KRRC**
    - Project proponent and FERC Section 106 delegate
  - **Cultural Resources Specialist**
    - Supervisory capacity responsible for implementation of cultural resource monitoring and IDP protocols
  - **On-site monitors**
    - Monitoring, safety, perform IDP protocols
    - Reporting/Documentation
    - Consult and make recommendation regarding on site actions

# Cultural Resources Monitoring, Cont.

- **Roles and Responsibilities, cont.**
  - **Tribal representatives**
    - Develop in consultation with Tribes
    - Comment on draft plan
  - **Construction Field Supervisors**
    - Work with on-site monitor during discoveries
    - Coordinate work stop/start and security functions
    - Safety
    - Assume initial responsibilities of on-site monitor



# Cultural Resources Monitoring, Cont.

- **Qualifications and Training**
  - **Cultural Resources Specialist**
    - SOI Qualified (PI Level)
    - Regional expertise and demonstrated experience with artifact/feature identification, analysis, and evaluation
    - Osteology
  - **Monitoring Teams**
    - **Archaeological monitors**
      - SOI Qualified (Crew Chief Level)
      - Identification and analysis experience
      - Previous field monitoring
      - On-Site Representatives of the CRS
    - **Tribal Monitors**
      - Selected by Tribes

# Cultural Resources Monitoring, Cont.

- **Training**
  - **Project Orientation**
    - Cover IDP Protocols
      - Expectations, types of resources
      - Work stop, secure, and notify process
    - Safety (Project and site-specific)
    - Replacement monitors
  - **Training Program**
    - Please comment on specific training needs

# Cultural Resources Monitoring, Cont.

- **Monitoring Locations and Activities**
  - **Locations**
    - Geoarchaeological sensitivity analysis
    - Ground-disturbing locations
  - **Types of Activities**
    - No monitoring of archaeological field surveys and site testing (no application of IDP protocols except for human remains).
    - Reservoir Drawdown
    - Facility Decommissioning
    - Restoration and Recreation Plan Implementation
    - Long-term monitoring

# Cultural Resources Monitoring, Cont.

- **Documentation and Reporting**
  - Recordation of all cultural resources discovered during monitoring
  - Daily monitoring logs
  - Collection and Curation of Artifacts
  - Final Monitoring Report
    - Summarize all activities,
      - append daily logs, site forms, photographs, maps
    - CRWG review
  - Site Specific Treatment Plans

# IDP

- **Introduction**
  - Recap of discovery potential
  - Two Sections: Cultural Resources and Human Remains
  - Regulatory Context
    - Two jurisdictions (California and Oregon)
    - Role of law enforcement, NAHC and CIS
  - Geographic Focus is the ADI
    - Parcel B Lands (PacifiCorp)
    - Federal Lands (BLM and USFS)
      - Agency specific protocols

# IDP, Cont.

- **Identification of Cultural Resources**
  - Precontact and post-contact artifact and feature identification
- **Discovery Protocols**
  - Stop
  - Secure
  - Notify
  - Support
  - Document
  - Proceed

# IDP, Cont.

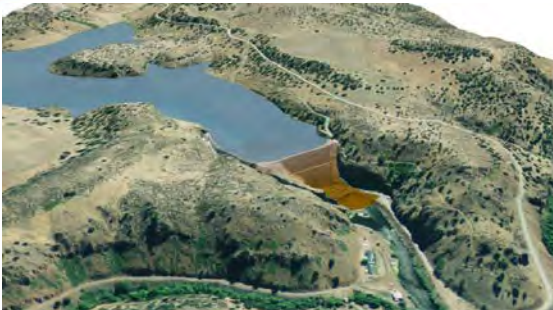
- **Protocol Exceptions**
  - Drawdown
  - Safety
- **Contact Information**
  - Name, Organization, Role, Phone, E-mail
  - Need feedback from CRWG Members

# Shasta Nation Presentation





# Next Steps and Review of Action Items



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# Next Steps and Action Items

- **Action Items**





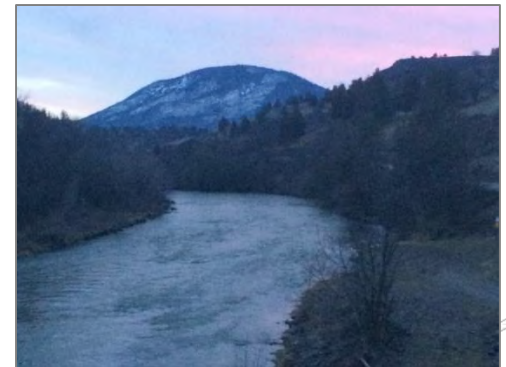
# Lower Klamath Project

## Cultural Resources Working Group Meeting

June 12, 2019

# Meeting Agenda

1. Introductions
2. Today's Meeting Objectives
3. April 2019 Meeting Minutes and Action Items
4. Tribal Caucus Report
5. Project Updates
  - General Update and Project Schedule
  - Recreation Plan
  - Phase II Study Plan
  - Monitoring and Inadvertent Discovery Plan
  - Section 106 Outreach: Advisory Council and other Consulting Parties
5. Closing Remarks and Discussion
6. Action Item Review







# 1 – Introductions



## 2 – Meeting Objectives

# Meeting Objectives

- Provide an update of the Recreation Plan, including conceptual designs
- Provide an update of the Phase II Study Plan
  - Comments from CRWG received to date
  - Establish procedures for review and finalization of Phase II Study Plan
- Provide an overview of the Monitoring and Inadvertent Discovery Plan
  - Establish procedures for review of Monitoring and Inadvertent Discovery Study Plan
- Highlight upcoming document preparation and review schedule
- Schedule individual tribal meetings



# 3 – April 2019 Tribal Caucus and CRWG Meeting



# April 2019 Tribal Caucus and CRWG Meeting

- Comments on April 2019 Meeting minutes
- Review of April 2019 Meeting action items
- Tribal Caucus Report

Action Item	CRWG/Tribal Action	KRRC/AECOM Action	Status
KRRC Legal Team Response to Shasta Nation		Check in with KRRC legal team	Letter in progress; to be delivered prior to June CRWG meeting
Monitoring/ Inadvertent Discovery Plan		Distribute to CRWG by May 17, 2019	In review; to be distributed June 28
Provide acronym list		Provide list with terms commonly used in the documents and meetings	Ready for distribution
LVPP Jurisdiction		Ask KRRC legal dept. what LVPP jurisdiction can be. Agreement documents must align with cultural resource laws	No progress made
Define Tribal training certifications	Provide draft language regarding individual Tribal training/approval requirements for a monitor to AECOM		



## 4 – Project Updates

# General Update and Project Schedule

# Project Update

## 1. Field Survey Update

- a) Ongoing biological and cultural surveys and testing this summer

## 2. Regulatory

- a) Draft CEQA process complete; SWRCB is in the process of reviewing and assessing comments
- b) Cost and risk submittal to FERC in July 2019
- c) USACE 404 permit application submitted
- d) Draft Biological Assessment coordination with USFWS and NMFS ongoing
- e) Klamath County MOU executed

# Project Update

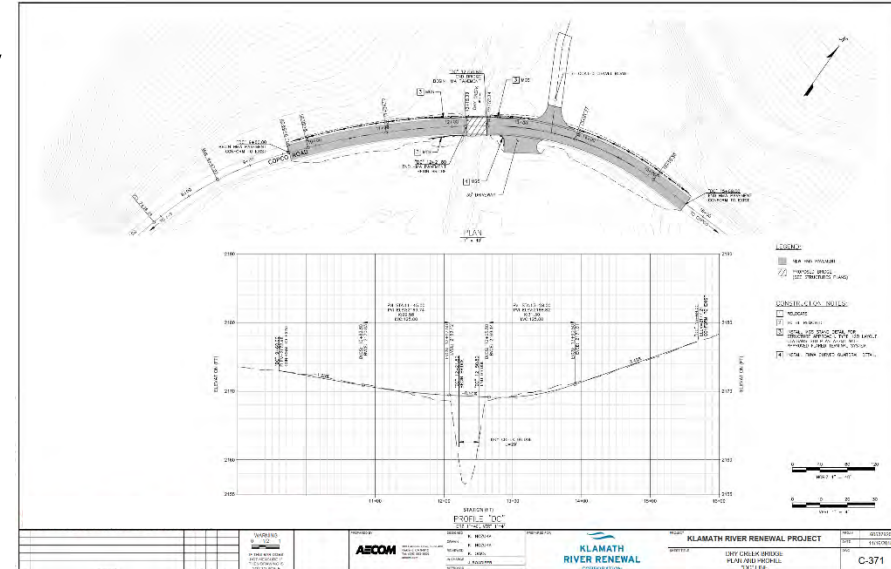
## 3. Procurement Update

- a) Progressive Design-Builder Preliminary Services Contract (Kiewit) executed
- b) Kiewit team has begun field work and final design development



## 4. Detailed Design

- a) Detailed design underway for nearly all project elements underway
- b) Working toward 60% design by December 2019



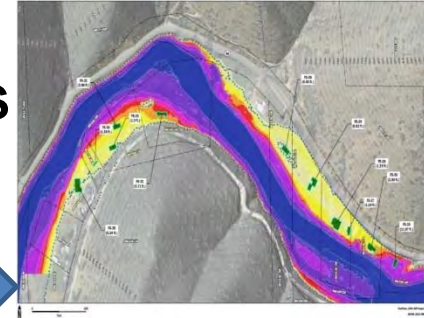


# Project Update

## Primary Work Components

Pre-Drawdown

1. City of Yreka Intake & Pipeline Replacement
2. Temporary Construction Access Improvements
3. Permanent Road & Bridge Improvements
4. Downstream Flood Control Improvements →
5. Hatchery Modifications
6. Dam Tunnel & Gate Improvements
7. Reservoir Drawdown



Post-Drawdown

8. Dam & Hydropower Facility Removal →
9. Reservoir Habitat Restoration →
10. Recreation Plan and Restoration



# Deliverable Review Periods

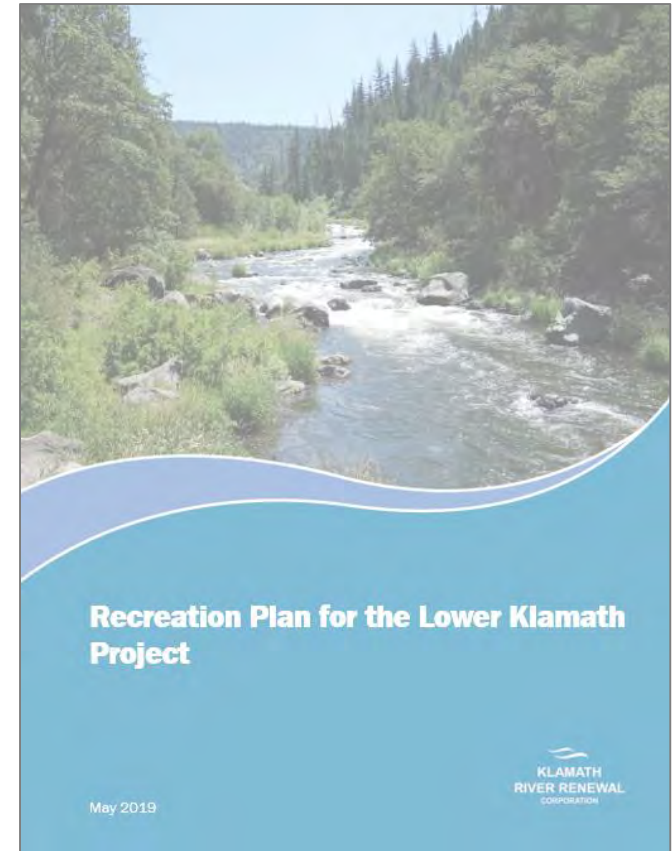
	Draft to KRRC	Draft to CRWG for Review	Receive Comments from CRWG	Final Draft
Phase II Study Plan	January 26, 2019/ April 3, 2019	May 3, 2019	June 19, 2019	July 31, 2019
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Programmatic Agreement (Prelim Draft)	March 21, 2019 June 28, 2019	August 2, 2019	September 6, 2019	October 18, 2019
Monitoring Plan	June 4, 2019	June 28, 2019	August 2, 2019	October 18, 2019
Looting and Vandalism Protection Plan	June 28, 2019	August 2, 2019	September 6, 2019	October 18, 2019
Historic Properties Management Plan	November 15, 2019	November 27, 2019	January 17, 2019	March 6, 2020
Human Remains Treatment Plan	November 15, 2019	November 27, 2019	January 17, 2019	March 6, 2020

# Recreation Plan Update



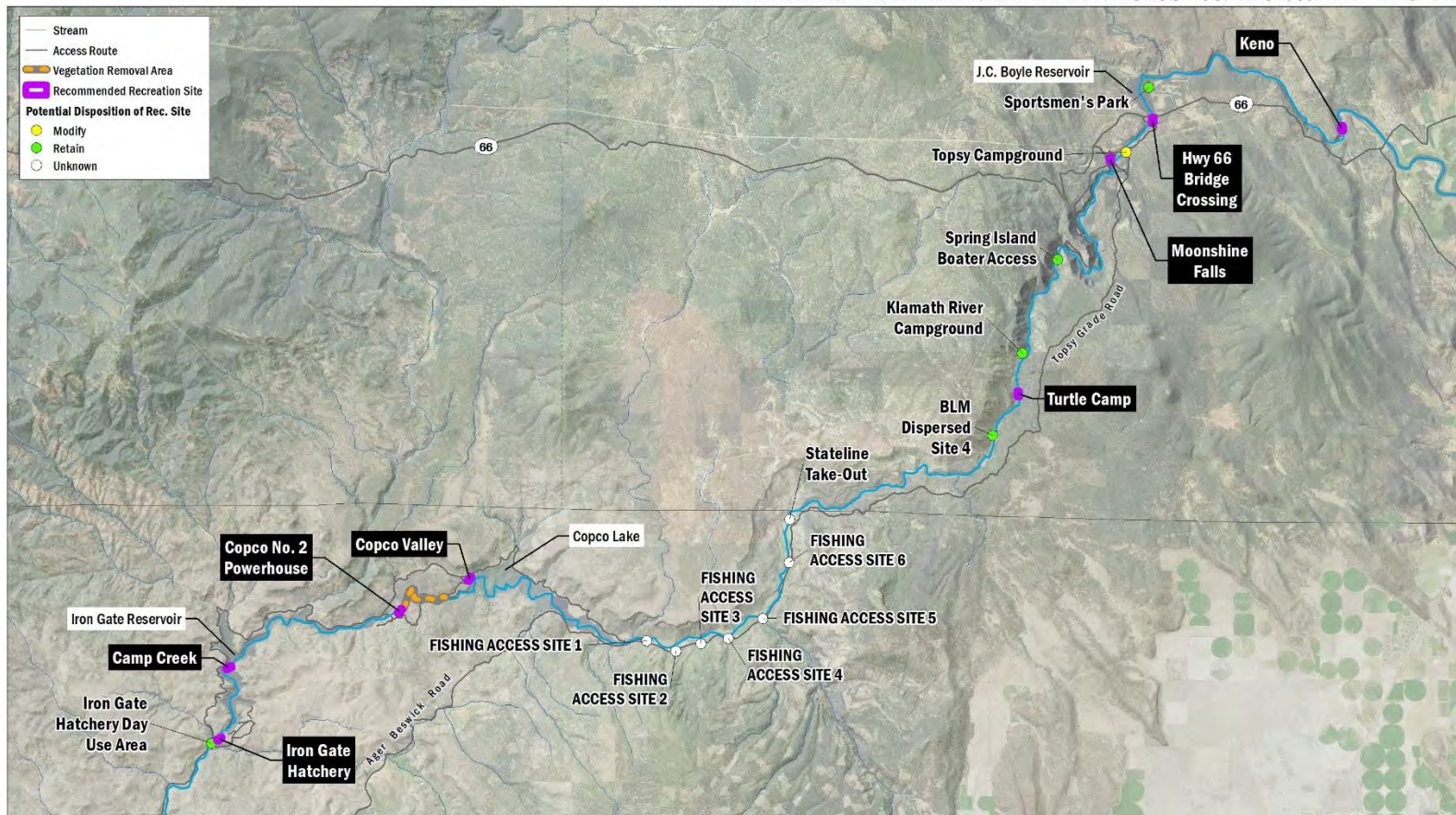
# Status on Recreation Plan

- **Recreation Plan under development**
  - Now includes additional details at proposed sites, including scenic quality information, and conceptual designs
- **Working towards Recreation Plan by December 2019, subject to FERC's schedule for processing the Surrender Application**



# Status on Recreation Plan

## Recommended Recreation Opportunities

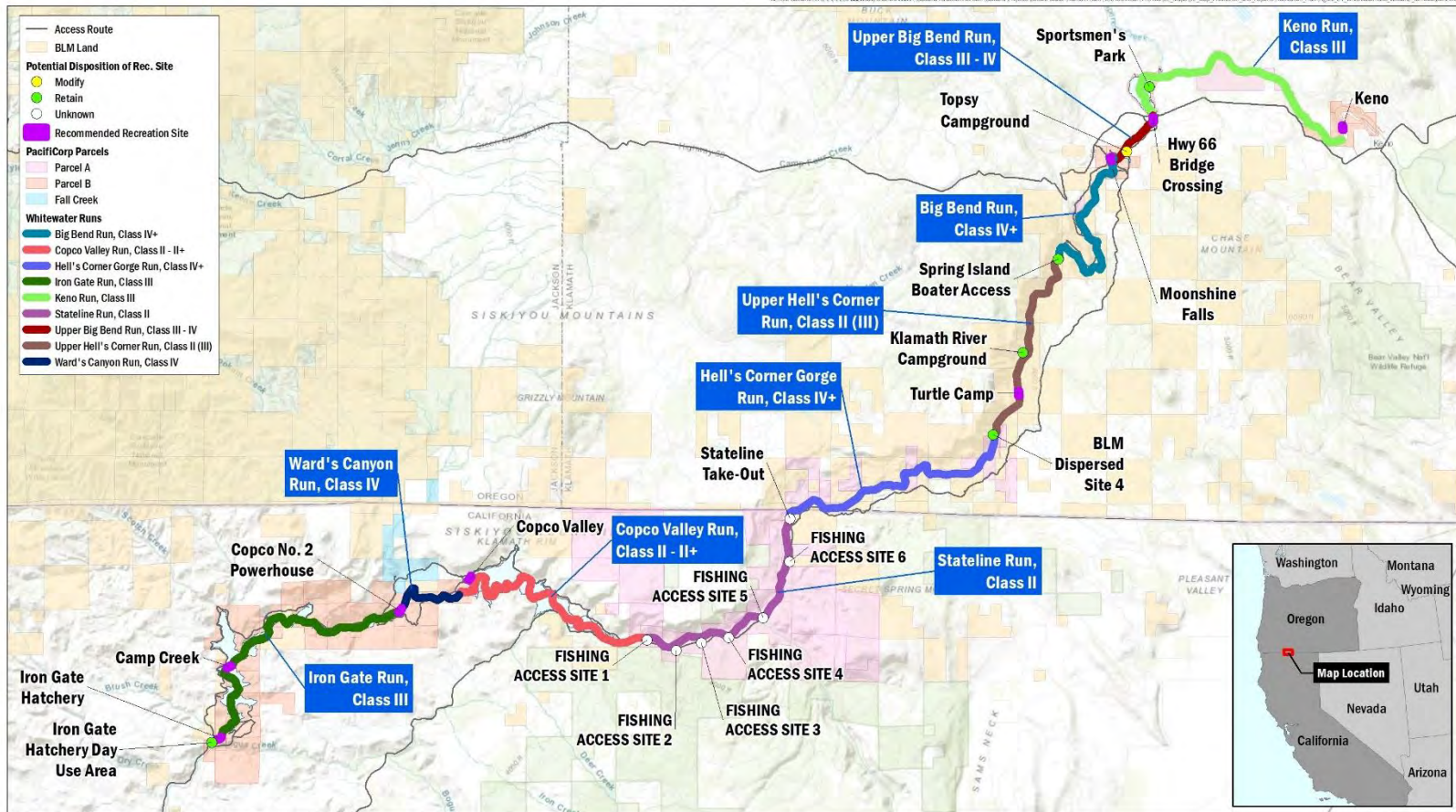


- 8 river access sites
- Refined through coordination with the whitewater users and Cultural Resources Working Group
- May change based on ultimate disposition and ownership of Parcel B lands
- May also change based on feedback from stakeholders



# Status on Recreation Plan

## Anticipated Whitewater Boating Runs



- Site under consideration, plus the retained existing sites provide whitewater boating access for each run



## 4 – Conceptual Designs



# Conceptual Designs

## Site #1: Keno Dam

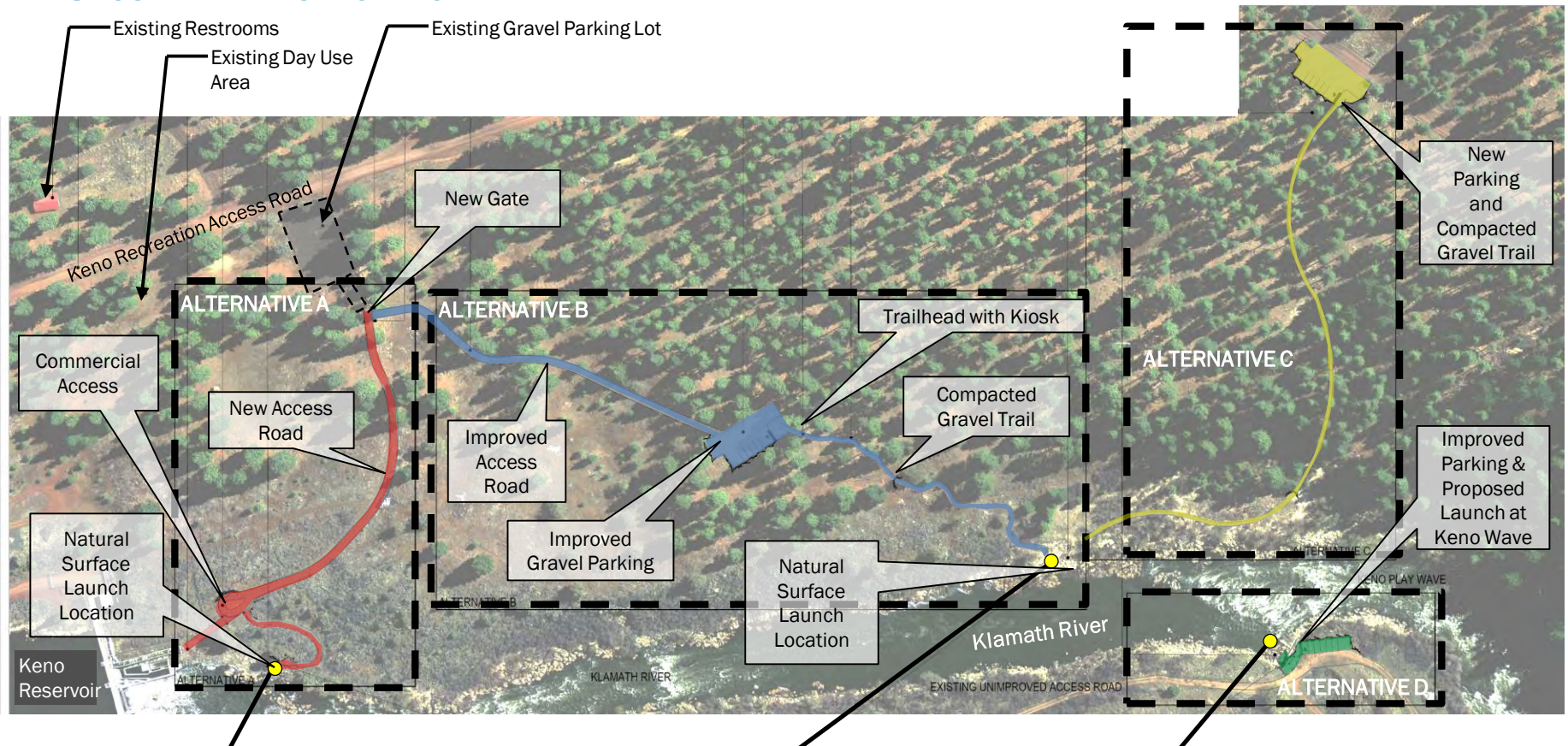


- Access from Highway 66
- Suitable for boating, fishing, and informal shoreline recreation
- Coordination with landowner USBR required to develop site
- Four alternatives considered (Alternative A preferred)



# Conceptual Designs

## Site #1: Keno Dam





# Conceptual Designs

## Site #2: Highway 66 Bridge Crossing

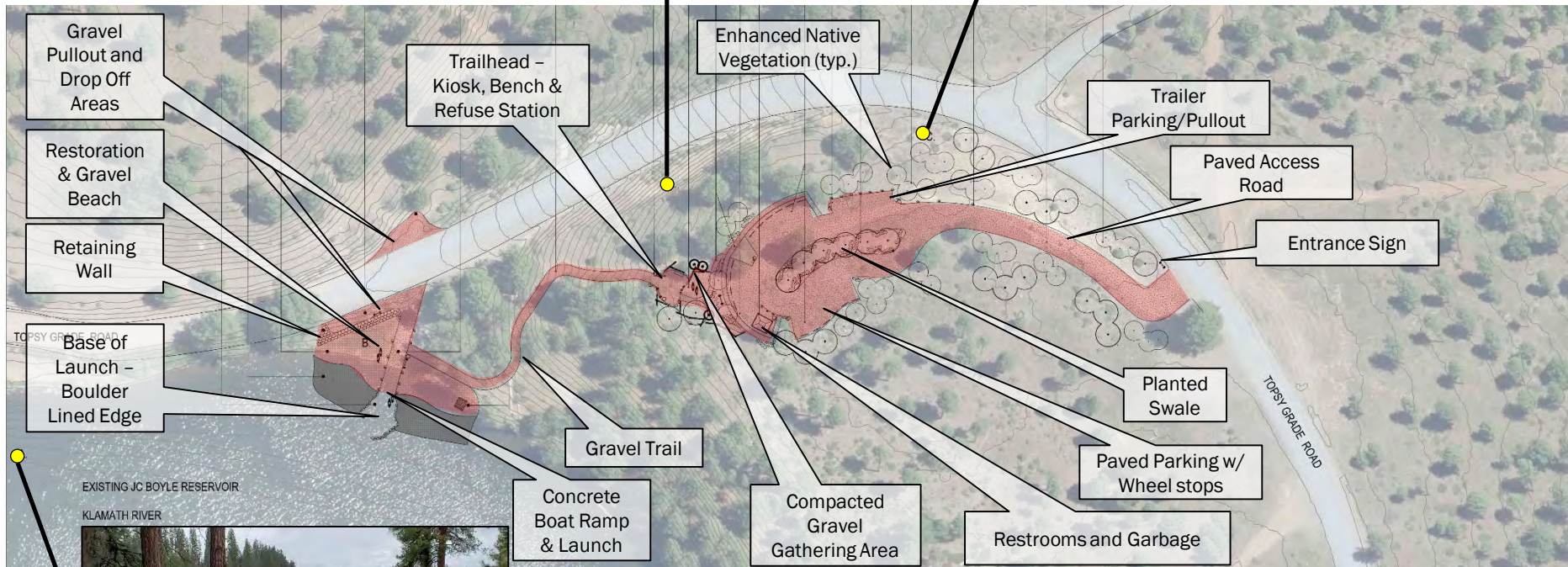


- Access from Highway 66
- Suitable for boating, fishing, and informal shoreline recreation
- Requires earthwork
- New ADA restroom



# Conceptual Designs

## Site #2: Highway 66 Bridge Crossing





# Conceptual Designs

## Site #3: Moonshine Falls

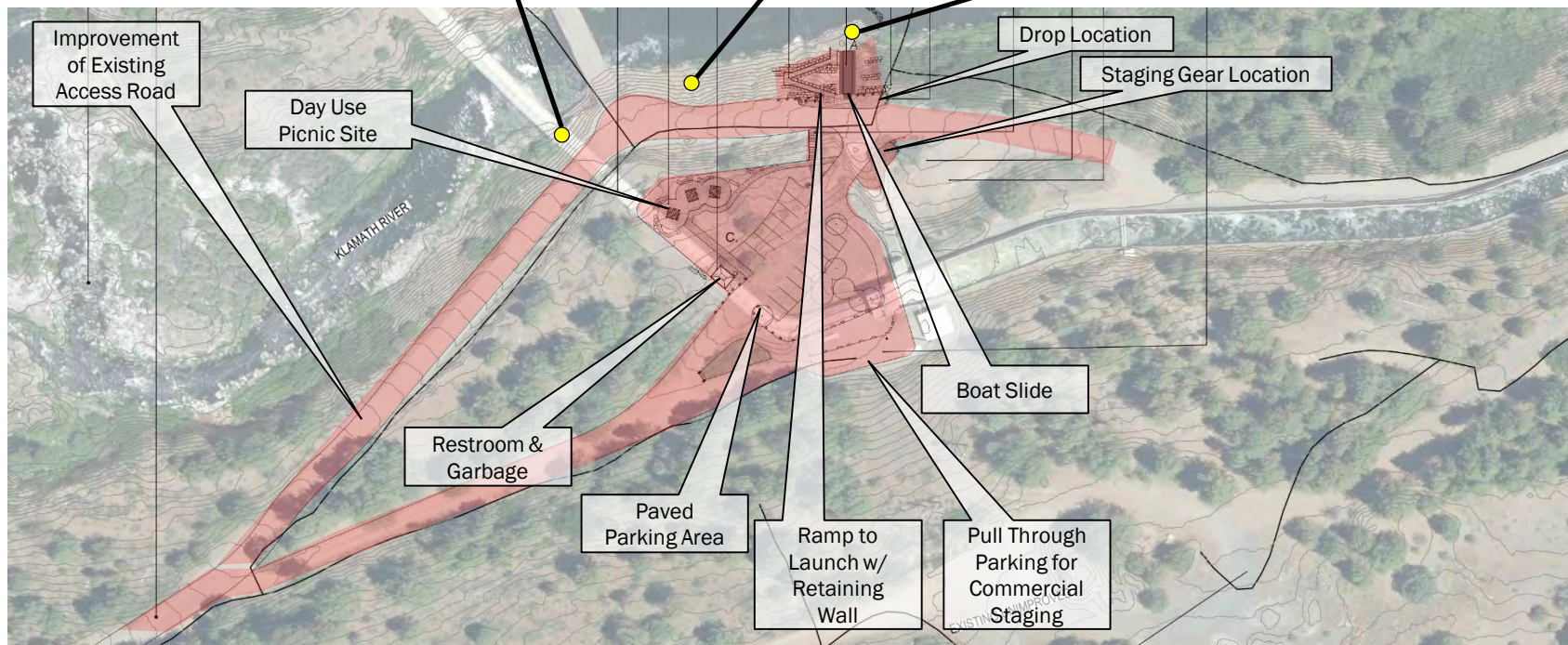


- Access from Highway 66 and dirt access road
- Suitable for boating and fishing
- Requires earthwork
- New ADA restroom



# Conceptual Designs

## Site #3: Moonshine Falls





# Conceptual Designs

## Site #4: Turtle Camp

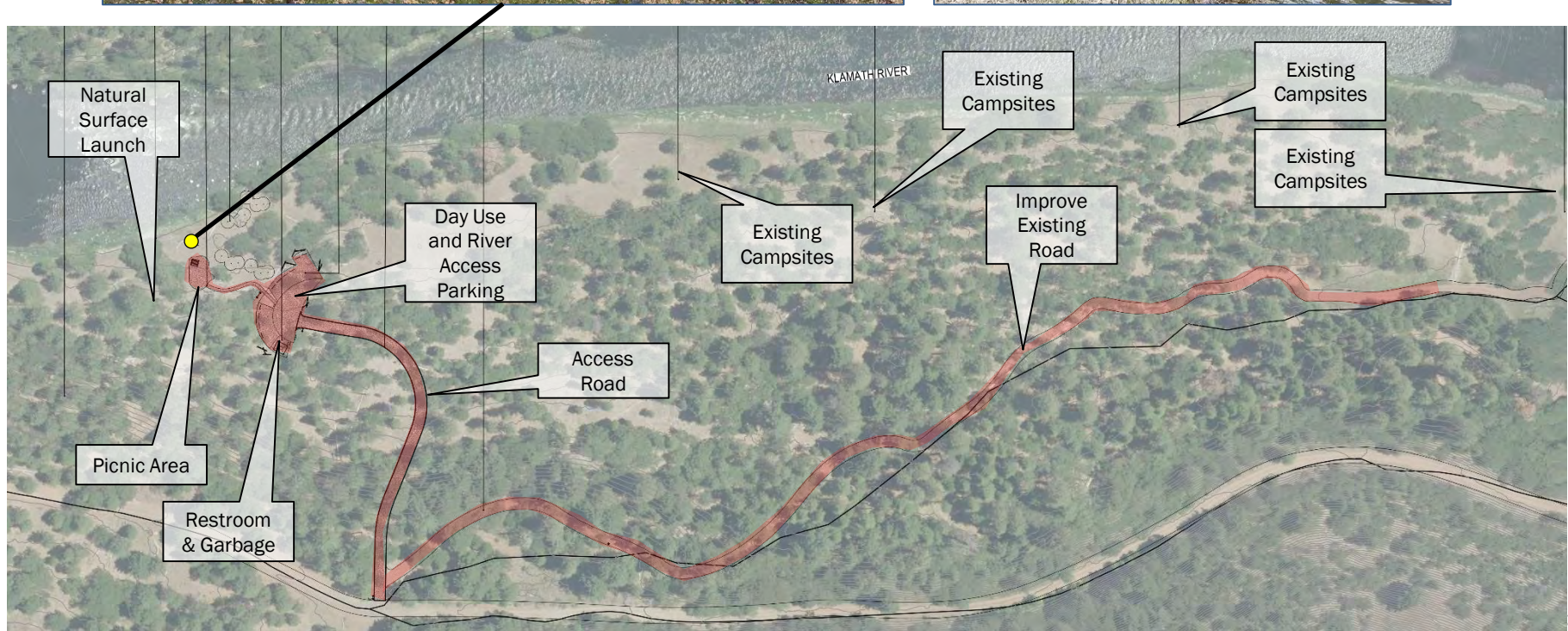


- Access from Highway 66 and J.C. Boyle Powerhouse Road
- Located at existing recreation facility
- Suitable for boating, fishing, and informal shoreline recreation
- May require earthwork
- New ADA restroom



# Conceptual Designs

## Site #4: Turtle Camp



# Conceptual Designs

## Site #5: Copco Valley

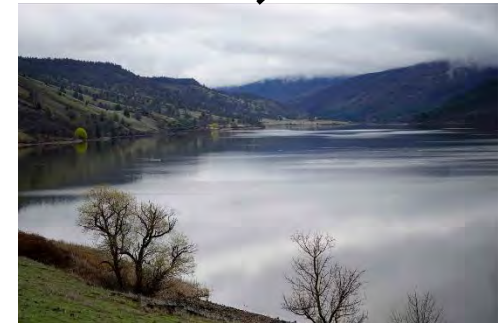
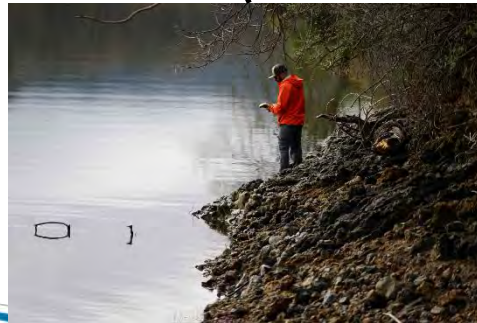
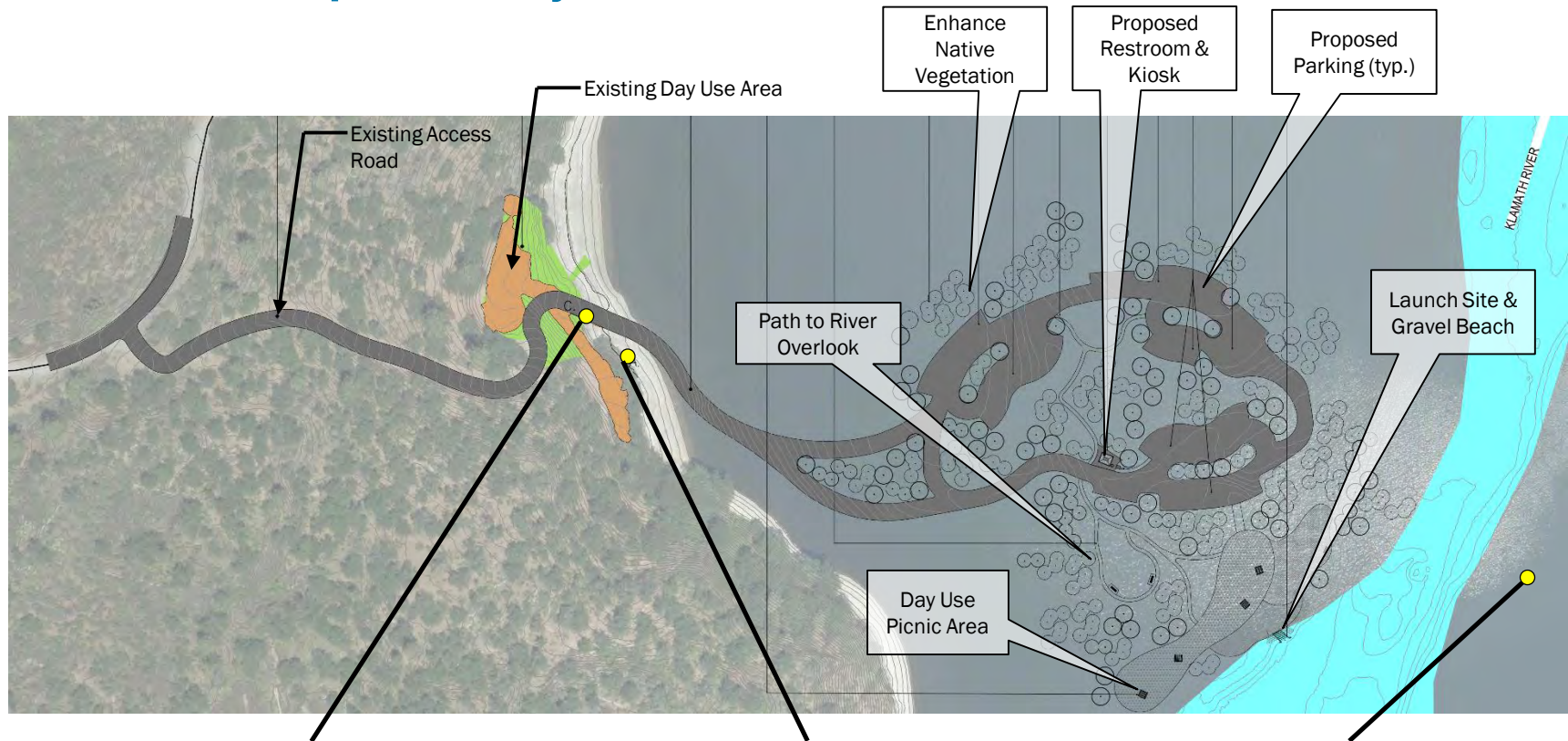


- Access from Copco Road
- Suitable for boating, fishing, and informal shoreline recreation
- Would require extension of Copco Cove access road



# Conceptual Designs

## Site #5: Copco Valley



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# Conceptual Designs

## Site #6: Copco No. 2 Powerhouse

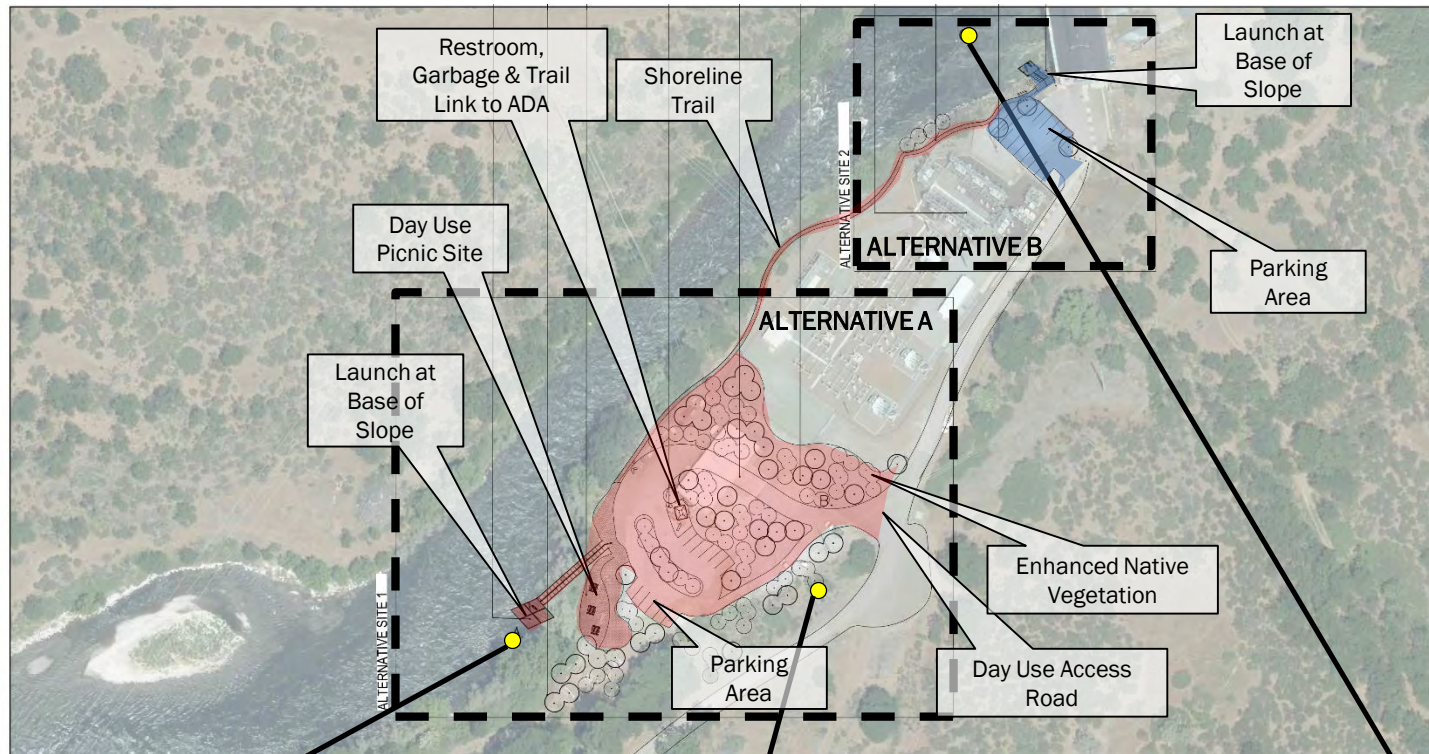


- Access from Daggett Road via Copco Road
- Upstream of existing day use site
  - Existing Fall Creek Day Use Area will be decommissioned
- Suitable for boating, fishing, day use, and informal shoreline recreation
- Requires earthwork and grading for access and parking
- Two alternatives being considered



# Conceptual Designs

## Site #6: Copco No. 2 Powerhouse





# Conceptual Designs

## Site #7: Camp Creek

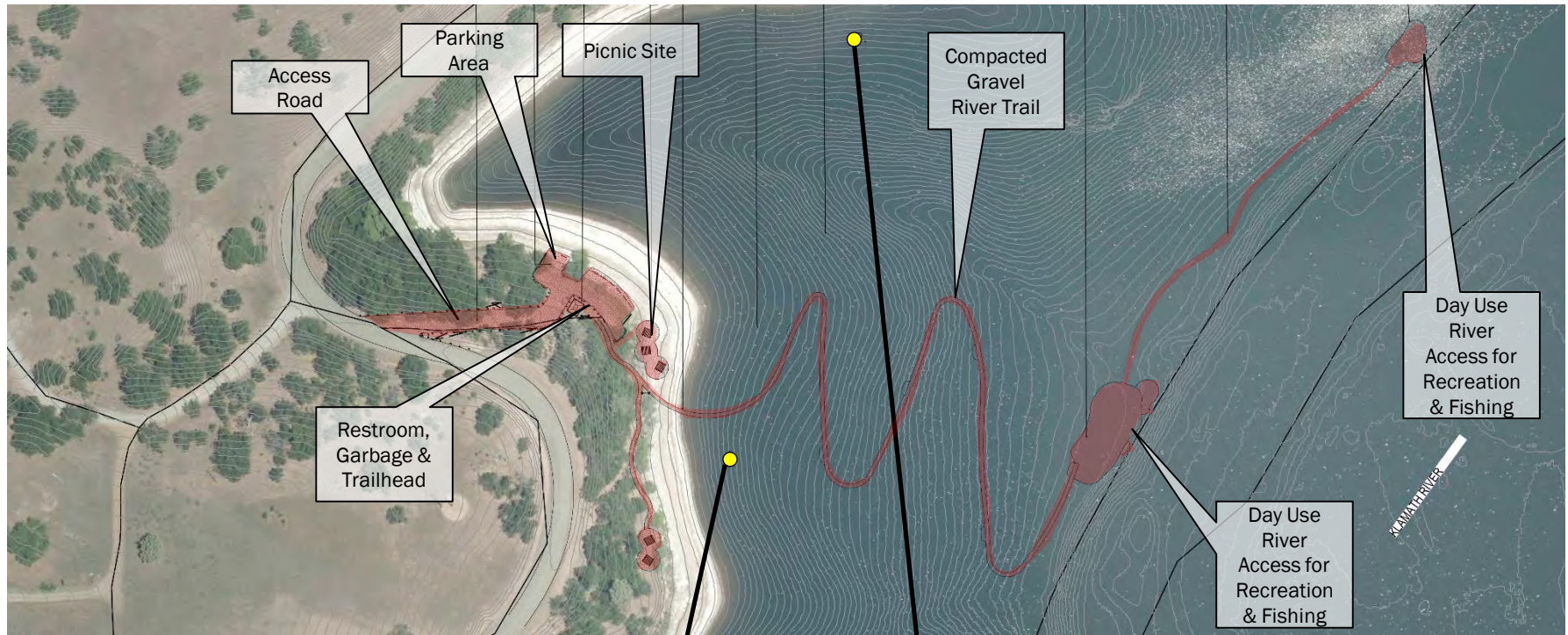


- Access from Copco Road
- Suitable for boating, fishing, and informal shoreline recreation
- Requires trail to river's edge



# Conceptual Designs

## Site #7: Camp Creek





# Conceptual Designs

## Site #8: Iron Gate Hatchery

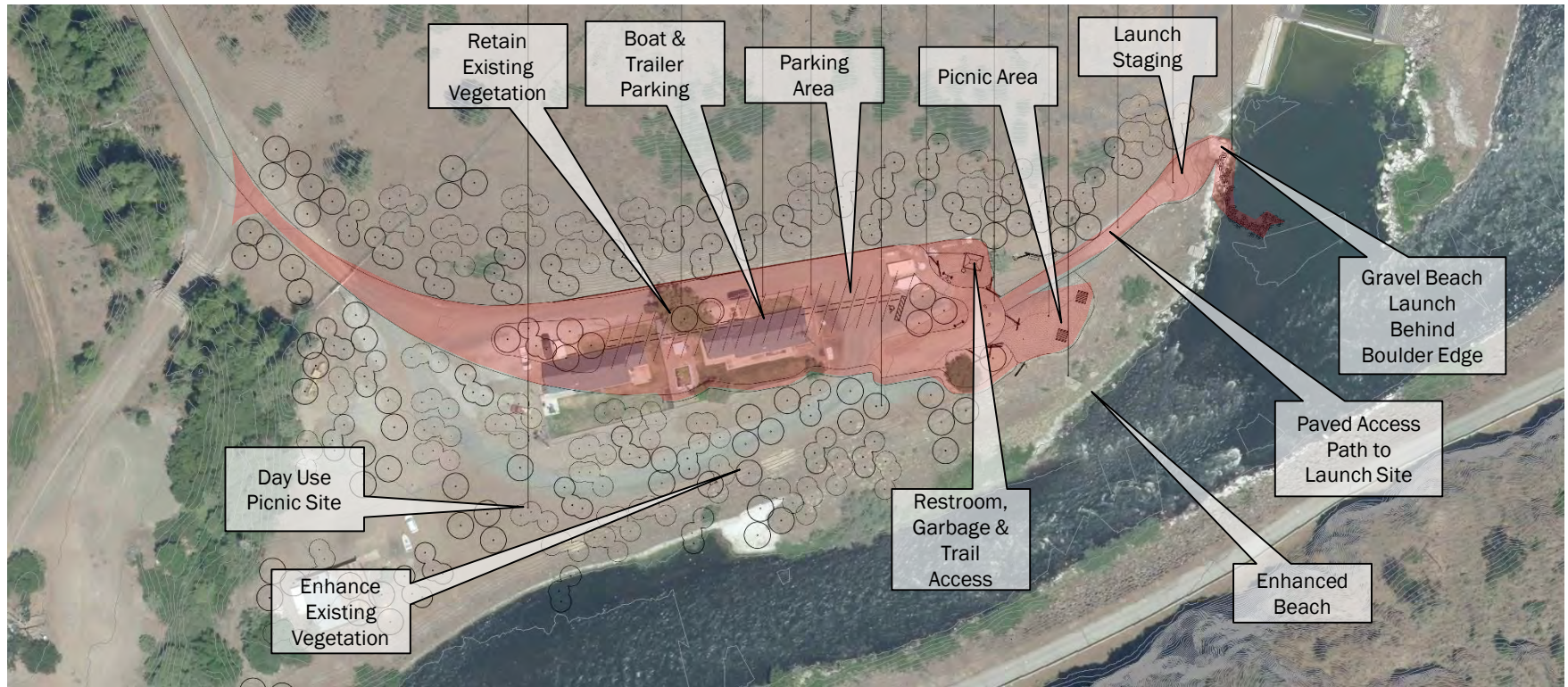


- Access from Copco Road
- Near existing recreation facility in good condition
- Suitable for boating, fishing, and informal shoreline recreation
- Little earthwork required



# Conceptual Designs

## Site #8: Iron Gate Hatchery



# Recreation Plan Next Steps

Task	Schedule
KRRC recreation stakeholder outreach	Ongoing
KRRC stakeholder follow-up / phone calls	Ongoing
Stakeholders submit written feedback to KRRC for consideration in final draft recreation plan	June 28, 2019
KRRC to submit Recreation Plan to FERC	Anticipated Dec. 2019

# Cultural Resources Plans Update

# Cultural Plans Update and Section 106 Outreach

- **Phase II Study Plan**
  - Provided to CRWG on May 3, 2019
  - Comments received from Oregon SHPO
  - Please provide comments by June 19, 2019
  - Fieldwork anticipated late Summer or early Fall 2019
- **Monitoring and Inadvertent Discovery Plan**
  - AECOM has prepared an Administrative Draft which is under Project Management and KRRC Review
  - Anticipate distribution to CRWG by **June 28, 2019**
- **Preparing letters for distribution to local jurisdictions, historical societies, and other potentially interested parties**
  - Distribution anticipated by July 5, 2019





## 6 – Closing Remarks and Discussion





# 7 – Action Item Review



# Lower Klamath Project

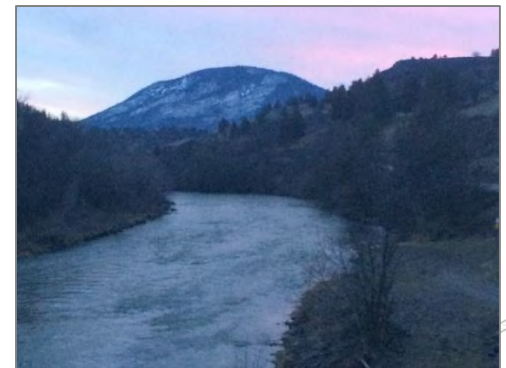
## Cultural Resources Working Group Meeting

July 30, 2019



# Meeting Agenda

1. Introductions
2. Today's Meeting Objectives
3. June 2019 Meeting Minutes and Action Items
4. Tribal Caucus Report
5. Project Updates
  - General Update and Project Schedule
  - Recreation Plan
  - Phase II Study Plan
  - Monitoring and Inadvertent Discovery Plan
  - Section 106 Outreach: Advisory Council and other Consulting Parties
5. Closing Remarks and Discussion
6. Action Item Review





# Introductions



# Meeting Objectives

# Meeting Objectives

- Provide an update of the Recreation Plan, including conceptual designs
- Provide an update of the Phase II Study Plan
  - Comments from CRWG received to date
  - Establish procedures for review and finalization of Phase II Study Plan
- Provide an overview of the Monitoring and Inadvertent Discovery Plan
  - Establish procedures for review of Monitoring and Inadvertent Discovery Study Plan
- Highlight upcoming document preparation and review schedule
- Schedule individual tribal meetings





# June 2019 Tribal Caucus and CRWG Meeting

# June 2019 Tribal Caucus and CRWG Meeting

Action Item	CRWG/Tribal Action	KRRC/AECOM Action	Status
Comment period on Phase II Plan extended	Provide comments no later than June 19		Comments submitted by Shasta Nation on July 16
June PPT Presentation, with deliverables schedule, to be distributed following meeting		Distribute presentation to CRWG members	Presentation emailed following meeting.
Recreation Plan	Provide comments on Recreation Plan by June 28		Comments are still encouraged. Working session to be scheduled for this fall.
Distribution of Monitoring and Inadvertent Discovery Plan		Distribute Plan to CRWG members	Addressed in today's presentation
Section 106 invitation to local jurisdictions		Circulate letters to local jurisdictions inviting participation in the Section 106 process	Letters sent via email and US Mail.



# General Update and Project Schedule

# Cultural Resource Plans Update and Section 106 Outreach

- **Phase II Study Plan**
  - Provided to CRWG on May 3, 2019
  - Response/Comments received from Oregon SHPO, California SHPO, BLM, PacifiCorp, and Shasta Nation
  - Revised Plan to be distributed following this meeting
  - Fieldwork anticipated late Summer or early Fall 2019
- **Monitoring and Inadvertent Discovery Plan**
  - Project Management and KRRC Review has been completed
  - Revised draft to be distributed following this meeting
- **Letters of Interest distributed to local jurisdictions, historical societies, and other potentially interested parties**
  - Interested Parties invited to Above-Ground Resource portion of today's meeting

# Deliverable Review Periods

	Draft to CRWG for Review	Receive Comments from CRWG	Final Draft*
Phase II Study Plan	May 3, 2019	June 19, 2019	July 31, 2019
Monitoring/ Inadvertent Discovery Plan	July 31, 2019	August 30, 2019	October 18, 2019
Programmatic Agreement (Prelim Draft)	August 5, 2019	September 6, 2019	October 18, 2019
Looting and Vandalism Protection Plan	September 6, 2019	October 4, 2019	October 25, 2019
Historic Properties Management Plan	November 27, 2019	January 17, 2020	March 6, 2020
Human Remains Treatment Plan	November 27, 2019	January 17, 2020	March 6, 2020
<ul style="list-style-type: none"> <li>Draft documents will be submitted to FERC following license surrender application.</li> </ul>			

# Built Environment Plan Update

# Historic Built Resources within the ADI



Wood Stave Pipe (1925), Copco No. 2

# Hydroelectric

- J.C. Boyle (Oregon)
- Copco No. 1 (California)
- Copco No. 2 (California)
- Iron Gate (California)
- Fall Creek (California)

The above developments and the resources they contain are proposed for removal, except Fall Creek.



- Dams, powerhouses, and water conveyance



Copco No. 2 Powerhouse (1925)



Iron Gate Dam and Powerhouse (1962)



- Employee Housing



Copco No. 2 (circa 1925)



Iron Gate Hatchery (1966)



Copco No. 1 (circa 1925)



J.C. Boyle (circa 1984)



- Education and Community



Fall Creek School/Copco No. 2 (circa 1965)



# • Operations



Iron Gate (1962)



Copco (circa 1922)



J.C. Boyle (1956)



- Fish Management



Iron Gate (1962 and 1966)



H.W. Shebley and H.E. Southern, CA Dept of Fish Culture, Hornbrook egg station (circa 1904)



# Transportation



CA SR 263 over Klamath River (1931)



J.C. Boyle Timber Bridge (1956)



# Residential and Commercial



# Evaluation Approach

Previous documentation:

2003 field surveys and evaluations of Klamath River Hydroelectric Project District

Survey updates are required to account for the following:

1. Iron Gate and 1960s resources at Copco No. 2 have turned 50
2. Overlooked resources
3. Miscounted resources
4. Demolished resources
5. The CRHR criteria for designation
6. A revised period of significance to reflect significant post-1958 events
7. Lack of survey data for many non-hydro resources

## Hydropower Chronology

1903	Fall Creek Power Plant (SEP&L)
1910	SEP&L begins survey of Ward Canyon
1911	Copco forms/acquires local power facilities
1911-1918	Copco No. 1 construction in Ward Canyon (Copco)
1919	Fall Creek hatchery construction (Copco No. 1 mitigation)
1922	Copco No. 1 expansion (second generating unit)
1924-1925	Copco No. 2 construction
1956-1958	J.C. Boyle construction
1961	Pacific Power acquires Copco
1961-1970	Pacific Power construction program to merge systems and enhance service
1960-1962	Iron Gate construction
1965-1966	Iron Gate fish hatchery construction



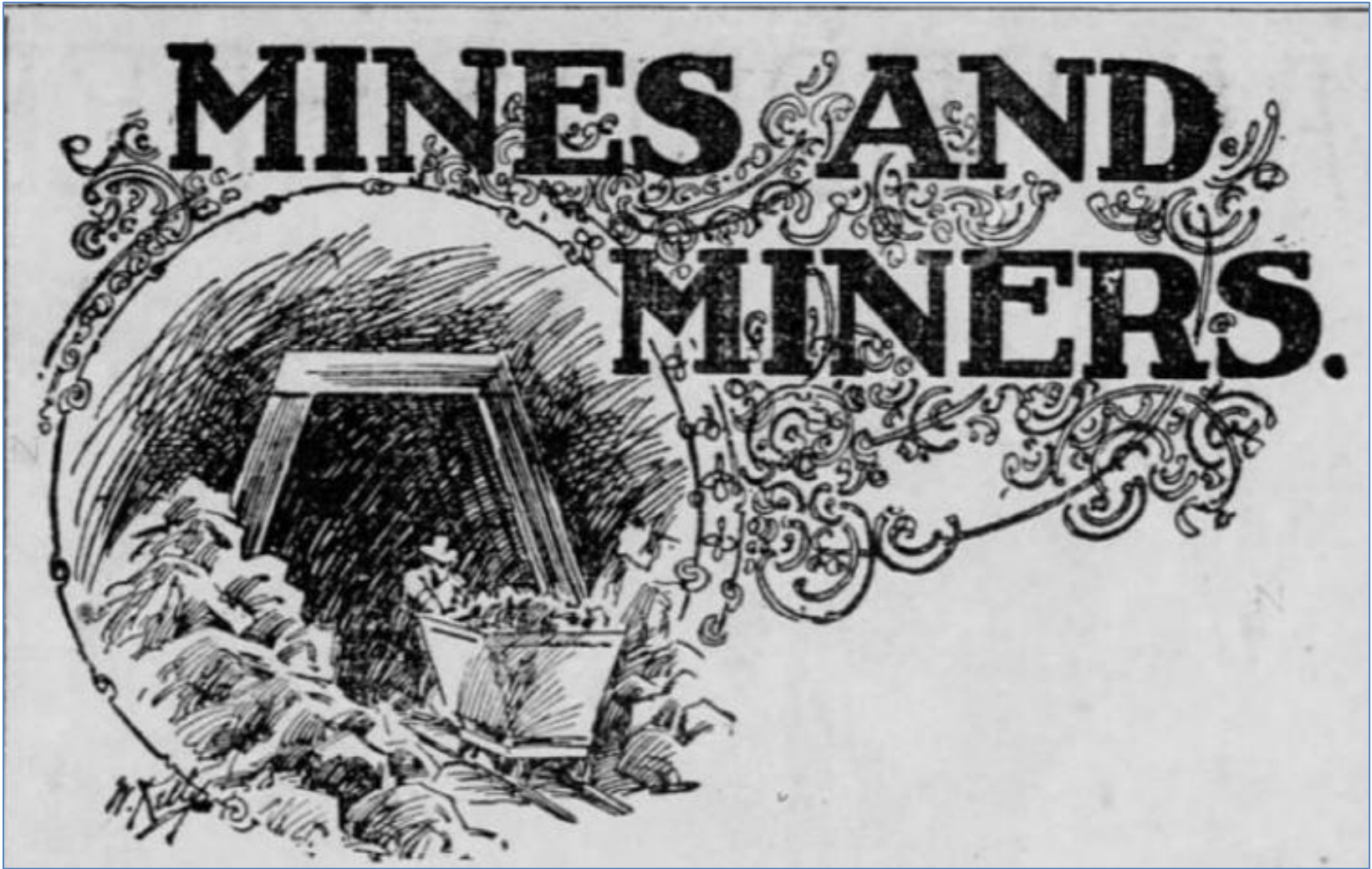
# Historic Themes

## ❖ Early exploration, settlement



Spencer Creek Station (courtesy of Klamath County Museum)

# ❖ Mining



“Mines and Miners”, 1897 (San Francisco Call)



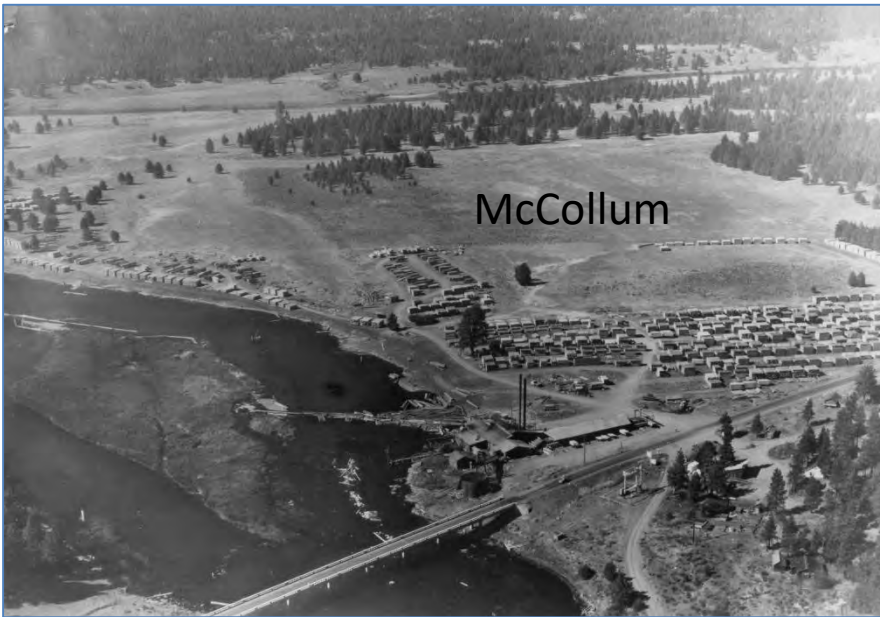
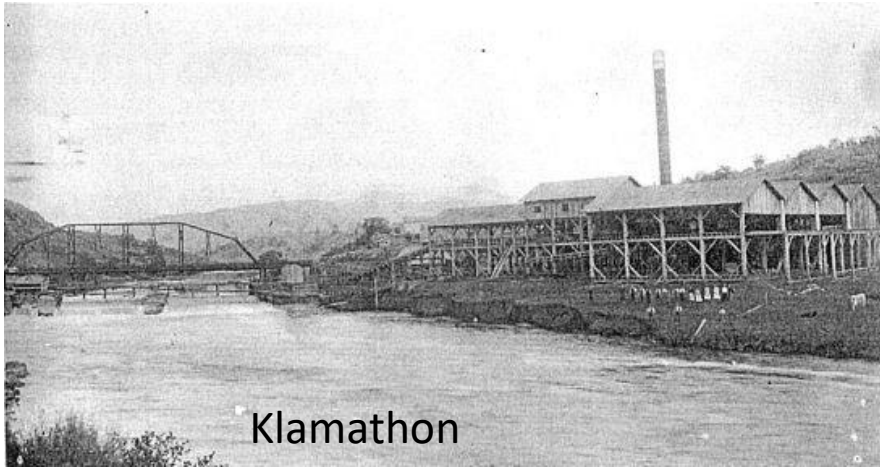
## ❖ Agriculture, ranching, reclamation



Lennox and Ward Ranches, 1910 (courtesy of Southern Oregon Historical Society)



# ❖ Logging





# ❖ Transportation



Topsy Grade Road dam-bridge, circa 1890  
(courtesy of Klamath County Museum)



Klamath River at Keno, 1913 (courtesy of Klamath County Museum)

# ❖ Hydropower



*(Left to right) A. E. Steinacher, Clyde Turner, Carl Sprout, A. F. Ager, Engineering Field Crew, Copco No. 1, July 1912.*



## ❖ Fish management



0016.1966.066.2789 Fish Hatchery Spencer Creek 1947

KLAMATH COUNTY MUSEUM

# ❖ Recreation



**KLAMATH HOT SPRINGS**



# Project Update

## Upcoming fieldwork

- ❖ Fall Creek Hatchery
- ❖ Hydro transmission lines
- ❖ Non-hydro bridges and culverts within ADI

# Mitigation Ideas

Seeking agreement on measures to address effects . . .

## Considerations

- ☐ What are the concerns of the interested parties?
- ☐ How will the knowledge acquired be provided to the community?
- ☐ Will the measure enhance the preservation and management of listed or eligible resources?

SHOWN IN PLAN VIEW  
DRAWN IN 1915-16 BY THE CALIFORNIA OREGON POWER CO.

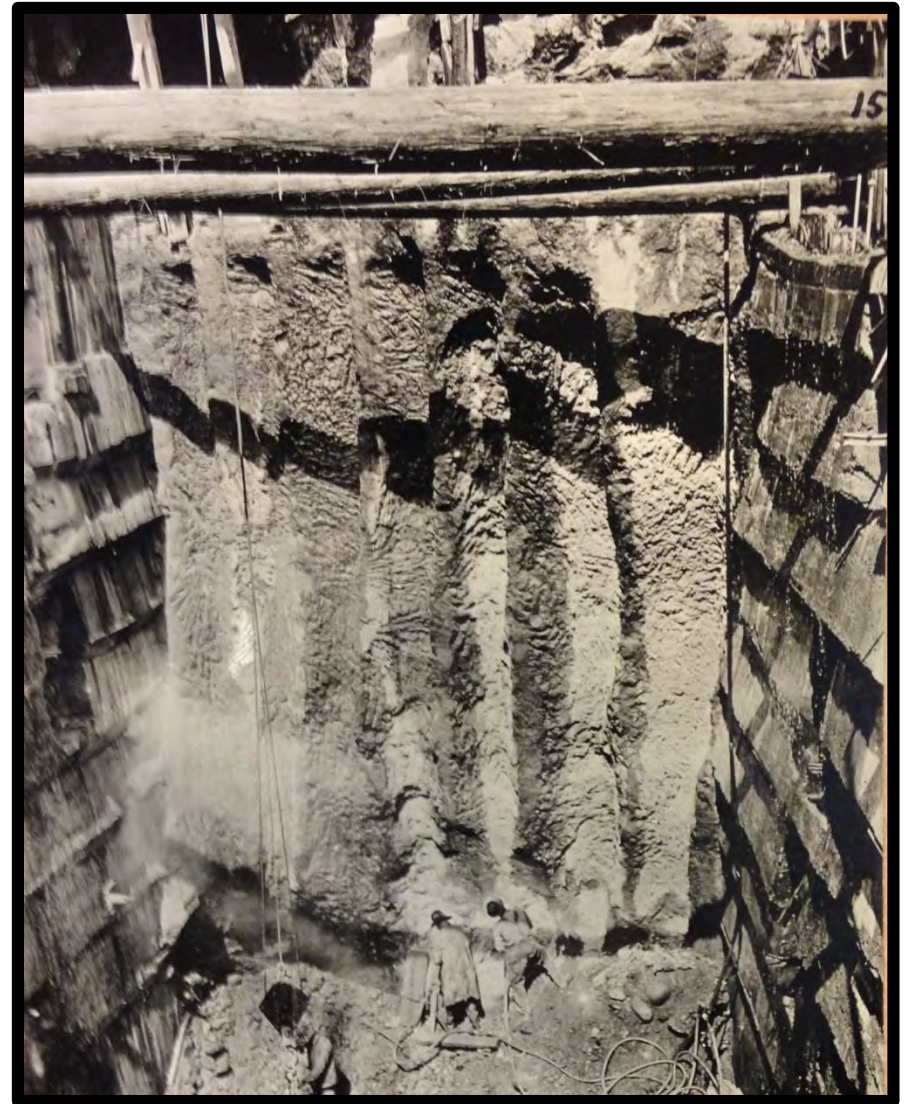
ACCOMPANYING PROGRESS REPORT  
ON CONSTRUCTION  
OF  
**COPCO DAM**  
ON  
KLAMATH RIVER,  
CAL.  
BY  
H. H. HARRIS  
OF JUNE 1916.

SCALE  
0 10 20 30 40 50 60 70

NOTE: Longitudinal Section of Dam & Spillway  
See Sheet in BUREAU OF REVENUE & CUSTOMS  
indicated by Letters and Figures as follows:  
A-10-A-11-A-12-A-13-A-14-A-15-A-16-A-17-A-18-A-19-A-20-A-21-A-22-A-23-A-24-A-25-A-26-A-27-A-28-A-29-A-30-A-31-A-32-A-33-A-34-A-35-A-36-A-37-A-38-A-39-A-40-A-41-A-42-A-43-A-44-A-45-A-46-A-47-A-48-A-49-A-50-A-51-A-52-A-53-A-54-A-55-A-56-A-57-A-58-A-59-A-60-A-61-A-62-A-63-A-64-A-65-A-66-A-67-A-68-A-69-A-70-A-71-A-72-A-73-A-74-A-75-A-76-A-77-A-78-A-79-A-80-A-81-A-82-A-83-A-84-A-85-A-86-A-87-A-88-A-89-A-90-A-91-A-92-A-93-A-94-A-95-A-96-A-97-A-98-A-99-A-100-A-101-A-102-A-103-A-104-A-105-A-106-A-107-A-108-A-109-A-110-A-111-A-112-A-113-A-114-A-115-A-116-A-117-A-118-A-119-A-120-A-121-A-122-A-123-A-124-A-125-A-126-A-127-A-128-A-129-A-130-A-131-A-132-A-133-A-134-A-135-A-136-A-137-A-138-A-139-A-140-A-141-A-142-A-143-A-144-A-145-A-146-A-147-A-148-A-149-A-150-A-151-A-152-A-153-A-154-A-155-A-156-A-157-A-158-A-159-A-160-A-161-A-162-A-163-A-164-A-165-A-166-A-167-A-168-A-169-A-170-A-171-A-172-A-173-A-174-A-175-A-176-A-177-A-178-A-179-A-180-A-181-A-182-A-183-A-184-A-185-A-186-A-187-A-188-A-189-A-190-A-191-A-192-A-193-A-194-A-195-A-196-A-197-A-198-A-199-A-200-A-201-A-202-A-203-A-204-A-205-A-206-A-207-A-208-A-209-A-210-A-211-A-212-A-213-A-214-A-215-A-216-A-217-A-218-A-219-A-220-A-221-A-222-A-223-A-224-A-225-A-226-A-227-A-228-A-229-A-230-A-231-A-232-A-233-A-234-A-235-A-236-A-237-A-238-A-239-A-240-A-241-A-242-A-243-A-244-A-245-A-246-A-247-A-248-A-249-A-250-A-251-A-252-A-253-A-254-A-255-A-256-A-257-A-258-A-259-A-260-A-261-A-262-A-263-A-264-A-265-A-266-A-267-A-268-A-269-A-270-A-271-A-272-A-273-A-274-A-275-A-276-A-277-A-278-A-279-A-280-A-281-A-282-A-283-A-284-A-285-A-286-A-287-A-288-A-289-A-290-A-291-A-292-A-293-A-294-A-295-A-296-A-297-A-298-A-299-A-300-A-301-A-302-A-303-A-304-A-305-A-306-A-307-A-308-A-309-A-310-A-311-A-312-A-313-A-314-A-315-A-316-A-317-A-318-A-319-A-320-A-321-A-322-A-323-A-324-A-325-A-326-A-327-A-328-A-329-A-330-A-331-A-332-A-333-A-334-A-335-A-336-A-337-A-338-A-339-A-340-A-341-A-342-A-343-A-344-A-345-A-346-A-347-A-348-A-349-A-350-A-351-A-352-A-353-A-354-A-355-A-356-A-357-A-358-A-359-A-360-A-361-A-362-A-363-A-364-A-365-A-366-A-367-A-368-A-369-A-370-A-371-A-372-A-373-A-374-A-375-A-376-A-377-A-378-A-379-A-380-A-381-A-382-A-383-A-384-A-385-A-386-A-387-A-388-A-389-A-390-A-391-A-392-A-393-A-394-A-395-A-396-A-397-A-398-A-399-A-400-A-401-A-402-A-403-A-404-A-405-A-406-A-407-A-408-A-409-A-410-A-411-A-412-A-413-A-414-A-415-A-416-A-417-A-418-A-419-A-420-A-421-A-422-A-423-A-424-A-425-A-426-A-427-A-428-A-429-A-430-A-431-A-432-A-433-A-434-A-435-A-436-A-437-A-438-A-439-A-440-A-441-A-442-A-443-A-444-A-445-A-446-A-447-A-448-A-449-A-450-A-451-A-452-A-453-A-454-A-455-A-456-A-457-A-458-A-459-A-460-A-461-A-462-A-463-A-464-A-465-A-466-A-467-A-468-A-469-A-470-A-471-A-472-A-473-A-474-A-475-A-476-A-477-A-478-A-479-A-480-A-481-A-482-A-483-A-484-A-485-A-486-A-487-A-488-A-489-A-490-A-491-A-492-A-493-A-494-A-495-A-496-A-497-A-498-A-499-A-500-A-501-A-502-A-503-A-504-A-505-A-506-A-507-A-508-A-509-A-510-A-511-A-512-A-513-A-514-A-515-A-516-A-517-A-518-A-519-A-520-A-521-A-522-A-523-A-524-A-525-A-526-A-527-A-528-A-529-A-530-A-531-A-532-A-533-A-534-A-535-A-536-A-537-A-538-A-539-A-540-A-541-A-542-A-543-A-544-A-545-A-546-A-547-A-548-A-549-A-550-A-551-A-552-A-553-A-554-A-555-A-556-A-557-A-558-A-559-A-560-A-561-A-562-A-563-A-564-A-565-A-566-A-567-A-568-A-569-A-570-A-571-A-572-A-573-A-574-A-575-A-576-A-577-A-578-A-579-A-580-A-581-A-582-A-583-A-584-A-585-A-586-A-587-A-588-A-589-A-590-A-591-A-592-A-593-A-594-A-595-A-596-A-597-A-598-A-599-A-600-A-601-A-602-A-603-A-604-A-605-A-606-A-607-A-608-A-609-A-610-A-611-A-612-A-613-A-614-A-615-A-616-A-617-A-618-A-619-A-620-A-621-A-622-A-623-A-624-A-625-A-626-A-627-A-628-A-629-A-630-A-631-A-632-A-633-A-634-A-635-A-636-A-637-A-638-A-639-A-640-A-641-A-642-A-643-A-644-A-645-A-646-A-647-A-648-A-649-A-650-A-651-A-652-A-653-A-654-A-655-A-656-A-657-A-658-A-659-A-660-A-661-A-662-A-663-A-664-A-665-A-666-A-667-A-668-A-669-A-670-A-671-A-672-A-673-A-674-A-675-A-676-A-677-A-678-A-679-A-680-A-681-A-682-A-683-A-684-A-685-A-686-A-687-A-688-A-689-A-690-A-691-A-692-A-693-A-694-A-695-A-696-A-697-A-698-A-699-A-700-A-701-A-702-A-703-A-704-A-705-A-706-A-707-A-708-A-709-A-710-A-711-A-712-A-713-A-714-A-715-A-716-A-717-A-718-A-719-A-720-A-721-A-722-A-723-A-724-A-725-A-726-A-727-A-728-A-729-A-730-A-731-A-732-A-733-A-734-A-735-A-736-A-737-A-738-A-739-A-740-A-741-A-742-A-743-A-744-A-745-A-746-A-747-A-748-A-749-A-750-A-751-A-752-A-753-A-754-A-755-A-756-A-757-A-758-A-759-A-760-A-761-A-762-A-763-A-764-A-765-A-766-A-767-A-768-A-769-A-770-A-771-A-772-A-773-A-774-A-775-A-776-A-777-A-778-A-779-A-780-A-781-A-782-A-783









# Potential for Adaptive Re-Use



Seeking input on measures to resolve adverse effects:

- ❖ Field school base camp: OIT, Humboldt?
- ❖ Cultural interpretation center?
- ❖ Recreational camp site?
- ❖ Museum?
- ❖ Other?

## Issues

- ❖ Land transfer to State of California
- ❖ HazMat remediation concerns
- ❖ Seismic retrofitting
- ❖ Operations and Maintenance Costs
- ❖ Removal of Daggett Road bridge access
- ❖ Federal Power Act



# Relocation for Residential/Commercial Re-Use



## Potential Uses

- ❖ Regional housing
- ❖ Regional community center
- ❖ Asset for local company



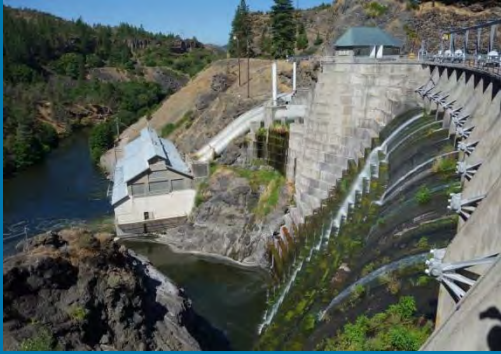
## Issues

- ❖ Locating interested parties
- ❖ Transport – cost and bridge capacity

# Seeking Input on Measures to Resolve Adverse Effects

- ❖ Grants to benefit local repositories such as Klamath County Museum, Siskiyou County Museum, Southern Oregon Historical Society for projects:
  - Digitization
  - Oral History
  - Publication (books, journal articles, pamphlets, interpretive materials)
- ❖ Scholarship programs for regional students to encourage study in history, engineering, cultural resources, geography, fish biology, etc.
- ❖ Other potential mitigation ideas?





# Closing Remarks and Discussion





# Action Item Review



# Lower Klamath Project

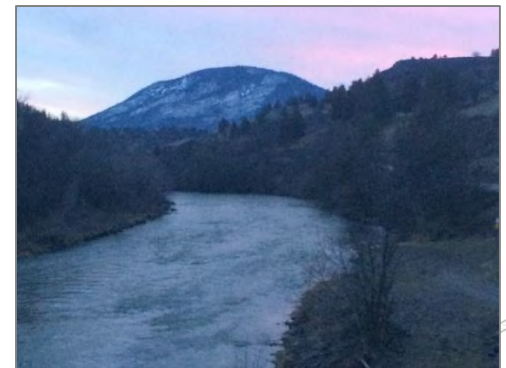
## Cultural Resources Working Group Meeting

September 5, 2019



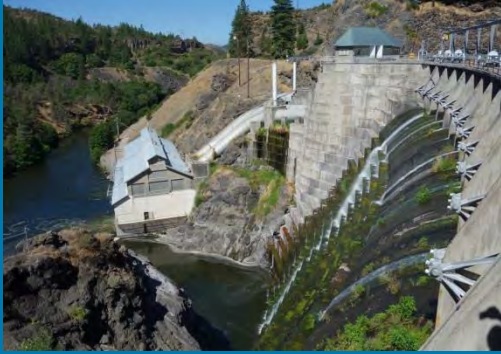
# Meeting Agenda

1. Introductions
2. Today's Meeting Objectives
3. July 2019 Meeting Minutes and Action Items
4. Tribal Caucus Report
5. Project Updates
  - General Update and Project Schedule
  - Monitoring and Inadvertent Discovery Plan
  - Phase II Evaluation
  - Restoration Plan and Culturally Significant Plants
  - Looting and Vandalism Prevention Plan
5. Fall Creek Hatchery Improvements
6. Programmatic Agreement
7. Closing Remarks and Discussion
8. Action Item Review





# Introductions



# Meeting Objectives

# Meeting Objectives

- Review of Monitoring and Inadvertent Discovery Plan
- Provide an update on the Phase II Evaluation Program
- Restoration Plan Plant List
- Looting and Vandalism Prevention Plan Update
- Provide update on planning for the Fall Creek Hatchery improvements
- Initiating the Programmatic Agreement





# July 2019 Tribal Caucus and CRWG Meeting

# July 2019 Tribal Caucus and CRWG Meeting

Action Item	CRWG/Tribal Action	KRRC/AECOM Action	Status
SHPO/ACHP Discussion on Phase II		Set up call with SHPOs and ACHP	Initial call held August 15
		Follow up discussion with Tribes	Waiting on feedback from ACHP/FERC discussion



# General Update and Project Schedule

# Cultural Resource Planning Update

- **Monitoring and Inadvertent Discovery Plan**
  - Draft distributed to CRWG on August 27
  - Comments requested by September 30
- **Phase II Evaluation Program**
  - Discussion held with SHPOs and ACHP on August 15
  - ACHP to confer with FERC
  - Possible revisions to evaluation procedures
  - Additional discussion to follow
- **Restoration Plan**
  - Addition of Culturally Significant Plants to Replanting List
- **Looting and Vandalism Prevention Plan**
  - Draft Plan submitted to KRRC September 4

# Deliverable Review Periods

	Draft to CRWG for Review	Receive Comments from CRWG	Final Draft*
Phase II Study Plan	May 3, 2019	June 19, 2019	July 31, 2019
Monitoring/ Inadvertent Discovery Plan	August 27, 2019	September 30, 2019	October 25 2019
Programmatic Agreement (Prelim Draft)	August 27, 2019	September 30, 2019	October 25, 2019
Looting and Vandalism Protection Plan	September 30, 2019	October 28, 2019	November 15, 2019
Historic Properties Management Plan	November 27, 2019	January 17, 2019	March 6, 2020
Human Remains Treatment Plan	November 27, 2019	January 17, 2019	March 6, 2020
<ul style="list-style-type: none"> <li>Draft documents will be submitted to FERC following license surrender application.</li> </ul>			

# Fall Creek Hatchery Update

# Fall Creek Hatchery Production

- 75,000 Coho yearlings
- 115,000 Chinook yearlings
- 2,885,000 Chinook smolts





# Fall Creek Site Modifications



# Upper Raceway





# Lower Raceway





# Diversion Points



# Fall Diversion Point

- Alternate diversion point mid-falls.



# Programmatic Agreement

**PROGRAMMATIC AGREEMENT  
BETWEEN  
THE FEDERAL ENERGY REGULATORY COMMISSION  
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION  
AND  
THE CALIFORNIA STATE HISTORIC PRESERVATION OFFICE  
THE OREGON STATE HISTORIC PRESERVATION OFFICE  
  
REGARDING  
THE LOWER KLAMATH HYDROELECTRIC PROJECT LICENSE SURRENDER  
IN KLAMATH COUNTY, OREGON AND SISKIYOU COUNTY, CALIFORNIA  
(FERC No. 14803)**



# Why A Programmatic Agreement?

- **36 CFR 800.14 (b)(1)**
  - (i) When effects on historic properties are similar and repetitive or multi-State or regional in scope;
  - (ii) When effects on historic properties cannot be fully determined prior to approval of an undertaking
  - (iii) When nonfederal parties are delegated major decision-making responsibilities

# Structure of a PA

- Section 106 agreements follow a standard format
- The **title** identifies the undertaking and the signatories to the agreement.
- The **preamble** notes the statutory authority for the undertaking; introduces the signatories; provides relevant background facts about the project, activity, or program; briefly describes the Section 106 consultation process; and identifies the consulting parties.
- The **stipulations** form the heart of the agreement by detailing each of the avoidance, minimization, or mitigation measures the federal agency has agreed to ensure are implemented. Following these substantive stipulations, agreement documents contain several administrative stipulations to cover what happens when the undertaking changes or is modified, when disputes arise, when new historic properties are discovered, and how long the federal agency will take to ensure the stipulations are carried out.
- “Whereas clauses” should state facts that exist at the time the agreement document is executed, and “stipulations” should denote actions the agency commits to ensuring are carried out in the future, after the agreement document is executed.
- Agreement documents always end with an affirmation clause and a signature block that formalizes the commitment of the agency and other parties to the terms of the agreement.

# FERC's Expectations of a PA

- FERC prepared standard language for Programmatic Agreements in consultation with the ACHP in 1997 and has been used thereafter.
- The HPMP (2002 Guidelines) includes sections that are often included in other federal agency PAs
  - Roles and Responsibilities
  - Annual Reporting
  - Process for Consulting
  - Detailed Dispute Resolution
  - HPMP Amendments
  - Emergency Situations

# FERC's Expectations of a PA

- **Signatories**
  - SHPOs (CA & OR), ACHP (pending), & FERC
- **Invited Signatories - None**
- **Concurrence by Others**
  - USFS, BLM, Corps, Tribes, KRRC, Local Governments, Others with a Demonstrated Interest in the Project
- **Federal Power Act** – Licensees are prohibited from terminating a part of their license



# FERC PA Sections

- I. HPMP**
- II. Dispute Resolution**
- III. Amendment of this Programmatic Agreement**
- IV. Termination of this Programmatic Agreement**
- V. Duration of this Programmatic Agreement**
- VI. Execution of this Programmatic Agreement in Counterparts**
- VII. Coordination with other Federal Reviews**

# Some Recent Developments/ Lessons Learned

FERC, in consultation with the Oregon and California SHPOs, has adopted modest clarifying edits to their Standard PA document.

- Lassen Lodge (FERC Pr. No. 12496-002) (2019) CA
- Prospect No. 3 (FERC Pr. No. 2337) (2019) OR
- Swan Lake (FERC Pr. No. 13318-003) (2019) OR

# Review of the “Whereas Clauses”

**WHEREAS**, the Federal Energy Regulatory Commission (hereinafter, “Commission”) is considering a proposal filed by the Klamath River Renewal Corporation (hereinafter, “License Applicant”) to receive and then surrender a license for the Lower Klamath Hydroelectric Project (FERC No. 14803) (hereinafter, “Project”) and, beginning in (insert date when known) to remove project facilities in accordance with Part I of the Federal Power Act, 16 U.S.C §§ 791(a) through 825(r) *as amended*, and

**WHEREAS**, the Commission has determined that issuing such a license surrender will affect properties included in or eligible for inclusion on the National Register of Historic Places (hereinafter, “historic properties”) and that the issuance of a license surrender is an Undertaking subject to review under Section 106 of the National Historic Preservation Act and its implementing regulations, “Protection of Historic Properties (36 C.F.R. Part 800) for the Commission; and

**WHEREAS**, the associated *Historic Properties Management Plan, Lower Klamath Hydroelectric Project License Surrender (FERC Project No. 14803)* (hereinafter, “HPMP”) dated (insert date when known), and the Final Environmental Impact Statement for the Project issued on (insert date when known) provide a description of the Project, the Project’s area of potential effects (hereinafter, “APE”), known historic properties and anticipated effects as of the date of this Programmatic Agreement; and

**WHEREAS**, the Lower Klamath Hydroelectric Project consists of four dams (J.C. Boyle (Oregon) and Copco Nos. 1 and 2 and Iron Gate (California) that under a License Surrender Order from FERC would be decommissioned and removed; and

**WHEREAS**, consistent with 36 C.F.R. § 800.2, the APE for the Project encompasses lands enclosed by the project boundary as well as those areas beyond the project boundary where decommissioning activities may cause changes in the character or use of historic properties, if any historic properties exist (see Section xx of the HPMP); and

**WHEREAS**, the U.S. Department of Interior, Bureau of Land Management, Redding and Klamath Districts (hereinafter, “BLM”) manages lands within the Project, and has responsibilities for the issuance of permits to the License Applicant for archaeological work on BLM lands under the authorities of the Archaeological Resources Protection Act (16 U.S.C. §§470aa to mm); the Antiquities Act of 1906 (16 U.S.C. §§ 431-33); and Federal Land Policy and Management Act of 1976 (43 U.S.C. § 1732); and

**WHEREAS**, the U.S. Department of Agriculture, U.S. Forest Service, Klamath National Forest and Six Rivers National Forest (hereinafter, “Forest Service”) manages lands within the Project, and has responsibilities for issuance of permits to the License Applicant for archaeological work on Forest Service lands under the authorities of the Archaeological Resources Protection Act (16 U.S.C. §§ 470aa to mm; hereinafter, “ARPA); the Antiquities Act of 1906 (16 U.S.C. §§ 431-33); and the Organic Act of 1897; and

**WHEREAS**, the United States Army Corps of Engineers San Francisco District (hereinafter “Corps”) has responsibilities for the issuance of permits to the License Applicant under Section 404 of the Clean Water Act of 1972 as amended (22 U.S.C. § 1344) and that the issuance of USACE permits are an Undertaking subject to review under Section 106 of the National Historic Preservation Act and its implementing regulations, “Protection of Historic Properties (36 C.F.R. Part 800) for the USACE; and

**WHEREAS**, the BLM, Forest Service, and Corps have agreed to participate in the Section 106 consultation regarding the Project under the terms of this Programmatic Agreement, and have been invited to concur in the Programmatic Agreement; and

**WHEREAS**, the Commission has consulted with the Oregon and California State Historic Preservation Officers (hereinafter, “SHPOs” pursuant to 36 C.F.R. § 800.14(b) of the Advisory Council’s on Historic Preservation (hereinafter, “Council”) regulations (36 C.F.R. Part 800), implementing Section 106 of the National Historic Preservation Act (54 U.S.C. § 306108; hereinafter, “Section 106”) and are signatories to the Programmatic Agreement; and

**WHEREAS**, the Commission has authorized the License Applicant to initiate the Section 106 process pursuant to 36 C.F.R. § 800.2(c)(4), the License Applicant has participated in the consultation, and has been invited to concur in this Programmatic Agreement; and

**WHEREAS**, the Commission, as part of its responsibility to make a good faith effort to identify and consult with Indian tribes that might attach religious and cultural significance to the properties that may be affected by the project, contacted the Klamath Tribes, Shasta Indian Nation, Modoc Tribe of Oklahoma, Karuk Tribe, Yurok Tribe Yurok Reservation, Shasta Nation, Quartz Valley Indian Community of the Quartz Valley Reservation of California, Cher-Ae Heights Indian Community of Trinidad Rancheria, and the Hoopa Valley Tribe (list of tribes (hereinafter, “Tribes”) and the Tribes have participated in the consultation and have been invited to concur in this Programmatic Agreement; and

**WHEREAS**, the Commission has notified the Council of the development of this Programmatic Agreement and provided documentation required at 36 C.F.R. § 800.11(e), and the Council formally entered consultation on xx, xx 2019; and

**WHEREAS**, the Commission will require the License Applicant to implement the provisions of this Programmatic Agreement as a condition of any license surrender for the Project and;

**WHEREAS**, all conditions of this Programmatic Agreement and associated HPMP will be met at the completion of project removal, clean up, and reclamation of construction areas as required by the surrender order to be issued by the Commission;

**NOW THEREFORE**, the Commission and the SHPOs agree that the Project's surrender will be administered in accordance with the following stipulations in order to satisfy the Commission's Section 106 responsibilities.

# PA: Next Steps

- CRWG members to provide comments on “Whereas Statements” within 30 days after September 5, 2019
- Next CRWG meeting – PA Stipulations II through VII
- Following CRWG meeting – PA Stipulation I (HPMP)



# Closing Remarks and Discussion





# Action Item Review



# Lower Klamath Project

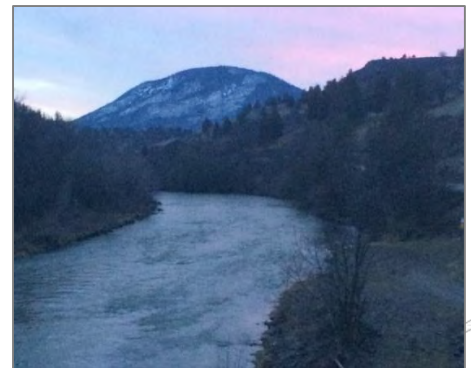
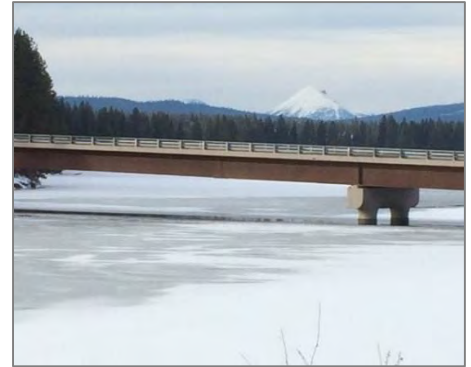
## Cultural Resources Working Group Meeting

December 12, 2019



# Meeting Agenda

1. Introductions
2. Today's Meeting Objectives
3. October 2019 Meeting Minutes and Action Items
4. Project Updates
5. Programmatic Agreement
6. Closing Remarks and Discussion
7. Action Item Review





# Introductions



# Meeting Objectives

# Meeting Objectives

- **Provide a general project update:**
  - Document status
  - Project schedule
  - Next steps
- **Continue Review of the Programmatic Agreement**





# October 2019 Tribal Caucus and CRWG Meeting

# October 2019 Tribal Caucus and CRWG Meeting Action Items

Action Item	CRWG/Tribal Action	KRRC/AECOM Action	Status
LVPP		Provide copy to OR SHPO	Completed on November 6.
Recreation Plan	Provide comments as soon as possible		No comments received
Monitoring/Inadvertent Discovery Plan	Comment date extended to November 15		No comments received
Programmatic Agreement		Circulate stipulations to CRWG	To be circulated after review during today's meeting



# General Update and Project Schedule

# Cultural Resource Planning Update

- **Monitoring and Inadvertent Discovery Plan**
  - Review period extended to November 15
  - Draft final under preparation
- **Review of Ethnographic Summaries**
  - No additional input received from Tribes
- **Phase II Evaluation Program**
  - Plan revised to minimize impacts to sites
- **Looting and Vandalism Prevention Plan**
  - Comments requested by November 23
  - Draft final under preparation
- **FERC Status Report**
  - KRRC plans to submit a status report to advise FERC on current status of consultation and request guidance for moving forward
- **CRWG Meetings and Tribal Caucus**
  - Transition from to individual Tribal meetings

# Deliverable Review Periods

	Draft to CRWG for Review	Receive Comments from CRWG	Final Draft <sup>1</sup>
Phase II Study Plan	May 3, 2019	June 19, 2019	December 14, 2019 <sup>2</sup>
Monitoring/ Inadvertent Discovery Plan	August 27, 2019	September 30, 2019	December 20, 2019
Programmatic Agreement (Prelim Draft)	August 27, 2019	September 30, 2019	December 20, 2019 <sup>3</sup>
Looting and Vandalism Protection Plan	October 25, 2019	November 23, 2019	December 20, 2019
Historic Properties Management Plan (Prelim Draft)	December 20, 2019	January 17, 2020	March 6, 2020 <sup>4</sup>
Human Remains Treatment Plan	November 27, 2019	January 17, 2020	March 6, 2020
<ol style="list-style-type: none"> <li>1. Draft documents will be submitted to FERC following notice of license surrender proceeding.</li> <li>2. Final draft of Phase II Plan on hold pending tribal consultation.</li> <li>3. PA will require multiple review periods.</li> <li>4. HPMP schedule will be extended pending resolution of Phase II methodology.</li> </ol>			

# Programmatic Agreement

**PROGRAMMATIC AGREEMENT  
BETWEEN  
THE FEDERAL ENERGY REGULATORY COMMISSION  
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION  
AND  
THE CALIFORNIA STATE HISTORIC PRESERVATION OFFICE  
THE OREGON STATE HISTORIC PRESERVATION OFFICE  
  
REGARDING  
THE LOWER KLAMATH HYDROELECTRIC PROJECT LICENSE SURRENDER  
IN KLAMATH COUNTY, OREGON AND SISKIYOU COUNTY, CALIFORNIA  
(FERC No. 14803)**

# Accomplishments to Date

- Completed Review of Whereas Statements
- Review of BLM and OR SHPO Comments
- Review of Whereas Statements
- Review of Standard Provisions of the PA
- Review of HPMP Structure and Content

# Goals for Today

- **Continue Review of Standard Provisions of the PA**
  - Coordination with Other Federal Reviews
  - Dispute Resolution
  - Amendment of the Programmatic Agreement
  - Termination of the Programmatic Agreement
  - Duration of this Agreement
  - Effective Date
  - Execution of this Programmatic Agreement in Counterparts
  - Execution of the Programmatic Agreement
  - Review of HPMP Outline

# Standard Provisions

- Provisions that occur generically in most PAs and form the basic requirements that appear in 36 CFR 800.
- CA and OR SHPO and ACHP have concerns about using standard FERC agreement documents,
- KRRC is attempting to address these concerns up front by modifying the FERC standard agreement to conform with PA language the SHPOs and ACHP approved in recent FERC PAs in 2019, including:
  - Prospect No. 3 Hydroelectric Relicensing – Oregon (2019)
  - Lassen Lodge Hydroelectric Project – California (2019)
  - Swan Lake North Pumped Storage Hydroelectric Project (2019)



# Stipulations III and IV

- **Stipulation III. Interim Treatment of Historic Properties**
  - Based on the Powerdale License Surrender Project MOA
  - Outlines process for complying with Section 106 for time between Surrender Order issuance and HPMP approval
- **Stipulation IV. Coordination with Other Federal Reviews**
  - Provision would allow a federal agency to accept the PA and integrate it into its Section 106 decisional process
  - Directly derived from text provided by the ACHP on another FERC Project

# Stipulations V and VI

- **Stipulation V. Dispute Resolution**

- Derived from Lassen Lodge and Swan Lake PAs
- Objections can be filed by any federal agency, ACHP, Tribes, SHPO, License Applicant
- FERC attempts to resolve them
- If no resolution, the matter is forwarded to ACHP for review
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- FERC takes ACHP opinion into account and makes final decision

- **Stipulation VI. Amendment to the PA**

- Derived From Lassen Lodge and Swan Lake PAs
- Any party may propose an amendment
- All signatories must agree to the proposed amendment

# Stipulations VII and VIII

- **Stipulation VII. Termination of PA**

- If any signatory determines that the PA terms can't be carried out, continue consultation and attempt amendment
- If no resolution is reached, agreement is terminated
- FERC can then either execute a new PA or consult with the ACHP

- **Stipulation VIII. Duration of the Agreement**

- Addresses duration of the surrender order and the temporal limits of FERC's oversight responsibilities

# Stipulations IX and X

- **Stipulation IX. Effective Date**
  - All signatories have signed the agreement
  - Surrender Order is effective
- **Stipulation X. Execution of this PA in Counterparts**
  - Provision requested by ACHP in Lassen Lodge and Swan Lake PAs
  - Allows for signatures to be collected individually on different pages

# Next Steps

- Completion of draft documents
- Prepare status report for submittal to FERC
- Schedule individual Tribal meetings (after Holidays)
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# Closing Remarks and Discussion



# Action Item Review





# Lower Klamath Project

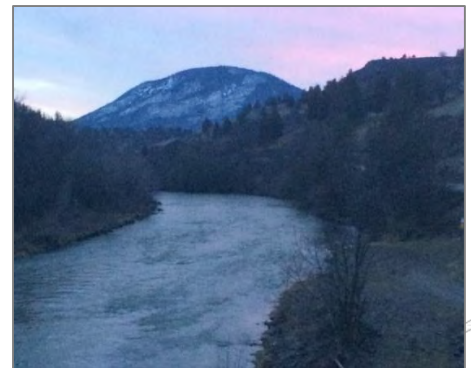
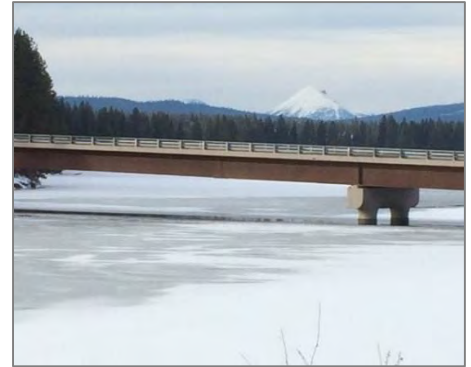
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# Action Item Review

[www.klamathrenewal.org](http://www.klamathrenewal.org)

# **ATTACHMENT 3**

Response to AIR-3  
Revised Table 3-4

ATTACHMENT 3

Explanation of Revisions to Table 3-4

Table 3-4 has been revised as requested to include: (1) all identified archaeological sites at the project (Site No.); site locations relative to the APE, the project boundary, the ADI/LOW, and Parcel B lands (PA/APE/ADI/LOW/PaB); (2) whether each resource is a prehistoric, multi-component, or historic-period site (Site Type); (3) whether each site is located on licensee, private, state, federal, or other lands (Landowner); (4) any National Register recommendations and/or determinations for each site (including clarification of any recommendations provided in the 2006 HPMP) and identification of all sites that will be subject to the 2021 Phase II archaeological investigations (2006, Current, and 2021 status columns); (5) a brief description of known and potential project effects to each specific resource (including any still-pertinent effects noted in the 2006 HPMP and any potential effects on historic properties as a result of downstream sediment transport associated with facility removal) (2006 and 2021 project effects; and (6) whether those specific effects are currently addressed in the 2021 HPMP (2021 HPMP Recommended Measures). Note that findings of eligibility that were recommended by PacifiCorp in 2006 are now considered “Unevaluated” because (1) the 2006 recommendations were not formally submitted for SHPO concurrence, and (2) Oregon SHPO recommended that subsurface testing be conducted before any determinations of eligibility are made. For consistency, the Renewal Corporation is applying the same approach for sites in California. Because the California and Oregon SHPOs have not yet made the necessary eligibility determinations, the Renewal Corporation has not formulated specific measures for each resource; however, the Renewal Corporation will do so upon receiving the eligibility determinations using the framework outlined in the HPMP and its subplans.

Revised Table 3-1      Recorded Archaeological Sites in the Project

Site No.	Location	Site Type	Submerged	Located within? (PA/APE/ ADI/LOW/PaB)	Landowner(s)	In 2006 KHP Study (Y/N) [Temp #]	2006 KHP NRHP Eligibility Rec.	Current NRHP Eligibility Status	In 2021 NRHP Phase II (Y/N)	Known and Potential Current Project Effects		2021 HPMP Recommended Measures <sup>3</sup>
										2006	2021	
35KL0013	J.C. Boyle	P	Part	PA/APE/ ADI/LOW/PaB	Licensee / Private	Y	E	U	Y	Erosion, data recovery	Reservoir drawdown, increased public access/looting	NRHP Eligibility
35KL0014	J.C. Boyle	P	Part	PA/APE/ ADI/LOW/PaB	Licensee / Private	Y	E	U	Y	Erosion, data recovery	Reservoir drawdown, increased public access/looting	NRHP Eligibility
35KL0015	J.C. Boyle	M	No	PA/APE/ ADI/LOW/PaB	Licensee / Private	Y	E	U	Y	Road and recreation development, looting, erosion, data recovery	Access route improvement, increased public access/looting, near recreational use or development	NRHP Eligibility



Site No.	Location	Site Type	Submerged	Located within? (PA/APE/ ADI/LOW/PaB)	Landowner(s)	In 2006 KHP Study (Y/N) [Temp #]	2006 KHP NRHP Eligibility Rec.	Current NRHP Eligibility Status	In 2021 NRHP Phase II (Y/N)	Known and Potential Current Project Effects		2021 HPMP Recommended Measures <sup>3</sup>
										2006	2021	
35KL1408	J.C. Boyle	P	No	ADI	Private	N	N/A	U	N	N/A	No known from current undertaking	None
35KL1472	J.C. Boyle	P	No	ADI/LOW	Private	N	N/A	U	N	N/A	No known from current undertaking	None
35KL1941	J.C. Boyle	M	Part	PA/APE/ ADI/LOW/PaB	Licensee / Private	Y	E	U	Y	Road and recreation development, looting, erosion, data recovery	Reservoir drawdown, habitat restoration, increased public access/looting	NRHP Eligibility
35KL1942	J.C. Boyle	P	Part	PA/APE/ ADI/LOW/PaB	Licensee / Private	Y	E	U	Y	Road and recreation development, looting, erosion, data recovery	Reservoir drawdown, increased public access/looting	NRHP Eligibility
35KL1943	J.C. Boyle	M	Part	PA/APE/ ADI/LOW/PaB	Licensee / Private	Y	E	U	Y	Road and recreation development, looting, erosion, data recovery	Reservoir drawdown, habitat restoration, recreation use or development, increased public access/looting	NRHP Eligibility
35KL1944	J.C. Boyle	P	No	PA/APE/	Licensee / Private	N	N/A	U	Y	N/A	Reservoir drawdown, increased public access/looting	NRHP Eligibility
35KL2397	J.C. Boyle	P	Yes	ADI/LOW/PaB	Licensee	Y (CB-20)	E	U	Y	Siltation/erosion, looting, utilities development	Reservoir drawdown, increased public access/looting	NRHP Eligibility
35KL2398	J.C. Boyle	P	No	PA/APE/ ADI/PaB	Licensee	Y (CB-06)	E	U	Y	Looting, erosion, utilities development	Staging or stockpiling	NRHP Eligibility
35KL2399	J.C. Boyle	M	No	PA/APE/ ADI/LOW/PaB	Licensee / Private	Y (CB-03)	E	U	Y	Looting, recreation development	Reservoir drawdown, increased public access/looting	NRHP Eligibility

Site No.	Location	Site Type	Submerged	Located within? (PA/APE/ ADI/LOW/PaB)	Landowner(s)	In 2006 KHP Study (Y/N) [Temp #]	2006 KHP NRHP Eligibility Rec.	Current NRHP Eligibility Status	In 2021 NRHP Phase II (Y/N)	Known and Potential Current Project Effects		2021 HPMP Recommended Measures <sup>3</sup>
										2006	2021	
35KL2401	J.C. Boyle	P	No	PA/APE/ ADI/PaB	Licensee / Private	Y (CB-02)	E	U	Y	Recreation utilities and road development erosion	Reservoir drawdown, increased public access/looting	NRHP Eligibility
35KL2411	J.C. Boyle	P	Part	PA/APE/ ADI/LOW/PaB	Licensee	Y (JC03-09)	E	U	Y	Looting, erosion, recreation development	Access route improvement, staging or stockpiling; reservoir drawdown, increased public access/looting	NRHP Eligibility
35KL2412	J.C. Boyle	P	Part	PA/APE/ ADI/LOW/PaB	Licensee	Y (JC03-10)	E	U	Y	Looting, erosion, utilities and recreation development	Reservoir drawdown, habitat restoration, increased public access/looting	NRHP Eligibility
35KL2428	J.C. Boyle	P	Part	PA/APE/ ADI/LOW/PaB	Licensee / Private	Y (JS-05)	E	U	Y	Recreation utilities and road development, erosion, looting, livestock activities	Access route improvement, security and/or silt fence, staging and or stockpiling, disposal site, reservoir drawdown, increased public access/looting	NRHP Eligibility
35KL2430	J.C. Boyle	P	Part	PA/APE/ ADI/LOW/PaB	Licensee / Private	Y (JS-07)	Eligible	U	Y	Recreation, utilities and road development, erosion, looting, livestock activities, logging	Reservoir drawdown, recreation use or development, increased public access/looting	NRHP Eligibility
35KL2434	J.C. Boyle	H	No	PA/APE/ ADI/LOW	Federal	Y (LA-01)	Eligible	U	N	Looting, weathering, road development (2006)	No known from current undertaking	None

Site No.	Location	Site Type	Submerged	Located within? (PA/APE/ ADI/LOW/PaB)	Landowner(s)	In 2006 KHP Study (Y/N) [Temp #]	2006 KHP NRHP Eligibility Rec.	Current NRHP Eligibility Status	In 2021 NRHP Phase II (Y/N)	Known and Potential Current Project Effects		2021 HPMP Recommended Measures <sup>3</sup>
										2006	2021	
35KL2435	J.C. Boyle	P	No	PA/APE/ ADI/LOW/PaB	Licensee / Private	Y (RM-01)	Eligible	U	Y	Looting, erosion, utilities development	Increased public access/looting, near facility removal	NRHP Eligibility
35KL2981	J.C. Boyle	P	No	PA/APE/ ADI/LOW/PaB	Licensee	N	N/A	U; currently recomm ended as NE/non- cultural	N	N/A	None	None
CA-SIS-155	Iron Gate Dam to Humbug Creek	P	No	ADI	Private	N	N/A	U	N	N/A	No known from current undertaking	None
CA-SIS-156	Iron Gate Dam to Humbug Creek	P	No	ADI	Private	N	N/A	U	N	N/A	No known from current undertaking	None
CA-SIS-157	Iron Gate Dam to Humbug Creek	P	No	ADI	Private	N	N/A	U	N	N/A	No known from current undertaking	None
CA-SIS-158	Iron Gate Dam to Humbug Creek	P	No	ADI	Private	N	N/A	U	N	N/A	No known from current undertaking	None
CA-SIS-159	Iron Gate Dam to Humbug Creek	P	No	ADI	Private	N	N/A	U	N	N/A	No known from current undertaking	None

Site No.	Location	Site Type	Submerged	Located within? (PA/APE/ ADI/LOW/PaB)	Landowner(s)	In 2006 KHP Study (Y/N) [Temp #]	2006 KHP NRHP Eligibility Rec.	Current NRHP Eligibility Status	In 2021 NRHP Phase II (Y/N)	Known and Potential Current Project Effects		2021 HPMP Recommended Measures <sup>3</sup>
										2006	2021	
CA-SIS-161	Iron Gate Dam to Humbug Creek	P	No	ADI	Federal / Private	N	N/A	U	N	N/A	No known from current undertaking	None
CA-SIS-264	Iron Gate Dam to Humbug Creek	P	No	ADI	State	N	N/A	U	N	N/A	No known from current undertaking	None
CA-SIS-326	Iron Gate	P	Part	PA/APE/ ADI/LOW/PaB	Licensee	Y	E	U	Y	Utilities development	Reservoir drawdown, increased public access/looting	NRHP Eligibility
CA-SIS-328	Iron Gate Dam to Humbug Creek	P	No	ADI	Private	N	N/A	U	N	N/A	No known from current undertaking	None
CA-SIS-329/H	Iron Gate Dam to Humbug Creek	M	No	ADI	Private	N	N/A	U	N	N/A	No known from current undertaking	None
CA-SIS-522	Iron Gate Dam to Humbug Creek	H	No	ADI	Private	N	N/A	U	N	N/A	No known from current undertaking	None
CA-SIS-536	Iron Gate Dam to Humbug Creek	H	No	ADI	Private	N	N/A	U	N	N/A	No known from current undertaking	None

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CA-SIS-632	Iron Gate Dam to Humbug Creek	M	No	ADI	Federal	N	N/A	U	N	N/A	No known from current undertaking	None
CA-SIS-873	Iron Gate Dam to Humbug Creek	P	No	ADI/LOW	Federal / Private	N	N/A	U	N	N/A	No known from current undertaking	None
CA-SIS-1670	Iron Gate	P	No	ADI/LOW/PaB	Licensee	N	N/A	U	Y <sup>1</sup>	N/A	Access route improvement	NRHP Eligibility
CA-SIS-1671	Copco / Iron Gate	H	No	PA/APE/ ADI/LOW/PaB	Licensee / Private	N	N/A	U	Y	N/A	Access route improvement, transmission line and/or pole removal	NRHP Eligibility
CA-SIS-1840	Copco	P	No	PA/APE/ ADI/LOW	Licensee	N	N/A	U	N	N/A	No known from current undertaking	None
CA-SIS-2129	Iron Gate	H	No	PA/APE/ ADI/LOW/PaB	Licensee / Federal	N	N/A	U	Y <sup>2</sup>	N/A	Transmission line and/or pole removal	NRHP Eligibility
CA-SIS- 2239/3923	Iron Gate	M	Part	PA/APE/ ADI/LOW/PaB	Licensee	Y (JC03-01)	E	U	Y	Erosion, looting, utilities, road, rural development	Access route improvement, reservoir drawdown, City of Yreka pipeline relocation, increased public access/looting; near staging or stockpiling	NRHP Eligibility
CA-SIS-2264	Copco	P	No	ADI	Licensee / Private	N	N/A	U	N	N/A	No known from current undertaking	None

Site No.	Location	Site Type	Submerged	Located within? (PA/APE/ ADI/LOW/PaB)	Landowner(s)	In 2006 KHP Study (Y/N) [Temp #]	2006 KHP NRHP Eligibility Rec.	Current NRHP Eligibility Status	In 2021 NRHP Phase II (Y/N)	Known and Potential Current Project Effects		2021 HPMP Recommended Measures <sup>3</sup>
										2006	2021	
CA-SIS-2403	Iron Gate	M	Part	PA/APE/ ADI/LOW/PaB	Licensee	Y	E	U	Y	Looting, road, utilities development, erosion, livestock activities, data recovery	Access route improvement, transmission line and/or pole removal, staging or stockpiling, increased public access/looting	NRHP Eligibility
CA-SIS-2576	Copco	P	Yes	APE	Licensee	N	N/A	U	N	N/A	None	None
CA-SIS-2579	Copco	P	No	PA/APE/ ADI/LOW/PaB	Licensee / Private	N	N/A	U	N	N/A	No known from current undertaking	None
CA-SIS-2824	Copco	H	No	PA/APE/ ADI/LOW/PaB	Licensee	Y	E	U	Y <sup>2</sup>	Looting, weathering, road and recreation development	None	NRHP Eligibility
CA-SIS-2825	Copco	H	No	PA/APE/ ADI/LOW/PaB	Licensee	Y (CB-29)	E	U	Y	Looting, residential and road development, weathering, livestock herding and grazing, looting	Access route improvement	NRHP Eligibility
CA-SIS-3913	Copco	P	Part	PA/APE/ ADI/LOW/PaB	Licensee	Y (CB-15)	E	U	Y	Utilities development, looting, erosion	Reservoir drawdown, habitat restoration, increased public access/looting	NRHP Eligibility
CA-SIS-3914	Copco	P	Part	PA/APE/ ADI/LOW/PaB	Licensee	Y (CB-16)	E	U	Y	Utilities development, erosion	Reservoir drawdown, increased public access/looting	NRHP Eligibility

Site No.	Location	Site Type	Submerged	Located within? (PA/APE/ ADI/LOW/PaB)	Landowner(s)	In 2006 KHP Study (Y/N) [Temp #]	2006 KHP NRHP Eligibility Rec.	Current NRHP Eligibility Status	In 2021 NRHP Phase II (Y/N)	Known and Potential Current Project Effects		2021 HPMP Recommended Measures <sup>3</sup>
										2006	2021	
CA-SIS-3915	Copco	P	Part	PA/APE/ ADI/LOW/PaB	Licensee	Y (CB-17)	E	U	Y	Rural, recreation and utilities development, erosion	Reservoir drawdown, increased public access/looting	NRHP Eligibility
CA-SIS-3916	Copco	H	No	APE/ ADI/LOW/PaB	Licensee	Y (CB-18)	NE	U	N	Erosion, weathering dismantling	No known from current undertaking	None
CA-SIS-3917	Copco	H	No	PA/APE/ ADI/PaB	Licensee	Y (CB-19)	NE	U	N	Weathering, livestock grazing	No known from current undertaking	None
CA-SIS-3918	Copco	H	No	PA/APE/ ADI/LOW/PaB	Licensee / Private	Y (CB-27)	E	U	Y <sup>2</sup>	Weathering, livestock herding and grazing, looting	None	NRHP Eligibility
CA-SIS-3919	Iron Gate	P	No	PA/APE/ ADI/LOW/PaB	Licensee	Y (FH-03)	E	U	Y <sup>1</sup>	Erosion, rural development	None	NRHP Eligibility
CA-SIS-3920	Copco	M	Part	PA/APE/ ADI/LOW/PaB	Licensee / Private	Y (FH-06)	E	U	Y	Erosion, looting, utilities, rural and recreational development	Reservoir drawdown, habitat restoration, recreation use or development, increased public access/looting	NRHP Eligibility
CA-SIS-3921	Copco	P	Part	PA/APE/ ADI/LOW/PaB	Licensee / Private	Y (FH-07)	E	U	Y	Erosion, utility development	Reservoir drawdown, habitat restoration, increased public access/looting	NRHP Eligibility
CA-SIS-3922	Copco	P	Part	PA/APE/ ADI/LOW/PaB	Licensee / Private	Y (FH-21)	E	U	Y	Looting, weathering, road and recreation development	Access route improvement, habitat restoration, increased public access/looting	NRHP Eligibility

Site No.	Location	Site Type	Submerged	Located within? (PA/APE/ADI/LOW/PaB)	Landowner(s)	In 2006 KHP Study (Y/N) [Temp #]	2006 KHP NRHP Eligibility Rec.	Current NRHP Eligibility Status	In 2021 NRHP Phase II (Y/N)	Known and Potential Current Project Effects		2021 HPMP Recommended Measures <sup>3</sup>
										2006	2021	
CA-SIS-3924	Copco	P	Part	PA/APE/ADI/LOW/PaB	Licensee / Private	Y (JC03-06)	E	U	Y	Erosion, looting, utilities, road and recreational development	Reservoir drawdown, habitat restoration, increased public access/looting	NRHP Eligibility
CA-SIS-3925	Copco	P	No	PA/APE/ADI/LOW/PaB	Licensee / Private	Y (JC03-07)	E	U	Y	Recreation and road development, erosion, looting	Access route improvement, security and/or silt fence, staging or stockpiling, reservoir drawdown, habitat restoration, increased public access/looting	NRHP Eligibility
CA-SIS-3926	Copco	M	Part	PA/APE/ADI/LOW/PaB	Licensee / Private	Y (JC03-08)	E	U	Y	Recreation, rural, utility and road development, erosion, looting, livestock activities	Access route improvement, reservoir drawdown, habitat restoration, increased public access/looting	NRHP Eligibility
CA-SIS-3927	Copco	H	No	APE/ADI/LOW	Licensee	Y (JC03-25)	NE	U	Y <sup>2</sup>	Road and utility development, erosion, recreation use, livestock grazing	Access route improvement, transmission line and/or pole removal	NRHP Eligibility
CA-SIS-3928	Copco	H	No	APE/ADI/LOW	Licensee / Private	Y (JC03-26)	NE	U	Y <sup>2</sup>	Erosion, road and utility development	Access route improvement, transmission line and/or pole removal	NRHP Eligibility
CA-SIS-3930	Iron Gate	P	Part	PA/APE/ADI/LOW/PaB	Licensee	Y (FH-01)	E	U	Y	Looting, erosion, utilities development	Reservoir drawdown, increased public access/looting	NRHP Eligibility



Site No.	Location	Site Type	Submerged	Located within? (PA/APE/ ADI/LOW/PaB)	Landowner(s)	In 2006 KHP Study (Y/N) [Temp #]	2006 KHP NRHP Eligibility Rec.	Current NRHP Eligibility Status	In 2021 NRHP Phase II (Y/N)	Known and Potential Current Project Effects		2021 HPMP Recommended Measures <sup>3</sup>
										2006	2021	
CA-SIS-3933	Iron Gate	M	Part	PA/APE/ ADI/LOW/PaB	Licensee	Y (CB-10)	E	U	Y	Road, recreational, utilities development, looting, erosion	Reservoir drawdown, habitat restoration, City of Yreka pipeline relocation, increased public access/looting	NRHP Eligibility
CA-SIS-3934	Iron Gate	H	No	PA/APE/ ADI/LOW/PaB	Licensee	Y (CB-11)	NE	U	Y <sup>2</sup>	Looting, erosion	None	NRHP Eligibility
CA-SIS-3935	Iron Gate	P	No	PA/APE/ ADI/LOW/PaB	Licensee	Y (CB-12)	E	U	N	Rural and utilities development, looting, erosion	No known from current undertaking	None
CA-SIS-3936	Iron Gate	H	No	PA/APE/ ADI/PaB	Licensee	Y (CB-13)	NE	U	N	Erosion, livestock grazing	No known from current undertaking	None
CA-SIS-3937	Iron Gate	H	No	PA/APE/ ADI/PaB	Licensee	Y (CB-14)	NE	U	Y <sup>2</sup>	Erosion	None	NRHP Eligibility
CA-SIS-3938	Iron Gate	P	No	PA/APE/ ADI/PaB	Licensee	Y (FH-02)	E	U	Y <sup>1</sup>	Erosion	None	NRHP Eligibility
CA-SIS-3939	Iron Gate	M	No	PA/APE/ ADI/PaB	Licensee	Y (FH-04)	E (P); NE (H)	U	N	Erosion, looting	No known from current undertaking	None
CA-SIS-3940	Iron Gate	M	Part	PA/APE/ ADI/LOW/PaB	Licensee	Y (FH-05)	NE	U	Y	Looting, erosion, livestock herding and grazing	Reservoir drawdown, habitat restoration, increased public access/looting	NRHP Eligibility
CA-SIS-3942	Iron Gate	H	Part	PA/APE/ ADI/LOW/PaB	Licensee	Y (JC03-02)	NE	U	Y <sup>2</sup>	Erosion, weathering	Transmission line and/or pole removal	NRHP Eligibility
CA-SIS-3943	Iron Gate	H	No	PA/APE/ ADI/PaB	Licensee	Y (JC03-03)	NE	U	N	Erosion, road development	No known from current undertaking	None
CA-SIS-3944	Iron Gate	H	No	PA/APE/ ADI/PaB	Licensee	Y (JC03-04)	NE	U	N	Erosion, road development	No known from current undertaking	None

Site No.	Location	Site Type	Submerged	Located within? (PA/APE/ADI/LOW/PaB)	Landowner(s)	In 2006 KHP Study (Y/N) [Temp #]	2006 KHP NRHP Eligibility Rec.	Current NRHP Eligibility Status	In 2021 NRHP Phase II (Y/N)	Known and Potential Current Project Effects		2021 HPMP Recommended Measures <sup>3</sup>
										2006	2021	
CA-SIS-3945	Iron Gate	H	No	PA/APE/ADI/LOW/PaB	Licensee	Y (JC03-05)	NE	U	Y <sup>2</sup>	Erosion, livestock grazing	Transmission line and/or pole removal	NRHP Eligibility
CA-SIS-4134	Iron Gate Dam to Humbug Creek	M	No	APE/ADI	Federal	N	N/A	U	N	N/A	No known from current undertaking	None
47-004303 (CA-SIS-4303)	Iron Gate Dam to Humbug Creek	H	No	APE/ADI	Federal	N	N/A	U	N	N/A	No known from current undertaking	None
47-004427 (CA-SIS-4427)	Iron Gate Dam to Humbug Creek	H	No	APE/ADI	Federal	N	N/A	U	N	N/A	No known from current undertaking	None
47-004999 (CA-SIS-4999)	Iron Gate Dam to Humbug Creek	H	No	APE/ADI	Federal / Private	N	N/A	U	N	N/A	No known from current undertaking	None
47-005000 (CA-SIS-5000)	Iron Gate Dam to Humbug Creek	H	No	APE/ADI	Private	N	N/A	U	N	N/A	No known from current undertaking	None
CA-SIS-5255	Iron Gate Dam to Humbug Creek	H	No	APE/ADI	Private	N	N/A	U	N	N/A	No known from current undertaking	None

Site No.	Location	Site Type	Submerged	Located within? (PA/APE/ ADI/LOW/PaB)	Landowner(s)	In 2006 KHP Study (Y/N) [Temp #]	2006 KHP NRHP Eligibility Rec.	Current NRHP Eligibility Status	In 2021 NRHP Phase II (Y/N)	Known and Potential Current Project Effects		2021 HPMP Recommended Measures <sup>3</sup>
										2006	2021	
CA-SIS-5256	Iron Gate Dam to Humbug Creek	H	No	APE/ADI	Private	N	N/A	U	N	N/A	No known from current undertaking	None
LKP-2017-2	Iron Gate	H	No	APE/ ADI/LOW/PaB	Licensee	N	N/A	U; currently rec. NE	N	N/A	None	None
LKP-2018-6	Iron Gate	M	No	PA/APE/ ADI/LOW/PaB	Licensee	N	N/A	U	Y <sup>1</sup>	N/A	None	NRHP Eligibility
LKP-2018-7	Iron Gate	P	No	PA/APE/ ADI/LOW/PaB	Licensee	N	N/A	U	Y <sup>1</sup>	N/A	None	NRHP Eligibility
LKP-2018-8	Copco	H	No	PA/APE/ ADI/LOW/PaB	Licensee	N	N/A	U	Y	N/A	Facility removal, hatchery improvement, access route improvement, transmission line and/or pole removal, staging or stockpiling	NRHP Eligibility
LKP-2018-11	Copco	H	No	APE/ ADI/LOW/PaB	Licensee	N	N/A	U	Y	N/A	Access route improvement	NRHP Eligibility
LKP-2018-14	J.C. Boyle	P	No	PA/APE/ ADI/LOW/PaB	Licensee	N	N/A	U	Y	N/A	Reservoir drawdown, increased public access/looting	NRHP Eligibility
LKP-2018-15	Iron Gate	H	No	PA/APE/ ADI/LOW/PaB	Licensee / Federal	N	N/A	U	Y <sup>2</sup>	N/A	Transmission line and/or pole removal	NRHP Eligibility
LKP-2019-3	Copco	M	No	PA/APE/ ADI/LOW	Licensee	N	N/A	U	Y	N/A	Hatchery improvements	NRHP Eligibility
LKP-2019-4	Copco	H	No	PA/APE/ ADI/LOW/PaB	Licensee / Private	N	N/A	U	N	N/A	No known from current undertaking	None

Site No.	Location	Site Type	Submerged	Located within? (PA/APE/ ADI/LOW/PaB)	Landowner(s)	In 2006 KHP Study (Y/N) [Temp #]	2006 KHP NRHP Eligibility Rec.	Current NRHP Eligibility Status	In 2021 NRHP Phase II (Y/N)	Known and Potential Current Project Effects		2021 HPMP Recommended Measures <sup>3</sup>
										2006	2021	
LKP-2019-5	Copco	H	No	PA/APE/ ADI/LOW/PaB	Licensee / Private	N	N/A	U	N	N/A	No known from current undertaking	None
LKP-2019-9	Iron Gate	M	No	PA/APE/ ADI/LOW/PaB	Licensee	N	N/A	U	Y	N/A	Transmission line and/or pole removal	NRHP Eligibility
LKP-2019-10	J.C. Boyle	M	No	PA/APE/ADI	Private	N	N/A	U	Y	N/A	Access route improvement, recreation use or development, increased public access/looting, near facility removal	NRHP Eligibility
LKP-2020-1	J.C. Boyle			PA/APE/ ADI/LOW/PaB	Licensee	N	N/A	U	Y	N/A	Facility removal, access route improvement, security and/or silt fence/staging or stockpiling, fire access, recreation use or development	NRHP Eligibility

Notes: ADI = Area of Direct Impact; APE = Area of Potential Effect; LOW = Limits of Work; PA = Project Area; PaB = Parcel B  
KHP = Klamath Hydroelectric Project  
NRHP = National Register of Historic Places  
P = Precontact; H = Historic; M = Multicomponent  
U = Unevaluated; NE = Not Eligible; E = Eligible

<sup>1</sup> Site is within the Project ADI, but no project-related impacts have been identified at the 100 percent design phase. The Phase II testing program outlined below for this site would only be conducted if project plans change and effects are identified.

<sup>2</sup> Included in 2021 NRHP Phase II archival research only: no subsurface investigation proposed.

<sup>3</sup> NRHP Eligibility indicates that a determination of eligibility through Phase II testing will be required before effects from current project can be identified per the direction of the Oregon SHPO. For consistency, KRRC is applying the same approach to sites in California, as explained above. Once eligibility determinations are finalized, KRRC will develop site-specific recommended measures using the framework in the HPMP and its subplans

## **ATTACHMENT 4**

Response to AIR-3  
HPMP Cultural Sites (Sheets 1 through 17)  
[REDACTED]

## **ATTACHMENT 4**

### **HPMP Cultural Resource Site Maps Sheet 1 through Sheet 17**

**REDACTED: Attachment 4 consists in its entirety of information about the location, character, or ownership of historic resources that, if disclosed, may cause a significant invasion of privacy; cause a risk of harm to the historic resource; or impede the use of a traditional religious site by practitioners. These attachments are separately filed as “Privileged” documents in accordance with 18 C.F.R. § 388.112, 18 C.F.R. § 388.107 and 36 CFR § 800.11(c).**

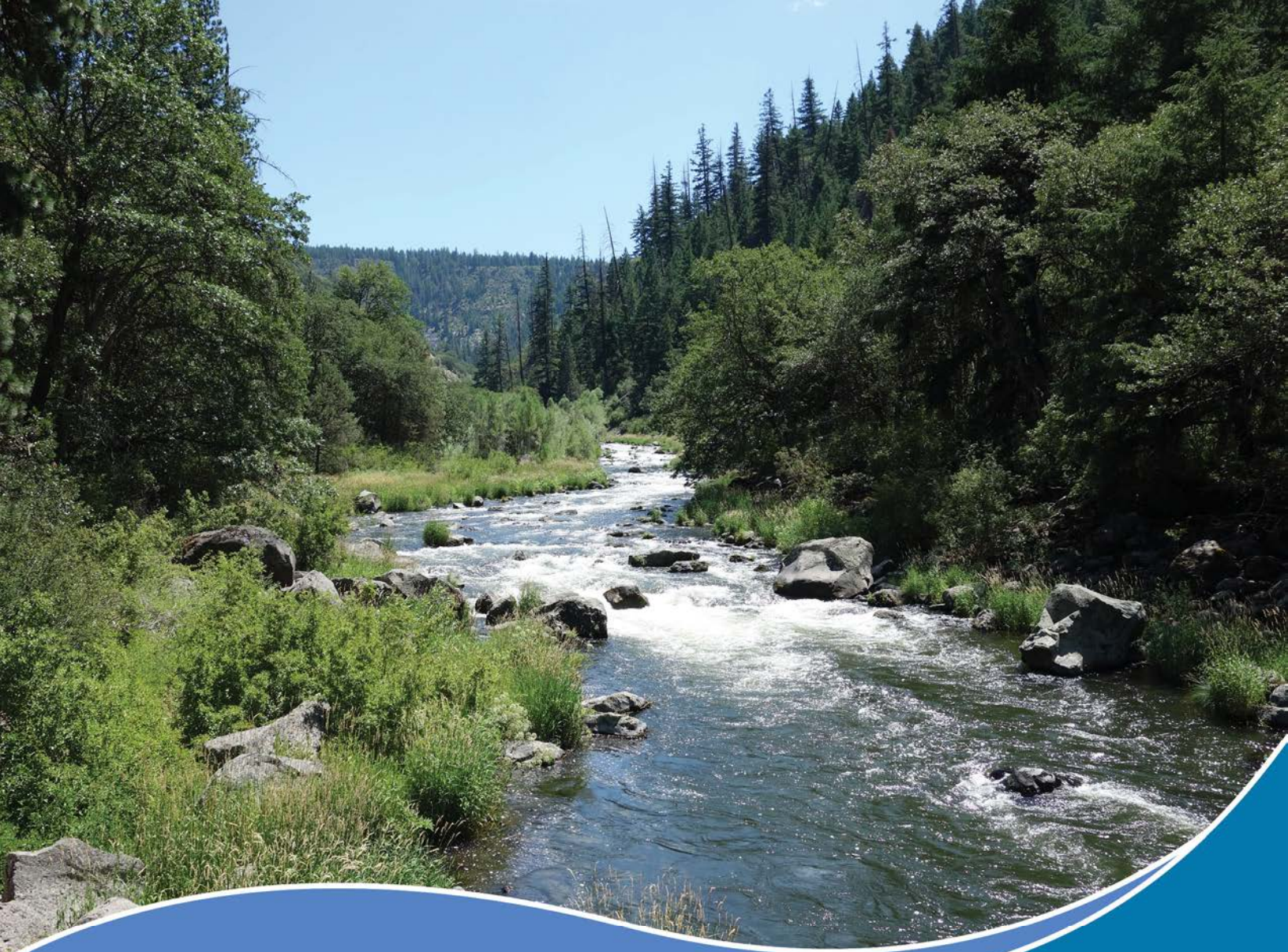
# **ATTACHMENT 5**

Response to AIR-5

Phase II Archaeological Research Design  
and Testing Plan

[REDACTED]





# **Lower Klamath Project**

## **Phase II Archaeological Research Design and Testing Plan**

### **Administrative Draft**

May 2021





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**Prepared for:**

Klamath River Renewal Corporation

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# Acronyms and Abbreviations

AB	Auger Bore
ACHP	Advisory Council on Historic Preservation
AD	Anno Domini
ADI	Area of Direct Impacts
AMS	accelerator mass spectrometry
APE	Area of Potential Effects
ATV	all-terrain vehicle
BC	Before Christ
BCE	Before the Common Era
BLM	Bureau of Land Management
BP	before present
Caltrans	California Department of Transportation
CCC	Civilian Conservation Corps
CCR	California Code of Regulations
CCS	cryptocrystalline silicate
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CHRIS	California Historical Resources Information System
CIEP	crossover immunological electrophoresis
cm	centimeter
cmbs	centimeters below surface
Copco	California-Oregon Power Company
CPRR	Central Pacific Railroad
CRHR	California Register of Historical Resources
EDM	Electronic Distances Measurement
EML	East Medicine Lake
EMP	edge-modified piece
EO	Executive Order
EPA	United States Environmental Protection Agency
EU	Excavation Unit
FERC	Federal Energy Regulatory Commission
FLPMA	Federal Land Policy and Management Act
GF	Grasshopper Flat
GIS	geographic information system
GPS	global positioning system
HAR	hammerstones, anvils, and rubbing stones
HBC	Hudson's Bay Company
HRA	Heritage Research Associates

HYSA	Hoopa-Yurok Settlement Act
KCHS	Klamath County Historical Society
KHSA	Klamath Hydroelectric Settlement Agreement
km	kilometer
KRRC	Klamath River Renewal Corporation
LIW	Lost Iron Well
m	meter
mm	millimeter
MAR	Mountain Anthropological Research
MNI	minimum number of individuals
NHPA	National Historic Preservation Act
NPS	National Park Service
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NRIS	National Reservoir Inundation Study
OARRA	Oregon Archaeological Records Remote Access
O&C	Oregon and California Railroad
OCR	oxidizable carbon ratio
ODOT	Oregon Department of Transportation
OHP	Office of Historic Preservation
OHV	off-highway vehicle
OMNCH	Oregon Museum of Natural and Cultural History
ORS	Oregon Revised Statutes
OSHA	Occupational Safety and Health Administration
PGT	Pacific Gas Transmission Company
PL	Public Law
PP&L	Pacific Power & Light Company
PRC	Public Resources Code (California)
RM	river mile
RS	Red Switchback
SCU	Surface Collection Unit
SEP&L	Siskiyou Electric Power and Light Company
SHARD	Sonoma State University Historic Artifact Database
SHPO	State Historic Preservation Officer
SOU	Southern Oregon University
SOWR	Southern Oregon Wagon Road
SPRR	Southern Pacific Railroad
SP	Shovel Probe Unit
SR	State Route
SRRA	safety roadside rest area
SRU	surface reconnaissance unit
STU	Shovel Test

TBD	to be determined
THPO	Tribal Historic Preservation Officer
UCAS	University of California Archeological Survey
US	United States
USBR	United States Bureau of Reclamation
USF&WS	United States Fish and Wildlife Services
U.S.C.	United States Code
WHPC	Western Historical Publishing Company
XRF	X-ray fluorescence



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## **Chapter 1: Introduction**



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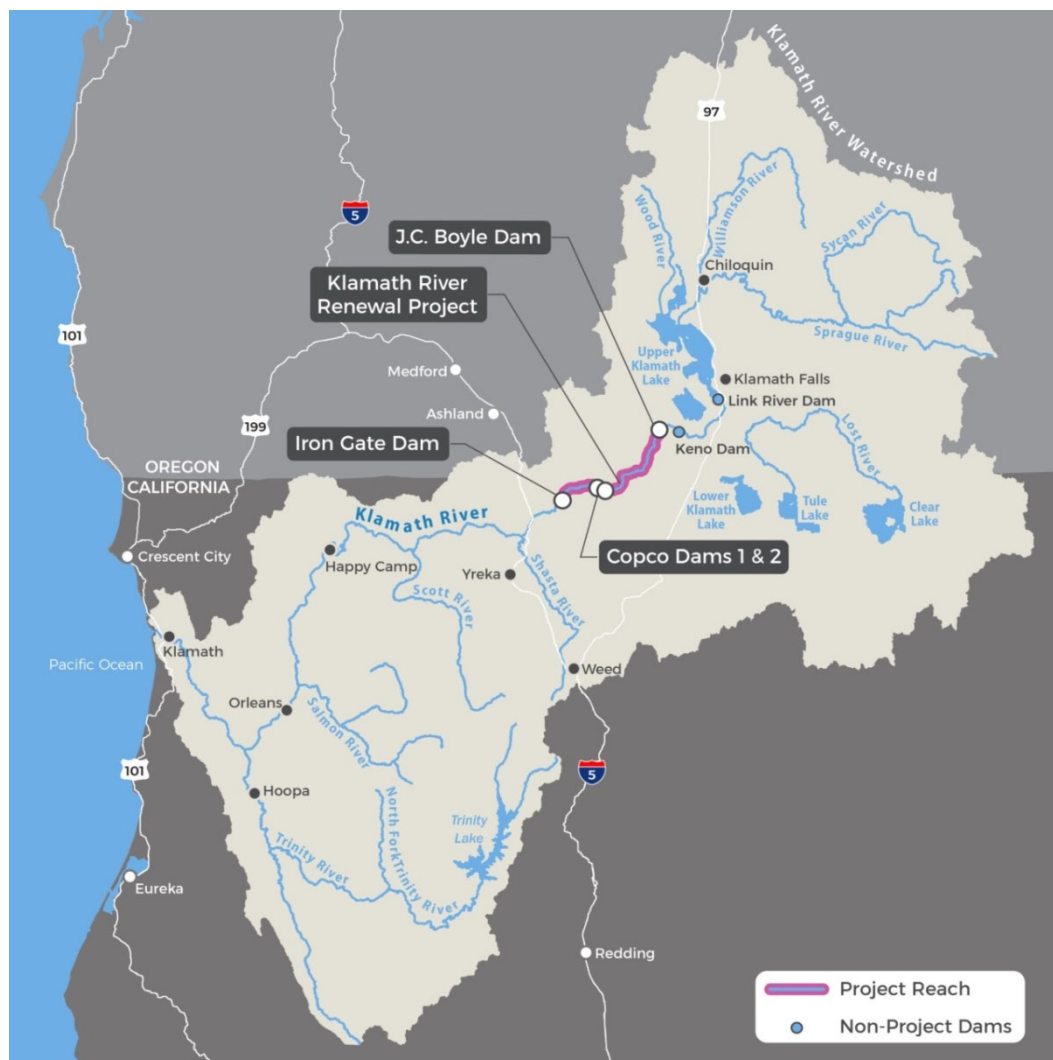
# 1. INTRODUCTION

The Klamath River Renewal Corporation (KRRRC) proposes to remove four hydroelectric developments (J.C. Boyle, Copco No. 1, Copco No. 2, and Iron Gate), along with appurtenant facilities (the Project). The purpose of the Project is to achieve a free-flowing condition and volitional fish passage in river reaches currently occupied by these developments (river miles [RM] 193.1 through 234.1). Under the Klamath Hydroelectric Settlement Agreement (KHSA), as amended in 2016, the Project consists of measures to remove the four developments; remediate and restore the reservoir sites; avoid or minimize adverse impacts downstream; ensure completion of the Project with committed funds; and avoid damages and liabilities for PacifiCorp, the United States, and third parties.

The Federal Energy Regulatory Commission (FERC) is the lead agency for the Project (a.k.a. Lower Klamath Project FERC No. 14803). Section 106 of the National Historic Preservation Act (NHPA; 54 United States Code [U.S.C.] 300101 et seq.) and its implementing regulations, “Protection of Historic Properties” (36 Code of Federal Regulations [CFR] Part 800), require that federal agencies take into account the effects of their undertakings on historic properties (36 CFR § 800.1[a]). This consideration of effects is accomplished by following the Section 106 process, in which the agency determines whether its proposed action is defined as an undertaking and, if so, whether it is a type of activity that has the potential to cause effects on historic properties (36 CFR § 800.3[a]). FERC has designated KRRRC, as transfer applicant, and PacifiCorp, as current owner of the four facilities, as its nonfederal representative for carrying out the Project in accordance with Section 106 and 36 CFR Part 800.

This document presents the Phase II Testing Plan (plan) for archaeological sites associated with the Project that have the potential to be affected during the decommissioning of four dams on the Klamath River in Klamath County, Oregon, and Siskiyou County, California (Figure 1-1). This plan details the approach for fieldwork, analyses, and curation of the recovered materials, and preparation of a report to facilitate National Register of Historic Places (NRHP) evaluation of the archaeological sites, gather data necessary to address Project effects, and design a mitigation strategy, if appropriate.

The archaeological sites addressed in this plan focus on those properties recorded in the Project’s Area of Direct Impacts (ADI), as defined in Section 1.3.2 below. There are 57 total archaeological sites covered by this plan that include 27 precontact, 16 historic-period, and 14 multiple-component resources (Table 1-1). Cultural resources studies conducted in support of earlier Klamath River dam relicensing (PacifiCorp 2004, 2006) and decommissioning (Cardno ENTRIX 2012) provided preliminary NRHP recommendations for many of the sites in the current ADI, based largely on surface constituents and informal assessment of a site’s research potential. Because these previous projects did not reach implementation stage, the NRHP recommendations were never formalized or concurred upon by the California or Oregon State Historic Preservation Officers (SHPOs) thus sites are considered unevaluated until Phase II or formal Determinations of Eligibility are completed and concurrence provided.



**Figure 1-1 Klamath Basin Watershed and Project Facility Locations**

Given the evolution of professional archaeology within the western United States and the rapidity with which human activity and developments can impact landform and landscape, current guidelines and standards dictate that inventories performed more than 10 years ago are generally no longer considered valid in inventory protocol or reporting standards. Specifically in relation to this Phase II project, site information to date is lacking in accuracy of site boundaries, prior excavation locations, and information regarding subsurface extent of sites. While every effort is made to re-locate prior excavation locales based upon prior reporting information, given the level and detail of reporting, efforts may not be successful for each and every site previously investigated.

The goal of the current study is to provide the information needed for the FERC, as the Project's lead agency, in consultation with the SHPOs, to make a final determination of NRHP eligibility and assess the proposed Project's effects on historic properties in the ADI. Ancillary goals include defining the

### Table 1-1 Proposed Phase II Archaeological Sites

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### Non-Reservoir Areas

NRHP = National Register of Historic Places

horizontal and vertical extent of the sites, identifying the types and quantities of cultural materials present, identifying and dating cultural components, and assessing each site's physical integrity. As discussed further in Chapters 5 and 6, based on consultation among the Native American Tribes, the California and Oregon SHPOs, and other project stakeholders, the proposed approach to the Phase II investigations is structured to minimize physical disturbance to the sites, while still providing sufficient information for determinations of NRHP eligibility.

AECOM understands that due to operational changes or weather conditions, drawdown and flow release may not be predictable, resulting in insufficient or complete lack of drawdown during field season. This may affect the ability to assess the following sites:

- J.C. Boyle - 35KL14, 35KL192, 35KL2397, 35KL2399, 35KL2401, 5KL2411, 35KL2412, 35KL2428, and 35KL2430
- Copco - CA-SIS-3913, CA-SIS-3914, CA-SIS-3915, CA-SIS-3920, CA-SIS-3921, CA-SIS-3924, CA-SIS-3925, and CA-SIS-3926
- Iron Gate - CA-SIS-326, CA-SIS-2293/3293, CA-SIS-3919, CA-SIS-3930, CA-SIS-3933, and CA-SIS-3940

In this event, the portion of work that cannot be conducted will be reserved for the next drawdown period.

## 1.1 Project Location and Description

The Project proposes the physical removal of the four dam developments (J.C. Boyle, Copco No. 1 and No. 2, and Iron Gate), consistent with the terms of the KHSA, to achieve at a minimum a free-flowing condition and volitional fish passage. The Project also includes site remediation and restoration, including areas previously inundated by the reservoirs; measures to avoid or minimize adverse downstream impacts; and all associated permitting for such actions. The Project is located on the Klamath River in the states of Oregon and California, approximately 200 miles upstream from the Pacific Ocean (see Figure 1-1). The Project area encompasses the lands and waters between the upper reach of J.C. Boyle Reservoir, at RM 234, and the toe of Iron Gate Dam, at RM 193. The Project involves the complete removal of the four dams as well as removal of power generation facilities, water intake structures, canals, pipelines, and ancillary buildings. Under a partial removal alternative, for purposes of environmental review, portions of each dam could remain in place, along with ancillary buildings and structures such as powerhouses, foundations, tunnels, and pipes, while still achieving the Project purpose to achieve a free-flowing condition and volitional fish passage.

Before removal of the hydropower developments, the surface water elevation in each reservoir would be drawn down as low as possible to facilitate accumulated sediment evacuation and to create a dry work area for removal activities. After drawdown is accomplished, remaining reservoir sediments would be stabilized to the extent feasible, and dam and hydropower development removal would begin. Full reservoir area restoration would begin after drawdown; vegetation establishment could extend for several years.



Other key Project components include measures to reduce Project-related impacts to aquatic and terrestrial resources; road and bridge improvements; temporary bridge construction; relocation of the City of Yreka's pipeline across Iron Gate Reservoir, including installation of a temporary pipeline, and associated diversion facility improvements; demolition of various recreation facilities adjacent to the reservoirs; recreation improvements; downstream flood control improvements; groundwater system improvements; water supply improvements; fish hatchery modification and improvements; and measures to protect identified historical, cultural, and tribal resources.

## **1.2 Regulatory Context**

This section provides an overview of the federal and state laws and regulations that guide the consideration of effects on cultural resources caused by the Project. Although this plan focuses on information gathering for the purposes of identifying historic properties under Section 106 of the NHPA, other cultural resource laws, regulations, and executive orders also apply to the FERC's review and permitting decisions for the Project.

### **1.2.1 Federal Laws, Regulations, and Executive Orders**

Federal laws provide protection to cultural resources for projects that are subject to federal jurisdiction. Specific statutes relevant to the Project include the following:

#### **The National Historic Preservation Act of 1966 (16 U.S.C. 470 et seq.)**

The NHPA, as amended, establishes the statutory responsibilities of federal agencies to manage the cultural resources under their jurisdiction and authorizes the Secretary of the Interior to maintain an NRHP. It also provides for the creation of SHPOs/Tribal Historic Preservation Officers (THPOs) to facilitate the implementation of federal cultural resource policy at the state/Indian reservation level. Section 106 of the NHPA requires federal agencies to take into account the effect of their proposed undertakings on properties listed in, or eligible for listing in, the NRHP.

#### **36 CFR Part 800, Protection of Historic Properties**

These regulations implement Section 106 of the NHPA, as amended, by stating the requirements for inventorying cultural resources; determining which are eligible for listing in the NRHP and are thus considered to be historic properties; evaluating project effects on the properties; and resolving adverse effects. These steps are implemented in consultation with oversight agencies, Indian Tribes, and interested parties.

#### **The Archaeological Resources Protection Act of 1979 (16 U.S.C. 470aa-mm)**

The purpose of the Archaeological Resources Protection Act is to secure the protection of archaeological resources that are on public lands and Indian lands; and to foster increased cooperation and exchange of information between governmental authorities, the professional archaeological community, and private individuals having collections of archaeological resources and data that were obtained before October 31, 1979, the date of the enactment of the act.

## **Federal Land Policy and Management Act of 1976**

The Federal Land Policy and Management Act of 1976 (FLPMA), as amended, establishes public land policy and guidelines for its administration; to provide for the management, protection, development, and enhancement of the public lands; and for other purposes. The FLPMA guides the Bureau of Land Management's (BLM's) treatment of cultural resources under its jurisdiction.

## **The Native American Graves Protection and Repatriation Act of 1990, as amended (25 U.S.C. 3001 et seq.)**

The Native American Graves Protection and Repatriation Act, passed in 1990, provides a process for museums and federal agencies to return certain Native American cultural items, including human remains, funerary objects, sacred objects, and objects of cultural patrimony, to lineal descendants, culturally affiliated Indian Tribes, and Native Hawaiian organizations.

## **The American Indian Religious Freedom Act of 1978 (42 U.S.C. 1996)**

The American Indian Religious Freedom Act makes it a policy of the federal government to protect and preserve for American Indians, Eskimos, Aleuts, and Native Hawaiians the inherent right to exercise their traditional religions. To this end, it specifically allows them to possess and use sacred objects and to access traditional sites for religious purposes.

## **18 CFR § 4.51(f)(4), Report on Historical and Archaeological Resources**

These are the regulations implementing FERC's responsibilities under the Federal Power Act regarding compliance with federal cultural resource protection laws in the agency's licensing of existing hydroelectric projects.

## **Guidelines for the Development of Historic Properties Management Plans for FERC Hydroelectric Projects**

These guidelines were prepared in conjunction with the Advisory Council on Historic Preservation (ACHP) to assist hydropower project licensees in the development of Historic Properties Management Plans, to consider and manage the effects of a project on historical properties.

## **Executive Order 12898, Environmental Justice, 1994**

This Executive Order (EO) requires that federal agencies avoid having disproportionate adverse environmental impacts on low-income populations and minority communities. This may include impacts on the cultural environment of these communities and populations.

## **Executive Order 13007, Indian Sacred Sites, 1996**

This EO requires that federal agencies seek to avoid adverse effects on Indian tribal sacred sites on federal land or tribal land and to maintain access to such sites. .

## **Executive Order 13175, Consultation with Tribal Governments, 2000**

The EO affirms the federal government’s commitment to a government-to-government relationship with Indian Tribes and directs federal agencies to establish procedures to consult and collaborate with tribal governments when new agency regulations would have tribal implications.

### **1.2.2 State Laws and Regulations**

Because of its location in the two states, both Oregon and California state laws and regulations apply to the Project. Those that apply to cultural resources include the following:

#### **Oregon Revised Statutes**

- Oregon Revised Statutes (ORS) 97.740–97.750 protect and establish procedures for the treatment of Indian graves.
- ORS 192.501 protects the confidentiality of information on archaeological sites.
- ORS 358.905–358.995 provide overall policy guidance on archaeological resources.
- ORS 390.235–390.237 require a permit from the Oregon State Parks and Recreation Department before archaeological materials can be excavated from public lands.

#### **Oregon Administrative Rules**

- Oregon Administrative Rules 736-051-0000–051-0090 archaeological permits on public and private lands.

#### **California Public Resources Code**

- Public Resources Code (PRC), Section 5024.1 established the California Register of Historical Resources (CRHR) and criteria to determine significance, eligible properties, and nomination procedures.
- PRC, Section 5097.5 makes any unauthorized removal or destruction of archaeological or paleontological resources on sites located on public land a misdemeanor. Public lands are those owned by or under the jurisdiction of the state, or any city, county, district, authority, or public corporation, or any agency thereof.
- PRC, Section 5097.9 prohibits the interference with the free expression of Native American religion as provided in the United States Constitution and the California Constitution and severe or irreparable damage to any Native American–sanctified cemetery, place of worship, religious or ceremonial site, or sacred shrine on public property, except on a clear and convincing showing that the public interest and necessity so require.
- Under PRC, Section 5097.98, if the county coroner determines that discovered human remains are Native American, the coroner is required to contact the Native American Heritage Commission, which is then required to determine the “Most Likely Descendant” to inspect the burial and to make recommendations for treatment or disposition of the remains and any associated burial items.

- PRC, Section 5097.99 prohibits obtaining or possessing Native American artifacts or human remains taken from a grave or cairn and sets penalties for these actions.
- PRC, Section 21083.2 provides that if a project may affect a resource that has not met the definition of an historical resource set forth in Section 21084, then the lead agency may determine whether a project may have a significant effect on “unique” archaeological resources; if so, an Environmental Impact Report shall address these resources. If a potential for damage to unique archaeological resources can be demonstrated, such resources must be avoided; if they cannot be avoided, mitigation measures shall be required. The law also discusses excavation as mitigation; discusses the costs of mitigation for several types of projects; sets time frames for excavation; defines “unique and nonunique archaeological resources”; provides for mitigation of unexpected resources; and sets financial limitations for this section.
- PRC, Section 21084.1 provides that a project may have a significant effect on the environment if it causes a substantial adverse change in the significance of a historical resource; the section further defines a “historical resource” and describes what constitutes a “significant” historical resource.
- Title 14, California Code of Regulations (CCR) Section 4307, states that no person shall remove, injure, deface, or destroy any object of paleontological, archaeological, or historical interest or value.
- California Environmental Quality Act (CEQA) Guidelines, Title 14, CCR, Section 15126.4, “Consideration and Discussion of Mitigation Measures Proposed to Minimize Significant Effects” Subsection (b), discusses impacts of maintenance, repair, stabilization, restoration, conservation, or reconstruction of a historical resource. Subsection (b) also discusses mitigation through avoidance of damaging effects on any historical resource of an archaeological nature, preferably by preservation in place or by data recovery through excavation if avoidance or preservation in place is not feasible. Data recovery must be conducted in accordance with an adopted data recovery plan.
- CEQA Guidelines, Title 14, CCR, Section 15064.5, “Determining the Significance of Impacts to Archaeological and Historical Resources” Subsection (a) defines the term “historical resources.” Subsection (b) explains when a project may be deemed to have a significant effect on historical resources and defines terms used in describing those situations. Subsection (c) describes CEQA's applicability to archaeological sites and provides a bridge between the application of the terms “historical” resources and a “unique” archaeological resource.
- CEQA Guidelines, Title 14, CCR, Section 15064.7, “Thresholds of Significance,” encourages agencies to develop thresholds of significance to be used in determining potential impacts and defines the term “cumulatively significant.”
- Under California Penal Code, Section 622.5, anyone who willfully damages an object or thing of archaeological or historic interest can be found guilty of a misdemeanor.
- Under California Health and Safety Code, Section 7050.5, if human remains are discovered during construction, the project owner is required to contact the county coroner.

- California Assembly Bill 52 amends Section 5097.94 of CEQA and establishes a consultation process with all California Native American Tribes on the Native American Heritage Commission List, inclusive of both federally recognized and nonfederally recognized Tribes; establishes a new class of resources (Tribal Cultural Resources); and requires consideration of Tribal Cultural Values in determination of project impacts and mitigation measures, as well as tribal notice and meaningful consultation.

## 1.3 Area of Potential Effects/Area of Direct Impacts

### Definition

This section describes the Area of Potential Effects (APE) as defined by 36 CFR 800. It then describes the ADI, which is a subset of lands in the APE subject to direct effects by the Project. The Section 106 process outlines the steps for identifying historic properties, beginning in part with determining and documenting the APE (36 CFR § 800.4[a][1]) through consultation among the SHPOs and/or the THPOs, and other consulting parties. Tribal consultation was initiated on October 18, 2017 and the Cultural Resources Working Group was subsequently involved during review and establishment of the APE and ADI.

#### 1.3.1 Area of Potential Effects

The regulations define an APE as the “geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist.” Furthermore, the APE “is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking” (36 CFR § 800.16[d]).

Defining an APE provides FERC and consulting parties with a basis for understanding the geographic extent of anticipated impacts of the proposed Project, which is necessary to properly plan the level of effort for historic properties identification, evaluation, and effects assessments. The different types of potential effects that may be caused by dam decommissioning have resulted in defining an ADI within the APE that delineates where there are anticipated direct physical impacts, particularly those areas that will be subject to ground disturbance, such as dam facility removal and reservoir restoration activities. The ADI generally corresponds with the Project area or the Project footprint.

In defining the APE, it is not necessary to know whether effects will occur, only that they may occur based on proposed actions. To confirm the consideration of possible downstream effects below Iron Gate Dam, as well as in the river reaches between J.C. Boyle Dam and Copco Lake, a geographically broad APE is proposed. This APE also allows for the examination of potential direct and indirect effects on the surrounding cultural landscape, the potentially NRHP-eligible riverscape, and other identified traditional cultural properties (TCP[s]), sacred sites, and/or archaeological or historic districts located in Klamath River Canyon between J.C. Boyle and Iron Gate Reservoirs that are not in the ADI.

The proposed APE is primarily a 0.5-mile-wide area on each side of the Klamath River from the upper reach of the J.C. Boyle Reservoir to the river mouth at the Pacific Ocean. However, around the reservoirs where topography is more open and rolling, the APE extends at least an additional

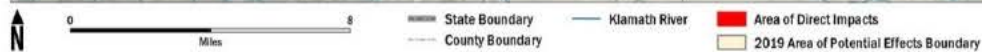
0.5 mile to create a minimum 1-mile-wide area on each side of the reservoirs to address the potential for indirect effects primarily related to viewshed alterations resulting from reservoir removal. Due to the potential for landscape-level visual changes, the APE around each reservoir may extend beyond the 1-mile-wide area to ensure inclusion of areas that are within sight lines of the reservoirs and ADI. The viewshed analysis is based on bare earth (e.g., no trees, vegetation, or other obstructions) intervisibility, where geographic information system (GIS) application determines direct sight lines from one position to another, considering intervening topography, using a digital elevation model. Based on these results, the maximum extent of the APE has been set at 2 miles from the ADI. This distance incorporates the majority of areas with direct sight lines to each reservoir and ADI component, yet excludes areas where adverse visual impacts are less likely, based on distance and the probability of vegetation screening (Figure 1-2).

During the development of this plan, the delineation of the APE and ADI has paralleled with Project designs as they have advanced from 60 percent completion through 100 percent completion. Based upon the 100 percent design plan, there are additions to Project activity that require additional fieldwork within CA-SIS-2239/3923 and in the vicinity of CA-SIS-2403. The additional activity and proposed increase to fieldwork parameters for these sites are discussed in Chapter 6 under each site section.

### 1.3.2 Area of Direct Impacts

The ADI (see Figure 1-2) corresponds geographically to the Project's Limits of Work (LOW). The LOW refers to the physical extent of on-the-ground construction activities associated with dam decommissioning and removal, reservoir restoration activities, safety zone, the Yreka pipeline crossing relocation, and improvements to Fall Creek hatchery. The LOW also includes rim stability areas around Copco Lake and the floodproofing habitable structures within the modeled post-dam removal floodplain, which occurs between Iron Gate Dam and the Klamath River-Humbug Creek confluence in California. The ADI expands on the LOW to include the complete boundaries of archaeological sites (buffered 40 meters) that intersect the LOW or are within 40 meters of the LOW and the modeled post-dam removal floodplain.

During the development of this plan, the delineation of the ADI has paralleled with Project designs as they have advanced from 60 percent completion through 100 percent completion. Based upon the 100 percent design plan, there are additions to Project activity that require additional fieldwork within CA-SIS-2239/3923 and in the vicinity of CA-SIS-2403. The additional activity and proposed increase to fieldwork parameters for these sites are discussed in Chapter 6 under each site section. Sites that will not be affected by the project have been eliminated from the Phase II evaluation process.



Note: These maps are confidential pursuant to the  
36 C.F.R. 800.11(c) and 54 U.S.C. 307103.

**Figure 1-2 Overview of the Project APE and ADI**



## 1.4 Phase II Archaeological Sites

Phase II archaeological evaluation will focus on potentially impacted sites that are (1) in the ADI; and (2) on PacifiCorp (Parcel B) lands (Figure 1-3). Fifty-seven such sites have been identified (see Table 1-1). Of these, 20 sites are in Oregon, with the remaining 37 sites in California. The Phase II study sites include precontact resources such as rockshelters, village and camp sites, lithic scatters, and stacked rock features and alignments, as well as historic-period resources such as the Copco No. 1 and Copco No. 2 dam construction labor camps, a former multi-residence area, artifact scatters, and linear features such as rock walls and segment of the Klamath Lake Railroad.

Of the 57 sites, 40 will be subject to impacts based on the Project's 100 percent design and require Phase II archival research and subsurface testing for NRHP evaluation. Phase II archival research or subsurface testing for NRHP evaluation is not designated for 7 of the 57 sites. Of these 7, 5 (CA-SIS-1670, CA-SIS-3919, CA-SIS-3938, LKP-2018-7, LKP-2018-6) are within the Project ADI, but no project-related impacts have been identified at the 100 percent design phase. Testing protocols have been developed for these 5 sites in the event that Project designs are revised and NRHP evaluation is needed. The remaining 2 sites (35KL 2981, LKP-2017-2) are considered not eligible for the NRHP at the survey level, thus, no Phase II work is planned for these resources. And finally, 10 of the 57 sites (CA-SIS-2824, CA-SIS-2129, CA-SIS-3934, CA-SIS-3937, CA-SIS-3942, CA-SIS-3945, LKP-2018-15, CA-SIS-3918, CA-SIS-3927, CA-SIS-3928) consist of historic-period resources that will be evaluated for the NRHP through archival research only unless research indicates the need for subsurface testing work.

## 1.5 Report Outline

The following chapters outline the Phase II investigations to be undertaken. Chapter 1 provides an introduction to the Project, including a description of its location and components, as well as its regulatory context and APE. Chapter 2 discusses the environmental and cultural context of the study area, including contemporary environment and paleoenvironment, while Chapter 3 summarizes the cultural context, including the precontact, ethnohistoric, and historic setting of the Project area. Chapter 4 provides the research design, including the theoretical perspective guiding the study, background data, research questions, and data requirements. Precontact research issues focus on domains of environmental variability and paleoenvironmental change; cultural chronology; settlement and subsistence patterns; lithic manufacturing technologies; and material conveyance systems. Historic research issues address site function and organization; chronology; consumer behavior and socioeconomic status; commodity markets, distribution networks, and market access; recreational behavior; cultural complexity; and industrialization and technology. Chapter 5 outlines the general research and field methods that will anchor the Phase II testing program. It covers field methods, laboratory methods, and specialized studies to be conducted, as well as presents a preliminary outline of the technical report and curation. Chapter 6 details the site-specific research methods to be employed for each Phase II site. Site descriptions are provided in four sections according to general site location: J.C. Boyle Reservoir area, Copco Lake area, Iron Gate Reservoir area, and Non-Reservoir areas. NRHP eligibility considerations are presented in Chapter 7. The document concludes with a section listing references cited.





**Figure 1-3 Overview of Phase II Study Sites on PacifiCorp Land Located in the ADI**



## **Chapter 2: Environmental Context**

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## 2. ENVIRONMENTAL CONTEXT

This chapter provides an overview of the environmental setting of the Klamath River watershed, beginning with a description of current environmental conditions and concluding with a discussion of the paleoenvironment. The environmental context is important for understanding human use of the landscape as well as factors of soils and geology that influence archaeological site placement. The primary sources for this information are the 2004 PacifiCorp Klamath Hydroelectric Project license application (PacifiCorp 2004), the United States Bureau of Reclamation (USBR) and California Department of Fish and Game Final Environmental Impact Statement (USBR and CDFG 2012), the Definite Plan (KRRRC 2018), and the Lower Klamath License Surrender (Stillwater Sciences 2018), as supplemented by other references.

### 2.1 Klamath River Basin Overview

Located in south-central Oregon and northwestern California, the Klamath River Basin or watershed is a large north-south oriented lake and wetland complex that drains nearly 16,000 square miles, with approximately 35 percent of the drainage in Oregon and 65 percent in California (NRCS 2018). The Klamath River headwaters begin in Upper Klamath Lake, Oregon's largest natural freshwater lake, and the river flows for approximately 250 miles until it reaches the Pacific Ocean at Requa, California. The Klamath River Basin geography, topography, hydrology, and biology are distinct from other watersheds in the Pacific Northwest because water in the Klamath River originates in relatively flat, open valleys before crossing the Trinity and Coast Ranges in a steep river canyon and intercepting cold water inputs from the Scott, Salmon, and Trinity Rivers (USBR and CDFG 2012). The flat topography, along with lower average precipitation in the Upper Klamath Basin versus the Lower Klamath Basin, influences water flow and temperature in the river. The river is also one of only three waterways that pass through the Cascade Mountains to the Pacific Ocean. The river basin is generally rural, with a total population of approximately 120,000. Its largest communities are Klamath Falls, Oregon, and Yreka, California.

The Klamath River Basin is often divided into the Upper and Lower Klamath Basins, with Iron Gate Dam used as the dividing feature (NRCS 2018). The Upper Klamath Basin includes the headwaters and is defined by the Sprague River, Williamson River, Upper Klamath Lake, Lost River, Upper Klamath East, and Butte Creek Sub-basins that flow through Jackson, Lake, and Klamath Counties in Oregon, and Siskiyou and Modoc Counties in California. There are five main lakes in the Upper Klamath Basin: Crater Lake, Upper Klamath Lake, Lower Klamath Lake, Clear Lake, and Tule Lake.

The Lower Klamath River Basin includes 200 miles of river corridor downstream from Iron Gate Dam to the Pacific Ocean. This area is influenced by seven hydrologic sub-basins: Upper Klamath West, Shasta, Scott, Salmon, Lower Klamath, Trinity, and South Fork Trinity, in Trinity, Humboldt, and Del Norte Counties, California (NRCS 2018; USBR and CDFG 2012:3.6-1 to 3.6-12). The Lower Klamath Basin is most heavily influenced by the Shasta, Scott, Salmon, and Trinity Rivers, which supply 44 percent of the average annual runoff. Downstream from Iron Gate Dam, and for most of the river's length to the Pacific Ocean, the river maintains a relatively steep, high-energy channel. Here, the Klamath River forms a deep canyon surrounded by mountains of the Trinity and Coast Ranges

(USBR and CDFG 2012). The Klamath Estuary on the northern California coast near the town of Klamath completes the system (Figure 2-1).

## 2.2 Geology, Geomorphology, and Soils

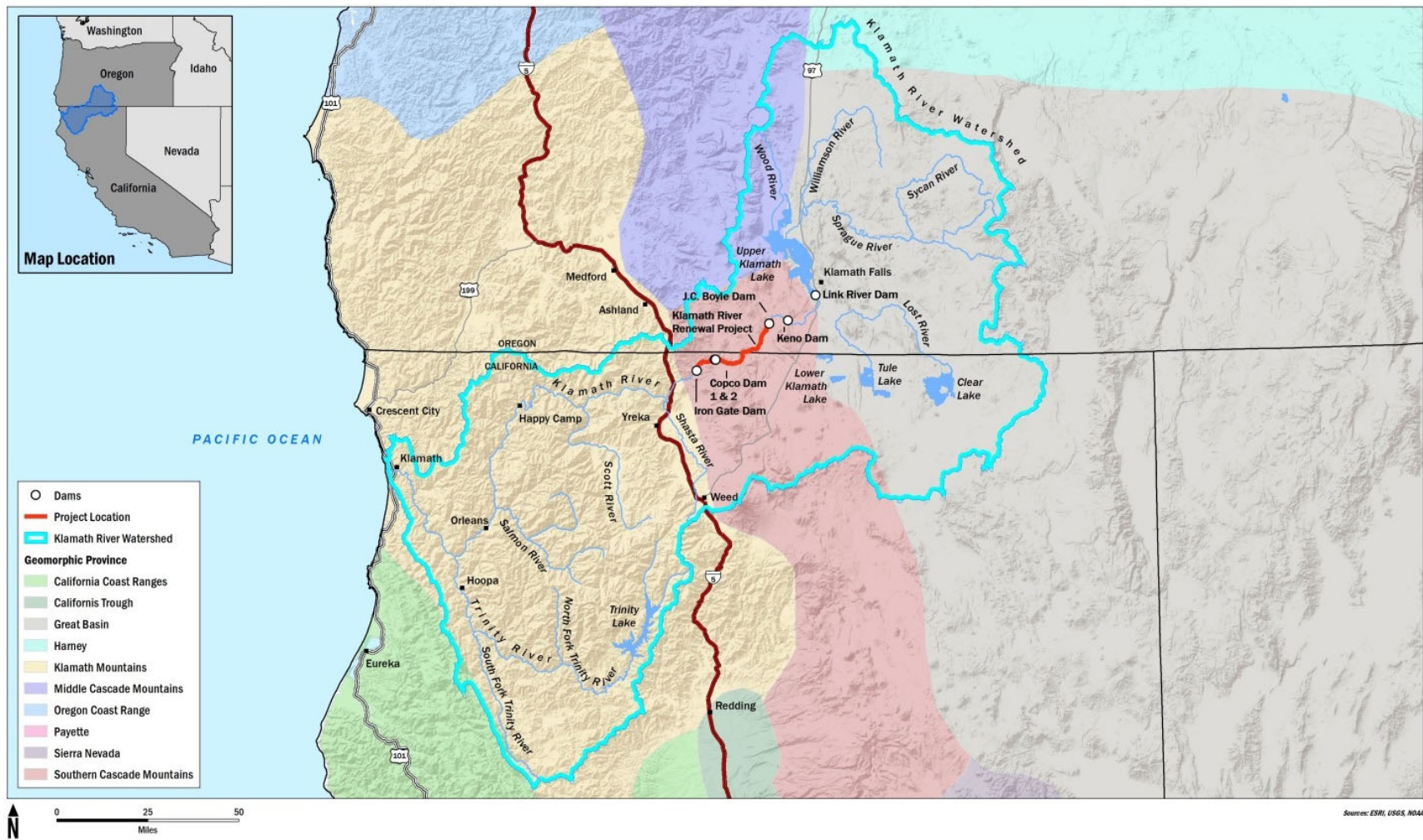
Geology, geomorphology, and soils data for the Klamath River Basin are described in this section and help characterize the setting for each archaeological site proposed for Phase II evaluation. These data provide general expectations for landform development and will guide the proposed depths of archaeological investigations.

The Klamath River Basin occurs at or near the convergence of three tectonic plates that have influenced the geologic setting of the region: the Pacific, Juan de Fuca, and North American plates. In particular, subduction of the Juan de Fuca plate (located off the coast of Northern California/Southern Oregon) beneath the North American plate created the Cascade Mountains, which now form a volcanic arc. Most of the Upper Klamath Basin in Oregon lies within the back-arc area, whereas the Lower Klamath Basin lies within the dynamic fore-arc area. Consequently, the Klamath River passes through four distinct geologic and geomorphic provinces—the Modoc Plateau and High Lava Plains of the Great Basin, the Middle and Southern Cascade Range, Klamath Mountains, and the California Coast Range—each of which changes the character of the river’s channel morphology and that of its tributary watersheds, varying the supply of inputs such as water, sediment, nutrients, and wood (FERC 2007).

The upper watershed originates along the Modoc Plateau and High Lava Plains at the western reach of the Great Basin province, and beginning near Keno, Oregon, the Klamath River cuts through the southern Cascades. Topography varies from near vertical canyon walls to gentle-sloping river terraces. The oldest Miocene-aged tuff is overlain with basalts and andesites, which are covered by deposits of Quaternary alluvium, colluvium, lacustrine, talus, and landslide materials (Hescock 2014:61).

At the J.C. Boyle Reservoir area (RM 229.8 to 233.3), the river transitions from a relatively wide and shallow upstream end, where the reservoir inundates a low-gradient river valley, to a narrower downstream end, where the river incises a bedrock canyon. Here, the bedrock is principally volcanic deposits that are part of the High Cascade province, and common lithologies include basalt, basaltic andesite, diatomite, and volcanoclastic deposits (Stillwater Sciences 2018:3-741).

At Copco No. 1 and Copco No. 2 Reservoirs and tributaries (RM 208.3 to 201.5), the majority of the upper reservoir inundates a low-gradient reach of the river valley, while the lower end of the reservoir represents a steeper reach (Stillwater Sciences 2018:3-742). Here, young volcanic deposits (Pleistocene cinder cones and associated lava flows and ash) resulted in valley filling. Surficial deposits around the reservoir include talus and rockfall debris, colluvium, alluvium, and alluvial fans, as well as older (Quaternary) fluvio-lacustrine terrace deposits. The fluvio-lacustrine deposits surround much of the reservoir shoreline, up to approximately 40 feet above the current reservoir level, and consist of diatomite, diatomaceous sediment and dense, coarse-grained alluvial deposits.



**KLAMATH RIVER WATERSHED**

**Figure 2-1 Klamath River Watershed with Geomorphic Provinces**



Iron Gate Reservoir (RM 200.0 to 193.1) overlies a slope break in the Klamath River valley profile, where a steeper upstream reach transitions to a lower-gradient downstream reach with a wider valley. Bedrock units at Iron Gate Dam include tuffaceous siltstones and sandstones, boulder volcaniclastics and breccia, and tuff. Downstream of Iron Gate Dam, the Klamath River flows through a narrow valley cut into the Western Cascade sub-province geology and sedimentary rocks. A narrow, discontinuous floodplain and high terraces border the channel, and most alluvial reaches have cobble-boulder bars (Stillwater Sciences 2018:3-744).

Near the community of Hornbrook, California, the river passes through the Klamath Mountains province, which includes the Trinity Alps, Salmon Mountains, Marble Mountains, and Siskiyou Mountains. This province comprises some of the steepest topography and highest mountains within the watershed; summits in the Trinity Alps exceed 9,000 feet in elevation. Gold-bearing deposits occur within this province, and the legacy effects of gold mining and dredging persist in some areas. Precipitation in the region tends to increase near the coast and, consequently, soils are generally deeper in the Middle Klamath than the Upper Klamath. Due to these deeper soils, steep slopes, and higher precipitation rates, mass wasting and fluvial erosion are the main geomorphic processes in the middle and lower portions of the watershed.

The lower 40 miles of the Klamath River traverse the Coast Range province. The Coast Range province comprises three linear rock formations that are separated by faults, most notably the San Andreas, including thrust faults that are presently increasing the height of the range. The Klamath River watershed portion of the Coast Range province encompasses the Franciscan Complex rock formation. This unit generally consists of sandstone with smaller amounts of shale, chert, limestone, conglomerate, serpentine, and blue schist. Due to faulting in the Coast Range, the relatively young Franciscan rocks are still uplifting, resulting in steep hillslopes, relatively high erosion rates, and high sediment yields (FERC 2007).

Surficial geology of the Klamath River Basin has been mapped in the Definite Plan (KRRC 2018). The geological setting is considered for each of the archaeological sites proposed under this Phase II Research Design and Testing Plan, as noted in Table 2-1.

**Table 2-1 Phase II Archaeological Sites with Geological Unit and Soils Data**

Trinomial or Temp. Number	Geologic Unit Description	Soil Unit Description
<b>J.C. Boyle Reservoir Area</b>		
35KL0013	OW – Holocene (water)	Lorella-Skookum complex, 15 to 35 percent slopes
35KL0014	OW – Holocene (water)	Lorella-Skookum complex, 15 to 35 percent slopes
35KL0015	Qba – Quaternary (basalt, andesite)	Greystoke-Pinehurst complex, 12 to 35 percent south slopes; Skookum-Rock outcrop-Rubble land complex, 35 to 70 percent slopes
35KL1941	OW – Holocene (water)	Bly-Royst complex, 1 to 12 percent slopes

Trinomial or Temp. Number	Geologic Unit Description	Soil Unit Description
35KL1942	OW – Holocene (water)	Bly-Royst complex, 1 to 12 percent slopes; Klamath silt loam, 0 to 1 percent slopes
35KL1943	OW – Holocene (water)	Bly-Royst complex, 1 to 12 percent slopes
35KL1944	OW – Holocene (water)	Bly-Royst complex, 1 to 12 percent slopes
35KL2397	OW – Holocene (water)	Water
35KL2398	Qba – Quaternary (basalt, andesite)	Greystoke-Pinehurst complex, 12 to 35 percent north slopes; Pinehurst-Greystoke complex, 1 to 12 percent slopes
35KL2399	OW – Holocene (water)	Bly-Royst complex, 1 to 12 percent slopes
35KL2401	OW – Holocene (water)	Bly-Royst complex, 1 to 12 percent slopes
35KL2411	OW – Holocene (water)	Bly-Royst complex, 1 to 12 percent slopes; Bly-Royst complex, 12 to 35 percent slopes
35KL2412	OW – Holocene (water)	Bly-Royst complex, 1 to 12 percent slopes; Klamath silt loam, 0 to 1 percent slopes
35KL2428	OW – Holocene (water)	Bly-Royst complex, 1 to 12 percent slopes
35KL2430	OW – Holocene (water)	Bly-Royst complex, 1 to 12 percent slopes
35KL2435	Qba – Quaternary (basalt, andesite)	Skookum-Rock outcrop-Rubble land complex, 35 to 70 percent slopes
35KL2981	Qba – Quaternary (basalt, andesite)	Greystoke-Pinehurst complex, 12 to 35 percent south slopes
LKP-2018-14	OW – Holocene (water)	Bly-Royst complex, 12 to 35 percent slopes
LKP-2019-10	Qba – Quaternary (basalt, andesite)	Greystoke-Pinehurst complex, 12 to 35 percent south slopes; Skookum-Rock outcrop-Rubble land complex, 35 to 70 percent slopes
LKP-2020-1	OW – Holocene (water)	Bly-Royst complex, 1 to 12 percent slopes
<b>Copco Lake Area</b>		
CA-SIS-2824	Qrv – Holocene (andesite, dacite)	Lava flows-Xerorthents complex, 0 to 50 percent slopes*
CA-SIS-2825	Qrv – Holocene (andesite, dacite)	Lassen-Kuck complex, stony, 2 to 50 percent slopes; Lava flows-Xerorthents complex, 0 to 50 percent slope; Medford clay loam, cool, 2 to 5 percent slopes; Rock outcrop
CA-SIS-3913	Tv – Tertiary (2-24 Ma) (andesite, basalt)	Lassen-Rock outcrop-Kuck complex, 2 to 50 percent slopes; Medford clay loam, cool, 5 to 15 percent slopes
CA-SIS-3914	Tv – Tertiary (2-24 Ma) (andesite, basalt)	Medford clay loam, cool, 5 to 15 percent slopes



Trinomial or Temp. Number	Geologic Unit Description	Soil Unit Description
CA-SIS-3915	Tv – Tertiary (2-24 Ma) (andesite, basalt)	Medford clay loam, cool, 5 to 15 percent slopes
CA-SIS-3920	Tv – Tertiary (2-24 Ma) (andesite, basalt)	Water
CA-SIS-3921	Tv – Tertiary (2-24 Ma) (andesite, basalt)	Lassen-Kuck complex, 15 to 50 percent slopes; Lassen-Rock outcrop-Kuck complex, 2 to 50 percent slopes
CA-SIS-3922	Qrv – Holocene (andesite, dacite); Tv – Tertiary (2-24 Ma) (andesite, basalt)	Lassen-Rock outcrop-Kuck complex, 2 to 50 percent slopes; Lava flows-Xerorthents complex, 0 to 50 percent slopes
CA-SIS-3924	Tv – Tertiary (2-24 Ma) (andesite, basalt); water – Holocene (water)	Medford clay loam, cool, 5 to 15 percent slopes
CA-SIS-3925	Tv – Tertiary (2-24 Ma) (andesite, basalt)	Medford clay loam, cool, 5 to 15 percent slopes
CA-SIS-3926	Tv – Tertiary (2-24 Ma) (andesite, basalt)	Lassen-Kuck complex, 15 to 50 percent slopes; Lassen-Rock outcrop-Kuck complex, 2 to 50 percent slopes
LKP-2018-8	Qrv – Holocene (andesite, dacite)	Lava flows-Xerorthents complex, 0 to 50 percent slopes; Rock outcrop
<b>Iron Gate Reservoir Area</b>		
CA-SIS-0326	water – Holocene (water)	Lassen-Kuck complex, stony, 2 to 50 percent slopes
CA-SIS-1670	Qrv – Holocene (andesite, dacite); Tv – Tertiary (2-24 Ma) (andesite, basalt)	Lassen-Kuck complex, stony, 2 to 50 percent slopes; Lava flows-Xerorthents complex, 0 to 50 percent slopes; Rock outcrop
CA-SIS-1671	Tv – Tertiary (2-24 Ma) (andesite, basalt)	Lassen-Kuck complex, stony, 2 to 50 percent slopes
CA-SIS-2129	Tv – Tertiary (2-24 Ma) (andesite, basalt)	Lassen-Kuck complex, stony, 2 to 50 percent slopes; Lassen-Rock outcrop-Kuck complex, 2 to 50 percent slope; Lassen cobbly clay, 2 to 15 percent slopes
CA-SIS-2239/3923	Tv – Tertiary (2-24 Ma) (andesite, basalt); water – Holocene (water)	Lassen-Kuck complex, stony, 2 to 50 percent slope; Lassen-Rock outcrop-Kuck complex, 2 to 50 percent slopes; Lassen cobbly clay, 2 to 15 percent slopes; Medford clay loam
CA-SIS-2403	Qrv – Holocene (andesite, dacite); Tv – Tertiary (2-24 Ma) (andesite, basalt)	Lassen-Kuck complex, stony, 2 to 50 percent slopes; Lava flows-Xerorthents complex, 0 to 50 percent slopes; Rock outcrop

Trinomial or Temp. Number	Geologic Unit Description	Soil Unit Description
CA-SIS-3919	water – Holocene (water)	Lassen-Kuck complex, stony, 2 to 50 percent slopes
CA-SIS-3930	water – Holocene (water)	Lassen-Kuck complex, stony, 2 to 50 percent slopes
CA-SIS-3933	Tv – Tertiary (2-24 Ma) (andesite, basalt); water – Holocene (water)	Lassen-Kuck complex, stony, 2 to 50 percent slopes
CA-SIS-3934	Tv – Tertiary (2-24 Ma) (andesite, basalt)	Lassen-Rock outcrop-Kuck complex, 2 to 50 percent slopes
CA-SIS-3937	Tv – Tertiary (2-24 Ma) (andesite, basalt)	Lassen-Kuck complex, stony, 2 to 50 percent slopes; Rock outcrop
CA-SIS-3938	water – Holocene (water)	Lassen-Kuck complex, stony, 2 to 50 percent slopes
CA-SIS-3940	Tv – Tertiary (2-24 Ma) (andesite, basalt)	Jenny clay, 2 to 15 percent slopes; Lassen-Kuck complex, stony, 2 to 50 percent slopes
CA-SIS-3942	Tv – Tertiary (2-24 Ma) (andesite, basalt)	Lassen-Kuck complex, stony, 2 to 50 percent slopes; Lassen-Rock outcrop-Kuck complex, 2 to 50 percent slopes
CA-SIS-3945	Tv – Tertiary (2-24 Ma) (andesite, basalt)	Lassen cobbly clay, 2 to 15 percent slopes
LKP-2017-2	Tv – Tertiary (2-24 Ma) (andesite, basalt)	Lassen-Kuck complex, stony, 2 to 50 percent slopes
LKP-2018-6	Tv – Tertiary (2-24 Ma) (andesite, basalt)	Lassen-Kuck complex, stony, 2 to 50 percent slopes; Lassen-Rock outcrop-Kuck complex, 2 to 50 percent slopes; Rock outcrop
LKP-2018-7	Tv – Tertiary (2-24 Ma) (andesite, basalt)	Lassen-Kuck complex, stony, 2 to 50 percent slopes
LKP-2018-15	Tv – Tertiary (2-24 Ma) (andesite, basalt)	Lassen-Kuck complex, stony, 2 to 50 percent slopes; Lassen cobbly clay, 2 to 15 percent slopes
LKP-2019-9	Tv – Tertiary (2-24 Ma) (andesite, basalt)	Lassen-Kuck complex, stony, 2 to 50 percent slopes; Lassen-Rock outcrop-Kuck complex, 2 to 50 percent slopes
<b>Non-Reservoir Area</b>		
CA-SIS-3918	Qrv – Holocene (andesite, dacite)	Lassen-Kuck complex, stony, 2 to 50 percent slopes; Lava flows-Xerorthents complex, 0 to 50 percent slope; Medford clay loam, cool, 2 to 5 percent slopes; Rock outcrop
CA-SIS-3927	Qrv – Holocene (andesite, dacite)	Lassen-Kuck complex, stony, 2 to 50 percent slopes; Lava flows-Xerorthents complex, 0 to 50 percent slope; Medford clay loam, cool, 2 to 5 percent slopes; Rock outcrop



Trinomial or Temp. Number	Geologic Unit Description	Soil Unit Description
CA-SIS-3928	Qrv – Holocene (andesite, dacite)	Lassen-Kuck complex, stony, 2 to 50 percent slopes; Lava flows-Xerorthents complex, 0 to 50 percent slope; Medford clay loam, cool, 2 to 5 percent slopes; Rock outcrop
LKP-2018-11	Qrv – Holocene (andesite, dacite)	Lassen-Kuck complex, stony, 2 to 50 percent slopes; Lava flows-Xerorthents complex, 0 to 50 percent slope; Medford clay loam, cool, 2 to 5 percent slopes; Rock outcrop
LKP-2019-3	Qrv – Holocene (andesite, dacite)	Lassen-Kuck complex, stony, 2 to 50 percent slopes; Lava flows-Xerorthents complex, 0 to 50 percent slope; Medford clay loam, cool, 2 to 5 percent slopes; Rock outcrop

## 2.3 Soils

There are many different soil types in the Klamath River Basin because the watershed spans multiple geological regions. However, the soils can be grouped into three major types: those formed on steeper slopes, those formed in floodplain or terrace surfaces, and those found along the river itself (FERC 2007:3-5). Soils on steeper slopes are shallow to moderately deep (typically 17 to 40 inches) and consist of a 7- to 8-inch-thick gravelly loam surface horizon underlain by a gravelly, clayey loam and very gravelly clay soil. The floodplain and terrace surface soils, which are typically within the canyon of the J.C. Boyle Reach, consist of a deep, combination of alluvium and/or colluvium, with a 15-inch-thick very gravelly loam upper horizon overlaying a 6-inch gravelly clay loam layer; this transitions to a 39-inch-thick horizon of heavy clay loam underlain by weathered bedrock to 60 inches or more below the ground surface (FERC 2007:3-5). Riverine soils comprise unconsolidated alluvium, colluvium, and fluvial deposits. These are geologically recent water- or erosion-deposited soils consisting of unconsolidated sand, silt, and gravels.

Specific soils types, as characterized by the NRCS (2018) are an indicator of landform stability and are considered for the individual archaeological sites proposed for excavation under this plan (see Table 2-1). Over half of the archaeological sites are on Lassen-Kuck complex soils, characterized by moderately deep to deep soils formed from residuum and colluvium from volcanic rocks and typically found on uplands and hills. The next most common soil type, with approximately one-third of the sites falling within these soils, is the Bly-Royst series soils, deep soils that formed in alluvium and eolian deposits, colluvium, and residuum derived from volcanic rock and tephra. Bly soils are on terraces escarpments, hills, plateaus and rock benches. Soils series descriptions are provided in Table 2-2.

**Table 2-2 Soils Series Descriptions**

Soil Series	Description
Bly	The Bly series consists of deep to very deep, well-drained soils that formed in alluvium and eolian deposits derived from volcanic rock and tephra. Bly soils are on terraces at elevations of 3,800 to 4,500 feet. Slopes range from 0 to 35 percent. Depth to the duripan is 40 to 60 inches or more. Volcanic glass content is 5 to 20 percent. These soils are used for timber production, livestock grazing, irrigated and dryland hay and pasture, homesites, and wildlife habitat. The soils commonly support ponderosa pine, antelope bitterbrush, Idaho fescue, and Ross' sedge. Bly soils are found in basins in south-central Oregon.

Soil Series	Description
Greystoke	The Greystoke series consists of deep, well-drained soils that formed in residuum and colluvium weathered from andesite or basalt and small amounts of volcanic ash. The soils are on plateaus and hillslopes at elevations of 3,000 to 5,200 feet and have slopes of 1 to 75 percent. Depth to weathered andesite is 40 to 60 inches. These soils are used for timber production and livestock grazing. Native vegetation includes an overstory of Douglas fir, ponderosa pine, incense cedar, sugar pine, and white fir. Understory includes western fescue, tall Oregon grape, pachystima, greenleaf manzanita, snowberry, Pacific serviceberry, spreading dogbane, and squaw carpet. Greystoke soils are found in southwestern Oregon.
Jenny	The Jenny series consists of very deep, well-drained soils formed in alluvium from extrusive igneous rocks, mostly of tertiary age. Jenny soils are on upland terraces and low terraces and bottoms at elevations of 2,500 to 5,200 feet. Depth to carbonates is 18 to more than 60 inches. The soil has cracks up to 4 inches wide to depths of 20 to 24 inches. The cracks open and close once each year. Rock fragments, mostly gravel or cobbles, make up 0 to 30 percent of the soil. These soils are used for range, irrigated and dryland pasture, hay, and small grains. Vegetation is mainly medusahead, mustard, ryegrass, rabbitbrush, big sagebrush, and a few forbs. Jenny soils are found in drier areas of northeastern California, in Siskiyou and Modoc Counties.
Klamath	The Klamath series consists of very deep, very poorly drained soils that formed in alluvium derived from diatomite and volcanic rock with minor amounts of volcanic ash and pumice derived from dacite. Klamath soils are in depressions on broad floodplains at elevations of 3,900 to 5,400 feet. Slopes range from 0 to 1 percent. Depth to apparent high water table ranges from 0 to 31 inches in spring and summer, and clay content averages 25 to 35 percent. These soils are used for meadow and irrigated and dryland hay and pasture and wildlife habitat. The series commonly supports Baltic rush, beaked sedge, northern mannagrass, tufted hairgrass, and Rocky Mountain iris. Klamath soils are found in basins near the southern fringe of the pumice-mantled region in south-central Oregon.
Kuck	The Kuck series consists of moderately deep, well-drained soils that formed in material weathered from andesitic bedrock, tuff, basalt, or conglomerates. This soil is often associated with cobbles and stones on the surface and with rock outcrops. Elevations are 2,500 to 4,500 feet. Kuck soils are on uplands and have slopes of 2 to 50 percent. Depth to a paralithic contact of fractured and weathered andesitic rock is 20 to 40 inches. Rock fragments make up 5 to 30 percent of the soil. Fragments are both angular and rounded and are mostly pebbles with a few cobbles and stones. Kuck soils are used mostly as rangeland. The native vegetation is bluebunch wheatgrass, Idaho fescue, Sandberg bluegrass, and a few western juniper and black oak. Many areas consist of medusahead, rye grass, and rabbitbrush. Kuck soils are found in northeastern California.
Lassen	The Lassen series consists of moderately deep, well-drained soils that formed in residuum and colluvium derived from volcanic rocks. Lassen soils are on hills and lava plateaus. Slopes are 2 to 50 percent. Elevations range from 2,000 to 5,400 feet. Depth to bedrock is 20 to 40 inches. Trans-horizon cracks at least 0.4 inch wide extend from the soil surface to a depth of about 26 inches. Lassen soils are used primarily for livestock grazing. The vegetation is principally bluebunch wheatgrass, Idaho fescue, and Sandberg bluegrass. Some areas have a very few scattered juniper and black oak or white oak. Other areas may be dominantly medusahead. Lassen soils are found in Northern California.
Lorella	The Lorella series consists of shallow, well-drained soils that formed in material weathered from tuff and basalt. Lorella soils are on sideslopes of mountains and hills and on convex slopes of escarpments. Elevations range from 3,500 to 6,000 feet. The soils formed in colluvium and residuum from tuff and basalt. Slopes are 0 to 75 percent. Depth to bedrock is 10 to 20 inches. Lorella soils are used for livestock grazing, pasture, water supply, and wildlife habitat. Vegetation is mainly western juniper, bluebunch wheatgrass, Idaho fescue, antelope bitterbrush, mountain big sagebrush, and Wyoming big sagebrush on the drier extreme. The soils are found in south-central Oregon and adjacent parts of Northern California.

Soil Series	Description
Medford	The Medford series consists of very deep, moderately well-drained soils that formed in mixed alluvium. The Medford soils are on stream terraces and alluvial fans. Slopes range from 0 to 15 percent. The soils formed in moderately fine and fine textured alluvium from basic igneous and sedimentary rocks. The soils are at elevations of 1,500 to 4,000 feet. Depth to bedrock is more than 60 inches, and the solum is 40 to 60 inches thick. The mollic epipedon is 20 to 40 inches thick. Gravel and cobble content on the surface and in the solum is 0 to 15 percent. These soils are used for urban development and dry-farmed and irrigated crops and orchards. These soils are found in southwestern Oregon and north-central California.
Pinehurst	The Pinehurst series consists of deep, well-drained fine-loamy soils that formed in mixed colluvium weathered from andesite, volcanic breccia, or tuffs. Pinehurst soils are on alluvial fans, hillslopes, pediment slopes, and saddles at elevations of 3,400 to 6,000 feet. Slopes are 1 to 50 percent. Depth to bedrock ranges from 40 to 60 inches or more. Soils are used for timber production, grazing, water supply, recreation, wildlife, and building sites. Native vegetation is mainly Douglas fir, white fir, Pacific yew, snowberry, serviceberry, and bunchgrass. This soil series is found in the southern Cascades of southwestern Oregon and in Northern California.
Royst	The Royst series consists of moderately deep, well-drained soils that formed in colluvium and residuum derived from lava rocks, including tuff, basalt, andesite, and small amounts of pumiceous ash. Elevations range from 3,000 to 6,600 feet. Royst soils are on escarpments, hills, plateaus, and rock benches and have slopes of 0 to 70 percent. Depth to bedrock is 20 to 40 inches. The soils are used for limited timber production, livestock grazing, and wildlife habitat. Potential native vegetation is ponderosa pine, western juniper, curlleaf mountain mahogany, antelope bitterbrush, and Idaho fescue. Royst soils are found in the colder, northern portions of the Basin and Range Province in south-central and northeastern Oregon.
Skookum	The Skookum series consists of moderately deep, well-drained soils that formed in colluvium and residuum weathered from extrusive igneous rock. Skookum soils are on mountainsides and hills at elevations of 2,000 to 4,800 feet. Slopes are 1 to 70 percent. Depth to a lithic contact is 20 to 40 inches. The particle-size control section averages 40 to 80 percent rock fragments. The soils are used mainly for range and wildlife habitat. Native vegetation is Oregon white oak, western juniper, ponderosa pine, wedgeleaf ceanothus, Idaho fescue, and Lemmon needlegrass. These soils are found on the western slope of the southern Cascades.

## 2.4 Climate and Hydrology

This section discusses the general climate and hydrology of the Klamath River Basin.

### 2.4.1 Climate

The Klamath River Basin receives varying precipitation because of its diverse geography. The Upper Klamath Basin is dry, with an average annual precipitation of 13 inches near Klamath Falls, Oregon, while the Lower Klamath Basin is much wetter, with an average annual precipitation of 80 inches at the river's mouth at Requa, California. Higher elevations (above 5,000 feet) of the Upper Klamath Basin receive rain and snow during late fall, winter, and spring. Peak stream flows occur during the late spring and early summer as a result of snowmelt, and flows are typically low during late summer and early fall (USBR and CDFG 2012). In the middle and lower portions of the Klamath River, the hydrologic pattern is dominated by rainfall events in the fall, winter, and spring (Stillwater Sciences 2018:3-593).

## 2.4.2 Hydrology and Water Management

The Klamath Hydroelectric Project and the USBR's Klamath Project currently manage water flow in the Klamath River Basin via several diversions in the Upper Klamath Basin. Along its 250-mile course, water flows from Upper Klamath Lake through Link River Dam into the Link River and then through the Keno Impoundment/Lake Ewauna (controlled by Keno Dam) and the Klamath Hydroelectric Project reach (from J.C. Boyle Dam to Iron Gate Dam), before reaching the Pacific Ocean.

Development of hydroelectric plants in the Klamath Basin began as early as 1891 in the Shasta River Canyon to provide electricity to the City of Yreka. In 1895, another facility was constructed along the Link River to supply power to Klamath Falls, Oregon. Additional hydrologic changes to the Klamath River were triggered by the authorization of the USBR's Klamath Project in 1905, which led to the construction of Link River Dam by California Oregon Power Company (now PacifiCorp) in 1921, as well as several hundred miles of irrigation ditches and canals that diverted water from the Klamath River and its wetlands to convert land for agricultural use (USBR and CDFG 2012:3.6-7). As the largest water management effort in the Upper Klamath Basin, the USBR's Klamath Project features a vast system of reservoirs, dams, canals, and pumps. Development and construction of these features occurred between 1905 and 1966, with most major facilities completed by the early 1940s (USBR and CDFG 2012:1-12).

The Klamath Hydroelectric Project was constructed between 1911 and 1962 and includes Iron Gate, Copco No. 1, Copco No. 2, J.C. Boyle, Fall Creek, and Keno Dams (USBR and CDFG 2012:1-18). The purpose of the Klamath Hydroelectric Project is power generation, and the segment of river affected by the four most downstream dams operated by PacifiCorp is referred to as the Klamath Hydroelectric Reach.

Pre-impoundment flow conditions of the Klamath Basin are complex and limited by a lack of historical hydrological data. The Klamath River historically began at the outfall of Lake Ewauna (USBR and CDFG 2012:2.6-5). Prior to the construction of dams and diversions, Upper Klamath Lake was similar to its current size, but Tule Lake and Lower Klamath Lake were much larger and had more extensive marshes and wetlands that influenced river flows. Water elevation in Upper Klamath Lake was controlled by a natural rock reef dam at the outlet of the lake, and water flowed into the Link River and Lake Ewauna, which developed because of a natural rock reef dam near Keno, Oregon.

Prior to diversions and dam construction, during high flow events out of Upper Klamath Lake, historically some water would flow down the Lost River Slough and into Tule Lake wetland area (USBR and CDFG 2012:3.6-6). The Lower Klamath Lake and Tule Lake areas formerly contained large areas of wetland and marshes, and the Lost River flowed from Clear Lake to Tule Lake. Now, a diversion provides water from the Lost River to the Klamath River. The former wetland and marsh areas associated with lakes in the Upper Klamath Basin have been substantially reduced in size.

The construction of Copco No. 1 and Copco No. 2 facilities also greatly altered flow patterns by causing rapid changes in flow associated with hydropower generation (Stillwater Sciences 2018:3-593). Iron Gate Dam was constructed in 1962 to re-regulate these flow releases from the



upstream Copco facilities, altering the timing of base flows. Further altering the natural hydrograph, fall flows increased while spring and summer flows were substantially reduced compared to natural flows.

## **2.5 Biological Resources**

The Klamath River Basin is considered to have some of the richest biological and ecological habitats in the United States (USBR and CDFG 2012). The basin falls primarily within the Klamath Mountains ecoregion, with the easternmost portion of the river within the Eastern Cascades Slopes and Foothills ecoregion, and the westernmost portion within the Coast Range ecoregion (EPA 2013).

### **2.5.1 Vegetation**

Vegetation communities in the Klamath River Basin include drier pine and fir forests in the mountain ranges of the Klamath Mountains ecoregion and wetter forests near the coast in the Coast Range ecoregion. The Klamath-Siskiyou mountain ranges are recognized for their biological diversity, having more than 3,000 documented plant species, including 30 temperate conifer tree species, which is more than any other ecosystem in the world. The Klamath River Canyon itself is primarily a mosaic of mixed conifer forest communities and riparian habitats (FERC 2007).

Many plants in the Klamath Basin are culturally important to Indian Tribes for food, basketry, regalia, medicine, and ceremonial use (FERC 2007). Examples include ipos (roots of *Carum oregonum*), desert parsley, camas, cattail roots, and wocas (yellow pond lily seeds). Wild celery, wild parsley, wild rhubarb, hazelnuts, acorns, pine nuts, chokecherries, serviceberries, Klamath plums, elderberries, blackberries, gooseberries, wild grapes, huckleberries, and other species are also culturally important plants (FERC 2007; USBR and CDFG 2012:5-24). Macrobotanical remains from excavated archaeological sites along the Klamath River include broken fruit pits (likely bitter cherry, choke cherry, or Klamath plum), *Chenopodium*, *Apiaceae*, cattail, tule, hazel, and *Rosaceae* (Hescock 2014:48-49). A recent pollen study along the Klamath River in California recovered archaeobotanical remains including fir, oak, cedar, pine, sagebrush, snowberry, mock orange, buckbrush, rose, pea, and a variety of grasses (Smith 2006:12).

### **2.5.2 Fish and Wildlife**

PacifiCorp conducted wildlife surveys in 2002 and 2003 and documented more than 225 vertebrate species, including amphibians, reptiles, birds, mammals, and fish that live in the Klamath River Basin (PacifiCorp 2004). Amphibians include salamander, bullfrog, Pacific chorus frog, and western toad. Sixteen reptile species have been documented, with the western fence lizard being the most abundant reptile, although a variety of snakes including western rattlesnake, garter snakes, and other species are also present.

The Upper Klamath Basin falls along the Pacific Flyway and supports the largest concentration of migratory waterfowl in North America. A large number of water-related birds also breed in the Klamath River Basin, and wetlands support large colonies of American white pelicans, double-crested cormorants, grebes, great egret, white-faced ibis, gulls, terns, and bald eagles (USBR and

CDFG 2012:5-26). Avian surveys by PacifiCorp detected 174 bird species, with the highest number occurring at Keno and Iron Gate Reservoirs (PacifiCorp 2004). Seven common bird species associated with riparian and wetland habitats were found in all study areas: western wood pewee, song sparrow, Brewer's blackbird, yellow warbler, brown-headed cowbird, black-headed grosbeak, and mourning dove (PacifiCorp 2004). In addition, 19 species of birds of prey (six species of hawk, two eagle species, three falcon species, seven owl species, and one vulture species), eight species of woodpeckers, and five game bird species (wild turkey, blue grouse, California quail, mountain quail, and mourning dove) were documented (USBR and CDFG 2012:5-26). Many of these bird species, especially waterfowl and quail, were important traditional food sources in the Native American diet (Moratto 1984).

Common mammals documented as part of the PacifiCorp study include black-tailed jackrabbit, mule deer, and California ground squirrel. Large mammals found in the Klamath River Basin include deer, elk, mountain lion, and black bear, and medium-size mammals include bobcat, skunk, fox, marmot, and coyote. Small mammals are represented by deer mouse, woodrat, least chipmunk, and montane vole, and aquatic and/or fur-bearing mammals include raccoon, beaver, muskrat, mink, and river otter (PacifiCorp 2004). A variety of these species were hunted by Native American Tribes, with deer being one of the most important mammals for human consumption (Dixon 1907; Silver 1978).

The Klamath River Basin has 19 native fish species including rainbow and redband trout, six species of lampreys, blue and tui chub, sculpin, and suckers. The Klamath River is also one of the most important rivers in North America for anadromous fish migration and once supported large runs of steelhead, Chinook salmon, coho salmon, green sturgeon, eulachon, coastal cutthroat trout, and Pacific lamprey (USBR and CDFG 2012:1-7). These anadromous fish resources contributed substantially to tribal, commercial, and recreational fisheries. Waterways in the upper watershed including Upper Klamath Lake also provide habitat for suckers, which are an important part of tribal culture and diet. Lost River and shortnose sucker spawning runs still constitute ceremonial events for the Klamath Tribes (USBR and CDFG 2012:1-7).

Copco No. 1 Dam was the first mainstem dam to block fish passage to the Upper Klamath Basin when it was completed in 1918. Iron Gate Dam, the dam farthest downstream that was completed in 1962, blocks upstream fish passage, with its flow releases and water quality affecting the fish habitat downstream along the Klamath River (FERC 2007). With the exception of J.C. Boyle Dam, which is equipped with a fish ladder, the other hydroelectric dams also block upstream fish passage and isolate fish populations between the dams (USBR and CDFG 2012:1-8).

Four species of native freshwater mussels have been documented in recent surveys (USBR and CDFG 2012:3-19). Oregon floater (*Anodonta oregonensis*), California floater (*A. californiensis*), and western ridged mussel (*Gonidea angulata*) were observed from the Keno Impoundment to the confluence of the Klamath and Shasta Rivers. In addition to these species, western pearlshell mussel (*Margaritifera falcata*) was also identified along the Klamath River from Iron Gate Dam to the confluence of the Klamath and Trinity Rivers. The western ridged mussel is currently the largest and most common type of freshwater mussel found within the Klamath Basin. Benthic macroinvertebrates are abundant and include crayfish, clams and snails, and aquatic insects and beetles.



## 2.6 Paleoenvironment

Few geological or paleoenvironmental studies have focused specifically on change in the Klamath River over time. The paleoclimate discussion provided below emphasizes the variability of climate throughout the larger Holocene and is largely derived from the overview of paleoenvironmental conditions presented in the FERC 2004 license application (PacifiCorp 2004).

Most of the climate change events that occurred during the Holocene are characterized by polar cooling, tropical aridity, and major atmospheric circulation changes. In general, high effective moisture results in increased stream flows, soil development, and landform stability. In contrast, low effective moisture results in reduced stream flows, erosion, and soil deposition (PacifiCorp 2004). Plants and animals respond to variations in effective moisture according to their needs. Based on relicensing studies and work by Gleason (2001), the preferred economic resources generally are patchy and tied to specific locations. Climatic change does not necessarily alter the location of resource patches; however, climatic change may have influenced the productivity of specific resources within these patches (PacifiCorp 2004).

One of the earliest studies of palynology (the study of fossil pollen) and paleoenvironmental conditions in western North America was conducted by Henry Hansen in 1942 near the Project area. Hansen, working in the Upper Klamath River basin with an interdisciplinary team led by Luther Cressman, conducted a groundbreaking study to illustrate the importance of relating climatic fluctuations and the histories of lakes and marshes to changing human populations. Since that time, little research on paleoenvironments has been directly tied to this region. Studies from surrounding areas, however, can be used to interpret general patterns of climate change and environmental conditions for the Holocene (Barnowsky et al. 1987; Mehringer 1985; Thompson et al. 1993; Wigand and Novack 1992).

Although an oversimplification of the highly variable climatic patterning of the Interior Northwest, the three-part sequence developed by Ernst Antevs (1955) continues to illustrate the overall Holocene pattern, consisting of a cool-moist early Holocene (Anathermal), a xeric middle period (Altithermal), and a return to cooler, moister conditions (Medithermal). At the end of the Pleistocene (circa [ca.] 11,700 before present [BP]), the Pacific Northwest and northern Great Basin pollen and packrat midden data reveal that tree lines were lower in elevation, by as much as 1,000 meters (3,280 feet; Wigand and Novak 1992). This quickly changed during the initial Holocene, and drier conditions (but still wetter than today) caused a demise of the Pleistocene woodlands. A short hiatus in this progression (called the Younger-Dryas) provided a 1,000-year reprieve from warming temperatures (PacifiCorp 2004).

By about 9,500 BP, most pollen records illustrate that the conditions of the Holocene were mostly established over the entire American northwest (Barnowsky et al. 1987; Mehringer 1985; Thompson et al. 1993; Wigand and Novak 1992). Although the plant and animal mosaic prior to this time was quite different than today, by 9,500 BP, the general patterning of plants, animals, and the peoples who exploited both were established in the Klamath River region. What followed was likely the warmest period of the Holocene. Although effective moisture was highly variable, overall moisture may not have decreased dramatically. But, by shifting to a more summer-like pattern, snowpack and

spring runoff dropped. At higher elevations of the Pacific and Interior Northwest, a temperature reduction probably was seen earlier than in the lowlands (Barnowsky et al. 1987; Mehringer 1985). However, by about 8,000 to 7,500 years ago, relatively cold, dry winters and moist spring conditions are demonstrated in the pollen and packrat midden data of the region (Johnson et al. 1994). Periods of drought are punctuated by moist episodes and brief re-expansion of mesic species. Relative to the Klamath River with its constant source of water, the variability of available resources would likely have been limited to irregularities in local spring discharge and fluctuations in the relative abundance of patch resources, not a wholesale reduction (or increase) of species specific to the region.

Volcanism in the Klamath River Basin began about 40 million years ago and continued until approximately 5 to 10 million years ago, with volcanic activity shifting eastward and diminishing in intensity over time (Stillwater Sciences 2018:3-737). Volcanic activity caused the formation of stratovolcanoes, lava domes, and cinder cones in the region; two Pleistocene cinder cones and associated lava flows are between the eastern edge of Iron Gate Reservoir and Copco No. 1 Dam (Stillwater Sciences 2018:3-738). During the mid-Holocene, however, the most dramatic volcanic impact would have been the eruption of Mt. Mazama (now Crater Lake), which was likely a series of up to four major eruptions over the span of 150 years (Mulineaux and Wilcox 1980). Crater Lake is located less than 25 miles northwest of Upper Klamath Lake. Although the impact of these eruptions was regionally devastating, the immediate Project area probably saw little ash rain from these events. Nevertheless, the pumice and ash from the terminal eruptions of Mt. Mazama flowed into the Upper Klamath Lake for centuries and probably affected the waters of the Upper Klamath River and its resources, including fish runs, for a long time period. Eruptions of Mt. Shasta, located about 40 miles from Iron Gate Dam, were the closest source of potential tephra. A major eruption occurred around 9,600 BP (Miller 1980). Since that time, Mt. Shasta eruptions have occurred approximately every 800 years, with the last known eruption occurring approximately 200 years ago. Volcanic activity in the Cascades, while intermittent, probably affected generations of precontact peoples at various times through the Holocene, forcing short-term abandonment of certain areas (PacifiCorp 2004).

At about 4,000 BP, a fairly moist, cool episode signaled the onset of overall wetter winters. Grasslands likely expanded for a time, and river flow was likely high at spring runoff between about 4,000 and 3,500 BP. Sometime after about 3,500 BP, overall conditions in the Upper Klamath River region echoed that of today. Fluctuating weather and short-term trends in climate remained the norm, but the composite of species represented in the vegetation and faunal communities was relatively “normal.” Since that time, and into the historic period, people have continued to adjust their behavior to weather and climate conditions (PacifiCorp 2004).

A recent thesis summarized geoarchaeological conditions in the Upper Klamath River, from RM 220 (near the Klamath River Boat launch), downstream for 5 miles to RM 215, at the Secret Springs Mountain Landslide, a stretch of river having a variety of archaeological sites representing occupation since 7,500 BP (Hescock 2014). The investigation found that colluvial and alluvial interactions are the main depositional features found in this area where the river has down cut into a steep canyon, and these deposits are found on the surface of terraces as well as within the depositional construct (Hescock 2014:133-134). Terraces farther from the river and higher are

older, and a majority of archaeological sites are found on the first terrace and are village sites. Using relative dating and radiocarbon samples, in general, the first terrace dates to the Canyon Phase; the second terrace to the Canyon Phase and possibly to the River Phase; and the third or highest terrace dates to the Secret Springs Phase or not-named Phase (Hescock 2014:135-138). Soil development at some of the terraces perhaps dates to at least 7,000 years, although the first terrace shows shallow soil formation. The oldest site in the canyon, the Klamath Shoal Midden, was located on a third terrace where artifacts were recovered from a depth of 200 centimeter (cm) in a river gravel stratum. Similarly old sites could also be on two higher terraces, although historic-period sites and other younger surface sites are most likely to be found on newly forming floodplains and the first terrace but may be found on all landforms.

In summary, paleoenvironmental conditions influenced the range of possible cultural activities as people contended with the general aridity of the landscape. The restricted locations of reliable water, primarily in the Klamath River, small feeder streams, and springs, contributed to a subsistence base geared toward these water sources. Changes in precontact and historical land use likely were related to the variable environment and to cultural changes influenced by nonclimatic stimuli, such as technological change, trade, and conflict or competition with other peoples (PacifiCorp 2004).

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## **Chapter 3: Cultural Context**

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## 3. CULTURAL CONTEXT

This section presents summary overviews of our current understanding of the cultural history of the Upper Klamath River area to assist with creating a framework for evaluating the results of the Phase II testing program. It includes discussion of precontact period, tribal, and historic-period contexts.

### 3.1 Precontact Context

This section reviews previous archaeological investigations conducted within south-central Oregon and northeastern California that are pertinent to the Project. Discussions are presented according to the three geomorphic provinces through which the Project ADI crosses: Modoc Plateau, Cascade Mountains, and Klamath Mountains. An overview of regional cultural sequences is presented first, focusing on the definition and dating of chronological phases or periods fundamental to the reconstruction of culture and lifeways. This is followed by an overview of key archaeological investigations that have contributed to an understanding of thousands of years of changing human culture, behaviors, and events within the Upper Klamath River area.

#### 3.1.1 Regional Cultural Sequences

The Klamath River Basin or watershed comprises a large, headwater lake (Upper Klamath Lake) and wetland complex located in south-central Oregon and northeastern California. The Klamath River Basin lies in the transition zone between the Modoc Plateau<sup>1</sup> and Cascade Range physiographic provinces, with the Klamath River cutting west through the Klamath Mountain province and then the Coast Range province where it reaches the Pacific Ocean near Requa, California (FERC 2007).

The development of archaeological chronology has long been a focus of scientific investigations conducted within the Upper Klamath River Basin. The first archaeological investigations into its prehistory were initiated by the pioneering work undertaken in the 1940s by the University of Oregon in the Lower Klamath Lake area, where Luther S. Cressman (1940, 1942) developed the first cultural sequence for the area, providing evidence for at least 8,000 years of human land use. Cressman's work was followed by investigations conducted at Tule Lake by Robert F. Heizer of the University of California, Berkeley in 1942, which expanded on aspects of Cressman's initial chronology. Subsequent work at Lower Klamath Lake by Squier (1956) and at the Nightfire Island site (Johnson 1969; Sampson 1985) provided a substantial body of data for continued chronological reconstructions. In the mid-1950s, Cressman focused attention on the Upper Klamath Lake area, where investigations were conducted at Medicine Rock Cave, Kawumkan Springs midden, and at several village sites along the Williamson and Lower Sprague Rivers, producing a 7,000-year-old chronological sequence (Cressman 1956).

Within the Cascade Mountains region, the reevaluation and reanalysis of the cultural assemblages recovered from the Salt Caves Dam sites (Salt Cave Locality) completed by Mack (1989) has

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<sup>1</sup> In Oregon, this area is referred to as the Basin and Range province.

provided a chronological sequence that details 7,000 years of prehistory within the Upper Klamath River Canyon. Chronological reconstructions for the Klamath Mountains region focus on the temporal sequence developed for Shasta Valley by Nilsson (1991), which documents 2,500 years of prehistory. Table 3-1 provides a concordance of the cultural sequences advanced for the Modoc Plateau, Cascade Mountains, and Klamath Mountains regions, as discussed below. This figure also includes sequences developed for the neighboring Upper Rogue River Valley (Pettigrew and Lebow 1987) and the Tuscarora Pipeline Project (Delacorte 1997; McGuire 2002), to provide a broad regional perspective and overview.

## **Modoc Plateau**

The headwaters of the Klamath River begin within the Modoc Plateau geomorphic province, a volcanic table land (elevation 4,000 to 6,000 feet above sea level) characterized by a thick accumulation of lava flows and tuff beds along with many small volcanic cones. The Modoc Plateau is a feature of the Great Basin, the northern part of the Basin and Range (Orr and Orr 2012). Occasional shallow lakes (Upper Klamath, Lower Klamath, and Tule lakes), marshes (Klamath Marsh), and slowly flowing streams cross the Modoc Plateau. The high elevation, semi-arid desert environment of the Modoc Plateau provided a cultural adaptation distinctive from that downstream Klamath River Canyon, and was centered predominately on lacustrine environments and attendant resources. Although the Modoc Plateau region borders the Project ADI to the north and east, its importance to regional chronological reconstructions is significant, as much of the pioneering work was conducted in this area. Discussion of the regional chronological sequences for the Modoc Plateau area centers on the Klamath Lakes Basin which, as defined for this study, includes the subbasins of Upper Klamath Lake, in Klamath County, Oregon, and Lower Klamath Lake, Tule Lake, and Butte Valley, in Modoc and Siskiyou Counties, California.

## **Klamath Lakes Basin**

A unifying feature of the Klamath Lakes Basin is its geographic association with Pluvial Lake Modoc (Dicken 1980; Dicken and Dicken 1985; Grayson 1993: Table 5-1). As part of an extensive system of some 80 Pleistocene lakes (Grayson 1993:86) Lake Modoc covered an area of more than 1,000 square miles (Dicken and Dicken 1985:1-4), overflowing into an adjacent basin at maximum levels (Grayson 1993: Table 5-2). The rich lacustrine environment of the Klamath Lakes region afforded a wealth of natural resources and features that attracted human land use potentially as early as 8,000 years ago (Cressman 1942:99), but certainly by 6,000 years ago (Aikens and Minor 1978; Cressman 1956; Sampson 1985).

Pioneering research in the Klamath Lakes Basin began in 1940 with the work of Luther S. Cressman, of the University of Oregon, in the Lower Klamath Lake area. Cressman's work at the Narrows (CA-SIS-257) and Laird's Bay (CA-SIS-230) sites provided for the development of the first cultural sequence for the Klamath Lakes Basin (Cressman 1942). Three cultural phases were recognized: Narrows Horizon, Laird's Bay Horizon, and a Historic Horizon.



Years BP	Continental Climate	MODOC PLATEAU						CASCADE RANGE		
		Lower Klamath and Tule Lakes (Cressman 1940; Heizer 1942; Squier 1956)	Kawumkan Springs (Cressman 1956)	Tule Lake (Swartz 1963, 1964)	Nightfire Island (Samson 1985)	Nightfire Island (Grayson 1972)	Tuscarora Pipeline/ Alturas Intertie (Delacorte 1997; McGuire 2002)	Klamath River Canyon Phases (Mack 1983)	Upper Rogue River (Pettigrew and Lebow 1987)	Shasta Valley (Nilsson 1991)
0										
2000	Late Holocene (post-4000 BP)	<div style="writing-mode: vertical-rl; transform: rotate(180deg); font-size: small;">Modoc Complex (2000 BP-contact)</div>	<div style="text-align: center;"><div style="border-bottom: 1px dashed black; width: 100px; margin: 0 auto;"></div><div style="margin: -10px auto 10px auto;">KV (~AD 1500-1864)</div></div>	Component III*** (post-AD 1000)	Arrowhead Zone (AD 250 to 1360 +/- 240 BP)		Terminal Prehistoric (600 BP-contact)	Canyon Sub3	Rogue Phase (250 BC - post-contact)	Meek Phase (AD 500 - contact)
	Gillem Bluff		<div style="font-size: 4em;">X</div>		Phase V (AD 1000-1400)	Late Archaic (1300-600 BP)	Canyon Sub2 (AD 900-1600)	Canyon Sub1 (250 BC - AD 900)		Ager Phase (500 BC - AD 500)
	Indian Bank				Phase IV (AD 0-1000)	Middle Archaic (3500-1300 BP)	River (2500-250 BC)			
	Medithermal*			Laird's Bay Horizon (4000-2000 BP)	KSMHP (AD 250-700)  Level I (2500 BP-AD 250)	Component II (1500-500 BC)	Small-flake Zone (2450 BC-AD 250)	Phase III (2250-0 BC)	Early Archaic (5000-3500 BP)	Basin (4500-2500 BC)
	4000				Component I (pre-1500 BC)		Phase II (3000-2250 BC)	Post-Mazama (7000-5000 BP)	Secret Spring (5500-4500 BC)	
6000	Middle Holocene (7500-4000 BP)	Narrows Horizon (8000-4000 BP)	Level III (7500-3500 BP)		Phase I (4000-3000 BC)					
	Altithermal*			Large-flake Zone (pre-5500 - 2450 BC)			Early Holocene (+7000 BP)			
8000			Level IV (+9000-7500 BP)							
10,000	Early Holocene** (11,700-7500 BP)								Applegate Phase (8500-6500 BC)	
	Anathermal*									
12,000	Late Pleistocene								Paleo-Indian Stage	

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The Narrows Horizon, dating from 8,000 to 4,000 years ago, included an artifact assemblage comprised of fossilized bone foreshafts; large, heavy leaf-shaped and side-notched projectile points; utilized flakes; and scrapers. These artifacts, possibly associated with fossilized mammal bones of elephant, horse, and camel, led Cressman to assign the Narrows Horizon to the Early Postpluvial Period (Cressman 1942:102).

The Laird's Bay Horizon, dating from 4,000 to 2,000 years ago, witnessed the use of large and medium leaf-shaped, side-notched, and corner notched projectile points (Northern Side-notched and Elko series); bone awls, perforated stone disk; and manos. The association of these items with ancient peat beds in the Lower Klamath Lake bottom led Antevs (1940:309) to suggest that they dated before the Little Pluvial Period, some 4,000 years ago.

The most recent horizon comprised historically modern materials found on the lakeshore and islands, including small corner-notched and barbed projectile points, mortars and pestles, manos, pipes, shell beads, bone awls, and antler wedges. This horizon represented shoreline occupations at the level of the lake before it permanently dried up in 1917. The horizon was placed after the beginning of the Christian era (Cressman 1940:305-306).

Following Cressman's (1940) initial studies in the Lower Klamath Lake area, work shifted to the southern shore of Tule Lake, where Robert F. Heizer excavated two caves (CA-MOD-2 and CA-MOD-3) at Petroglyph Point. Heizer's (1942) work defined the Modoc Complex, which drew from his own study, but also encompassed those attributes of Cressman's "Historic" horizon for the Upper Klamath Lake area. The Modoc Complex was assigned a chronological span of 2,000 years ago to historic times (Cressman 1956). Modoc Complex artifacts included Pacific coast shell, bird bone and seed beads, twined basketry, cordage, obsidian points, mortar fragments, and obsidian debitage.

Based on Squier and Grosscup's subsequent work in the Klamath Lakes area, which focused on three rockshelters in the Tule Lake Basin and two open sites on Lower Klamath Lake, Squier (1956) subdivided the last half of the Heizer's Modoc Complex into three phases: Indian Bank, Gillem Bluff, and Tule Lake. Cultural characteristics associated with the older Indian Bank Phase (AD [Anno Domini] 850 to 1350) included flexed burials; large projectile points; portable bowl mortars; grinding slabs; stone mauls; antler wedges and flaking tools; bone awls, beads, whistles, pins and pendants; *Haliotis* pendants, and *Olivella* beads.

The Gillem Bluff Phase (AD 1350 to 1800) was defined based on associations with possible cairn burials, possible basketry (textiles), large and medium size projectile points, large obsidian blades, split mammal bone awls and stone mauls, thin grind slabs.

The Tule Lake Phase (AD 1800 to historic times) was considered to represent the culture of the late precontact and protohistoric Modoc Indians. Small triangular and side-notched points; large obsidian blades; twined basketry; split mammal bone awls; antler and bone flaking tools; bird and mammal bone beads; shell and pinenut beads, hopper mortars, and cremation burials.

From 1947 to 1951, Cressman's work shifted to the Upper Klamath Lake area, where investigations were conducted at Medicine Rock Cave, Kawumkan Springs midden, and at several village sites along the Williamson and Lower Sprague Rivers (Cressman 1956). The archaeological record

showed occupation beginning before 6,500 years ago, with the Kawumkan Springs midden evidencing four levels of occupation (Level I to Level IV), followed by occupations associated with house pit villages. Level IV represents the oldest temporal period, spanning from 9,000 to 7,500 years ago. Level III occupation extends from 7,500 to 3,500 years ago, marking the appearance of small projectile points. Level II occupation ranges from 3,500 to 2,500 years ago. The terminal period is Level I, ranging from 2,500 years ago to AD 500. Site use continued well into the historic contact period (AD 1864), as evidenced by occupation of the Kawumkan Springs house pits (Cressman 1956:463).

The southern shore of Tule Lake was the next focus of archaeological research aimed at chronology building. Incorporating excavation results for four rockshelter sites (CA-MOD-186, CA-SIS-299, CA-SIS-303, CA-SIS-304) and CA-SIS-101, the Modoc ethnographic village of *Gumbat* (Ray 1963:207-208), Swartz (1963, 1964) proposed a separate cultural sequence for the Tule Lake area comprised of four components. Component I (pre-1500 BC [Before Christ]) is characterized by large lanceolate, leaf-shaped, side-notched, and bipointed projectile points. Component II (1500 to 500 BC) comprises an assemblage of lanceolate points and smaller, thinner stemmed triangular points, bowl and slab mortars, and secondary cairn burials.

Archaeological investigations conducted at the Nightfire Island Site (CA-SIS-4) by Johnson (1969) and then studied by Sampson (1985) document a 7,000-year record of lakeshore adaptation. Sampson (1985) identified 15 cultural strata which were grouped into three major stratigraphic zones: (1) a large flake zone (5500 BC to 2450 BC) defined and correlated on the basis of the physical size of the obsidian debris; (2) small flake zone (2450 BC to AD 250), defined on the presence or absence of avifaunal constituents; and (3) a terminal arrowhead zone (AD 250 to AD 1360  $\pm$  240) identified by the presence of Gunther<sup>2</sup> (now termed Tuluwat) series projectile points above the small flake zone.

One of the most extensive archaeological projects completed within the Modoc Plateau region involved testing and data recovery excavations at a large number of precontact sites as part of the Tuscarora Gas Transmission project (Delacorte 1997). The project included the construction of a 200-mile long pipeline from Malin, Oregon, south to Tracy, Nevada, skirting the eastern edge of both the Cascade Range and Sierra Nevada Mountains. Data recovery excavations were conducted at 32 precontact sites along this route, including six sites along the 53-mile long Modoc Uplands segment within Tule Lake Basin and the Devil's Garden. The temporal chronology developed for the Tuscarora Project identified six temporal phases of human occupation. The Early Holocene (7000+ BP) represents land use of pluvial lakeshore and/or marsh contexts, although such occupation is not well documented in the Modoc Plateau area. Artifacts typical of the Early Holocene (pre-7000 BP) include Great Basin Stemmed, crescents, and Fish Slough Side-notched points. The Post-Mazama period (7000 to 5000 BP) is marked by Northern Side-notched projectile points. Representing the Early Archaic (5000 to 3500 BP) are Gatecliff Split-stem and Humboldt Concave Base, while the Middle Archaic (3500 to 1300 BP) includes Elko Series and Siskiyou Side-notched points are identified as hallmarks of the Middle Archaic. The Early and Middle Archaic specimens are

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<sup>2</sup> Use of the term "Gunther or Gunther Barbed" has been replaced by the term "Tuluwat". Since discussions in the cultural context section reflect information from the reports prepared by individual researchers, the term "Gunther" is maintained as used in those original reports, as appropriate.

interpreted as dart points, whereas small arrow points are representative of post-1300 BP occupations. Late Archaic (1300 to 600 BP) times are represented by Rose Spring points. The Terminal Prehistoric period (600 BP through contact) reflects use of Desert Side-notched, Cottonwood Triangular, and Small Stemmed points (Delacorte 1997:86-95). Both Dart-sized and Lanceolate projectile points are characteristic of pre-1300 BP occupations, while those classified as Arrow-sized are placed in the post-1300 BP period.

Investigations within the Modoc Uplands segment of the Tuscarora pipeline yielded little organic material suitable for radiocarbon dating, while bone and seed remnants were equally scarce. Based primarily on projectile points and associated tools, 30 chronologically discrete components were identified within the Modoc Uplands sites. Of these, most appear to represent the Middle and Late Archaic, providing strong evidence for occupations between 3500 and 1000 BP. Bifaces, with associated projectile points and flake tools, were common within the Middle Archaic sites, while the ground stone and core tools become more common in the Middle-to-Late Archaic transition period. Also, during this transition, the use of Buck Mountain obsidian increased. The first evidence of prolonged habitation, including a fire hearth feature, was found within Late Archaic components (Mikkelsen 1997:108).

## **Cascade Range**

The Cascade Range comprises a chain of large and recently active volcanic cones that extend from north from Lassen Peak, in California, through Oregon and Washington, and into southern British Columbia. Between the two volcanic centers of Mount Shasta, in California, and Mount McLaughlin, in Oregon, the Cascade Range is transected by the canyon of the Klamath River, on its westward journey, through the adjoining Klamath Mountains and California Coast Ranges, to join the Pacific Ocean. Just 30 miles east of Mount Shasta lay the Medicine Lake Highland, a large shield volcano and eastward bulge of the Cascade Range (Hinds 1952:129) which provided precontact Native American peoples with abundant obsidian toolstone for flaked stone tool manufactures. Local and regional cultural sequences developed for the Cascade Range pertinent to the current study include those established for the Upper Klamath River (Mack 1989), Shasta Valley (Nilsson 1991), and the Upper Rogue River (Pettigrew and Lebow 1987).

## **Upper Klamath River**

Mack (1989) developed a cultural chronology for the Upper Klamath River Canyon area based on the reanalysis of artifacts recovered by the University of Oregon (Newman and Cressman 1959) in the area later affected by the construction of J.C. Boyle dam and reservoir and other sites investigated as part of the Salt Caves Dam Project. Mack's chronology, which spans some 7,000 years of prehistory, divides human occupation of the area into four distinct phases: Secret Spring, Basin, River, and Canyon.

The Secret Spring Phase (5500 BC to 4500 BC) represents the earliest evidence for human land use of the Upper Klamath River Canyon area (Mack 1989). A small collection of generalized bone tools and several unifacial flaked tools from one site (35KL21) characterize this phase, as does the use of turtle and mammals (Mack 1989:52-53, 58).

The Basin Phase (4500 BC to 2500 BC) marks the first well documented period within the Upper Klamath River Canyon area (Mack 1989:53). General hunter-gatherer strategies and seasonal site use mark this phase. Hallmark artifacts associated with the Basin Phase consist of large dart-size projectile points (Humboldt, Concave Base, McKee Uniface, and Northern Side-notched), ground stone tools (bowls, muller, and mortars) and bone tools (Mack 1989: Table 14). A single human burial from this Phase indicates a mortuary pattern of internment within a shallow pit, with the remains placed in a supine position and covered with rocks.

The River Phase (2500 BC to 250 BC) signals an increase in the number of documented sites within the Upper Klamath River Canyon area, many of which are marked by more diverse and specialized artifact assemblages (Mack 1989). Settlement patterns reflect use of base camps within the canyon and a principal reliance on riverine resources. Hallmark artifacts of the River Phase include medium-to-large dart points, such as Gold Hill Leaf, Elko Series, Siskiyou Side-notched, Class 28 points (similar to Clikapudi Corner-Notched [Basgall and Hildebrandt 1989] and Class 29 points that resemble Martis Series points (Mack 1989:53). Mullers and mortars persist as characteristic ground stone tools (Mack 1989). Bone tools reflect diversification and specialization, incorporating bone and antler chisels and wedges and barbs for harpoons and fishing equipment (Mack 1989:56). Human remains indicate a mortuary pattern of primary internment of burials on sides or flexed position.

The Canyon Phase (250 BC to Historic Contact), comprises two sub-phases that are well documented within the Upper Klamath River Canyon area (Mack 1989:53). Principal settlement features note the appearance of house pit villages for year round habitation in the canyon, large midden sites adjacent to the river used as fishing camps and processing areas, and small upland sites focused on specialized uses (Mack 1991:81). Hallmark artifacts include small narrow-necked projectile points, mullers for processing woks, bone tools, Siskiyou Utility Ware among the downriver villages, and *Olivella* shell beads. Associated human remains indicate a mortuary pattern of cremations.

The Canyon I phase (250 BC to AD 900) marks the first use of small Gunther series arrow points, along with *Olivella* saucer and ring beads and bone fishing tools, chisels, and wedges. The Canyon II phase (AD 900 through Contact) reflects an increase in the diversity of small arrow points, whose forms expand to include Desert Side-notched and Rose Spring types. Other hallmark artifacts of the Canyon II Phase include Siskiyou Utility Ware pottery and figurines, mammal bone beads, and other bone tools.

## Shasta Valley

Based on work conducted principally in the eastern part of Shasta Valley, Nilsson (1991) proposed a provisional cultural sequence based upon information from six excavated sites, including two rockshelters (CA-SIS-13 and CA-SIS-266), one temporary campsite (CA-SIS-900), one semi-permanent occupation site (CA-SIS-154), and two semi-permanent or permanent upland villages (CA-SIS-331 and CA-SIS-332). Temporal reconstructions allowed for the identification of two occupational phases (termed the Ager Phase and Meek Phase) largely defined on the basis of artifact typologies, radiometric data, and obsidian hydration information.

The Ager phase (ca. 500 BC to AD 500) represents the first solid evidence for occupation of Shasta Valley. The Phase is characterized by Elko Corner-notched, Medium side-notched, and stemmed leaf-shaped projectile points manufactured almost exclusively from GF/LIW/RS obsidian characterize the Ager Phase. Other functionally discrete artifacts include unifacial and bifacial handstones, unifacial millingstones, end scrapers, and side scrapers. Lithic technology is focused on the reduction of imported, preformed obsidian bifaces, although core reduction of local CCS and basalt materials was also undertaken. Temporal data include three radiocarbon dates that begin at 2380  $\pm$ 80 BP (Beta-42563) and also include dates of 1470  $\pm$ 70 (Beta-20678) and 1460  $\pm$ 190 BP (Beta-42562) Obsidian hydration data for projectile points and debitage range from 3.4 to 5.6 microns (Nilsson 1991). Faunal data reveal dietary patterns reliant on large and small mammal terrestrial species including artiodactyl (deer, sheep, or pronghorn), and leporids (rabbits and hares).

The Meek phase (AD 500 through contact) represents the late precontact period in Shasta Valley and is best documented occupational period. Highly diversified artifact assemblages include a wide spectrum of signature tools such as Gunther Barbed, Desert Side-notched, and small corner-notched points; key-shaped drills; lanceolate-shaped drills; leaf-shaped bifaces; triangular bifaces; triangular, concave base preforms; and a variety of end and side scrapers. Ground stone implements consist of circular and ovoid unifacial and bifacial handstones; unifacial slab-type millingstones; flat-ended pestles; cylindrical pestles; and, more rarely, hopper mortars. Ceramic implements consist exclusively of clay objects including pottery fragments, objects with punctate designs, a bead, a female figurine, and a clay rod. The pottery fragments include rim and body sherds of Siskiyou Utility Ware (Mack 1979, 1986), a ceramic tradition that has been identified within various north central and northeastern California site assemblages, as well as others in southern Oregon. Analysis of faunal remains, demonstrate a focus on both terrestrial and riverine resources. Mammals were the principal species exploited and included the hunting of both large game such as black-tailed deer and/or mountain sheep, and small species including cottontail and jackrabbits. Although evidence for the exploitation of riverine resources is rare, salmon, trout, minnow, sucker, and river mussel shell fragments attest to the consumption of these species. Radiocarbon assays for the Meek Phase begin at ca. 1450  $\pm$ 130 BP/AD 500 (WSU-3396) and extend to 320  $\pm$ 60 BP/AD 1630 (WSU-3392). Obsidian hydration values range from 1.5 to 2.7 microns for GF/LIW/RS, the dominant source. These implements, however, have been extensively reworked, suggesting that the artifacts may have been scavenged and recycled from older site deposits elsewhere (Nilsson 1991).

The CA-SIS-13 rockshelter provides the only Meek phase data regarding fragile and perishable materials such as plant fibers and wood. Wooden implements from the shelter include mountain mahogany arrow foreshafts; black-painted reed arrow shafts; peeled twig fire drill; spindle-shaped gaming pieces; and other miscellaneous objects. Basketry, matting, and cordage comprise the lot of plant fiber artifacts known for the Meek phase. Basketry remains reveal the use of three twined techniques and indicate that tule, peeled willow, hazel, and pine root were employed in basketmaking (Wallace and Taylor 1952).

Socio-cultural data for the Meek phase reflect information from the recovery of a single human burial and associated funerary items. Based upon artifact associations, the burial was dated to sometime after ca. AD 1400. Additionally, charcoal recovered from an adjacent test unit at a slightly deeper



level than the burial provided a radiocarbon date of  $690 \pm 90$  years BP, or AD 1260 (Beta-24306) (Nilsson 1991).

### **Upper Rogue River Valley**

The archaeology of the Rogue River drainage in the southern Cascade Range, north of the current Project area, holds relevance to Phase II study given the proximity of the river systems and similarity of precontact site assemblages within the two areas. In addition, a primary source of obsidian tool stone within sites of the Upper Rogue River Valley is the Medicine Lake Highland, particularly within site assemblages of the Coquille and Rogue phases (LaLande 1990; Nilsson and Kelly 1991). This indicates that there were cultural ties extending south from the Rogue River drainage to at least the Medicine Lake Highland south of the Klamath River.

Using data derived from radiocarbon dates, stratigraphic associations, projectile point typologies, and obsidian hydration studies from 20 regional sites, Pettigrew and Lebow (1987) proposed a cultural sequence for the Rogue River drainage and Middle Fork Coquille River area of southwestern Oregon. This reconstruction, detailed below, depicts a two-stage cultural sequence (Paleo-Indian Stage, Archaic Stage) that is segregated into four distinct cultural phases and six subphases.

The earliest cultural manifestation is the Paleo-Indian Stage, a period evidenced by the presence of two fluted points at sites in the upper Rogue River drainage (cf. Deich 1977; Dyck 1982; LaLande and Fagan 1982). Based on typological cross-dating of these points with other fluted point sites located across North America, a provisional date of 10,000 to 8500 BC has been assigned to this phase. Unfortunately, other corollary data are lacking, making this cultural phase the least known and most provisional within the local sequence.

The subsequent Archaic Stage, dating from 8500 BC to historic contact, incorporates four distinct cultural phases: Applegate, Marial, Coquille, and Rogue. The Applegate phase (8500 to 6500 BC) is characterized by the cultural attributes of a single site, 35JA53, located on a high terrace above Applegate River near Ashland (Brauner and Nisbet 1983). Hallmark artifacts of the Applegate Phase include square-based, lanceolate projectile points with pentagonal to broad-stemmed concave bases; and edge-faceted cobbles. The use of local CCS material dominates the flaked stone assemblage, while imported obsidian occurs infrequently.

The Marial phase (6500 to 2500 BC) represents a cultural era recognized by the predominance of Diverging Stem Broad-necked, Willow Leaf Medium, and Willow Leaf Extra Large projectile points and the prevalence of McKee unifaces and end scrapers. The use of imported obsidian is greater than in the previous Applegate phase. The Marial Phase is composed of two distinct subphases: Marial 1 (6500 to 3500 BC) and Marial 2 (3500 to 2500 BC). The cultural manifestations of the Marial 1 subphase include the dominance of Willow Leaf Extra Large points over Willow Leaf Large points, and the presence of Side Notched Straight Base points. Edge-faceted cobbles remain frequent in site collections of this subphase. The Marial 2 subphase constituents consist of relatively equal amounts of Willow Leaf Large and Willow Leaf Extra Large points, and the regular presence of Side Notched Straight Base points. Edge-faceted cobbles, however, appear to decline in use.

The Coquille phase (2500 to 250 BC) is recognized by the appearance and predominance of Coquille Series Broad-necked projectile points, most of which are fashioned from local CCS tool stone. The frequency of Willow Leaf Medium projectile points increases steadily during this phase, while a significant decrease is witnessed in the use of obsidian, particularly in the early part of the phase. End scrapers continue to be a prolific artifact form, but McKee Unifaces disappear from the archaeological record during this phase. Obsidian hydration values ranging from 3.2 to 3.9 microns are associated with the Coquille phase, and, perhaps, the latter part of the Marial phase (Pettigrew and Lebow 1987:31).

The final Rogue phase (250 BC to post-contact) heralds the introduction of bow and arrow weaponry into the region. Projectile point types reflective of this system are composed primarily of narrow-necked specimens. Typically numerous in site assemblages from earlier phases, endscrapers become less frequent, as does the use of obsidian tool stone. The Rogue Phase is segregated into four distinct subphases: Rogue 1, Rogue 2 Ceramic Period, Rogue 2, and Rogue 3.

The Rogue 1 subphase corresponds to the period of 250 BC to AD350 and is marked by the prevalence of Coquille Series Narrow-necked projectile points and the regular occurrence of Elk Creek Square Barbed and Willow Leaf Small points. Foliate series projectile points decrease in overall numbers, but Coquille Series Broad-necked specimens, held over from the earlier Coquille phase, are also present. Obsidian hydration values of 1.9 to 2.6 microns are associated with the Rogue 1 subphase.

The Rogue 2 subphase (AD 350 to contact) is identified by the dominance of Rogue River Barbed projectile points over all other forms; point types Rogue River Distally Constricted, Rogue River Diverging Stem, Triangular Concave Base, and Triangular Straight Base are also present. Obsidian hydration values ranging from 1.0 to 1.8 microns correlate with the Rogue 2 subphase. The Rogue 2 Ceramic Period (AD 900 to AD 1300 or 1500) is distinguished within this subphase by assemblages with ceramic vessels and figurines. A marked decrease in the frequency of Side Notched Concave Base and Triangular Concave Base points is noted after the Rogue 2 Ceramic Period.

The final Rogue 3 subphase (post-contact) represents the period of European American intrusion into the region and is recognized by the presence of trade goods among corresponding site assemblages.

### **3.1.2 Archaeological Investigations**

#### **Modoc Plateau**

##### **Klamath Lakes Basin**

The Klamath Lakes Basin has received the most extensive archaeological research of all regions discussed in this study, as well as some of the earliest archaeological fieldwork. Interest in this area appears to have been the result of an extension of previous work undertaken within the adjoining Great Basin. Professional archaeology was brought to southcentral Oregon in the early 1930s by Luther S. Cressman of the University of Oregon, Eugene. Cressman began teaching as professor of sociology in Eugene in 1929 and conducted his first archaeological excavation near the Rogue River



in 1930 (Butler 2018). He began his study of southeastern Oregon in 1932 with a survey of Oregon petroglyphs, followed with a survey of Guano Valley in 1934 (Cressman 1940:iii). At this time, interest in the prehistory of southeastern Oregon coincided with a period of extended drought that brought “Dust Bowl” conditions to this arid part of the state. Large scale reclamation projects of the preceding decades, coupled with a period of homesteading, overgrazing, dry farming, and drought, caused significant drying of regional lakes and wind erosion of lake sediments. Such erosion laid bare a vast amount of archaeological materials, much of which pointed to very ancient human settlement of this region.

In 1935, Cressman supervised field survey and preliminary excavation of Catlow Cave in Harney County, reportedly with the aim of testing the theory that eastern Oregon served as a travel route and settlement area for ancient migrants to North America (Voget 1998:2). That same year, excavations were carried out at Wikiup Damsite No. 1 (35DS50) on the Deschutes River (Cressman 1937). Excavations continued at Catlow Cave (35HA405) and other sites in the summers of 1937-1940. These included Paisley Five-Mile Point Caves (35KL3400) and Fort Rock Cave (35LK1) (Cressman et al. 1940). These caves yielded ancient sandals, an amount of basketry, wooden objects, bone tools, scrapers, projectile points, manos, and other objects recovered from above and below Mazama pumice. They also yielded fire lenses (ash and charcoal) and associations of extinct fauna (fossil bones) with human occupation (Cressman et al. 1940:301).

### ***Northern Klamath Lakes Basin, Oregon***

Archaeological investigations conducted within the Northern Klamath Lakes Basin were initiated by Cressman in the late 1940s when work was conducted at 12 precontact sites located along the Sprague and Williamson rivers, north and northeast of Upper Klamath Lake. The sites included the Sprague River Nos. I-IV (35KL4, 35KL5, 35KL6, 35KL7), Medicine Rock Cave (35KL8), Kawumkan Springs Midden (35KL9/35KL2562), 35KL10, 35KL11, and 35KL12 on the Sprague River, as well as the Merritt (35KL3), Gentry (35KL1), and McQuiston (35KL2) sites on the Williamson River. Cressman's (1956) work focused on finding evidence of early post-Pleistocene occupations and linking such occupations to the development of later precontact cultures, particularly with the Klamath Indians. This might be accomplished by discovering a site that contained a continuous record of human occupation from the post-Pleistocene to historic times. Cressman was also interested in determining how ancient cultures once adapted to lakeshore environments might have evolved or changed to exploit other environments, such as adjacent river valleys and mountain slopes. At the time of his study, Cressman (1956) noted that evidence had been found of Great Basin occupations extending back to the termination of the Pluvial period, and that such evidence was confined largely to the margins of the ancient lakes. Such evidence of early human occupation had yet to be found in the creeks and rivers that extended out from the ancient lakes, Klamath River being one such example.

Most cultural materials recovered from the 12 sites investigated by Cressman (1956) derived from Medicine Rock Cave (35KL8) and Kawumkan Springs Midden (35KL9/35KL2562). Forty-four classifiable artifacts were collected from Medicine Rock Cave, including 12 projectile points, 12 bone and antler tools, several scrapers and knives, 1 drill, and 4 gouges or gravers. Fish bone and freshwater mussel shell were recovered from the cave, as well as a bone fish gorge. Mammal bone

was much less common. Evidence indicated intermittent use of the cave from before the eruption of Mount Mazama until historic times, more than 6,000 years.

Investigation of the Kawumkan Springs Midden yielded a large sample of flaked and ground stone artifacts, battered stone, bone and antler tools, pendants, and beads. Numerous features were identified, including house pits, sweat houses, human remains, and dog burials. Also recovered were freshwater mussel shell and the bones of fish, bird, rodents, carnivores, and large mammals. Ground stone artifacts from Kawumkan Springs Midden included mortars, pestles, metates, and a variety of manos, mauls, paint palettes, and other objects. Three hundred seventy-four projectile points were recovered, representing 19 morphological types. Other flaked stone tools included choppers, knives, scrapers, drills, and graters. The initial occupation of the midden was put before 7,000 years ago and perhaps as early as 9,000 years. Klamath type villages, as that at Kawumkan Springs, were estimated to date back to AD 700 and such traditional villages were known to be occupied as late as AD 1864 (Cressman 1956:463-465).

Three additional precontact sites in the Northern Klamath Lakes Basin have provided important information for defining regional chronology. Investigations conducted at the Collier State Park site (35KL34) in the late 1960s by David Cole of the University of Oregon (Cheatham 1990) documented a late precontact house pit village site at the confluence of the Williamson River and Spring Creek, near Chiloquin, Oregon. The excavation of a single house pit produced a cultural assemblage defined by flaked stone artifacts, including debitage, small stemmed projectile points, knives, scrapers, bifaces, used flakes; ground stone items; and a large quantity of fish bone, which was later studied by Stevenson (2011). Radiocarbon assays for the site yielded dates of 340 and 360 years ago.

In the late 1980s, the University of Oregon conducted excavations at the Williamson River Bridge site (35KL677), also near Chiloquin, Oregon (Cheatham 1991). An extensive cultural assemblage was recovered from this precontact spring fishing camp, comprised of more than 600 flaked stone tools, 15,500 pieces of debitage, 117 cores, 54 bone tools, more than 14,000 pieces of animal bone, and 200 pounds of freshwater mussel shell. Temporal data revealed recurrent site use over a 2,000- year period, based on low diversity of feature classes and tool forms. Subsequent study of the fish remains and new radiocarbon dating for the site have been conducted by Stevenson (2011).

The Beuksewas Village (35KL778), located near the confluence of the Williamson and Sprague Rivers near Chiloquin, Oregon was investigated by the University of Oregon in 1990 (Cheatham et al. 1995). Thousands of precontact and protohistoric cultural remains were recovered from this winter village site that was used for fishing and shellfish collecting. Three temporal components were identified: Component 3 (2500 BC to AD250), Component 2 (AD 250 to 1300) and Component 1B (AD 1300 to 1860) and Component 1A (AD 1860 to 1920). Subsequent study of the fish remains have been conducted by Stevenson (2011).

### ***Lower Klamath Lake and Tule Lake Basins, California***

Following his initial work at cave sites in Oregon, Cressman shifted some of his attention to the Lower Klamath Lake area of northeastern California in the 1940s where surface artifacts had been found in possible association with the fossils of early fauna. By 1917, Lower Klamath Lake had been reclaimed by the construction of levees, and several years of vegetation burning had stripped the

ground of peat. Arid conditions of the 1930s allowed high winds to carry away lake sediment and the deeper deposits of volcanic pumice and diatomite, exposing the hardpan below. Upon this hardpan was found ancient artifacts and bluish-colored, mineralized bones of animals, some long extinct. Among artifacts given by local collectors to the University of Oregon was a punch-like object of fossilized bone and a stone pipe fragment (Howe 1968:202). Cressman (1940) reported that this private collection was shared with the university by Frank A. Payne. Other materials were shared by local educator and co-founder of Klamath County Museum, Carrol B. Howe. Howe's interest in collecting artifacts began at Clear Lake in Modoc County, where he found artifacts exposed on the lakebed in 1933 (Howe 1968: ix).

Cressman's 1940 fieldwork in the Lower Klamath Lake area focused on determining whether the association of artifacts with mineralized bone was original or derivative. Another goal was to identify the number and character of horizons of human occupation, to identify the chronological sequence of horizons, and to identify variations of the horizons between different parts of the lake (Cressman 1940:302). Trenches were excavated within undisturbed lake deposits at three major localities, including a channel called the Narrows (CA-SIS-257), a point at the south end of channel called the Cove, and Laird's Bay (CA-SIS-230) at the south end of Lower Klamath Lake. For trenching, geologists Ernst Antevs, Ira Allison, and W. D. Smith were invited to study the geologic features of the lake basin and identify any evidence of climatic change (Cressman 1940:302). Cressman's work provided the first chronological sequence of culture in the Klamath Basin, one that included three horizons discussed above: Narrows, Laird's Bay, and Historic.

Cressman's "Historic" horizon was later included in the Modoc Complex through Heizer's (1942:123-127) excavation of two caves at Petroglyph Point near the southern shore of Tule Lake. In addition to his work at Petroglyph Point, analyzed burial and cremation remains recovered from the shoreline of Tule Lake. His analysis identified 31 traits/artifacts in the assemblage, 22 of which occurred in native Klamath or Modoc culture. Based on these findings, Heizer concluded that the Tule Lake assemblage, like that from Petroglyph Point, represented a late prehistoric phase of Klamath or Modoc culture.

The temporal periods proposed by Cressman (1940) for Lower Klamath Lake, and by Heizer (1942) at Tule Lake, were confirmed by subsequent work conducted in the early 1950s. During the summers of 1952 to 1954, under sponsorship of the University of California, Berkeley, Robert J. Squier and Gordon L. Grosscup directed survey and excavation projects at Lava Beds National Monument and Tule Lake and Lower Klamath Lake basins. During this time, 332 new sites were recorded and several sites were excavated. Squier and Grosscup's work was aimed primarily at the recordation and study of resources relating to the protohistoric Modoc Indians (Squier 1956:35). Their survey work revealed that only within the immediate neighborhood of lake shores is there "evidence of occupation of any appreciable duration" (Squier 1956:37). Squier and Grosscup's excavation of three rockshelters in the Tule Lake Basin and two open sites on Lower Klamath Lake recovered late prehistoric/early historic materials relating to Modoc occupation. The assemblages were comparable to those identified as the Modoc Complex, prompting Squier (1956) to refine the latter half of the complex by subdividing it into three phases: (1) Indian Bank, (2) Gillem Bluff, and (3) Tule Lake.

Additional survey work by Swartz (1961) along the southern shore of Tule Lake developed a classification of eight site types and resulted in the excavation of four rockshelters: CA-SIS-299, CA-SIS-303, CA-SIS-304, and CA-MOD-186. Another site, CA-SIS-101, a 42 house pit village known as the Peninsula Bay site, was excavated by Swartz in 1962. The CA-SIS-101 village corresponded with the location of *Gumbat*, an ethnographic Modoc village described by Ray (1963:207-208). The results of these five site investigations led Swartz (1963, 1964) to identify four chronological components, spanning several millennia. Component I (pre-1500 BC) was characterized by large lanceolate, leaf-shaped, side-notched, and bi-pointed projectile points. Component II (1500 BC to 500 BC) consisted of an assemblage of lanceolate points as in Component I, in addition to smaller, thinner stemmed triangular points, bowl and hopper mortars, and secondary cairn burials. Components I and II were considered roughly equivalent to Cressman's (1942) Laird's Bay Horizon. Component III (post-AD 1000) was defined by the presence of Gunther and Desert Side-notched series points, metates, shallow hopper mortars, tubular pipes, twined basketry, human cremations, and circular semi-subterranean dwellings. Finally, Component IV represented the period of the Modoc War, 1872-1873.

Following the work by Swartz (1961), the University of California, Davis, investigated the Merriam Site (CA-SIS-258), a precontact midden located 15 air miles northwest of Tulelake, California (Johnson 1966). Site excavations reached a depth of 76 centimeters below surface (cmbs), and yielded faunal, shell, ground stone, flaked stone, and human remains (Johnson 1966). Five primary interments and two cremations were found, as were numerous spire-lopped *Olivella* beads. Ground stone items consisted of mortars, pestles, manos, metates, pipes, and tubes. Flaked stone artifacts were dominated by obsidian and secondarily, CCS and basalt. CA-SIS-258 dated to a few hundred years before AD 1600 based on bead and projectile point typologies (Johnson 1966). Although this site lacked stratigraphy, the spatially segregated burials allowed for the designation of two site components. The remains of fish, waterfowl, and large mammal, along with ground stone artifacts, indicated a lacustrine adaptation.

Nightfire Island (CA-SIS-4), a village site on what was once the western shoreline of Lower Klamath Lake has yielded a long and important chronological sequence for the region that spans some 6,000 years of human occupation. The site was first excavated in 1966 and 1967 by field crews from the University of Oregon under the direction of LeRoy Johnson (1969a, 1969b). The first chronological sequence developed for the site was based on the interpretation of the faunal assemblage advanced by Grayson (1976). Recent analyses of the cultural assemblage by Sampson (1985) and of obsidian artifacts by Hughes (1983) have resulted in a revised chronological sequence and specific artifact data for the site.

Sampson (1985:83) identified 15 strata at Nightfire Island spanning a time depth of 5500 BC to AD 1360  $\pm$  240. Strata were detected using sedimentary deposits, avifaunal and lithic constituents, and a group of 27 radiocarbon dates. The strata were grouped into three major stratigraphic zones: (1) a large flake zone (5500 BC to 2450 BC) defined and correlated on the basis of the physical size of the obsidian debris; (2) small flake zone (2450 BC to AD 250), defined on the presence or absence of avifaunal constituents; and (3) a terminal arrowhead zone (AD 250 to AD 1360  $\pm$  240) identified by the presence of Gunther series projectile points above the small flake zone.

Site investigations revealed that the first occupants, prior to 5000 BC, sought temporary habitation on a streambank ridge or small island where potable water was readily available and from where a waterfowling station was established (Sampson 1985:5017). Small hunting parties or single households used the site during this time. Recovered tools include a few manos, unifacial and bifacial preforms, and large notched dart points. Resource forays for obsidian toolstone led the inhabitants north to source areas in southern Oregon and to the east end of Lower Klamath Basin. The procurement of coots and mammals provided a substantial part of the diet.

By about 6,000 years ago (4450 BC), drier climatic conditions forced the retreat of lake's shoreline, possibly prompting site abandonment for several centuries (Sampson 1985:509). By 5,500 years ago, reoccupation occurred and the site resumed its principal function as a waterfowling station, expanding to include procurement of scaups, as well as coots, and the reintroduction of plant processing equipment such as mortars and pestles. Projectile point styles expanded to include "ready-made" Humboldt series, side-notched forms, small corner-notched types, and large stemmed points (Sampson 1985:511). Between 5,000 and 4,850 years ago, site occupation intensified and a semi-permanent house pit village was established, as witnessed by an increase in pounding and grinding equipment for processed stored foods. Projectile point styles incorporated side-notched styles and the appearance of "diminutive" Great Basin types. Site abandonment occurred again roughly 4,500 years ago, with the renewed retreat of the shoreline. Resettlement occurred shortly after, ca. 4,450 years ago, following a subsequent rise in the lake level. Site use at this time advanced to incorporate intensified plant food exploitation, reestablishment of waterfowl procurement, and the beginning of fish procurement (Sampson 1985:512). Following almost 1,300 years of continual occupation, the site was once again abandoned about 3,200 years ago. After a prolonged abandonment, the site was re-occupied by 2,600 years ago as a small temporary summer fishing village, characterized lighter surface structures. Fish exploitation increased and occupation remained intact until 2,100 years ago, when the site was once-again abandoned.

Site reoccupation at 1,950 years ago continued to focus activities on maintenance of a small, temporary procurement station that serviced a couple of households. Bow and arrow weaponry was introduced at the site around AD 300, apparently correlated with the site's inclusion within the range of an *Olivella* bead exchange network. Burial patterns suggest that the site may have been the target of violent interactions from rival groups, which may have prompted the eventual abandonment of the site at ca. 600 years ago.

Hughes (1983, 1986) conducted obsidian geochemical source determinations of 347 obsidian projectile points from the Nightfire Island site. Seven projectile point series were examined, including Desert Side-notched, Rosegate, Gatecliff, Humboldt, Northern Side-notched, Elko, and Gunther. Of these types, only the latter three occurred in adequate frequencies to warrant detailed analysis (Hughes 1983:147).

Hughes' results for Northern Side-notched, Elko, and Gunther points indicate that diachronic shifts in obsidian source use occurred. Points fashioned during Northern Side-notched times (5500 BC to AD 500) were dominated (80 percent) by nearby obsidian sources to the south in the Medicine Lake Highland. Fourteen percent of the Northern Side-notched points were fashioned from sources to the northeast of Nightfire Island, while the remaining 6 percent were from more distant eastern sources.



During Elko times (ca. 1350 BC to AD 250), percentage frequencies of obsidian points made from more distant northeast sources nearly doubled from those during the preceding Northern Side-notched times (Hughes 1983:Table 5-4). Sixty-three percent of the Elko points were manufactured from Medicine Lake Highland materials, 26 percent from sources to the northeast, and 11 percent from materials to the east. According to Hughes (1983:159), these results may be suggestive of broader sociocultural changes occurring in the Lower Klamath Lake region during Elko times.

Sometime around AD 200 to AD 300, Gunther series projectile points superseded the Elko series at Nightfire Island. This replacement involved another shift in obsidian source representation with frequencies of nearby southerly Medicine Lake Highland obsidian increasing noticeably (18 percent) and the percentage of more distant northeastern materials declining by 15 percent (Hughes 1983:156). Hughes (1983:163) noted that this shift during Gunther times was rather different than the previous two and involved technological differences and evidence of violent social conflict.

Investigations conducted at the Sheepy East 1 site, located along the western edge of Tule Lake, (McGuire 1985) provided evidence for its use as a task-specific camp during the late prehistoric period. Site occupations, dated from AD 700 to 1400 reflect a fishing and antelope hunting campsite.

In 1989 and 1990, archaeologists from the University of California, Davis, led by John Beaton, excavated two rockshelters (Shelter A and D) within site CA-SIS-218, located near the west shore of Tule Lake (Beaton 1991; Erlandson et al. 2014). An excavation trench placed in Shelter A revealed a 2.5 m deep cultural deposit, with the lowest 50 cm of Paleoindian age. Seven accelerator mass spectrometry (AMS) radiocarbon dates obtained from burned wood and twigs within the Paleoindian stratum provided standard dates of  $10,280 \pm 40$  to  $11,450 \pm 340$  BP. Calibrated dates ranged from 11,820 to 14,050 BP, suggesting occupation of Late Paleoindian age to perhaps pre-Clovis age. However, it was suggested that the largest date of 14,050 to 12,800 cal BP represented “old wood” (Erlandson et al. 2014:778) and that this outlying date might have resulted from differential weathering or preservation (e.g., Schiffer 1986). Two dates of 11,100 BP (13,090 to 12,935 cal BP) were identified as possibly representing an ephemeral Clovis-age occupation (Erlandson et al. 2014:778). The remaining four AMS dates ranged from 10,425 to 10,280 BP (12,590 to 11,820 cal BP), pointing to a Late Paleoindian occupation falling squarely within the Younger Dryas event<sup>3</sup> (Osborn 2014). Artifacts recovered from the Paleoindian stratum at CA-SIS-218 included 280 pieces of debitage, 6 bifacial point fragments, 2 biface fragments, 4 retouched flakes, 1 side scraper, and fragments of at least 4 eyed bone needles. Also collected were 32 bones from the feet of an adult human skeleton, as well as the bones of birds, fish, and mammals (Erlandson et al. 2014:777-778). Erlandson and colleagues (2014) noted that the occurrence of bone needles fits with the assertion by Osborn (2014) that such artifacts are characteristic of North American Paleoindian occupations dating to the Younger Dryas. Bone needles and spurred flake graters likely used to create the needles typify this temporal period and suggest that tailored skin clothing was being produced to meet the challenges of severe winters and cold stress brought on by the Younger Dryas (Osborn 2014).

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<sup>3</sup> The Younger Dryas was a period of rapid cooling in the late Pleistocene 12,800 to 11,500 years ago.

In the 1990s, archaeological investigations were conducted at the Four Bulls site, 35KL1459, located near the Klamath River, along the southwestern edge of Klamath Lakes Basin, close to the old shoreline of Lower Klamath Lake (Wilson et al. 1996). Phase II testing revealed a deep, stratified midden containing a variety of flaked stone artifacts, ground stone, and bone tools, along with animal bone debris and freshwater mussel shell. Flaked stone tools included contracting stem and Coquille broad-necked projectile points, biface fragments, cores, flake tools, metate fragments, and one possible bowl fragment. Several projectile points were also obtained for study from local landowners, including a stemmed point, a lanceolate point, and an Elko Corner-notched specimen (Wilson et al. 1996:2-10).

Faunal remains from 35KL1459 included deer, ground squirrel, gopher, moles, mice, voles, garter snake, pond turtle, geese, ducks, and Corvids. More than half of these bone fragments showed evidence of burning. Organic blood residue analysis of one biface fragment provided a faint positive reaction for bovine antiserum, suggesting possible exploitation of bison. Also, a large amount of freshwater mussel shell was recovered, as were shells of pond snail (Wilson et al. 1996:2-11).

Obsidian studies for 35KL1459 documented the use of a wide range of sources distributed across northeastern California and south-central Oregon. Primary among these were 47 (66 percent) artifacts identified as Medicine Lake Highland materials (GF/LIW/RS and EML). Five specimens (7 percent) were classified as Glass Mountain and seven artifacts (10 percent) were identified as Spodue Mountain. Other artifacts included Buck Mountain (n=3), Cowhead Lake (n=1), Rainbow Mines (n=1), Drews Creek/Butcher Flat (n=1), Tucker Hill (n=1), and Silver Lake/Sycan March (n=1). Two unmodified obsidian nodules were sourced to Spodue Mountain and Witham Creek. Obsidian hydration analysis revealed that most artifacts exhibited greater than 3.5 microns. The GF/LIW/RS and EML artifacts showed two principal modes, including 3.5-4.0 microns and 5.5-6.0 microns. A few additional specimens exhibited rims greater than 7.0 microns, while several others ranged between 1.0 and 3.5 microns. For Spodue Mountain obsidian, hydration values spanned 2.9 to 6.1 microns. Several artifacts had no visible hydration, pointing to a late-period occupation. This was also indicated by the presence of Glass Mountain obsidian. Comparing the span of hydration readings to those for Nightfire Island (CA-SIS-4) suggested occupations at 35KL1459 were primarily during the Early- to mid-Holocene (Wilson et al. 1996:2-12).

Data recovery investigations were conducted at 35KL1459 in 1995 (Wilson et al. 1996), where portions of the site revealed an organic stratum related to lacustrine deposition. Eight features were identified, including three historic features related to railroad construction, two precontact shell and fish bone concentrations, two areas containing human burials, and a concentration of mineralized, large mammal bones. Trenching revealed at least four human burials in two closely related areas, evidence of a precontact cemetery, and this was avoided by the project by boring underneath the burials. Feature 7, the area containing mineralized bone, yielded a variety of species. These included the remains of deer, bison, shrub-ox, goat, large bird, sucker, and Cyprinid (minnow/carp family). Intrusive gopher and ground squirrel remains were also recovered from the area of Feature 7. The mineralized bone suggested Pleistocene-age deposition. Several examples of cut marks and conchoidal fracture on bone were viewed as evidence of cultural modification. In addition, several artifacts were found associated with mineralized bone fragments (Wilson et al. 1996:2-47 to 2-54).



A robust artifact assemblage was recovered during the data recovery work. More than 3,500 pieces of debitage were recovered from data recovery investigations at 35KL1459, including primarily obsidian with lesser amounts of CCS and basalt. Also recovered were 141 stone tools, including bipolar artifacts, cores, blanks, preforms, bifaces, projectile points, and flake tools. The points included large and medium size, side-notched forms (Northern Side-notched and Siskiyou Side-notched), large lanceolate, McKee Uniface, and other stemmed and shouldered point fragments. The point types span the period from 9000 to 300 BP, with overlap at 5000 to 3000 BP. Arrow points were absent from 35KL1465, suggesting a terminal date of ca. 3000 BP (Wilson et al. 1996:2-117). Also recovered from this site was a square, tabular basalt piece that was flaked and ground. This specimen was interpreted as a possible net weight or a cooking stone, appearing similar to artifacts described by Cressman (1956:425) as “hotrocks.” In addition, a grooved basalt abrader was collected, as well as a basalt pipe bowl fragment and an elongated basalt ground stone tool with a biconically drilled hole, possibly a digging stick handle (Wilson et al. 1996:2-113).

Obsidian studies for data recovery artifacts from 35KL1459 focused on analysis of 256 specimens. Combined with testing artifacts, obsidian sourcing and hydration data were made available for 226 pieces of debitage and 101 stone tools (Wilson et al. 1996:2-123). Overall, more than 63 percent of the obsidian specimens were derived from the Medicine Lake Highland and about 25 percent from Spodue Mountain. The remaining specimens include a variety of northeastern and southeastern Oregon sources. Obsidian hydration readings indicated initial site occupation by 9000 BP, and possibly as early as 10,500 BP. The most intensive occupation was from 8000 to 4500 BP, followed by sporadic use after 4500 BP, and the latest occupation occurring perhaps as late as 1000 BP (Wilson et al. 1996:2-131 to 2-132).

### ***Butte Valley Basin***

Butte Valley Basin is a closed drainage basin that lies about 5 km southeast of the Klamath River, bordering the eastern edge of the Cascade Range. In the early 1980s, several archaeological projects were conducted within Butte Valley and along its eastern margin. These included the excavation of precontact site CA-SIS-342 and subsequent site survey (Jensen and Farber 1982), followed by the sampling of surface lithic assemblages at precontact sites CA-SIS-439, CA-SIS-440, and CA-SIS-864 (Ritter and Crew 1985). Finally, test excavations were carried out at CA-SIS-833, a rockshelter on the eastern side of Butte Valley (Sletteland 1984).

The first major data recovery program in Butte Valley proper was conducted in 1981 at CA-SIS-342 by Jensen and Farber (1982). Results of their investigations indicated that this site, located north of Macdoel, California, represents the remains of a temporary hunting/gathering camp near the Meiss Lake shoreline. Artifacts were recovered to depths of 180 to 200 cmbs, and included a number of lanceolate projectile points similar to Lake Mojave, Parman, Cougar Mountain, Haskett, and Lind Coulee types (Jensen and Farber 1982:68-77). The site was assigned a 7,500 to 10,500 BP date based on projectile point typologies and the results of obsidian hydration studies, making it one of the oldest sites documented within the Siskiyou County area.

Obsidian is the dominant lithic material used for stone tool manufacture at CA-SIS-342, but CCS and basalt are present as well. Debitage analysis indicates that primary reduction of lithic material was being carried on off-site and that stone working activities involve the final stages of tool shaping or

edge preparation (Jensen and Farber 1982:98). Obsidian sourcing analysis identified three Medicine Lake Highland sources: (1) GF/LIW, (2) Yellowjacket/Stoney Rhyolite Core, and (3) Cougar Butte. Obsidian hydration values range from 5.6 to 8.0 microns.

In addition to the excavations at CA-SIS-342, a corollary site survey was undertaken by Jensen and Farber (1982: Appendix C) in and around Butte Valley to provide a local contextual framework by which to characterize and interpret the materials from CA-SIS-342. Twenty sites were inspected, 18 of which were subjected to limited obsidian sourcing and hydration analysis of surface artifacts. With exception of 12 specimens, all items are projectile points including Gunther, Side-notched, Rosegate, Gatecliff, Desert Side-notched, and Humboldt series types. Sourcing results indicate that 95 percent of the items are fashioned from Medicine Lake Highland sources: GF/LIW (n=32), Callahan Flow (n=1), and Stoney Rhyolite Core (n=2). Two specimens are not from the Highlands and include Drews Creek/Butcher Flat and Blue Mountain. Obsidian hydration values range from 1.1 to 7.2 microns for all 37 specimens analyzed.

Test excavations at the Coyote Hill Rockshelter, CA-SIS-833, were conducted in 1981 by Sletteland (1984). The site is in the eastern portion of Butte Valley, four air miles southwest of Mount Dome. CA-SIS-833, excavated to 70 cmbs, yielded flaked stone tools and debitage, bone, and shell. Flaked stone artifacts included Rosegate series points, biface fragments, and debitage fashioned from obsidian (91 percent) and basalt (9 percent). Sletteland (1984) suggested that final tool formation and resharpening were the primary activities occurring at the site. Obsidian sourcing indicated GF/LIW (n=3) and Railroad Grade (n=1) as loci for raw material. Obsidian hydration values ranged from 1.2 to 7.2 microns. Based on a radiocarbon assay, the chronological placement of the site at  $1085 \pm 130$  BP was determined through the analysis of a charcoal sample.

Further research directed at understanding the nature and information potential of surface lithic assemblages was undertaken by Ritter and Crew (1985) in the Mount Dome-Big Tablelands area east of Butte Valley. Surface artifacts from CA-SIS-439, CA-SIS-440, and CA-SIS-864 were subjected to obsidian sourcing, hydration, and lithic analysis.

The assemblage from CA-SIS-439 indicates two raw materials were being exploited, obsidian (75 percent) and black metavolcanics (25 percent). Debitage analysis suggested secondary shaping and trimming with primary reduction being only minimally represented. Obsidian sourcing and hydration of a single nondiagnostic projectile point indicated that the artifact was fashioned from Blue Mountain obsidian which hydrated to 4.4 microns.

The surface artifacts from CA-SIS-440 indicated different patterns of stone tool technology than those from CA-SIS-439. The collection, comprised of obsidian (96 percent) and basalt (4 percent), represented bifacial reduction of flake cores, preforms, and bifaces. Ritter and Crew (1985) suggested that large bifaces and preforms were probably imported to the site and subsequent primary and secondary shaping of these items undertaken. Obsidian sourcing analysis of seven items revealed that GF/LIW was the dominant source (n=6), with Cougar Butte represented by only a single item. Hydration values ranged from 1.2 to 7.3 microns for these specimens.

The lithic assemblage analyzed from CA-SIS-864 was dominated by obsidian (81 percent), but also included basalt (15 percent) and CCS (3 percent). Debitage analysis indicated that bifacial reduction

of projectile points and bifaces was the dominant activity at the site. Secondary shaping and maintenance of tools were also noted. Obsidian sourcing results revealed the dominance of GF/LIW (n=16) followed by Spodue Mountain (n=2) and Buck Mountain (n=1). Hydration values range from 2.4 to 5.2 microns.

## **Cascade Mountains**

The Klamath River crosses the Cascade Mountains beginning near Keno, Oregon, extending generally southwest to near Hornbrook, California. Archaeological investigations in this area began in the 1950s and have continued to the present-day. The following review of these works is divided into three sections: Upper Klamath River, Upper Klamath River Tributaries, and Shasta Valley.

### **Upper Klamath River**

The earliest archaeological investigations conducted within the Upper Klamath River area were undertaken by the University of California, Berkeley archaeologists in 1953, who recorded and tested site CA-SIS-16, located near Beswick, California. Between 1958 and 1965, the University of Oregon completed several salvage projects in response to proposed hydroelectric developments associated with the Big Bend Project (Newman and Cressman 1959), Salt Caves Dam Reservoir Project (Cressman and Olien 1962; Cressman and Wells 1962), and the Keno Development Project (Cole 1965) in Oregon, as well as the Iron Gate Reservoir Project (Leonhardy 1961, 1967 in California. Subsequent re-evaluation and reanalysis of the Salt Caves Dam materials (Salt Cave Locality) was completed by Mack (1979, 1983), providing a synthetic discussion and chronological information that details 7,000 years of prehistory within the Upper Klamath River Canyon. Mack has continued her research in the canyon through the Upper Klamath River Project, an ongoing, multi-year research program focused on the study of cultural adaptations and human occupation and use of the canyon. In addition to Mack's synthetic works, other project-specific studies have been conducted in Oregon, including investigations completed for infrastructure replacement projects, including the PGT Medford Extension (Fagan et al. 1994; Wilson et al. 1996) and the Spencer Bridge replacement (O'Neill 2005; O'Neill and Connolly 2009).

### **CA-SIS-16**

The first archaeological site investigated in the Upper Klamath River area was CA-SIS-16, a multi-component site known as the Upper Klamath River Rockshelter, located on the Klamath River, near the community of Beswick, California. The site is mentioned by C. Hart Merriam (1976) as *Chah'-hah-took*, a Shasta winter camp in a cave across the Klamath River from Klamath Hot Springs (Beswick). University of California Archaeological Survey (UCAS) archaeologists recorded and tested the precontact rockshelter and midden site in 1953. Although no report has been prepared of these investigations, as noted in the 1953 site record, the cultural deposit extended to over 3 feet (1m) in depth and contained projectile points, a basalt core, debitage, and a hopper mortar fragment (Mack 1979:6, 1989:3).

## **Big Bend Project**

In early 1951, the California-Oregon Power Company (Copco) made plans to install a hydroelectric power plant on the Klamath River roughly 6 miles below Keno, Oregon. In 1956, an agreement was reached between Copco and the USBR to construct the facility as part of the Big Bend Project, the first of the post-WWII developments built on the Klamath River. Facilities associated with the Big Bend Project were later renamed as the J.C. Boyle Dam, Reservoir, and Powerhouse to honor Copco's long-time chief engineer John C. Boyle.

Work on the hydroelectric project began in 1956 and by mid-1957, an 11,000 ft. open concrete conduit and 1,600 ft. tunnel between the dam site and power plant were under construction (*Sacramento Bee* 1957). According to Boyle (1976:54), construction of the dam and power plant was rushed to completion by October 1958. During construction, Copco issued a grant to the University of Oregon, Department of Anthropology, Eugene, to conduct an archaeological survey of the Big Bend Project area, as well as salvage excavations once the survey was completed (Newman and Cressman 1959).

In March 1958, a team of university students conducted the survey and located seven precontact sites near the proposed dam site. Of these, three sites were deemed of "sufficient importance to warrant assigning" state trinomials (Newman and Cressman 1959:3). These included two rockshelters assigned the trinomials 35KL13 and 35KL14, and one open lithic scatter assigned 35KL15. During a two-week period in July and August 1958, test excavations were carried out at the sites by Thomas M. Newman, Bruce A. Cox, and Daniel J. Scheans of the University of Oregon (Newman and Cressman 1959:1). These three sites, 35KL13, 35KL14, and 35KL15, are advanced for additional study under the current Phase II program.

The 35KL13 rockshelter revealed an artifact-bearing deposit that included flaked and ground stone artifacts, bone tools, and ceramic items. More than 30 small projectile points were recovered, nearly all of which had triangular blades. Six point variants were noted, including two side-notched types, basal notched with contracting stem, barbed expanding stem, straight stem with square shoulders, and triangular with concave base. Other precontact artifacts included 3 pressure flaked blades, 3 scrapers, more than 50 modified flakes, 6 grinding slabs, several manos, 1 bone awl, and 3 pottery fragments. Charcoal, burnt earth and other evidence of fires was noted in the deposit. Although several lenses of burnt earth were noted, no evidence of cultural stratigraphy was found. Several well-preserved faunal remains were collected, as well as one freshwater shell and six broken fruit pits. Faunal remains included carnivores, cervids, rodents, and turtles. Site occupation was estimated to fall between AD 1000 and 1850 (Newman and Cressman 1959:15).

Investigations conducted at 35KL14, a small rockshelter overlooking the Klamath River, yielded a sparse assemblage of one projectile point, one point fragment, one scraper, a few worked flakes, and one possible mano. In addition, human skeletal remains of one adult male were uncovered, as were small quantities of freshwater mussel shell and animal bone (Newman and Cressman 1959:16). It was suggested that the site might be related in time and culture with 35KL13, although conclusive evidence for this association was not found (Newman and Cressman 1959:16).

Testing at 35KL15, an open lithic scatter below the proposed dam, indicated that the site contained a thin deposit of cultural materials, destroyed in part by erosion. Recovered artifacts included the base of a large projectile point or hafted scraper, one fragment of a large obsidian blade, a small, elliptical scraper, a few worked flakes, and waste flakes. Faunal remains included one turtle carapace fragment. The point or scraper base was identified as a type found west of the Great Basin (Newman and Cressman 1959:17). Temporal and cultural associations for the site remained inconclusive, pending additional study.

### ***Iron Gate Reservoir Project, 1960***

In early 1960, the University of Oregon surveyed the proposed Iron Gate Reservoir on the Klamath River, 7 miles east of Hornbrook (Cressman 1960; Leonhardy 1961). Three precontact sites were identified and one was selected for excavation. This site, initially referred to as Iron Gate 2 and now identified as CA-SIS-326, consisted of a small village containing 13 house pit depressions and artifacts eroding from the river bank (Leonhardy 1961:3, 1967:1). Due to the forthcoming inundation of the site by the Iron Gate Reservoir, in the summer of 1960 the University of Oregon conducted data recovery excavations to determine its cultural position.

Investigations at CA-SIS-326 revealed the remains of pit houses, varied and abundant artifacts, and floral and faunal remains. House pits were found to contain multiple floors or living surfaces, fire pits, areas of burnt earth and ash, burnt bark and beams, and a variety of artifacts. Evidence pointed to conical house structures covered with bark, a form distributed widely in California (Leonhardy 1961:7). Flaked stone artifacts included a robust assemblage, comprised of 187 typeable projectile points, 86 nondiagnostic projectile point fragments, 39 knives (bifaces), 83 scrapers, 13 drills, 17 graters, 132 worked flakes, 22 worked basalt flakes, 27 choppers, and 3 tools of uncertain function (Leonhardy 1961:27-35). An additional 46 fragments of flaked stone were grouped as unclassifiable. Ground stone items included 11 unshaped manos, 13 shaped manos, 6 metates and metate fragments, 3 complete pestles, 6 pestle fragments, 5 mortars (hoppers), 1 mortar fragment, 3 small grinding or polishing tools, 1 fragment of polished serpentine, and 8 unidentifiable fragments. Other stone artifacts consisted of two small round stones, five pounding stones (battered), four notched pebble sinkers, one piece of flaked and mashed sandstone, one serpentine rod, one tubular steatite pipe, and one fragment of a stone tube (Leonhardy 1961:36-38).

Nonlithic artifacts recovered from CA-SIS-326 included three antler flakers, one piece of longitudinally cut antler, two fragments of longitudinally cut bone, three ulna awls, two bone splinter awls, one net shuttle, three pieces of highly polished bone, one flaked bone end scraper, one bird bone tube, two bone beads, two incised bone splinters, one unfinished scraping or polishing tool, one bone rod, nine bone rod fragments, one bird bone awl or needle, and one piece of bone with a transverse V-cut (Leonhardy 1961:38-41). Also recovered was one horn tube, one incised *Dentalium* shell, one *Olivella* bead, one *Protothaca* shell bead or pendant, two fragments of baked clay, one piece of charred wood with a hole in it, three piece of incised petrified wood, and one piece of incised, fossilized tusk (Leonhardy 1961:42-45). No historic-period trade goods were recovered, inferring that the site was abandoned before ca. 1850 (Leonhardy 1961:48). Two radiocarbon dates (400 ±75 and 510± 75 B. P.) from wooden structural remains in House Pit 4 placed initial site



occupation before AD 1500. Overall, the village site was estimated to have been occupied between the period of A. D. 1400 and 1600 (Leonhardy 1961:47-48).

### ***Salt Caves Dam Reservoir Project/Salt Cave Locality***

The Salt Caves Dam Reservoir Project was undertaken as a salvage operation in response to planned construction of a hydroelectric power plant and dam on the Klamath River, in Oregon. In March 1961, archaeological survey of the proposed dam and pool area was begun by the University of Oregon under direction of Luther S. Cressman. At that time, seven archaeological sites were recorded, designated SC #1 to SC #7 (later 35KL16 to 35KL21). These included five village sites containing house pits and other features, one lithic scatter with cupule boulder features, and one lithic scatter with human remains. Survey in July and August 1961 resulted in the recordation of five additional sites (SC #8 to SC #12; 35KL22 to 35KL26). These included four sites with house pit features and one site containing rockshelters with some flaked stone artifacts. Sites SC #1 and SC #2 were later combined as a single site, 35KL16, leaving a total of 11 sites recorded in 1961. The University of Oregon conducted excavations at these sites from 1961 to 1963 (Anderson and Cole 1964; Cressman and Olien 1963; Cressman and Wells 1962).

Excavations conducted at the Salt Caves sites revealed complex midden deposits with buried features such as house floors, house fills, cache pits, fire pits, rock clusters, and human burials. A wide variety of ground, battered, and flaked stone artifacts was recovered, as well as fired clay objects and pottery, identified by Mack (1979:160) as Siskiyou Utility Ware. Several fired clay objects revealed basketry impressions. Also recovered were tools and ornaments fashioned from antler, bone, and shell. Nearly 600 projectile points, representing 29 types or classes, were recovered, along with several thousand flake tools, hundreds of cores, 150 scrapers, numerous drills and gravers, knives (bifaces), and other stone tools (Mack 1979).

It was not until the fall of 1973 that all processing and cataloging of materials from the Salt Caves site investigations was completed by Joanne Mack of the University of Oregon as part of her doctoral dissertation. Mack visited the Salt Caves area during the summer of 1974 to become familiar with the sites and to collect plant specimens for identification (Mack 1979:10). These collections were then utilized by Mack (1979, 1983) for her dissertation, which focused on relationships of aboriginal cultures occupying the Salt Caves Locality between ca. 5000 BC and AD 1700. This included an examination of settlement pattern, subsistence, technology, and cultural influences from surrounding regions (Mack 1979, 1983). For her analysis, Mack focused on the three sites where considerable excavation had taken place: Big Boulder Village (35KL18), Klamath Shoal Midden (35KL20), and Border Village (35KL16).

Mack (1979:357) noted three primary cultural changes within the Salt Cave Locality during its 7,000 years of aboriginal use. These included: (1) changes associated with technological developments, such as the shift from atlatl technology to the bow and arrow; (2) variations in settlement type, namely a shift from open camps to semi-permanent and permanent villages; and (3) change in the extent of cultural influence from adjacent areas. Hunting was of primary importance at all three sites, with an emphasis on deer, and the use of a variety of animals, including medium- and small-sized mammals, birds, and turtles (Mack 1979:358-363). Fishing was also of importance, as indicated by the number of harpoon parts and fishhooks recovered (Mack

1979:365). The large number and variety of ground stone tools also provide evidence that an assortment of local plants were processed and consumed.

Analysis of ground stone assemblage from the Salt Caves Locality sites suggested that the horned mullers, thought to have developed in the Klamath Lakes area, spread down the Klamath River to Shasta groups after AD 1400 (Mack 1979:382). Also, projectile points provided evidence of Great Basin influence during the earliest periods of occupation, with more influence from Northwest California later in time. Ties with Northwest or North-central California were also suggested by the presence of steatite vessels at Border Village (Mack 1979:385). Gunther Barbed projectile points and marine shell beads also pointed to some influence from Northwest California during late prehistoric times. Basketry impressions and Siskiyou Utility Ware, dated to ca. AD 1400 at the Salt Caves Locality, provided evidence of influence or association with groups of the Upper Rogue River Valley (Mack 1979:383-384). Earlier influence with the Upper Rogue River Valley was also indicated by the presence of Gold Hill Leaf points. As with the Iron Gate site, CA-SIS-326, house pits and associated features at the Salt Caves Locality suggested a north-central California influence (Mack 1979:393). The geographical position of Salt Caves Locality indicated that this locale was likely on the fringe area of tribal territories, with the river itself serving as a primary passageway for cultural influence, which changed direction and intensity over time (Mack 1979:409).

### ***Keno Hydroelectric Development Project***

Various water control projects completed in the Klamath Lakes Basin between 1890 and 1930 caused significant changes in the flow of water in the Klamath River below Keno, Oregon. In response, the USBR contracted with Copco in 1930 to build a regulating dam near Keno. A needle dam was completed at the Keno Reef in December 1931 (Boyle 1976:51-52). This dam was later replaced in the 1960s by PP&L with a low-level concrete regulating dam built downstream of the original needle dam. This subsequent dam project, known as the Keno Hydroelectric Development, was designed to allow for future installation of power generators. Before construction of Keno Dam began in 1966, the University of Oregon, Museum of Natural History was funded by PP&L to conduct a salvage archaeology project at several precontact sites above and adjacent to the proposed Keno Dam (Cole 1965).

During a one-day salvage archaeological survey conducted in May 1965, five sites of interest were identified within the Keno Hydroelectric Development. These sites included: two resources destroyed sites near the dam that were not assigned temporary numbers or trinomials; one surface precontact campsite on the south side of Klamath River near the dam (Keno 3; no trinomial); one site of undisclosed type on the north side of the river (Keno 2; 35KL27); and one site north of the river containing house pits (Keno 1; 35KL28). Because site Keno 3 appeared to be a surface scatter, it was not investigated and a state trinomial was not assigned. Site Keno 2 (35KL27) was not investigated because of its location on private land and permission could not be obtained to excavate the site. Site Keno 1 (35KL28) was excavated in June 1965 (Cole 1965).

Subsurface testing of 35KL28, included work in three areas: Area 1, along the river bank; Area 2, an island that contained house pits; and Area 3, a flat near the river. Area 1 was investigated with two units that yielded artifacts to a depth of 80 cmbs. Work at Area 2 included trenches within two house pits and a test unit within a third pit feature that yielded a wide range of cultural materials and



several storage pit features. At Area 3, two test pits were dug in a shallow depression, revealing a possible house floor. Overall, the site assemblage included 7 cores, 19 graters, 52 scrapers, 83 worked flakes, 80 used flakes, 5 knives, 30 projectile points, 21 projectile point fragments, 36 other flaked stone tool fragments, 2 grinding stones, 2 pounding stones, 2 pieces of worked bone, and 5 items classified as combination tools. Projectile points were placed within 26 descriptive types based on blade shape, notching, shoulder form, and stem form. Photographs of projectile points include a variety of leaf shaped specimens and stemmed points, including side-notched, corner-notched, and basal-notched types (Cole 1965). Although no temporal data were offered by Cole in his preliminary (and only) site report, projectile point forms suggest Middle and Late Archaic occupations.

### ***Salt Caves Hydroelectric Project***

In the early 1980s, the City of Klamath Falls proposed to construct a hydroelectric generating facility within the Klamath River Gorge between the existing John C. Boyle Dam and the California-Oregon border. Because this proposal, known as the Salt Caves Hydroelectric Project, could have potential adverse effects to cultural resources, FERC, BLM, and state agencies required full inventory and assessment of cultural resources within the project. Consequently, extensive archaeological survey was commenced under the supervision of Elliott Gehr of Beak Consultants, Inc. in 1984 and 1985 (City of Klamath Falls 1986a:4-1) and nearly 40 archaeological sites were identified in the project area. In addition to survey work, testing and data recovery excavations were initiated in mid-1984 and continued through the summer of 1985. Subsurface investigations were conducted at nine sites on nonfederal lands before the project underwent a major reconfiguration, which left most of these sites outside the proposed impact area. Test excavations were halted at a number of sites since archaeological disturbance was no longer necessary (City of Klamath Falls 1986a:4-208).

In 1986, Resource Management International, Inc. (RMI) continued the Salt Caves work, conducting additional archaeological survey of the reconfigured project area and site testing, all under the supervision of Peter M. Jensen (City of Klamath Falls 1986a). Previous data recovery efforts conducted by Gehr were reported with the results of the 1986 work.

Between the spring of 1984 and spring of 1986, combined survey efforts for the Salt Caves Hydroelectric Project resulted in the identification of 43 separate sites, including 34 of precontact Native American occupation, 3 of only historic-period occupation or use, and 6 sites with evidence of both precontact and historic-period use. The nine sites with historic-period components included one historic road, five homesteads or ranches, one stagecoach station, one cemetery, and one school. The precontact sites included 20 with one or more house pits, with such features found within sites adjacent to the Klamath River and sites in upland locations. Deep cultural midden was noted within at least 12 of the precontact house pit village sites. In addition, nearly all precontact sites were found to contain surface lithic scatters (City of Klamath Falls 1986a:4-1 to 4-2).

Of the 43 project sites, 20 were located outside the reconfigured project area and did not require subsurface testing. An additional 17 sites, also outside the reconfigured Salt Caves project area, were tested in 1984 and 1985 to delineate site boundaries, look for subsurface cultural materials, and estimate midden volume (City of Klamath Falls 1986a:4-86). The 17 tested sites included: 35KL17, 35KL18, 35KL19, 35KL20, 35KL22, 35KL23, 35KL25, 35KL26, 35KL550, 35KL553, 35KL554, 35KL578 (Site #21 and #27 merged), 35KL566, 35KL567, 35KL576, and 35KL2864.

An extensive cultural assemblage was recovered during the 1984 and 1985 survey and testing programs. Classifiable projectile points reflected types spanning thousands of years of use, including Desert Side-notched (n=10); Siskiyou Side-notched (n=2); Gunther Stemmed (n=21); Gunther Expanding and Straight Stem (n=17); small stemmed and barbed (n=2); Gunther Barbed, Contracting Stem (n=3); Gunther Barbed, Expanding Stem (n=1); Rose Spring Side-notched (n=2); Elko Side-notched (n=3); Double Notch (n=1); Harpoon (n=1); Lightweight Blanks (n=4); Gold Hill Leaf (n=2); Northern Side-notched (n=2); Elko Corner-notched (n=3); and medium corner-notched, expanding stem (n=2) (City of Klamath Falls 1986a:4-13). A variety of bifaces and knives was also collected, as well as end scrapers, side scrapers, drill and perforators, graters, spokeshaves, choppers, utilized flakes, and cores (primarily chert). Ground stone tools included grooved spheroids, unworked cobbles with edge wear, mullers, millstones, and mortars. Hammerstones were also recovered, in addition to a stone bead, a steatite ring fragments, several fragments of Siskiyou Utility Ware, and clay figurine fragments (City of Klamath Falls 1986a).

Six archaeological sites within the reconfigured Salt Caves project area had the potential to be affected by the hydroelectric project, including 35KL16 (Border Village), 35KL551 (Council Bluffs), 35KL552 (Chert Creek Village), 35KL558 (Feather Flats), 35KL632 (Weir Village), and 35KL634 (Robber's Camp), and each of these resources was archaeologically tested. Although the first site, Border Village, had been previously determined likely NRHP-eligible (Mack 1983), the remaining five sites were unevaluated. Based on subsurface testing, the presence of features, and artifact assemblages, it was determined that two sites had archaeological significance, including Council Bluffs and Chert Creek Village. Sites lacking features, artifact diversity, and depth were determined to be without archaeological significance. These included Feather Flats (35KL558), Weir Village (35KL632), and Robber's Camp (35KL634) (City of Klamath Falls 1986a).

In a subsequent report, the City of Klamath Falls (1986b) provided more detailed site significance statements with recommended mitigation measures. In this report, four of the six sites with potential project effects were recommended not eligible for inclusion on the NRHP, including 35KL552 (Chert Creek Village), 35KL558 (Feather Flats), 35KL632 (Weir Village), and 35KL634 (Robber's Camp). Because of its unusual setting, variety of tool types, and presence of a potential house pit feature, 35KL551 (Council Bluffs) was deemed to have some level of archaeological significance. However, testing revealed a near-surface deposit of sparse materials and it was recommended that any further testing of the surface would not provide additional data that would qualify the site for inclusion on the NRHP (City of Klamath Falls 1986b:4-231). Mitigation was recommended for the potential house pit feature at 35KL551, which would likely be destroyed by proposed conduit construction. Site 35KL16 (Border Village) was determined to have good integrity and to contain information important to the understanding of local and regional prehistory (City of Klamath Falls 1986b:4-219). Because the entire site was scheduled for impact due to powerhouse construction, it was recommended that the damage be mitigated with data recovery, including phased excavation. Oregon SHPO subsequently acknowledged that Feather Flats (35KL558), Weir Village (35KL632), and Robber's Camp (35KL634) are not eligible for inclusion in the NRHP (Jensen and Associates 1987). After RMI provided additional detail for Chert Creek Village (35KL552), and the BLM supported the finding of "Not Eligible" and "No Adverse Effect," SHPO concurred that Chert Creek Village (35KL552) was not eligible for the NRHP.

In July 1987, archaeological investigations were carried out at sites 35KL16 (Border Village) and 35KL551 (Council Bluffs), under the supervision of William Shapiro. This included a program of backhoe trenching and hand excavation. At 35KL16, trenching revealed that most cultural materials were deposited within or adjacent to the house pit features and were primarily limited to the upper 50 cm. The midden deposit rapidly declined as one moved away from the pit depressions. Work at 35KL16 yielded a large number of Late Period artifacts and faunal remains associated with Shasta or Takelma occupation dated ca. AD 1000 to 1500, based on diagnostic artifacts and radiocarbon dating (Jensen and Associates 1987). This site was determined to be very similar to the Iron Gate site, CA-SIS-326. Regarding 35KL551, trowel probing and augering of the pit depression indicated that this feature was not a precontact house feature and that controlled excavation of the pit would not provide additional data necessary to address local or regional prehistory. It was decided to abandon further data recovery efforts at 35KL551 (Jensen and Associates 1987:3-79).

The cultural assemblages recovered from the Salt Caves Hydroelectric Project sites were subsequently integrated into the cultural chronological framework for the Upper Klamath River Canyon developed by Mack (1989).

### ***Upper Klamath River Project***

The Upper Klamath River Project, under direction of Dr. Joanne Mack, was begun in 1992 with the support of Pomona College; Earthwatch Institute; BLM, Klamath Falls Resource Area; and Pacific Power (Mack 1996:3, 2012:15). Additional support has since been provided by the BLM's Redding Resource Area and Ashland Resource Area, as well as the University of Notre Dame (Mack 2012:15). The project's interest lies with cultural adaptations and changes as reflected in the remains of human occupation and use within the Upper Klamath River drainage system, and to augment baseline data for this area (Mack 2003:1). At its inception, the project focused on that area from J.C. Boyle Reservoir to Copco Lake, but later expanded its study area to include the river from Keno, Oregon, downstream to the confluence of the Klamath and Shasta rivers near Yreka, California.

The first two seasons of fieldwork, 1992 and 1993, were primarily dedicated to botanical survey of the Upper Klamath River and updating archaeological site records for known precontact sites. As part of this effort, new archaeological sites were also recorded in previously unsurveyed areas. In 1992, test excavations were carried out several sites, including 35KL18, 35KL25, and 35KL628 (Mack 1992, 1996:5). In 1993, test excavations were conducted at 35KL23/566, 35KL791, and CA-SIS-1198 (Mack 1994).

In 1994, the Upper Klamath River Project focused on updating site forms for previously recorded historic-period sites and continuing the botanical survey; only a few precontact sites were field checked and updated. Also, in 1994, excavations occurred at two sites in Oregon and two sites in California (CA-SIS-1198 and CA-SIS-1721; discussed below). In 1995, survey was conducted within Jenny Creek drainage in California, and six known sites in the California portion of the Klamath River Canyon were located and records updated. During this time, three new sites were recorded on PP&L land (Mack 1996:5).

From 1992 through October 1995, staff and students from Pomona College conducted excavations at CA-SIS-1198 and CA-SIS-1721, both of which are located on BLM land. CA-SIS-1198, referred to

as Coyote's Paw, is a large house pit village containing numerous precontact and historic-period features. This site was first visited by Pomona College archaeologists in the summer of 1992 as part of the Upper Klamath River Project. A number of cultural features was noted and recorded, including rock walls, girdled trees, cairns, storage features, a house ring, possible petroglyph rocks, a medicine circle, a healing rock, and the remains of a historic-period cabin (Mack 1996:7). The college returned in the summer of 1993 and excavated test pits within the midden and two house pit features. At least four floors were identified in one of the features, designated House Pit 9. Excavations were again undertaken by the college in 1994 and 1995, with the assistance of the BLM. The 1995 work focused on investigating House Pit 9, which in this season was found to contain a fifth floor. A large number of precontact artifacts, faunal remains, and floral remains were recovered from the house pit, including bone tools, Siskiyou Utility Ware, and Gunther Barbed (or Tuluwat) projectile points. Many of the surface features at CA-SIS-1198 were associated with historic-period religious activities of the late nineteenth century (Mack 1996:27-31). Fuller (1998) used artifacts from House Pit 9 to conduct crossover immunological electrophoresis (CIEP) analysis of proteins on ground stone and dated soil samples from this feature using the oxidizable carbon ratio (OCR) dating technique, as part of a senior thesis at Pomona College.

CA-SIS-1721, known as the Freedom Site, is a house pit village first recorded by BLM, Redding District archaeologists in May of 1980. At that time, it was noted to contain five pit depressions, midden, flaked and ground stone artifacts, possible fire-cracked rock, and mussel shell. The presence of a Gunther Barbed projectile point indicated that the site was occupied as recently as 500 to 1000 BP. CA-SIS-1721 was first tested by Pomona College in the summer of 1994 to locate site boundaries and assess site damage, including damage to a feature designated House Pit 4 (Mack 1996:6). Excavation of House Pit 4 continued in 1995, at which time several house floors were documented. Cultural materials recovered from this feature included charred wood, worked bone, ground and pecked stone, flaked stone tools, debitage, and faunal remains. Diagnostic projectile points consisted primarily of Gunther Barbed specimens with one Desert Side-notched point. These artifacts indicated that the house feature was occupied between AD 1600 and AD 1850 (Mack 1996:26).

A NRHP District Registration Form was prepared by Joanne Mack in 2003 as part of the Upper Klamath River Project, incorporating CA-SIS-1198 and CA-SIS-1721, as well as neighboring site CA-SIS-2646. The form identified these three resources as constituting the Upper Klamath River Stateline Archaeological District. The district nomination was updated by Amy Jordan of the BLM, Redding Field Office; in 2016 the district was approved by the California State Office of Historic Preservation (OHP).

As part of Upper Klamath River Project research being conducted by Pomona College and University of Notre Dame in the late 1990s, archaeological investigations were completed at two other precontact campsites near Secret Spring Mountain (Mack 2012). The first site, CA-SIS-2135, known as Geese Flying, was tested in 1997, while the second site, CA-SIS-2136, known as Wise Eagle, was tested in 1999. Both sites were originally recorded and minimally tested by HRA in 1996 for a proposed BLM land exchange (Oetting 1996).

The 1997 testing of CA-SIS-2135 yielded 399 items, while work completed at CA-SIS-2136 produced 461 artifacts, with the majority of both collections identified as flaked stone artifacts (Mack 2012:18). Collectively, these two sites yielded 33 projectile points and point fragments, 29 biface fragments, 41 cores, 76 worked flakes, 119 used flakes, 40 scrapers, 39 gravers, 4 choppers, and 12,879 pieces of debitage. Ten projectile point types were identified, including Great Basin Stemmed, Borax Lake Widestem, McKee Uniface, Coquille Series, Humboldt Concave Base, Siskiyou Side-notch, Leaf Series, Clikapudi Notched Series, Rose Spring Side-notch, and Tuluwat (Gunther) Series (Mack 2012:21-27). Also recovered were several pieces of ground stone (pestle, mullers, millingstone, and mortars), hammerstones, Siskiyou Utility Ware fragments, one bone tool fragment, and faunal and floral remains. It was noted that the majority of cores consisted of CCS while the other tools were almost entirely obsidian. Debitage included both materials types. The majority of obsidian specimens submitted for sourcing was identified as Medicine Lake Highland sources, while lesser amounts of obsidian were classified as Buck Mountain, Blue Mountain, Spodue Mountain, and silver Lake-Sycan Marsh. Hydration readings ranged from 1.3 to 6.7 microns, estimated to date from 2415 BC to AD 1624 (Mack 2012:49). Five radiocarbon dates from bulk soil samples were obtained, two from CA-SIS-2135 and three from CA-SIS-2136. These ranged from AD 445 to 1170 for the first site and AD 1020 to 1950 for the second (Mack 2012:46-47). Overall, site data point to occupation starting during the Basin phase (6,450 to 4,450 BP), continuing through the River phase (4,450 to 2,200 BP) and into the Canyon phase (2,500 to 200 BP). Ground stone was restricted to the lower levels, suggesting a shift in site use over time, while the higher number of artifacts in the upper levels point to increased intensity of site use later in time. The sites were likely occupied only during certain times of the year and were used for collecting resources that were seasonally available (Mack 2012:54).

### ***The Dalles/California Highway 97 Bridge Project***

In the 1980s, Oregon Department of Transportation made plans to widen a 2.6-mile segment of US Route 97 just south of the City of Klamath Falls, including construction of a new bridge over the Klamath River. The site of the new bridge was surveyed by archaeologists from the Oregon State Museum of Anthropology (Connolly 1987), which revealed no precontact cultural materials. Construction work began in 1993, at which time human remains were exposed on the west bank of the river, adjacent to the new bridge footings. Construction work was halted while the site was evaluated by archaeologists and representatives of the Klamath Tribe. The site became known as the Klamath River Bridge Cemetery (35KL1121) (Tasa and Connolly 1997).

Precontact human remains and associated artifacts had been disturbed and removed in an estimated 500 cubic yards of fill dirt taken to another location (Connolly and Tasa 1993; Tasa and Connolly 1997:1). In cooperation with the Klamath Tribe, the State Museum of Anthropology recovered the remains and artifacts from the removed fill dirt and from the loose fill surrounding the bridge footings and an inventory of the remains and artifacts was made before reburial. The remains of at least 32 individuals were recovered. Associated artifacts included 94 projectile points, 461 *Olivella* beads, 18 *Haliotis* beads, 61 *Haliotis* ornaments, 41 decorated and undecorated *Dentalia* beads, 2 bone pendants, 8 tubular bone beads, incised and polished bone fragments, bone awls, antler wedges, bone spatulates, bone pins, ground stone mauls, pestles, bowls, metates, mano, stone ornaments, and faunal remains. The projectile points included 44 specimens grouped as



Gunther/Rose Spring, 2 small triangular, 5 small foliate, 4 small side-notched, 5 small fragments, 4 medium side-notched, 14 large stemmed, 3 large side-notched, 4 large contracting stem, and 9 large fragment (Tasa and Connolly 1997:45-49). Due to time constraints, debitage from 35KL1121 was not quantified or catalogued prior to reburial; however, the flakes did include obsidian, CCS, and basalt material types.

Collectively, the cultural assemblage indicated that 35KL1121 served both as a village and cemetery during the Late Precontact Period, used sometime during the period of AD 300 to 1500. It was determined that the people occupying this site suffered high infant mortality, and that deaths during the twenties and early thirties likely resulted from violent encounters with other Native groups. Exotic materials within the site pointed to interactions with outside groups, including groups in northern California (Tasa and Connolly 1997:4).

### ***Spencer Bridge Replacement Project***

In 2003, the University of Oregon completed subsurface testing and significance evaluation of two sites associated with the proposed replacement of Spencer Bridge on State Route 66 west of Keno, Oregon. Both sites are part of the Phase II testing program outlined below in Chapter 6, with the current work focused on areas outside of the bridge replacement project APE.

The first site, 35KL1941, consisted of a multiple component site resource including a precontact lithic scatter and the remains of the 1920s to 1950s McCollum and/or Ellingson Lumbermill. Excavations focused on the Project APE, revealing diffuse deposits of waste flakes and flaked stone tools among a scatter of historic-period debris associated with the nonextant sawmill (O'Neill 2005). Recovered artifacts included 96 obsidian and CCS flakes, 2 CCS uniface fragments, and 3 obsidian biface fragments. Precontact and historic-period artifacts were primarily limited to the upper 30 to 40 cm of the deposit (O'Neill 2005; O'Neill and Connolly 2009). A large amount of historic-period debris was found subsurface, including wire rope, glass, rubber, aluminum, nails, bricks, ammunition, and other metal objects.

The second site, 35KL1943, known as the John C. Boyle Village, consisted of a precontact scatter of knapped stone artifacts, including projectile point and debitage, cobble tools, and fire-affected rock. Archaeological testing, which also focused on only the APE, resulted in recovery of 288 artifacts, including 262 obsidian flakes, 12 CCS flakes, 4 utilized flakes, 3 biface fragments, 4 projectile points, 1 cobble uniface, 1 hammerstone, and 1 glass trade bead. The projectile points were classified as Siskiyou Side-notched and Elko corner-notched and the maximum artifact density was 640 items per cubic meter for a 10 cm level. Site occupation was inferred as extending from the middle Holocene into the contact period. During subsequent archaeological monitoring in 2006 during tree removal for highway clearing, two stone bowl mortars were recovered (O'Neill and Connolly 2009:64).

### ***Keno Water System Extension Project***

In May and June 2011, archaeological monitoring for the Keno Water System Extension Project in the historic town of Keno, Klamath County, Oregon, identified buried cultural resources, including 13 isolated finds and 1 multiple component archaeological site designated as 35KL3594 (Jones

2011:3). The isolates included ceramic shards, bottle fragments, window glass, a modified tin can, and two animal bone fragments. One concentration of historic-period artifacts was encountered, and this area was excavated with both shovel probes and shovel test units, revealing a historic-period site (35KL3594) with a diffuse precontact lithic scatter (Jones 2011:3-4).

The historic-period artifact concentration contained over 500 items, comprised largely of bottle glass fragments and unidentifiable metal fragments. Also found were ceramic fragments, other household wares, and animal bone fragments (Jones 2011:18). Additional historic-period artifacts were collected from backhoe trenching during monitoring. Diagnostic pieces included ceramic fragments with maker's marks dating to the late 1800s and bottle glass from the same period. The historic-period materials were interpreted as a refuse deposit upon which the road was built (Jones 2011:21).

The precontact component contained a small collection of about 30 obsidian artifacts, consisting of debitage and edge-modified flake tools (Jones 2011:18). These items were distributed equally within the shovel probes and test units, with no indication of lithic concentrations. It was suggested that the lithic scatter became buried under modern fill associated with road construction and other historic-period activities. NRHP eligibility of 35KL3594 could not be addressed given the fact that the project was limited to a narrow pipeline corridor, providing an incomplete picture of the site deposit.

### **Upper Klamath River Tributaries**

In the mid-1950, the UCAS conducted recordation, surface collection, and limited testing at two sites situated on the lower extent of tributary streams that feed into the main stem Klamath River, just outside of the Project ADI.

#### **CA-SIS-17**

CA-SIS-17 is a multi-component site just south of Copco Lake, on Deer Creek, that encompasses a precontact midden, a historic Indian village and cemetery, and a historic-period ranch complex. This site was first recorded in 1953 by UCAS archaeologists J. A. Bennyhoff and D. M. Pendergast, who collected a sample of surface artifacts (UCAS Accession #312), including a basalt chopper, projectile point fragments, and flakes (Mack 1979:6). These materials are housed at the Phoebe A. Hearst Museum of Anthropology at the University of California, Berkeley.

#### **CA-SIS-262**

In early 1955, a historic period cemetery was discovered on Bogus Creek, a Klamath River tributary. The cultural remains, exposed during ranching activities, included an extensive collection of trade goods, Native American artifacts, human remains, faunal remains, and other items dating to the 1860s (*Oakland Tribune* 1955). At the request of Walter B. Pollock, president of the Siskiyou Historical Society, two members of UCAS (A. B. Elsasser and J. A. Bennyhoff) visited the site, which became known as the Foster Site, CA-SIS-262. A local informant identified the site as the location of a deadly skirmish where a German peddler and several Shasta Indians were killed by Modoc Indians sometime between 1863 and 1866 (*Oakland Tribune* 1955). This time frame was supported, in part, by the recovery of a coin dated to 1860.



During their site visit in 1955, Elsasser and Bennyhoff, along with the local landowner, excavated and removed human remains representing a minimum of 21 individuals and associated funerary objects. Accessioned into the Lowie Museum of Anthropology (formerly the Phoebe A. Hearst Museum of Anthropology) at the University of California, Berkeley (Accession UCAS-357), the extensive funerary assemblage included almost 32,000 precontact and historic period items (Federal Register 2008). Additional artifacts were kept by the landowner, while all human remains were given to the university museum. Other artifacts from the site are housed at the Siskiyou County Museum, in Yreka, California (Joanne Mack, 2018 personal communication). No formal report has been prepared for the site.

## **Shasta Valley**

Located in central Siskiyou County, California, about 10 miles south of the California/Oregon border, Shasta Valley is a nearly oval intermontane basin bounded on the west by the Klamath Mountains and on the east by the Cascade Range. The valley, which measures about 30 miles long (north-south) and 15 miles wide (east-west), encompasses an area of roughly 250 square miles. The Shasta River, Little Shasta River, and Parks Creek comprise its major streams.

Archaeological investigations conducted within Shasta Valley began in the early 1950s with the work of Wallace and Taylor (1952) at rockshelter site CA-SIS-13, in eastern Shasta Valley. More than a decade passed before further work was conducted, when, in 1965, S.E. Clewett investigated CA-SIS-327, a small village site located in the southern part of the valley. Following a hiatus of nearly 20 years, the BLM led subsurface investigations at CA-SIS-326, a rockshelter site at Sheep Rock, near the eastern edge of the valley (Ritter 1989). Simultaneously, a group of eight precontact sites in northern Shasta Valley were examined as part of County of Siskiyou infrastructure projects associated with the Ager-Beswick Road and the Hornbrook-Ager Road (Johnston and Nilsson 1983; Nilsson 1987, 1988; Nilsson et al. 1989), followed by work at CA-SIS-1207 in the southern part of the valley (Vaughan and Nilsson 1987). Collectively, these studies led to a summation of Shasta Valley prehistory by Nilsson (1991) and development of a preliminary cultural sequence. Later, the prehistory of the eastern margin of Shasta Valley was investigated in 1995 as part of a BLM land exchange project (Hamusek et al. 1996, 1997).

The earliest archaeological investigation conducted within the Shasta Valley region was undertaken in 1950 by William J. Wallace, from the University of Southern California, and Edith S. Taylor, who excavated CA-SIS-13, a rockshelter site at the valley's eastern edge. The site yielded an extensive and diversified cultural assemblage of almost 500 items, made of nonperishable and perishable materials. Lithic artifacts included flaked stone tools such as projectile points, drills, scrapers, graters, and prismatic flakes, made predominately of obsidian, but also including smaller quantities of CCS and basalt toolstone. Other lithic items included ground stone tools such as manos, metates, hammerstones and pestles. A small collection of clay objects comprised a pottery fragment and clay balls. Perishable organic items included an assemblage of mammal bone; *Olivella* shell beads and unmodified mussel shell; wooden arrow foreshafts and shafts; basketry remains; and food plants.

The presence of Gunther (Tuluwat), Desert Side-notched, Cottonwood Triangular, and Rose Spring series projectile points suggested a late period occupation, dating to within the latter years of the eighteenth century and the first decades of the nineteenth century (Wallace and Taylor 1952:33).

Site function was attributed to seasonal hunting by Achomawi, Modoc, or Eastern Shasta peoples (Wallace and Taylor 1952).

With the completion of work at CA-SIS-13, archaeological research in the Shasta Valley region was not undertaken again until 1965, when S. E. Clewett and California State University, Chico excavated the Chaney site, CA-SIS-327, located in southern Shasta Valley on the bank of the Shasta River. Although no technical report has been prepared for the Chaney Site, information provided by Clewett (Personal communication, 1982) indicates that the site is a small, late period village with circular house depressions, and that the cultural assemblage, especially projectile points and ground stone tools, is similar to that of the Iron Gate site (CA-SIS-326; Leonhardy 1961, 1967). These similarities led Clewett to conclude that CA-SIS-327 was a late period Shasta Indian occupation site. More recently, BLM conducted an analysis of the CA-SIS-327 artifact assemblage, which suggested that an earlier occupational phase might also be present (Hamusek et al. 1997).

Following a nearly 20-year hiatus in archaeological research in the Shasta Valley area, investigations resumed in 1982 with work conducted by the BLM at site CA-SIS-266, also known as Sheep Rock Shelter (Ritter 1989). This site, located in eastern Shasta Valley, within a few miles of CA-SIS-13, yielded a sparse cultural assemblage. Few cultural remains were recovered from the site, including one corner-notched projectile point fragment, two metate fragments, and lithic debitage dominated by obsidian, but also including CCS materials. Obsidian geochemical sourcing of eight specimens indicated the use of GF/LIW material, a source located in the Medicine Lake Highlands. Obsidian hydration readings for these items ranged from 2.6 to 5.4 microns, reflecting multiple periods of site use. Lithic analysis suggested final tool shaping and edge maintenance activities, while pollen analysis inferred that the site may have been occupied during the spring, when pollination was about to begin. Radiocarbon dating provided a  $1235 \pm 60$  BP date of occupation. Site function was attributed to use as a lithic reduction workshop (Ritter 1989).

Following work conducted at CA-SIS-266, research in Shasta Valley intensified during the mid-to-late 1980s, shifting north to the area around the townsite of Ager, located on Willow Creek 2.5 miles south of Klamath River. Conducted in response to the proposed realignment of the Montague-Ager Road, four precontact sites (CA-SIS-154, -900, -1103, -1105) were investigated by Mountain Anthropological Research (MAR) on behalf of the Siskiyou County Department of Public Works (Johnston and Nilsson 1983; Nilsson 1987, 1988; Nilsson et al. 1989).

Site CA-SIS-900 was the first Shasta Valley site to be studied as part of the Montague-Ager Road project. Phase II testing conducted by Johnston and Nilsson (1983) identified a well-stratified cultural deposit that extended one meter in depth. The cultural assemblage consisted largely of flaked stone artifacts, comprised of cores, bifaces, drills, scrapers, and projectile points, including two Gunther Barbed point fragments and one large corner-notched specimen. These artifacts, dominated by local CCS and basalt materials, signaled that primary and secondary stages of lithic reduction occurred at the site, while obsidian toolstone was used more sparingly, reflecting the latter stages of tool production. Obsidian geochemical sourcing of 15 specimens indicated that the GF/LIW/RS source ( $n=13$ ), located in the Medicine Lake Highlands, was the predominant tool stone used for flaked stone artifact manufacture. Minor representation by Cougar Butte material ( $n=1$ ), also from the Medicine Lake Highlands, and an unknown source ( $n=1$ ) was also noted. Associated obsidian

hydration readings for these collective sources ranged from 1.0 to 3.9 microns. Other assemblage characteristics noted the abundance of ground and battered stone artifacts, including hammerstones, manos, metate fragments, and pestles. Chronological placement of the site, based on projectile point types and obsidian hydration studies, indicated a time span of 3000 BC to AD 1500.

Subsequent data recovery investigations were conducted at CA-SIS-900 in May 1985 (Nilsson et al. 1989), yielding a more diversified cultural assemblage. Large number of projectile points, cores, bifaces, and retouched flakes were recovered, as were several perforators and bipolar elements. The projectile point collection included Gunther series, Elko series, medium-to-large side-notched, stemmed, and corner-notched forms resembling Rose Spring points (Nilsson et al. 1989:79-89), which together expanded the point assemblage recovered during the earlier work. Tool stone use remained focused on local CCS and fine-grained igneous rock. In addition to flaked stone artifacts, other recovered items included a steatite bipoint, hammerstones, manos, pestles, metates, an incised bone pendant (bead), incised bone fragments, and a bone spatulate. Human remains were also found, limited to two dental incisors. Faunal remains were documented, including specimens of freshwater mussel, trout, quail, pheasant (nonnative), deer, coyote, squirrel, gopher, jack rabbit, cottontail, domestic pig (intrusive), unidentified rodent, and unidentified reptile.

Geochemical obsidian source analysis conducted for the CA-SIS-900 data recovery work revealed a similar focus on GF/LIW/RS tool stone (n=29), with a small representation of one specimen each for other Medicine Lake Highlands obsidian, including Cougar Butte, Callahan, Glass Mountain, and Railroad Grade. Finally, one obsidian artifact was fingerprinted to an unknown source and one piece was identified as not obsidian (Nilsson et al. 1989:103). Cumulative obsidian hydration readings for the sourced artifacts ranged from 1.4 to 4.2 microns.

The data recovery work at CA-SIS-900 solidified site use as a temporary campsite. Dietary remains emphasized the use of local plants and hunting of deer, rabbit, and other small mammals, with little emphasis placed on fishing (Nilsson et al. 1989:126). A narrower period of site use was identified compared with the earlier testing phase, with the former based on both radiocarbon dates and projectile point typologies. Six radiocarbon dates were obtained from the data recovery work, with most representing a 1,200-year span of site use, from ca. AD 420 to AD 1630; one earlier date of ca. 370 BC was also identified.

Site CA-SIS-154, located on Willow Creek, a tributary of the Klamath River, was first recorded in 1952 by Albert Elsasser of the University of California, Berkeley, as the Shasta ethnographic village of *Em'-mah-kwit-te* (Merriam 1976). Elsasser's recordation described the site as a probable campsite with occupation of some duration, characterized by obsidian artifacts and a CCS scraper.

Phase II testing conducted at CA-SIS-154 by MAR in 1985 yielded a robust cultural assemblage of more than 8,500 cultural items, consisting primarily of lithic artifacts (Nilsson 1987). Abundant faunal remains were also recovered, providing evidence for likely cultural use of hare or brush rabbit and artiodactyl remains, along with abundant intrusive rodent species (Nilsson 1987:107). In addition, one well-preserved human bone fragment was found in disturbed soil on the site surface (Nilsson 1987:114).

Flaked stone tools from CA-SIS-154 included cores, bifaces, bipolar elements, retouched flakes, projectile points, scrapers, perforators, burins, a uniface, and varia. Projectile points included Gunther Barbed, Desert Side-notched, Elko Corner-notched, and medium side-notched specimens. Also found were a drilled and incised slate pendant, a bone awl tip, and ground stone artifacts such as manos, one pestle, and one millstone fragment. Obsidian geochemical sourcing pointed to near exclusive use of GF/LIW/RS material, with one specimen of unknown obsidian in the sample (Nilsson 1987). Obsidian hydration readings ranged from 2.2 to 6.7 microns. A single radiocarbon date of ca. 1470  $\pm$  70 BP was obtained from a burned soil matrix of unclear cultural association. Collective temporal data for the site indicated multiple component use, defined as Component I (ca. 2000 BC to AD 300/700) and Component II (ca. post-AD 300/700 to Historic).

The lack of a well-developed cultural midden suggested that CA-SIS-154 was not the location of the ethnographic Shasta village of *Em'-mah-kwit-te*, and instead functioned as a locus of semi-permanent occupation. An unrecorded site located to the east, on Willow Creek, near the historic site of Ager, was advanced as the possible location of the ethnographic village, in keeping with the original description for the village described by Merriam (1926) as located "on Willow Creek at Ager".

As recorded in 1984, site CA-SIS-1103 is a sparse surface scatter of lithic debitage and flaked stone tools within a cultivated field, on the eastern side of Willow Creek. Phase II testing conducted at the site in 1985 yielded only one precontact artifact, comprised of an obsidian biface, along with two pieces of historic-period glass (Nilsson 1987). Artifacts noted on the surface in 1984 were not present in 1985, indicating that ongoing cultivation activities had caused significant disturbance to the site.

Site CA-SIS-1105 consists of a sparse, shallow scatter of lithic debitage and flaked stone tools located on a hillside slope and knoll bordering an intermittent tributary of Willow Creek. Phase II testing and surface collection conducted at the site in 1984 yielded a precontact assemblage of 26 pieces of debitage, 2 basalt cores, 1 CCS biface, and 2 edge-modified flakes. The small size of the obsidian artifact collection precluded the conduct of obsidian studies. A single Desert Side-notched point noted on the surface during site recordation, however, suggested a post-AD 1400 period of use (Nilsson 1987). Site function was noted as reflecting a task-specific locale focused on flaked stone reduction and possibly tool rejuvenation activities (Nilsson 1987:131).

To extend planned road improvement activities north from the community of Ager to the Klamath River, Siskiyou County Department of Public Works initiated plans for the reconstruction of a 2.4-mile long segment of the Hornbrook-Ager Road in northern Shasta Valley from the southern boundary of the Klamath River County Estates to the Klamath River at Klamathon. Archaeological inventory conducted by MAR in 1986 identified four precontact sites along the proposed road realignment on the west side of Willow Creek. These site included CA-SIS-331 and CA-SIS-332, both midden deposits; CA-SIS-1281, a house pit village; and CA-SIS-1282, a lithic scatter. Collectively termed the Ager III sites, Phase II testing of the four sites was conducted by MAR in November 1987 (Nilsson 1988).

Subsurface investigations completed at CA-SIS-331 revealed an extensive, largely single component, late precontact period midden deposit characterized by a highly diversified artifact assemblage. Extending to a depth of one meter below surface, the site yielded abundant lithic debitage; flaked,

ground, and battered stone tools; ceramic, bone, and shell artifacts; and unmodified animal bone. Cultural features included a rock-lined fire hearth and an infant burial containing a distinctive array of grave offerings.

The flaked stone artifact assemblage from CA-SIS-331 encompassed over 4,300 pieces of CCS, basalt, and obsidian debitage that indicated material dependent reduction strategies. Flaked stone tools comprised a diverse collection of cores, triangular and ovate bifaces, projectile points, retouched tools, unifaces, drill tips, and notched pieces. Projectile points included mostly late period Gunther Barbed types, as well as a medium corner-notched specimen of possible older association. The battered stone assemblage included a variety of quartzite or basalt hammerstones, a quartzite anvil stone, and a battered piece of basalt. Ground stone artifacts comprised a collection of manos, metates, pestles, and a steatite vessel fragment. In addition to lithic artifacts, the site yielded a robust assemblage of Siskiyou Utility Ware pottery, bone tools such as awls and a ground long bone, and several marine shell pendants.

Obsidian geochemistry analysis of 12 artifacts recovered from CA-SIS-331 indicated that 11 (91.7 percent) of the specimens were fashioned from GF/LIW/RS material and 1 (8.3 percent) pressure flake from the infant burial was Buck Mountain obsidian. Twenty obsidian artifacts from CA-SIS-331 were submitted for hydration studies and revealed readings between 1.9 and 3.8 microns. Faunal remains included deer, cottontail, hare or rabbit, coyote, other Canids, ground squirrel, kangaroo rat, woodrat, mice, gopher, vole, Great Horned Owl, salmon or trout, sucker, and minnow.

The infant burial was laid to rest atop a bed of mahogany obsidian pressure flakes and surrounded by unique and distinctive grave goods. The burial offerings included bird bone pins, bird bone tube, incised bone pieces, a bone pendant, elongated siltstone artifacts, Desert Side-notched and larger stemmed and corner-notched series projectile points; elbow pipe, gaming piece, and petrified wood tablet. Based on its associated artifacts, the infant burial was dated to post AD 1400 (Nilsson 1988:66).

Charcoal associated with the CA-SIS-331 rock hearth feature returned a radiocarbon assay of  $690 \pm 90$  years, or AD 1265 (Beta-24306). Collective site data pointed to use of the site as a residential base and burial area occupied primarily during late precontact times, ca. post-AD 1200 (Nilsson 1988:199).

The second cultural midden deposit, CA-SIS-332, was investigated both by Dames & Moore (Shackley 1987) and MAR (Nilsson 1988). The Dames & Moore project focused on limited shovel testing and surface collection associated with the US Sprint Fiber Optic Cable Project. This work was followed by more extensive study in 1987 conducted by MAR for the Hornbrook-Ager Road realignment.

Like the work conducted at neighboring site CA-SIS-331, the MAR investigation of CA-SIS-332 also revealed a largely single component, late precontact period midden deposit characterized by a diversified artifact assemblage. Extending to a depth of 90 cm below surface, the site yielded abundant lithic debitage; flaked, ground, and battered stone tools; ceramic, bone, and shell artifacts; unmodified animal bone; and a human molar.



The flaked stone artifact assemblage from CA-SIS-332 encompassed over 4,600 pieces of CCS, basalt, and obsidian debitage that indicated material dependent reduction strategies. Obsidian was the primary tool stone at CA-SIS-332, whereas obsidian is of lesser importance within the other Ager III sites (Nilsson 1988:130). Flaked stone tools comprised a diverse collection of cores, triangular and leaf-shaped bifaces, projectile points, retouched tools, scrapers, and key-shaped drills. Projectile points included mostly late period Gunther Barbed and Desert Side-notched types, as well as Elko Corner-notched and Stemmed Leaf Shaped specimen of possible older association. The battered stone assemblage included a small collection of one igneous and one quartzite hammerstones. Ground stone artifacts comprised a collection of manos, metate, pestle, and a steatite ornament. In addition to lithic artifacts, the site yielded three clay objects, comprised of two rods and one punctate, but lacked Siskiyou Utility Ware pottery. Also recovered were bone tools such as awls, a worked bone piece, double perforated bone pendant, and an *Olivella* shell bead.

A highly varied faunal assemblage was collected from CA-SIS-332, including deer, cottontail, hare or rabbit, Canid, beaver, squirrel, ground squirrel, rat, woodrat, mice, gopher, bird, snake, turtle, frog, salmon or trout, sucker, and minnow. Also encountered was a single human tooth fragment.

Of 14 obsidian artifacts from CA-SIS-332 submitted for XRF analysis, 13 (92.9 percent) were identified as GF/LIW/RS obsidian and 1 (7.1 percent) specimen as Buck Mountain. Hydration readings for 20 specimens ranged from 1.3 to 4.0 microns (Nilsson 1988:177-178). Similar to CA-SIS-331, data from CA-SIS-332 point to semi-permanent habitation during late precontact times, ca. post-AD 1200 (Nilsson 1988:201).

Phase II testing conducted at CA-SIS-1281 focused on limited subsurface investigations conducted within the road project's APE, located between the existing road and the western boundary of the site. This work yielded a small sample of flaked and ground stone tools, comprised of 39 flakes, 4 cores, 4 bifaces, 6 EMPs, 3 projectile points (1 Gunther and 2 Rose Spring series), and 1 metate fragment. Two hopper mortars were noted in association with a house pit and were not collected. Two obsidian Rose Spring projectile points were submitted for hydration analysis and yielded readings of 3.1 and 5.8 microns. Overall, CA-SIS-1281 appeared to be a semi-permanent or permanent habitation site located on a small stream. Because the site lacked a well-developed midden, unlike those that characterize neighboring sites CA-SIS-331 and CA-SIS-332, it may have been occupied for short period of time or may have been a protohistoric habitation site (Nilsson 1988:203-204).

Testing of the final Ager III site, CA-SIS-1282, yielded no subsurface artifacts. This site is characterized by a sparse surface scatter of chert debitage and a hammerstone, while unmodified cobbles, nodules, and detritus of chert material were found to be common within the site. The artifacts indicate that CA-SIS-1282 was a temporary use area, likely occupied but a single time for lithic reduction activities (Nilsson 1988:204).

Site CA-SIS-1207 located on the western bank of the Shasta River in southern Shasta Valley, constitutes the oldest archaeological resource studied to date within the valley. Phase II testing was conducted at the site in 1987 for Siskiyou County's proposed Louie Road and Bridge Realignment Project (Vaughan and Nilsson 1987). The site, comprised of a light density lithic scatter and historic period artifact scatter, yielded a sparse cultural assemblage of flaked stone, ground stone, and

historic artifacts. The flaked stone collection was limited to 155 items, including debitage, 1 core, 4 bifaces, 1 endscraper, 2 uniface, 1 perforator; and several notched, truncated, and retouched elements. Also recovered were a granite hammerstone and an andesite mano/hammerstone. Based on the interpretation of obsidian hydration data, the site may have been occupied as early as 3000 BC. Site function includes the manufacture of flaked stone tools and vegetal food gathering and processing (Vaughan and Nilsson 1987).

In 1995, BLM conducted an intensive Class III archaeological inventory of 4,300 acres of scattered parcels and limited subsurface testing within eastern Shasta Valley, focused both within the valley proper and also extending east to the foothills and mountain slopes of the Cascade Mountains (Hamusek et al. 1996, 1997). Inventory resulted in the identification of 66 archaeological sites, including 51 sites with precontact components and 15 sites with historic-period components, as well as 150 isolated finds (Hamusek et al. 1997:64). The field methodology also included subsurface testing to meet management and research objectives for NRHP evaluation of the identified sites.

The BLM inventory identified a broad range of temporally sensitive projectile points associated 7,000 years of human land use, beginning in the early Archaic and extending into the historic contact period (Hamusek et al. 1997:109). Noted types include Northern Side-notched, Elko series, McKee series (McKee Uniface), Clikapudi Notched series, Siskiyou Side-notched series, Squaw Creek Contracting Stem, Gunther Barbed series, Desert Side-notches series, and miscellaneous corner- and side-notched points. Other contributing data included obsidian geochemical analysis of 30 artifacts, which revealed near predominance of GF/LIW/RS (Grasshopper Group) obsidian, along with a single specimen of Railroad Grade material. Hydration analysis for these same specimens provided readings ranging from no visible hydration to 9.7 microns, with an overall mean of 4.82 microns. Two clusters of hydration readings were noted, including 2.5 to 3.5 and 4.5 to 6.5 microns (Hamusek et al. 1997:96-97). The hydration profile for the eastern Shasta Valley area was found to fit the pattern of hydration rim frequencies noted for the PGT Pipeline project on the Modoc Plateau, providing evidence of occupation increasing from early to mid-Holocene times, followed by peaks in the Middle Period between 4500 and 2000 BP. This was followed by a gradual decline in occupation of the highland area. These data suggest that the lack of time depth for Shasta Valley noted by Nilsson (1991) may reflect a sampling bias, with occupation for at least the eastern part of the Valley extending back to early Middle Archaic times, with sparse evidence of early Holocene occupation (Hamusek et al. 1997:111-112).

## **Klamath Mountains**

At its western extent, the Project's ADI crosses through the Klamath Mountains, beginning near Hornbrook, California and extending downriver to the Humbug Creek. Few archaeological investigations have been conducted within this area, restricted to three studies of precontact sites located between Interstate 5 and the Shasta River.

### **CA-SIS-1066H**

Included as part of Mack's Upper Klamath River Project was the 1998 test excavation of CA-SIS-1066H, a multi-component site near the confluence of the Klamath and Shasta rivers. This site, known as Fool's Paradise and Paradise Craggy Village, consists of precontact house pit



depressions and midden deposit and a historic period mining camp with tailings, ditches, and a dugout. Site investigations were conducted in 1998 by Notre Dame University and Norcet Training (Mack 2003). Two house pits were tested, revealing several house floors and post holes (Mack 2003:33). A large sample of flaked stone tools was recovered, including 191 utilized flakes, 121 worked flakes, 40 projectile points, 21 cores, 24 knives (bifaces), 20 gravers, 16 scrapers, 7 drills, and 1 chopper. Projectile point types included Northern Side-notched, McKee Uniface, Leaf Series, Coquille Series, Elko Eared, Clikapudi Notched Series, Side-notched Leaf, and Gunther Series. Also collected were 12,316 pieces of debitage, including obsidian (95.3 percent), CCS (3.5 percent), basalt (1.0 percent), quartzite (0.01 percent), and quartz (0.01 percent) (Mack 2003:9-17). Obsidian debitage was found to primarily represent the last stages of biface and projectile point manufacture, with limited evidence of bipolar reduction, radial breakage, and uniface retouch. Chert flakes represent core reduction and biface manufacture, while the number of flakes of other materials was too small to accurately characterize reduction behavior (Rondeau 2007).

Other precontact artifacts recovered from CA-SIS-1066H included one pestle, one muller fragment, four milling slabs, one milling block fragment, one pipe fragment, one abrader, five hammerstones, six rubbing stones, one incised stone, one piece of shaped slate, three fragments of Siskiyou Utility Ware, one sandstone tray fragment, and one ecofact (fossil). Bone tools included six spatula objects, one gouge, three flakers, and eight barbed or pointed objects, possibly fragmented fishing implements (Mack 2003:26-27). The historic period assemblage comprised metal bullets casings, metal buttons, nails, several ceramic fragments, and numerous glass fragments. Bone fragments and mussel shell were also collected from the excavation, as well as a piece of burned acorn shell.

Obsidian sourcing of 67 artifacts showed the majority (n=64) to have come from the GF/LIW/RS source, while one specimen each came from the Spodue Mountain, Blue Mountain, and Tuscan sources. Obsidian hydration readings ranged from 1.4 to 12.3 microns, although the specimen with the 12.3 value also had a second band measuring 4.4 microns. Not including the largest reading, the hydration profile has a span of 1.4 to 7.3 microns (Mack 2003:39). Comparison of the hydration readings with provenience showed a considerable amount of mixing, resulting in part from ground squirrel activity.

A 6,000-year period of site occupation was identified based on artifact types, radiocarbon dates from bulk soil samples, and interpretation of obsidian hydration data. Using the hydration formula for GF/LIW/RS material presented by Nilsson and colleagues (1996:80), Mack (2003:40) noted a continuous site occupation from roughly 3900 to 1634 BP, with later peaks at 1290 to 1230 BP and 420 to 375 BP. Little evidence existed for site use before 4000 BP. The site was noted as reflecting the subsistence pattern for the Upper Klamath River drainage, with this location serving as a typical residential base camp from which diverse resources were exploited, particularly after 4500 BP. Fishing and plant gathering increased in importance after 2500 BP (Mack 2003:46-47).

### **CA-SIS-329**

Several recent archaeological projects have been completed in association with the California Department of Transportation's (Caltrans) construction activities at the Randolph C. Collier Safety Roadside Rest Area (SRRRA), located on the east bank of Klamath River several miles south of Hornbrook, California (Dalldorf 2013; Hamusek and Haney 2001; Waechter and Young 2015).

Dorothy Hill originally recorded this site in 1965 while surveying for a proposed rest area and highway expansion project. At that time, she noted one millingstone, two manos, one pestle, and one basalt core (Hill 1965). The site was later investigated by Caltrans archaeologists B. Hamusek and J. Haney (2001) in preparation for additional construction activities within the SRRA. Investigations focused on test excavations and monitoring, resulting in the collection of flaked and ground stone artifacts, bone, and shell. Projectile points (Siskiyou Side-notched and Gunther Barbed) and obsidian hydration analysis placed the precontact occupation of CA-SIS-329 within the period of 4450 to 1050 BP.

Pacific Legacy conducted an Extended Phase I investigation of the eastern edge of the SRRA in 2013, identifying two loci: a low-density lithic scatter with ground stone at 80 to 140 cmbs; and a buried cultural deposit approximately 200 to 230 cmbs (Dalldorf 2013). A radiocarbon date of ca. 5380 BP was obtained for the second, deeper deposit.

In support of plans to upgrade the potable water and wastewater systems at Collier SRRA, Far Western Anthropological Research Group, Inc. completed Phase II testing and evaluation of CA-SIS-329 in 2014 (Waechter and Young 2015). Excavation of the river terrace revealed an area of buried, intact, organic-rich cultural midden below 20 to 40 cm of graded fill materials. In contrast, a block excavation placed at a footslope on the eastern edge of the site revealed a deeply buried archaeological deposit in a paleosol, located several meters below the surface. Thirteen projectile points were collected, including Gunther series, Klikapudi Side- and Corner-notched, Squaw Creek Contracting Stem, Siskiyou Side-notched, and Lanceolate. Other items included 1 red CCS core, 16 biface fragments, 4 formed flake tools, 17 simple flake tools, 2 handstones, 1 pestle fragment, 1 bowl mortar fragment, 1 polished pebble, 1 incised bone fragment, 1 bone needle, and 1 bone awl (Waechter and Young 2015:56-67). Mammal bone from this site included mule deer, bobcat, leporids, pocket gopher, squirrels, rodents, and some carnivore remains. Also included in the faunal assemblage were duck and other bird bone, turtle remains, and fish remains. Identified fish remains included sturgeon, sucker, sculpin, and salmon/trout (Waechter and Young 2015:61).

Four radiocarbon dates were obtained for CA-SIS-329, including 1130 ±30, 1660 ±30, 2090 ±30, and 4830 ±30 BP (Waechter and Young 2015:52). XRF analysis confirmed that all obsidian material from this site was derived from the GF/LIW/RS source, while hydration analysis provided readings ranging from 1.0 to 7.1 microns. Mean readings by unit and depth ranged from 3.3 to 4.7 microns. In comparison to hydration profiles from the Tuscarora-Alturas (Hildebrandt and King 2002) and Sacramento River Canyon (Basgall and Hildebrandt 1989) projects, the hydration profile for CA-SIS-329 indicated site occupation centered at the Middle/Late Archaic transition, and that the site was likely abandoned before historic contact (Waechter and Young 2015:54).

### **CA-030-2127**

Recent archaeological investigations conducted by BLM at rockshelter site CA-030-2127, located near Hornbrook, California, have identified a multiple component cultural deposit associated with prehistoric, protohistoric, historic-period occupations (Neel 2016, 2019). Site recordation conducted inside the rockshelter in 2016 noted an assemblage of metal artifacts such as a tanged projectile point, cut nails, and suspender clip; melted lead and a lead bullet fragment; and pieces of green glass. Outside the shelter, artifacts included one basalt flake; brown, green, and cobalt blue glass

fragments; possible Chinese brownware fragments; strap with a square-cut nail; and other metal items such as cut nails and tobacco tin parts. Site features include a low-lying rock wall that fronts the rockshelter and a historic-period foundation and refuse scatter, the latter possibly associated with a neighboring nineteenth century placer mine and associated tent flats (Neel 2016).

Site excavations in 2018 revealed a shallow cultural deposit with stratigraphic integrity that extended to between 20 and 40 cmbs. Obsidian pressure flakes were recovered to a depth of 40 cm. Obsidian source studies indicate the predominant use of Grasshopper Flat/Lost Iron Well material, although also present are specimens from Drews Creek/Butcher Flat and Railroad Grade sources. Radiocarbon dating on a piece of faunal indicates an age of  $100 \pm 30$  year BP (Neel 2019). The full results of the testing program are pending.

### **Cupped Rock Art Complex**

An analysis of cupped rock art sites in north-central California was performed by Nissen and Ritter (1986) to determine the age of cupped rocks, the association of cupules with other rock art designs, the relationship of cupped rocks with environmental factors, and the human behavior associated with the creation of cupped rocks. This study focused on a sample of 18 prehistoric and ethnographic sites, 14 of which are located within the Klamath Mountains geomorphic province. The other four sites include CA-SHA-168 in the southern Cascade foothills near Redding, CA-SIS-117 near Lower Klamath Lake, CA-SIS-886 at Meiss Lake, and 35KL18 near the Klamath River. Within the current ADI, this study includes the Osburger Gulch site, CA-SIS-168, on the Klamath River near Hornbrook. The sample of rock art sites chosen for study primarily corresponded with historic tribal territories of the Hoka-speaking Shasta, Okwanuchu, Karok and Chimariko, a small portion of the Hoka-speaking Yana, and peripheral areas of the Penutian-speaking Wintu and Modoc (Nissen and Ritter 1986:59). Most study sites tended to be within canyons or valleys near rivers or major streams, with riffles, rapids, or falls present. In addition, several sites were found near major inland lakes. These sites were also in areas of low snowfall. In other words, these sites were found in areas amenable to villages and were often located at or near middens. Overall, locations of cupped rock sites could be explained by a number of environmental factors.

This study found that the mean diameter of cupules ranges from 1.5 to 4.7 cm, while mean depths range from 0.5 to 2.1 cm (Nissen and Ritter 1986:62). Overall, the study detected no significant regional variation of cupule size. With regard to other rock art designs, it was found that cupules with associated grooves, deep scratches, and bear paw prints occur in historic Shasta-Okwanuchu territory, while cupules with associated geometric abstract designs and bear paw prints occur in Wintu-Yana frontier sites. Abstract designs and possible fish skeleton glyphs are linked with cupules at sites within Karok and Hoopa territories. The single cupped rock site in Chimariko territory was found to also contain fish skeleton designs (Nissen and Ritter 1986:65).

Few sites containing cupped rock features have been excavated, and such middens have yielded projectile points dating to both early (Borax Lake, Northern Side-notched) and late (Gunter Barbed, Desert Side-notched) prehistoric occupations. Within the Sacramento River Canyon, cupped rocks were found at CA-SHA-1040, a site containing bedrock mortars and an ethnographic dance house feature. Cupped rock features are believed to have been recently removed from two sites, CA-SHA-

678 and CA-SHA-1169, where excavations yielded incised stones, late period projectile points, and early period points dating from to as early as 5000 BC (Nissen and Ritter 1986:67-68).

Ethnographic data indicate that cupped rock art was and is strongly associated with Hoka-speaking groups, and that such features play a role in World Renewal ritual. Such features occur in major public sites that are integral to social structure and ritual. Namely, such features along the Klamath River are associated with World Renewal ceremonies used to restore nut crops and the spawning of anadromous fish. These ceremonies are also performed to prevent disease, restore happiness, and control the weather (Nissen and Ritter 1986:72). It was earlier reported by Kroeber and Gifford (1949:5) that this ritual system involved the Yurok, Karok, and Hupa, and that the Wiyot, Tolowa, and Chilula were participants. Data also indicate that the Shasta and Wintu were involved in the World Renewal. Data also indicate that cupped rock art plays a role in other ceremonies, such as First Salmon, Deerskin, and Jumping dances (Nissen and Ritter 1986:73).

## 3.2 Tribal Context

Native American Tribes whose ancestral territory encompass the Project APE include the Klamath, Modoc, Shasta, Karuk, Hupa, and Yurok. These Tribes have a long history of land use along the Klamath River as evidenced by the numerous archaeological, ethnographical, and contemporary resources that are present. Traditional beliefs indicate that these groups have occupied their respective areas for time immemorial. The discussion of the ethnographic and contemporary record for these Tribes provided below emphasizes those cultural elements that relate primarily to the archaeological record such as geography, material culture, subsistence, and settlement systems. Other cultural aspects, including social and political organization, religion, and mythology, are only briefly mentioned, with thorough discussions of these and all cultural features found in the ethnographies and contemporary tribal overviews cited below.

The Phase II study sites are geographically restricted to areas immediately surrounding the Project's reservoirs – J.C. Boyle, Copco Lake, and Iron Gate – where ancestral territories encompassed lands of the Klamath, Modoc, and Shasta Tribes. The Section 106 consultation process with Tribes has identified at least seven TCPs and/or Sensitive Cultural Resources (SCR[s]); however, further consultation and dissemination of information pertaining to TCPs has yet to occur and no formal presentation regarding TCPs or SCRs has been presented to either the Oregon or California SHPO. While Tribes may consider these sites to be sacred, no specific concerns by Tribes have been raised to date. The following tribal overviews discuss each of the six Tribes for whom the Klamath River played a pivotal and indispensable role in cultural lifeways, shared view of the significance of the river itself, its biological resources that sustained native peoples, its cultural uses, and the perceptions of its value to Tribes (see King 2004 for additional discussion). The overview begins with the Klamath Tribe, whose ancestral territory encompassed the headwaters of the Klamath River, at Upper Klamath Lake, in present day Oregon, and also extended into portions of northern California. The overview continues with a discussion of Tribes whose ancestral territory encompassed successive downriver areas, including the Modoc, Shasta, Karuk, Hupa, and Yurok people. The section ends with a discussion of the Quartz Valley Community of the Quartz Valley Indian Reservation followed by the Resighini Rancheria.

### 3.2.1 Klamath Tribe

#### Language and Ancestral Territory

Klamath ancestral territory stretched from the southern boundary of the Deschutes River watershed in the north to the Klamath River at the present-day California/Oregon state line in the southwest (Spier 1930:Figure 1; Stern 1998:Figure 1). These lands included the Sprague, Williamson, Sycan, and portions of the Klamath Rivers; Sycan and Klamath Marshes; Klamath Falls; and Agency and Upper Klamath Lakes. The Klamath Peoples' eastern border was defined by the escarpment of Winter Rim, and the western boundary is the eastern border of the Cascades (Berreman 1937; Spier 1930; Stern 1998). The Klamath speak a dialect of the Lutuami linguistic stock, a member of the Plateau Penutian family (Sapir 1929; Spier 1930; Stern 1998).

The Treaty of 1864 ratified between the US Government and the Klamath Tribe, Modoc Tribe, and the Yahooskin Band of Snake Indians, now collectively called the Klamath Tribes, ceded their aboriginal title to approximately 22,000,000 acres (89,000 km<sup>2</sup>) of aboriginal lands in the present-day states of Oregon and California to the United States. This vast area extended south from present-day Bend, Oregon, along the Cascade Mountain crest, to the headwaters of Spencer Creek, Oregon, a tributary of the Klamath River. From here, the ceded land boundary continued southwest to Seiad Valley, California, and proceeded southeast to near Callahan, California, before turning northeast to extend to Goose Lake, California. Crossing back into present-day Oregon, the ceded land boundary continued north/northeast from Goose Lake to Harney Lake, turning north and continuing to the headwaters of Myrtle Creek before turning west to rejoin at Bend, Oregon.

#### Lifeways

The Klamath were organized in villages that collectively owned productive fishing or other resource (e.g., seed or other plants) gathering areas. Influential heads of households, supported by extended families, assumed leadership roles in the villages (Stern 1998). Villages tended to be located near watercourses and included various types of structures including semi-subterranean winter lodges with communal storage facilities for families and extended families. The permanent winter villages were never fully abandoned during the year.

Winter settlements constituted semiautonomous political entities, and among the Klamath, five geographic subdivisions of winter villages, or “tribelets,” were identified (Berreman 1937; Spier 1930; Stern 1998). The Klamath Marsh people were the largest group and included approximately 34 villages on the shore of Klamath Marsh and Agency Lake, as well as the Lower Williamson and Sprague Rivers. The Agency Lake group included one village and a hamlet on Agency Lake and the northern arm of Klamath Lake, respectively. The Uplanders group included four or five villages on the Upper Sprague River and was sometimes considered to be part of the Klamath Marsh division. The Lower Williamson River group consisted of about seven villages at the mouth of the Williamson River, and the Pelican Bay division included approximately eight villages along the northwestern shore of Upper Klamath Lake to the western shore of Agency Lake. Lastly, the southernmost Klamath division was the Klamath Falls group with a total of about 14 villages along both shores of the southern half of Upper Klamath Lake (Spier 1930; Stern 1998).



Fish was the primary subsistence resource for the Klamath; consequently, settlements clustered near rivers and streams. Runs of fish began in the early spring and lasted into the fall (Spier 1930). Men, with some assistance from women, fished throughout the year from the banks of rivers or streams or from canoes using long-handled dip nets, spears, harpoons, and hook-and-line. Triangular nets on A-frames or purse nets were also used. These nets were dragged through the water by foot or from canoe or tule boat. Gill nets drawn between canoes and traps were also used to acquire fish. In addition, stone barriers were constructed on some streams to restrict fish passage and facilitate fishing.

Although fishing was a year-round activity for the Klamath, they supplemented their diet of fish with a variety of mammals and plant resources. Klamath typically left their winter villages in early spring to begin a seasonal round of harvest activities. In spring and early summer, the Klamath aggregated near fishing stations and exploited the marshes and flats to gather roots (Spier 1930). Spring activities began with harvesting fish from the run of large suckers that took place in Upper Klamath Lake in March. As the spring sucker run subsided, Klamath women turned their attention to digging ipos roots (*Carum oregonum*), gathering waterfowl eggs, and scraping the cambium layers of young ponderosa pines for food. By June, women dug camas bulbs in wet meadows, baking them in earth ovens and sun-drying them for storage while men hunted waterfowl and other animals (Stern 1998).

In summer, all local Klamath divisions harvested wokus, the nutritious seeds of the yellow pond lily (*Nuphar luteum polysepalum*), at Klamath Marsh (Spier 1930). Wokus were an important food resource, and some tribal members still harvest wokus today. Shaman conducted a ceremony at the beginning of the harvest. Resource procurement of the wokus consisted of harvesting and processing the seeds by drying, parching, and lightly hulling them on grinding stones (Beckham 2006). Recent research by Deur (2009) suggests that the Klamath participated in active plant management or cultivation of wokus, ipos or yampah, black huckleberry, and the selective harvest of tree cambium. Women also collected cattail roots for drying and grinding into meal. During the summer months, men hunted waterfowl and a variety of mammals, including deer and elk in the Cascades (Stern 1998).

In fall, Klamath People gathered chokecherries, serviceberries, Klamath plums, pine nuts, blackberries, and gooseberries. Whitefish were also harvested in the fall primarily by the use of dip-nets. The Klamath eventually moved into the high country of the western Cascades, such as Mt. Pitt, to harvest berries. Women dried the berries before fires while men hunted deer and elk and trapped furbearing mammals (Stern 1998).

The typical Klamath tool kit included bows and arrows, spears, mortars and pestles, and manos and metates. Bows were made from juniper and yew, reeds were used to manufacture arrow shafts, and mountain mahogany was used for spears. Men burned out pine logs, hollowing out the charcoal with elk antler picks and wedges to make shovel-nosed dugout canoes. Women twined baskets and cordage from nettle fibers, Indian hemp, tule, cattail, willow, and other plants. Women also tanned hides to make warmer clothing.

The religious and ceremonial practices of the Klamath highlight their relationship to the water. Many ceremonies focused on the spiritual powers that were possessed by water and the role of those powers in securing successful fish harvests.

## Post-Contact History

European American expansion into Klamath territory had a dramatic effect on their traditional cultural practices. Contact with European Americans occurred in the 1825, when Hudson's Bay Company (HBC) fur trapper Peter Skene Ogden first met the Klamath on Klamath Marsh and subsequently resided with them for two months (Spier 1930:5). Explorer John C. Frémont visited the Klamath Marsh area in 1843, making contact with the Klamath People, and returned again in 1846, visiting Klamath Lake (Spier 1930:6-7). The first American settlement in Klamath territory was established about 1860 to 1865 near the village of *kowa'cdi*, on the eastern shore of Agency Lake (Spier 1930:8).

During this period, Klamath People worked for European American settlers in the Willamette Valley; and soon thereafter, hostilities developed between the Klamath and the newcomers, particularly as settlers traveled along the South Emigrant Trail through Modoc lands (Stern 1998; The Klamath Tribes 2019). Native uprisings and valuable tribal land convinced the US government to relocate Native Americans onto reservations. On October 14, 1864, the Klamath, Modoc, and the Yahooskin band of Snake River Indians signed the Klamath Lake Treaty with the US government. Under the provisions of the Treaty of 1864, the three Native groups were united under the collective term "Klamath Tribe". The treaty ratified on July 2, 1866; and as a result, the Tribes ceded more than 23 million acres of land and were moved from their traditional lands to the Klamath Reservation in Chiloquin, Oregon. The Tribes retained the rights to hunt, fish, and gather in safety on their lands (Lahren 1998; The Klamath Tribes 2019). In 1869, slight modifications were made to the treaty, and it was ratified by Congress in 1870 (Lahren 1998).

During the reservation period, the Klamath Tribal members experienced economic success, particularly in cattle ranching, freighting, and timber and lumber sales. The reservation contained thousands of acres of Ponderosa pine; and in 1870, a Klamath Tribal Agency-sponsored sawmill was completed for the purpose of constructing the Agency (The Klamath Tribes 2019). Proceeds from timber and lumber sales funded a tribal government and health clinic.

Soon after the treaty was ratified, many Modocs on the reservation were disconcerted due to friction with the Klamaths and inadequate provisions from the government. One band of Modocs under Captain Jack (Kientpoos) returned to their traditional lands in the Lost River and Tule Lake areas, while another group, under the former Modoc head chief, Schonchin, withdrew to the upper Sprague River area, where the Upper Klamaths and Yahooskin Northern Paiutes resided (Stern 1998). Attempts to relocate the Modocs under Captain Jack to the reservation precipitated the Modoc War of 1872-1873. At the conclusion of the war, Captain Jack and his leaders was hanged for killing peace commissioners at a council, and the remainder of the Modoc who fought in the war were exiled to Quapaw Agency, Indian Territory in present day Oklahoma. Those Modoc who did not participate in the Modoc War remained on the Klamath Reservation. In 1900, survivors of Captain Jack's Band of Modoc Indians were permitted to return to the Klamath Reservation or remain at the Quapaw Agency (Stern 1998).

By 1873, Klamath Tribal members sold lumber to Fort Klamath and many other private parties; and with the arrival of the railroad in 1911, reservation timber became extremely valuable and helped to sustain Klamath County for decades. By the 1950s, the Klamath Tribe was one of the wealthiest



Native groups in the nation (The Klamath Tribes 2019). In 1954, despite Bureau of Indian Affairs and tribal opposition, Congress passed the Klamath Termination Act (P. L. 587), which terminated the reservation and its trust relationship with the Klamath Tribes, including the Klamath, the Modoc, and the Yahooskin Band of Snake Indians. The Act discontinued federal social services, such as free education, and it organized tribal lands into national forests or areas that could be sold. The Klamath were targeted for termination because of their timber assets and their ability to manage their own affairs. Congress was convinced that the Klamath people were assimilated into “white” society and no longer needed special assistance (Haynal 2000). The Klamath Tribes retained some rights to resources, but a majority of the tribal members withdrew from the tribe and received a portion of the tribal holdings. The trust account created for the rest of the members was later liquidated. In 1964 and 1969, the Indian Claims Commission awarded the Klamath a settlement for lands ceded in 1864.

In 1974, the federal government condemned thousands of forest acres that had been part of the Klamath Indian Reservation so that the forest land could be added to the Winema National Forest (Klamath Tribes 2003). The Klamath Tribes accomplished restoration of federal recognition in 1986 and began to rebuild their tribal government, economy, and community. In 1992, the tribe took over the field of health from the Indian Health Services, and they have provided assistance in education to the local schools. Currently, the tribal Culture and Heritage Committee is working to protect, preserve, and enhance traditional cultural values and regain economic self-sufficiency (Klamath Tribes 2003; The Klamath Tribes 2019).

### **Contemporary Studies Pertaining to the Project Area**

The cultural significance of the Klamath River corridor and other areas of the Klamath Basin to the Klamath Tribes was studied by Deur (2003) for PacifiCorp’s Klamath Hydroelectric Relicensing Project. This study focused on identification of potential TCPs and SCRs that had the potential to be affected by future operations of the Klamath Hydroelectric Project. Research included ethnographic interviews and participant-observation ethnographic fieldwork, site visits, and literature review. Potential project impacts and management recommendations for identified resources were advanced.

### **3.2.2 Modoc Tribe**

Excluded at the request of the Modoc Nation (formerly Modoc Tribe of Oklahoma).

### **3.2.3 Shasta Tribe**

#### **Language and Ancestral Territory**

Shasta ancestral territory encompassed areas in present-day California and Oregon, including a large part of Siskiyou County and extending across the Siskiyou Mountains into Jackson County, Oregon, and also into Klamath County, Oregon. Although Shasta people speak a common Hokan language (Dixon and Kroeber 1913), there were four internal divisions that roughly corresponded to major geographic features of their homeland. Three divisions resided in the present-day California area,

one each along the Klamath River, in Scott Valley, and in Shasta Valley; the fourth division occupied the Rogue River Valley in Oregon. Slight differences of language and custom distinguished these divisions and politically, each formed more or less a unit (Dixon 1907:388). Three other Hoka-language Tribes with similar Shastan languages inhabited neighboring areas, including the Konomihu near the south fork of the Salmon River; the New River Shasta in the upper reaches of the Salmon and New Rivers; and the Okwanuchu near the McCloud River, Squaw Creek, and Upper Sacramento River drainages south of Mount Shasta. Today, the Shasta People are represented by various Native American entities including the Shasta Nation, Shasta Indian Nation, Etna Band of Indians otherwise known as the Ruffey Rancheria, and the Butte Valley Indian Community.

Silver (1978) summarizes ethnographic information regarding Shasta collected by Dixon (1907), Voegelin (1942), and Holt (1946). These sources generally note that traditional Shasta territory extended north to a point about 20 miles north of Ashland, Oregon, including the Rogue River; south to Mt. Shasta; west to Seiad Valley on the Klamath River, southwest to New River; and east to Beswick on the Upper Klamath River (Silver 1978). A Shasta tribal homeland map developed in 2016 by the Shasta people and Siskiyou County refines these boundaries (Jester 2016). With regard to the current Project, the 2016 Shasta tribal map extends the eastern boundary beyond Beswick, to a point on the Klamath River roughly five miles upstream from the California-Oregon stateline. Recent summaries of Shasta life have also been detailed by Daniels (2003), the Shasta Indian Nation (2019), and Hall and Hall (2004), with the latter focused on aspects of historical research and personal recollections.

## Lifeways

Shasta were organized into autonomous tribelets consisting of extended family groups that occupied a group of villages. The family was the basic social unit of the Shasta, with the village being the political and economic unit. Each village had a chief/headman to provide leadership and organize important social, political, and economic events (Hall and Hall 2004:7; Silver 1978). Shamans conducted a variety of ceremonies in villages, and the Shasta people considered Mt. Shasta to be sacred ground that was used for healing, blessing, and ceremonies. Mount Shasta is a significant part of Shasta traditions and ceremonialism.

Information presented here focuses on the Klamath River Shasta, called the *Wiruhikwairuk!a* by Dixon (1907:388), although he also indicates that they commonly known as *Kammatwa*; Curtis (1924) refers to the upper Klamath River Shasta as the *Kikatsik*. Shasta living along the Klamath River built their permanent winter villages near the river. Collectively, 137 Shasta villages are known (Heizer and Hester 1970; Merriam n.d.), with at least 64 established along the Klamath River (Merriam 1967), some within the Project ADI and several included among the proposed Phase II study sites. Villages had recognized territories with areas for each family, including fishing places with fish weirs along the Klamath River. Hunting territories also were held privately over the long term, in contrast to tobacco-growing plots and acorn-gathering trees, which were claimed only for brief periods. Typical villages consisted of brush shelters, bark houses, sweathouses, assembly houses, and winter houses (Silver 1978). The major structures of a Shasta village included the dwelling house (*umma*), a big house (*okwa-umma*), the sweat house (*wukwu*), and the menstrual hut (*wapsahumma*) (Daniels 2003; Shasta Indian Nation 2019; Silver 1978).

During the spring and summer, the Shasta established temporary hunting and gathering camps in the foothills and mountains to make use of seasonally available resources in those ecological zones. Shasta relied on a subsistence pattern emphasizing gathering, hunting, and fishing, and use of a variety of plant and animal resources as they became seasonally available. For example, resources used by the Shasta included black-tailed deer, brown bear, rabbit, and a variety of other small mammals; fish; birds; insects; acorns, buckeye, pine nuts, manzanita berries, and a variety of other plants including ipos (Dixon 1907; Holt 1946). Regardless of the variety of resources available to the Shasta, the primary components of their diet were deer, Chinook salmon, and acorns (Dixon 1907; Silver 1978).

Individual hunters and communal hunting parties hunted deer using bows and arrows, snares, dogs, and drives (e.g., driving deer over cliffs). Waterfowl and quail were taken using nets, snares, and traps (Moratto 1984). Three major anadromous fisheries were within Shasta territory, and fish were procured along Klamath River tributary streams and creeks during specific seasons: Chinook salmon, beginning in April; steelhead beginning in August; and coho and chum salmon beginning in early October (Hewes 1947). Fishing techniques included a combination of techniques including nets, weirs, spears, and fish drives (Dixon 1907:428; Shasta Indian Nation 2018), and fishing places were inherited along patrilineal lines (Holt 1946:316). In the spring, Klamath River Shasta waited to catch salmon until a member of another Shasta Group called the *Kammatwa* caught the first fish and performed a ritual. Klamath River Shasta could then catch and process the fish for storage but could not eat them until the Karuk people who lived downriver performed the White Deerskin Dance (*pikiyawish*) ceremony. Shasta people also observed a First Salmon Ceremony within their own territory, with two remembered locations being at Hamburg on the Klamath River and at Big Bend on the Shasta River (Daniels 2003:53). Salmon and trout were sun dried and stored in baskets for winter consumption (Silver 1978). Women and children also dove for mussels in the Klamath River during the spring.

The Shasta traded pine nuts, obsidian blades, and juniper beads with their neighbors for obsidian from the Achumawi; pine nut necklaces from the Wintu; canoes from Karuk and Yurok; acorns, baskets, Dentalium shells, Haliotis shells, and other shells from the Karuk, Hupa, and Yurok; and beads from Wintu (Silver 1978:213). They imported buckskin, Dentalium shells, and clamshell disk beads from their northern neighbors in exchange for acorns and acorn paste. Shasta also acted as a middleman for the Achumawi, who acquired Dentalium shells from groups in the Columbia River area.

## Post-Contact History

The earliest contact between the Shasta and European Americans occurred in 1826, when fur trapper and guide Stephen Meek visited the Shasta Valley for two weeks (Hall and Hall 2004:7). Meek returned to the area in 1836 with fur trapper Jean Baptiste McKay, remaining in Oro Fino area of present-day Scott Valley during the winter (Hall and Hall 2004:7). Following these early forays, European American settlement into Shasta lands accelerated because of the California Gold Rush. Conflicts between Indian Tribes and European Americans resulted in local skirmishes as well as the Rogue River Indian Wars of 1850 to 1857 that pushed Shasta from their traditional fishing, hunting, and village sites. A treaty (never ratified) negotiated in 1851 by Indian agent and commissioner

Redick McKee and Shasta chiefs established a reservation in Scott Valley, but conflict between European Americans and Shasta persisted. The following year, in 1852, the military post of Fort Jones was established in Scott Valley to protect the mining town from conflicts (Ruhge 2019). In 1856, some Oregon and California Shasta survivors of the Rogue River wars were removed to reservations in Oregon, first the Grande Ronde Reservation and then to the Siletz Reservation (Silver 1978:212).

By the 1870s, the Shasta way of life had been significantly devastated by cumulative effects of European American immigrants, military conflicts, and disease and epidemics. Consequently, the Shasta welcomed cultural revivalist movements such as the 1870s Ghost Dance religion (Daniels 2003; DuBois 1939) and the Earth Lodge cult and Big Head cult (DuBois 1939) that helped affirm Shasta community boundaries and restore a sense of common purpose within a changing social framework (Daniels 2003:204). The Upper Klamath River area served as a focal point for dances associated with the Ghost Dance religion and the area remains an important place for spiritual activity (Daniels 2006:24; Winthrop 1986).

From the 1870s through the 1940s, most Shasta residing near the Project lived at the Frain Ranch or Bogus Tom Smith's Rancheria (Daniels 2003). Here, they adopted subsistence gardening to replace the loss of acorn as a food staple and also continued to practice traditional hunting and fishing activities. Archival documents indicate that Shasta members lived at several historic-period homesteads now under Copco Lake and at other ranches elsewhere on the Upper Klamath River (Hall and Hall 2004), providing a legacy of cultural continuity in the face of changing environmental and historical developments during the early twentieth century. Today, the Shasta people continue to preserve, protect, and maintain traditional cultural practices, including sites associated with those practices.

### **Contemporary Studies Pertaining to the Project Area**

The study of contemporary Shasta Indian people has focused on the historical continuity of cultural lifeways and traditions. Cultural change and resilience of the Shasta Indian community during the period of 1850 to 1900 has been recently studied by Daniels (2003). This work addresses the phenomenon of cultural contact, transformation, and survival in response to the 1850s to 1860s Gold Rush; revitalizing communities during the 1860s and 1880s through participation in the Ghost Dance religion; and the significance of living on allotments or Rancherias during the 1880s to 1900s which became viable community spaces and critical anchor points for cultural continuity.

The cultural significance of the Upper Klamath River area to the Shasta Nation was studied by Daniels (2006) for PacifiCorp's Klamath Hydroelectric Relicensing Project. This confidential study focused on identification of TCPs and SCRs that had the potential to be affected by future operations of the Klamath Hydroelectric Project. Research included review of published ethnography, archival records documentation, and oral histories of living tribal elders (Daniels 2006:5). Potential project impacts and management recommendations for identified resources were advanced. As part of the California State Water Board's water certification process for the current Project, confidential information regarding Shasta Indian Nation TCPs and tribal cultural resources has been identified (Brian Daniels, personal communication 2020).

### 3.2.4 Karuk Tribe

(with contributions by Alex Watts-Tobin, Karuk Tribal Historic Preservation Officer)

Ethnographic information on the Karuk Tribe was summarized by Bright (1978), primarily based on information collected by Gifford (1939a, 1939b, 1940) and Kroeber and Barrett (1910). A more recent summary is presented by Salter and Tucker (2010). Information presented below has been drawn from these sources.

#### Language and Ancestral Territory

The Karuk Tribe is an Aboriginal people, occupying the same territory it always has, in parts of Siskiyou, Del Norte, and Humboldt counties. This territory stretches along the middle course of the Klamath River from Seiad Valley to Hopkins Creek, between Orleans and Weitchpec. This vast aboriginal territory encompasses about 1.4 million acres (USBR and CDFG 2011:3.12-17). The Karuk Tribe has had a government-to-government relationship with the US federal government since 1851. Following lapses in services, federal recognition was formally restored in 1979. The Karuk language is unique, and notably mellifluous. It has some elements in common with the Hoka language family, although that attribution is disputed.

#### Lifeways

The Karuk people traditionally lived in villages situated along the Klamath and Salmon rivers, as well as key tributaries. Villages were in advantageous locations on bends of the Klamath River and bluffs above it, such as near the mouths of Camp Creek (*Tishawnik*), the Salmon River (*Mashuashav*), and Clear Creek (*Inam*). These villages varied in size and consisted of rectangular cedar plank houses and sweat houses. Three key components of the diet - Salmon, acorns, deer - come from the river, from hunting, and from gathering; however, there was and continues to this day a process of active management of the landscape, which is explained in stories and in ancestral tradition, and is memorialized in ceremony. Certain species were cultivated. Traditional Karuk villages were year-round structures, and because of their relative inaccessibility have no significant defensive works; the people would move into the mountains during the summer months following ungulates and fur-bearing mammals. The hides of mammals, bird feathers, and pelts are used for ceremonial regalia. The abundant resources on the landscape supported more than 100 ancestral Karuk villages (Salter and Tucker 2010:3), and a population of 2000 to 3000 people. With a dependable source of food in place, a relatively dense population could exist through the winters of the lower Klamath River area without the necessity of a migratory lifestyle (Salter and Tucker 2010: 2).

The Klamath River was a key location for salmon fishing; consequently, material culture items in that segment of the territory may include harpoons, nets, and hooks; however, many other items for food processing, craft making, tools, living, gathering, and hunting activities may also be found in the vicinity. Traditionally, facilities constructed to harvest fish include weirs, dams, and fishing platforms. Tribal members continue these practices to this day. Canoes made from hollowed out logs were used for fishing and transportation along the Klamath River and its tributaries. The river is central to the Karuk people's patterns of existence - from ceremony, to habitation, resource gathering, crafts, hunting, management of the landscape, and transport routes.



The Klamath River provides a spawning area for several species of fish utilized by the Karuk. These fish represent a major subsistence resource, the focus of ceremonies, and more recently, an issue of cultural sovereignty and survival (Salter and Tucker 2010: 6-7). The Karuk list the principal Klamath River fish as Chinook or King salmon, coho or silver salmon, steelhead, trout, sucker, bullhead, sturgeon, and Pacific lamprey (Salter and Tucker 2010: 6-7). The Karuk and other Tribes of the region recognize two runs of Chinook, or King, salmon. Spring Chinook is the subject of the First Salmon Ceremony, performed in coordination with all native people along the river. The Spring Chinook historically spawned as far north as the Williamson River. This portion of the drainage was available as spawning grounds prior to the damming of the Klamath River and the reconstruction of Klamath Lake in its present form. This First Salmon Ceremony was conducted around April when the fish first breeched the sandbar at the mouth of the Klamath, marking their transition from the Pacific Ocean back to the fresh water of the Klamath River. As these spring run salmon make their way up river, the Karuk mark their arrival at *Ameeky'aaraam*, below the mouth of the Salmon River. The largest run of the year was spring salmon, which were followed by the fall Chinook (Salter and Tucker 2010: 7).

The religious and ceremonial practices of the Karuk highlight their relationship to the Klamath River and its associated resources. Particularly important are world renewal ceremonies and ceremonies for bountiful harvests of fish and other resources (Bright 1978). World renewal ceremonies include the White Deerskin and Jump ceremonies at which the earth and the creator are honored for providing food and facilitating the prosperity of the Tribes. These ceremonies were and continue to be conducted at sites along the Klamath River such as *Panamnik* (Drucker 1936; Verwayen and Hillman 2010). Ceremonies to ensure harvests of fish include the First Fish, First Salmon, and Fish Dam ceremonies. Other ceremonies related to world renewal and curing are the Boat Dance and the Brush Dance. Karuk, Hupa, and Yurok regularly attend each other's ceremonies and the ceremonies are conducted for the benefit of all the groups.

The White Deerskin and Jump Dance ceremonies honor the earth and the creator for providing food resources and maintaining the Tribes. The White Deerskin ceremony is held from late August into September, depending on the river and its waters. The Jump Dance ceremony is conducted after the conclusion of the White Deerskin ceremony and is also held for the benefit of all. Both the White Deerskin and the Jump Dance ceremonies depend on a healthy Klamath River system for fish, basket materials, and bathing. The First Fish ceremony is conducted in spring and the Fish Dam ceremony is conducted in mid-summer to celebrate the harvesting of fish and to pray for continuing prosperity and access to subsistence resources, primarily fish resources. The Boat ceremony forms part of the White Deerskin ceremony, celebrating the flows and health of the rivers. The Brush Dance is held to cure the sick, particularly children. Tribal ceremonies celebrate traditional life ways, and in particular serve to remind the people of their responsibilities to the land and to the species they depend upon.

## Post-Contact History

European American settlement along the Klamath River accelerated following the discovery of gold in the mid-nineteenth century, after which conflicts between Indians and European Americans became commonplace across Karuk territory. The area saw the largest influx of settler populations in

the 20 years or so following the discovery of gold. Massacres and removals of native people accompanied this settlement, but in the event many Karuk people were able to stay at or near their ancestral communities. In 1910, at its lowest point, the native population declined to 775, perhaps 25% of the figure for a hundred years previously. The favorable locations of Karuk villages made them equally desirable for the settlers, and what had been Karuk villages became the towns of Orleans, Somes Bar, and Happy Camp.

Throughout this time, traditional cultural practices were observed. Imported cultural revivalist movements in the 1870s such as the Ghost Dance had only a short flowering, after which the people returned to their traditional ceremonies, which had taken place in the same place, and in the same way, for millennia. Today, the Karuk people continue to practice their traditional activities and are actively engaged in programs related to improving the health of the Klamath River and its fishery. There is a recognized connection between the health of the salmon, the health of the people, and their work to promote the health of the whole landscape. Currently, the Karuk are the second-largest tribe in California and they maintain offices in California at Orleans in Humboldt County, and in Happy Camp and Yreka in Siskiyou County. The Karuk Department of Natural Resources was founded in 1989 to protect fisheries. In 2018, the Karuk opened a casino on Trust land in Yreka, California.

### **Contemporary Studies Pertaining to the Project**

The cultural significance of the Klamath River to the Karuk Tribe was studied by Salter (2003) for PacifiCorp's Klamath Hydroelectric Relicensing Project. This study focused on identification of potential TCPs and SCRs that had the potential to be affected by future operations of the Klamath Hydroelectric Project. Research included reconstruction of the natural setting and patterns of early habitation of Karuk Ancestral Territory, with particular attention paid to cultural elements that are directly dependent on the Klamath River health and upon salmonid resources. The setting and duration of cultural adaptations were examined through ethnographic interviews of Karuk people and knowledgeable individuals, focused on concerns regarding the effect of Klamath River dams on the cultural and natural resources of the Karuk Tribe and People. Study results were integrated with other tribal ethnographic projects to assist with evaluation with the preparation of the synthesis document for the purposes of assessing the Klamath River's eligibility to the NRHP as a Cultural Landscape, or Ethnographic Riverscape (Gates 2003; King 2004).

## **3.2.5 Hupa Tribe**

### **Language and Ancestral Territory**

The Hupa are members of the Athabascan language family and refer to themselves as *Natinixwe*. Hupa ancestral territory is centered in Hoopa Valley and the area surrounding the Trinity River near its confluence with the Klamath River. Ethnographic information regarding the Hupa was largely collected by Goddard (1903), as summarized by Wallace (1978).



## Lifeways

Hupa were organized in villages with a relatively loose political structure (Wallace 1978). Villages were typically comprised of family groups of varying size and consisted of rectangular cedar plank houses. Traditional Hupa subsistence was based primarily on fish and aquatic resources, but also utilized terrestrial resources such as mammals, birds, reptiles, insects, and other fauna (Wallace 1978). Hupa also harvested acorns and hunted in upland areas around the Trinity and Klamath River for deer, elk, birds, and fur-bearing mammals. The hides of mammals were used for a variety of clothing and bird feathers and pelts were and continue to be used for ceremonial regalia.

Hupa tools reflect their emphasis on the acquisition of fish and other aquatic resources and include harpoons, nets, and hooks. Facilities constructed to harvest fish include weirs and dams. The Hupa used canoes for fishing and transportation along the Trinity and Klamath rivers, obtaining their canoes from the Yurok. Transportation along the river and streams was essential to Hupa ceremonial activity.

Like the Karuk and the Yurok, the Hupa's religious and ceremonial practices highlight their relationship to a river, in this case the Trinity River, and its associated resources. Particularly significant are world renewal ceremonies and ceremonies for the harvesting of fish and other resources (Wallace 1978). World renewal ceremonies include the White Deerskin and Jump ceremonies, at which the earth and the creator are honored for providing food and prosperity. Ceremonies to ensure harvests of fish and acorns include the First Salmon ceremony and Acorn Feast (Wallace 1978). Hupa, Karuk, and Yurok regularly attend each other's ceremonies, conducted for the benefit of all the groups.

## Post Contact History

European American settlement following the discovery of gold ultimately resulted in the establishment of the original Hoopa Valley Reservation in 1864, in the northeastern corner of Humboldt County, California. The reservation, known as the 12-mile square, encompasses some 90,000 acres and is the largest in California (USBR and CDFG 2011:3.12-27). The northern portion of the reservation is in Yurok ancestral territory. The Reservation was expanded in 1891 to include the Klamath River Reserve, extending one mile on either side of the Klamath River from the Pacific Ocean for 22 miles upstream, as well as the lands one mile on either side of the river between the Yurok and Hoopa reservations (Salter 2003). The 1988 Hoopa-Yurok Settlement Act (PL-100-580) divided the reservation again, separating it into the Hoopa Valley Reservation and the Yurok Indian Reservation (Salter 2003).

Hupa culture is closely tied to the Klamath and Trinity Rivers. The tribe subsist in large part on the resources acquired from the rivers, most of their sacred sites are located along them, and their cultural traditions are related to them (Bright 1978; Pilling 1978; Wallace 1978). Contemporary Hupa continue to practice traditional activities and are actively engaged in programs related to improving the health of the Trinity River and its fishery. The Hoopa Valley Tribe has established a variety of industries that support varied business enterprises such as timber and gravel extraction modular house manufacturing, a hotel, a restaurant, and a small casino (USBR and CDFG 2011:3.12-27).

## Contemporary Studies Pertaining to the Project

Hupa lifeways largely focused on the lower course of the Trinity River upstream above its confluence with the Klamath River but share many of the close ties to the Klamath as the neighboring Yurok and Karuk peoples. Hupa ties to the area surrounding the confluence of the two streams is described in documents prepared for environmental impact studies addressing fisheries restoration along the mainstem Trinity River (USFWS/USBR 2000), as well as in the Klamath Riverscape study (King 2004). As noted in these documents, the Hoopa Valley Tribe continues to conduct many of their traditional religious ceremonies, and the cultural significance of the Trinity River and its sacred localities is captured in many of these ceremonies. Religious sites on the river are ancient and were designated by spiritual deities at a time beyond living memory. Hupa ceremonies are of unique importance not only to Hupa Indians, but to other Northwest California Indians as well.

### 3.2.6 Yurok Tribe

Ethnographic information regarding Yurok people, collected by Waterman (1920), Waterman and Kroeber (1934), and others has been summarized by Pilling (1978). More recently, Sloan (2003, 2011) also presents a summary of the ethnography of the Yurok and the relationship to the tribe to the Klamath River.

#### Language and Ancestral Territory

Yurok are members of the Algonquian language family and occupied Ancestral Lands that covered approximately 350,000 acres and included approximately 50 miles of Pacific coastline. This vast territory included usual and customary off-shore fishing areas, from Damnation Creek at the north to the southern boundary of the Little River drainage basin, and unbroken along both sides of the Klamath River from its mouth upstream to and including the Bluff Creek drainage basin. Included within these lands are the drainage basins of Wilson Creek, drainages of all streams entering the Klamath River from its mouth upstream to and including the Bluff Creek and Slate Creek basins, including a village site at Big Bar, and the Canyon Creek drainage basin of the Trinity River, the drainage basins of streams entering the ocean or lagoons between the Klamath River and Little River, except for the portion of the Redwood Creek drainage basin beyond the McArthur Creek and excluding the portions of the Little River drainage basin which lies six miles up from the ocean. Currently, the Yurok Tribe occupies a reservation that consists of a strip of land beginning at the Pacific Ocean and extending upstream one mile along each side of the Klamath River for approximately 45 miles.

#### Lifeways

The Yurok life, language, ceremonies, society, and economy are closely tied to the Klamath River. Yurok stories reinforce the Yurok belief that the River was created to provide Yurok people with the best of worlds (Sloan 2003, 2011). Yurok refer to the river as *HeL kik a wroi* or “watercourse coming from way back in the mountains.” Contemporary Yurok often refer to the Klamath River as the “Yurok Highway”. Karuk, Yurok, and Hupa people share similar cultural traits, and traditional stories state that the Klamath River was created to facilitate their interaction with each other and with salmon.

Ethnographically, the Yurok occupied permanent settlements with substantial architectural features including houses, smokehouses, and storage facilities (Kroeber and Barrett 1910; Pilling 1978). Pilling (1978) cites numerous villages, fishing locations, significant cultural places used for ceremonies, gathering, and hunting), and many additional places of cultural significance along the Klamath River in Yurok territory. The Yurok Tribe has documented over 70 villages in its ancestral territory. The Yurok Tribe considers cultural resources sites along and associated with the Klamath River to be part of a larger ethnographic riverscape (Gates 2003; King 2004; Sloan 2003).

The Yurok represent a socially complex hunter-gatherer population in California (Fredrickson 1984, Kroeber 1925) that used marine and salmon resources. Organizing labor to capture the short-duration salmon runs, preserving fish by smoking, then packing and storing the fish suggests a high degree of sociopolitical differentiation. There is also evidence of a maritime expression to Yurok culture involving marine mammal hunting more than 10 miles offshore. Evidence for an open-ocean maritime adaptation comes from the presence of the large amount of northern fur seal fauna in the Stone Lagoon midden. Jones and Hildebrandt (1995) argued that pinnipeds were extirpated early on shore by Native Americans, who then developed watercraft to hunt offshore.

The material culture of the Yurok people includes, to this day, dugout redwood canoes, split plank houses, storage boxes, sweathouse pillows and stools, numerous varieties of fishing implements, baskets, and leather, shell, straw and feather garments and ceremonial regalia.

Transportation along the rivers and streams is essential to Yurok ceremonial activity. One of the most important aspects of Yurok technology was the river- and ocean-going canoe or yoch, carved from selected redwood trees (Sloan 2003, 2011). Historic accounts document expeditions traveling up to 180 miles along the coast. A typical river canoe measured 16 to 20 feet in length and 3 to 4 feet in width. River canoes were customarily paddled and or pushed with a long pole. Yurok technology serves utilitarian functions, but also include ceremonial aspects of Yurok culture. For example, facilities, such as fishing weirs, were created specifically to signify the time of sacred ceremonies (e.g., the White Deerskin and Jump ceremonies).

Fishing places along the Klamath River are owned by individuals, families, or groups of individuals. Fishing places can be borrowed, leased, inherited, or bought and sold (Sloan 2003, 2011). Some ownership rights at fishing places depended on species of fish caught at the site, while others depended on the water level. For example, individuals owned the right to fish at a place if the river was below or above a certain level. Yurok still recognize this traditional form of resource management and use of the river and families and individuals continue to use and own rights to fishing places on the Klamath River.

The religious and ceremonial practices highlight the Yurok relationship to the Klamath River and its associated resources. Particularly important are the Jump, White Deerskin, Boat, and Brush Dance ceremonies. The Jump and White Deerskin ceremonies are held in to give thanks for food resources abundance collected during the year and to insure a continued abundance of food resources for the next year (Sloan 2003, 2011). Affluent individuals and religious leaders conduct most ceremonies, and wealthy individuals are expected to feed salmon to everyone attending the ceremonies.

The Boat Ceremony is part of the White Deerskin Ceremony. In this ceremony, several boats filled with participants travel down the Klamath River. The participants thank the river for continuing to flow and provide resources. The Brush Dance Ceremony unfolds over a 10-day period and is for the healing of a sick child or individual. This ceremony highlights the importance of Klamath River resources to Yurok. For example, baskets made of plant materials collected at the water's edge are used to hold food and ceremonial medicine; acorns are cooked in the baskets using cooking stones gathered at specific river bars; ceremonial regalia is made from various plant and animals that live along the river; ceremonial bathing is performed; and participants listen to the sounds made by the Klamath River (King 2004). The social and ceremonial significance of the Klamath River is evident in and reinforced by Yurok traditions. For example, there are at least 77 Yurok stories that make direct reference to the Klamath River (Sloan 2003, 2011). These Yurok stories reinforce the belief that the Klamath River was created to provide Yurok with a very good place to live.

### Post-Contact History

Spanish explorers and vessels traveling from the Philippines interacted with Yurok along the coast as early as the late 1700s. The Yuroks' first confirmed visit by outsiders was in 1775 by the Spanish, who came ashore at Trinidad Bay on Trinity Sunday (USBR and CDFG 2011). Other explorers, including Peter Skene Ogden of the Hudson's Bay Company and Jedediah Smith of the Rocky Mountain Fur Company, certainly encountered Yurok along the Klamath River in the 1820s. Intensive European American settlement and use of Yurok territory, however, did not begin until after the discovery of gold in California in early 1850. With strikes along the Klamath and Trinity rivers, gold prospectors inundated the region, significantly altering traditional Yurok culture (Pilling 1978).

In 1851, a "Treaty of Peace and Friendship" was signed between the United States and the Klamath River Indians, but the United States Congress did not ratify this treaty. Subsequently, on November 16, 1855, the Klamath River Reserve, also known as the Klamath Indian Reservation, was established by Executive Order. The Order designated the reservation lands from the mouth of the Klamath River, one mile on each side extending approximately 20 miles upriver to Tectah Creek (Sloan 2003, 2011).

Escalating conflict between Yurok and European Americans during the 1860s and 1870s over encroachment onto the Klamath Indian Reservation resulted in the gradual attempted displacement of Lower Klamath Indians further upriver (Sloan 2003, 2011). European Americans on the reserve resisted attempts to remove them, including eviction in 1879 by the United States Army (Sloan 2003, 2011). After decades of struggle to keep their traditional homelands, the Hoopa-Yurok Settlement Act 51 (Public Law 100-580, 102 Stat. 2924), enacted by the U.S. Congress on October 31, 1988, divided the Hoopa Valley Reservation into separate Hoopa and Yurok reservations and allowed the Yurok to govern themselves. The Act noted that resources of each reservation belong to the corresponding tribe, with the Yurok given a federally allotted subsistence and commercial fishery that includes use for commercial purposes themselves through the Yurok tribal government. The Yurok constitution was adopted November 19, 1993 (USBR and CDFG 2011).

Today, the Yurok Tribe, headquartered in Klamath, California, with an upriver office located in Weitchpec, California, is the largest tribe in the state with over 6,200 enrolled tribal members. The Yurok Tribe employs more than 200 people, manages one of the most substantial fishery programs

on the Klamath River, and self-regulates its subsistence and commercial fishery (USBR and CDFG 2011). The Yurok Tribe actively participates in the in-river and upslope restoration of its ancestral lands and has signed a collaborative management agreement with the Department of the Interior that memorializes the prime role that the Yurok Tribe maintains in managing its resource base (USBR and CDFG 2011).

### Contemporary Studies Pertaining to the Project

The cultural significance of the Klamath River area to the Yurok Tribe was examined by Sloan (2003) for PacifiCorp's Klamath Hydroelectric Relicensing Project. This confidential study focused on identification of cultural resources within the Project's APE, including TCPs and SCRs to assist with the preparation of the synthesis document for the purposes of assessing the Klamath River's eligibility to the NRHP as a Cultural Landscape, or Ethnographic Riverscape (Gates 2003; King 2004). The Yurok tribal studies evaluated cultural components related to water, fish, gathering areas, transportation, habitation, and sacred/ceremonial areas associated with the River. The study included ethnographic information on Yurok traditional and contemporary culture, archival and published literature, and Yurok oral histories and interviews with tribal elders on the Yurok relationship with the Klamath River.

### 3.2.7 Quartz Valley Community of the Quartz Valley Indian Reservation

The Quartz Valley Community of the Quartz Valley Indian Reservation is a federally recognized tribe representing people primarily of Karuk and Shasta ancestry. The Quartz Valley Indian Reservation is in Scott Valley, near Fort Jones, in Siskiyou County, California, within the Klamath River watershed. The Reservation consists of consists of 694 acres of land of which 143 acres are tribally owned.

As part of the 1934 Reorganization Act for Indian People (Wheeler-Howard Act), the federal government purchased 604 acres of land in the Scott Valley area between 1937 and 1939, establishing the Quartz Valley Indian Reservation. The Quartz Valley Indian Community filed their constitution and bylaws with the Office of Indian Affairs in 1939, which was granted in March of 1940.

In 1958, the US Congress passed the California Rancheria Act, which terminated Federal supervision and Indian status for 41 rancherias, including Quartz Valley. The goal of the act was to eliminate the many small reservation units and to promote assimilation, eventually leading to the termination of the Quartz Valley Indian Reservation in 1960. The Quartz Valley Indian Reservation land was divided and deeded to Indians choosing to terminate in 1964. Over the next few years, over 90 percent of the Reservation lands were seized or sold out of Indian ownership to pay for debts and unpaid taxes.

In 1979, Quartz Valley Indian Reservation was a member of the *Tillie Hardwick* class action suit that restored federal recognition and federal legal status to 17 California reservations. In 1983, a stipulated judgment was entered against the United States, requiring the United States to restore "benefits or services provided or performed by the United States for Indians because of their status as Indians" and to restore their former tribal status through inclusion on the Secretary's Federal Register list of recognized tribal entities.



Since 1983, the Quartz Valley Indian Reservation has diligently sought to reacquire and place in federal trust those lands lost after termination. The Tribe's current total of tribally owned trust land is about 143.37 acres, which is located both within and outside the original Reservation boundaries. Tribal administrative facilities were developed and continue today as the tribe continues to grow. Shackleford Creek, a major tributary to the Scott River and eventually into the Klamath River, flows through tribal trust properties within and outside the original Reservation boundaries. Shackleford is one of the primary water sources of Quartz Valley Indian Reservation, but the free-flow of Shackleford Creek is impaired from agricultural demands, run-off and other pollutants.

Today, the Quartz Valley Indian Community continues to practice stewardship, protection, and enhancement of their natural and cultural resources. The Klamath River offers passage of migrating salmon from the ocean back to the Scott River, Shackleford Creek, and ultimately the Reservation. The focus of environmental protection for the Quartz Valley Tribal Environmental Program includes this migratory pathway.

### 3.2.8 Resighini Rancheria

The Resighini Rancheria, also known as the Coast Indian Community of Yurok Indians of the Resighini Rancheria, is located just south of Klamath, California, on the lower Klamath River. The Resighini Rancheria is a federally recognized tribe of historic Yurok origin. The rancheria was established in 1938 on property that once belonged to Swiss immigrant Augustus "Gus" Resighini. It is located on the south side of the Klamath River, at Waukell Flat, named for the Yurok village of *Wo-Kel* (Pilling 1978:139). The rancheria parcel is bordered to the west by U. S. Highway 101 and Waukell Creek, and to the east by the Klamath River. To the north lies the Klamath River and to the south steep forested slopes. The mouth of Klamath River is 3 miles to the northwest.

The discovery of gold in northern California in 1849 brought an influx of European miners and settlers to the Klamath River area, resulting in widespread displacement of Indian peoples. Beginning in 1851, Indian treaties were negotiated in California, including one with the "Pohlik or Lower Klamath River Tribe"; however, none of the treaties were ever ratified. To quell local hostilities that ultimately grew between Whites and Indians, in November 1855, US President Franklin Pierce established the 25,000-acre Klamath River Reservation (Klamath River Military Reserve) by Executive Order, which included one mile on each side of the Klamath River from the mouth upriver twenty (20) miles. The headquarters for the Klamath River Reservation was the Waukell Agency, located on the same river flat as the present-day Resighini Rancheria. In 1864, congressional legislation required that only four reservations exist in California; thus, the Klamath River Reservation was enlarged to encompass the Hoopa Valley Indian Reservation and a connecting strip (known as the "Extension" or "Addition"). The following year, Congress initiated disposition and sale of lands of the former Klamath River Reservation. Indian allotments were granted on the Extension area, encompassing present-day Resighini Rancheria tribal lands. Through several purchases, Augustus "Gus" Resighini eventually acquired the homestead land on Waukell Flat (Resighini Rancheria 2020).

In 1938, the U. S. federal government purchased the Gus Resighini parcel to provide trust land for Indigenous People residing on the Klamath River and coast in Del Norte and Humboldt Counties that

did not own an allotment at the time. Several Yurok families moved downriver to take up residence and, in 1939, the Resighini property was designated a reservation and the tribe was federally recognized under the authority of the Indian Reorganization Act of 1934 (BLM 2010). The reservation was subsequently occupied by a small number of Yurok people traditionally known as Poliklah and Nr-er-ner.

In 1975, Resighini Rancheria members formed a tribal government that was approved by the US Secretary of Interior. As the Coastal Indian Community of Yurok Indians of the Resighini Rancheria continued to grow tribal governmental operations, Congress passed the Hoopa-Yurok Settlement Act (HYSA) in 1988, which split the Hoopa Valley Indian Reservation into two reservations, creating the Yurok Reservation and requiring the establishment of the new federally recognized Yurok Tribe to govern said reservation (Resighini Reservation 2020). This meant the new Yurok Reservation now surrounded the Resighini Rancheria. The HYSA also required that, as a Tribe of “historic Yurok origin,” the Coast Indian Community of Yurok Indians of the Resighini Rancheria had to vote on whether they wanted to merge with the new Yurok Tribe or maintain their distinct sovereign status as a federally recognized Tribe. Resighini Rancheria citizens voted to stay a distinct Tribe, which meant maintaining separate federal recognition status; reservation trust land; government-to-government relationship with the United States; water, fishing, mineral, hunting and other rights and trust resources; assets we had developed; and retaining a more traditionally sized tribal government (Resighini Rancheria 2020).

Today, the Resighini Rancheria community is governed by a democratically elected, five-member Tribal Council and a General Council, while the general membership serves on boards, committees, commissions, and corporations to assist the Tribal Council. Resighini Rancheria is the only Indian Rancheria in the State of California situated within the exterior boundaries of lands granted to another federally recognized Indian tribe (BLM 2010). The 2000 federal census reported 31 persons residing within the rancheria. Today, Resighini Rancheria consists of 435 tribally owned acres, most held as tribal trust land (BLM 2010).

Resighini Rancheria citizens continue time-honored practices of traditional storytelling, subsistence fishing, and resource gathering. Members participate in traditional dances, including the Brush Dance, Jump Dance, and White Deerskin Dance held every two years at sacred areas (Resighini Rancheria 2020). Local cultural activities include attending and/or making regalia of necklaces and ceremonial dress for the traditional dances (Resighini Rancheria 2020). The Resighini Rancheria is recognized by the U. S. Environmental Protection Agency as having water quality authority over water resources of the rancheria and, as the it borders the Klamath River, it maintains riparian water rights. A Tribal Water Quality Ordinance establishes water quality standards for the rancheria, and a Tribal Environmental Protection Authority monitors the Klamath River and other rancheria waters.

### 3.3 Historical Context

The arrival of European Americans to the Klamath River region brought about rapid changes within traditional Native American cultures. The earliest European Americans to arrive were nineteenth century fur trappers and expeditioners, followed by gold prospectors, many of whom eventually settled in the area. Completion of emigrant trails and routes, such as the Applegate Trail, helped



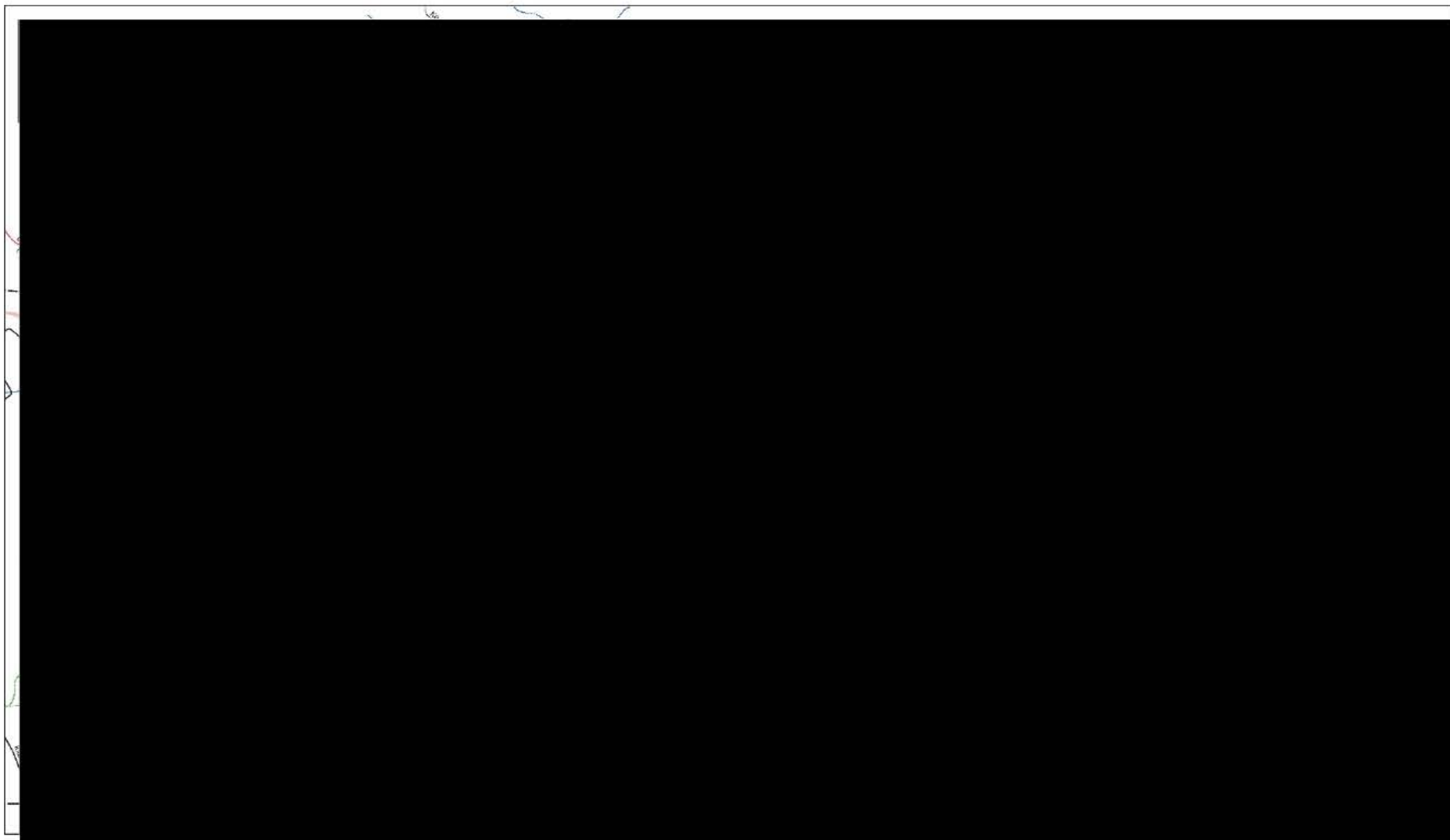
establish small communities in the Klamath Lakes area and along the Klamath River corridor. Settlement was promoted by federal land and water legislation that greatly increased the acreage available for agriculture and ranching. Logging, one of region's primary industries, substantially expanded as railroads carrying lumber and passengers supplanted the stage lines. Hydroelectric development in the Upper Klamath River canyon area began around the turn of the twentieth century; and by 1912, competing regional electricity producers merged into the California-Oregon Power Company (Copco). Hydroelectric development during the twentieth century created fish management and conservation issues, as well as provided recreation opportunities.

The following historical overview summarizes the major historical themes relevant to the Project area. A historic context statement for the Klamath Hydroelectric Project (Kramer 2003a) and a historical landscape overview of the Upper Klamath River Canyon by Beckham (2006) provide additional detail. Figures 3- 1 and 3-2 illustrate place names important to the summary discussion presented below.

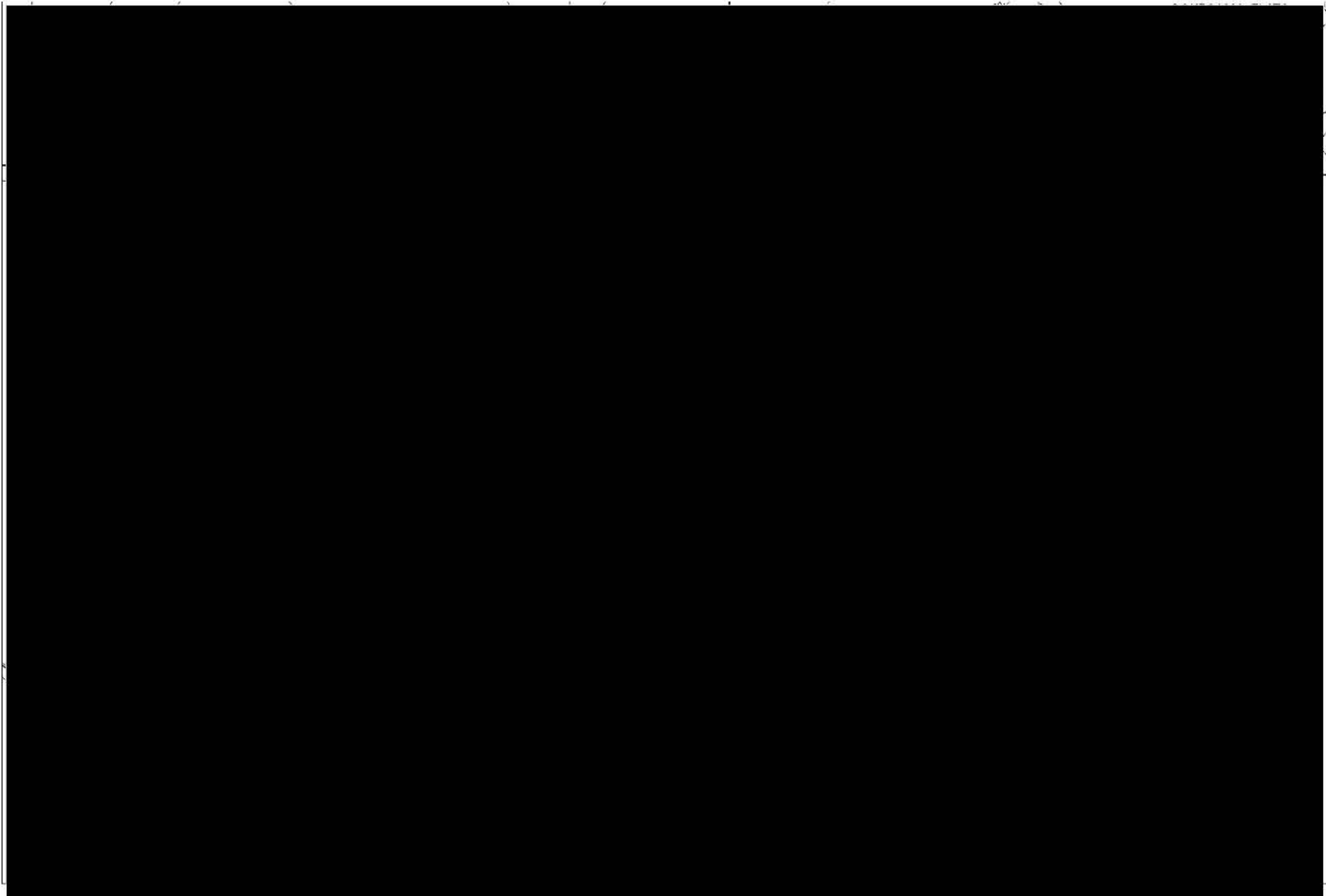
### 3.3.1 Early Exploration and Settlement

A network of Native American trails that were often used by early European explorers and later settlers originally traversed the Project area. One of the first Europeans to use these trails to enter the Klamath River region was the HBC fur trapper Jean Baptiste McKay. McKay came west as a member of the Astor Expedition's 1810–1812 overland voyage to Astoria, Washington, sponsored by the Pacific Fur Company (Barry 1933:288). He is credited with possibly establishing a fur-trading camp on the Umpqua River, in Oregon, called the Old Establishment or McKay's Old Fort, which saw seasonal use into the 1830s (LaLande 2018). His forays into the fur-bearing Klamath River region took place as early as 1825, when he reportedly camped near Sheep Rock, in Shasta Valley (Jones 1953:2); the route of his entry into Siskiyou County is not known.

During the 1820s and 1830s, HBC trappers were intensely involved in the early exploration and development of what would become southern Oregon and northern California. HBC trapping brigades were sent south from company headquarters in Fort Vancouver, Washington, along what became known as the Siskiyou Trail, into the northern California area and as far south as the San Francisco Bay, where the company operated a trading post at Yerba Buena (San Francisco). In 1826-1827, Jedediah Strong Smith and Peter Skene Ogden explored what is now Siskiyou and Klamath counties in search of beaver for fur trading. Ogden's expedition of 1827 is of particular interest, as Ogden's journal indicates that this HBC brigade first encountered and crossed the Klamath River in mid-January 1827, immediately below Lake Ewauna, Oregon (LaLande 1987:25-29), traveling into the Project area. The group continued south along the river to a point west of Big Bend, eventually making camp on Long Prairie Creek. After remaining there several days, on January 31, 1827, the brigade proceeded south to the Klamath River, where they established camp within an area now under Copco Lake. After camping several days, the Ogden party traveled down the Klamath River to a point at or near Brush Creek, within present-day Iron Gate Reservoir. Here, they made camp while some of the trappers scouted the river below Cottonwood Creek (LaLande 1987:44). The brigade then moved to Cottonwood Creek on February 6, 1827, making their way up the creek some distance before making camp. Two days later, the group crossed the Siskiyou Mountains divide and entered the Rogue River drainage basin, in present-day Oregon.



**Figure 3-1 Historic Place Names in the Project Area (Part 1)**



**Figure 3-2 Historic Place Names in the Project Area (Part 2)**

Soon after, in 1829, Alexander Roderick McLeod led a party of HBC trappers and explorers through the area. During this expedition, McLeod established a number of trails in northern California, and, within a few years, HBC trappers were passing regularly through what would become Siskiyou County. Over time, the various travel routes between Oregon and northern California became collectively known as the “California-Oregon Trail.” This included the coastal route used by Jedediah Smith and Alexander McLeod, the HBC trail over the Siskiyou Mountains, and the Peter Skene Ogden route by way of Klamath Lake (Rensch et al. 1933:415). These various routes have been described as strands of the Siskiyou Trail (Dillon 1975). The central portion of these trails passed through Shasta Valley, and this area was crossed by many emigrants in the 1830s and 1840s.

American fur trapper and trader Ewing Young was the first to break trail up the Sacramento River Canyon and along the western base of Mt. Shasta in 1834, and 3 years later, he drove nearly 700 head of cattle north along this route from San Francisco to the Willamette Valley in Oregon to provision the burgeoning American settlements (Rensch et al. 1933:415-416). During and following the 1848 California gold rush, thousands of Oregonians used the Siskiyou Trail to enter and settle the Rogue Valley. The trail was re-engineered and re-plotted as a toll road in 1860.

The fur trade declined in the mid-1840s, leaving the area sparsely occupied until the advent of regional mining and logging. Following the discovery of gold at Sutter’s Mill in Coloma in 1848, and the confirmed presence of large gold deposits, a mass migration to California caused the European American population to jump from an estimated 4,000 in 1848 to 500,000 in 1850 (Bancroft 1888). In the Klamath River region, gold was discovered just north of present-day Yreka in 1851 (Hoover et al. 2002).

An important early travel route across southern Oregon, used by gold seekers and other emigrants, was the Applegate Trail, a branch of the California Trail. The Applegate Trail is an alternate southern route of the Oregon Trail and was blazed from west to east, intersecting the California Trail at the Humboldt River in Nevada. After its opening, Oregonians used part of the Applegate Trail to travel back and forth to California’s gold fields. A group of Oregon settlers from the Willamette Valley, led by Jesse and Lindsay Applegate, established this wagon road in 1846. The route was intended to be a less dangerous, southern route into Oregon that avoided the HBC forts and other British owned lands to the north, as well as provided an all-land route from Fort Hall (in present-day Idaho) for future settlers, bypassing the original Oregon Trail route along the Columbia River.

By 1849, with thousands of emigrants were entering California by the Applegate Trail, some coming from the east and others from the north. Trail use continued in the 1850s, but slowly declined as new routes were established. In 1857, a shorter route to California was developed to reduce westbound travel on the Applegate Trail. This route, known as the Honey Lake Wagon Road and the Lander Cut-off, was established near Susanville, California, and was the first wagon road to receive congressional funding.

Increased emigrant traffic led to conflicts with Native American groups, and attacks on travelers by Modoc Indians beginning in the early 1850s served to diminished use of the Applegate Trail. In the summer and fall of 1860, a military camp was set up on Spencer Creek (Clear Creek), just north of present J.C. Boyle Reservoir, to protect emigrant traffic. This was known as Camp Day and was

located about 1 mile east of the Klamath River crossing of Applegate Trail. Subsequently, Fort Klamath, near present-day Chiloquin, Oregon, was established in 1863, also for the protection of travelers on the Applegate Trail and other emigrant routes. Use of the Applegate Trail continued through 1867, at which time the town of Linkville, Oregon (now Klamath Falls), was established on the Klamath River, with the Applegate Trail used to bring in freight from the west (Helfrich 1971:13-16).

In the 1860s, with the rush to the gold mines being worked in eastern Oregon and Idaho, additional roads were constructed that supplanted the Applegate route. In addition, settlements were established in Modoc County and roads were built from these locations to Linkville, again reducing the need for the Applegate Trail. Portions of the Applegate Trail witnessed considerable use during the Modoc War in the early 1870s, discussed below, while other portions were largely abandoned. The establishment of the Ashland-Linkville Road, also known as the Southern Oregon Wagon Road, in 1869 eventually replaced the older Applegate Trail through the area west of Klamath River (Helfrich 1971:97).

### **3.3.2 Mining**

Permanent settlement of the Upper Klamath River area by European Americans followed shortly after the California Gold Rush of the early 1850s. It was the discovery of placer gold that attracted the pioneers of what became Siskiyou County. The influx of miners also provided a market for early agricultural pursuits, including livestock ranching. The earliest white settlers within that portion of the Upper Klamath River area where gold was not present took advantage of the natural resources to earn a living. As described below, trapping and hunting provided valuable furs and deer hides, while local streams yielded abundant fish for market.

By early 1852, the mining population in the Yreka area and on the neighboring Scott River in California had grown so large that it became necessary to form a new county, and Siskiyou County was created from a portion of Shasta County. Before the end of that year, Justices of the Peace were presiding in four townships, including Yreka, Humbug, Scott River, and Cottonwood (Jones 1953:22).

Gold was first discovered in the larger northern California and southern Oregon region in 1842 by members of the Wilkes Exploring Party (Wells 1881:25). The team found both placer gold and vein gold in quartz along the Umpqua River in Oregon, as well as placer gold in the upper Sacramento River. After the 1848 discovery of gold at Sutter's Mill, prospectors in Oregon began to work their way south into what later became Siskiyou County (Stumpf 1979:4; Wells 1881:53). In 1849, Lindsey Applegate and others crossed the Siskiyou Mountains and searched for gold in the headwaters of Scott River for several days (Stumpf 1979:4; Wells 1881:53). At the same time, settler Pearson B. Reading left his ranch in the upper Sacramento Valley to prospect the Trinity River. Upon finding river bars rich in gold, he brought a large contingent of laborers to mine the river. By the fall of 1849, word was sent out of the riches that were being found (Wells 1881:55).

In early 1850, parties searching for the mouth of the Trinity River discovered the Klamath River, exploring it downstream, where they founded the settlement of Klamath City (Wells 1881:59). Groups explored the Klamath River upstream as far as the Happy Camp area, as well as portions of its tributary, the Salmon River, where they discovered gravel bars containing gold. Additional mining

parties traveled further up the Klamath River during the summer of 1850. Miners went as far as 1 mile above the mouth of the Shasta River and crossed over the hills into Shasta Valley. By the first week of August 1850, miners reached the mouth of Yreka Creek, traveled up the stream, and made camp at the current location of the City of Yreka. After some prospecting, miners continued south along the “Oregon Trail” to the Sacramento River and on to the City of Shasta, just west of Redding (Wells 1881:59-60).

By the fall of 1849, a large number of miners were working the Trinity River; and by late 1850, considerable gold mining had begun near the confluence of Klamath and Scott rivers, particularly at Scott Bar on the Scott River. In early 1851, thousands of prospectors poured into areas of the upper Klamath and Shasta rivers, Yreka Flats, Greenhorn Creek, and Scott Valley (Wells 1881:62). The portion of the Klamath River between Cottonwood and Humbug creeks, within the Project ADI, is within what became known as the Klamath River mining district, and falls more specifically within the Hornbrook portion of the district. The original economy of the Cottonwood Creek area was entirely mining, and gold production at Cottonwood Basin was considered second only to Yreka Flats (Jones 1953, 1971).

A number of other claims were filed in the Klamath River mining district on several Klamath River tributaries, near French Gulch (Jones 1971:285), Dutch Gulch and Printer Gulch (French 1990:25), Sharp’s Gulch (Jones 1971:286), Bar Bell, Oregon Bar, and Long Gulch (Jones 1971:288). On Ash Creek, north of the Klamath River, extensive mining was carried out on the steep hillsides (Jones 1971:288). In some areas, miners used wings dams to divert the river and expose the river bed and derrick mechanisms to move the large boulders. Gravels were processed to bedrock and the bedrock crevices were washed for gold (Jones 1971:288). Gravel bars of the Klamath River were also mined using large dredges, often employed on the large tributary streams, such as Cottonwood Creek (*Sacramento Union* 1908).

Mineral patents indicate that no productive mining ever transpired on the Upper Klamath River east of Cottonwood Creek and east of the Klamath Mountains, although some prospecting likely occurred in the early days. It was likely during the early mining period that much of the upper river was initially explored, revealing areas ideal for later settlement, ranching, and logging.

Many of the men and women who settled farms and ranches in the Upper Klamath River region originally worked the mines of Siskiyou County, particularly in the areas of Yreka, Hawkinsville, Scott Valley, Quartz Valley, and Humbug Creek. Some individuals turned from mining to working in hotels and stores, butcher shops, laundries, banks, and mills, while others worked for express and stage companies. Others started livestock ranches or became ranch hands. Others returned to their profession in medicine, some entered politics, and still others turned to fur trapping, hunting, and fishing to earn a living.

Although early county records and histories indicate that there was a large Chinese population working the Klamath River mines at and near Henley, California, it appears that many of these miners did not stay in the area after the mines played out. A large number of Chinese men were later employed in the construction of the Klamath Lake Railroad in 1901. A significant number of Portuguese miners, along with miners of German or Prussian descent, came to Siskiyou County, and



many of these people later settled in the Upper Klamath River region, particularly in the Willow Creek and Bogus Creek areas.

### 3.3.3 Agriculture, Ranching, and Reclamation

As regional mining activity waned, a number of former miners remained in the Upper Klamath River area to establish ranches and farms, capitalizing on the area's rich soil, flat terrain, and plentiful water (PacifiCorp 2004: Exhibit E 6-64). Towns developed and, in 1867, the Linkville townsite (Klamath Falls) was founded in southern Oregon on the Klamath River near the outlet of Upper Klamath Lake. By 1869, approximately 100 people were living within the present Klamath County boundaries (WHPC 1905:940). Further downriver, in the 1850s a small community was founded at Whittles Ferry, near present day Keno, Oregon. In California, communities developed in the present day Copco Lake area by the 1860s at Oak Grove (now Copco Village) and Killebrews Ferry, near Wards Bridge, and by the 1870s at Beswick. Although the Iron Gate Reservoir area witnessed the eventual development of numerous family ranches, no distinct communities were established during the late nineteenth century.

Federal legislation related to public lands and irrigation shaped settlement patterns in the Upper Klamath Basin. The 1850 Donation Land Law and 1862 Homestead Act provided means for settlers to acquire and develop public lands. Early regional agriculture primarily provided winter forage to the cattle and horses (Hayden 1941:103). Recognizing the land's potential, residents began cultivating grain near Keno, Klamath Falls, and Klamath Lake's eastern shore to supply the local market (WHPC 1905:939). During the 1880s and 1890s, before irrigation became widespread, Klamath County farms used dryland farming techniques to produce crops such as barley and potatoes (KCHS 1984:232). By 1905, the local farms were producing large potato crops, as well as sugar beets, apples, pears, plums, prunes, cherries, peaches, berries, grasses. During that era, buyers from throughout the west coast flocked to the Upper Klamath Basin to buy cattle (WHPC 1905:985,989).

Agriculture and ranching do not appear to have been a major focus of historical activity in what is now the J.C. Boyle Reservoir area, as no patented homesteads were recorded (Beckham 2006: Table 2). Instead, historical records for this area detail the influence of logging, lumber mills, and early transportation routes. The Homestead Act did attract numerous settlers to the Upper Klamath River canyon area downstream of J.C. Boyle Reservoir to the California-Oregon border. As noted by Beckham (2006:62), however, only a low percentage of acreage (1 to 5 percent) in this area was in private ownership, with most parcels retained as public domain lands.

Between 1882 and 1890, a majority of the lands surrounding and currently inundated by Copco Lake and Iron Gate Reservoir had been patented, with occasional additional claims made between 1911 and 1919. Unlike the Oregon homestead patents, those on the California side encompassed a higher acreage percentage (15 to 22 percent) of private land (Beckham 2006), possibly related to gentler terrain and valley environments, unlike the steep geography of the river canyon present near and above the California-Oregon stateline.

Many of these homestead claimants in the Copco Lake and Iron Gate Reservoir area are associated with local geographic landmarks (e.g., Lennox Rock, Ward Canyon, and Chase Mountain), as well as with documented historic sites (e.g., Beswick/Klamath Hot Springs) and features (e.g., Miller-DeSoza



ditch) within the Project area. Historical summaries of these homesteads can be found in compilations by Hessig (1978) in several volumes of the *Siskiyou Pioneer* (1974, 1982, 1995), and in a historical landscape overview by Beckham (2006). In the Copco Lake area (Figure 3-3), from upstream to downstream, lands were patented by J. Calkins (1890), A. Keplar (1882), C. Schnackenberg (1888), F. Picard (1882), E. C. Spannaus (1883), H. Sparling (1888), J. Lennox (1884), W. B. Ward (1889), H. Ward (1882), H. F. Keeton (1911), B. Davis (1889), C. T. Clarke (1919), and D. Mains (1917). In the Iron Gate Reservoir area, patented landowners included W. G. Spearin (1890), T. J. Greive (1888), R. Wanaka (1901), G. A. Tebe (1931), F. Miller (1899), W. A. Moore (1888), A. Borges (1892), A. Burch and A. Borges (1904), and M. Franklin (1890). Named ranches associated with some of these families include the Hahn Ranch, Chase Ranch, Parks Ranch, Spannaus Ranch, Stone-Edwards Ranch, Lennox Ranch (Figure 3-4), Raymundo Ranch, Keeton Ranch, Mary Ward Ranch, Tip Ward Ranch, Thomas A. Grubb Ranch, Thomas J. Greive Ranch, and Maurezo Aguada-Daggett Ranch. Other land parcels were patented by the CPRR (1895) and the State of California (1881, 1918).

Another piece of landmark legislation, the Reclamation Act of 1902, provided for conversion of unproductive land into small, irrigated farms (Foster 2002:153-154). The Act built upon the Upper Klamath Basin's early irrigation efforts, such the Linkville Water Ditch Company's 1878 canal. The canal originated at the Link River, near its outlet from Upper Klamath Lake, to supply water to Linkville's town lots. Subsequent area canals enabled farmers to cultivate croplands that, after harvest, were pastured with large herds of stock cattle (Hayden 1941:103; Heileman 1908:15). The federal reclamation program, administered by what is now the USBR, substantially increased the acreage available for Basin agriculture and ranching, mainly east of the Klamath River.

In 1905, the USBR approved the Klamath Project, requiring the government to purchase water rights from mostly private owners. The Klamath Project area encompassed northern portions of Siskiyou and Modoc Counties, California, and areas of Klamath County, Oregon (Heileman 1908:4-9). Construction projects included "dams, canals, ditches, and other facilities to drain, move and store of Upper Basin water" (Most 2018; Foster 2002:155). Reclamation led to a substantial increase in the percentage of cultivated Klamath Basin lands; and in Klamath County, dairying, farming, and stock-raising remained the principle industries (Copco 1923). Farms remain an important part of the Klamath Basin's landscape and economy, with 1,744 irrigated farms out of a total of 2,239 farms (Doremus and Tarlock 2008:29).

### 3.3.4 US Military Activities

The US military history of the Upper Klamath River area began during the 1850s gold rush period and was tied to the unrest that occurred between Native Americans and the arrival of European American miners and settlers. Land seizure by the settlers, coupled with intense and rapid incursion into the region by gold seekers, resulted in displacement of Native Americans, changes in social order, cultural upheaval, and episodes of personal combats. As ancestral Native American lands were overtaken, tribal access was irrevocably lost to large areas of the natural environment traditionally used for resource gathering, hunting, and fishing, and Native American economies were threatened by a dwindling food supply. Native American communities were forcibly removed from



**Figure 3-3 Historic Land Patents in the Copco Lake Area**





Figure 3-4

their ancestral village locations and frequently needed to support themselves by stealing the cattle and stock of local ranchers for food (Daniels 2003). Retaliations by settlers prompted acts of violence, and volunteer militias were formed to attack native settlements. Eventually, small skirmishes between Native American groups and settlers gave way to larger military expeditions against native peoples, instigated to “right” a perceived wrong and to gain Indian property and political capital for ambitious office seekers (Castillo 1978:108).

Despite its remote setting, the Upper Klamath River area witnessed a number of US military campaigns between the 1850s and 1870s. These campaigns included what is known as the Cave Fight (1853-1854), a battle fought near Fall Creek, California, just outside the Project ADI; the Piper Detachment (1859), a military company sent to retrieve livestock near Moonshine Falls (35KL15), in Oregon, within the Project ADI; and Camp Day (1860), established on Spencer Creek, about 3 miles west of Keno, Oregon, outside the Project ADI. Regionally, the Upper Klamath River area lies in the area between where two major US military campaigns were fought to remove native peoples to distant reservations—the Rogue River Wars (1855-1856), in the Rogue Valley of southern Oregon, and the Modoc War (1872-1873), in northeastern California and southeastern Oregon.

## Cave Fight, Fall Creek Area on the Klamath River, Siskiyou County, California

The first US military operation conducted in the Project vicinity occurred during the winter of 1853-1854 in Fall Creek area, just north of present-day Copco Lake. This event, known as the Cave Fight, was documented by Wells (1881:134-136) in the *History of Siskiyou County* and by Paine (1959:107-109) in *Conquest of the Great Northwest*, as well as in several period newspapers, including the *Shasta Courier*, *Sacramento Daily News*, and the *Yreka Journal*.

According to Wells' 1881 account, numerous European American men living in Cottonwood (present-day Henley, California) had taken Native women as their companions or wives and, due to mistreatment, some of the women left these men and went into hiding in a cave near Fall Creek, a Klamath River tributary located about 13 miles upstream from Cottonwood. These women were part of "Bill's band of Shastas," referring to Shasta headman Tyee Bill (Sisemore and Good 1941:24; Wells 1881:134). After their escape in November 1853, the women were chased upriver, but the pursuers were turned around by the Shastas. Unable to prevail, these men reported that the Indians were keeping stolen livestock at the cave, prompting a company of Cottonwood volunteers to attack the cave on January 13, 1854 to retrieve the stolen property. Four volunteers were killed during this first skirmish and a number of other European Americans were injured.

Word of the Cave Fight and the reported stolen livestock reached Fort Jones, a US military post that had been established in 1852 in nearby Scott Valley, Siskiyou County, California. In January 1854, detachments of army troops from Fort Jones and the Cottonwood volunteer militia traveled to the cave site for battle. Wells' account of the ensuing fight describes that the army troops stationed themselves on the south side of Klamath River, while the volunteers took a position north of the river, within view of the cave. In setting their fighting position, several men, including Captain R.C. Geiger climbed to the top of the hill, above the cave. When Geiger peered over the rocks at the cave below, he was shot in the head and killed. As this fight was occurring, another detachment of US army soldiers, under the command of Captain Andrew Jackson Smith, were en route from Fort Lane, in Jackson County, Oregon, armed with a mountain howitzer, a short gun for firing shells on high trajectories at low velocity (Captain Smith would later play a prominent role in the Rogue River War). According to Wells (1881:135), the howitzer was stationed on the south side of the Klamath River and shots were fired in the direction of the cave. For fear of being struck, the volunteer militia retreated as the area surrounding the cave was bombarded. Wells (1881:135) reported that only a single projectile fell near the mouth of the cave. However, it was not necessary to strike the cave directly as the howitzer was capable of firing both cannonballs and explosive shells, the latter rendering the howitzer more of a large shotgun.

Since the army reportedly stationed their howitzer on the south side of the river, it may have been placed somewhere on the high cliffs above Ward Canyon, where a view of the cave was easily afforded. However, given the effective range of the model 1841 mountain howitzer, the cliffs above Ward's Canyon would have been much too far for a howitzer shell to reach the cave. In fact, the only point south of the river within firing distance to the cave was the river crossing later known as Killebrew's Ferry and Ward's Bridge, located on what later became known as the Harrison (Tip) and Kitty Ward Ranch. The volunteer militia was likely stationed on the flats northwest of the river crossing, near what was later known as Hot Springs Station on the Klamath Lake Railroad.

Wells' 1881 account of the Cave Fight relates that a fur trapper known as "Old Man Robinson," who lived along the Klamath River and who had witnessed the initial hostilities between the Cottonwood men and the Shastas, revealed to Captain Smith the November 1853 fight was prompted by the attempt of the Cottonwood men to capture the Shasta women seeking refuge at the cave. Consequently, Robinson was able to persuade Smith, one soldier, and a man named Eddy (likely a member of the Eddy family in Cottonwood) to meet with Tyee Bill at the cave. Once convinced of the truth, Smith became angered and ordered the army troops to return to Fort Lane and Fort Jones (Hall and Hall 2004:15; Wells 1881). In the spring of 1854, while Tyee Bill's band of Shastas were still residing at the cave, hostilities between white settlers and other Indians occurred along the Siskiyou Trail and other neighboring locations, confrontations that would ultimately lead to the Rogue River War.

What legacy remains of the Cave Fight are the stories, the descendants of those involved, memorial markers, the battle sites, and the cave itself. At the Henley/Hornbrook cemetery may be found the graves and monuments of some directly involved in the event, while local places bear the names of others. The story of the Cave Fight was imparted by historian George F. Wright (1954) in his account of local place names. According to this author, US army soldiers from Fort Jones were traveling to the area of Copco Lake in the early 1850s to have a battle with the Indians. These soldiers made camp for the night on a tributary stream of Klamath River, and since then this stream has been referred to as Camp Creek. The following day the soldiers crossed a stream about 2 miles upriver from Camp Creek. Because this journey was made during the winter, this second stream was at flood level and difficult to cross. While crossing, one of their mules was drowned. Because a mule is also known as a jennet or jenny, this stream became known as Jenny Creek (McArthur 1974:390; Wright 1954).

### **Piper Detachment, Moonshine Falls, Oregon**

In 1859, a detachment of soldiers under the command of Lieutenant Piper left Fort Jones and headed north to retrieve livestock that had been reported stolen by Indians. This company went as far north as Klamath County, Oregon, making camp for several days on the west side of the Klamath River at a place later known as "the cabins" (Sisemore 1941:25). This was said to be below the present town of Keno, Oregon, and was likely the same place as the Southern Pacific cabins once located at Moonshine Falls (35KL15). Lieutenant Piper and his men proceeded upriver to a point on what later became the O. A. Stearns ranch. There, they observed a band of Indians coming in their direction and, for defense, felled some trees and hastily constructed some entrenchments. The Indians turned out to be peaceful and the soldiers resumed their search for the stolen livestock. Because of this expedition, knowledge was gained regarding a previously unexplored territory and this led to the later establishment of Fort Klamath (Sisemore 1941:25).

### **Camp Day, Spencer Creek, Oregon**

According to family letters of Lieutenant Lorenzo Lorain of the Third Artillery, Lorain and a detachment from Fort Umpqua, Oregon, left the fort for the Rogue River Valley on June 26, 1860. Once in the valley, they marched through Jacksonville and south on the Yreka road. The detachment then went east on the Applegate Trail as far as the Klamath River, where they made camp on Spencer Creek 0.5 mile from the river. This location became known as Camp Day, named by Lorain in

honor of Lieutenant Edward Henry Day, who was a member of the Third Artillery and who died on January 2, 1860. Lorain and his men remained at Camp Day until October 6, 1860, at which time the company marched back to Fort Umpqua, arriving there on October 18 (Epley 1964; McArthur 1974:110).

Camp Day was said to have been established for the protection of emigrants (Helfrich 1969:48). According to Martha Alice Cooper (1973), soldiers coming to and from Fort Klamath had a camp and parade ground just west of Cooper stage station, which was on the road north of Klamath River (Green Springs Highway) and about 3 miles west of Keno. Cooper (1973:88) witnessed soldiers holding drills at this location, which she identified as “Day.” Since Ms. Cooper was born in 1869, this would suggest that Camp Day was used or reoccupied for some time after the departure of Lieutenant Lorain. Fort Klamath was established in 1863 and it is possible that troops from that fort occasionally occupied Camp Day.

### 3.3.5 The Logging Industry

As the early mining population moved into the Klamath River area, there was a rapid need for lumber for the construction of dams, flumes, sluice boxes, and other mining structures, as well as for lumber to construct dwellings and infrastructure. As a result, a number of small sawmills were established on the Klamath River and its tributaries as early as the 1860s (Beckham 2006:138). Siskiyou County mills located near the Project area included an early sawmill on Cottonwood Creek at what later became the Herman Kurt ranch; the John Hilt sawmill on the West Branch Cottonwood Creek near the present town of Hilt; the Martin Frain and J. S. Baker sawmill at the mouth of Jenny Creek (later moved to Bogus Creek); and the Henry Harrison Ward sawmill on upper Fall Creek; (Jones 1971; KCHS 1973:98). Mills within Klamath County included the Naylor and Hockenhouse sawmill on Spencer Creek; the Gordon/McCormack Mill on Klamath River near Keno; the Connelly Mill on Klamath River; the Kinney Mill at Snowgoose Landing; and the Wise and Maxwell Sawmill at the top of Topsy Grade (Helfrich 1973:101). Large sawmill operations later developed along the river and included Klamathon in Siskiyou County, California; and the McCollum/Ellingson sawmill near Keno, the Kesterson Sawmill near Klamath Falls, and Weyerhaeuser Mill in Klamath County, Oregon.

The establishment of these and other mills spurred development within the greater Klamath-Siskiyou counties region. Before European American settlement, Klamath County contained about 2 million acres of timberlands, encompassing some of the world’s most valuable ponderosa and sugar pine stands (Bowden 2002:5). Early settlers operated small-scale sawmills in the 1860s and 1870s, often to supplement farming and ranching income (Kramer 2003a:6). In 1863, the federal government became the region’s first local timber supplier when the US Army brought the first sawmill into Klamath County to construct the fort’s buildings and to supply lumber to the Klamath Tribes as required by the 1864 treaty establishing the Klamath Indian Reservation (Lamm 1960:1). At that time, the Klamath Indian Reservation was the area’s primary lumber source, encompassing over a million acres, most of which was “timbered, hilly land, little suited to agriculture, but usable for grazing, hunting, fishing, and logging” (Dicken and Dicken 1985:3-4).

In 1868, Granville Naylor and John Hockenhouse established a water-powered sawmill on Spencer Creek, Oregon, about 1 mile upstream from its confluence with the Klamath River, on the northern



side of J.C. Boyle Reservoir. The mill, which was purchased by Hiram and Mary E. Spencer in 1871, provided lumber for building Klamath Falls and the first bridge over the Link River (Beckham 2006:138). The Keno area witnessed several early sawmills, including those operated by Daniel Gordon, the Cooper Brothers (1883), Dusenberry (1888), and Connally (1895-1907) (Beckham 2006:138).

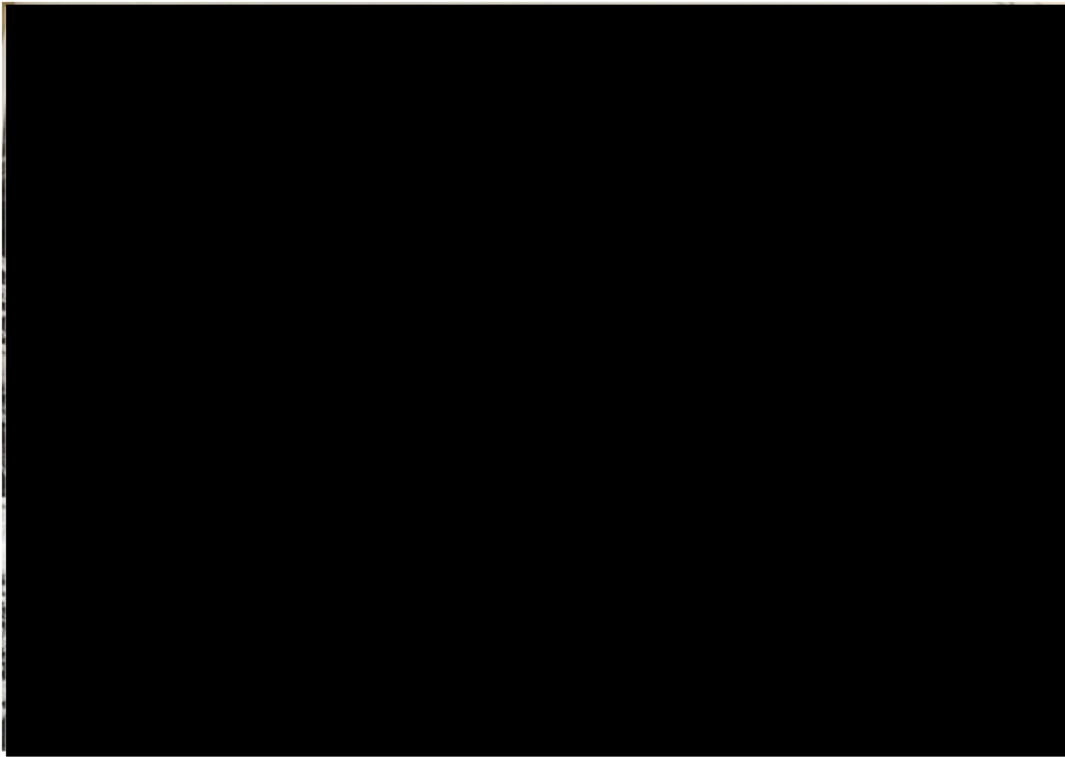
Land sales by the Southern Pacific Railroad served as another major impetus for the development of commercial logging and lumbering near the Upper Klamath River Canyon. Incorporated in 1881, the Klamath River Improvement Company selected a site at the projected crossing of the Klamath River by the Oregon & California Railroad, naming the new community Klamath City. A related firm, Pokegama Sugar Pine Lumber Company, purchased over 10,000 acres in Klamath and Jackson counties, Oregon, from the Oregon & California Railroad. In 1906, the Oregon & California Railroad released the rights to the Pokegama Sugar Pine Lumber Company, setting the stage for federal government patent of the lands, which by that date had been purchased by Weyerhaeuser Timber Company (Beckham 2006:138-139). As larger companies moved in, lumber towns formed along the Klamath River. In 1909, the Southern Pacific Railroad's completion to Klamath Falls (formerly Linkville), spurred a regional lumber boom. Within 2 years, the Pelican Bay Lumber Company became one of the first to establish a mill site and operation on the Upper Klamath Lake for supplying nonlocal markets.

The Klamath River itself also contributed to the development of the industry. In 1888, the Klamath River Improvement Company staged a test log drive, dumping 135 logs into the river at the Oregon-California state line; 119 reached the company's millsite at Klamath City, California (later known as Klamathon). In early 1889, Klamath County granted the company a log-driving franchise for 20 years from the mouth of Spencer or Wetas Creek to the California border. The company agreed to improve the river to float logs, timber, and lumber, and reserved the right to charge other firms using its franchise privileges (Beckham 2006:139). That same year, crews working for the Klamath River Improvement Company built a splash dam about 5 miles west of Keno, Oregon, near the site of the McCollum or Ellingson sawmill. The company used this dam to raise the level of the Klamath River by artificial freshets to drive logs to its mill site in Siskiyou County. The Kerwin Ranch, in Oregon, near Topsy Grade, was one of the first areas logged for river driving timber. In 1890, floods carried away the blacksmith shop, dam, and other structures at Klamathon, leading to the demise of the Klamath River Improvement Company (Beckham 2006:139).

In the fall of 1891, the Southern Pacific sold timberlands in the Jenny Creek watershed to Cook, Pardee, & Company of Michigan. The firm also reportedly purchased "an equal portion of government timber" interspersed between the odd-numbered sections that were part of the original Oregon & California Railroad grant. Cook, Pardee & Company bought the remaining Klamath City or Klamathon Mill in 1891 which operated until 1898 when it was destroyed by catastrophic fire.

Cook, Pardee & Company began logging in the Klamath River watershed by the summer of 1892, employing over 110 men along the river and a number of experienced rafters following them in boats to keep the logs moving. An immense chute long was cut into the mountain slope, down which the logs were shot into the river (Figure 3-5). Logging crews used large carts, or "big wheels," horse teams, and eventually a small locomotive to drag the logs to the head of the chute. The company





**Figure 3-5 Pokegama Log Chute [REDACTED], Undated Photograph (courtesy of the John C. Boyle Collection, Southern Oregon Historical Society)**

anticipated building logging railroads to haul the timber more distant from the chute. This log chute was one of the most dramatic of its kind in the Pacific Slope<sup>4</sup> and drew the attention of tourists who came to watch its operations, as well as later generations intrigued with the technology of log transportation. [REDACTED]

[REDACTED]

Driving logs down the Klamath River was extremely hazardous, as the river riffles and rapids caused logs to hang up. Log drivers had to go into these hazards to break the jams, using either dynamite or cant hooks. Because of the lack of roads along the river, they did not have the benefit of steam donkeys to power cables to set the logs free. Unknown numbers of men perished in these drives (Beckham 2006:147) Many men from the pioneer families mentioned above found work in log driving, including Jim White, Ed Way, George Spannaus, Frank Woods, Rod Frain, Wren Frain, Fred Frain, Henry Hoover, and George Cook (Beckham 2006:148).

Around Klamath Falls, Oregon, wooden box manufacturers and other lumber concerns also established sawmills (Sisemore 1941:117,118). California fruit companies, which used enormous numbers of wooden boxes and crates for shipping produce, built large lumber mills and box factories in Klamath Falls (Bowden 2003:10; KCHS 1984:25). The timber supply began to shift after Weyerhaeuser and other large companies, such as Shevlin-Hixon and Gilchrist, acquired immense,

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<sup>4</sup> The phrase Pacific Slope was commonly used by early explorers to describe the western slope of the continental divide.

private timber stands (Bowden 2003:3). Leading lumber companies acquired timberlands by purchasing railroad land grants (Bowden 2002:6). In Siskiyou County, California, 4,000 residents were working in the lumber industry as loggers or mill hands by 1915. At that time, 50 county sawmills produced about 200 million board feet annually derived from sugar pine, ponderosa, white pine, fir, and cedar (French 1915:9,11).

By 1918, Klamath Falls had grown into one of Oregon's most important freight centers, second only to Portland, and the lumber industry became the region's primary employer (Bowden 2003:7). After surviving the Great Depression, the Klamath County lumber industry became Oregon's highest (and the nation's second highest) producer, with 843 million board feet in 1941 (Sisemore 1941). [REDACTED]

[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]

[REDACTED] The mill closed during the early 1950s (*Herald and News* 1953).



**Figure 3-6 Ellingson Mill Site (formerly McCollum Mill) ca. 1950 (photography courtesy Klamath County Museum)**

During the Great Depression, many lumber companies endured by substantially reducing production and closing the plant for extended periods (Evening Herald 1929). Economic recovery began in the mid-1930s, as the demand for inexpensive lumber and agricultural boxes gradually increased (KCHS 1984:27). By 1941, 30 lumber manufacturers, from small to large, were operating in Klamath County. Although the number of manufacturers had declined since the 1930s, the total production

had risen (Sisemore 1941:119). Weyerhaeuser acquired much of the remaining timberlands from companies that closed their mills (Bowden 2003:14). After World War II, the critical demand for building materials prompted companies to use salvaged wood for fabrication of new products (KCHS 1984:27). Weyerhaeuser remained the region's primary lumber interest until terminating operations in 1992. By 1996, the company had sold its forestlands to the US Timberlands company. In 2003, the region's only remaining logging railroad was the Klamath Northern Railway at Gilcrist (Bowden 2003).

### **3.3.6 Regional Transportation**

A network of Native American trails that were often used by early European explorers, fur trappers, traders and later settlers originally traversed the project area. Many native trails had been time-honored routes for trade, with one such route becoming the Siskiyou Trail. After historic contact, such trails were incorporated into a network of wagon roads, some of which were subsequently converted into rural roads and local and regional highways.

#### **Klamath Basin Waterways**

The Klamath and Modoc Tribes were the first to navigate the Upper Klamath Basin's lakes and waterways using tule rafts and dugout canoes made from a single fir log (Barrett 1910:247, 256; Drew 1974:1; Spier 1930:169-171). Later, European American settlers used the waterways to ferry passengers and cargo as an alternative to the area's inadequate road system (Drew 1974:1). Boating associated with the US military began on Upper Klamath Lake around the time Fort Klamath was established in 1863. John Gleim built the first boat on Upper Klamath Lake during the Modoc Indian War (1872-1873) to transport supplies from Fairchild to Klamath Falls (Federal Works Agency 1941:33). As the area grew in population and industry, water transportation for passengers, lumber and general freight necessitated better steamers, dock construction, and channel dredging. Through the late 1800s, the Upper and Lower Klamath lakes landings experienced heightened steamer activity, with the landing of Shippington, on the southeast end of Upper Klamath Lake, ranking as the busiest (Dicken and Dicken 1985:4-24). In 1889, Klamath County designated the major rivers, including Klamath River, as public highways for log transportation. The county later leased the Link River to the Moore family and the Klamath River Improvement Company as a toll highway for floating logs (Federal Works Agency 1941:33). During the 1910s, tug boats became a popular way to haul logs and freight on Upper Klamath Lake (PacifiCorp 2004: Exhibit E 6-63). After the turn of the twentieth century, the construction of railroads and road improvements, as well as the increasing use of automobiles rendered water transportation virtually obsolete in the basin, although transportation of logs in rafts continued in Upper Klamath Lake and along the Klamath River (Dicken and Dicken 1985:4-25). Drainage related to reclamation and the federal establishment of wildlife refuges also reduced the feasibility of water transportation.

#### **Klamath County**

The Applegate Trail (Southern Emigrant Road) was the first European American trail through the Klamath River region, and was a southern alternative to the western-most segment of the Oregon Trail. In 1846, a group of Oregon settlers from the Willamette Valley, led by brothers Jesse and

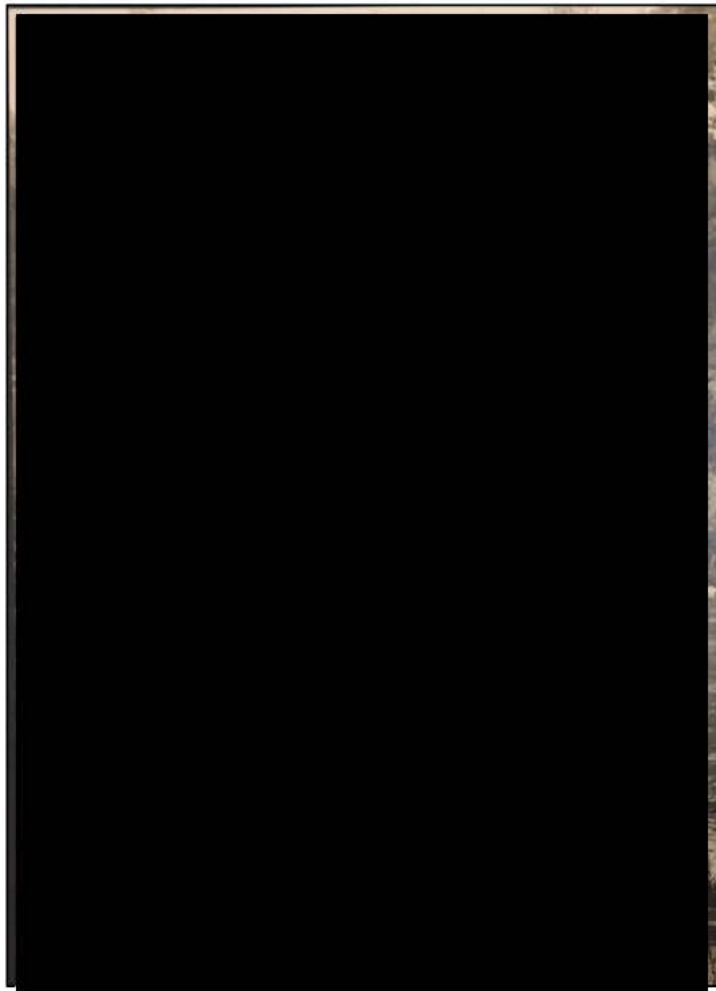
Lindsay Applegate, established this wagon road, and the trail became the longest alternative route of the nineteenth century overland emigrant trails (Hazelett 2010:222). After gold was discovered in California in 1849, the route became popular with gold miners enroute to southern Oregon and northern California (PacifiCorp 2004: Exhibit E 6-62). During the 1860s, the trail became known as the Southern Oregon Wagon Road (SOWR) and, after its completion in 1873, facilitated freight shipping east from Rogue River Valley and livestock exporting west to valley markets (Beckham 2006:110-111). Within the Project area, the SOWR opened in 1869 as the Jackson County Road (Klamath County was originally part of Jackson County) and served as a primary trade and travel route for stage coaches, buggies, and freight wagons for about four decades (Pierce and Blanchard 2011:106).

Between the 1880s and 1910s, stages carrying passengers and mail ran through Keno, Oregon, from Ager, California to Klamath Falls, Oregon (1880s stage), to Ashland, Worden and Pokegama (MacDonald 2009). The last stage coach traveled the SOWR within the basin in 1908 and automobiles used it until the completion of Oregon State Highway 66, which overlays a portion of the old SOWR (Pierce and Blanchard 2011:106). Topsy Road, originally the Yreka-Fort Klamath Wagon Road, was one of the first major roads in Upper Klamath Basin and was busiest between 1887 and 1903. Paralleling the Klamath River's east side, the road became an alternative for shipping supplies to Fort Klamath and to Upper Klamath Basin settlers. When it opened in 1871, the route extended from Yreka to ferries on the Klamath River, then to the Link River, passing through Klamath Falls and ending at Ft. Klamath (Beckham 2006:114-116). Stage stations along Topsy Grade Road furnished stages with fresh horse teams and usually provided rest and food for stage passengers (Drew 1979:31) (Figure 3-7). Topsy Grade's use as a stage road declined with the arrival of the Southern Pacific Railroad (SPRR) in Klamath Falls (1909) (KCHS 2006:6). Until US Highway 97 was completed during the mid-twentieth century, Topsy Road had the only mail, freight and stage line connecting Yreka to Klamath Falls (PacifiCorp 2004: Exhibit E 6-62). Another notable stage road was the Keno-Pokegama stage line, which was discontinued around 1909 when the SPRR arrived in Klamath Falls.

Railroads first arrived in the region in 1887 when the Oregon & California Railroad (O&C) was built through Siskiyou County, California and Jackson County, Oregon. The SPRR acquired the O&C that same year (PacifiCorp 2004: Exhibit E 6-63). The Klamath Lake Railroad was completed from the SPRR line in Thrall, California, to the Pokegama logging camps by 1903, and carried mostly logs and lumber, but also passengers and general freight. For travelers continuing on to Klamath Falls, the daily stage from Pokegama carried up to 30 passengers on a six-hour ride. At Keno Landing, freight and passengers were often transferred to steamer for the final leg of the trip to Klamath Falls (Dicken and Dicken 1985:4-22). The Oregon Truck Line, later called the Great Northern Railway (GNR), also served the basin and was completed from the Columbia River to Bend in 1916 and from Bend to Klamath Falls in 1927. The route was extended about 100 miles southward in 1931 to join the Western Pacific Railroad in Bieber, California (Dicken and Dicken 1985:4-26).

By the 1910s, a growing number of automobiles in the Klamath Basin prompted extension and improvement of the existing roads. US Highway 97 was the basin's first (and only) national road. US Highway 97 originally traversed the Cascades via Green Springs Pass, to connect with US Highway 99 (now I-5) near Ashland. The highway was later rerouted directly south to Weed,





**Figure 3-7 Topsy Grade Road Dam Bridge over the Klamath River [REDACTED] Built in ca. 1890 (undated photograph courtesy of the Klamath County Museum)**

California, and the route across Green Springs Pass became State Highway 66. The area's other major roads include State Highway 62 (from Ft. Klamath to Medford, through the Cascades), part of which became State Highway 140 (eastward to Lakeview) (Dicken and Dicken 1985:4-22). State Highway 66 approximates the alignment of the Applegate Trail and Southern Oregon Wagon Road through the Klamath Basin (KCHS 1973:17). In 1917, the State of Oregon added Highway 21, which was graveled in 1922 (Beckham 2006:136). By 1950, automobiles were the most common mode of transportation in Klamath County and logging truck roads had replaced the logging railroads (common carrier rail lines still transported logs and lumber). US Highway 97 had been rerouted to Weed, California to join US Highway 99. State Highway 66, the main east-west route from Ashland to Klamath Falls had been paved, as had other major roads in southern Oregon and northern California (Dicken and Dicken 1985:5-21).

## Siskiyou County

First used as a network of Native American foot trails, and later as the route of HBC trappers and traders, mule train packers, stagecoach drivers, the Central Pacific Railroad, and finally as today's

Interstate 5, the Siskiyou Trail helped define the political, cultural, and natural history of the American West. During the 1820s and 1830s, HBC trapping brigades were sent south from company headquarters in Fort Vancouver, Washington, along what became known as the Siskiyou Trail, into Northern California as far south as the San Francisco Bay Area, where the company operated a trading post at Yerba Buena (San Francisco). After its use as an HBC route, Ewing Young repurposed the trail in the 1830s when he drove cattle northward from California, over the Siskiyou Summit, and into the Willamette Valley to provision the burgeoning American settlements. During and following the 1848 California gold rush, thousands of Oregonians used the Siskiyou Trail to enter and settle the Rogue Valley. In the final decades of the 19th century, the trail was re-engineered and re-plotted as a toll road in 1860, a telegraph line was completed in 1864, and the Southern Pacific Railroad was completed in 1887 (SOU 2005).

Until 1856, transporting items into the Siskiyou area required a pack train, usually coming from Sacramento, Marysville, or Colusa, California. Flour, potatoes and other provisions generally arrived by pack from Oregon. Once roads were constructed, teamsters driving stages generally replaced pack trains (Wells 1881:161). By 1860, the California Stage Company was running daily stages from Sacramento to Portland and Stone & Sullaway were running stages from Yreka to Soda Springs (Wells 1881:165). The O&C arrived in Hornbrook, California in 1887, connecting with the Southern Pacific in Ashland, Oregon, to complete the San Francisco-Portland line (*Medford Mail Tribune* 1957).

Completed in 1931, State Route (SR) 263, previously US Highway 99's Shasta River Canyon segment, extends from Yreka to the SR 96 (Klamath River Highway). SR 96, known as the Klamath River Highway, begins at the junction with SR 299 and follows the Trinity River, the Klamath's largest tributary, and the Klamath River through Karuk, Yurok, and Hoopa Tribal Reservations. The Klamath River Highway is the primary automobile route through the small, unincorporated community of Klamath River, which occupies about 11 miles on both sides of the Klamath River from Gottville to Kohl Creek (*Daily Siskiyou News* 2018).

### 3.3.7 Hydroelectric Development

Hydroelectric development in the Klamath Basin began in 1891 to furnish Yreka, California—the Siskiyou County seat—with electricity by placing a water power wheel in Shasta River Canyon, below the mouth of Yreka Creek (Kramer 2003a:14). Four years later, the Klamath Falls Light and Water Company built the East Side power plant no. 1 in a wooden building. The power plant was located on the Link River's east bank, within the Klamath Falls, Oregon city limits. The plant supplied the city with its first electric power on November 1, 1895 (Boyle 1976:27; Kramer 2003a:15). These early hydroelectric ventures soon attracted competitors. The California Oregon Power Company (Copco) formed in 1912 through the merger asset acquisition of the Siskiyou Electric Power and Light Company (SEP&L), Klamath Falls Light and Water Company, and Rogue River Electric Company, including the hydroelectric facilities at Fall Creek. SEP&L had operated Fall Creek since its completion in 1903 (Kramer 2003b:12). In 1920, eight years after Copco formed, the company acquired the Keno Power Company, which operated the Keno hydroelectric development, built in 1911 and rebuilt in 1931 and 1966 (Kramer 2003b:5).

## Fall Creek Hydroelectric Plant

In the summer of 1902, Siskiyou County residents Jerome Jr. and Jesse Churchill, Alex Rosborough, and Hubert Steele formed the Siskiyou Electric Power Company to construct a new hydroelectric project to serve the Yreka market and compete with the small Shasta River plant constructed in 1891 (Kramer 2003a:16). Survey work for the new hydroelectric project focused on Fall Creek, a tributary of the Klamath River, which provided an abundant water source. Construction of the plant began during the summer of 1902, next to the Klamath Lake Railroad line, and was completed by spring 1903 (Kramer 2003a). In March 1903, the SEP&L purchased the Ashland Electric Light and Power Company, founded in 1889, and planned to market power to both Ashland and Medford, Oregon (Beckham 2006). In the spring of 1910, the SEP&L began surveys in Ward's Canyon and along the Klamath River for a projected dam, power plant, and reservoir, which eventually become the Copco No. 1 dam and Copco Lake (Beckham 2006). To realize their dream, the power company purchased the ranches of several families whose holdings once encompassed the broad river valley, including those of William Lennox, Henry Keaton, Mariesii Acadia, Kitty Ward, Mary Ward, William Raymond, Stone and Edwards, Henry and Herman Spannaus, George L. Chase, D. D. Hahn, Erskine Parks, and Manuel Coville (Beckham 2006). This transfer of ownerships enabled construction of Copco No. 1 when Copco took over Siskiyou Electric Power (Beckham 2006; Boyle 1976:8).

## Keno Power Company Plant

Reclamation activities begun by the USBR in the Klamath Basin area in early 1900s included the purchase of water rights and rights of way in the Keno Reef area of the Klamath River to lower the water level and possibly drain portions of Lower Klamath Lake to facilitate the discharge of water from the proposed Lost River Canal (Beckham 2006:160). In 1912, the Keno Power Company built a dam and generating facility at the Keno Reef site that went on line in 1912 (Beckham 2006:160). Seeking to construct transmission lines from their Keno plant to the City of Klamath Falls, aligned the Keno Power Company's into direct conflict with Copco), which already served the city. After years of tension and discord, in 1921, Copco purchased the Keno Power Company, setting up a series of investments along the Klamath River from near Spencer Creek to Keno. Rebuilding the hydroelectric development in 1931 and 1966, Copco eventually constructed Big Bend No. 1 and No. 2 hydroelectric developments in the 1960s (consolidated and later rededicated as J.C. Boyle) (Kramer 2003b:5).

## Copco Through World War II (1918-1945)

Copco's first project was the Copco No. 1 hydroelectric development, previously surveyed by the SEP&L and known initially as the Ward's Canyon Dam Project. As construction progressed on Copco No. 1, the company's existing facilities were already powering major regional industries, including nearly all the large Northern California lumber mills and several large mining dredgers (*Sacramento Bee* 1917). Copco completed the first phase of Copco No. 1 in 1918, including the dam, water conveyance system, and powerhouse (Figure 3-8). In 1920, the company reorganized, becoming the California-Oregon Power Company, and moved its headquarters from San Francisco to Medford. In 1922, the company completed Copco No. 1 by raising the dam, expanding the powerhouse, and



adding a new generating unit. Three years later, in 1925, the company completed the Copco No. 2 hydroelectric development, downstream from Copco No. 1 (Figure 3-9).



**Figure 3-8 Copco No. 1, Showing Powerhouse, Dam, and Gatehouse No. 1, December 1917 (courtesy of the John C. Boyle Collection, Southern Oregon Historical Society)**



**Figure 3-9 Copco No. 2 Dam, Showing Original Headgate and Intake at Left, Undated Photograph (courtesy of Los Angeles Public Library, image LAPL00009700)**

Between 1926 and 1947, the company was owned and operated by Standard Gas and Electric Company. Ownership was acquired through purchase of Copco's outstanding common stock. In 1947, to comply with provisions of the Public Utility Act of 1935, Standard Gas and Electric sold its Copco interests to an investment banking group, which in turn made a public offering of the acquired shares (*Medford Mail Tribune* 1960a). During the late 1920s and 1930s, after completion of Copco No. 1 and Copco No. 2, Copco continued investigating the regional power potential of the Klamath, Rogue, and Umpqua River basins (Boyle 1962). Throughout that period, Copco made progress on the Prospect hydroelectric project located along the Rogue River in Jackson County, Oregon (Gauntt 2012).

### **The Post-World War II Era through the Pacific Power Acquisition (1946-1960)**

In the years following World War II, growth in population and expansion in industry spiked the regional demand for electricity. In response, Copco completed its first postwar project, the North Umpqua project, between 1947 and 1957, which doubled the company's capacity by building eight interconnected plants along the North Umpqua River east of Roseburg, Oregon. By 1950, well before completion of the project, Boyle and other Copco officials recognized that increased regional population and power demand would outpace the power supply, requiring new projects for future Copco customers (McCready 1950). Copco thus advanced a 10-year, \$70 million power development plan in the Klamath Basin. In addition to Big Bend No. 1 and No. 2 hydroelectric developments (consolidated and later rededicated as J.C. Boyle hydroelectric development), the plan included Iron Gate, completed by Pacific Power in 1962 (Guernsey 1957; Wynne 1957).

In 1958, when Big Bend began operations, the Copco service area contained about 50,000 square miles and a population approaching 250,000. The service area included 72 communities and adjacent rural areas in Klamath, Jackson, Josephine, Lake and Douglas counties in Oregon, and in Siskiyou, Modoc, Del Norte, Trinity and Shasta counties in California. At that time, the regional economy was still based on logging, farming, ranching, and mining, industries with a long local history (*Medford Mail Tribune* 1959).

### **Pacific Power Expansion Phase (1961 to 1970)**

Pacific Power's June 1961 acquisition of Copco led to significant changes in regional hydroelectric power generation and transmission (*Bend Bulletin* 1960). After acquiring Copco, Pacific Power initiated a \$500 million construction program, designed to last from 1961 to 1970. The program's goals was to integrate the two companies' systems, enhance power delivery to service areas, and accommodate workers involved in the expanded operations (Pacific Power 1961:1). As the construction program proceeded, Pacific Power officials monitored developments and continued planning for future improvements (*Sacramento Bee* 1967). In 1962, Pacific Power (now PacifiCorp) completed Iron Gate as the final hydroelectric development along the Klamath River. Iron Gate was constructed primarily to regulate flows and thereby restore downstream fish habitat disturbed by the dams and operations at Copco No. 1 and Copco No. 2. In addition to fish catching and spawning facilities built into the Iron Gate dam and powerhouse site, an associated fish hatchery complex is located 0.25-mile downstream.

### 3.3.8 Fish Management

Starting in the late nineteenth century, dams have been built along the Klamath River for hydropower development, as well as logging operations, flood control, and agricultural irrigation. These dams have blocked anadromous fish access to native spawning grounds, manipulated natural river water levels, and diminished water quality. Although other factors such as overfishing and pollution have contributed to the depopulation of anadromous fish and other river species, hydropower dams have been a key factor in the substantial degradation of the Klamath River fishery and other regional fisheries. Damage to the fisheries and their environments has greatly disrupted Tribal culture and subsistence, which depends upon salmon, and impacted commercial and recreational fishing. The Chinook salmon population was significantly reduced following the construction of a series of hydroelectric dams along the Klamath River, beginning with the Copco No. 1 dam (1918). Completion of Iron Gate dam in 1962 eliminated 16 additional miles of natural spawning grounds downstream of Copco No. 1 and Copco No. 2 (Hamilton et al. 2005:10-11).

In the Klamath region, efforts at fish management began with constructed fishways such as the fish ladder to allow passage over the Klamathon logging dam in 1889. Fish ladders were later built on the Link River dam in 1925, the Big Bend (J.C. Boyle) dam in 1958, the Keno dam in 1966. Other fish management strategies involved egg collection stations operated by state fish and game agencies in conjunction with fish hatcheries. In California, eggs were collected at stations, including Hornbrook (1901 to 1938), Bogus Creek (1910 to 1941), Camp Creek (1910 to 1934), and Klamathon (1910 to 1940). The Klamath River's earliest known fish hatchery was located at the river's confluence with Spencer Creek and operated from 1914 to ca. 1954 (Figure 3-10). The Fall Creek hatchery was established in 1919 as mitigation for the Copco No. 1 hydroelectric development, which blocked anadromous salmon from reaching upstream spawning grounds, while the Klamath River Experimental hatchery (1959 and 1960) was operated adjacent to Copco No. 2 powerhouse to determine the feasibility of a hatchery below the proposed Iron Gate dam (Leitritz 1970:46). Finally, Iron Gate hydroelectric facility contains fish capturing and spawning facilities at the base of the dam (1962) that operate in conjunction with the nearby Iron Gate fish hatchery (1966).

### 3.3.9 Recreation

The Klamath River area has long been a gathering place for fishing, hunting, and other forms of recreation. Recreationists still engage in bank and boat fishing, hunting, reservoir boating, whitewater boating, camping, sightseeing, swimming, picnicking, waterskiing, viewing scenery and wildlife, mountain biking, hiking, and off-highway vehicle (OHV) use.

#### Fishing and Hunting

During the late nineteenth century, fishing and hunting among European American residents of the Upper Klamath River area progressed beyond subsistence-based activities to ones that provided a livelihood for some local residents. Among the first of these individuals was Robert Whittle, who established a ferry at present-day Keno, Oregon, in the 1860s, and fished and hunted to supply food

## **ATTACHMENT 5**

### **Phase II Archaeological Research Design and Testing Plan**

**Pages 138 to 146**

**REDACTED: Pages 138 to 146 of Attachment 5 consist in their entirety of information about the location, character, or ownership of historic resources that, if disclosed, may cause a significant invasion of privacy; cause a risk of harm to the historic resource; or impede the use of a traditional religious site by practitioners. These pages are labeled as “Privileged” in accordance with 18 C.F.R. § 388.112, 18 C.F.R. § 388.107 and 36 CFR § 800.11(c).**

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## **Chapter 4: Research Design**

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## 4. RESEARCH DESIGN

The research design developed for the Phase II study provides background data and a framework to guide planned field strategies, laboratory procedures for collections analysis, and evaluation of each site using NRHP eligibility criteria (Chapter 7). As such, the research design serves as the fundamental document that directs all investigative efforts, and outlines the justification of methods and research focus that have been developed within the context of regional knowledge and federal cultural resources compliance guidelines.

The research design is presented in three sections: one focused on the effects of reservoir inundation to cultural resources, serving not only to fill data gaps related to specific site information but also to assist in remediation and restoration of the Project and post-drawdown management of exposed sites; one on the study of precontact resources; and one on the study of historic-period resources. Within each section, discussion is provided of general research domains that outline regional issues, specific research questions to be addressed for each domain, and data needs and sources necessary to answer the research questions. More detail regarding analytical procedures and specialized studies to be used to assist with data development are presented below in Chapter 5 of this report.

While site evaluations will consider NRHP eligibility under Criterion A (Event[s] and Broad Patterns of Events), Criterion B (Important Person[s]), and Criterion C (Design, Construction, and Work of a Master), the nature of Phase II site evaluation level of inquiry requires research topics structured in the context of determining whether a particular site has materials suitable to more detailed inquiry within stated domains, which falls under Criterion D (Information Potential). While site evaluations are considered under the four criteria, they are also assessed within the seven aspects of integrity, which are (NPS 2000):

1. Location – where the historic property was constructed or where the event occurred
2. Design – elements combined that create the property’s form, plan, space, structure and style
3. Setting – physical environment, including topographic features, landscape and artificial features, open space, viewsheds, and vegetation
4. Materials – physical elements combined or deposited during a time period, reflective of particular patterns or configurations, that form the historic property
5. Workmanship – physical evidence of a particular culture’s or people’s labor and skill during a period in history
6. Feeling – property’s conveyance of aesthetic or sense for the contextual period of time
7. Association – direct link between the contextual person or event and the historic property



In relation to Criterion D, association is the more commonly utilized aspect of integrity for archaeological sites and generally refers to the strength of association between data potential and important research questions. Represented in the level of preservation and quality of information, association is defined by relative intactness of site stratigraphy as it relates to excavated assemblages available within a site. That is, if archaeological deposits within a site appear relatively undisturbed, in their original context and complete, the site is considered to have good associative integrity. While there are multiple opportunities for site disturbance to occur that would negatively impact archaeological deposits, and few archaeological sites have ever been spared from some form of cultural or natural disturbance, there is no definable integrity template that can be utilized from property to property. Rather, associative integrity is considered a flexible concept considered relative to research questions posted in a research design and the significance that the property conveys. Of primary consideration, therefore, is whether disturbance has or has not destroyed the important information present within the site. If activity areas or important information is still discernible relative to the research basis, then the site would retain associative integrity. Commonly understood, associative integrity may be assessed relative to spatial patterning reflective of surface and/or subsurface use or activity areas (NPS 2000).

Further explored, associative integrity may be retained even for sites for which contributing elements, such as use or activity areas, have been lost if at least a single representative contributing element still exists. Associative integrity can be explored by examination of sites and features similar to the site being examined and relative to the region and context of the site being examined. Based on the expectation of encountering and recovering similar information as other known and documented sites in the region, associative integrity may be justified (NPS 2000).

## 4.1 Effects of Reservoir Inundation to Cultural Resources

Cultural resources located within reservoir inundation and drawdown zones have long suffered from detrimental effects related to mechanical, biochemical, and human and other impacts (Lenihan et al. 1981). Erosion from fluctuating pool levels, wave action, saturation, slumping, and siltation are readily visible along shorelines of the three project reservoirs (J.C. Boyle, Copco, and Iron Gate) contributing to both historic and on-going effects to archaeological sites. Human and other impacts are also common, including impacts related to shoreline areas by grazing animals, invasive plants, and recreational use. Sites initially exposed by erosion become targets for vandalism, which has been noted among the Phase II sites in both reservoir and nonreservoir contexts. These types of mechanical and human impacts are readily apparent, but other effects related to biochemical alteration of site soil, deterioration of archaeological material categories (e.g., bone, shell, stone), and contextual relationships are less tangible without subsurface archaeological investigation. In this regard, the proposed Phase II program offers the opportunity to contribute important information to research begun decades ago regarding effects of reservoirs to cultural resources and ways to assess and manage historic properties in drawdown zones.

During the Great Depression of the 1930s, the federal government instituted several programs to stimulate the economy, including numerous large-scale construction efforts to employ citizen workers and to improve agriculture and other forms of production. This included the construction of dams and reservoirs for the generation of electricity and crop irrigation. Such projects resulted in the

widespread destruction of archaeological sites, especially since river valleys were among the most archaeologically sensitive areas in the country. This destruction led the Senate and House of Representatives to pass the Reservoir Salvage Act in 1960 (PL 86-523; 16 U.S.C. 461-467), an act which required the recovery and preservation of archaeological materials that might be destroyed or lost by constructing reservoirs and their accompanying facilities (Bower 1986:438). This act directed federal agencies to notify the Secretary of Interior of proposed water projects requiring federal funding or permitting, and the Secretary was required to ensure that a survey of the project area was completed to locate archaeological sites, and to provide for preservation or data recovery of archaeological data. The National Park Service was authorized to seek federal funds for such work. The Reservoir Salvage Act resulted in the conduct of intensive “salvage archaeology” projects across the United States, including in the Upper Klamath River area with the excavation of sites in the Big Bend/J.C. Boyle Reservoir area (Newman and Cressman 1959) and the Iron Gate Site, now under Iron Gate Reservoir (Leonhardy 1967).

Although the Reservoir Salvage Act provided for the recovery of archaeological materials, it did not afford the preservation of sites. The act was also limited to water related projects. In 1970, the Moss-Bennett Amendment to the 1960 Reservoir Salvage Act (16 U.S.C. 469) broadened the scope of the Reservoir Salvage Act to include all federally funded or permitted projects involving alteration of the terrain. This amendment also provided that the project fund the archaeological work with up to 1 percent of the total cost of the development. Thus, salvage work on reservoir and other large-scale projects continued into the 1970s. During the salvage era, there arose debate in the archaeological community regarding whether inundation of reservoir areas was a detriment to the archaeological record through the loss or damage to sites or whether it was a benefit to local archaeology by preserving those sites that were inundated. In other words, there was disagreement whether archaeological sites should be excavated before inundation to salvage data, or whether such sites should be left alone and preserved as “data banks” for future study (Lenihan et al. 1981:4). In 1975, representatives from four federal agencies (National Park Service, USBR, Army Corps of Engineers, and Soil Conservation Service) decided to resolve the conflict by forming the National Reservoir Inundation Study (NRIS), and National Park Service archaeologists took the lead role in conducting the study.

#### **4.1.1 National Reservoir Inundation Study**

The NRIS involved intensive research of the issue, formation of standardized guidelines for collecting comparative data, development of a research design for inundation of archaeological sites on a national level, and networking archaeologists working on the issue. Once all the data from various studies was compiled, the team presented the findings in a final report (Lenihan et al. 1981) useful to both archaeologists and reservoir managers. Among those issues the study attempted to address were questions regarding differential preservation of common cultural materials, impacts upon analytical techniques commonly employed by archaeologists, impacts upon survey techniques, impacts to dating techniques, and impacts to qualitative data relating to features, artifacts, and stratigraphy. The study not only looked at impacts to cultural remains within the footprint of a reservoir, but also impacts to resources upstream and downstream of the impoundment. The impacts were divided into three categories, including: 1) mechanical; 2) biochemical; and 3) human and other effects (Lenihan et al. 1981:18).

Mechanical impacts affecting archaeological resources within reservoirs include wave action, fluctuating shorelines, saturation and mass wasting of shorelines and submerged geologic strata, and siltation from stream inflow and backshore runoff. The most destructive impact was identified as that caused by wave action along fluctuating, unconsolidated shorelines. Types of aquatic erosion may include splash, sheet erosion, rilling, gullying, wave impact, longshore drift, and ice push in those areas where ice may form during winter months. Mechanical forces of wave action and nearshore currents within the beach zone can drastically alter shoreline topography and cultural resources occurring on that topography. Both wind driven waves and boat wake can cause direct impact to the shoreline. The height of waves is determined by fetch, or the distance wind can blow across a reservoir, and by water depth. Wave impact is also determined by the angle from which a wave strikes the shoreline.

It was determined that for shorelines characterized by shallow water (shoals), shoaling waves result in the most significant erosion of the nearshore zone and transportation of sediments away from the shore. Waves approaching a shoreline at an oblique angle can also result in longshore currents that alter shorelines, especially for large reservoirs with greater fetch (Lenihan et al. 1981:43-44). For steep to near-vertical slopes, wave action can create cut banks, resulting in the mass wasting or slumping of blocks or soil. Trees along such shoreline may also uproot and dislodge blocks of soil.

The removal of silt and fine sediments from shoreline archaeological sites may lead to the destruction of features and the redistribution of cultural materials, or artifact displacement. Small lithic flakes may be carried away from their original context, resulting in an artificially small number of flakes on the exposed surface, while heavier pieces of ground stone are significantly overrepresented on the surface (Lenihan et al. 1981:113). For sites on flat or gentle slopes, sheet erosion can gradually erode the surface and carry away light or small artifacts, as well as organic materials. Such materials may then be redeposited in a series of bands just beyond the breaker zone (Lenihan et al. 1981:116). In addition, cultural material too heavy to be transported by wave will accumulate within lower levels of the site.

Besides the nearshore environment, the deeper reservoir basin may also experience changes to topography, especially during the period of initial inundation. Saturation of underwater reservoir slopes may result in dramatic alterations of slope geometry (Lenihan et al. 1981:45). Unconsolidated slopes, once saturated, may fail, resulting in slumping. Sedimentation may also accumulate within the deeper areas of a reservoir. Although such fill might create a buffer against biochemical or mechanical impacts to site deposits, the great weight of such fill atop sites might actually cause damage to cultural materials. The buildup of sediments can also prevent access to cultural resources.

Biochemical impacts to sites were assessed through in-field analysis and laboratory experimentation, revealing that biochemical solutions within freshwater reservoirs can have subtle impacts to archaeological sites. Chemical patterns within a site deposit may be altered (Lenihan et al. 1981:129), while certain classes of artifacts or faunal remains may suffer damage or be lost. This results in differential preservation of cultural materials.

The deepest areas of a reservoir, farthest downstream, have the highest concentrations of chemicals, and so chemical degradation to cultural resources will be greatest in those areas

(Lenihan et al. 1981:58). Anaerobic bacteria also have a significant long-term impact on submerged cultural materials.

Large-scale seasonal drawdowns often occur in agricultural storage and power generation reservoirs. The study by Lenihan and colleagues (1981) revealed that repeated wetting and drying cycles caused by shoreline fluctuation can negatively impact cultural materials. This is especially true for bone or tooth enamel that may be damaged by wetting and drying (Lenihan et al. 1981:143), as well as historic artifacts made of metal.

Experimentation and in-field observation indicated that site inundation and biochemical processes do not appear to adverse impacts to flaked stone artifacts, including crystalline and crypto-crystalline materials. Analysis showed no observable difference in wear pattern deterioration, patination, or mechanical impacts (Lenihan et al. 1981:169-170). In addition, study of obsidian artifacts from inundated sites showed no significant alteration of hydration rim readings, although the artifacts used in the study were only submerged for a period of 20 years (Lenihan et al. 1981:179-180). Inundation of obsidian artifacts also showed no limitations with regard to trace element analysis (Lenihan et al. 1981:192).

Regarding human and other impacts, it was emphasized that the creation of reservoirs leads to increased human traffic through recreation. Consequently, archaeological sites that were once remote and undetected can be easily accessed by boat, or by roads or trails established along the shoreline. Because such shoreline sites are exposed by wave action, looting of surface artifacts becomes a serious issue, and in fact, is a common pastime at reservoir sites throughout the nation. Vehicular traffic might also pose a problem for cultural resources. During periods of low water, heavily silted floodplains provide ideal locations for off-road vehicles (Lenihan et al. 1981:136). The construction of vacation or retirement homes on reservoir margins may disturb cultural sites, in addition to development of camping and picnic areas, hiking or riding trails, boat ramps, and other facilities (Lenihan et al. 1981:135).

Lenihan and colleagues (1981:123) also noted that inundation of sites can introduce burrowing zoobenthic organisms (shellfish) that can disturb site sediments through their feeding activities, with the disturbance reaching a depth of 30 cm. In addition, animals such as raccoons may dig for such creatures, resulting in additional sediment disturbance.

Creation of a lake or reservoir can result in widespread changes in vegetation (Lenihan et al. 1981:136). Certain plant growth can accelerate soil erosion, especially through root growth. The loss of native vegetation cover can also have negative impacts to sites. Archaeologists must be aware that the landscape characteristics of archaeological sites at or near reservoirs could have been altered by inundation and may not represent the natural landscape present during or after site use. Such changes can impact archaeological interpretation at the site and regional level.

The results of the NRIS, and those of other reservoir studies conducted subsequently (e.g., Dunn et al. 1996, among others), have broad implications for the Phase II study which will focus on both inundated and noninundated areas of sites. Archaeological testing to be conducted within inundation areas will likely recover a range of artifacts and ecofacts for specialized studies. Such data will assist with the NRHP evaluation of the study sites, effects assessments, identification of

future research potential for assessing mitigation needs, and development of monitoring and protection programs for sites in the reservoirs' impact areas. Additionally, while not the focus of the Phase II investigations, data collection from inundation zones offers the information to address erosion and other impacts related to reservoir inundation and the potential to test preservation parameters outlined in the NRIS.

#### 4.1.2 Lake Oroville FERC Relicensing

In 2002 and 2003, archaeological fieldwork was conducted at Lake Oroville in Butte County, California, as part of a FERC relicensing project for the Oroville facility. This project was undertaken by Sonoma State University, Rohnert Park, and California State University, Sacramento, on behalf of the California Department of Water Resources (Selverston et al. 2005). Studies included both archaeological and historic resource inventories, which covered 15,476 acres within a 41,000-acre APE. About 75 percent of the inundated "fluctuation zone" of Lake Oroville was surveyed. Overall, the project documented 478 historic-era sites, 250 prehistoric sites, and 75 multiple component sites. One-third of these sites were found within the fluctuation zone and two-thirds were above the waterline.

Results of the Lake Oroville survey revealed that the major threats to archaeological sites within the reservoir fluctuation zone consisted of shoreline erosion, sheet erosion, and public use of the lake, including recreation. Visibility within the reservoir fluctuation zone was excellent, and sites were found to be clustered within certain areas. Differential distribution of artifacts and features, namely projectile points, bedrock milling features, millings, and steatite vessels was noted among the project sites (Selverston et al. 2005:126-130).

In 2004, archaeological investigations were conducted at one project site, CA-BUT-362/H, a large, multiple component resource. Seven precontact loci were investigated at the site, with four of these loci (A, B, C, and D) found to be eligible for listing in the NRHP and the CRHR. Three loci (G, V, and W) were determined ineligible and two loci (E and F) could not be fully investigated since they became inundated during the study (Delacorte and Basgall 2006). Investigations yielded a substantial collection of cultural materials, including millings, handstones, mullers, pestles, cobble tools, cores, core tools, bifaces, drills, projectile points, blanks, formed and simple flake tools, and a quartz crystal. Also recorded were numerous bedrock milling features and approximately 10 cupule boulder features. Some areas within the site were found to be covered with redeposited sand washed downslope after inundation while other areas exhibited intact sediments, as evidenced by root molds and rodent tunnels that pre-dated the creation of the lake in 1961 (Delacorte and Basgall 2006:148).

Although study of inundation effects at CA-BUT-362/H was not specifically discussed in the project's research design, the testing conclusions noted that an analysis of deposit structure and integrity was fundamental for understanding such effects (Delacorte and Basgall 2006:183). The site demonstrated that intact sediment, soils, and cultural remains had survived the fluctuating lake levels at Lake Oroville, under certain circumstances. Better site preservation was noted on top of ridges and saddles, as well as on the south-facing sides of those landforms where there was less wave action and erosion. Erosional benches and sand deposits were found more frequently on



northern and western slopes. In general, sites were more often removed or scoured along the upper portion of the reservoir. There was less erosion at CA-BUT-362/H than might have been expected due to the fact that the site is within a protected embayment. In general, intact sediments and cultural deposits were more likely to survive in (1) the uppermost reaches of the fluctuation zone; (2) on the top and leeward side of ridges and other landforms exposed to wave action and onshore currents; (3) protected bays and flooded canyons; (4) granite rather than metasedimentary substrates; and (5) places where bedrock is more deeply buried (Delacorte and Basgall 2006).

Based on the above discussions pertaining to the NRIS and the Lake Oroville FERC Relicensing project, certain research questions may be posed for the Phase II sites with regard to site inundation and reservoir-related impacts:

- What are the apparent effects of freshwater flooding of the Phase II sites?
- Do sites exhibit evidence of pre-inundation landscape or topographic alteration? Can pre-inundation subsurface features be found, such as root molds or rodent burrows?
- Do midden strata observed along the shoreline of the partially inundated Phase II sites represent intact cultural deposits, or are these redeposited bands of midden and organic materials created by sheet erosion or other disturbance factors?
- Do surface artifacts scatters observed at the Phase II shoreline sites occur within the original site boundaries, or are these scatters redeposited artifacts transported by longshore currents? Will testing of these scatters reveal subsurface artifacts, or are some scatters restricted to the surface only?
- Is there evidence of differential preservation within site assemblages from inundated versus noninundated areas of sites?
- Is there a correlation between site slope and amount of soil erosion? Are there differences in soil erosion between sites of different topography?
- How do the results of specialized studies, such as obsidian hydration and source analysis and radiocarbon dating, compare with expectations advanced in the NRIS regarding impacts from site inundation and biochemical processes?
- How do obsidian hydration readings for inundated sites compare with those of noninundated sites? Do inundated and noninundated sites of similar ages, based on diagnostic artifacts and radiocarbon dating, provide similar hydration profiles?

## Data Requirements

Datasets required to address questions related to the effects of reservoir inundation to cultural resources require observation and recordation of geologic, geomorphic, and sedimentologic information, as well as recovery of ecofactual and artifactual remains. An understanding of sedimentation rate and sediment type and amount is important in evaluation of site preservation factors and reservoir inundation effects. Central is the recovery of temporally controlled (a fixed point in time), single component (single event) remains. Artifacts facilitative to obsidian hydration, source analysis, and radiocarbon dating will assist in assessing impacts from inundation and biochemical processes. Also critical is recognition and recordation of areas within the site that may retain stratigraphically unmixed ecofacts such as faunal, shell, and charcoal remains.

## 4.2 Precontact Research Domains and Data Requirements

Precontact period research domains developed for the Phase II study encompass six interrelated themes that incorporate past and on-going research foci for the Upper Klamath River and Klamath Basin area. These domains include the topics of environmental variability and paleoenvironmental change; cultural chronology; settlement strategies; subsistence strategies, lithic manufacturing technologies; and material conveyance strategies. At the Phase II site evaluation level of inquiry, research topics are structured in the context of determining whether a particular site has materials suitable to more detailed inquiry (Criterion D) within stated domains rather than proposing specific hypotheses that can be tested with site data. Pertinent questions include defining the range of apparent site occupation, the continuity of land use, the range of manufacturing technologies represented, the relative representation of lithic raw material types, and the relationship between environmental change and diachronic patterns in site use. Site evaluations will also consider NRHP eligibility under Criteria A, B, and C, employing other research methods such as oral history, ethnographic research, and place name studies to provide a holistic a view as possible to arrive at a well-informed eligibility statement for each site.

### 4.2.1 Theoretical Perspective

For much of the early twentieth century, the most significant theoretical orientations in the discipline of anthropology focused on evolutionism, historical particularism, and structural functionalism. These paradigms, which established the framework for the scientific study of culture or society, were steadfastly ensconced in American and British anthropological thought until the Second World War. By the 1950s, however, growing dissatisfaction with existing theories of culture change stimulated a change in American anthropology's theoretical landscape, giving birth to cultural ecology, a model developed by anthropologist Julian Steward based on decades of fieldwork in the Great Basin (Steward 1938) and American Southwest. The concept of cultural ecology eventually grafted onto a revitalized version of evolutionism (Barrett 2009:85), where it remains today as a viable concept over a half-century later.

In his seminal work entitled *Theory of Culture Change*, Steward (1955) outlined the concept and defined ecology as the adaptation of culture to environmental and technological factors. Building upon the influence of anthropologists Franz Boas and mentor Alfred Kroeber, Steward theorized that culture is shaped by environmental conditions, and that techno-economic factors combine with environment to influence the character of social organization and ideology. Steward likened cultural ecology to a view of “man in the web of life,” encompassing both cultural and natural realities. He noted that the web “may extend far beyond the immediate physical environment and biotic assemblage” and that the “nature of the local group is determined by these larger institutions no less than by its local adaptations (Steward 1938:32).

Broadly stated, cultural ecology is the study of the processes by which a society adapts to its environment. It seeks to determine the relationship of culture to natural environment, with the goal of explaining the origin of cultural features and patterns characteristic of particular areas, rather than attempting to formulate general rules applicable to any cultural-environmental situation



(Steward 1938:36). This is accomplished by assuming a direct relationship between environmental variable and natural resources, the tools and knowledge used to exploit them, and the patterns of work needed to capitalize on those resources. The organization of work is assumed to have a determinant effect upon other social institutions and practices.

Two factors must be considered in the study of this relationship, including the characteristics of the environment itself and the way in which the environment is exploited, in terms of both economic organization and technology (Barrett 2009; Hatch 1973:114-115). Those features most closely related to the utilization of the environment are defined by Steward (1972:37) as the *cultural core*, and are assumed to be those most closely connected with adaptation and change. The core includes political, social, and religious patterns determined to be closely connected with fundamental features of life, especially technology. Conversely, those features not closely associated with economic pursuits and environmental exploitation, are *secondary features* (Steward 1972:37), which are determined by cultural historical factors, such as random innovations or diffusion. Such features give the appearance of outward distinctiveness to cultures with similar cores (Robbins 2004). These secondary features were necessarily determinant of other more contingent factors. Thus, semiarid ecosystems, such as the Great Basin, do not determine the structure of a society in any simple way. Steward argued that the link between environment and culture were particularly clear in societies like the Western Shoshone of the project area, where the margins of survival were slim. Conversely, in societies that “have adequately solved subsistence problems, the effects of ecology becomes more difficult to ascertain. In complex societies, certain components of the social superstructure rather than ecology seem increasingly to be determinants of further developments. With greater cultural complexity, analysis becomes increasingly difficult (Steward 1938:262).

Other processes of cultural change, like diffusion and innovation were not precluded by the cultural ecology approach. Since all hunter-gatherer societies in such ecosystems face similar production challenges, however, common social structural solutions might be hypothesized that influence property relations, marriage partners, food sharing, and other facets of human life (Robbins 2004). Too, such patterns might initiate a range of higher ordered cultural functions, hierarchy, cosmology, and the broader morals and ideals of a larger cultural group (Robbins 2004). Since society reveals culture by means of environmental adaptation, then hypothetically cultural ecology also advanced the idea that similar biophysical environments could give rise to cross-cultural similarities (Krech et al. 2004). In this context, the concept of culture expanded to include more than norms, values, and taboos, and began to focus on forms of sociopolitical organization, economy, food production systems, and material culture (Krech et al. 2004).

During the 1960s and 1970s, the changing view of archaeology—the New Archaeology—relied heavily on Steward’s cultural ecology. His work was deemed as relevant because it considered the relationship between human society and environment over space and time, both key research issues that archeologists could readily address with data (Barrett 2009). During the half-century since Steward’s *Theory of Culture Change* was published, cultural ecology has evolved as a dynamic field, incorporating an increasing number of concepts and methods.

In the early 1980s, Great Basin and California archaeologist were challenged to move beyond simply defining culture histories and describing human-land relationships to explaining variation in human

behavior, both in the present and in the past (O’Connell et al. 1982). Researchers were urged to consider models and theories derived from evolutionary ecology as a possible means for achieving this end. As defined by Winterhalder and Smith (1992:5), evolutionary ecology is “the application of natural selection theory to the study of adaptation and biological design in an ecological setting”. Essentially, the evolutionary ecology approach postulates that natural selection has endowed humans with the ability to track locally changing fitness opportunities, and that changes in human behavior are thus explained by the need to achieve one goal: maximization of inclusive fitness. Therefore, evolution by natural selection, played out within a given environment, is the ultimate causal determinant of human behavior (Surovell 2009:4). The optimization logic used in evolutionary ecology does not require that the organism under study be consciously engaged in rational choice, nor does it deny the existence of intentionality in decision-making (Broughton and O’Connell 1999). Instead, it assumes only that natural selection has designed organisms to behave in ways that tend to enhance fitness, whatever the proximate genetic, physiological, or cognitive mechanisms involved in that design (Broughton and O’Connell 1999).

A subset of evolutionary ecology concerned with explaining behavioral variability is behavioral ecology (e.g., Krebs and Davies 1997). The roots of behavioral ecology are firmly grounded in the biological sciences and provide a rigorous framework for studying adaptation within an environmental context (Bird and O’Connell 2006; Smith 2000; Winterhalder and Smith 1992, 2000). Although models in behavioral ecology are ultimately founded on evolutionary principles, when applied to archaeological data, they generally do not examine evolutionary origins directly, nor do they directly monitor diachronic changes in gene frequencies (Surovell 2009:5). Because of its focus on explaining variability, this approach is often of special interest to archaeologists (Broughton and O’Connell 1999).

The behavioral ecological approach addresses specific questions about behavior, with answers typically involving the use of optimality models. Models are often framed in terms of constraints, essentially assumed limits on behavior, determined by the environment or the biological limits of an organism (Surovell 2009:7). Research hypotheses, which predict an optimal pattern of behavior, include a possible fitness-related goal for the behavior of interest, the alternate strategies to achieve that goal, the costs and benefits associated with each strategy, and the currencies in which those costs and benefits are to be measured (Broughton and O’Connell 1999). When archaeologists consider a particular behavioral trait, therefore, their questions should ask how that trait maximizes the inclusive fitness of those individuals who display it. If, for example, human fitness is maximized by increasing the rate at which energy is captured (energy efficiency), then it should be expected that settlement, mobility, and subsistence strategies will be organized to meet that goal. These strategies are projected to change as the natural and social environments alter rates of energy capture.

In this study, we seek to explain variation in human behavior from the perspective of behavioral ecology, as dictated by the essence of the particular research domain(s) and within the parameters established by the Project. We recognize the importance of addressing questions that traditionally are identified with cultural-historical or descriptive ecological approaches for the identification of obvious patterns in the archaeological record, and note that this is an essential first step in the investigation of regional prehistory that cannot be circumvented. In other words, it is impossible to determine whether hunter-gatherers subsisted and settled in particular habitat types because those

places offered maximum rates of caloric return until we understand what habitat types were present, and when and what their potential return rates were. Therefore, the research domains and questions outlined below are, to a greater or lesser extent, interrelated and relevant to an approach that seeks to explain variation in human behavior.

In interpreting the archaeological record, a holistic, systematic view of culture is taken. It is postulated that human behavior is largely organized and patterned. Consequently, it is predictable enough for societies to exist and for them to be effective in meeting biological and psychological needs (see White 1959). Because of this patterning, human behavior can be studied as a system that interacts with its environment, referred to as a “sociocultural system,” to emphasize that it occurs within social groups of people who share a common tradition of learned behavior. It is not implied, however, that the sociocultural systems has any real existence outside of the people who comprise the components of the system. A sociocultural system is merely a theoretical construct to aid in the analysis of human behavior, both synchronically and diachronically. The organized, systemic nature of sociocultural systems suggests that change in one component of the system will result in changes in other components.

The organized, systemic nature of sociocultural systems implies that change in one component of the system can be predicted to cause changes in other components. Additionally, certain components tend to be more closely related to each other; thus, it is profitable to conceive of subsystems within the overall system. The definition of subsystems is largely at the discretion of the analyst, however, since in reality, behavior may operate on several levels simultaneously.

#### **4.2.2 Environmental Variability and Paleoenvironmental Change**

##### *Identify evidence of paleoenvironmental change in the Upper Klamath River Area.*

The natural environment is an important part of the overall setting in which a sociocultural system operates. This is particularly true in precontact societies where natural environmental factors were likely of primary importance in directly influencing the course of human development. Natural environmental circumstances such as a shift in climate or in the availability of water or animal and plant resources would have specific and immediate consequences for a group’s subsistence and settlement systems, resource procurement strategies, demography, and socio-cultural processes. Temperature regimes can affect such critical environmental attributes as length of growing season, predictability of summer rains, and overall drought stress.

The Late Quaternary paleoenvironmental record for the Upper Klamath River area is not well known. Paleoecological and paleoclimatic studies have not been conducted, and inferences regarding paleoenvironment are drawn from neighboring regions, as outlined in Section 2.6 above. Important among these have been the studies of Antevs (1955) for the Interior Northwest, Hansen (1947) for the Pacific Northwest, Grayson (1976) for the Nightfire Island site at Lower Klamath Lake, as well as the summary of late Pleistocene and early Holocene paleoenvironments by West and colleagues (2007).

A related topic of importance is the potential effect of Cascade Range volcanism on human populations in the Upper Klamath River area either directly or as a consequence of regional environmental stress. It is known that ashfall from the catastrophic Mt. Mazama eruption (now

Crater Lake) at 6700 to 7000 BP was widely distributed across southern Oregon. Corresponding effects likely decimated some local environments and more distant areas such as the Upper Klamath River basin and canyon may have witnessed associated influences such as increased use by people seeking refuge or decreased use by people abandoning the area because of environmental conditions. Volcanic ash layers associated with the Mt. Mazama eruption have been recognized at a number of local and regional archaeological sites in stratigraphic contexts revealing cultural materials above and below the tephra (Bevill et al. 1994; Sampson 1985; Wilson et al. 1995). In addition, less catastrophic eruptions from other Cascade Range volcanos such as Paulina Peak, which is part of the Newberry Crater complex, and perhaps Secret Spring Mountain in the Upper Klamath River area (Joanne Mack, 2019 personal communication), may also have deposited ash deposits within the study area.

Paleoecological data from dated pollen-stratigraphic sequences and packrat middens offer the greatest potential for providing paleoenvironmental information for study. Given the restriction of the Phase II study, it is unlikely that information would be forthcoming from packrat midden studies. Thus, the current analysis of environmental variability and paleoenvironmental change will rely on environmental reconstruction based on geomorphological studies and analysis of materials collected from cultural deposits such as faunal remains, pollen, and plant macrofossils to relate past environmental changes to changes in the resources important to precontact populations.

Geomorphological and sedimentological data for use in paleoenvironmental reconstructions will focus on establishing site depositional sequences and site formation processes, as detailed in Section 5.4.12 below. Primary focus includes determining the age(s) of site occupation, identifying processes that led to post-occupational transformations of the archaeological assemblage (site formational processes), and identifying geologic aspects of the site that relate to environmental conditions during occupation(s), including paleotopography. Whenever possible, identifying and analyzing aspects in each of these focal areas would occur but not all are required to inform conclusions regarding NRHP eligibility.

Faunal assemblages can provide important information regarding paleoenvironmental change, as certain species are susceptible to changes in the environment such as temperature fluctuations and rainfall. Among the faunal species noted in archaeological assemblages recovered from the Upper Klamath River area are freshwater mussel shell (Waechter and Young 2015; Wilson et al. 1996). The study of growth rings of *Margaritifera* shell has the potential to provide information regarding changes in riverine environment (see Cleland 1997a and Wilson et al. 1996), which may be relatable to climatic change in the Upper Klamath River area.

Primary data for making inferences regarding past vegetation conditions and precontact vegetal resource use are typically derived from pollen and plant macrofossils (e.g., seeds, charcoal) preserved in archaeological sediments. The quality of preservation of vegetal remains and, by association, the archaeobotanical and paleoecological potential of site deposits, are necessarily interrelated. In this regard, an important consideration for the current investigation are the findings of the NRIS (Lenihan et al. 1981) and other reservoir drawdown studies (Dunn et al. 1996) that examined the effects of mechanical, biochemical, and other impacts to archaeological sites and analysis techniques from freshwater immersion. The Phase II study will focus on determining the

relative degree of pollen and macrofossil preservation in both inundated and noninundated areas of the study sites to assist with environmental reconstructions.

The following research questions are proposed within the domain of environments:

- Is there evidence of environmental change present among the Phase II study sites and, if so, is this evidence of sufficient quality to develop a more localized model of that change?
- What do geomorphological and sedimentological data reveal about paleoenvironment, depositional context, and natural site formation processes? What do these data suggest regarding effects of diachronic regional climate regimes and trends?
- What processes account for the formation of deposits within each site setting, and what implications do these processes have for paleoenvironmental reconstructions?
- Does tephra from volcanic eruptions of the Cascade Mountain, particularly Mt. Mazama, occur within the site deposits? What is the age and volcanic association of the tephra?
- Is there evidence to support any significant changes in the fluvial regime of the Klamath River during the Holocene?
- What is the preservation of organic materials, such as botanical or faunal remains, both within and outside inundation settings? How do these compare with models of preservation from the National Reservoir Inundation Study (Lenihan et al. 1981) and other reservoir studies (Dunn et al. 1996)?

### Data Requirements:

Datasets required to address environmental variability and paleoenvironmental change research questions require observation and recordation of ecofactual and artifactual remains present at each site. Central among these are recovery of temporally controlled (a fixed point in time), single component (single event) faunal remains. An animal butchering or processing feature exposed in cut bank or erosional profile that is isolated (not associated with a midden deposit) would be a time-fixed, single event and stratigraphically unmixed feature of unmixed faunal remains. Also central is recognition and recordation of locations that may retain stratigraphically unmixed pollen or other macrofossil plant remains and data that characterize micro-variability, even though the patterns of variability may not be readily apparent in a field setting. Similarly, intact volcanic ash layers and tephra analysis, geomorphological evidence of stable or changing fluvial regimes and patterns of *Margaritifera* growth rings would also provide important data for consideration.

### 4.2.3 Cultural Chronology

*Identify temporal variability in the distribution of precontact cultural resources in the Upper Klamath River Basin.*

Definition of site chronology and recognition of cultural components within sites is fundamental to the investigation of research questions concerned with diachronic changes in human behavior. Chronological studies are important to determine site-specific chronology, to compare and contrast occupational histories with other sites in surrounding areas, and to test the validity of current culture history sequences for the Klamath River region. Chronological data are especially important for prehistory because they may help determine the initial dates of Native American settlement and



changes over time. Individual sites may not address these topics, but they can provide information relevant for local and regional syntheses. The application of multiple dating methods, including the use of radiocarbon dating, obsidian hydration analysis, artifact cross-dating, and horizontal and vertical stratigraphic observations, provides for the most accurate reconstruction of prehistoric site chronology.

Mack (1989) developed a cultural sequence for the Upper Klamath River Canyon area based on research and reanalysis of archaeological site collections associated with the Salt Cave Project conducted in the 1960s (Anderson and Wells 1964; Cressman and Olien 1962; Cressman and Wells 1962) and from subsequent work undertaken in the 1980s (Gehr 1985, 1985a; Jensen 1986, 1987). Mack (1989:52) also considered the prehistory of other adjacent areas—the Klamath Basin, Upper Rogue River, and the Middle Pit River—to assist with development of the Upper Klamath River sequence. Employing results of radiocarbon assays and artifact assemblage attributes (particularly projectile points), Mack recognized four phases of occupation: Secret Spring (5500 BC to 4500 BC), Basin (4500 BC to 2500 BC), River (2500 BC to 250 BC), and Canyon (250 BC through historic contact). Mack’s cultural sequence remains the primary chronological framework for the Upper Klamath River Canyon area, and serves as the principal temporal construct for consideration among the proposed Phase II sites.

Mack (1991:1) defined the Upper Klamath River Canyon area as a 21-mile-long stretch of the river, extending from J.C. Boyle Dam (RM 225), in Oregon, downriver to the backwater of Copco Reservoir (RM 204), in California. This area corresponds with Mack’s (1983; 1991:1) Salt Cave Locality of the Upper Klamath River, and crosses through what has been called the Klamath Gorge. Because the Project’s ADI both encompasses and extends upriver and downriver beyond Mack’s Upper Klamath River Canyon area, the term “Upper Klamath River Area” is used throughout this section to reference the geographic extent of the ADI and to frame the discussion of research domains and questions pertinent for this extended area. This report defines the Upper Klamath River Area as that portion of the river that crosses the Southern Cascade Mountains (Figure 2-1) from near Keno, Oregon, southwest to river’s confluence with the Shasta River, seven air miles NNE of Yreka, California. The Upper Klamath River Area corresponds with Mack’s (2012:1) “Upper Klamath River Project” area, but that term is not used here to preserve the project-specific designation for Mack’s long-term work conducted within this stretch of the river.

Section 3.1.1 provides a detailed overview of Mack’s Upper Klamath River Canyon cultural phases which, for discussion purposes, are briefly summarized below, focusing on their chronological aspects. To further inform the discussion, Table 4-1 (on the second page following) presents a summary of chronological information for precontact archaeological sites that have been investigated within the Project’s Upper Klamath River area, focusing on their correspondence with Mack’s temporal phases; reported radiocarbon assays; the presence or absence of temporal markers such as diagnostic projectile points, Siskiyou Utility Ware (Mack 1983), shell or glass trade beads, and whether obsidian hydration studies have been conducted.

Archaeological evidence for human land use of the Upper Klamath River Area during the early Holocene is found within the Four Bulls Site (35KL1459), a deeply buried, multiple component site located near Keno, Oregon (Wilson et al. 1996). The site occupies a transitional location between the

eastern limit of the Upper Klamath River Area and the neighboring Lower Klamath Lake (Great Basin) area. Site investigations revealed a potential Paleo-Indian Period association (11,500 to 6000 BP [9950 BC to 4050 BC]) based on the recovery from a cultural feature of mineralized bone (i.e., shrub-ox, bison, deer, fish, and mountain goat), possible worked bone, and obsidian flakes. Notable quantities of obsidian artifacts from 35KL1459 revealed age-computed hydration values (microns) that suggest site use possibly as early as 10,500 BP, (8850 BC), with intensive occupation occurring between 8000 and 4500 BP (6060 and 2550 BC) (Wilson et al. 1996:2-131). A freshwater mussel shell feature found at the site produced a conventional radiocarbon date of  $6850 \pm 80$  (cal. 5850 BC), but the date is not entirely secure, possibly being as much as 2,000 years too old (Wilson et al. 1996:2-135, 7-1). The only other evidence for possible use of the Upper Klamath River Area before 5500 BC consists of a single Eden projectile point identified at site 35KL18 near the Oregon/California state line (Mack 1989).

The Secret Spring Phase (5500 to 4500 BC) is represented by a small collection of generalized bone tools and several unifacial flaked tools from site 35KL21, as well as the use of turtle and mammals (Mack 1989:52-53, 58). Also corresponding to this temporal phase are cultural remains recovered from 35KL1459, the Four Bulls Site, bolstered by age-computed obsidian hydration dates that indicate intensive site occupation during this phase (Wilson et al. 1996:2-131). Further downstream, near the Shasta River in California, investigations conducted by Mack (1988:59) at the Paradise Craggy Site (CA-SIS-1066) suggest a possible, but unconfirmed, association of cultural remains with the Secret Spring Phase. Because of the paucity of sites and assemblages with temporal data that bracket the Secret Spring Phase, many basic chronological questions remain regarding its timing, influences, and cultural characteristics. Identification of site components among the Phase II sites that can be confidently tied to the Secret Spring Phase date range, as well as identification of hallmark artifacts or other cultural constituents, would enhance the understanding of this little known period and are viewed as an important focus of the Phase II work.

The Basin Phase (4500 to 2500 BC) marks the first well documented period within the Upper Klamath River Canyon area (Mack 1989:53). Presently, nine investigated sites within the Upper Klamath River Area have produced cultural constituents that correspond with Mack's date range and/or associated cultural characteristics for this phase (Table 4-1). These sites include five Salt Cave Project sites studied by Mack (1989) and four sites associated with other work (Mack 2003, 2012; Wilson et al. 1996). Hallmark artifacts associated with the Basin Phase consist of large dart-size projectile points (Humboldt, Concave Base, McKee Uniface, and Northern Side-notched), ground stone tools (bowls, muller, and mortars) and bone tools (Mack 1989: Table 14). Two bulk-soil radiocarbon dates retrieved from CA-SIS-1066, which is located at the western limit of the Upper Klamath River Area, provide the only assays to date correlated with the Basin Phase. These soil samples included one from the site's midden area, dated to  $4700 \pm 70$  BP (cal. 3645 to 3340) and one from the South Locus dated to  $4240 \pm 70$  BP (cal. 2930 to 2605). Presently, obsidian hydration values correlated with the Basin Phase temporal range are restricted to artifacts recovered from sites 35KL1459 and CA-SIS-1066.

The River Phase (2500 to 250 BC) signals an increase in the number of documented sites within the Upper Klamath River Canyon area, many of which are marked by more diverse and specialized artifact assemblages (Mack 1989). Currently, 13 investigated sites within the Upper Klamath River



Area have yielded cultural remains corresponding with the River Phase date range and/or associated cultural characteristics (Table 4-1). These sites include nine Salt Cave Project sites studied by Mack (1989) and four sites associated with other excavation projects (Mack 2003, 2012; Wilson et al. 1996). Hallmark artifacts of the River Phase Include medium-to-large dart points, such as Gold Hill Leaf, Elko Series, Siskiyou Side-notched, Class 28 points (similar to Clikapudi Corner-Notched [Basgall and Hildebrandt 1989]) and Class 29 points that resemble Martis Series points (Mack 1989:53). Mullers and mortars persist as characteristic ground stone tools (Mack 1989). Bone tools reflect diversification and specialization, incorporating bone and antler chisels and wedges and barbs for harpoons and fishing equipment (Mack 1989:56). The River Phase currently has few corresponding obsidian hydration data, currently restricted to artifacts recovered from CA-SIS-1066, near the Shasta River; CA-SIS-2135 and CA-SIS-2126 near Secret Spring Mountain.

The Canyon Phase (250 BC through historic contact) encompasses the best documented cultural Phase In the Upper Klamath River Canyon area (Mack 1989:53). To date, 29 investigated sites in the Upper Klamath River area have yielded corresponding assemblages (see Table 4-1). Principal features of the Phase Include house pit villages, large midden sites, and small upland sites focused on specialized uses (Mack 1991:81). Hallmark artifacts of the Canyon Phase Include small narrow-necked projectile points, mullers for processing woks, bone tools, Siskiyou Utility Ware among the downriver villages, and *Olivella* shell beads.

The preceding review notes that several types of data have been fundamental to the development of the precontact period chronology for the Upper Klamath River area. Such data have focused primarily on projectile point typologies and, to a lesser extent, on associations of ground stone artifacts, Siskiyou Utility Ware, bone tools, and radiocarbon assays. Previously investigated sites have demonstrated that such time markers can be successfully used to assist with chronological reconstructions, particularly where radiocarbon pairings are also available. Radiocarbon dating has also served to inform the chronology from the time of the earliest work, and many investigated sites have proven to contain suitable materials for testing. Obsidian hydration analysis has become prominent in later studies, providing for relative dating through the use of age-computed hydration dates. At the Phase II level, certain basic chronological questions are important for helping define site function and duration of occupation, and to possibly refine the existing regional chronology.

These questions include the following:

- What is the chronological range of occupation and use of each site: single component, multi-component, or mixed-component?
- Can distinct single component loci be identified within multi-component sites? Can these loci be placed in chronological order using available data?
- Are components reflected in soil strata that can be followed in excavation?
- Is occupation "continuous" or are distinct periods of disuse or abandonment present?
- What types of temporally diagnostic artifacts are present among the sites and what is their relative age?
- Do the temporally diagnostic artifacts correlate with site stratigraphy to provide a rate of deposition and a determination of site integrity?

Table 4-1 Temporal Data for Previously Investigated Upper Klamath River Sites

Trinomial	Correspondence with Upper Klamath River Canyon Phases (Mack 1983)						Obsidian Studies		Radiocarbon Dates	Siskiyou Utility Ware	Projectile Point Types	Beads	Other Site Number	Phase I*	Assoc Project	Excavated?
	Secret Spring 5500 to 4500 BC	Basin 4500 to 2500 BC	River 2500 to 250 BC	Canyon Sub1 250 BC to AD 900	Canyon Sub2 AD 900 to 1600	Canyon Sub 3 AD 1600 to Contact	Geochemical Sourcing	Hydration								
35KL0013					X	X				X	CT, DSN, GB, SSN		FY58-014-001; HRA-32	Yes	Big Bend	Newman and Cressman 1959
35KL0014					X						GB		FY58-014-002; HRA-33	Yes	Big Bend	Newman and Cressman 1959
35KL0015											Large point		FY58-014-003; HRA-34	Yes	Big Bend	Newman and Cressman 1959
35KL0016		X	X		X	X	X		970 ± 80 580 ±120 580±100 540±120	X	GB, RSCN, RSSN, EG, CT, DSN, GH, Alkali, Border Village Class 29		SC#1; Gehr-1; FY61-014-001; HRA-35; CKF1; CW1 & 2		Salt Caves	Anderson and Cole 1964; Mack 1983; Gehr 1985b; Jensen 1986c; Jensen and Associates 1987
35KL0017/0554											GB		SC#2 and SC#16; FY61-014-002; Gehr-2; CKF2; CW3; Gehr-16		Salt Caves	Gehr 1985b, 1985c; Jensen 1986c
35KL0018		X	X	X	X	X	X		564±110		GB, GH, Eden	Shell disc bead	SC#3; FY61-014-003; Gehr-3; CW4; CKF3; KRC-6		Salt Caves	Cressman and Wells 1962; Cressman and Olien 1963; Mack 1983, 1992; Gehr 1985b; Jensen 1986c
35KL0019		X	X	X	X	X			580±60 230±60 210±80		DSN, GB, ES, McK		SC#4; FY61-014-004; Gehr-4; CKF4		Salt Caves	Cressman and Wells 1962; Gehr 1985b; Jensen 1986c
35KL0020				X		X			100 ±70		GES	Shell bead	SC#5; FY61-014-005; Gehr-5; CW6; CKF5; KRC-7		Salt Caves	Mack 1983; Jensen 1986c
35KL0021/0786	X	X	X	X	X	X	X		7646 ±400 6065±400 1296±125 1009±110 990±110	X	GB, ES, GH, NSN	Olivella spire-lopped and Olivella saddle	SC#6; FY61-014-006; Gehr-6; CW7; CKF6; KRC-8		Salt Caves	Cressman and Wells 1962; Cressman and Olien 1963; Mack 1983, Gehr 1985b
35KL0022					X	X					GB		SC#7; FY61-014-007; Gehr-7		Salt Caves	Cressman and Wells 1962; Mack 1983; Gehr 1985b; Jensen 1986c
35KL0023/0566					X					X			SC#8; FY61-014-008; Gehr-8; 39/7-36-4; Gehr-22 (KL566)		Salt Caves	Cressman and Wells 1962; Mack 1994; Gehr 1985b; Jensen 1986c
35KL0024													SC#9; CW10; CKF9; KRC-13		Salt Caves	Cressman and Olien 1963; Mack 1983
35KL0025		X	X		X				AD 700 AD 1000	X	GB, RSSN, SSN, GH, NSN		SC#10; CW11; CKF10; Site 10		Salt Caves	Cressman and Wells 1962; Gehr 1985b; Jensen 1986c Mack 1992; Mack screened in 1994



Trinomial	Correspondence with Upper Klamath River Canyon Phases (Mack 1983)						Obsidian Studies		Radiocarbon Dates	Siskiyou Utility Ware	Projectile Point Types	Beads	Other Site Number	Phase I*	Assoc Project	Excavated?
	Secret Spring 5500 to 4500 BC	Basin 4500 to 2500 BC	River 2500 to 250 BC	Canyon Sub1 250 BC to AD 900	Canyon Sub2 AD 900 to 1600	Canyon Sub 3 AD 1600 to Contact	Geochemical Sourcing	Hydration								
35KL0026					X	X			400±50 380±80 330±60		GES, RS		SC#11; CW12; CKF11		Salt Caves	Gehr 1985b; Jensen 1986c
35KL0028				X	X	X					GB, RS, MSN, ECN, Leaf-shaped				Keno Development	Cole 1965
35KL0550											CN		FY84-014-001; Gehr-12		Salt Caves	Gehr 1985b; Jensen 1986c
35KL0551/0787			X	X	X	X					DSN, RS, Elko, Four unclassified		RS-7; Gehr-13; Gehr-42; CKF42; KRC-11		Salt Caves	Jensen 1986c Jensen and Associates 1987
35KL0552				X	X						Small point, NSN		Gehr-14		Salt Caves	Gehr 1985b; Jensen 1986c
35KL0553													Gehr-15; CKF15; KRC-12		Salt Caves	Gehr 1985b; Jensen 1986c
35KL554			X		X											
35KL558			X	X	X	X					GB, ESN					
35KL0567													SC#21, FY84-014-012; Gehr-23; Gehr-21; 36		Salt Caves	Gehr 1985b; Jensen 1986c
35KL0576													FY84-014-013; Gehr-24; 87; KRC-3; CKF24		Salt Caves	Jensen 1986c
35KL0578			X		X					X	DSN, GB		FY84-014-010; FY84-014-016; Gehr-21 and Gehr-27		Salt Caves	Gehr 1985b; Jensen 1986c
35KL0628/0789/2354													FY79-014-004; FY89-014-008; FY03-014-091; Gehr-29; 35AR11-94/RS-9/35AR11-24/NH 41/6-11-1		Salt Caves	Mack 1992
35KL0632													FY85-014-004; Gehr-33; 90; CKF33		Salt Caves	Jensen 1986c
35KL0634						X					Fragments		FY85-014-011; Gehr-40; CKF40		Salt Caves	Jensen 1986c
35KL0791/0797													FY89-014-010; FY92-014-008; RS-4; 94			Mack 1994; surface collected Mack 1992, 1994

Trinomial	Correspondence with Upper Klamath River Canyon Phases (Mack 1983)						Obsidian Studies		Radiocarbon Dates	Siskiyou Utility Ware	Projectile Point Types	Beads	Other Site Number	Phase I*	Assoc Project	Excavated?
	Secret Spring 5500 to 4500 BC	Basin 4500 to 2500 BC	River 2500 to 250 BC	Canyon Sub1 250 BC to AD 900	Canyon Sub2 AD 900 to 1600	Canyon Sub 3 AD 1600 to Contact	Geochemical Sourcing	Hydration								
35KL1121				X	X	X						Shell beads, Dentalium	KRB-1			Tasa and Connolly 1997
35KL1459	X	X	X	X	X		X	X	6580±80 2630±50 1050±60		SSN, GH/WLXL, McK, GCS/COQ, NSN		93/126-106; OR-KL-41		PGT	Fagan et al. 1994; Wilson et al. 1996
35KL1460													93/126-04		PGT	Fagan et al. 1994; Wilson et al. 1995; Wilson et al. 1996
35KL1461							X	X					93/126-203		PGT	Fagan et al. 1994
35KL1468							X	X					93/126-206		PGT	Fagan et al. 1994
35KL1469							X	X					93/126-101; 6HP2		PGT	Fagan et al. 1994
35KL1861													Columbia #1			Tasa 1996
35KL1941													39/7-32-2	Yes		O'Neill and Connolly 2009
35KL1943											SSN, ECN	Glass trade bead	39/7-31-1	Yes		O'Neill and Connolly 2009
35KL2227													41/5-12-1; FY85-014-009; CKF38; BK-38; Gehr-38			Mack 1994
35KL2831													93/126-125, OR-KL-40, 5HP1		PGT	Fagan et al. 1994; Wilt 2011 (just outside site)
35KL2864													SC#25H; OR-KL-81; Gehr-25		Salt Caves	Jensen 1986c
35KL3045													HRA-25; 93/126-119; 6HP3		PGT	Fagan et al. 1994
35KL3594													Keno-01			Jones 2011
CA-SIS-0016/H*													KRC-22			UC Berkeley 1953 (from Mack 1989:3)
CA-SIS-0017/H*													Sis-X-2			UC Berkeley has a collection (from Mack 1989:3)
CA-SIS-0326					X		X		510±75 400±75	X	DSN, CT, GB, MCN, MSN, Small leaf-shaped		Iron Gate 2; IG2	Yes	Iron Gate	Leonhardy 1961, 1967
CA-SIS-0329/H			X	X			X	X	4830±30 4690±30 2090±30 1660±30 1130±30		GS, CLIK-SN, CLIK-CN, SQU-CS, Lanceolate		NA		Caltrans Collier	Dalldorf 2013; Hamusek and Haney 2001; Waechter and Young 2015



Trinomial	Correspondence with Upper Klamath River Canyon Phases (Mack 1983)						Obsidian Studies		Radiocarbon Dates	Siskiyou Utility Ware	Projectile Point Types	Beads	Other Site Number	Phase I*	Assoc Project	Excavated?
	Secret Spring 5500 to 4500 BC	Basin 4500 to 2500 BC	River 2500 to 250 BC	Canyon Sub1 250 BC to AD 900	Canyon Sub2 AD 900 to 1600	Canyon Sub 3 AD 1600 to Contact	Geochemical Sourcing	Hydration								
CA-SIS-1066/H	Possible	X	X	X	X		X	X	4700±70 4240±70	X	GB, SN leaf shaped, CLIK, EE, Leaf series/COQ, McK, NSN		FS-05-51-111; CA-030-210; Pollock Site 12			Mack 2003
CA-SIS-1198/H				X	X	X	X		420±30 185±5 159±4 150±80	X	DSN, GB		CKF28, KRC-15, Gehr-28			Mack 1994, 1996, 1995 [need], 1999 [need]; surface collected Mack 1994
CA-SIS-1721				X	X	X	X		390±90	X	GB, DSN		CA-030-060			Mack 1996
CA-SIS-2135		X	X	X	X	X	X	X	AD 445-655 AD 895-1170	X	GB, RS, SSN, CLIK, NSN					Mack 2012
CA-SIS-2136		X	X	X	X	X	X	X	AD 1020-1300 AD 1410-1650 AD 1510-1595		GB, CLIK, ES, COQ, McK, HUM, SQW, GBS					Mack 2012
CA-SIS-2646					X	X					GB					
CA-030-2127						X						Glass trade beads				Neel 2019

Notes:  
\* All sites listed falling under the Phase I column were either initially identified through a Phase I inventory or revisited for the current project.  
Caltrans = California Department of Transportation  
COQ = Coquille Series  
CLK = Clikapudi Series  
CT = Cottonwood Triangular  
DSN = Desert Side-notched  
EG = Eastgate  
ECN = Elko Corner-notched  
ES = Expanding Stem  
GB = Gunther Barbed  
GES = Gunther Expanding Stem  
GH = Gold Hill  
GRBS = Great Basin Stemmed  
HUM = Humboldt Series  
McK = McKee Uniface  
MSN = Medium Side-notched  
NSN = Northern Side-notched  
RS = Rose Spring  
RSCN = Rose Spring Corner-notched  
RSSN = Rose Spring Side-notched  
SQW = Squaw Creek  
SSN = Siskiyou Side-notched  
WLXL = Willow Leaf Extra Large

- What kinds of archaeological data are best suited to characterizing temporal variability among the Phase II sites?
- Do the chronological data, particularly from obsidian hydration and radiocarbon dating, allow an assessment of the stratigraphic integrity of the site deposits?
- How does site occupation relate to the cultural sequence developed by Mack (1989) for the Upper Klamath River Canyon area? Can refinements to Mack's chronology be posited based on assemblage traits, obsidian hydration results, geomorphic and stratigraphic observations, and radiocarbon assays?
- Do site assemblages exhibit assemblage characteristics associated with other regional chronologies such as the Upper Klamath Basin, Northern California, or Plateau?
- What preliminary observations can be offered regarding protohistoric Native American assemblages?

### Projectile Point Chronologies

A defining attribute of chronological reconstructions for the Upper Klamath River area and elsewhere has been the reliance on hallmark artifacts such as projectile points, shell beads, and ornament as temporal markers. The seminal projectile point typology developed by Thomas (1981) for the Monitor Valley, Nevada, area remains the primary adoptive typology used across much of southern Oregon and northeastern California, although a number of local and site-specific projectile point typologies have also been developed (e.g., Cressman 1956; Hughes 1986; Justice 2002; King et al. 2016; Pettigrew and Lebow 1987; Sampson 1985).

Projectile point typologies advanced for the Klamath Basin area have focused on the work of Cressman (1956) in the upper basin area and that of Sampson (1985) and Hughes (1986) in the lower basin. From his work at Kawumkan Springs Midden and Medicine Rock Cave, located in the Upper Klamath Basin, Cressman (1956:412-413) provided the first significant projectile point typology for the region, relying on artifact form, size, and stratigraphic context. Thirteen point types were identified, comprised of leaf-shaped, side-notched, corner-notched, and contracting stem types. Larger leaf-shaped, unshouldered and slightly shouldered forms appeared early in the sequence, along with triangular forms, and these forms continued throughout the cultural sequence. Several leaf-shaped specimens were similar to points recovered from caves of the Northern Great Basin, where some were found immediately underlying Mt. Mazama pumice, while others occurred immediately above Mazama ash. Large side-notched, corner-notched, and contracting stem types, referred to collectively as Great Basin types (Cressman 1956:415), flourished at Kawumkan Springs between ca. 7500 and 2500 BP.

Archaeological investigation conducted at the Nightfire Island Site, in the Lower Klamath Lake area, provided considerable information useful for assessing the position of projectile points in regional chronology and developing a typology based on a well-stratified archaeological deposit (Hughes 1983; Sampson 1985). A large number of unstemmed foliate points were identified, with these subdivided into three basic forms: knives, large foliate, and small foliate. Large foliate points most closely resembled the Gold Hill Leaf (Davis 1968, 1970) from the Gold Hill site in southwestern Oregon, while small foliate points also compared well to a smaller variety of the Gold Hill type

(Sampson 1985). Stemmed and notched projectile points were grouped according to traditional Great Basin styles, including Humboldt, Cottonwood, Northern Side-notched, Elko, and Rose Spring. Sampson (1985) also applied other projectile point types from distant regions to the Nightfire Island collection, including the Pinto and Martis series. Of interest, Sampson (1985:328) established that Rose Spring points appeared during the period of 2450 to 1950 BC, several millennia earlier than established within the Great Basin. Finally, a great many projectile points from Nightfire Island were grouped as Gunther series types and were used as a marker in defining the late period “Arrowhead Loams” (Sampson 1985:342). Gunther points with short tangs and serrated blades occurred in greater numbers after AD 500 (Sampson 1985:347). The classic variation of Gunther points, defined by Treganza (1958) as having extended barbs, were uncommon at Nightfire Island, appearing at the end of the cultural sequence, likely as a trade item after AD1400.

For the Nightfire Island site, Hughes (1986:131) segregated projectile point types using the key developed by Thomas (1981) for Monitor Valley, Nevada. This resulted in a significant difference in projectile point types than those assigned by Sampson (1985), particularly for Elko and Rose Spring series. Hughes (1986) suggested that Sampson’s difference in classification likely prompted Sampson to assign “significantly longer use lives” to his types than established elsewhere. Namely, this likely led Sampson to place Rose Spring points into a timeframe significantly earlier than expected. Hughes (1986:135) re-examined the vertical distribution of Northern Side-notched projectile points at Nightfire Island and based on provenience and radiocarbon dates, placed these points within the timeframe of 3000 to 1350 BC. He also suggested that Elko Series points appeared sometime between 1350 and 500 BC, dating to after the decline of Northern Side-notched points.

The development of a projectile point typology specific to the Upper Klamath River area was undertaken by Mack (1983:129), relying on the assemblages recovered from the Salt Cave Locality. Applying metric attributes defined by Binford (1963), Hester (1973), and Thomas (1970), Mack identified 30 projectile point types and classes, roughly half of which were recognized as Great Basin types. The remaining classes included examples of northern California and southern Oregon point types.

The earliest projectile point types identified for the Upper Klamath River consists of a single, stemmed projectile point from 35KL18, identified as an Eden point (Wormington 1948), inferring possible use of the canyon before 5500 BC (Mack 1991:72). Beginning with the Basin Phase (4500 to 2500 BC), projectile points become more visible in the archaeological record, witnessed by a group of large dart points representing Northern Side-notched, Humboldt Concave Base, and McKee Uniface types (Mack 1991:74). Although neither pervasive nor numerous, the points represent the first strong evidence of hunting weaponry in the Upper Klamath River area. During the Basin Phase (2500 to 250 BC) projectile point styles diversify slightly to include a group of corner- and side- notched, eared, and foliates that continue to represent the use of dart-and-atlatl technology. It is during the Canyon Phase (250 BC through Contact) that projectile points reflect the greatest stylistic diversity, technological change, and highest representation in the archaeological record. The shift from dart/atlatl technology to bow/arrow technology is witnessed by the adoption of small, narrow-necked projectile points reflecting the Desert Side-notched, Gunther (now Tuluwat),



Rose Spring/Eastgate series, in addition to other types such as Cottonwood (triangular and bipoint), Alkali, and Surprise Valley Split Stem (Table 4-2).

**Table 4-2 Upper Klamath River Projectile Point Sequence (Mack 1983, 1991)**

Phase	Point Type	No. of Specimens
Canyon 250 BC through Contact	Gunther Barbed (Type 1)	262
	Gunther Stemmed (Type 11)	72
	Rose Spring Contracting Stem (Type 2)	11
	Rose Spring Corner-notched (Type 3)	56
	Rose Spring Side-notched (Type 14)	14
	Desert Side-notched (Type 4)	36
	Small to Medium Triangular	13
Possible Canyon Phase Association	Eastgate Expanding Stem	5
	Eastgate Straight Stem	3
	Cottonwood Triangular	14
	Cottonwood Bipoint	2
	Surprise Valley Split Stem	2
	Alkali	17
River 2500 to 250 BC	Elko Corner-notched	11
	Elko Eared	2
	Elko Side-notched	9
	Gold Hill Leaf	10
	Siskiyou Side-notched	8
Basin 4500 to 2500 BC	Northern Side-notched	11
	Humboldt Concave Base	2
	McKee Uniface	
Secret Spring 5500 to 4500 BC	Eden	1

The above review of existing Upper Klamath River projectile point typology notes the influences of both the Great Basin and the northern California styles throughout all phases of occupation. Since the time that Mack established the Upper Klamath River point typology in the late 1980s, however, advances have been made in the development of point typologies in neighboring areas, particularly in southern Oregon (Pettigrew and Lebow 1987; Pettigrew et al. 1995), and also in the timing and introduction of particular Great Basin point types into the region (Delacorte 1995, 1997). Several of our research questions are directed toward developing and refining the point sequence based on potential local variations and advances made in regional projectile point typologies. Addressing this goal will require attribute analysis of projectile point from the Phase II collections and subsequent application of these techniques to comparative collections.

Based on previous research, several key questions can be posed regarding the chronology of projectile points:

- What is the nature of the relationship in stylistic variation of projectile points between those identified at the sites and those known from the Upper Klamath River Basin and adjacent Lower Klamath River, Cascade Mountains, and Great Basin regions?

- Can a local typology be established that differs from those schemes already proposed? What is the range of variability within local point classes and is there significant overlap that would make absolute typing difficult?
- What additions/refinements can be made to the Secret Spring and Basin Phases based on projectile point typologies? Do alternate stemmed, wide-stemmed, large leaf-shaped or lanceolate points occur? Do Northern Side-notched projectile points, common at Nightfire Island (Sampson 1985), occur in number within the Upper Klamath River drainage, and if so, how far downriver do such temporal markers extend? Do Northern Side-notched points tend to co-occur with McKee Uniface points?
- What additions/refinements can be made to the Basin Phase based on projectile point typologies? What is the relationship between Elko Corner-notched points from the Upper Klamath River area and similar types termed Klikapudi Notched series identified at sites further downriver and in northcentral California? Do Klikapudi Notched points occur among the Phase II sites and is their use coeval with that of the Elko series?
- What additions/refinements can be made to the Canyon Phase based on projectile point typologies? What is the temporal span of Tuluwat projectile points based on radiocarbon dates and obsidian hydration? Can Tuluwat points be segregated into subtypes based on shoulder or stem form, or serration of the blade, similar to Mack's (1989) typology? When do Desert Side-notched and Cottonwood points first appear in the canyon, and do they reflect a similar temporal pattern as noted by Delacorte (1997) for the west central Great Basin? What is the timing of use of Eastgate series points and Rose Spring points, which area generally ascribed to the same time period in the central Great Basin? Does this same pattern hold true for their use in the Upper Klamath River area?
- Is there evidence for variability in the inception and disappearance of point styles from upriver to downriver or vice-versa?

## Obsidian Hydration Dating

Although obsidian hydration dating has been available to the archaeological community since the 1960s, its use in the Upper Klamath River region largely began in the early 1980s. One exception is the obsidian hydration rate established by Leroy Johnson (1969b) for Nightfire Island, which was developed by pairing hydration readings with radiocarbon dates. By correcting Friedman and colleagues (1966) hydration rate with Nightfire Island data, Johnson (1969b) developed the rate formula:  $\log x = 2 (\log y + 1.2679)$  (Sampson 1985:111). This rate may be applied to GF/LIW/RS and EML obsidian. In comparing projectile point types, radiocarbon data, and stratigraphic units with mean hydration values for Nightfire Island, Basgall and Hildebrandt (1989:191-192) noted that Gunther Series and Northern Side-notched points are good time markers, proposing that 1.8 microns is equivalent to ca. 1250 BP, and that 3.7 microns equals roughly 3900 BP. Using hydration and radiocarbon pairings for Nightfire Island, Basgall and Hildebrandt (1989:198) derived the formula:  $\log y = 1.37 (\log x) + 2.81$ . A similar rate was also developed for GF/LIW/RS for the Sacramento River Canyon sites by Basgall and Hildebrandt (1989:196), namely:  $\log y = 1.60 (\log x) + 2.47$ .

For the PGT-PG&E Pipeline Expansion Project, Moratto (1995) compared the Modoc Plateau obsidian hydration readings with hydration data for projectile point types at Sacramento River Canyon and

Nightfire Island. Differences in hydration data/ranges for Gunther Series and Clikapudi/Elko Series points between the regions were believed to represent differences in effective hydration temperatures. It was found that mean hydration rates for these point types were smaller on the Modoc Plateau than at Sacramento River Canyon, and significantly smaller at Nightfire Island than at the Modoc Plateau. Given these apparent differences, estimated pairings were derived for various projectile point types and hydration readings for the Modoc Plateau (Moratto 1995:3-12). These provided a hydration rate for GF/EML obsidian of the Modoc Plateau as:  $\log y = 1.844 (\log x) + 2.403$ .

One of the early studies to apply obsidian hydration analysis to the study of local, Siskiyou County assemblages was that undertaken by Nilsson (1985) to identify stylistic differences between flaked stone assemblages of the ethnographic Modoc and Shasta Tribes. The aim of the study was to determine if analysis of surface assemblages alone is sufficient to identify significant stylistic differences in lithic technologies that could be assigned to temporal periods and/or cultural identity. To this end, an attempt was made to use projectile points and obsidian hydration to identify late prehistoric sites (AD 1000 to 1850) that would relate to either Shasta or Modoc site occupations. One hundred seventy obsidian artifacts from 22 study sites were submitted for hydration analysis. Obsidian source analysis indicated that the majority of artifacts were fashioned from Medicine Lake Highland materials, while artifacts from an ethnographic Modoc site were identified primarily as Blue Mountain and Buck Mountain obsidians. Overall, mean hydration values by site for this study ranged from 1.08 to 5.10 microns, with nearly all sample means being below 2.80 microns. Nilsson (1985:86) noted that previous investigations at Sheep Rock Cave (Ritter 1989) and Coyote Hill Rockshelter (Sletteland 1984) indicated that obsidian from the GF/LIW/RS source found in rockshelters hydrated at a rate of 475 to 500 years per 1.0 micron. Nilsson cautioned that obsidian artifacts from surface contexts in open sites could hydrate at a significantly higher rate, perhaps double that for specimens in closed or buried contexts, as demonstrated by Layton (1973). For her study, Nilsson (1985:87) paired hydration readings with temporally diagnostic projectile point types, which indicated that late period points (ca. AD 1000 to 1850) exhibit readings of 2.5 microns or less.

At Lake Britton in Shasta County, California, Cleland (1997b) derived obsidian hydration rates for GF obsidian in two ways, including induced hydration and radiocarbon pairings. The results of both methods were nearly identical, and given some uncertainty in the archaeologically derived pairings, the induced rate was chosen for application (Cleland 1997b:222). This rate also compared favorably to that developed for the Sacramento River Canyon, although the two models diverge for readings above 5.0 microns. The GF obsidian hydration rate formula for Lake Britton was offered as:  $y = 192.3 x^2$ , where  $y$  is the age in years BP and  $x$  is the hydration rind thickness in microns.

Besides Medicine Lake Highland obsidian, hydration rates have been proposed by various authors for other sources, including Tuscan (Basgall and Hildebrandt 1989), and Buck Mountain (Nilsson et al. 2000:96). Although no specific hydration rates have been established for Spodue Mountain and Silver Lake/Sycan Marsh obsidians, Pettigrew and Lebow (1987) suggest that these materials have similar rates based on similar distributions of readings. Pettigrew and Skinner (1994:26) write that Silver Lake/Sycan Marsh and Spodue Mountain obsidians occur primarily within archaeological sites of the Klamath Basin and that the frequency of these sources drop off rapidly in all other areas outside the basin.

Questions that may be asked regarding obsidian hydration data for the Phase II sites include:

- Do the obsidian data (sourcing and hydration) obtained from waste flakes and nondiagnostic artifacts produce a chronology? Are these data comparable to other datasets (e.g., diagnostic artifacts, obsidian sourcing and hydration of diagnostic artifacts, radiocarbon samples)?
- Can obsidian hydration data be employed to assess or refine previous regional chronologies or artifact typologies?
- What do obsidian hydration data from individual sites, units, or features point reveal regarding site integrity? Do the data provide evidence of post-depositional mixing subsurface deposits, or evidence of environmental change?
- Do hydration readings for temporally diagnostic artifacts support previous hydration rates established for the obsidian sources present?
- Do individual artifacts display multiple hydration rims? If so, did this result from artifacts reuse or recycling?
- Can data from the Klamath River sites, coupled with data from Nightfire Island and other locations, be used to calculate a provisional hydration rate for Silver Lake/Sycan Marsh and Spodue Mountain obsidians?

## **Radiocarbon Dating**

Investigation of at least 15 sites on the Upper Klamath River has yielded radiocarbon dates, many associated with house pit features and some from bulk soil samples (see Table 4-1). The conventional radiocarbon dates for these sites range from  $6580 \pm 80$  to  $100 \pm 70$  BP, representing the Secret Spring through Canyon phases (Mack 1989). Overall, two radiocarbon dates fall within the temporal period of the Secret Spring Phase, one in the Basin Phase, and two in the River Phase. Twenty-nine radiocarbon dates fall within the late period Canyon Phase, many of these from house pit features. For the current study sites, the following questions may be addressed:

- Are materials suitable for radiocarbon dating within the study sites? Can individual features be dated using this technique?
- What are the absolute ages of the components present at each site, based on radiocarbon dating? Are new data consistent with results of previous investigations in the Upper Klamath River Canyon?
- Can radiocarbon dates be paired directly with obsidian hydration readings to assist with refining hydration rates and projectile point typologies?

## **Ceramics**

Archaeological research has demonstrated that a ceramic tradition developed in place some 1,600 years ago within the southern Cascades of southern Oregon and northern California (Mack 1983, 1991, 1995, 2011a). This tradition encompasses Siskiyou Utility Ware, a locally-produced hand-modeled brownware pottery, fired clay figurines, and fired clay tubular pipes.

Siskiyou Utility Ware is known from archaeological deposits from house pit villages and large campsites located within three southern Oregon and northern California river drainages, including

the Rogue River in southern Oregon, the Klamath River in southern Oregon and northern California, and the Pit River in northern California (Mack 2011b:115). The pottery derives from clay deposits located on-site or from clay lenses or beds proximate to the sites (Mack 2011:119). Construction techniques and other physical characteristics of Siskiyou Utility Ware are near identical between the three river drainages (Mack 2011b:120). One point of divergence concerns the use of fingernail impressions on the inner rim of some bowls and rim sherds from the Upper Rogue River, while vessel decorations have yet to be identified for specimens from the Upper Klamath and Middle Pit River drainages (Mack 2011b:120). Siskiyou Utility Ware typically occurs as shallow bowls with slightly flattened, convex bases and vertical to slightly incurved rims. Based on bowl shape and the materials used to create the ware, Mack (1990:130) suggests that such bowls were not conducive to cooking and were likely used for serving food, possibly fish oil. Siskiyou Utility Ware is a hallmark of the Canyon Phase, where the pottery has been dated to between AD 350 to 1850 based on direct association with radiocarbon dates or a direct radiocarbon assay (Mack 2011b:115).

Associated with Siskiyou Utility Ware are fired clay figurines and ceramic pipes. The figurines have a similar distribution to Siskiyou Utility Ware, but have also been found in other areas away from the main stem Upper Rogue, Upper Klamath, and Middle Pit river (Mack 2011:115). In contrast, ceramic pipe distribution is primarily restricted to sites within the Middle Pit River drainage (Mack 1988, 2011b).

Siskiyou Utility Ware and ceramic figurines have been recovered or identified on the surface of various archaeological sites in the Upper Klamath River area. Closest to the J.C. Boyle Reservoir in Oregon, the cultural assemblages from 35KL13, 35KL16, 35KL18, and 35KL578 yielded Siskiyou Utility Ware pottery sherds, while 35KL16 and 35KL21 produced figurines (Mack 2011a, 2011b). The surface assemblage from 35KL25 has been noted as containing potsherds and ceramic figurine fragments. Further downstream on the Klamath River, near the California/Oregon border, sites CA-SIS-1198, CA-SIS-1721, CA-SIS-2135, and CA-SIS-2400 contained Siskiyou Utility Ware pottery sherds or a mix of sherds and figurines (Mack 2011a). In the Iron Gate Reservoir area, a Siskiyou Utility Ware figurine has been noted within the cultural assemblage recovered from CA-SIS-326 (Mack 2011b:116). Siskiyou Utility Ware pottery and/or figurines also occurred among the assemblages from CA-SIS-154, CA-SIS-331, and CA-SIS-332 (Nilsson 1987, 1988) located on Willow Creek, a Klamath River tributary just below Iron Gate Dam. Presently, the western-most extent of Siskiyou Utility Ware distribution on the Klamath River is near its confluence with the Shasta River, where several potsherds were found at CA-SIS-1066 (Mack 2003).

Questions that may be posed regarding ceramics include:

- What is the spatial and temporal distribution of Siskiyou Utility Ware among the Phase II study sites? Does the temporal range conform to association with the Canyon Phase? Does such ware only occur within village or midden sites?
- Can any Siskiyou Utility Ware attributes such as size, shape, and rim thickness provide information to assist with refining the temporal association of these ceramics, similar to the typology for Owens Valley Brownware (Eerkens 2003)?



- What is the function of Siskiyou Utility Ware? Are vessel shapes other than shallow bowls present? Can organic residue or starch grain analysis provide information regarding the organic resources that may have been used with the ceramic ware?
- Do fired clay figurine fragments and/or clay pipes occur among the Phase II study sites, and are these associated with Siskiyou Utility Ware?

## Data Requirements

Field studies designed for the Phase II investigation focus on surface survey and collection and subsurface excavation procedures to help retrieve sufficient quantities of artifacts for temporal dating, as well as to explore the potential for exposure and study of subsurface cultural features, such as fire hearths or house floors, that may be useful for chronological reconstructions.

Issues related to cultural chronology are best addressed using multiple data sets to ensure reliability and replicability. Important among these would be identifiable single-occupation site components, stratigraphy that exhibits cultural integrity and/or identifiable patterns in formation, temporally diagnostic artifacts, sufficient quantities of obsidian suitable for hydration analysis, samples of Siskiyou Utility Ware and other ceramics, samples of organic materials suitable for radiocarbon analysis, assemblages of equivalent age for comparison on a local level, and comparative data from previous studies in the region.

To obtain data necessary to address the chronology research questions, a number of specialized studies are required. Essential studies include morphological and technological analysis of projectile points and other potentially temporally diagnostic flaked and ground stone tools; nondestructive obsidian geochemical studies to determine geologic source and the potential variability of materials in support of obsidian hydration studies; obsidian hydration sampling of tools and debitage to derive source-specific data for temporally diagnostic forms and examine horizontal and vertical stratigraphy; radiocarbon assays from feature contexts, preferably in association with temporally diagnostic tools and/or obsidian artifacts.

### 4.2.4 Settlement Strategies

*Identify settlement patterning in the Upper Klamath River area based on variability and distribution of cultural resources.*

Settlement systems and accompanying subsistence strategies have been the topic of considerable interest in terms of regional research in Northern California and Southern Oregon. Settlement, subsistence, and seasonality studies are important to determine why and when sites were occupied (season) and what economically valuable resources were used and/or exploited. The topics are functionally interrelated because precontact people in the region were hunter/gatherers who relied on available seasonal resources and scheduled their subsistence round in response to resource availability.

Site locations mirror a variety of choices people make in their lives. Specific locations may suggest a sense of "place" that reflects important cultural values or may be selected on the basis of resource availability. To interpret spatial distributions of cultural artifacts, features, and other precontact human constructs, the nature of the site environment must be documented. This includes identifying

specific patches (locations of relative resource abundance) that contain potential subsistence resources. Another consideration is that the nature and type of cultural remains may indicate activities not logistically possible in the current environmental setting. In this instance, cultural remains may indicate environmental variability and paleoenvironmental change.

In hunter-gatherer studies, investigations of settlement patterns and subsistence practices are closely related. A basic tenet of such studies is that hunter-gatherers organize their settlement systems primarily in response to the locations of subsistence resources. A central tenet underlying the interpretation of Klamath River prehistory is that settlement patterns became increasingly more centralized over time, culminating in the semi-sedentary villages recorded at historic contact.

Settlement patterns can be discerned from careful examination of the archaeological sites that reflect past use of the area. The Klamath River and its tributary streams provided natural boundaries for settlement and was likely a factor in the organization of cultural space. For example, the use of a particular river bank location (e.g., north vs. south) or distance from the river (adjacent vs. further away) may assist in identifying settlement variables of importance for interpreting the archaeological record. Because the ancestral Tribes of the Klamath River practiced a settlement and subsistence system strongly oriented toward riverine resources, it is conceivable that diachronic changes in such systems will be detectable in the archaeological record. An increase in the use of pithouse villages on the river has been demonstrated as having occurred late in time, during the Canyon Phase (Mack 1989). Elsewhere across the state (Cleland 1997a), and in areas of the Pacific Northwest (Shalk 1983), a pattern of increased reliance on riverine fishing led to the movement of precontact settlements closer to rivers, particularly during late prehistory. The increased dependence on fishing would have required greater sedentism and an increase in the amount of time spent annually in residential sites. Such a pattern also may be detectable on the Klamath River, depending upon the recovery of fish remains and fishing tools in good temporal contexts.

Settlement data for the Upper Klamath River, summarized for the Salt Cave Locality area, have identified three principal site types along the river—large open sites, rockshelters, and house pit villages—and their environmental associations (Mack 1983:213). In contrast, temporary camp sites associated with specific resource gathering activities should be expected in the surrounding uplands. Within the Salt Cave Locality area, most sites occur on river terraces, mostly the first river terrace, near shoals in the river. Other important environmental correlates include the placement of sites near intermittent streams or rills, or at locations on or near the edge of two life zones. Most sites recorded in the Salt Cave Locality comprise house pit villages, whose introduction and use signal the most recent Canyon Phase (250 BC through Contact). Estimates of population density or distribution during the Canyon Phase have been advanced using analogy to other areas, reflecting five to six houses per village and between 32 and 48 people per village depending on tribal associations (Mack 1983:214). Although little difference has been detected in village size and organization among the Salt Cave Locality sites, some differences were noted in house type between two particular village sites with respect to floors (multiple vs single, clay capping, burning, entrance locations, and the presence of cache pits (Mack 1983:214-215). Seasonality information, drawn from faunal remains, indicates use of pit house villages during spring, summer, and fall.



Mack's analysis of house pit village sites (1983:214) suggests that the number of pit depressions per site ranges from 2 to 19, with the average site containing from 9 to 11 depressions. Whereas most pit depressions range from 3.5 to 6 m in diameter, such features within one site, Border Village (35KL16), average 8 m in diameter. Based on the size and number of pit depressions per site, Mack (1983) estimated the number of residents that resided at each locale. For pit house depressions with a diameter of 5 m or less (less than 200 ft<sup>2</sup>), no more than 6 individuals could be accommodated. Given that the average site contained from 9 to 11 house pits, and the fact that not all features would have been occupied at any one time, it was estimated that 25 to 48 people would have occupied each village site, with exception of several very small sites (Mack 1983:214). This estimate was found to be consistent with the previous village population estimate by Cook and Heizer (1965) of 48 persons per Shasta village and 32 persons per Modoc village.

Ethnographic accounts for the Upper Klamath River area describe the utilitarian and socio-religious aspects of precontact house structures within the region. Shasta houses on Klamath and Rogue rivers were described as rectangular, semisubterranean structures (Holt 1946; Silver 1978; Theodoratus et al. 1990; Voegelin 1942), while Shasta people of Shasta Valley also employed conical dwelling houses (Silver 1978; Voegelin 1942). Shasta rectangular dwellings measured roughly 16 to 19 feet wide by 22 feet long and faced towards water (Holt 1946:305). Smaller sweat houses were also built within villages of several families and could be used by residents of neighboring villages (Holt 1946:309). The Shasta also constructed larger, rectangular, semi-subterranean earth lodges (big houses) that could measure as much as 19 to 27 feet wide and 40 feet long (Voegelin 1942; Holt 1946:306). The big house was found within large villages and were used as sleeping places by men, as assembly places for the whole village, as a place to hold dances or ceremonial events, and as a place for gambling (Holt 1946:306; Kroeber 1925:290; Silver 1978:214; Theodoratus et al. 1990:14).

Modoc houses encompassed a variety of forms, including semisubterranean earth-covered lodges used in winter; an elongated, mat-covered house; and a domed-shaped, mat-covered hut used in summer as a utility house but also a limited use dwelling. The individual house typically faced east. Earth-covered lodges were built over a round or elliptical shaped pit and ranged from 4 to 5 feet in depth and contained a central fire pit (Ray 1963:149). These large lodges ranged from 16 to 40 feet in diameter, with an average of 22 feet. The largest lodges could accommodate six to eight families. The mat-covered house differed from the earth lodges in the shallowness or absence of a subterranean pit and other features (Ray 1963:155). These houses, which also contained a central fire pit, ranged from 12 to 14 feet in width, with the length possibly twice as long as the width (Ray 1963:155). The domed-shaped house, essentially a summer structure, comprised an above ground, bent willow frame with a mat covering. Ray (1963:158) notes that no special ceremonial or assembly houses were built. Sweat lodges consisted of two distinct types: (1) an earth-covered structure of unique design, measuring 6 to 8 feet in diameter; and (2) a Plains type, dome-shaped lodge of bent willow poles covered with matting or robes.

Klamath houses were characteristically circular structures, with conical mat or grass roofs, and of two varieties: a semi-subterranean earth lodge and a mat-covered summer house (Spier 1930:197). Considerable variation in house size characterized the dwellings, with the earth-lodges ranging from 12 to 30 feet in diameter. The earth lodges spanned depressions that generally measures 2 to 3 feet

in depth (Ray 1963:149). Spier (1930:198) notes that the biggest earth lodges represented the residences of shamans and were typically larger than even those of the village chief. Houses faced southeast, and contained a central fire pit. The Klamath also built two types of sweat-lodges for summer and winter use (Spier 1930:205-206). The summer sweat lodge consisted of an above ground dome-shaped, mat covered structure. The winter sweat lodge, measuring up to 5 feet in length, was constructed over an elliptical pit.

Within the Project ADI, 10 archaeological sites (35KL13, 35KL1942, 35KL1943, 35KL2430, CA-SIS-326, CA-SIS-2403, CA-SIS-3921, CA-SIS-3926, CA-SIS-3940, and LKP-2018-14) have been noted as containing pit depressions, and many other Upper Klamath River sites contain similar features.

A basic approach to be taken for investigating settlement patterns begins with primary data regarding site function. Sites, whether single, multi-component, or mixed, are microcosms of cultural activities and use. Sites come into existence for a variety of reasons but are generally related to sociodemographic and ceremonial/religious purposes (including settlement, subsistence, and economics). Interpretation of site function relies on the type, amount, and arrangement of cultural material observed and available for analysis and comparison by the Project archaeologists. Archaeological material may be arranged in clusters (associations) or dispersed vertically or horizontally throughout a site. These arrangements allow the identification of activity areas or loci. Information regarding site function can assist in informing other research themes, including subsistence patterns, economic pursuits, lithic manufacturing technology, cultural chronology, domestic organization and practices, paleo-environments, physiography and geomorphology, and geochronology, sedimentation, and stratigraphy.

Site function data may include identification of specific tool kits and manufacturing technologies, activity areas (intrasite patterning) floral and faunal remains, and cultural features such as fire hearths, cache and storage pits, and house pits. Compilation of such data allows for an understanding of both intra- and inter-site patterning across the landscape and the range and intensity of activities carried out. For site function, both general classes of tools and debris and the individual technological features of such items must be examined. In contrast to simple assemblage diversity and/or other statistical analyses, this perspective simply recognizes the presence of an activity (e.g., processing, manufacturing) at a site within a functional model, rather than weighing the representation of each activity. This may be particularly important for sites occupied only briefly and, therefore, not exhibiting diversity generally equated with habitation sites. This approach also acknowledges that artifacts at such sites reflect many activities that were likely not actually conducted on-site (e.g., hunting).

A significant issue facing reconstruction of precontact settlement systems within reservoir sites is whether critical elements of the system have already been lost to inundation and the effects of erosion. Thus, reconstructions may only be able to provide limited and selective information due to factors related both to inundation and the exclusivity of subsurface investigations within or across sites resulting from land ownership parcels not included within a project.

While a primary goal of Phase II investigations is not the reconstruction of precontact settlement systems, data gathered may provide indicators in initial analysis that can lend to understanding

settlement and land use within the reservoir and immediate surrounding areas. Bathymetric data recently collected will be used to depict the pre-reservoir course of the river and landforms for the purpose of proposing tentative settlement boundaries in the inundated areas. Such data will be important for assessing the potential spatial extent of cultural remains that can be expected when the reservoirs are dewatered in anticipation of dam decommissioning, addressing aspects of demography, and interpreting data with respect to NRHP eligibility,

Research questions include the following:

- What is the function(s) of each site? What activities were conducted? Can multiple use/functions be identified? How do these observations compare with documentary information and similar archaeological data from other local sites of comparable age?
- Does the site belong to a specific physiographic (i.e., correlation of site type with geographical area) or geological (e.g., are village sites confined to riparian or marsh areas?) area?
- Can the site be placed into a regional network (e.g., allowing for resource availability and environmental factors, lithic scatters and temporary camps should be interrelated, and located within a geographically restricted zone)?
- Can a specific season or seasonal round be determined from the range of subsistence activities represented at the sites?
- Does evidence exist to support reiterative use of sites? What reasons, including cultural factors, such as attachment to place or natural factors such as resource availability, might account for such habitual or episodic use?
- What intra-site settlement patterns can be identified among the project sites?
- How are the various site types distributed across the landscape? Does site type distribution illustrate specific settlement patterns or systems? If macroscale mobility is indicated, is this correlated with climatic change?
- Is there evidence of demographic change (change in the group using a site, or evidence of change in a people's trade associations) through time in the artifact assemblages at villages or other sites?
- Can pre-inundation settlement patterns be adequately reconstructed? To what extent have historic-period activities affected the sites? Does the degree of site integrity vary across different portions of the sites?
- Does subsurface testing of the recorded pit depressions indicate that these features are structural remnants? If so, can any structural remains or floors be identified?
- What artifact classes are associated with pit depressions and what do these tell us about the function of each feature? Is function consistent with feature size?

## **Data Requirements**

Field procedures designed for the Phase II investigation focus on examination of broad areas of the study sites to provide extensive areal exposure to gain information regarding both artifact assemblages and cultural features. Research issues within the settlement domain may be

addressed through recognition of single or multiple components or specific activity areas. General characteristics of artifact assemblages, such as abundance and diversity of formed tools, may indicate the relative importance of different subsistence activities. Some information used to address subsistence related questions will also be necessary to answer settlement questions. This includes descriptions of lithic artifacts, shell, bone, and/or floral remains observed during site recordation. Also important are identification of single-occupation sites or site components, and discrete features, including hearths, living surfaces, structures, or other architectural remains.

The interpretation of settlement patterns, site function and functional significance depends on the interpretation of kind and context of cultural materials at each site. Any activity or activity loci at each site will be identified on the basis of the interpretation of individual artifacts and assemblages, as well as other factors. Other research domains identified for the Phase II study have noted several data requirements that will have implications on interpretations of site function and classification of site type. However, three data sources (obsidian hydration, lithic tool wear pattern analyses, and intact or stratified deposits) are proposed.

Obsidian hydration dates may help identify components at sites. Single-component sites reflect a single use. Two-component sites, representing two similar or different activities or events in time and space, are more difficult to interpret than single-component sites; as a result, only general function or chronological placement may be possible from the data obtained. Multi-component sites, representing three or more similar or different activities or events through time and space, are subject to the same restrictions on interpretation as two-component sites. Mixed-component sites have a wide range of hydration readings from both surface and subsurface contexts indicating disturbance and lack of integrity.

Wear pattern analysis can be a useful means to determine the function(s) of formed tools and unmodified debitage. In addition to sample size, edge damage caused by frost heaving, cattle trampling, abrasion from the site matrix, and numerous other factors (including the brittle nature of obsidian) suggests that wear pattern analysis of either artifacts or debitage from the sites would be inconclusive.

The study of sedimentology or geomorphology assists in providing data to determine of the age(s) of site occupation, identify processes that led to post-occupational transformations of the archaeological assemblage, and identify geologic aspects of the site that relate to environmental conditions during occupation(s).

#### **4.2.5 Subsistence Strategies**

*Identify settlement patterning in the Upper Klamath River area based on variability and distribution of cultural resources.*

Several lines of evidence can be used to reconstruct precontact subsistence strategies. These include direct evidence such as plant macrofossils, animal bones, and pollen samples, as well as indirect evidence through the presence of tools used for resource capture such as projectile points and resource processing such as millingsstones and handstones). Such evidence may also include several types of residual analyses that may provide important and direct evidence of tool function like blood residue analysis from tools and starch grain analyses from tools and ceramics. Although

these analyses focus on providing specific information regarding plant and animal species, they can also yield other insights into resource exploitation strategies, site function, seasonality, and mobility patterns.

Research conducted to date within the Upper Klamath River has provided considerable information regarding for subsistence-based resources used throughout prehistory. Mack (1991:79) has described the Upper Klamath River Canyon area as one of subsistence uniformity with variation in settlement pattern and cultural affiliations of the inhabitants throughout prehistory. The environmental diversity of the Upper Klamath River Canyon area provided an abundance of faunal species for human use. A variety of fish, reptile, bird, and especially mammal remains have been recovered from the Salt Cave Locality sites (Mack 1991). Mammals, including small, medium, and large types, clearly dominate the recovered unmodified bone specimens, although these specimens have not been identified to species level. Artiodactyl are represented by deer and elk bone. Only a small number of fish bone (e.g., long nose sucker) were noted, and the lack of fish bone in general was mentioned as possibly related to cultural practices where bone was pounded and stored for later use (Kroeber 1925; Mack 1991, citing Holt 1946; Silver 1978). Recently, the reanalysis of fish remains from 35KL16, 35KL18, and 35KL21, which are part of the Salt Cave Locality collections, noted several additional fish species in the assemblages, including Klamath Smallscale and Largescale sucker, blue and tui chub, Chinook salmon, and rainbow trout (Gobalet 2018).

Further upstream, archaeological investigations conducted at 35KL1459, the Four Bulls Site, near Keno, Oregon, recovered a robust assemblage of animal bones and freshwater mussel shell (Wilson et al. 1996:2-81 to 2-89). Considerable variability was noted in the types and frequency of animal bones recovered from the site, and specimens related to both possible human use and post-occupational rodent burrowing were found. Mammal bone of likely human use included bison, shrub ox, mule deer, unidentified Artiodactyla (cloven-hoofed mammals), longtail weasel, rabbit, and representatives of the hare/rabbit family (Leporidae). Burnt bird bone, including Canadian goose, duck (*Anas* sp.), and members of the swan/goose/duck families suggest possible human use, as did specimens of pond turtle. Fish bones encompassed over 300 specimens, including examples of chub, Lost River sucker, and minnow or sucker. Shell included gastropod and pelecypod species.

Investigations conducted at CA-SIS-326, a late period village now under Iron Gate Reservoir, yielded an assemblage of mammal and bird bone associated with house pit floors (Leonhardy 1961, 1967). Mammal bone thought to be associated with human use included deer, jack rabbit, brush rabbit, mountain sheep, and possibly ground squirrel; other types of rodents such as gopher were considered intrusive. Additional mammal remains included small quantities of fox, porcupine, raccoon, mountain sheep, coyote, marmot, river otter, badger, beaver, and bear. Also present were avian samples of small goose and duck. Recent analysis identified several fish bone in the collection, including sucker and Pacific trout or salmon (Gobalet 2018).

Archaeological investigations conducted at CA-SIS-329, a multiple-component site located on the Klamath River, 11 miles downstream of Iron Gate Dam, also recovered a diversified assemblage of faunal bone (Hamusek and Haney 2001; Waechter and Young 2015). The assemblage, comprising bones of birds, mammals, and fish, was derived largely from the site's midden deposit, but faunal bone was also found in other contexts. These faunal remains suggest a varied diet that included



waterfowl, rabbits/hares, deer (and possibly other large artiodactyls), and fish. Mammal bone was most prevalent and included a range of small to large types. Identified mammal species included Artiodactyla, mule deer, rabbits and hares, bobcat, and various rodents. Aves specimens and one duck bone comprise the small bird bone assemblage. Excavations also produced an assemblage of fish bone, representing at least four individuals, each from a separate species: sturgeon, sucker, sculpin, and salmon/trout. Three bone tools were also recovered, consisting of an incised fragment, bone needle, and bone awl.

Subsistence-affiliated information has also emerged from artifact types recovered from the Upper Klamath River sites. The review of projectile point styles discussed above in Section 4.1.3, above, attest to the importance of hunting for at least terrestrial animal resource procurement. Ground stone tools first appeared in the Upper Klamath River Canyon during the Basin Phase (4500 to 2500 BC), marked by the presence of stone bowls, mullers, and mortars (Mack 1991). Mullers comprise the most common ground stone type identified within the canyon, with six classes having been described (Mack 1983). A possible distinction exists between upriver and downriver site clusters in terms of the frequency of small HAR stones and shouldered uniface mullers (Mack 1991). Also noted by Mack (1991) is the use of specialized mullers, such as those used for woks processing in the Klamath Basin, during Canyon Phase (250 BC to Contact).

Although no direct archaeological evidence has yet been found to indicate the types of food or other resources processed using the various ground stone implements, their widespread presence and diversity within the Upper Klamath River Canyon attest to their prominent role in lithic toolkits and in subsistence-based activities. The ethnographic records for the Upper Klamath River Tribes provide some discussion regarding the types of stylistic ground stone tools that were used as well as information regarding targeted resources. Ethnographers Barrett (1910) and Spier (1930) document among the Klamath and Modoc Indians the use of two-horned mullers for woks (water lily pods) processing, a very small metate or muller for certain seeds, and small mortars and pestles for seeds, dried fish, and meat (Barrett 1910; Spier 1930). Ethnohistorian Voegelin (1942) notes the use of shaped and smoothed portable stone mortars, wooden mortars, stone pounding slabs, tapering and maul-shaped stone pestles, wooden mortar pestle, oval-shaped grinding slabs, and mullers. Klamath and Modoc fishing paraphernalia incorporated the use of ground stone artifacts such as grooved net sinkers and single-grooved, flat-bottomed arrow straightener (Barrett 1910:252,253; Spier 1930). Coville (1897, 1904) and Gatschet (1890) provide some of the earliest accounts of food plants used by Klamath Indians, species of which were undoubtedly processed using ground stone tools.

Shasta ethnographer Holt (1946) notes that tan oak acorns were processed on flat stones (also employing a mortar basket), while dried pine nut seeds were powdered and often mixed with powdered salmon. Similarly, the fruit of the sumac was dried and pounded, as were epos plants (Oregon yampah), which were sometimes pounded and eaten dry as a powder with manzanita cider. Deer bones and salmon bones were pounded up and stored for making soup in the winter. Salmon was dried by smoking and stored in thin slabs or pulverized. The powder from pounded manzanita berries was used as a medicinal (Holt 1946:340). Voegelin (1942:73) reports the use of portable, shaped and smoothed stone mortars by Shasta Indian shamans, but these implements were not use for food processing. Instead, stone pounding slabs, tapering and flanged pestles, oval and squared

grinding slabs, mullers, and hammerstones and anvils facilitated Shasta Indian resource processing activities (Voegelin 1942:74).

Research questions include the following:

- What are the predominant faunal and floral resources associated with the archaeological sites? Can their ecological zones be determined? Are there changes in species exploitation over time?
- Did any changes in subsistence practices occur over time at the study sites, and if so are they observable? What influences affected these changes? Is there a parallel change in tools used for food procurement and processing?
- Are the study sites comparable in terms of primary subsistence modes? If not, how do they differ and what factors can account for these differences?
- What types of formed tools are present with site assemblage, and what information do they provide regarding subsistence practices?
- How do the subsistence data from the Phase II study sites compare with those from other local or regional sites? Can such data be used to expand the characteristics of the Upper Klamath River chronology identified by Mack (1991)?

## Fishing

The archaeological investigation of fish utilization and its importance in the prehistory of river systems continues to be an important research topic of particular interest across the western United States, particularly for those researchers interested in aspects of resource intensification, optimal foraging (Basgall 1987; Broughton 1994; Butler and O'Connor 2004; Gobalet and Jones 1995; Gobalet 2018, among others).

The Klamath River watershed has been described as once supporting significant runs of Chinook salmon (*Oncorhynchus tshawytscha*) and steelhead (*Oncorhynchus mykiss*) as well as other anadromous fish such as coho salmon (*Oncorhynchus kisutch*), green sturgeon (*Acipenser medirostris*), eulachon (*Thaleichthys pacificus*), coastal cutthroat trout (*Oncorhynchus clarki clarki*), and Pacific lamprey (*Lampetra tridentata*) (Hamilton et al. 2016). Ethnographic accounts for the river's Tribal groups note the importance of fish, particularly salmon, for subsistence and religious and ceremonial practices (Holt 1946; Silver 1978; Spier 1930). Although abundant faunal remains have been recovered from Upper Klamath River archaeological sites, fish remains are few, largely restricted to mussel shell detritus, along with a few pieces of bone (Mack 1979: Table 18; Waechter and Young 2015). Similarly, fishing paraphernalia remain low in number compared to other bone tools and, when present, reflect the use of harpoon parts and fish gorges/bone bipoints. Thus, a profound disconnection exists between ethnographic accounts, oral history, contemporary fish research, and the current archaeological record. It is well known that any number of depositional and post-depositional factors can operate to influence an archaeological assemblage (Binford 1972); particularly one of organic origin such as fish remains. Such factors may include selective dismemberment or consumption, selective transport, durability, processing techniques such as bone pulverization; and archaeological sampling and recovery techniques. The reasons behind the paucity



of fish remains among the Upper Klamath River sites remain enigmatic and reflect an important focus of study for the archaeofaunal assemblages that may be recovered from the Phase II sites.

In addition to nonexoskeleton fish procurement, ethnographic accounts for the Upper Klamath River Tribes note the importance of freshwater mussel to Native American communities, both in terms of diet and for material culture. Historically, the river supported three North American mussel genera—*Anadonta*, *Gonidea*, and *Margaritifera* (Byron and Tupen 2017; Tennant 2010; USBR and CDFG 2012:3-19). Freshwater mussel shell has been found at several Upper Klamath River archaeological sites (Waechter and Young 2015; Wilson et al. 1996), as well as in regional contexts at Lake Britton, in Shasta County (Chatters 1986; Cleland 1997a). The growth pattern evident in freshwater mussel shell indicates that seasonality and other archaeologically relevant information can be obtained through the study of growth rings. Such was the case for mussel shell collection recovered from the Four Bulls site (35KL1459), located on the Klamath River, near Keno, Oregon (Wilson et al. 1996). Mussel shell analysis revealed 37 specimens identifiable to the Rocky Mountain ridged mussel (*Gonidea angulata*), a species that prefers warmer, slow-moving, turbid waters (Chatters 1986). The mussel shell was considered to be of cultural origin, with mussel harvesting having occurred during mid-summer months (Chatters 1986).

Further afield, mussel shell analysis conducted for a group of sites on the middle Pit River, in northeastern California, provided evidence of a similar summer period exploitation pattern for the recovered *Margaritifera falcata* specimens (Chatters 1986; Cleland 1997a). A low frequency of late winter to early spring exploitation also was identified. Information regarding age of mussel death indicated greatest age in the samples from the earliest periods of site use, followed by a reduction in age during later periods, suggesting reproductive pressure from human exploitation. Freshwater mussel shell was also recovered during investigations at CA-SIS-329, both from midden and nonmidden contexts (Waechter and Young 2015).

The ethnographic record for the Shasta Indians notes that women and children dove for freshwater mussels in the spring or gathered them in low water during the fall. The mussels were steamed in an oven of hot rock covered by greens and then opened to dry in the sun (Holt 1946).

With regard to precontact fishing, the following questions may be posed:

- Does fishing gear occur in any of the study sites? If so, what range of fishing tools can be identified?
- Can sufficient fish remains be recovered from any of the study sites to address biological questions regarding prehistory of fishes of the Klamath River?
- Is there evidence for use of freshwater mussel as a subsistence resource? If seasonality information can be discerned, does it follow the regional pattern of disproportionately high frequencies of individuals taken during the late summer or early fall?

## Plant Foods

Plant gathering and processing may be inferred directly from identification of botanical remains (burnt and unburnt), palynology (pollen analysis), or organic residue analysis (lipids, starches). Plant use may also be inferred indirectly from analysis of ground and flaked stone assemblages. An

important step towards identification of precontact subsistence in the study area was initiated by the Upper Klamath River Project with a comprehensive identification and listing of local plants. This plant survey identified more than 60 plant foods on the Upper Klamath River. Survey data, together with ethnographic data and nutritional analysis, allowed Todt and Hannon (1998) to rank the plants according to their abundance, nutritional value, and utility. Thus, they were able to identify a handful of plant species that could have influenced precontact food procurement strategies and settlement pattern. Not surprisingly, the oak species (acorns) were ranked highest, followed by several species of geophytes (*ipos* and *yampa*). Other plants of high value included sugar pine (seeds), tarweed, elderberry, serviceberry, and camas.

Both Cressman (1956:419-423) and Mack (1979:117-125) present a typology of handstones, along with discussions of ground stone assemblages, including function and changes in relative frequency through time. Cressman (1956:419) noted that both Barrett (1910:252) and Spier (1930:177) reported that the Klamath used millingstones and mortars for similar purposes (grinding seeds, smashing roots), but preferred the millingstone. In describing ground stone tools from Kawumkan Springs Midden, Cressman noted that millingstones and handstones outnumbered mortars and pestles three to two, with a preference for millingstones in all levels of the deposit. Cressman (1956:421) also noted that the use of mortars and pestles peaked in Level II (3500 to 2500 BP) and declined thereafter. Cressman identified two basic types of handstones, one a general Great Basin basalt cobble form and the second a more carefully shaped, lighter weight form of scoriaceous material or pumice. He demonstrated that both types of handstones occurred together through the early occupation of Kawumkan Springs, prior to 2500 BP. At this time, Level I, the shaped form developed into the handled, horned, and grooved handstones typical of late Klamath occupations. Another form typical of late occupations was the bell-shaped handstone. Cressman (1956:420) suggested that the preference for millingstones and handstones over the use of mortars and pestles might have resulted from the fact that millingstones and handstones did not break as easily as the other tool types.

Mack (1979) categorized handstones (mullers) of the Salt Cave Locality within six classes based on shape and material type. Handstones typical of late Klamath and Modoc occupations, similar to those described by Cressman (1956) for the Klamath, were also described by Mack (1979). Mack wrote that the abundance of handstones within village sites indicated a reliance on wild seeds, with the specialized, Class 6 specimens likely used to process *wokas* (pond lily) seeds, gathered at some distance or obtained through trade (Mack 1979:123). Such tools are typically found within and adjacent to house pit features.

Specific questions regarding ground stone technology for the project area include:

- What is the spatial distribution of ground stone types across the sample of sites being investigated?
- What is the age and function of ground stone tool types across the sample of sites being investigated?
- Is there ground stone tool variability through time?
- Do mortars and pestles occur more frequently within the oak woodlands at Copco Lake and Irongate Reservoir than at sites near J.C. Boyle Reservoir?

- How does the ground stone industry across the sample of sites being investigated compare with that from surrounding regions?

## Data Requirements

Datasets required to address subsistence-related research questions require observation and recordation of ecofactual and artifactual remains present at each site. These data can be used to examine patterns of transhumance (seasonal movements of peoples related to subsistence practices), gathering and hunting behavior, and site placement with respect to local resources. A subsistence framework can be constructed using any available faunal, macrobotanical (seeds, stems, leaf parts, etc.), and paleoenvironmental data. Comparisons can be made against the available ethnographic record. Attempts to determine seasonality can be made through the analysis of the faunal and macrobotanical information.

Specialized data collection, can yield faunal, palynological, macrobotanical, and biomolecular samples. In addition, the evaluation of certain artifact types (projectile points, bifaces, ground stone, etc.) may provide data for inferences on the subsistence practices and seasonality of sites by the precontact inhabitants of the area.

Faunal analyses can provide qualitative and quantitative summaries of the archaeofaunal assemblage. Interpretations of hunting behavior, food processing, seasonality, and paleoenvironmental life zone reconstruction may result from the analysis. Faunal analysis may also provide information on intra-site task differentiation by comparing relative minimum number of individuals (MNI) and number of individual species present (NISP) frequencies in contingency arrays and measuring the association and dependence between taxonomic categories and spatial location.

### 4.2.6 Lithic Manufacturing Technology

*Identify the elements of lithic manufacturing technology in the Upper Klamath River Area.*

An axiom of archaeological study is that stone is a reductive medium, whereby artifact size changes only in one direction. In its strictest sense, toolstone knapping reflects continuum mechanics, where steps in the manufacturing process cannot be skipped, and where their expression can be altered and adjusted based on a broad range of technological, morphological, and stylistic factors. Steps in the reductive continuum are viewed as stages (Flenniken 1981) that represent the byproducts of activities that reflect the behavior responsible for sequential reduction of raw material into usable implements. The study of lithic reduction technology then, elucidates the techniques used and decisions made by precontact knappers to create, maintain, discard, and curate stone tools.

Lithic artifacts and debitage comprise one of the most durable and ubiquitous items found among precontact sites in the Upper Klamath River area. Because they survive where less durable items do not, and because they played an integral and indispensable role in the daily lifeways of precontact peoples, these implements constitute a vital part of the human adaptive mechanism (Collins 1975). The study of such implements offers a pathway to understanding broader aspects of human behavior embedded within facets of chronology, technology, economy, subsistence, and settlement. Importantly, lithic technology, and the way it is organized, is responsive to human mobility, and a number of authors have argued how aspects of lithic technology reflect different mobility strategies

(e.g., Beck 2008; Eerkens et al. 2007; Kelly 1985, 1988; Prasciunas 2007). For example, Kelly (1988) outlines how mobility and raw material distribution are likely to affect biface technology, while Beck (2008) argues that procurement site assemblage variability is predictably affected by expected toolstone transport distance. By distinguishing lithic toolstone sources, and the relative amounts and quality of the raw material present at a site, information regarding mobility strategies may be gained. In general, it is expected that a low degree of residential mobility will result in a greater use of poor quality and locally available toolstone, reflected archaeologically by a mix of expedient tools of poor quality stone and highly curated formed tools of high quality material. Sites occupied by more residentially mobile foragers are expected to contain an abundance of quality tool stone obtained by frequent moves over a large range. Temporary sites associated with foragers may contain waste from distant, nonlocal material sources rather than local or poor quality stone.

Variability of flaked stone artifact classes and types can also reflect mobility strategies. Types of tools and debitage manufactured and used at sites provide information regarding both on-site and off-site ventures. Additionally, the conditions of flaked stone artifacts may reveal whether items were discarded during the manufacture process or after use, or were reworked and recycled into new forms. Therefore, both the type and condition of artifacts upon discard can yield information about settlement and subsistence organization.

Analytical approaches employed to study lithic technology vary widely in emphasis, depending upon the research goal and orientation. For the project sites, lithic assemblages will be classified according to analytic categories representing knapping stages in the reduction continuum. Identification of lithic reduction sequences can provide an understanding of the criteria used in toolstone selection, such shape, size, and knapping qualities of the parent raw material, and may provide data regarding procurement strategies, the system of material transport, and tool stone curation. Similarly, techniques used to reduce lithic material can reveal information regarding socioeconomic factors of a group, including the form, quality, and availability or abundance of the material; economizing or risk avoidance; shared technologies or traditions; stylistic norms; and intended function of the toolstone. In addition to providing information regarding reduction trajectories, an artifact's stage of manufacture may relate to logistic strategies, site function, or duration of occupation. Lastly, the final tool form produced as part of the continuum may yield information related to site function, period of use, subsistence technology, personal gear/tool kit composition, and curation.

Obsidian tool stone is the predominant flaked stone artifact material identified among the Upper Klamath River sites. Technological studies conducted for area sites, although few in number, indicate the predominate use of biface reduction strategies focused on reduction of preformed artifacts. Evidence of core reduction and bipolar reduction has been minimally noted. Besides obsidian, precontact flaked and ground stone assemblages of the Upper Klamath River have yielded a variety of tool stone types, including CCS, quartz, fine-grained basalt, vesicular basalt, andesite, sandstone, granite, and petrified wood. That area known as Agate Flat, west of Jenny Creek and at the California and Oregon border, is known as a place to collect agates and petrified wood, while CCS materials naturally occur at Chert Creek, west of Salt Caves. Gray chert also commonly occurs within the Gazelle Formation west of Shasta Valley (Holtz 1977:11; Lydon 1993). In addition, recent fieldwork has revealed that red and yellow CCS nodules occur naturally within gravel exposed on the

shoreline of the Klamath River, Copco Lake, and Irongate Reservoir. This indicates that such material is widespread within the project area and would have been available prehistorically, at least through embedded procurement.

Mack (1993) found that upland sites of the Upper Klamath River Drainage often contain formed, flaked stone tools of primarily obsidian, while cores and debitage are mostly CCS. This would suggest that raw CCS tool stone is available locally, and Mack suggests that Chert Creek was the origin of such material found in archaeological contexts. With a majority of obsidian artifacts in this region derived from the Medicine Lake Highland, and local CCS materials having been exploited, proximity to source appears to have been the major factor in the procurement of lithic raw materials.

Research questions with this domain include the following:

- What lithic assemblage(s) and manufacturing techniques (including types, range, and variability for both chipped and ground stone materials) are present?
- Do the lithic assemblage(s) and manufacturing techniques change through time?
- If chronological variation in lithic manufacturing techniques and raw material preference is present, do the metric and nonmetric (primary, secondary flakes, etc.) attributes of whole flakes change over time?
- Are workshop/activity areas present within the sites?
- Is there evidence for artifact curation, refurbishment, reuse, and scavenging of older obsidian artifacts to create alternate forms during the late prehistoric period? If so, are such factors related to specific tool stones (i.e., obsidian versus nonobsidian)?
- What do reduction strategies indicate about mobility behavior? Do assemblages reflect short-term, and highly specialized logistical site visits by mobile groups marked by a dominance of expedient tools? Conversely, do site assemblages reflect residential occupation marked by lower ratios of used tools, both expedient and formal?
- How do the identified trends in lithic procurement and reduction of the study sites compare with previously identified trends in other local and regional studies? Can regional patterns be detected?
- In what frequencies do nonobsidian lithic materials occur within the study sites?
- Are CCS artifacts within cultural deposits consistent with those materials found at Chert Creek, Agate Flat, or other local source areas? Are there any macroscopic or microscopic characteristics of these materials that may be used to pinpoint their place of origin?
- Were more distant, exotic lithic materials used more frequently for production of nonutilitarian items or for socio-ceremonial practices? Conversely, were local lithic materials used more frequently for utilitarian or mundane purposes?
- Besides basalt, what other tool stone was used for the manufacture of ground stone tools? Do specific material types correlate with certain tool forms? If so, what does this indicate with regard to tool function?



## Data Requirements

Field studies designed for the Phase II investigations include a rigorous program of surface artifact collection and subsurface excavation procedures to help retrieve sufficient quantities of flaked stone and other stone artifacts for conduct of detailed technological analysis, analysis of intra- and inter-site artifact patterning, and temporal artifact dating through obsidian studies and/or typological assessment. Data necessary for addressing research questions related to lithic manufacturing technologies include time-sensitive projectile points, bifaces, debitage analyses, and exotic precontact items or materials indicative of material conveyance patterns. Sufficient quantities of debitage, flaked lithic tools, and ground stone will be necessary to allow for lithic analysis to identify manufacturing techniques. Also important would be the presence of temporally and functionally diagnostic artifacts for use in identifying changing patterns of lithic technology and obsidian debitage for study of reduction strategies and recycling practices.

### 4.2.7 Material Conveyance Strategies

*Identify the elements of material conveyance in the Upper Klamath River Area.*

#### Obsidian Procurement

Obsidian procurement and exchange studies have advanced over the past few decades to enable archaeologists to recognize a signature to the frequency distribution/relative proportion of source-specific obsidian artifacts and debitage. Artifact inventories at each site can be inspected and compared for the presence of "nonlocal" materials. Obsidian source analysis can be used in conjunction with hydration analysis to provide a chronological/location record of obsidian use at the sites. Debitage data can be reviewed for evidence of manufacturing for a surplus in excess of inferred local immediate needs. Hydration dates can be cross-checked against available absolute dates to assist in developing the chronological data to interpret the ethnic signature of any recognized trade patterns.

Ethnographically, the Upper Klamath River tribal groups participated in exchange relationships involving subsistence goods, tools, and status-related items. Trade had both economic and social significance and enabled groups to diversify their subsistence and technology base beyond resources in their home territory and hedge against the uncertainty of seasonal or annual resource availability. Across western North America, obsidian has been documented as an important precontact trade commodity and one whose distribution is readily demonstrated through various analytical techniques aimed at identifying its parent geological source. By considering the directionality and specific intensity of conveyance, information regarding mechanisms of obsidian trade and exchange can be understood.

The value of obsidian geochemical sourcing for the study of precontact exchange in the Upper Klamath River region has been well documented (Hughes 1983, 1985, 1986, 1988, 1989, 1994a, 1994b, 1997; Mack 2003, 2012, 2015a, 2015b, 2016; Nilsson 1985, 1987, 1988; Waechter and Young 2015; Wilson et al. 1996, among others). Resultant geochemical data have particular utility for examining and reconstructing settlement practices and investigation of stone tool technologies, tool curation, and territoriality (e.g., Hughes 1994a). Because of its commonness at many western archaeological sites, its preservability and ability to be geologically fingerprinted, and its capacity to

provide relative temporal dating through hydration analysis, obsidian has assumed a level of prominence in archaeological analysis. Although various analytical techniques have been applied to assign geographic provenience to stone artifacts, XRF spectrometry has been the dominant method in North America (Eerkens et al. 2007).

Obsidian conveyance patterns noted for sites in the Upper Klamath River Canyon area document the predominant use of tool stone from the Medicine Lake Highlands, one of two geographically close source areas (Mack 2003, 2015a, 2015b, 2016). GF/LIW/RS glass was the primary obsidian used by Native American peoples who occupied a vast area of Northern California, and this source occurs within 60 to 80 km of the Project area. The conveyance zone for such obsidian extended as far west as the Pacific Coast, as far east as the Warner Mountains, north to the Klamath Basin, and south to the northern Sierra Nevada region.

Obsidian sourcing studies for the Upper Klamath River area began in 1977 with the analysis of five projectile points from the Salt Cave Locality (Mack 1983:263). Schaefer (1995) was among the first to examine a large sample of obsidian artifacts to identify distribution patterns within the Upper Klamath River by compiling XRF data from several projects near the river and between Keno and the northern end of Shasta Valley (Hughes 1994a, 1994b; Jensen and Associates 1987; Mack 1983; Nilsson 1988; Nilsson et al. 1989). Data drawn from 131 artifacts identified the predominance (86 percent) of Medicine Lake Highland obsidian, composed of 83 GF/LIW/RS, 12 EML, 8 Callahan, 3 Glass Mountain, 2 Cougar Butte, 2 Railroad Grade, and 3 general Highland. The remaining specimens (14 percent) indicated use of other northern California, southern Oregon, and western Nevada source areas, including Buck Mountain, Spodue Mountain, Silver Lake/Sycan Marsh, Drews Creek/Butcher Flat, and Massacre Lake/Guano Valley. Using the temporally diagnostic projectile points, separated into late (arrow) and early (atlatl) points, Schaefer (1995:20-21) found that Medicine Lake Highland obsidian was the predominant for both groups. All early points were identified as Medicine Lake Highlands sources, while the other sources were only found within the late points. This indicates that a greater variety of obsidian sources was used within the Upper Klamath River Canyon late in time, during the Canyon Phase, likely pointing to some form of trade or exchange system. Schaefer (1995) also noted a greater variety of sources within village sites than within camp sites. In addition, the occurrence of Buck Mountain obsidian within an infant burial at CA-SIS-331 pointed to the socio-ceremonial use of this material.

Recently, Mack (2015a, 2015b, 2016, and 2017) has compiled a list of more than 750 obsidian artifacts from 82 archaeological sites in and near the Upper Klamath River area. The artifacts, identified to obsidian source, revealed that more than 85 percent were made from Medicine Lake Highlands glass. Of those pieces, more than 85 percent were classified as GF/LIW/RS material. Obsidian source information for temporally diagnostic projectile points indicated that Paleo-Indian points were made from two identifiable obsidian sources—GF/LIW/RS and Spodue Mountain—while Archaic points represented at least five sources, including two from the Medicine Lake Highlands (GF/LIW/RS and East Medicine Lake) and Tuscan, both in California, and others from the Silver Lake/Sycan Marsh and Spodue Mountain sources in south-central Oregon. Projectile points of the Late Precontact Period included specimens from 14 different obsidian sources, including five from the Medicine Lake Highlands area (Mack 2017). Although this pattern points to the use of a greater diversity of tool stone in the Late Precontact Period, it also reflects the fact that earlier projectile



point types are found less frequently in local sites. In other words, smaller projectile point samples result in less tool stone diversity.

Archaeological investigation conducted at CA-SIS-329, the Collier Rest Area on Klamath River, identified two intact precontact deposits, one dating from the Canyon I Phase (2200 to 1050 BP) and one from the earlier River Phase (4450 to 2200 BP; Waechter and Young 2015). From this site, a sample of 40 artifacts was submitted for XRF analysis, all of which were identified as GF/LIW obsidian.

Wilson and colleagues (1996) reported on obsidian sourcing for a large collection of artifacts (n=327) recovered from 35KL1459, the Four Bulls site, near Keno, Oregon. This early- to mid-Holocene site was found to contain a wide variety of faunal remains, bone tools, flaked stone artifacts, and ground and perforated stone tools. Nearly 65 percent of the obsidian artifacts were traced to the Medicine Lake Highlands sources, while 26 percent were identified as the Spodue Mountain source. Ten artifacts (3 percent) were derived from the north Warner Mountains, including Rainbow Mines, Buck Mountain, and Sugar Hill. A single biface was identified as South Warners, while two flakes were classified as Blue Mountain. Other identified sources included Silver Lake/Sycan Marsh (n=8), Drews Creek/Butcher Flat (n=2), Tucker Hill (n=1), Newberry Volcano (n=1), and Cowhead Lake (n=1). Three flakes were of unknown sources (Wilson et al. 1996:2-125). These collective data indicate that the Medicine Lake Highlands sources were the most predominate over the 4,000 years of site use. Some 30 percent of the obsidian overall was derived from sources northeast of Upper Klamath Lake.

The other closest obsidian source of noted importance to the Upper Klamath River Canyon area is Spodue Mountain, which is located near the Sycan River about 64 km northeast of the Project. Another important obsidian chemical group in this area is Silver Lake/Sycan Marsh, which is an additional 25 to 38 km north of Spodue Mountain (Hughes 1986). These obsidians have been documented as far northwest as the Willamette Basin, where Spodue Mountain accounts for less than 1 percent and Silver Lake/Sycan Marsh 3 percent of obsidian in archaeological contexts (Baxter and Connolly 2015). Investigation of 17 precontact sites in the Upper Rogue River Valley in Jackson County, southwestern Oregon, identified seven obsidian sources, including Spodue Mountain and Silver Lake/Sycan Marsh (Nilsson and Kelly 1991). Of 180 artifacts submitted for source determination, 71 (39 percent) were derived from Spodue Mountain, while 50 specimens (28 percent) were from the Silver Lake/Sycan Marsh geochemical group. Fifty-two artifacts (29 percent) were made of obsidian from Medicine Lake Highland (Nilsson and Kelly 1991:349). These results indicate that toolstone from the Sycan River area was largely transported west of the Cascade Range.

At the Nightfire Island site in the Lower Klamath Lake area of Siskiyou County, geochemical analysis of 310 projectile points indicated that 9 percent of the sample was Spodue Mountain obsidian while 2 percent was identified as Silver Lake/Sycan Marsh (Hughes 1986). These artifacts represent the entire chronological sequence at Nightfire Island, from roughly 5500 BC to AD 1360 (Sampson 1985). Analysis of 381 temporally diagnostic projectile points from Surprise Valley (Hughes 1986) revealed no use of obsidian from Spodue Mountain or Silver Lake/Sycan Marsh, indicating the preference for local obsidians.

The current obsidian tool stone profile for the Upper Klamath River Canyon area points almost exclusively to conveyance and use of GF/LIW/RS materials. However, the recovery of non-GF/LIW/RS obsidian artifacts from the Phase II study sites remains a possibility, particularly with regard to the south-central Oregon sources such as Spodue Mountain, Silver Lake/Sycan Marsh, and Drews Creek/Butcher Flat. It would appear that obsidian from the Sycan River area was carried or traded to the west and northwest, with little of this material making its way south through the Klamath Basin to today's Siskiyou County. Obsidian from the Medicine Lake Highlands was the predominate tool stone used for the manufacture of flaked stone artifacts within the current Project area, and this material appears to have been carried or traded largely to the northwest, west, and south, with some amounts going east into Modoc County.

Research questions include the following:

- How many obsidian sources, and which sources, are represented at each site?
- How do obsidian sources compare between precontact villages and camps?
- Do the obsidian sources change over time in terms of absence/preference and quantity? Can any changes be correlated with artifact style changes?
- Does the frequency of non-Medicine Lake Highland obsidian sources increase late in time, as suggested by Hughes (1986) and Schaefer (1995)?
- Can any obsidian artifacts representing early site occupations (Secret Spring, Basin, or River phases) be identified within the current study collections? If so, what obsidian sources were utilized early in the precontact sequence?
- Can any site be identified as a center for exchange or manufacturing of trade items or raw materials? How does the trade network represented at a site compare with other sites in the area?
- In what form(s) or stage(s) of reduction did obsidian tool stone arrive in the Upper Klamath River area? Do different forms or stages of manufacture relate to different source materials? What do the forms or stages of manufacture indicate with regard to procurement practices?

## Ornaments

Ethnographic literature for the Upper Klamath River Canyon Tribes note the widespread use of shell and bone for personal ornamentation, decorating clothing, and for household use (Voegelin 1942). Ornaments included earrings made of clamshell beads as well as Dentalium, flat shell, and *Haliotis* pendants; shell ear tubes; and necklaces with Dentalium, clamshell disk beads, *Haliotis* pieces, and pine nut shells. Horn spoons and freshwater mussel shell spoons were items of household use. Dentalium also served as a form of currency, and clamshell and *Haliotis* disks and small cylinders also carried a standard of value (Voegelin 1942:91).

A small assemblage of marine shell ornaments were recovered from the Salt Cave Locality sites comprised of three *Olivella biplicata* spire-lopped beads, an *Olivella biplicata* saddle type bead, and a *Haliotis rufescens* pendant (Mack 1983). Further upriver, the Klamath River Bridge cemetery site (35KL1211) located near Klamath Falls, produced a large assemblage of *Olivella biplicata* shell beads; red abalone shell beads, pendants, and fragments; and undecorated and decorated (incised

and colored) Dentalium beads (Tasa and Connolly 1997). Also present was an assemblage of several bone pendants and bone beads. Downstream, the Iron Gate Site (CA-SIS-326) yielded a small assemblage of shell and bone ornaments, including an *Olivella biplicata* bead, a *Protothaca* (Littlenecks) shell bead or pendant, an incised Dentalium shell, and several tubular bone beads (Leonhardy 1961). Although not recovered among the various Upper Klamath River site collections, pine nut beads may be anticipated, as ethnographic accounts for the Shasta Indians indicate that such ornaments were used in necklaces (Holt 1946).

Historic period glass beads or other trade items are not common among the sites investigated in the Upper Klamath River Canyon area, but they are known to have been a commodity brought to the area by early nineteenth-century European American traders and trappers, as well as gold miners, settlers, and merchants (Motz et al. 1986). Near the California/Oregon border at Yainax Butte, about 30 miles east of Klamath Lake, an intermediate node or trade center was established by the mid eighteenth century, facilitating the exchange of European trade goods between the Pacific Plateau and Middle Missouri areas (Layton 1981; Motz et al. 1986).

Evidence for historic period trade interactions has been documented at site 35KL1943 (a Phase II site) located on the Klamath River, where a white glass cylindrical bead was recovered (O'Neill and Connolly 2009). Elsewhere near the Project area, an abundant and diversified glass bead and trinkets assemblage was recovered from a site in Siskiyou County located on a Klamath River tributary (Federal Register 2008; Jenkins 2000), as well as from two other Siskiyou County sites that produced glass beads supplied by Russian and/or English fur traders (Motz et al. 1986). As the Klamath River served as an important transportation route during the early exploration and settlement period, European trade goods can be anticipated among the site collections.

Research questions include the following:

- What types of ornaments occur among the Phase II sites? What are their age and point of origin?

## Data Requirements

As with other precontact research domains, field studies designed for the Phase II investigation focus on a broad range of surface collection and subsurface excavation procedures to help retrieve sufficient quantities of artifacts for temporal dating and examination of obsidian and other material conveyance patterns, as well as to explore the potential for exposure and study of subsurface cultural features, such as fire hearths, that may would be particularly useful for chronological dating and discussion of diachronic material conveyance patterns. Data necessary for addressing research questions related to obsidian material conveyance patterns include time-sensitive projectile points, other flaked stone tools, and debitage to support the robust program of obsidian geochemical sourcing and hydration proposed for the sites. Also important would be the recovery of exotic precontact items or materials to assess patterns of external trade.

Questions related to nonobsidian exchange items can be addressed by identification of imported items, such as marine shell or glass trade beads. Beyond baseline data regarding exotic raw material types, it is important to consider whether materials were procured directly from the source through

travel or transport, or if items arrived through a system of trade and exchange. Technological attributes of items of Native American manufacture from sites within and beyond the Upper Klamath River area may assist with this research goal, while supporting historic documentary and artifact characteristics may also provide clues regarding the shape and manufacturing stage in which resources arrived and the steps undertaken for any further processing to render items serviceable for local needs.

## 4.3 Historic-Period Research Domains and Data Requirements

While archaeological data may produce unique, complementary information not available from archival documents such as photographs, written records, maps, or other historical documents and can verify and/or contradict the historical record (and vice versa), archival records will be used to develop the historical research themes and site types.. Once archaeological data is collected, and analyzed post-field, it can complete and/or refine these contexts, elaborate on definitions, and may even allow for refinement of research questions originally posed. The following sets of research topics - including questions related to site function, chronology, consumer behavior and socioeconomic status, household/institutional living units, institutional geography, ethnicity, and industrialization and technology - are proposed to describe and evaluate historic resources within the Project area. At the Phase II site evaluation level of inquiry, research topics are structured in the context of determining whether a site is suitable to more detailed inquiry within stated domains; however, information gathered from materials recovered will lend to assessment of sites within all NRHP criteria and levels of integrity. More commonly, for historic-period sites, artifacts are often considered whether or not they are reflective of particular patterns or configurations, that form the historic property (integrity of materials). Artifacts are also examined as to whether they convey a direct link between a person or event and the historic property or, in the case of Criterion D, this is the strength of association between data potential and important research questions. Site evaluations will also consider NRHP eligibility under Criteria A, B, and C, employing other research methods such as archival and historical research and oral history to provide a holistic view as possible to arrive at a well-informed eligibility statement for each site.

The Phase II sites include properties with historic-period components that reflect ranches or homesteads, ranching or farming activities, refuse deposits, railroad construction, lumber mill, historic cabins, Fall Creek hatchery, or labor camps associated with construction of Copco No. 1 or Copco No. 2 developments (Table 4-3). Phase II testing will focus on historic-period components identified at 10 sites, including 35KL15, CA-SIS-1671, CA-SIS-2403, CA-SIS-2825, CA-SIS-3922, CA-SIS-3940, LKP-2018-8, LKP-2018-11, LKP-2019-3, and LKP-2020-1. At seven sites, including 35KL1943, CA-SIS-2403, CA-SIS-2403, CA-SIS-2825, CA-SIS-3918, CA-SIS-3922, and LKP-2018-8, historic artifact concentrations will be inventoried without subsurface testing. For these sites, an inventory-only approach is deemed appropriate based upon the concentration characteristics, such as lack of other associated historic-period features within the site or a lack of evidence for subsurface presence. For other sites, inventory intensity may also depend upon concentration characteristics and associations, resulting in a full inventory of the artifact concentration or a sampling strategy. Sampling strategy can be a very effective tool in data-gathering for diagnostic

### Table 4-3 Phase II Sites with Historic-Period Components

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**Table 4-4 Historical Research Themes for the Phase II Sites Proposed for Subsurface Testing**

Site No.	Research Theme							
	Site Structure and Function	Consumer Behavior	Chronology	Commodity Markets, Distribution Networks, and Market Access	Subsistence Practices	Recreational Behavior and Conspicuous Consumption	Cultural Complexity and Social Stratification	Industrialization and Technology
35KL15	X	X	X	X	X			
CA-SIS-1671	X	X			X		X	X
CA-SIS-2403			X			X		
CA-SIS-2825	X	X	X	X	X	X		X
CA-SIS-3922	X	X	X		X			
CA-SIS-3940	X	X	X	X	X	X	X	
LKP-2018-8	X	X			X	X	X	X
LKP-2018-11	X	X	X	X	X		X	X
LKP-2019-3	X	X	X		X		X	X
LKP-2020-1	X	X	X		X			

Historic-period research themes developed for the Phase II sites proposed for subsurface testing vary by site based on assemblage characteristics and anticipated research potential. Collectively, these themes include site structure and function; chronology; consumer behavior; commodity markets, distribution networks, and market access; subsistence practices; recreational behavior; social complexity; and industrialization and technology (see Table 4-4).

### 4.3.1 Site Function and Organization

*Identify site function and organization by historical themes.*

Historical sites, whether single, multi-component, or mixed, are microcosms of cultural activities and use. Sites come into existence for a variety of reasons, but during the historic period are generally related to socioeconomic and sociodemographic purposes (including exploration and development planning, settlement, subsistence, and economic expansion). The interpretation of site function by a historian and historical archaeologist relies on the types, amount, and horizontal and vertical distribution and context of cultural material observed and available for analysis and comparison.

Specific historical themes can be identified archaeologically if cultural materials that represent specific activities remain. Archaeological material may be arranged in clusters (associations) or dispersed vertically or horizontally throughout a site. These arrangements allow the identification of activity areas or loci and may suggest embedded activities of a site otherwise attributable to another theme. Site organization will be based on the overall assemblages and associations, with embedded activities or developments correlated to the observed primary theme.



Research questions include the following:

- What is the function(s) of each historic-period component or site? What activities were conducted? Can multiple uses/functions be identified? Does site function correspond with the historic record for sites with known associations?
- Does the site's spatial location correlate with geographical constraints? Are there specific resources or transportation routes associated with the site location?
- Can the primary theme at a site be placed into a regional pattern based on preceding socioeconomic or demographic activities of the area (i.e., are homestead sites confined to older transportation corridors)?
- Can the locations of nonextant structures be found at 35KL15, CA-SIS-2825, CA-SIS-3940, LKP-2018-8, LKP-2018-11, LKP-2019-3, and LKP-2020-1? If so, does the layout of the structures match available historic photographs or maps? Do artifact assemblages associated with the structures fit with the recorded or assumed function of the structures based on available literature?
- Can features or structures within the study sites be attributed to specific periods of use or occupation?
- Are there sufficient artifactual or landscape remains to ascertain the patterns of construction/use/residency/discard and socioeconomic status of a household or living unit, occupational group, or others? What types of housing was employed at labor camps vs. homesteads?
- Can social or economic differences be found within labor or construction camps that point to labor organization? Are differences evident between those areas occupied by temporary or transient laborers vs. those areas occupied by permanent employees? Is there evidence of a diversity of labor force, or of segregation?

## Data Requirements

Determination of site chronology will require archival documentation, analysis of construction methods and materials, and analysis of associated artifact assemblages. Similar data sources will be used to address site function. Site structure may also be reflected in archival documentation, but where it is lacking through such documentation, it will be a focus of archaeological field methods, designed to identify buried deposits or other features. Time sensitive artifacts discovered in site deposits may assist in identifying the age and affiliation of recovered cultural remains. In large, interpretation of site function will rely on the written record.

### 4.3.2 Chronology

*Identify temporal variability in the distribution of historic-period cultural resources in the Upper Klamath River Basin.*

Historic-period use of the Upper Klamath River area reflects a variety of historical themes. Permanent settlement and institutional development/construction sites may be recorded in historical documents and in existing site records for the region. Overall, the timing of initial exploration in the region by non-Indian people dates from about the late 1820s to the 1840s. Non-

Indian settlements followed gold mining exploration downstream and early ranching upstream, and were active during (1) the 1850s in the area that became Klamath Falls, and (2) in the 1860s and 1870s in a variety of places from Lake Ewauna, throughout the Klamath Canyon, and downstream. Logging, initiated to support a growing Klamath Falls and other communities to the south and west, expanded into a larger regional industry just before the turn of the twentieth century. Hydroelectric development in the Copco region dates from ca. 1902 and later.

Research questions include the following:

- Are there artifactual remains to ascertain the period of construction/use/residency/discard of a household or living unit, occupational group, or other?
- Do the artifact assemblages within each site correspond with the written record and estimated dates of site use?
- Are there artifacts distinct to an exploratory or other temporary foray that correspond to the written historical record?
- Are there specific artifacts, features, or spatial characteristics that suggest a specific—and time sensitive—institutional activity?

## Data Requirements

Some architectural materials are time sensitive and may indicate an approximate or general period of construction (e.g., nail types, some additives to daubing, materials used to reinforce concrete; forged as opposed to machined hardware may be an indication of relative age). Items that can be tied to a specific, discrete period of manufacture may indicate period of use. These items may include food or patent medicine containers, coins, some household appliances, dishes, and others. Industrial methods and tools (including logging practices, equipment, fuels, etc.) change with advances in technology. Decisions regarding period of use, however, should be made only on the basis of a preponderance of evidence because some types of artifacts tend to be curated (used for many years after their time of manufacture).

### 4.3.3 Consumer Behavior and Socioeconomic Status

*Identify aspects of consumer behavior and socioeconomic status in residential/homestead/construction-related site types.*

Consumer behavior reflects a major focus of historical archaeology (Henry 1991; Holt 1991; Huelsbeck 1991; Klein 1991; LeeDecker 1991). Consumer behavior and trade patterns may reveal not only world system changes in the production and transport of material goods, but also a distinctive regional pattern of interpretation. National markets, industrialization, and a middle class began to appear during the Civil War era in the 1860s. For the first time, national advertising and the pursuit of middle class status created a large demand for material goods (Sutherland 1989:xii). This desire, increasingly realized through the sale of mass-produced imitations of upper-class houses, furniture, clothing, and art, had, by the 1870s, begun to transform the appearance, even the character, of everyday life. During the Victorian Period between 1875 and World War I, the pace quickened and America was rapidly transformed into a “mass consumption” society (DeSantis 1989; Schlereth 1991). The period was marked by a period of ideology of “conspicuous consumption” and

by the “homogenization” of material life through mass factory production of commodities, large retail outlets, mass advertising, and mail order marketing. At the same time, it is clear the shift to a mass consumer society and culture did not mean simply purchases of more commodities, but the “reinterpretation” of new goods within the contexts of local and regional cultures. Consumer behavior, therefore, is expected to reflect not only the transition to a mass consumer society and culture, but also a unique social and cultural reinterpretation. Documentary and physical data should exist in trade and consumer behavior at the household and community levels, showing significant adjustments toward “mass consumerism” during the Victorian Period between 1876 and World War I, resulting in the formation of a distinctive historical and regional pattern.

Settlement, as a historical theme, reflects the importance of consumer choices and, for the Upper Klamath River region, often relates to farming/animal husbandry activities or smaller community development. This includes open-range ranching, subsistence farming on homesteads, and larger commercial operations based on land consolidated through purchase and/or lease from the federal government. Some industrial pursuits (logging, hydroelectric development) may require temporary settlement with distinct consumption traits.

Research questions include the following:

- Does evidence suggest different approaches in consumer behavior between the various occupants of the sites with historic components? Is there a difference in conspicuous consumption between the residents of the homesteads, labor camps, and temporary camps?
- For labor camps, where did employees get their personal items, food stuffs, and other supplies? Were such items provided by the employer at camp, were they obtained from another camp, or were employees responsible for supplying their own needs?
- What types of utilities were available within the various historic sites? Was gas or electricity available? How was water supplied? What types of power were used for cooking or lighting? Were telephones available?
- Was there a trend toward mass consumerism in the very late nineteenth and early twentieth centuries?

## Data Requirements

Determination of consumer behavior and socioeconomic status will require archival documentation, oral history, and intact domestic household features containing buried deposits and artifacts with makers’ marks and other attributes that reflect geographical origins, prices, and other determinants of household consumer behavior. Sites for which surface inventory determined that there is no potential for subsurface deposits and will not undergo subsurface investigations, reliance on archival documentation and oral history to supplement surface materials will occur.

#### 4.3.4 Commodity Markets, Distribution Networks, and Market Access

*Identify the patterns of the household (rural or organized into settings of community/urban) or institutional (transient, occupational setting) commodity markets, distribution networks and market access.*

The participation of historic-period sites in various levels of economic markets and distribution networks is a topic of ongoing research interest. Most historical artifacts were mass produced for sale on a large scale, meaning that these artifacts were commodities created specifically for exchange. Every settlement or community, however small or self-sufficient, was linked to neighboring settlements, regions, and the wider world in a need for commodities that could not be produced locally. Through the identification and study of surviving artifacts (commodities) from historic archaeological sites, it is possible to identify such long-distance connections, whether social, political, or commercial (Orser and Fagan 1995:83-85). Sites such as 35KL15, LKP-2018-8, CA-SIS-2825, and CA-SIS-3940 have the potential to yield an array of historical artifacts that will provide insight into the economic lives of a variety of people. Even site CA-SIS-1671, with its small assemblage of ceramic tableware fragments, has the potential to convey important information regarding long distance trade in historic-period times.

Research questions include:

- Do historical artifacts differ between study sites, or do the sites contain a comparable range of items? If variability exists in the commodities identified or recovered from the study sites, then what can these items tell us about individual or corporate consumer choice?
- What product types and brand names can be identified within the artifact assemblages? What do these brands tell us about consumer choice? Can these products be tied to specific manufacturing centers or trade networks?
- Is there evidence that products were reused, recycled, or modified? If so, what does this tell us about the local availability of resources? Does reuse or mending of items indicate that replacement products were unavailable, or did reuse result from socioeconomic status, ethnicity, personal preference, or remoteness of the Project area?
- Are changes in market access apparent during different periods of occupation?
- Did homestead residents participate in different market networks than corporations and laborers associated with the construction camps?
- How have relative frequencies of “store-bought” items and locally produced goods present in site assemblages changed over time?

#### Data Requirements

Items with makers’ marks or other attributes identifiable to manufacturing sources are necessary to address this research issue. The potential for useful analysis of these materials is increased when historical documentation is available which provides good chronological data and indications of site function and socioeconomic status of the occupants.

### 4.3.5 Subsistence Practices

*Identify aspects of subsistence practices in residential/homestead/construction-related site types.*

Study of subsistence practices focuses on the acquisition, preparation, and consumption of food. Investigation of historical subsistence practices employs documentary records and the analysis of food-related items and features found in the archaeological record. Although historical documents provide considerable information on foods, they usually fail to provide details necessary to analyze actual subsistence practices. The archaeological record, on the other hand, is often an excellent source of such data. Variability among sites offers a way to address choices influenced by gender, age, status, ethnic background, religion, and household composition.

The historic record indicates that some of the earliest non-Indian settlers on the Upper Klamath River made a living through fur trapping and fishing, selling their products in local settlements such as Yreka, Linkville, and Fort Klamath. These early settlers, such as Martin Frain and Frank Picard, were known for their ability to hunt and fish, often bringing in large amounts of wild game. In later years, local homesteads focused their economic activities on the raising of cattle and other livestock through use of irrigated pasture and open grazing. Oftentimes, such livestock was sold to local logging camps and mines to provide a cash income, which in turn could be used to buy consumer goods. Besides homesteads, historic-period sites of the current study include dam construction labor camps where subsistence was usually provided by corporations. The Phase II investigations may yield subsistence remains from all historic sites, with the likely exception of CA-SIS-2403.

Research questions include:

- Are artifact assemblages containing subsistence remains present at the study sites? If so, can deposits representative of different site occupants be differentiated?
- A large quantity of food containers has been documented within assemblages at CA-SIS-3922, LKP-2018-8, and LKP-2018-11. How do these assemblages compare to those at the assumed homesteads CA-SIS-2825, CA-SIS-3940, and LKP-2020-1 or with those artifacts at the smaller camps of 35KL15 and CA-SIS-1671?
- What variability between sites is present in terms of use of local, regional, or imported goods? Do the residential sites provide more evidence of self-sufficiency than the larger construction camp?
- What variability exists between tableware, kitchen tools, and utensils at the study sites?
- Do the sites contain evidence of the use of local domestic livestock as food? Is there evidence that wild game was exploited to any degree during later historic times?

### Data Requirements

Analysis of subsistence practices requires study of both direct evidence of subsistence resources, including preserved faunal and floral remains, as well as indirect evidence, such as bottles, cans, and containers, tools and utensils, and other means of food preparation. Such materials are often concentrated in scattered dumps within or adjacent to residential sites or camps.

### 4.3.6 Recreational Behavior

#### *Identify traits and patterns of recreational behavior.*

Study of recreational behavior may focus on leisure, conspicuous consumption, and pursuit of other than secular behavior. The Klamath River has long attracted tourists and sportsman as a premier fishing stream, as a place to hunt wild game, and as a place of relaxation. Within the Project area, the focus of such activities was Klamath Hot Springs, at the Beswick Hotel established after 1869 and maintained through the early 1920s (Anderson 1974). This facility attracted thousands of distant visitors through advertisement and was utilized as a social hall for community gatherings. Archaeological evidence of recreational activities was noted at a number of sites at Copco Lake and Iron Gate Reservoir during AECOM's 2018 site visits, including abandoned hunting and fishing tackle, ammunition, and boating hardware.

With regard to the current study sites with historic-period components, CA-SIS-2403 stands out as one potential location for finding evidence of recreational activities. This site is easily accessible from Daggett Road and was found to contain several rock features possibly related to historic camping. Besides this spot, site LKP-2018-8 may contain evidence of recreational or leisure activity, particularly within those areas that once contained living quarters. The homestead sites, such as CA-SIS-2825 and CA-SIS-3940 have the potential to yield artifacts associated with recreation, as well as conspicuous consumption.

Research questions include:

- Do the historic assemblages contain evidence of conspicuous consumption, imported foods and beverages, and other high-end goods?
- How do differences between artifact assemblages reflect the lifestyles of the site inhabitants?
- Is there evidence of indulgences, luxuries, or nonessential items within the labor camps, including 35KL15, CA-SIS-1671, CA-SIS-2825, and LKP-2018-8? If so, are such items evenly distributed within these sites? Can these items be associated with particular ethnic or socioeconomic groups?
- Is there evidence of sporting activities within the study sites? Are artifacts associated with hunting or fishing present within the historic assemblages? If so, do these represent sports or leisure activities, or do they represent subsistence activities?

### Data Requirements

The identification and/or recovery of artifacts associated with sporting or leisure activities, or items associated with indulgence or conspicuous consumption will be necessary to address this research issue. Such items may include tobacco or liquor containers, smoking paraphernalia, jewelry or other luxury items, hunting and fishing tackle, decoys, traps, and ammunition.



### 4.3.7 Social Complexity

#### *Identify traits and patterns of social complexity.*

Social stratification is the division of two or more groups of people ranked relative to one another in terms of social, economic, or other criteria (Orser and Fagan 1995:200). In stratified societies, individuals are members of distinct social classes, and such classes are often unevenly represented in the written record. One goal of historical archaeology is to identify the remains or artifacts of different social classes and to understand how these people used their material culture to indicate and to symbolize their identities (Orser and Fagan 1995:202). Cultural investigations are important but are sometimes overlooked in cultural contexts and field investigations. Historical research to be conducted as part of the Phase II study will include investigation of the ethnic range of use of the study sites, and to identify the material culture of different social classes or ethnic groups that once lived at the locales. For example, site LKP-2018-8 was a labor camp occupied or frequented by employees of Copco between ca. 1913 and the late 1920s, including managers and engineers, skilled and unskilled laborers, cooks, transient employees, and other workers. By testing those areas occupied by laborers vs. those areas occupied by engineers and managers, one may study the relationship between material culture and class membership.

Dominant cultures documented for the Project area include groups of American Indian and European American descent. However, exploration, mining, logging, transportation development, and urban development brought a wide variety of ethnic groups into the region, some settling in living units for periods of time. Orser and Fagan (1995:209) note that ethnicity was the first great sociological topic of historical archaeology, and it remains so today. Within the Project area, Chinese, Italian, and Greek laborers were employed in the construction of the Klamath Lake Railroad from 1901 to 1903 (Pacific Rural Press 1902; Rippon 1949). Therefore, investigation of site CA-SIS-1671 may provide an opportunity to study the correlation between ethnicity and artifacts (ethnic markers) for the study area.

Daniels (2003) explored the cultural transformation of Shasta Indian people after their homeland was occupied during and after the California Gold Rush. Although gold and other minerals of economic value were not found within the Upper Klamath River area east of Hornbrook, California, the influx of European American, Chinese, and other miners to the Klamath Mountains led to the early settlement of the Project area by permanent settlers, most of which were engaged in ranching. Whereas missionaries and colonists of the Spanish and Mexican periods often attempted to assimilate Native populations, such was not usually the case during the American period after 1847, particularly during the Gold Rush years (Schuyler 1978). With exception of policymakers and some local authorities, few efforts were made to assimilate Native American people into late nineteenth century European American life. Instead, during the 1860s and 1870s, many Shasta were faced with displacement, violence, alcoholism, and inter-racial marriage. Such factors led to a cultural revitalization, including spiritual reassurance and a new sense of identity. Many Shasta people became wage laborers to survive. As Rancherias were established, people were able to pool their resources and their collective knowledge of traditional lifeways. A form of biculturalism arose in which the Shasta were integrated into the new European American economy and understood the social demands of European American society, yet maintained their unique community life (Daniels 2003:206).



Within the Project area, a number of historic ranches were owned and operated by families of both Native American and European American descent. These families included the Wards, Barlowes, Picards, Wrights, Keatons, Raymonds, and Frains, among others. In addition, a number of local ranches were places where Native people could take refuge in the historic period, including the Spearin homestead (CA-SIS-3933) (Jones 1971:113).

Research questions include:

- Do any of the Phase II sites reflect a class-based ideology (i.e., does this resource possess unique and/or typical material artifacts or features that could distinguish ethnic, occupational, gender, and/or other subgroup preferences, differences, etc.)?
- Is there evidence of spatial difference between groups of different age, gender, class, or ethnicity? How is the social distance between groups reflected archaeologically?
- Can distinct social groups or predominant ethnicity patterns be identified in the archaeological assemblage (foodways, distinctive kinds of artifact used/discarded)? What do clothing and personal items in the artifact assemblage reveal about ethnicity, class status, or personal taste?
- Can Native American historic-era artifacts/features/sites (or components of sites) be identified? Can these be traced to a period of occupation, activity, or group/family/individuals? To what extent were old and new technologies and materials combined (such as chipped glass and metal arrow points)?
- Is evidence of Chinese laborers restricted to the railroad grade at CA-SIS-1671, or is there evidence of Chinese within other sites, such as LKP-2018-8 and CA-SIS-2825? Were Chinese cooks employed at Camp Ward (LKP-2018-8)?

## Data Requirements

These questions require the identification and recordation of items of specific ethnic origin or use (celadon ceramics, modified rice strainers, tin dogs, clothing and decoration, etc.). This involves recording items of personal care (combs, shaving tins, hair clips), toys, art, and utility that may reflect gender and age. Although the presence of American Indians may be indicated by specific types of artifacts (personal items such as clothing components, weaponry, gaming pieces, etc.) and by some types of structures, answers to the questions regarding group/family/individuals are best sought in the historical documentary record or through oral history. As noted above, sites that represent Indian settlement during the historical period will contain materials of nontraditional manufacture and features that reflect the period and industries of the period.

Some architectural materials are used for specific purposes at specific periods of time and may reflect socioeconomic attributes. In addition to the recordation of time-sensitive construction materials, some materials reflect demographic, ethnic, or economic attributes (e.g., availability of specific manufactured materials and compounds relative to period costs, use of crudely hand-forged as opposed to professionally manufactured materials, evidence of recycling, reuse, and curation). Indicators of ethnicity may occur as personal items (clothing components, gaming pieces, symbols of some fraternal organizations) as well as food choices and implements used to prepare and serve

food. House plans may relate to ethnicity but are generally unreliable, except for some rather obvious distinctions.

### 4.3.8 Industrialization and Technology

#### *Identify traits and patterns of industrialization and technology.*

Evidence associated with several industries is anticipated among the Phase II study sites. Such evidence might include agriculture (animal husbandry and farming), logging, and development of transportation, dams, and other community infrastructure. Features associated with industrial development are expected at 35KL15, LKP-2018-8, LKP-2018-11, LKP-2019-3, and CA-SIS-2825, while artifacts and features associated with transportation are present at CA-SIS-1671. Materials associated with ranching activities are expected at CA-SIS-3940, and perhaps at CA-SIS-2825. Field identification of these industries—and any other undocumented activities—will guide additional research into the overall cultural context of the region, and the refinement of historical themes.

Research questions include:

- Are undocumented technologies visible within strata or artifacts?
- Is there evidence of transitory industries (including trapping, mining exploration, and recreation)?
- Do the documented industries (logging, agriculture, railroad construction, hydroelectric construction, etc.) exhibit artifacts and spatial distribution patterns anticipated for their documented period of use?
- What is the evidence of standardized technologies, "appropriate technology," and/or local innovation? Is there evidence for extensive reuse of equipment, sites, buildings, and artifacts?

### Data Requirements

Answering these questions will require that field crews record features and functionally diagnostic artifacts at sites. Additional research questions also may be developed after completion of the field survey. Although it is important to maintain flexibility so as to accommodate additional research questions as they arise, beginning the process with the general research topics presented above will maximize productivity of the field survey.

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## **Chapter 5: General Research Methods**

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## 5. GENERAL RESEARCH METHODS

To achieve the objectives outlined in the plan (Chapter 4), a rigorous work plan is proposed that incorporates archival research, multifaceted field investigations, and laboratory and specialized studies. The plan considers the research methods employed during previous archaeological site testing work conducted in the Upper Klamath River area (e.g., City of Klamath Falls 1986a, 1986b; Cole 1965; Cressman and Olien 1963; Cressman and Wells 1962; Fagan et al. 1994; Hamusek and Haney 2001; Jensen and Associates 1987; Jones 2011; Leonhardy 1961, 1967; Mack 1979, 1983, 1992, 1994a, 1995, 1996, 1999, 2003, 2012; Newman and Cressman 1959; O'Neill and Connolly 2009; Tasa and Connolly 1997; Waechter and Young 2005; Wilson et al. 1996, Wilt 2011) while also developing procedures to provide a thorough assessment of NRHP eligibility and proposed Project-related impacts to the archaeological sites located within the ADI.

Field methods have been designed to provide a flexible strategy that is efficient, minimizes subsurface testing to the extent possible, and recovers sufficient data to address identified research questions and assess NRHP significance. The proposed scale of the subsurface investigations presented below reflects ongoing consultation among the KRRC, Native American Tribes, the California and Oregon SHPOs, and other project stakeholders, and are designed to address Tribal requests to reduce to the extent possible any physical disturbance to Native American archaeological deposits. To date, several reviews of the Project designs and consultations regarding field methodology have been conducted with the Oregon SHPO directly, from which the current general research methods and site-specific methodology was developed. These are duplicated within the Oregon Archaeological Permit application. Within Oregon, the Klamath Tribes has been fully engaged in the Project development and parameters and has signed a contract to provide Tribal Archaeological Monitors for the Project. The permit application will be submitted by the Oregon SHPO to the Klamath Tribes for review and, as a result of all prior and ongoing consultation, AECOM does not anticipate any delays with tribal review of the excavation permit application.

While California SHPO does not require archaeological permitting for this project, the Shasta Indian Nation and Karuk Tribe have verbally expressed agreement to the need for the Phase II efforts and subsurface excavation. While not yet finalized, the Shasta Indian Nation may provide Tribal Archaeological Monitors as well. The Yurok Tribe has deferred to those Tribes most associated with the Project area. The final draft of the plan will be circulated to all Tribes and agencies at least 30 days prior to initiation of Phase II testing activities.

Archival research methods are outlined first, followed by general discussion of the archaeological field methods to be used to achieve Project goals. Laboratory methods are discussed next and focus on general cataloguing procedures and database management. Specialized studies planned for the recovered assemblages are discussed in terms of their utility for addressing the Project's research goals, and specific sampling strategies are outlined. This section concludes with a discussion relating to preparation of the Phase II Evaluation Report, updated site records, and the disposition (curation) of the recovered site assemblages.

## 5.1 Archival Research

Archival research performed to date in the development of this plan includes the following: Assessor's Offices in Klamath County, Oregon, and Siskiyou County, California; Klamath and Siskiyou County Historical Societies; and other resources such as interviews and oral histories, community/county histories, land records, homestead records, tax records, maps and plats, online newspaper and genealogy databases (e.g., newspapers.com, genealogybank.com, ancestry.com), online aerial photography databases (historicaerials.com), photograph collections (e.g., Siskiyou County Museum and Klamath County Museum), and PacifiCorp archives (photographs only). Archival research will facilitate an informed decision regarding Phase II site NRHP significance.

Archaeological review has been completed through the Oregon Archaeological Records Remote Access (OARRA) online and the California Historical Resources Information System (CHRIS), via the Oregon and California OHPs, respectively.

Archaeological investigations conducted in 1958 by the University of Oregon at sites 35KL13, 35LK14, and 35KL15 (Newman and Cressman 1959) in the J.C. Boyle Reservoir area and at CA-SIS-326 (Leonhardy 1961, 1967) in the Iron Gate Reservoir area recovered a variety of cultural constituents that are curated at the University of Oregon Museum of Natural and Cultural History (UOMNCH). The technical reports prepared for these sites and the specialized analyses conducted at that time lack sufficient information to offer an NRHP eligibility assessment that would be in keeping with the evaluation methods and approach planned for the other Phase II precontact period sites. Thus, the Phase II work conducted at these sites will include detailed review of the field notes, further descriptive analysis of the artifact assemblages, and select specialized studies (e.g., obsidian source and hydration, faunal analysis) to arrive at a well-informed NRHP assessment. To date, all accession material associated with sites 35KL13, 35KL14, 35KL14, 35KL15, and CA-SIS-326 has been reviewed with the exception of artifacts. Further, research regarding specialized studies will be coordinated with the UOMNCH and incorporated into NRHP eligibility assessments..

At the time of finalization of this plan, and leading to fieldwork scheduling, access to various archives and repositories is limited by closures resulting from the Coronavirus Pandemic and federal and state mandates regarding closures. It is anticipated that if archives and repositories must be revisited, special arrangements will need to be made.

## 5.2 General Field Methods

The general archaeological field methods outlined below for the Phase II investigations have been developed in consideration of proposed Project effects to the sites in the ADI as well as the research values and research potential each site currently holds based on 2018 and 2019 field review and site record updates. The 2018 and 2019 field review was performed as preface to the current Phase II fieldwork and all data gathered will be incorporated into Phase II documentation and reporting. The field strategy is based in part on several factors that local and regional archaeology indicate will be prevalent for the study sites. First, precontact sites will represent hunter-gatherer use and, by their nature, many will reflect intermittent occupation over a relatively long period of time. Second, site deposits are expected to be quite deep, and overburden associated with site areas where reservoir



erosion has occurred will likely have resulted in considerable mixing and disturbance, at least of the upper portions of the cultural deposits. These factors indicate that investment of time in shallow surface transects units or other similar near-surface tests would likely not provide the most satisfactory results.

The Phase II field methods place an emphasis on areas within the sites that face direct impacts (adverse effects) from proposed Project activities, including those located within reservoir and non-reservoir areas. Potential effects to the sites include a broad range of impacts such as removal, relocation, or abandonment of existing facilities (e.g., buildings, structures, dams); construction and/or improvement of access roads; replacement of the City of Yreka pipeline and select bridges; transmission line removal; and construction staging and landfill areas. Other effects will include reservoir drawdown, sediment removal, habitat landscaping, irrigation installation, revegetation, improvement or establishment of recreational facilities, and increased vandalism to archaeological sites, among others, reflected in Chapter 6, Table 6-2.

Phase II fieldwork conducted on PacifiCorp land will focus on those areas that are not inundated by reservoir waters. Every effort will be made to coordinate with PacifiCorp for fieldwork to occur during reservoir drawdown or low water periods, maximizing access to portions of sites otherwise inundated and prioritizing site investigations upon greatest visibility. If Phase II fieldwork is unable to occur during drawdown or low water periods, however, and only part of a site, and not the entire site, is available for subsurface testing, including boundary delineation work, accommodations have been outlined in Chapter 7.

Within the J.C. Boyle, Copco, and Iron Gate Reservoir zones, where sites are partially inundated, areas planned for investigation largely consist of the mud flat or rocky wake zone located between the high water and low water marks along the shorelines. As appropriate, other areas of a site located outside of the mud flats, such as adjoining grassy flats or elevated benches or terraces, also will be investigated within the parameters of land ownership and inundation. For those sites outside of the reservoir zone (i.e., no part of the site is underwater), site testing procedures would only be bound by any land ownership restrictions (i.e., only on PacifiCorp land).

Human land-use patterns documented for the Upper Klamath River have been identified as extremely dynamic, often producing complex accumulations of materials that reflect multiple occupations of different lengths and functions. With this point in mind, the Phase II field investigation strategy incorporates a flexible program tailored to each site (see Chapter 6), its potential research value, and proposed Project effects. Proposed field procedures include pre-excavation pedestrian surface reconnaissance and use of Surface Collection Units (SCUs), hand excavation of Shovel Probes (SPs) and Shovel Test Units (STUs), as well as limited numbers of Excavation Units (EUs) and Auger Bores (ABs). It is important to note that the proposed field methods may require adjustments as fieldwork progresses, or in the rare event that Project design plans change, to refocus collection and excavation procedures to maximize data quality or minimize disturbance from subsurface investigations. Any substantive adjustments to the field strategy (e.g., reduction or increase in proposed volume) will be determined within the professional discretion of the PI. It is important to note, however, that Tribal Archaeological Monitors will be present throughout the Project duration and will be involved in all decisions made during fieldwork. Additionally, if any significant changes to

research strategies are deemed necessary due to situations encountered in the field, PacifiCorp, Oregon and California SHPO, and Tribal contact will be made via email a minimum of 48 hours prior to changes being implemented.

Table 5-1 provides a summary of the proposed Phase II field investigation strategy. The following discussion provides information related to general surface reconnaissance and collection and subsurface excavation procedures. Chapter 6 provides details regarding site-specific field methods.

## **5.2.1 Surface Reconnaissance and Collection**

### **Surface Reconnaissance Procedures**

Field investigations at the Phase II sites will begin with pedestrian surface reconnaissance to identify surface artifacts, artifact concentrations, and cultural features. This reconnaissance will provide a broad view of the distribution of cultural materials and assist in recognizing horizontal stratigraphy of temporally diagnostic materials. Surface reconnaissance will be accomplished using controlled transects with a maximum 3-meter (m) spacing. Diagnostic precontact and historic period artifacts and cultural features will be marked with color-coded surveyor's pinflags, providing a broad view of cultural materials to guide subsequent unit placement. Flagged locations will be point-provenienced using a submeter-accurate global positioning system (GPS) device to aid in the assessment of site and loci boundaries. All temporally and functionally diagnostic precontact artifacts will be individually collected, bagged, and listed in a field log. With reference to historic artifacts, only uniquely temporally or functionally diagnostic artifacts (e.g. for ceramics, those with maker's marks, decorative patterns, or identifiable to vessel form or function; tin cans/glass/leather/metal, similar diagnostic parts or pieces) will be collected, as appropriate. Remaining precontact (e.g. debitage) and historic artifacts (e.g. building materials, metal or glass fragments, etc., with no distinguishing characteristics) will be documented in-field. In addition, all cultural features will be recorded, mapped, and photographed.

### **Surface Reconnaissance Units**

For the Phase II sites that border Copco Lake and Iron Gate Reservoir, observed precontact surface artifacts, including debitage, occur primarily within the reservoir drawdown zone, or between the high and low water lines. Debitage noted in this zone during surface reconnaissance procedures will be flagged and collected. Because the debitage will not be from in situ contexts, mapping of the specimens will use a generalized approach (versus point provenience). The 2018 field review conducted by AECOM noted that most surface debitage is concentrated within a narrow gravel strip located at the reservoir edge, bordering the low water line. If exposed during the time of the Phase II work, the gravel zone will be divided into 2-m long segments (width to be determined based on exposure), and each segment will be assigned a sequential surface reconnaissance unit number. All surface debitage noted within a surface reconnaissance unit (SRU) will be collected as a group, bagged, and listed in a field log. Debitage located outside the gravel zone (i.e., on the mud flat up to the high water line) will also be collected. Since such items are not expected in large quantities in the gravel zone area (based on the 2018 field review), each piece of debitage will be point-provenienced, collected, and bagged as an individual specimen.

Table 5-1 Summary of Proposed Phase II Subsurface Investigation Strategy

State Trinomial or Temporary Number	Site Type	Site Dimensions (m)	Site Area (m²)	SRUs n	SCUs n	SPs <sup>1/</sup> n (m³)	STUs <sup>2/</sup> n (m³)	EUs <sup>3/</sup> n (m³)	Total Excavation Volume (m³)
J.C. Boyle Reservoir Area (n=19)									
</									

State Trinomial or Temporary Number	Site Type	Site Dimensions (m)	Site Area (m²)	SRUs n	SCUs n	SPs <sup>1/</sup> n (m³)	STUs <sup>2/</sup> n (m³)	EUs <sup>3/</sup> n (m³)	Total Excavation Volume (m³)
Copco Lake Area (n=11)									
</									

State Trinomial or Temporary Number	Site Type	Site Dimensions (m)	Site Area (m <sup>2</sup> )	SRUs n	SCUs n	SPs <sup>1/</sup> n (m <sup>3</sup> )	STUs <sup>2/</sup> n (m <sup>3</sup> )	EUs <sup>3/</sup> n (m <sup>3</sup> )	Total Excavation Volume (m <sup>3</sup> )
Non-Reservoir Area (n=2)									
TOTALS				135	47	590 (33.61)	350 (70.8)	14 (8.4)	112.81

Notes:

<sup>1</sup> Average SP depth is estimated at 80 cmbs for a per unit volume of 0.0566 m<sup>3</sup>.

<sup>2</sup> Average STU depth is estimated at 80 cmbs for a per unit volume of 0.2 m<sup>3</sup>.

<sup>3</sup> Average EU depth is estimated at 60 cmbs for a per unit volume of 0.6 m<sup>3</sup>.

EU = excavation unit

m = meters

m<sup>2</sup> = square meters

m<sup>3</sup> = cubic meters

n = number

SRU – surface reconnaissance unit

SCU = surface collection unit

SP = shovel probe

STU = shovel test unit

TBD = to be determined

## Surface Collection Units

For the Phase II sites that border J.C. Boyle Reservoir, precontact surface artifacts, including debitage, occur largely above the high water line, as this reservoir footprint encompasses what was, before inundation, the naturally flat and gentle topography of former meadows that lacked the steep slopes of the Copco and Iron Gate areas. Thus, the Phase II sites in the J.C. Boyle Reservoir area have been less prone to erosion and fluctuating water levels, and cultural deposits are more intact. Although surface debitage will be flagged during initial surface reconnaissance procedures, their collection will focus on the use of SCUs.

SCUs will be used at the nonreservoir zone sites and the J.C. Boyle Reservoir sites to provide information regarding precontact artifact distribution and lithic technology specific to noted artifact concentrations. SCUs, each measuring 2 × 2 m, will be placed within each artifact concentration. All surface artifacts (debitage and formed tools) noted within the SCU will be point-provenienced using a submeter accuracy GPS device and/or hand-plotted onto a unit-specific base map, collected, and listed in a field log.

### 5.2.2 Subsurface Excavation

Archaeological excavation is an important tool for understanding past human land use patterns, allowing for the controlled exploration of what lies below the surface to reveal the types of human activities that occurred over time. As discussed at the beginning of Chapter 5, the proposed scale of the subsurface investigations presented below reflects ongoing consultation among the KRRC, Native American Tribes, the California and Oregon SHPOs, and other project stakeholders, and are designed to address tribal requests to reduce to the extent possible any physical disturbance to Native American archaeological deposits. To this end, the proposed subsurface testing program will minimize disturbance to archaeological deposits by strategically employing a combination of 30-cm diameter shovel probes, 50 × 50 cm shovel test units, and a limited number of standard 1 × 1 m excavation units, while also providing sufficient information to meet the goals of the Phase II study. It is anticipated that shovel probes will be limited primarily if not exclusively to areas outside of site boundaries.. Data gathered from all these subsurface tests will provide crucial information to characterize the nature of the cultural deposits and assess the NRHP eligibility of the sites that will be affected by Project-related activities.

Due to the sensitive nature of archaeological sites and the potential exposure during periods of excavation, appropriate measures will be taken to ensure security as reflected in the Looting and Vandalism Prevention Plan, addressed in a separate document. During non-excavation time frames, pin flags, equipment and other indications of ongoing excavation will not be left in the field.

Because many of the Phase II sites lie along reservoir shorelines, the need exists to examine both drawdown and nondrawdown zones to arrive at a comprehensive picture of their cultural deposits and integrity, but this may encounter limitations (see Chapter 1 and Section 5.2).



## Shovel Probes

Initial subsurface work at the Phase II sites will focus on data collection through shovel probing. To enhance Project-wide consistency, shovel probing will be conducted at the Phase II sites to assist with boundary delineation since the spatial limits (vertical and horizontal) of the sites have not been previously assessed in relation to the location of proposed Project impacts. Secondly, shovel probing will also provide a preliminary view of sediment characteristics and initial information regarding the depth and distribution of subsurface cultural materials.

To test site boundaries, a series of transect lines will extend outside a recorded or newly apparent site boundary within noninundated areas of a site and only on PacifiCorp lands. For reservoir shoreline sites, this means that a site boundary that borders the lake water will not be examined. Boundary delineation SPs will be oriented on transects laid out in cardinal directions (i.e., north, south, east, west, northeast, southeast, northwest, southwest). The number of SPs to be excavated at a site will be based site size as specified in site-specific research methods detailed below in Chapter 6. SPs will continue until two consecutive negative probes are encountered. To allow for a buffer, the site boundary will be marked at the location of the first negative SP.

SPs will measure 30 cm in diameter and will be hand excavated in 10 cm levels to sterile subsoil (i.e., after two sterile 10-cm levels) or 100 cm below surface (cmbs), whichever comes first, unless not feasible from bedrock or other obstruction. SPs will be excavated using trowels and shovels, depending upon soil composition and the nature of the deposit. Within the reservoir drawdown zone, it is likely that the water table will dictate the excavation depth. As appropriate, hand augering or coring may be used to reach 100 cm depth, but this may not be viable given anticipated cobbles. Retrieved sediments will be wet or dry screened through 1/8-inch (3.2-millimeter [mm]) hardware mesh, depending upon sediment condition. All cultural materials recovered from a SP will be collected, bagged for laboratory processing, and recorded on a Shovel Probe Form. Sediment characteristics will also be noted on the form, and representative soil SP profiles will be drawn. SPs will be backfilled immediately upon completion.

## Shovel Test Units

Another means of testing the Phase II sites will be excavation of 50 × 50 cm STUs. Such units will be used to provide a preliminary picture of the distribution, depth, and research value of subsurface archaeological materials; sediment characteristics; and subsurface integrity. STUs will be excavated in areas of artifact concentrations and at dispersed intervals along grid lines established for each site and/or locus. The resulting information, in conjunction with data collected during surface reconnaissance and SPs, will assist in identifying areas of potential subsurface deposits and further guide the placement of unit excavations.

For the Phase II sites at Copco Lake and Iron Gate Reservoir, shovel testing will largely focus on the drawdown zone, where deflated soils and heavy erosion have significantly altered the pre-inundation setting and in situ deposition of cultural deposits. Nondrawdown zone portions of sites will also be subject to shovel testing as allowed by landowner restrictions. As the cultural deposits at most of the Phase II sites at J.C. Boyle Reservoir occur above the drawdown zone (high water mark), STUs will generally focus outside this area, subject to landowner restrictions. However, three sites (35KL2397,



35KL2412, and 35KL2428) are exceptions, as their cultural deposits extend into the drawdown zone.

The number of STUs to be excavated at a site will be based on site size and the results of shovel probing, as specified in site-specific research methods detailed below in Chapter 6. STUs will be excavated as 50 × 50 cm plots in 10 cm levels, with sediment passed through 1/8-inch hardware mesh. A minimum of five 10-cm levels will be excavated within each STU (to 50 cmbs) unless bedrock is found or the nature and integrity of the site can be determined before that depth is reached. A 15-cm diameter auger hole will be dug at the base level of select STUs, to a depth of roughly 50 cm, to test for the presence of cultural remains buried below the terminal level of excavation. STUs will be dug using trowels and shovels, depending upon soil composition and the nature of the deposit.

All cultural materials recovered from a STU will be recorded on STU forms, collected, and bagged for laboratory processing. The form will note soil characteristics (type and color), an inventory of the cultural materials (artifacts and ecofacts) encountered and collected; a listing of special samples collected; a discussion of any charcoal, features, disturbances, or stratigraphic changes; and a record of photographs taken. Selected profile walls will be delineated stratigraphically, photographed, and illustrated upon completion of unit excavation. STUs will be backfilled immediately upon completion.

Should a cultural feature be encountered during STU excavation and further information such as a stratigraphic profile desired, the STU may be expanded to a 1 × 1 m EU or a 1 × 1 m EU will be established adjacent to the shovel test to expose the feature. This is one of the criteria by which reserve units will be placed. Soil samples may be removed from a STU if necessary or desirable.

## Excavation Units

As a result of consultation among the Tribes, KRRC, and other project stakeholders, EUs will be employed sparingly and primarily within postcontact deposits associated with European American activity. Where they are employed, EUs will generally measure 1 × 1 m in size, unless buried cultural features are encountered during excavation, upon which unit size may be expanded to 1 × 2 m or larger for greater exposure. EUs will be dug to a minimum of 10 cm below culturally sterile soil (i.e., evidenced by a marked decrease in cultural material and concomitant soil change), unless precluded by either impenetrable soil or geological formations. EUs will be excavated in arbitrary 10-cm levels (using the northeast corner of the unit for level datum) unless natural or cultural strata are discerned and can be followed. All recovered sediments will be passed through 1/8-inch hardware mesh. EUs will be dug using trowels, shovels, and pick mattocks, depending upon soil composition and the nature of the deposit. As needed, a 15 cm diameter auger bore will be dug at the base level of an EU to test for the presence of cultural remains buried below the terminal level of excavation.

For EUs located within the reservoir drawdown zone, excavation extent will be contingent upon the depth of the water table. Although attempts will be made to reach an average depth of at least 60 cmbs, this may not be feasible. For EUs located outside the drawdown zone, in areas not subject to inundation (above the high water mark), it is anticipated that EUs will average 60 cm in depth, although it is acknowledged that some may extend beyond that level. In compliance with

Occupational Safety and Health Administration (OSHA) regulations and standards, no EU will be excavated over 150 cm in depth without the use of shoring. If it is found that a deposit exceeds the 1.5 m limit in a 1 × 1 m unit, an auger bore will be excavated in the floor of the unit to determine the depth of subsurface cultural materials. If warranted, the 1 × 1 m unit may be expanded to a 1 × 2 m unit to reach sterile soil. In addition to safety reasons, there is a practical justification for terminating excavations in a 1 × 1 m unit at 150 cm due to the difficulty involved in excavating below that depth in a very confined space. It is expected that sterile soil can be reached in all cases using 1 × 2 m units.

All cultural materials retrieved from the EUs will be recorded in the field on Unit Level Forms, collected, and bagged for laboratory processing. A Unit Level Form will be completed for the surface and each excavation level. The form will note soil characteristics (type and color), an inventory of the cultural materials (artifacts and ecofacts) encountered and collected; a listing of special samples collected; a discussion of any charcoal, features, disturbances, or stratigraphic changes; and a record of photographs taken. All artifacts found in situ will be mapped by triangulation onto the Unit Level Form. Selected profile walls will be delineated stratigraphically, photographed, and illustrated upon completion of unit excavation. Features will be recorded on Feature Record Forms. When excavated, a feature will be treated as a discrete entity using standard unit divisions and Unit Level Forms for documentation.

Any EUs left open at the end of the working day will be covered with sheets of ½-inch plywood placed upon 2 × 4-inch boards spanning the units. Any large excavation areas will be physically barricaded with fencing or other materials. Upon completion of the excavation and profile studies, all EUs will be backfilled to the surface contour.

### **Auger Bores**

Soil core augers (ABs) will be employed at the base level of select STUs and EUs to ensure that no cultural deposits are present below their excavated depths. Hand-augering of such locations will be conducted using a 15-cm diameter bucket bored to a minimum depth of 50 cm below the base level of the EU, as permitted by sediment conditions and obstructions encountered. Extracted sediments from the ABs will be screened using 1/8-inch hardware mesh for artifact recovery. Sediment characteristics for the ABs will be recorded, and observations for each auger hole will be listed on an Auger Log Sheet.

### **5.2.3 Field Documentation**

Photographic and written documentation will be maintained during the course of fieldwork. The latter will include completion of field specimen logs; SP logs; unit level records for STUs; site sketch maps; feature records; profile drawings of subsurface units; photographic logs; and general field notes. Photographic documentation will consist of general site photographs taken before, during, and at the completion of excavations, as well as photographs of unit and trench stratigraphic profiles and cultural features. Digital color images will be used to document fieldwork.

## 5.2.4 Mapping

A planimetric contour map of each study site, drawn to 1 m intervals, and using all available mapping data, will be prepared using a Total Station, or EDM (Electronic Distances Measurement), designed for measuring of slant distances and horizontal and vertical angles and elevations in topographic work. An EDM is used to measure the distance between two points: a site datum and/or subdatums and an object of interest (e.g., cultural feature or artifact). The electronic signal the EDM emits across a site is relatively unaffected by slopes or other features (rocks, shrubs, etc.) in the landscape, thereby providing a high level of accuracy. After collecting datum points from all over the site, computer software will process the data to generate a map of the site. Major site features to be included on the site map will include site and locus boundaries; natural depressions; contour changes; and the location of all surface collected artifacts and subsurface test units (SCUs, STUs, and EUs). To assist in the assessment of site integrity and recognition of the extent of previous impacts to sites, observable surface disturbances also will be mapped.

## 5.2.5 Treatment of Human Remains

Should human remains or items of cultural patrimony be encountered, or situations of a sensitive or controversial nature arise, work at the specific location will stop and all excavations will cease near the find. Procedures will follow those outlined in the Project's Monitoring and Inadvertent Discovery Plan. In the event that human remains are identified, KRRC will immediately notify the County Coroner's office (Siskiyou or Klamath County, respectively), Native American Heritage Commission (California), Commission of Indian Services (Oregon), KRRC, and PacifiCorp.

## 5.3 Laboratory Methods

Cultural materials recovered during fieldwork will be placed in plastic bags that separate material types (vials will be used for fragile specimens) and grouped in paper level bags labeled according to site, date, unit, level, excavators, and contents. If materials requiring special treatment are recovered, they will be sent immediately to the AECOM laboratory in Chico, California for stabilization.

At the end of each field day, all collected materials and completed forms will be submitted to the Principal Investigator (PI) or Field Supervisor for processing and tabulation. A daily bag log will be maintained to ensure proper recording of provenience and to provide a backup if provenience information is inadvertently lost. A daily inventory will be maintained to ensure that all field forms are systematically filed by site number and that all recovered materials are accounted for in properly labeled bags. All forms and logs will be cross-referenced for accuracy and quality control.

Once fieldwork is complete, artifacts and other samples will be transported for processing to the AECOM laboratory in Chico, California, as described within the Project permit application. Nonperishable items within the site collections will be washed and dried or cleaned, as appropriate, and those items requiring stabilization will be processed to protect from deterioration. Bulk samples such as soil columns and carbon will not be washed or cleaned.

As per the Project curation agreement and UOMNCH curation guidelines (see Section 5.6), AECOM will request museum accession and catalog numbers for each site. All cultural materials collected during Project fieldwork will be processed for curation. Artifacts and other samples will be separated by class (stone, bone, shell, etc.), material (obsidian, chalcedony, basalt, etc.), and item (debitage, biface, handstone, etc.). The information gained from this classification will then be recorded on a catalog form specific to the designated curation facility. Additional information to be recorded on the catalog record typically includes count, weight, locus, unit coordinates, unit size, screen size, type of collection, and date collected but may vary based on the curation facility. After this information has been recorded on the catalog record, individual formed tools (e.g., projectile points, handstones, and bone awls) will be inked with the site accession number and a consecutive artifact number, or a tag with this information will be attached if the item is too small or fragile (e.g., shell beads). Debitage, unmodified animal bone, unmodified shell fragments, and other samples will be treated as a group according to provenience, separated by material, and assigned an artifact lot. Artifacts will then be placed into 4-mil archive quality plastic bags and labeled boxes and incorporated into a temporary boxing system ready for final curation. The boxing system will be set up by site, item, and catalog number, all of which will be recorded on a box log form. The system will allow easy access to any artifact or group of artifacts needed for further analysis.

All artifacts and other samples will be entered into a Microsoft Access database to standards of the appropriate curation facility (see Section 5.6). Permanent accession tags will be printed from the database and placed within individual bags for final curation.

## 5.4 Specialized Studies

The interpretation of cultural remains recovered from the Phase II study sites must be established within the overall framework of research issues and questions developed above in the Project research design. AECOM proposes to undertake a number of specialized studies that have proven particularly useful in interpreting the archaeological record of the upper Klamath River area. These studies include analyses for radiocarbon dating; obsidian geochemistry and hydration; flaked stone, ground stone, ceramic, and small find artifacts; faunal remains, including bone and freshwater mussel shell; paleoethnobotanical remains; organic blood residue; geomorphology and sedimentology; and historic period artifacts, as appropriate, and as described in the Oregon SHPO Project permit application. Below is an outline of the anticipated specialized studies to be conducted, along with a brief discussion of their applicability and the sampling methods to be employed.

### 5.4.1 Radiocarbon Analysis

The refinement of and contribution to the archaeological chronology developed for the Upper Klamath River area (Mack 1989) has been given a high research priority during the testing phase. Radiocarbon analysis is expected to be the most accurate chronometric tool available for interpretation of site chronology and will receive high priority in application of various analytical techniques. Analysis data will provide for dating of features, strata, and/or site components while also providing absolute dates of use for developing source-specific obsidian hydration rates and hydration sequences, which is a key research goal of the Phase II study.

Previous investigations conducted within the Upper Klamath River Canyon area have demonstrated good potential and preservation of charcoal for radiocarbon dating. Charcoal is generally considered the most reliable substance for radiocarbon analysis, but discrete charcoal deposits are not always available in primary and/or intact contexts. Charcoal obtained from flotation samples can be useful in filling this void, but these samples are subject to the vagaries created by the general mixing that occurs in cultural deposits as they do not date a single observable episode in the manner a charcoal concentration or hearth might. In addition, flotation of older cultural deposits often yields insufficient amounts of charcoal for radiocarbon dating using conventional, economical methods. Experience has shown that multiple radiocarbon assays from the same context are often necessary to control for measurement, lab error, and post-depositional mixing.

For these reasons, radiocarbon analysis will focus on precontact period materials recovered from primary contexts, particularly where temporally diagnostic artifacts, such as projectile points and/or obsidian specimens, are also available for cross dating. Such samples may occur associated with a range of cultural features, including fire hearths, house pit floors, burned structural remains, charcoal concentrations, or other primary context. Secondly, charcoal recovered from flotation studies may also provide additional samples for analysis.

The proposed radiocarbon analysis program provides for a robust sample of up to 40 samples, with the main goal of establishing chronological control for the Phase II sites. As discussed under the Chronology research domain (see Section 4.2), refinement of the cultural chronology for the Upper Klamath River Canyon is of prime importance. The area, and the river system itself, was a cultural crossroads between the California, Plateau, and Great Basin culture areas. The interrelationships between these areas and their cultural chronologies are not well established, although interregional influences, in the form of certain artifact types (e.g., shell beads from the coast, obsidian from the Medicine Lake Highlands and Southern Oregon) have been documented. Definitions of projectile point types overlap to some extent, and different age ranges have been suggested but not rigorously vetted. By employing a large number of radiocarbon dates, better chronological control can be established for the Phase II sites, providing a strong foundation for the study of diachronic change in settlement and subsistence practices, material conveyance strategies, and artifact typologies. Good chronological control during the testing Phase is also crucial for establishing each site's data potential and stratigraphic integrity to arrive at an informed decision regarding its NRHP eligibility.

### 5.4.2 Tephra Analysis

Occupying the eastern flank of the Cascade Range, the Upper Klamath River Canyon area lies within an area of active volcanism dominated by young volcanic peaks. One of the most prominent regional volcanic features is Crater Lake (located 65 km north of J.C. Boyle Reservoir), an 8 to 10 km wide basin caldera that represents the remnant core of the Mt. Mazama volcano. A tremendous explosion blasted the mountain apart some 6,800 years ago, with the force of the eruption so cataclysmic that an immense volume of pyroclastic materials was extruded from a reservoir beneath the volcano. The resultant ash cloud was larger than any recorded during recent times and spread ash over virtually all of Oregon, Washington, Idaho, Northern California, western Montana, and parts of Nevada and Wyoming.



The Mt. Mazama eruption deposited thick layers of ash predominately north and east of the Project area, but pumice flows extended to Upper Klamath Lake, north of J.C. Boyle Reservoir (PacifiCorp 2004:Exhibit E 6-20). A lesser but also important eruption occurred about 4,000 years ago involving the Pauline Peak shield volcano, which contains Newberry Crater. Occurring 175 km north of J.C. Boyle Reservoir, this eruption also blanketed an extensive area to the north and east with ash and pumice (Franklin and Dyrness 1973). Similarly, volcanic activity to the south of the Upper Klamath River Canyon, in the Medicine Lake Highlands, and at Mt. Shasta and Mt. Lassen, produced ash lenses that have discrete, fairly well documented sequences (Sarna-Wojcicki et al. 1991). The region's volcanic history can be a valuable aid to interpretations of archaeological sites, as these eruptions often deposited volcanic ash and tuffs (tephra layers) on the surrounding countryside. These tephra layers can be analyzed and traced to a specific source. If the sequence of eruptions of that source has been dated and the tephra can be tied to that sequence, it can be used as a time marker for an archaeological component. This linkage, referred to as tephrochronology, provides a unique stratigraphic method for connecting, dating, and synchronizing geological, paleoenvironmental, or archaeological sequences or events.

Volcanic ash layers associated with the Mt. Mazama eruption have been recognized at a number of local and regional archaeological sites in stratigraphic contexts revealing cultural materials above and below the tephra. Within the Upper Klamath River Canyon area, a sediment sample from the 125 to 140 cm level at the Four Bulls site (35KL1459), near Keno, Oregon, yielded two glass shards with a composition very similar to that from the Mazama eruption (Wilson et al. 1995). In addition to this single Mazama association, other glass shards from the site were documented as from an unidentified secondary source, but similar to tephra samples from the West Lost River site (35KL972) on the Lost River (Fagan et al. 1992: Appendix F; Wilson et al. 1996:2-81). As part of subsequent investigations at the Four Bulls site (Wilson et al. 1996), three additional sediment samples were examined for the presence of volcanic glass. These three specimens provided information suggestive of a secondary deposit of one or more volcanic glasses similar to those analyzed during the testing phase. It was concluded that this tephra, although of unknown source and age, appeared to be widely distributed across the Klamath Basin (Wilson et al. 1995, 1996:2-81), predating the Holocene (Wilson et al. 1996:2-136). Investigations conducted at the Nightfire Island site, in the neighboring Lower Klamath Lake area, identified a Mazama pumice lens within the Basal Clays layer, possibly derived from fluvial action (Sampson 1985:118). Similarly, the Tiller Site (35DO37), located further afield on the Umpqua River, near Roseburg, Oregon, produced cultural remains both below and above a Mazama pumice lens (Bevill et al. 1994).

Volcanic ash has also been identified in the stratigraphic matrices at several other Upper Klamath River Canyon archaeological sites, including 35KL28 (Cole 1965) near Keno, Oregon. Volcanic ash identified at sites 35KL21 and 35KL25, near the California/Oregon border (Mack 1983) are considered to be associated with volcanic activity stemming from the Secret Spring Mountain volcanic eruption (Joanne Mack, personal communication 2019).

If volcanic ash lenses are identified among the Phase II sites, their study would be aided by conduct of tephra analysis. The techniques involved in tephra analysis are similar to obsidian sourcing, relying on geochemical x-ray fluorescence, neutron activation analysis, or electron microprobes to fingerprint specimens of volcanic glass separated from samples of ash. The geochemical and

petrographic characteristics of these specimens link them to specific sources and, hopefully, to a particular position within a volcanic eruption sequence, which are often dated by means of bracketed radiocarbon dates. The report by Sarni-Wojcicki and colleagues (1991) provides a list of regional tephra layers derived from moderate to large eruptions during the late Pleistocene and Holocene.

Tephra analysis will be applied, as needed, based on recovery of ash samples or on the presence of volcanic glass shards in sediment samples. The actual number of samples will depend on the number of tephra layers identified in the field.

### 5.4.3 Obsidian Geochemistry and Hydration Studies

The volcanic history of northeastern California and south-central Oregon has provided the region with abundant and diverse obsidian tool stone that was used extensively by Native American Tribes for the manufacture of flaked stone tools. Obsidian tool stone is a principal constituent of archaeological assemblages within the region and particularly within the Upper Klamath River Canyon area. Because obsidian can be geochemically “fingerprinted” to a particular location of origin (source), and also studied for its relative age through hydration analysis, it provides an excellent indicator for reconstructing past human lifeways.

Obsidian sources are “fingerprinted” by examining characteristic concentrations of chemical constituents, and archaeological specimens may be correlated to those by comparison. This is most often accomplished through use of neutron activation analysis, X-ray fluorescence (XRF), or optical emission spectroscopy. Identification of the source of archaeological specimen of obsidian is necessary to interpret the results of obsidian hydration analysis.

A freshly flaked surface of obsidian hydrates (absorbs water from its surrounding) at a regular rate (variable with source) and forms a measurable hydration layer. An artifact may be analyzed to determine the extent of hydration (the measurement of the hydration zone or extent of water absorption), measured as microns, and the amount of time that has elapsed since the artifact was made.

Hydration analysis of precontact obsidian tool stone can contribute information to address a variety of research topics. Such data are fundamental to examination of site structure and evaluation of the integrity of cultural deposits, while site-specific chronology, regional chronology, and population reconstruction are some of the more general themes that can be examined using hydration information. Furthermore, definition of source-specific relative hydration sequences and investigation of source-specific hydration rates are basic areas of research for the Phase II study and the region, as is the development of the regional projectile point sequence through application of hydration data. Previous archaeological investigations undertaken within the Upper Klamath River area have provided source-specific obsidian hydration data that will be incorporated into the Phase II analysis to enhance interpretation of results.

Ethnographically, the Upper Klamath River tribal groups participated in exchange relationships involving subsistence goods, tools, and status-related items. Trade had both economic and social significance and enabled groups to diversify their subsistence and technology base beyond



resources in their home territory and hedge against the uncertainty of seasonal or annual resource availability. Across western North America, obsidian has been documented as an important precontact trade commodity and one whose distribution is readily demonstrated through various analytical techniques aimed at identifying its parent geological source. By considering the directionality and specific intensity of conveyance, information regarding mechanisms of obsidian trade and exchange can be understood.

The value of obsidian geochemical sourcing for the study of precontact exchange in the Upper Klamath River region has been well documented (Hughes 1983, 1985, 1986, 1988, 1989, 1994, 1997; Mack 2003, 2012, 2015a, 2015b, 2016; Nilsson 1985, 1987, 1988; Waechter and Young 2015; Wilson et al. 1996, among others). Resultant geochemical data have particular utility for examining and reconstructing settlement practices and investigation of stone tool technologies, tool curation, and territoriality (e.g., Hughes 1994a). Because of its commonness at many western archaeological sites, its preservability and ability to be geologically fingerprinted, and its capacity to provide relative temporal dating through hydration analysis, obsidian has assumed a level of prominence in archaeological analysis. Although various analytical techniques have been applied to assign geographic provenience to stone artifacts, XRF spectrometry has been the dominant method in North America (Eerkens et al. 2007).

Obsidian conveyance patterns noted for sites in the Upper Klamath River Canyon area document the predominant use of tool stone from the Medicine Lake Highlands, one of two geographically close source areas (Mack 2003, 2015a, 2015b, 2016). GF/LIW/RS glass was the primary obsidian used by Native American peoples who occupied a vast area of Northern California, and this source occurs within 60 to 80 km of the Project area. The conveyance zone for such obsidian extended as far west as the Pacific Coast, as far east as the Warner Mountains, north to the Klamath Basin, and south to the northern Sierra Nevada region.

Mack (2015a, 2015b, 2016, 2017) compiled a list of more than 750 obsidian artifacts from 82 archaeological sites in and near the Upper Klamath River area. The artifacts, identified to obsidian source, revealed that more than 85 percent were made from Medicine Lake Highlands glass. Of those pieces, more than 85 percent were classified as GF/LIW/RS material. Obsidian source information for temporally diagnostic projectile points indicated that Paleo-Indian points were made from two identifiable obsidian sources—GF/LIW/RS and Spodue Mountain—while Archaic points represented at least five sources, including two from the Medicine Lake Highlands (GF/LIW/RS and East Medicine Lake) and Tuscan, both in California, and others from the Silver Lake/Sycan Marsh and Spodue Mountain sources in south-central Oregon. Projectile points of the Late Precontact Period included specimens from 14 different obsidian sources, including five from the Medicine Lake Highlands area (Mack 2017). Although this pattern points to the use of a greater diversity of tool stone in the Late Precontact Period, it also reflects the fact that earlier projectile point types are found less frequently in local sites. In other words, smaller projectile point samples result in less tool stone diversity.

Recent archaeological investigation conducted at CA-SIS-329, the Collier Rest Area on Klamath River, identified two intact precontact deposits, one dating from the Canyon I Phase (2200 to 1050 BP) and one from the earlier River Phase (4450 to 2200 BP; Waechter and Young 2015).

From this site, a sample of 40 artifacts was submitted for XRF analysis, all of which were identified as GF/LIW obsidian.

Wilson and colleagues (1996) reported on obsidian sourcing for a large collection of artifacts (n=327) recovered from 35KL1459, the Four Bulls site, near Keno, Oregon. This early- to mid-Holocene site was found to contain a wide variety of faunal remains, bone tools, flaked stone artifacts, and ground and perforated stone tools. Nearly 65 percent of the obsidian artifacts were traced to the Medicine Lake Highlands sources, while 26 percent were identified as the Spodue Mountain source. Ten artifacts (3 percent) were derived from the north Warner Mountains, including Rainbow Mines, Buck Mountain, and Sugar Hill. A single biface was identified as South Warners, while two flakes were classified as Blue Mountain. Other identified sources included Silver Lake/Sycan Marsh (n=8), Drews Creek/Butcher Flat (n=2), Tucker Hill (n=1), Newberry Volcano (n=1), and Cowhead Lake (n=1). Three flakes were of unknown sources (Wilson et al. 1996:2-125). These collective data indicate that the Medicine Lake Highlands sources were the most predominate over the 4,000 years of site use. Some 30 percent of the obsidian overall was derived from sources northeast of Upper Klamath Lake.

The other closest obsidian source of noted importance to the Upper Klamath River Canyon area is Spodue Mountain, which is located near the Sycan River about 64 km northeast of the Project. Another important obsidian chemical group in this area is Silver Lake/Sycan Marsh, which is an additional 25 to 38 km north of Spodue Mountain (Hughes 1986). These obsidians have been documented as far northwest as the Willamette Basin, where Spodue Mountain accounts for less than 1 percent and Silver Lake/Sycan Marsh 3 percent of obsidian in archaeological contexts (Baxter and Connolly 2015). Investigation of 17 precontact sites in the upper Rogue River Valley in Jackson County, southwestern Oregon, identified seven obsidian sources, including Spodue Mountain and Silver Lake/Sycan Marsh (Nilsson and Kelly 1991). Of 180 artifacts submitted for source determination, 71 (39 percent) were derived from Spodue Mountain, while 50 specimens (28 percent) were from the Silver Lake/Sycan Marsh geochemical group. Fifty-two artifacts (29 percent) were made of obsidian from Medicine Lake Highland (Nilsson and Kelly 1991:349). These results indicate that toolstone from the Sycan River area was largely transported west of the Cascade Range.

At the Nightfire Island site in the Lower Klamath Lake area of Siskiyou County, geochemical analysis of 310 projectile points indicated that 9 percent of the sample was Spodue Mountain obsidian while 2 percent was identified as Silver Lake/Sycan Marsh (Hughes 1986). These artifacts represent the entire chronological sequence at Nightfire Island, from roughly 5500 BC to AD 1360 (Sampson 1985). Analysis of 381 temporally diagnostic projectile points from Surprise Valley (Hughes 1986) revealed no use of obsidian from Spodue Mountain or Silver Lake/Sycan Marsh, indicating the preference for local obsidians.

Within the Upper Klamath River area, Mack (2015b) compiled a list of 470 obsidian specimens from 50 sites and 7 isolates. Of this sample, 4 percent of the specimens were identified as Spodue Mountain, while 2 percent of the sample was Silver Lake/Sycan Marsh. Of 36 archaeological specimens from the Sheep Rock Shelter site (CA-SIS-266) submitted for source determination, two

bifaces (6 percent) were identified as Spodue Mountain obsidian (Ritter 1989). These relatively low counts also points to the preference for Medicine Lake Highlands obsidian.

The current obsidian tool stone profile for the Upper Klamath River Canyon area points almost exclusively to conveyance and use of GF/LIW/RS materials. However, the recovery of non-GF/LIW/RS obsidian artifacts from the Phase II study sites remains a possibility, particularly with regard to the south-central Oregon sources such as Spodue Mountain, Silver Lake/Sycan Marsh, and Drews Creek/Butcher Flat. It would appear that obsidian from the Sycan River area was carried or traded to the west and northwest, with little of this material making its way south through the Klamath Basin to today's Siskiyou County. Obsidian from the Medicine Lake Highlands was the predominate tool stone used for the manufacture of flaked stone artifacts within the current Project area, and this material appears to have been carried or traded largely to the northwest, west, and south, with some amounts going east into Modoc County.

Obsidian source analysis to be conducted for the Phase II sites will have three primary objectives: (1) to support obsidian hydration analysis, (2) to identify potential changes in obsidian procurement/exchange relationships over time, and (3) to identify potential exceptions to the expected procurement pattern. The strategy for sampling collections for hydration and source analysis will include an array of obsidian materials suitable for addressing various research questions. The proposed obsidian XRF sample from the Phase II sites with a precontact component will include an average of 30 pieces from each site. This sample will include (1) debitage from various vertical and/or horizontal proveniences, (2) artifacts recovered from radiocarbon-dated features, and (3) formed tools.

Obsidian hydration analysis will serve as a primary tool for chronological reconstructions for the Phase II precontact sites. It is expected that the assessment of cultural chronology will rely on obsidian hydration information and the conversion of micron values into computed ages using source-specific formulas for the region. Secondly, existing projectile point typologies provide may provide additional temporal data provided such specimens are recovered. The proposed program of hydration analysis of obsidian debitage will serve to assess the integrity of cultural deposits and provide temporal data for the sites and identified components. Hydration studies of obsidian debitage are necessary because hydration rim frequencies can vary substantially among various artifact classes due to artifact re-use. Projectile points from multi-component sites, for instance, often show very different frequency profiles than debitage. Consequently, to develop a clear picture of the occupation sequence at a site, a variety of artifact classes must be considered and debitage likely provides the most accurate indications of actual site use. The following sampling strategies have been developed.

Obsidian hydration analysis of debitage will focus on column sampling of excavation units at each site. A sample of debitage from alternating 10 cm levels within the selected unit will be examined. To provide independent data for assessment of source-specific hydration rate profiles, analysis of a sample of obsidian debitage recovered in direct association with radiocarbon-dated features will also be conducted. Obsidian hydration analysis will also include a sample formed tools from the Phase II sites. Due to their importance as time-sensitive artifacts, all diagnostic projectile points will be

submitted for hydration and source analysis. Other functionally diagnostic tools, tied to defined temporal components, will also be a focus of study.

#### 5.4.4 Flaked Stone Analysis

Flaked stone artifacts comprise one of the most durable and ubiquitous types of cultural material recovered from local and regional precontact sites. Having formed an integral and indispensable role in the daily lifeways of Native peoples, these artifacts offer important insight into patterns of technology, economy, subsistence, and settlement, as well as elements of site function and period of use.

Several goals will guide the analysis of the flaked stone assemblages. One goal will be the identification of site-specific tool stone reduction strategies to provide information regarding technology, site function, and period of use. This will be addressed primarily from the standpoint of stages in the biface reduction process, but other modes of tool production will also be considered. A second goal concerns the identification of temporal variation in formed tool morphology, which will be realized through detailed attribute analysis of tools, particularly projectile points. A third goal encompasses an assessment of the feasibility of functional analysis of the formed tools, to be addressed through microwear analysis—the systematic process of recording wear traces such as edge flaking, the surface characteristics of polish, and the orientation of striations on a stone tool to determine how that tool was used. The fourth goal concerns determining the diachronic variability in the use of raw materials used for flaked stone tool manufacture. Obsidian tool stone use will be studied through geochemical sourcing and hydration (see Section 5.4.3). Nonobsidian materials, such as cryptocrystalline silicates (CCS) and basalt, will be assessed using cross tabulations to determine whether the relative frequency of these materials varies chronologically or by artifact class.

To facilitate the description and study of the flaked stone assemblages, several analytical techniques will be employed. The flaked stone assemblage from each study site will be segregated into various techno-morphological classes using a hierarchical classification system, which is composed of larger classes to which subclasses may be added. The use of a standardized system provides for similar classification of artifact collections, facilitating intra- and inter-site comparisons and the establishment of site typologies suitable for use in developing a data recovery program, as needed. The classification system incorporates technological attributes (e.g., platform orientation, flaking technique) and morphological attributes (e.g., outline symmetry, flaking patterns). Definition of the artifact classes and expected analytical procedures are discussed below.

On the most general level, the flaked stone assemblages will be segregated into five broad classes: cores, debitage, unifacial tools, bifacial tools, and varia. Each class will be subdivided into specific techno-morphological types, which in turn will be sorted into subtypes as necessary.

Cores consist of blocks or pieces of tool stone that exhibit one or more negative flake or blade scars. These scars reflect the detachment of blanks (flakes or blades) to be used un-altered or to be subsequently fashioned into formal tools. Cores may vary widely in shape and size, somewhat dependent on raw material, and may include blocky, spherical, and cylindrical forms. Individual cores will be segregated into subtypes based on the relative position of their striking platforms (e.g., single-

platform, multiple-platform) and their method of reduction (e.g., percussion, bipolar). Other attributes of cores to be monitored include material type, condition (complete vs. incomplete), presence or absence of cortex and platform preparation, dimensions (length, width, and thickness), and weight.

The term debitage refers to all waste materials produced during the process of lithic reduction and the production of flaked stone tools. Byproducts of these processes may include flakes, blades, shatter, and other production debris. Quantification of debitage by provenience, material type, and weight will provide a preliminary tabulation of the assemblage. Following this, a selected sample of debitage from a site will receive detailed technological analysis.

The debitage sampling strategy will employ a number of selection criteria, including artifact densities, intra-site patterns of lithic reduction identified in a preliminary appraisal of the assemblage, and association of artifacts with cultural features. Due to the variability in the quantity of debitage that may be recovered from a given site, a flexible sampling strategy will be employed. For study sites that yield less than 500 pieces of debitage, all debitage will be subject to technological analysis. For sites with debitage quantities exceeding 500 pieces, technological analysis will focus on the debitage collection from every second or third 10 cm level excavated from one or more excavation units, depending upon the quantities recovered, until at least 500 pieces have been analyzed site-wide to maintain the desired sample size and avoid redundancy.

Debitage selected for analysis will be sorted into technological classes and stages using a method of analytic classification (Rouse 1960) based on the visual examination of selected flake attributes characteristic of different reduction techniques. Eleven broad classes have been preliminary identified: (1) core reduction, percussion; (2) blade reduction, percussion; (3) blade reduction, pressure; (4) biface reduction, percussion; (5) biface reduction, pressure; (6) uniface reduction, percussion; (7) uniface reduction, pressure; and (8) bipolar reduction, percussion; (9) indeterminate reduction, pressure; (10) indeterminate reduction, percussion; and (11) unidentifiable technology. Within each class, early vs. late-stage flakes will be identified. Other debitage attributes to be monitored as part of the technological analysis include condition (complete vs. incomplete), size (measured by mm grid), presence or absence of cortex, platform preparation, and other diagnostic types (e.g., alternate flakes, notching flakes).

All flaked stone tools, including unifacial and bifacial types, will be segregated into taxonomic classes based upon the modes of manufacture, style, shape, and erred function. Unifacial and bifacial tool classes will be further divided into morphological, descriptive types.

A unifacial tool is a flake-based artifact with evidence of intentional shaping or retouch on either its dorsal or ventral face, but not both. Such tools will be further subdivided based on the type and location of retouch, and the angle of each modified edge conducted to infer economic activities (utilization) resulting in the visible wear (Keeley 1980). The assumption is that different activities, or different worked materials, result in different types of wear and varying edge angles. Examples of unifacial tools may include scrapers, spokeshaves, notched flakes, and edge-modified pieces (EMPs).

A bifacial tool is an artifact that exhibits intentional shaping or retouch on both faces (dorsal and ventral). Such tools may be derived from cores or flakes or may be repurposed from other formed



tools, but in most cases, it is difficult to distinguish the source of the parent piece due to extensive retouch or reworking. This tool category includes artifacts that are flaked on two opposing surfaces, forming an edged, beveled margin at the platform. Bifacial tools can be manufactured by reducing parent material through a series of sequential stages (the blank-preform-product reduction continuum) or by simply selecting flaked stone byproducts (e.g., flakes, blades, broken tools) and fashioning these into workable implements.

Bifacial tools will be subdivided into subtypes (e.g., bifaces, drills, projectile points) based on technomorphological attributes, as well as apparent function. Morphological types will be identified for each subtype as appropriate. It is anticipated that both bifaces and projectile points will be recovered in quantities from the study sites, so additional discussion regarding these bifacial tool types is warranted.

Five biface types have been initially defined for the study based on type and extent of flaking, amount of remnant cortex, and degree of outline symmetry (see Callahan 1979). Type 1 bifaces represent attempts at initial shaping and thinning of parent material into a bifacial form. These artifacts typically exhibit few, broad, expanding percussion flake scars that are unpatterned on the worked surfaces. Established midline ridges are not present, and margins are ill-defined, at best exhibiting initial stages of alternate flaking or platform preparation. As such, Type 1 bifaces are difficult to distinguish from intentionally flaked EMPs.

Type 2 bifaces consist of forms that exhibit initial edging by freehand percussion reduction. As defined by Muto (1971), edging is a process whereby a series of regular flakes is removed along a margin, by either unifacial or alternate bifacial flaking, to create a sharp edge. Flake scars are largely unpatterned and approach the midline of the biface on either side. Stranded remnant surfaces, cortex, or prominent ridges may be present on the midline of both faces. Lateral margins may be symmetrical and tip and basal areas roughly defined, while step fractures and projecting masses of material are often present on Type 2 bifaces discarded as manufacturing failures.

Type 3 bifaces show evidence of secondary thinning and shaping by percussion. Flaking on these pieces appears more patterned than on Type 2 bifaces, and relict flake scars have usually been removed. Type 3 bifaces commonly exhibit secondary thinning, defined as the removal of flakes from one margin that undercut flake scars originating from the opposite margin (Callahan 1979:37). Secondary thinning produces bifaces that are flattened in cross-section.

Type 4 bifaces consist of specimens that have been at least partially shaped by pressure flaking. These bifaces reveal activity directed away from thinning the body of the piece and a focus on creating a regularized edge associated with mid-to-late-stage shaping. This is most often accomplished by pressure flaking directed at removing arris or edge remnants, giving most Type 4 bifaces a highly symmetrical form with patterned flaking. Often, Type 4 biface fragments represent finished tools, such as projectile points or perforators, that were broken during use.

Type 5 bifaces consist of thin core or early-stage biface flakes exhibiting either percussion or pressure flaking on both faces, usually restricted to the margins. Although flake scars are evident on the ventral surface, usually representing bulbar removal, typically the dorsal surface has received the most intensive modification.

Finally, in the case of projectile points, temporally significant groupings will be identified relying on both comparison with existing typologies and the use of obsidian hydration analysis. The approach to projectile point classification will employ both technological and morphological attributes, including those hallmarks defined by Thomas (1981) for Great Basin point styles, which will serve as a baseline. Thomas's attributes, however, may not be sufficient overall to classify site collections due to cultural "influences" from other areas of Northern California and southwestern Oregon (e.g., Gunther Barbed points from the northwest Coast; Cascade leaf-shaped points from Southern Oregon) that have been noted in other Upper Klamath River Canyon site assemblages.

Projectile points will first be segregated into gross class based on morphological similarities (e.g., small corner notched points, small leaf-shaped). Next, univariate techniques will be applied to each gross class to determine which attributes have the potential to serve as diagnostic markers in a system such as the one devised by Thomas (1981). This will involve searching for attributes that show a bimodal distribution, strong skewness, or other deviations from a normal distribution. If a univariate approach does not prove successful, a multivariate clustering approach will be applied, incorporating statistical analyses. Regardless of which method proves most effective in defining point types, all specimens will be compared to previously defined types, and, where appropriate, existing names will be used. All point types and variants will be defined and indices of variability within each class will be noted.

The varia category includes uncommon or unique flaked stone artifacts of distinctive form that cannot be readily subsumed under the more standard artifact classes described above.

Data generated as part of the flaked stone analysis will be entered into database files arranged according to artifact type (i.e., biface, projectile point, and debitage). Summary data and statistics will be generated on both a site-specific and artifact-specific level.

### 5.4.5 Ground Stone Analysis

The precontact period ground stone industries of the Upper Klamath River Canyon incorporate a broad range of tool forms that document resource processing and other activities over many millennia (Mack 1991). The term ground stone refers to formed tools made by combinations of flaking, pecking, pounding, grinding, polishing, or incising. Within the Upper Klamath River Canyon, among the Salt Cave Locality sites, noted food plant processing artifacts have included hopper mortar bases, bowls, portable mortars, pestles, mullers, millingstones, and handstone or manos (Mack 1991:10). These artifacts reflect a strong reliance on plant foods and reveal the importance of resources such as bulbs and hard seeds to the subsistence economy. Other ground stone artifacts consist of what has been termed HAR stones (Mack 1991:9), incorporating hammerstones, anvils, and rubbing stones. In addition, ground stone assemblages also have included grooved and perforated stones, such as fishing net weight sinkers and sandstone arrowshaft smoothers, as well as polished stones such as steatite and basalt dishes, steatite pendants, smoking pipes, and a possible stone bead (Mack 1983,1991).

Separate from the Salt Cave Locality, archaeological investigations conducted at the Four Bulls Site near Keno, Oregon (Wilson et al. 1996) note that a property owner had previously collected vesicular basalt sinkers, "canoe anchors," as well as other grooved and pecked stones, a basalt muller, bowl,



mortar, and metate fragments. Other ground stone tools recovered from excavations at the Four Bulls Site include a probable net weight, an elongated specimen with tapered end, a possible pipe bowl fragment, and a possible arrow shaft abrader fragment (Wilson et al. 1996). At 35KL1121, the Klamath River Bridge Cemetery Site, ground stone items included mauls and pestles, shaped metates, mano, shallow stone bowl, and two pendant ornaments (Tasa and Connolly 1997). Further downriver, in the Iron Gate Reservoir area, investigations at CA-SIS-326 yielded a ground stone assemblage of shaped and unshaped manos, metates, pestles, and hopper mortars (Leonhardy 1961).

As part of the techno-morphological analysis, all portable ground stone artifacts recovered from the sites will be separated into classes, consisting of grinding slabs/millingstones, mortars, handstones, pestles, pounders, grooved stones, perforated stones, stone vessels, unidentifiable fragments, and other ground stone types, as needed. To provide comparability with previous ground stone information collected from the Upper Klamath River Canyon area, existing typologies and terminology will be followed to the extent possible and/or reassessed as needed. Each ground stone category will be further sub-divided according to shape and milling surface characteristics. Variables to be monitored include blank type; shape of the artifact in transverse and plan; shape of the use surface in traverse, plan, and long section; number of use surfaces; and relationship of the use surfaces. The ground stone artifacts will be measured, weighed, and photographed. This information, along with all data used for classificatory purposes, will be included with the analysis results.

#### 5.4.6 Ceramic Artifact Analysis

The Upper Klamath River area comprises one of three river systems within the southern Cascades of Oregon and California where a Late Precontact period ceramic tradition has been identified from house pit villages and large campsites (Mack 1983, 1991, 1995, 2003, 2011a). Termed Siskiyou Utility Ware (Mack 1989), this ceramic tradition also extends to two other neighboring river systems: the Upper Rogue River, in Oregon (Mack 1986, 1987, 1994b, 2006; Nilsson and Kelly 1991) and the Middle Pit River, in northeastern California (Cleland 1997a; Kelly et al. 1987; Mack 1988; Tiley et al. 2007). Shallow, wide-mouth bowls, some decorated with fingernail indentations along their rim, characterize Siskiyou Utility Ware vessels. Fired clay figurines (Mack 1990, 2011b; Nilsson 1988) and tubular ceramic pipes (Mack 1994b) also are associated with Siskiyou Utility Ware, with a few representative figurine specimens having been found further afield at sites on the Umpqua, Coquille, and Applegate rivers in western Oregon (Mack 2011b: Figure 5.1). Siskiyou Utility Ware vessel fragments have been dated to between AD 350 and 1850 based on direct association with radiocarbon dates. Additional data supporting this temporal range derive from ceramic pipes, figurines, and potsherds found associated with Gunther Series projectile points, which are common Late Precontact period time markers across Northern California and Southern Oregon (Mack 2011).

Given its widespread distribution within Upper Klamath River archaeological sites, it is anticipated that Siskiyou Utility Ware pottery and figurines will be collected as part of the Phase II investigations. Pottery sherds and figurines recovered from cultural features and/or from radiocarbon-dated contexts will be selected for detailed stylistic and technological analyses, followed by others from less clear associations as needed.

Technological analysis will focus on identification of the types of clay and tempering materials to verify their association with Siskiyou Utility Ware and to determine, to the extent possible, the origin of the materials. Toward this end, petrographic analysis (microscope) will be used to identify the mineral composition of the pieces. The use of XRF fluorescence analysis of ceramic artifacts may also be considered. Stylistic analysis will focus on the decorative styles applied to ceramic artifacts, including incisions, embossing, and other surface treatments. Stylistic decorative patterns, and the information they convey, are often determined by specific cultural elements, providing the opportunity to examine social change in a culture through time.

A sample of Siskiyou Utility Ware specimens will be analyzed for organic residues preserved on the surface or the fabric of potsherds. These residues may include extractable compounds such as lipids, resins, and waxes, as well as solid compounds such as chars resulting from cooking and heating food and nonfood materials (Oudemans 2007). If such residues are identified, they may provide information regarding the animal and plant foodstuffs processed in pots, insights into hunting and gathering activities, and may also detect trade in exotic organic goods. In addition, information about the environment and climate can be extrapolated from the isotopic composition of compounds detected in potsherds, potentially providing avenues for future study. To facilitate the organic residue analysis, a minimum sample of five pieces of Siskiyou Utility Ware from each site where it is recovered will not be washed or cleaned in the laboratory.

### 5.4.7 Small Finds Analysis

Based on the results of previous archaeological investigations conducted within the Upper Klamath River Canyon area, a variety of small finds are expected to be recovered from the study sites. As defined here, small finds consist of objects such as precontact beads and ornaments of stone, shell, nuts, and bone, as well as historic-period trade items such as glass beads. These ornaments, particularly those manufactured from shell, can provide data useful for temporal control and the study of inter-regional exchange and stylistic variability. Because they are amenable to typological analysis and often occur in well-dated contexts, shell beads and ornaments have long been used as hallmark items that assist in defining chronological sequences and for assessing material conveyance patterns in California and the Great Basin (Bennyhoff and Heizer 1958; Bennyhoff and Hughes 1987; Gifford 1947; Lillard et al. 1939; Milliken and Schwitalla 2012).

All small finds will be described and classified to the extent possible, using attributes employed in previously established typologies (e.g., Bennyhoff and Hughes 1987; Gifford 1947; Kidd and Kidd 1970; Milliken and Schwitalla 2012). Resulting types will then be compared to existing types and arranged in chronological order (as possible), using dates obtained during the Phase II investigations. In addition to general classification, attributes reflecting manufacturing techniques and wear patterns will be recorded for all small finds.

### 5.4.8 Faunal Analysis

Faunal analysis focuses on the study of animal remains (i.e., bones, shells, and antler) found at a site to assist with the reconstruction or characterization of past human activities. Using this information, inferences can be made regarding the local environment and resource availability;

subsistence practices (what was eaten and where it was obtained); the number, types, age, and size of the animals taken; and the season of their procurement. Animal remains used for tool manufacture also provide information regarding technology and material culture.

The environmental diversity of the Upper Klamath River Canyon area provided an abundance of faunal species for human use. A variety of fish, reptile, bird, and especially mammal remains have been recovered from the Salt Cave Locality sites (Mack 1991). Bone tools are among the earliest artifacts noted in the Upper Klamath River cultural sequence, where their use is first associated with the Secret Springs Phase (5500 to 4500 BC) and continues across 7,000 years, into the historic contact period (Mack 1991). Faunal remains recovered from the Salt Cave Locality sites have included unmodified bone, likely representing discarded food resources; bone tools that formed part of hunting and fishing toolkits; and beads and other ornaments worn for personal adornment. Mammals, including small, medium, and large types, clearly dominate the recovered unmodified bone specimens, although these specimens have not been identified to species level. Artiodactyl are represented by deer and elk bone. Only a small number of fish bone (e.g., long nose sucker) were noted, and the lack of fish bone in general was mentioned as possibly related to cultural practices where bone was pounded and stored for later use (Mack 1991, citing Holt 1946; Kroeber 1925; Silver 1978). Recently, the reanalysis of fish remains from 35KL16, 35KL18, and 35KL21, which are part of the Salt Cave Locality collections, noted several additional fish species in the assemblages, including Klamath Smallscale and Largescale sucker, blue and tui chub, Chinook salmon, and rainbow trout (Gobalet 2018).

Some 600 pieces of modified animal bone, antler, and shell characterize the Salt Cave Locality assemblages (Mack 1983). Bone tools comprise a diversified collection that includes awls; pins or daggers; gouges, fleshers, or flakers; knife, chisels, or scrapers; shoehorn-shaped tool; head scratcher; pendants; gaming pieces; bipointed objects; pointed, blunt-based objects; beads or tubes; whistles; wedge or chisel; antler tine point; fish gígs; elk antler spoon; and miscellaneous pieces. Shell artifacts include four Olivella shell beads, an abalone pendant, and a freshwater mussel shell spoon.

Further upstream, archaeological investigations conducted at 35KL1459, the Four Bulls Site, near Keno, Oregon, recovered a robust assemblage of animal bones and shell (Wilson et al. 1996:2-81 to 2-89). Considerable variability was noted in the types and frequency of animal bones recovered from the site, and specimens related to both possible human use and post-occupational rodent burrowing were found. Mammal bone of likely human use included bison, shrub ox, mule deer, unidentified Artiodactyla (cloven-hoofed mammals), longtail weasel, rabbit, and representatives of the hare/rabbit family (Leporidae). Burnt bird bone, including Canadian goose, duck (*Anas* sp.), and members of the swan/goose/duck families suggest possible human use, as did specimens of pond turtle. Fish bones encompassed over 300 specimens, including examples of chub, Lost River sucker, and minnow or sucker. Shell included gastropod and pelecypod species.

Investigations conducted at CA-SIS-326, a late period village now under Iron Gate Reservoir, yielded an assemblage of mammal and bird bone associated with house pit floors (Leonhardy 1961, 1967). Mammal bone thought to be associated with human use included deer, jack rabbit, brush rabbit, mountain sheep, and possibly ground squirrel; other types of rodents such as gopher were

considered intrusive. Additional mammal remains included small quantities of fox, porcupine, raccoon, mountain sheep, coyote, marmot, river otter, badger, beaver, and bear. Also present were avian samples of small goose and duck. Recent analysis identified several fish bone in the collection, including sucker and Pacific trout or salmon (Gobalet 2018). The faunal assemblage also included a variety of bone and antler artifacts, comprising awls, net shuttle, spatulate implements, scrapers, tubular beads, incised bone fragments, horn tube, antler tine flaker, and cut antler. Shell artifacts were restricted to an *Olivella biplicata* bead, a *Protothaca* (Littlenecks) shell bead or pendant, and an incised *Dentalium* shell.

Archaeological investigations conducted at CA-SIS-329, a multiple-component site located on the Klamath River, 11 miles downstream of Iron Gate Dam, also recovered a diversified assemblage of faunal bone (Hamusek and Haney 2001; Waechter and Young 2015). The assemblage, comprising bones of birds, mammals, and fish, was derived largely from the site's midden deposit, but faunal bone was also found in other contexts. These faunal remains suggest a varied diet that included waterfowl, rabbits/hares, deer (and possibly other large artiodactyls), and fish. Mammal bone was most prevalent and included a range of small to large types. Identified mammal species included Artiodactyla, mule deer, rabbits and hares, bobcat, and various rodents. Aves specimens and one duck bone comprise the small bird bone assemblage. Excavations also produced an assemblage of fish bone, representing at least four individuals, each from a separate species: sturgeon, sucker, sculpin, and salmon/trout. Three bone tools were also recovered, consisting of an incised fragment, bone needle, and bone awl.

The above review of investigated sites notes the diversity and widespread use of faunal species in the archaeological record of the Upper Klamath River Canyon. Thus, a robust faunal assemblage may be anticipated for the Phase II sites. Analysis of any recovered faunal remains will be directed at acquiring as much data as possible from recovered assemblages. The approach to be followed will concentrate first on identifying each specimen to the lowest possible taxonomic unit. An effort will then be made to quantify the relative abundance of the various taxa represented. The various assemblages will be compared using appropriate units of analysis, including sites, strata, and components, and an attempt made to identify patterns of faunal exploitation and interpret them in the context of the Project as a whole. Patterns that may be revealed by faunal data include diachronic changes or continuity in subsistence activities, differences associated with microenvironmental setting; and differences associated with seasonality of occupation. Finally, faunal data will be interpreted in light of the availability and accessibility of the various resources represented.

At a minimum, the general size range of the faunal material from the sites (e.g., large or small mammal) will be presented for specimens that are not easily identifiable. In addition to taxa identification, when the faunal remains are of sufficient quality, MNI counts will be made and evidence of charring and butchering marks will be recorded.

### 5.4.9 Freshwater Mussel Shell Analysis

Freshwater mussels (Bivalvia–Unionoida) comprise a vital part of freshwater riverine ecosystems, including that of the Klamath River. Ethnographic accounts for the Klamath River Tribes note the

importance of freshwater mussel to Native American communities, both in terms of diet and for material culture. Historically, the river supported three North American mussel genera—*Anadonta*, *Gonidea*, and *Margaritifera* (Byron and Tupen 2017; Tennant 2010; USBR and CDFG 2012:3-19). Presently, the Klamath River system supports four freshwater mussel shell species: *Anodonta oregonensis* (swan mussels), *A. californiensis* (California floater), *Gonidea angulata* (Rocky Mountain ridged mussel), and western pearlshell mussel (*Margaritifera falcata*) (Byron and Tupen 2017; USBR and CDFG 2012:3-19).

Freshwater mussels are relatively slow-growing and long-lived, and each species has a unique ecological niche. At least 3 to 5 years are required for mussels to reach reproductive age, and life spans of up to 100 years have been reported. Growth of the shell is faster until maturity then slows considerably. It has long been known that freshwater mussels exhibit annual growth rings, resulting from dormancy or very slow growth during the winter and relatively rapid growth during the summer. This growth pattern indicates that seasonality and other archaeologically relevant information can be obtained through the study of growth rings.

Although freshwater mussel shell is not readily apparent in cut banks or on the surface of the Phase II sites, its presence in archaeological contexts at sites 35KL1459 and 35KL1469, coupled with the notations of mussel use in ethnographic records, suggests that discarded river mussel shell may be recovered during the testing phase. If identified among the Phase II sites, mussel shell will be collected, focusing on hinge elements. This will provide estimates of the minimum number of individuals represented. Particularly large or well-preserved nonhinge fragments will also be collected, as will samples of small fragments for radiocarbon dating. These data will be used to cross correlate individual specimens within and between any noted shell disposal features to help establish temporal relationships outside of obsidian hydration dating and typological artifact comparisons.

Mussel shell analysis will be conducted to determine species composition, season collected, age at death, and feature-use life. Also important will be an assessment of whether the shells were deposited by cultural or noncultural processes. Such data have the potential to contribute to research domains associated with settlement/subsistence studies and chronological reconstructions.

### 5.4.10 Paleoethnobotanical Analysis

Paleoethnobotanical data are crucial to addressing any research questions posed by archaeologists, including those relating to site function and subsistence practices. These data include macrobotanical information from flotation samples and archaeo-palynological data from analysis of organic residues. Exploitation and processing of plant resources and the effect that ecological changes may have had on attendant strategies and technologies are important issues for consideration.

Paleoethnobotany, or archaeobotany, focuses on the archaeological interpretation of the relationship between people and plants. This interpretation is informed through the recovery of plant macrofossils (e.g., seeds, chaff), microfossils (phytoliths and pollen), coprolites, or plant impressions in ceramic sherds and clay. A number of methods may be used to recover and identify plant remains.



Primary among these is flotation, which focuses on water processing of sediment from an archaeological feature or other context to separate heavy fraction (soil, sand) from light fraction (charred seeds, grains, or charcoal). Both fraction sets are then examined under low power microscope, and any plant macro-remains are quantified, described, and analyzed.

Ethnographic accounts for the Upper Klamath River Canyon Tribes indicate that food plant use varied regionally and was an important part of Native subsistence practices. Acorns were used extensively by the Shasta Indians but not by the Klamath or Modoc, who lacked such resources in their environment (Voegelin 1942). Among the Shasta, acorns were buried whole in mud and also allowed to dry, then pounded and processed into a meal that was leached in an earthen basin. Water lily seeds were a staple food for the Klamath and Modoc, but not reportedly used by the Shasta (Voegelin 1942). Sunflower seeds and *ipos* and other bulbs were eaten by all Upper Klamath River Tribes (Voegelin 1942). Seeds were ground or pounded and made into mush or eaten dry. The ethnographic record also notes that fish (salmon) and some deer bone and insects were ground for eating. Earth ovens were used to cook varying flesh and vegetable foods. Practices documented for tobacco use among the Eastern Shasta indicate they practiced horticultural methods, such as sowing seeds in ashes and thinning, as well as gathering tobacco from the wild (Todd 2007).

Previous archaeological studies conducted within the Upper Klamath River Canyon area have provided little information regarding paleoethnobotanical reconstructions. Early researchers either did not focus on collecting sediment samples for use in macrobotanical and archaeo-palynological analyses or, if collected, the samples were not processed and analyzed for such remains. Thus, it is not that the archaeological sites lack the potential for preservation of paleoethnobotanical materials, but more that this analytical technique had not been generally employed. Given the strong reliance on diverse plant and animal resources in the Native diet, coupled with the presence of cultural features such as fire hearth, middens, and house pits, it is anticipated that paleoethnobotanical remains will be encountered in site sediments. This observation is underscored in the research by Gleason (2001), where charred acorn samples were identified in flotation samples from Upper Klamath River sites.

Macrobotanical analysis of bulk soil samples collected from the John C. Boyle village site (35KL1943) identified samples of charcoal and seeds in the site matrix (Heizer et al. 2009). Identifiable charcoal specimens indicated the presence of birch, pine, and willow, all typical vegetation present along the Klamath River. Two charred goosefoot seeds were also recovered from the site.

Pollen and archaeobotanical analysis conducted for four Upper Klamath River Canyon sites (CA-SIS-1066, -1198, -1721, and -2136) revealed signatures of grass and composite pollen interpreted as evidence of cultural use (Smith 2006). Paleoethnobotanical analysis conducted for CA-SIS-1066 also yielded a low presence of charred seeds (Gleason 2003). These data provided information regarding Late Precontact period plant use in the canyon and established the potential for micro fossils to contribute to research regarding precontact subsistence practices.

Recent archaeological investigations conducted at CA-SIS-329, located on the Klamath River, 11 miles downstream of Iron Gate Dam, have shown the utility of archaeobotanical analysis for site interpretation. Flotation samples collected from a midden deposit and unit column samples yielded

an assemblage of charred nutshell fragments (mostly acorn), manzanita berry stones, and one rose family seed (Wohlgemuth 2015). These findings suggest that future archaeobotanical studies in the Klamath River Canyon have the potential to make meaningful contributions to the understanding of precontact plant use and human-habitat relationships (Wohlgemuth 2015).

For the Phase II sites, flotation samples will be collected from different contexts and will be analyzed to determine the extent of preservation, if any, of plant macro- and micro-fossils in the soils and to facilitate the collection of charcoal for radiocarbon dating. These samples will be collected from (1) cultural features, such as living surfaces (pit house floors) or fire hearths; (2) columns from selected excavation units (average of one column per site); and (3) midden soils, which promise to yield macrobotanical (seeds and wood) specimens in significant quantities. If preserved within the site matrix, plant remains may provide data concerning past botanical communities, environmental regimes, and subsistence practices.

Flotation samples taken from well-developed middens containing abundant charcoal will be collected from 20 × 20 cm columns, while any samples taken from leached midden, or midden with small amounts of charcoal, will be taken from 30 × 30 cm columns. If fire hearths or earth ovens are encountered, the entire interior area will be taken as a single flotation sample. This strategy will ensure that a sufficient sediment sample is obtained for the recovery of organic remains. The samples will be collected and initially processed, where initial sorting of heavy and light fractions will occur. In general, light fraction will be collected using 40 mesh/inch (0.4 mm) screen, and heavy fraction will be washed through 1/8-inch (3 mm) and 24 mesh/inch (0.7 mm) mesh. Light fraction will be size-sorted using increasing smaller screen (2-mm, 1 mm, etc.). The light fraction will then be microscopically examined for charred seeds, nutshell, wood fragments, and other identifiable plant material.

In addition to contributions from the study of bulk soil samples, archaeobotany offers additional analytical methods that may provide biological indicators and information regarding the function and character of archaeological remains for understanding past environment, human diet, and the function of particular objects such as stone tools and pottery. Such methods often focus on organic residue studies of plant microremains such as phytoliths, pollen, spores, and starch grains, as well as remains of animal products such as bone, fat, and oil for food or other practices using lipid analysis techniques. Organic residue analysis of pottery and stone artifacts may provide information regarding the types of plant or animal resources associated with artifact use, while similar analysis on items such as smoking pipes may provide information regarding pipe-smoked plants and smoking culture.

To minimize contamination and preserve any potential plant residues that may yet exist on an artifact, stone artifacts typically associated with plant food processing (such as pestles, millingstones, and handstones) as well as ceramic artifacts that often served as food vessels (Siskiyou Utility Ware pottery) or as smoking paraphernalia will be extracted with a clean trowel, wrapped in aluminum foil, and placed into labeled bags. A soil control sample will also be taken from the same location, because soils contain compounds such as bacteria and animal feces that can cause false positive reads for organic residues. Ground stone and ceramic artifacts will not be washed in the laboratory and will be minimally handled except to prepare them for dissemination to



the protein residue specialists. A project-wide sample of up to 25 ground stone artifacts and 25 ceramic artifacts and their associated soil samples will be submitted for protein residue analysis. Once these technical specialists have completed their analyses, the artifacts will be subject to standard techno-morphological analysis.

#### **5.4.11 Blood Residue Analysis**

The discovery of biologically active blood on prehistoric stone tools has the potential to provide information regarding archaeological tool use and targeted animal species that may otherwise be invisible in the archaeological record. Lithic artifacts may retain traces of blood residue from their original use. Through the application of immunological (CIEP) and biochemical techniques, the animal origin (either human or nonhuman) of the artifact may be identified through positive interaction with antisera, at least to the taxonomic level of the family, if not more specifically. Although the technique is accepted in principle, its validity and applicability remain a point of continued discussion. Most prudent is a multifaceted approach that establishes a link between an observed residue and its functional significance, based on multiple lines of evidence including site context, technology, wear traces, and taphonomic factors.

To collect suitable specimens for blood residue testing, it is necessary to wrap flaked stone tools (e.g., projectile points, scrapers, and bifaces) in foil as they are recovered from the field and secure them in sealable plastic bags without being handled. Also collected will be a small “pinch” (roughly 0.25 grams) of sediment near the artifact that will also be analyzed to provide verification that any noted residue is from the artifact and not its adjacent soil. Once in the laboratory, especially promising artifacts will be microscopically examined for the presence of shiny spots or unusually glossy surfaces that may be indicative of dried blood residue. Appropriate specimens, and their associated soils, will then be submitted for analysis. Project-wide, a total of approximately 25 stone tools and 25 soil specimens will be selected for blood residue analysis.

#### **5.4.12 Geomorphology and Sedimentology**

Geomorphology is concerned with study of natural landforms—their description, origin, processes, form, and sediments—at the surface of the Earth and the processes acting on them such as wind and rain. The linkage of scientific archaeology and geomorphology, referred to as geoarchaeology, provides a basis by which to study environmental reconstructions and conditions and process of site formation and destruction (Gladfelter 1977; Schiffer 1987). Sedimentology encompasses the study of sediments such as sand, mud (or silt), and clay and the various ways they were formed (e.g., erosion and weathering), transported (e.g., water and human influence), and deposited (siltation).

When combined, the study of geomorphology and sedimentology provide a crucial tool for understanding how archaeological sites were formed and what natural and cultural factors may have affected the nature and composition of their cultural deposits over time. Geomorphological analysis can contribute to site catchment analysis and the evaluation of ancient landscape in terms of settlement locations. Such analysis may also provide information regarding the effects of geological processes on the density and distribution of artifacts in a site (Kirkby and Kirkby 1976) and to an understanding of paleoenvironment and paleogeography. Sedimentological analysis of

archaeological deposits and associated sediments assist in reconstructing the developmental history of a site such as rate of deposition and patterns of accumulation or removal (Hassan 1979).

Geoarchaeological research has been conducted on a limited basis in the Upper Klamath River Canyon area, with a recent study by Hescok (2014) focused on the geomorphology and pedogenesis of a 5 RM stretch of the river reach segment between J.C. Boyle Reservoir and Copco Lake. The Phase II study seeks to build upon the research conducted by Hescok (2014) to provide site-specific geoarchaeological data and contribute to the understanding of landform formation and depositional processes that may have influenced precontact settlement patterns. To achieve this goal, the geomorphological investigation of the study sites will assist in providing data to (1) determine of the age(s) of site occupation, (2) identify processes that led to post-occupational transformations of the archaeological assemblage (site formational processes), and (3) identify geologic aspects of the site that relate to environmental conditions during occupation(s), including paleotopography. Collection of these data begins with an assessment of site topography and geomorphic setting, focusing on stratigraphy and sediments exposed in excavation units.

Geomorphic analysis will examine whether the site is in an aggradational, stable, or degradational (erosional) setting, providing key data for interpretation. Other relevant broad-scale information includes whether post-occupational sedimentation likely occurred in a high- or low-energy regime. High-energy sediments (e.g., colluvium) indicate that there may be little chance of recovering in situ cultural materials at depth. Geomorphic assessments of drainages near the site are also important. Many channels were as ephemeral during precontact times as they are today; however, historic diversion or damming of surface waters upstream and drawdown of the local water table has resulted in the desiccation of many once-perennial or seasonal streams.

The stratigraphy of an archaeological site often displays lateral variation that can potentially muddle the interpretation of depositional processes and hamper archaeological explanations. This is particularly the case when the number of excavation units is limited and they are separated from one another by several to tens of meters. A uniformly applied system of classification of sediment types, discontinuities, and soils, is valuable in interpretation of stratigraphic information. The US Department of Agriculture textural classification of clastic sediments will serve as an effective descriptive system, supplemented by determination of the degree of sorting, colors according to the Munsell system, and description of bedding (if any). The nature of the surface soil, as well as buried soils (paleosols), can provide important markers. Similarly, discontinuities (unconformities) provide important data whether they are accompanied by a paleosol or not, and their character is described (abrupt, wavy, conformable, etc.). These descriptive data will be assembled on standardized forms by the excavator under the direction of the PI or Field Director to assure that standard descriptive terms are used, while additional technical observations will be made by the Project Geoarchaeologist.

### 5.4.13 Historic Artifact Identification and Classification

Historic-period artifacts recovered during the Phase II study will be analyzed and placed into standard functional categories following the Sonoma State University's Historic Artifact Research Database (SHARD) system. Artifacts will first be separated into one of nine basic categories: Structural Artifacts (building materials and components), Furnishings (furniture and household

accessories), Personal Artifacts (clothing, adornments, and toiletries), Tools and Equipment (agricultural and animal husbandry, woodworking, maintenance), Transportation (wagons, harness), Subsistence (bottles, cans, and other containers), Recreational Artifacts (toys and games, hunting, fishing), Undefined Use, and Unclassifiable. Other categories will be added as necessary. Within each category, artifacts will be further sorted by subgroups, material, and other meaningful classes. All artifacts will be classified and identified to the finest categories possible to allow for intra-site comparability.

## 5.5 Phase II Evaluation Report

The Phase II Evaluation Report will provide a detailed overview of the investigations and document the contribution of the sites to regional research, their research potential, and their NRHP eligibility. AECOM will furnish a Draft Phase II Evaluation Report and revised site records to KRRC for dissemination to FERC and members of the CRWG within 6 months of the completion of fieldwork. The report will be consistent with the Oregon OHP's Guidelines for Reporting on Archaeological Investigations (Oregon SHPO 2015), California OHP's Archaeological Resource Management Report guidelines (OHP 1990), and the American Antiquity Style Guide. All maps, illustrations, charts, and tables intended for the Final Report will also be included in the Draft Report.

The PI will serve as the primary author of the Evaluation Report, assisted by Field Supervisors, Laboratory Director, and Project Geoarchaeologist, staff archaeologists, technicians, GIS specialists, clerical personnel, and graphic artists. Given the accelerated Project schedule, some aspects of report preparation may actually begin while fieldwork is underway. This is particularly indicated for description of field methods and preliminary appraisal of sample selection for analyses to be conducted by specialists (e.g., obsidian geochemistry and radiocarbon dating).

The integrated laboratory system for collections processing will augment the analysis element of the Phase II Evaluation Report. Cataloging will be concurrent with artifact processing (e.g., washing and sorting), using the field specimen log as the initial source of information for computerization of the catalog. When the processing of individual site collections is complete, the PI and Laboratory Director will select samples for specialized studies.

It is anticipated that the majority of recovered remains will be lithic types (flaked stone, ground stone), and reporting of these collections will begin after their analyses have been completed. A similar system will be adopted for other artifact classes, such as faunal remains and small finds, with initial data presentation in tabular form for inclusion in descriptive sections of the Evaluation Report; more detailed discussion will be presented in the Results and Synthesis sections of the report.

Site-specific field methods will be described by the PI and Field Supervisors on an on-going basis, typically at the completion of field investigations at a site. Using daily field notes, sampling strategies, unit placement criteria, and general field results will be defined. These notes will also contribute to initial assessment of sample section for specialized studies, as well as forming the basis for the Methods sections of the report.

At a minimum, the Draft and Final Phase II Evaluation Report will include an Executive Summary, Project Description, Cultural Context, Research Design, Methods, Investigation Results, Synthesis, and an appended Site Record update package. The Project Description section will include an overview of the Project, its purpose, geographical limits, regulatory context, and a summary of findings. The Cultural Context section will provide an overview of the environmental setting, cultural background, geomorphology, and previous studies. The Project's Research Design will be discussed, outlining salient themes and questions that formed part of the study. This will be followed by the Methods section, which will discuss specific field and laboratory strategies. Investigation Results will provide descriptions of the recovered materials on a site-by-site basis, excavation locations, surface collection and analysis units, and photos and illustration of soil profiles, features, and diagnostic artifacts. The Synthesis section will detail data analysis, cultural resource research questions addressed, and the methodology applied; regional implications of the data will also be discussed. The Management Recommendations section will include a NRHP assessment of each site that discusses site integrity, addresses specific eligibility criteria, evaluates Project effects on each site, and assesses treatment measures in light of the proposed Project. Determination of site significance is most often based on the identified integrity of resources, as well as the demonstrated contribution of site data to research domains and/or potential to provide additional data in such categories (see Chapter 7).

Updated State of California archaeological site records and State of Oregon Cultural Resource Site Records will be prepared for the Phase II sites to reflect the results of the testing and evaluation program. Revised site maps will delineate updated site boundaries as identified through surface survey and excavation work, as well as the location of all investigated units.

AECOM will provide twenty (20) bound copies of the Draft Report and appendices to the KRRC for dissemination to FERC and members of the CRWG. Following final review and acceptance, an estimated twenty (20) bound copies of the Final Report will be provided to KRRC, as well as one (1) copy on compact disc in Microsoft Word format. In addition to the Final Report, GIS data compiled will be provided on CD-ROM disc format.

## 5.6 Curation

As per the Project curation agreement, cultural materials recovered from the Phase II sites will be curated at the UOMNCH in Eugene, Oregon, which meets federal guidelines for curation of archaeological materials. All cultural materials collected during Project fieldwork will be processed for curation. The UOMNCH currently houses collections from a number of sites in the project area, and has agreed to curate both historic and precontact artifacts from Project site fieldwork in both Oregon and California. Upon completion of all investigation and reporting, AECOM will prepare all photographs and Project documentation for permanent archiving. Archival materials will be prepared for curation consistent with the UOMNCH guidelines. Site information, field records, journals, maps, photographs, negatives, and digital data, will be delivered to the UOMNCH at the same time as the artifact collections. The topic of curation has been ongoing with Tribes to include discussion regarding Tribe's interests in pursuing long-term curation of artifacts at Tribal facilities. Until such a time as decided, the UOMNCH has agreed to house all artifacts from Phase II investigations.

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## **Chapter 6: Site-Specific Research Methods**

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## 6. SITE-SPECIFIC RESEARCH METHODS

### 6.1 Introduction

Archaeological inventory and monitoring conducted to date within the Project's ADI, on PacifiCorp land, has identified 57 cultural resources properties (Table 6-1, Table 6-2), including 27 precontact, 16 historic-period, and 14 multiple-component resources. Of these, 55 resources are advanced for Phase II study (i.e., archival research, field review, and/or subsurface testing) based on research potential and anticipated Project effects based on the 100 percent Project designs. The remaining 2 will not be addressed during the Phase II study as they have been preliminarily assessed as Not Eligible for NRHP listing based upon current information and field data to date. If current Project designs are altered prior to testing completion and indicate no impact to any specific site, subsurface testing and other fieldwork may be modified to eliminate specific sites from Phase II study. Conversely, in some cases Phase II methodology was developed for sites for which no known project impacts are expected, but which may be candidates for last-minute Project design change impacts. In these cases, fieldwork will be postponed on these sites until/unless Project impacts are identified. Additionally, proposed field methods may require adjustments as fieldwork progresses to refocus collection and excavation procedures to maximize data quality or minimize disturbance from subsurface investigations. Any substantive adjustments to the field strategy (e.g., reduction or increase in proposed volume) will be determined within the professional discretion of the PI. As stated in Section 5.2, Tribal Archaeological Monitors will be present throughout the Project duration and will be involved in all decisions made during fieldwork. Additionally, if any significant changes to research strategies are deemed necessary due to situations encountered in the field, PacifiCorp, Oregon and California SHPO, and Tribal contact will be made via email a minimum of 48 hours prior to changes being implemented.

The cultural resources studies conducted in support of earlier Klamath River dam relicensing (PacifiCorp 2004, 2006) and decommissioning (Cardno ENTRIX 2012) provided preliminary NRHP recommendations for many of the current ADI sites based largely on surface constituents and informal assessment of a site's research potential. Because these previous projects did not reach implementation stage, the NRHP recommendations were not formalized or concurred upon by the California or Oregon SHPOs; thus sites are considered unevaluated until Phase II or formal Determinations of Eligibility are completed and concurred by the California and Oregon SHPOs for respective sites. All sites addressed in this Phase II study will undergo NRHP eligibility assessment based on all four criteria for evaluating the significance of archaeological properties: Criteria A - Event(s) and Broad Patterns of Events; Criteria B - Important Person(s); Criteria C - Design, Construction, and Work of a Master; and Criteria D - Information Potential (NPS 2000), as explored in Chapter 7.

Given the evolution of professional archaeology within the western United States and the rapidity with which human activity and developments can impact landform and landscape, current guidelines



and standards dictate that inventories performed more than 10 years ago are generally no longer considered valid in inventory protocol or reporting standards. Specifically in relation to this Phase II project, site information to date is lacking in accuracy of site boundaries and information regarding subsurface extent of sites. Therefore, site-specific archaeological field methods for the Phase II investigations have been developed in consideration of archival research, previous inventory information and limitations, proposed Project effects, as well as the research values and research potential each site currently holds based on 2018 and 2019 field review and site record updates. The 2018 and 2019 field review was performed as preface to the current Phase II fieldwork and all data gathered will be incorporated into Phase II documentation and reporting.

Presented below by reservoir (J.C. Boyle, Copco Lake, and Iron Gate) or non-reservoir area are descriptions of each site, highlighting salient assemblage characteristics and the proposed Phase II evaluation activities. Several tables present information regarding the Phase II sites. Table 5-1, presented in Chapter 5 above, provides summary information regarding the level of effort planned for each site. In this section, Table 6-1 provides a summary description of each site, its recordation and investigation history, current site condition and NRHP recommendation, and proposed Phase II work. Table 6-2 provides information regarding the anticipated Project-related impacts to the Phase II sites based on current Project data and information presented in the Project's Definite Plan. Figures 6-1 through 6-4 provide location maps for the proposed Phase II sites.

## **ATTACHMENT 5**

### **Phase II Archaeological Research Design and Testing Plan**

**Pages 249 to 407**

**REDACTED: Pages 249 to 407 of Attachment 5 consist in their entirety of information about the location, character, or ownership of historic resources that, if disclosed, may cause a significant invasion of privacy; cause a risk of harm to the historic resource; or impede the use of a traditional religious site by practitioners. These pages are labeled as “Privileged” in accordance with 18 C.F.R. § 388.112, 18 C.F.R. § 388.107 and 36 CFR § 800.11(c).**

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## **Chapter 7: Assessment of NRHP Eligibility**

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# 7. ASSESSMENT OF NRHP ELIGIBILITY

## 7.1 Resource Evaluation Approach

A primary goal of the Phase II plan is to evaluate the historical significance of individual sites or archaeological districts and whether they retain historical integrity and meet the NRHP Criteria for Evaluation. Based on the evaluation, and as adopted by the ACHP, determinations of eligibility for the NRHP and CRHR on sites and districts will be made consistent with Section 106 of the NHPA and its implementing regulations (36 CFR Part 800), and if applicable, 36 CFR Part 63. These determinations will rely, to the extent possible, on archival research, probing, testing, and analytical results. As discussed in general methodology (Chapter 5), the Phase II plan is designed to refine site boundaries, presence or absence of subsurface components, presence of features and multiple artifact classes, chronologically and functionally diagnostic artifacts, and previous impacts and overall site integrity.

As discussed in Chapter 5, Phase II fieldwork conducted on PacifiCorp land will focus on those areas that are not inundated by reservoir waters. Every effort will be made to coordinate with PacifiCorp for fieldwork to occur during reservoir drawdown or low water periods, maximizing access to portions of sites otherwise inundated and prioritizing site investigations upon greatest visibility. If Phase II fieldwork is unable to occur during drawdown or low water periods, however, and only part of a site, and not the entire site, is available for subsurface testing, including boundary delineation work, sites will be assessed for eligibility based on available data or fieldwork will be delayed until the next drawdown or low water period. For sites within Oregon, however, AECOM expects that if site boundaries are unable to be delineated due to submersion, then Oregon SHPO will maintain consideration of those sites as unevaluated and they will need to be mitigated for that status until they can be fully assessed within Oregon SHPO parameters.

As clarified by the ACHP, archaeological sites typically require some limited exploration to gather information needed to make an evaluation and to properly gauge their potential to yield information that contributes to our understanding of human history and prehistory and is considered important. Unlike large-scale data recovery excavation, however, Phase II testing is aimed at determining if the site should be considered eligible for listing in the NRHP. Archival data, oral history, ethnographies, and information and insight resulting from Tribal consultation, combined with minimal site testing to determine nature, size, limits and contents of a site, can effectively facilitate significance and integrity assessment as it pertains to NRHP criteria and eligibility. While archival data and previously gathered oral histories and ethnographic information can be readily available in various repositories and can provide useful data, Tribal consultation can be a valuable tool in identifying or defining areas of significance in relation to the archaeological sites and vicinities that are the focus of this plan. To date, no formal concerns regarding areas of significance in the form of TCPs or SCRs have been put forth, nor submitted to either Oregon or California SHPOs; however, further insight may be sought from continued consultation with Tribes if analysis of cultural materials, synthesized with

archival research, indicate a site's significance for NRHP eligibility. This further consultation would maintain awareness of confidentiality and sensitivity concerns for Tribes and any associated information would remain confidential and protected from public disclosure specifically under 36CFR800.11(c) and Section 304 of the NHPA.

The NRHP is the official federal list of historic properties, including districts, sites, buildings, structures, and objects significant in American history, architecture, archeology, engineering, and culture. A historic property may be of national, state, or local significance, and is defined as the place or places where the remnants of a past culture survive in a physical context that allows for the interpretation of those remains. The quality of significance is measured in level of integrity of location, design, setting, materials, workmanship, feeling and association.

The significance of a property is best judged and explained when it is evaluated within its historic context or how it relates to its geographic area, prevailing historical/precontact themes, and chronological period (Wyatt 2009). By exploring the patterns or trends by which a specific occurrence, property, or site is understood, its meaning and comparative significance within history or prehistory is made clear (NPS 1997a). It serves as the framework within which NRHP criteria are applied to specific properties. A key principle of historic contexts is that resources, properties, or events do not occur in isolation but reflect larger historical developments, associations, and/or patterns.

After identifying the relevant historic context with which a property is associated, four criteria of evaluation are considered to assess significance for NRHP listing. These criteria serve as the standards by which every property nominated to the NRHP is judged. The criteria are written broadly to recognize the nation's wide variety of historic properties and to identify the range of resources and kinds of significance that qualify properties for NRHP listing. The criteria recognize associative, design, and information values, as listed in 36 CFR Part 60, and associated guidelines in National Register Bulletins 15 and 36 (NPS 1997a, 2000):

1. Criterion A: associated with events that have made significant contributions to the broad pattern of our history; or
2. Criterion B: associated with the lives of persons significant in our past; or
3. Criterion C: embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
4. Criterion D: have yielded, or may be likely to yield, information important in prehistory or history.

To be listed in the NRHP, a property must not only be shown to be significant under one or more criteria, but it also must have integrity as related to the Criterion or Criteria under which it is being nominated (NPS 1997a, 2000). Within the concept of integrity, the NRHP recognizes seven aspects or qualities that, in various combinations, define integrity (NPS 1997a, 2000). The seven aspects of integrity are (NPS 1997a, 2000):

1. Location – where the historic property was constructed or where the event occurred;

2. Design – elements combined that create the property’s form, plan, space, structure and style;
3. Setting – physical environment, including topographic features, landscape and artificial features, open space, viewsheds, and vegetation;
4. Materials – physical elements combined or deposited during a time period, reflective of particular patterns or configurations, that form the historic property;
5. Workmanship – physical evidence of a particular culture’s or people’s labor and skill during a period in history;
6. Feeling – property’s conveyance of aesthetic or sense for the contextual period of time;
7. Association – direct link between the contextual person or event and the historic property; in relation to Criterion D, this is the strength of association between data potential and important research questions.

In short, integrity refers to the level of site preservation as well as to the quality of information recovered from that site. As stated, “integrity is the ability of a property to convey its significance” and “to retain historic integrity a property will always possess several, and usually most, of the aspects” (NPS 1997a, 2000). Because it is recognized that all properties change over time, it is not necessary for one to retain all historic physical characteristics or features. It must, however, retain essential physical characteristics or features that enable it to convey its historic identity that define why it is significant and when it was significant (NPS 1997a).

Generally speaking, an archaeological site must possess relatively intact deposits if being considered under Criteria D. Even if such deposits lie within fluctuating reservoir drawdown zones, as is the case for the current Project, or if they have been subject to other natural or human caused disturbances an archaeological site may still be considered to have integrity relative, but not limited, to association between data and important research questions, such as (NPS 2000):

- Can materials demonstrate the presence of spatial patterning of surface or subsurface artifacts or features, within this site or with regards to intrasite comparison?
- Is there a lack of serious disturbance to archaeological deposits?
- Are identifiable activity areas and time frames of use identifiable?
- Are there identifiable changes to the property over time?
- Is there quality of documentary record relative to occupation and use of the property over time, when applicable?

Additionally, under Criterion D integrity aspects of location, design, and materials may also apply (NPS 2000) relative to research questions.



With respect to significance and integrity under Criteria A and B, archaeological sites and sites possessing traditional cultural value are commonly examined under the integrity aspects of location, design, setting, materials, feeling, and association (NPS 2000), but are not limited to these. Such property may possess integrity if the location and setting appears much as it would have during the time period related to Criteria A and/or B. If the property shows design or material elements characteristic of the time period related to Criteria A and/or B, it may be found to retain integrity. This may be reflected in the layout or planning on a large-scale, such as a village or activity areas, or presence of materials and their patterns still observable in the archaeological record relative to a specific aspect of Criteria A and/or B (NPS 1997a, 1997b, 2000).

Archaeological sites assessed under Criterion C often include integrity aspects of design, materials, and workmanship (NPS 2000). Integrity of design tends to be paramount when considering Criterion C as it pertains to patternings of discrete activity areas, or features such as structures or buildings having high artistic value or distinctive expressive value. If these patterns and/or features of an archaeological site create recognizability of the site conveyed to the significance Criterion or Criteria nominated, then integrity would be considered intact. With reference to sites possessing traditional cultural value, an example is a petroglyph or pictograph site that is highly coveted by Tribes as reflective of distinct images providing meaning within Tribal tradition. Further, an area possessing traditional cultural value associated with, or representative of, an entity (e.g., resource on the landscape representative of a larger traditional use, or visually distinguishable landmarks that figure prominently in traditional history), or the work of a master displayed via the quality of the workmanship alone (even though precise identity is not known), can be considered under integrity of design, materials, and workmanship (NPS 1997b).

Also important for assessing NRHP eligibility is consideration of the type of site that is being investigated. Important in this regard is an evaluation of the data that may be retrieved and how that information may contribute to the understanding of similar site types on both a local and regional level. For example, sites that address "data gaps," or areas where little or no documented archaeological research exists, may be eligible for their contribution to expanding and enhancing the archaeological record.

It is important to note that not every archaeological site is eligible for NHRP listing because not all archaeological sites possess both significance and sufficient integrity to be considered eligible. Sites may be deemed important to a group or community, or people may feel that, as a place of ancestral occupation or activity, these sites possess a value that should be recognized. This does not, however, always equate to the requisite significance for NRHP eligibility purposes. To be eligible for listing on the NRHP, archaeological sites must meet at least one of the four NRHP criteria (A through D, listed above) and possess integrity. If the historic property bears no resemblance to its historic appearance and/or does not contain diagnostic materials to date its occupation, for instance, it would not likely be found to be eligible for listing in the NRHP.

Determination of site significance is most often initially based on the integrity of resources as well as the demonstrated contribution of site information to research domains and/or potential to provide additional data in such categories. For the current investigation, NRHP recommendations will be derived through examination of archaeological materials observed at sites, presence or absence of

subsurface deposits, degree of impacts, and discussions of research potential, including how these cultural materials relate to historic documentary records (for historic-period sites), Tribal oral histories and narratives, and other sites identified during the literature review or investigated as a part of this Project. To assist in determining a site's potential to yield additional information, data necessary to address specific research questions identified in the Research Design (see Chapter 4) will be considered within categories, as will indications that sufficient quantity of cultural materials exist to provide a meaningful sample. The following research domains include site characteristics/factors that will be considered during the evaluation process.

If a resource is determined eligible to the NRHP, Section 106 and its implementing regulations (36 CFR Part 800) require that effects of a proposed project to that resource be assessed. If NRHP listed or eligible properties are identified and will be adversely affected by the project implementation, then measures to avoid, minimize, or otherwise mitigate any adverse effects must be taken. If adverse effects are anticipated, the ACHP, SHPO, Tribes (if they ascribe significance to the resource), and other consulting parties must be provided an opportunity to review and comment on these measures. The public and other applicable consulting parties must also be notified of project impacts upon historic properties. Section 106 and its implementing regulations (36 CFR Part 800) implement these consultation and notice requirements.

### **7.1.1 Precontact Resources**

1. Environmental Variability and Paleoenvironmental Change
  - a) Archaeofaunal, palynological, and macrobotanical remains
  - b) Micro-environmental data
  - c) Geomorphological data
2. Cultural Chronology
  - a) Identifiable single-occupation sites or components
  - b) Stratigraphy that exhibits cultural integrity and/or identifiable patterns in formation
  - c) Temporally diagnostic artifacts
  - d) Sufficient samples of obsidian suitable for geochemical and hydration analysis
  - e) Samples of organic materials suitable for radiocarbon analysis
3. Settlement and Subsistence Strategies
  - a) Identifiable single-occupation sites or components
  - b) Stratigraphy that exhibits cultural integrity and/or identifiable patterns in formation
  - c) Well-preserved faunal and floral remains representative of dietary practices
  - d) Discrete cultural features, including hearths, living surfaces, structures, and other architectural remains
  - e) Multiple artifact classes representing varied resource processing activities
  - f) Multiple artifact classes representing varied site activities or intra-site patterning
4. Lithic Manufacturing Technologies
  - a) Identifiable single-occupation sites or components
  - b) Stratigraphy that exhibits cultural integrity and/or identifiable patterns in formation
  - c) Temporally and functionally diagnostic artifacts

- d) Sufficient quantities of obsidian and nonobsidian debitage and lithic formed tools for technological analysis and identification of manufacturing strategies, recycling practices, and artifact reuse
- e) Sufficient samples of obsidian suitable for geochemical and hydration analysis
- 5. Material Conveyance Strategies
  - a) Identifiable single-occupation sites or components
  - b) Stratigraphy that exhibits cultural integrity and/or identifiable patterns in formation
  - c) Temporally diagnostic artifacts for use in examining diachronic patterns in material conveyance
  - d) Sufficient quantities of obsidian for geochemical sourcing
  - e) Sufficient quantities of obsidian and nonobsidian debitage and lithic formed tools for the study of manufacturing strategies, recycling practices, and artifact reuse
  - f) Small finds (beads and ornaments) that may assist in identification of interaction spheres and conveyance networks

## 7.1.2 Historic-Period Resources

- 6. Site Function Organization
  - a) Stratigraphy that exhibits cultural integrity and/or identifiable patterns in formation
  - b) Temporally diagnostic artifacts
  - c) Identification of surviving features and artifact discard patterns
  - d) Artifact attribute analysis to create chronologies
- 7. Chronology
  - a) Identifiable single-occupation sites or components
  - b) Stratigraphy that exhibits cultural integrity and/or identifiable patterns in formation
  - c) Temporally diagnostic artifacts
- 8. Consumer Behavior and Socioeconomic Status
  - a) Intact domestic house features with buried deposits
  - b) Temporally diagnostic artifacts that reflect geographical origins
- 9. Commodity Markets, Distribution Networks, and Market Access
  - a) Identification of market-oriented artifacts such as consumables and inexpensive manufactures
  - b) Identification of labor-related artifacts such as relatively expensive or inexpensive mass-produced items
  - c) Quantity and relative percentages of artifacts by market type and access area compared with other rural sites in Oregon and California
- 10. Subsistence Practices
  - a) Well-preserved faunal and floral remains representative of dietary practices, butchering marks, and meat cuts
  - b) Sufficient quantities of identifiable commercially vs. home produced goods
  - c) Sufficient quantities of items with information pertaining to content, brand names, and trademarks of food containers
- 11. Recreational Behavior

- a) Artifacts associated with leisure and sporting activity
- b) Artifacts associated with indulgences or conspicuous consumption

#### 12. Social Complexity

- a) Artifacts related to consumer procurement, use, and discard associated with sex, gender, age, ethnicity, and/or religious affiliation

#### 13. Industrialization and Technology

- a) Functionally and temporally diagnostic artifacts
- b) Detailed recordation of features

Using these research domain categories, eligibility determinations and recommendations for the Phase II site will apply all four NRHP criteria. Support will include information for horizontal and vertical boundaries, site integrity, historical research (if applicable), tribal information (if available), and cultural constituents.

Once site boundaries have been established (see Chapter 6) and the significance of each site has been determined, or its contribution to an archaeological district(s) assessed (see Section 7.2), the next step will be to assess the effects of the Project on NRHP eligible properties. The most current and updated construction plans and site characteristics specific to the ADI will be examined to this end.

According to 36 CFR 800.5, the Project would adversely affect a NRHP eligible/NRHP listed archaeological site (i.e., historic property) if the Project would "alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association." Examples of potential adverse effects include:

- Physical destruction of or damage to all or part of the property;
- Alteration of a property including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation and provision of handicapped access, that is not consistent with the Secretary's Standards for the Treatment of Historic Properties (36 CFR part 68) and applicable guidelines;
- Removal of the property from its historic location;
- Change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance; and
- Introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features.

Recommendations for avoidance, effect minimization, and/or mitigation will be the final element of the Evaluation Report. If data recovery (Phase III) is indicated, recommendations for such work will be noted and discussed.

## 7.2 Resource Types

Cultural resources inventories conducted within the Project ADI have resulted in the identification and recordation of 57 archaeological sites on PacifiCorp land. Collectively, these resources include 27 precontact, 16 multiple-component, and 14 historic-period sites. For management and evaluation purposes, and in keeping with guidelines for NRHP nominations (NPS 1997a), these properties will be evaluated within the context of two resource types: archaeological sites and archaeological districts.

Precontact and historic-period archaeological resources are typically classified as sites, representing properties listed under a single category, using the primary resource (e.g., building, structure, or site). A site can possess associative significance or information potential or both and can be significant under any or all of the four NRHP criteria. As defined in National Register Bulletin 15 (NPS 1997a) a site:

- Is the location of a significant event, a precontact or historic occupation or activity, or a building or structure, whether standing, ruined, or vanished, where the location itself possesses historic, cultural, or archeological value regardless of the value of any existing structure.
- A site can possess associative significance or information potential or both, and can be significant under any or all of the four criteria. A site need not be marked by physical remains if it is the location of a precontact or historic event or pattern of events and if no buildings, structures, or objects marked it at the time of the events. However, when the location of a precontact or historic event cannot be conclusively determined because no other cultural materials were present or survive, documentation must be carefully evaluated to determine whether the traditionally recognized or identified site is accurate.
- A site may be a natural landmark strongly associated with significant precontact or historic events or patterns of events, if the significance of the natural feature is well documented through scholarly research. Generally, though, the NRHP excludes from the definition of "site" natural waterways or bodies of water that served as determinants in the location of communities or were significant in the locality's subsequent economic development. Although they may have been "avenues of exploration," the features most appropriate to document this significance are the properties built in association with the waterways.

Archaeological sites, buildings, and structures may also be considered elements of an archaeological district, if they are linked precontactally or historically by chronological period, function, or theme. National Register Bulletin 15 (NPS 1997a) notes that:

- A district derives its importance from being a unified entity, even though it is often composed of a wide variety of resources. The identity of a district results from the interrelationship of its resources, which can convey a visual sense of the overall historic environment or be an arrangement of historically or functionally related properties. For example, a district can reflect one principal activity, such as a mill or a ranch, or it can encompass several interrelated activities, such as an area that includes industrial, residential, or commercial buildings, sites, structures, or objects. A district can also be a grouping of archeological sites

related primarily by their common components; these types of districts often will not visually represent a specific historic environment.

- A district must be significant, as well as being an identifiable entity. It must be important for historical, architectural, archeological, engineering, or cultural values. Therefore, districts that are significant will usually meet the last portion of Criterion C plus Criterion A, Criterion B, other portions of Criterion C, or Criterion D.
- A district can comprise both features that lack individual distinction and individually distinctive features that serve as focal points. It may even be considered eligible if all of the components lack individual distinction provided the grouping achieves significance as a whole within its historic context. In either case, the majority of the components that add to the district's historic character, even if they are individually undistinguished, must possess integrity, as must the district as a whole.
- A district can contain buildings, structures, sites, objects, or open spaces that do not contribute to the significance of the district. The numbers of noncontributing properties a district can contain yet still convey its sense of time and place and historical development depends on how these properties affect the district's integrity. In archaeological districts, the primary factor to be considered is the effect of any disturbances on the information potential of the district as a whole.
- A district must be a definable geographic area that can be distinguished from surrounding properties by changes such as density, scale, type, age, style of sites, buildings, structures, and objects, or by documented differences in patterns of historic development or associations. It is seldom defined, however, by the limits of current parcels of ownership, management, or planning boundaries. The boundaries must be based upon a shared relationship among the properties constituting the district (NPS 1997a).

The draft Historic Properties Management Plan prepared by PacifiCorp in 2006 for the Klamath Hydroelectric Project relicensing study identified three potential precontact archaeological districts within the Upper Klamath River Canyon area (PacifiCorp 2006). Each of these proposed districts was noted as a significant concentration of sites within a geographical area and, in keeping with 36 CFR 60.3(d), would entail designation as a distinct district of precontact use that probably was a place of past cultural activity, not limited to a specific site but to the general location and the series of sites (PacifiCorp 2006). These three proposed districts are located at (1) the mouth of the Keno reach in the Klamath River Canyon in Oregon (at and near the mouth of Spencer Creek), (2) on and near the mouth of Shovel Creek in California, and (3) at the mouth of the Copco No. 2 reach in California, in the Klamath River Canyon (at and upstream of the mouth of Fall Creek on Iron Gate reservoir). None of the sites within these potential districts has been determined eligible for listing in the NRHP. At that time, preliminary NRHP eligibility information was based on current (2006) and past recommendations by professional archaeologists and were noted as subject to SHPO and FERC concurrence (PacifiCorp 2006).

Located at and around the mouth of Spencer Creek, in the upper J.C. Boyle Reservoir pool, in Oregon, the proposed Spencer Creek District comprised a series of eight archaeological sites that appeared to represent a distinct geographical area of precontact occupation and area use. The eight sites (35KL1942, 35KL2397, 35KL2399, 35KL2401, 35KL2411, 35KL2412, 35KL2428, and



35KL2430) are located on both sides of J.C. Boyle Reservoir and represent an intensive use of the immediate landscape, with at least seasonal settlement in a village setting, with midden soils present at multiple sites and house pit features reported at 35KL1942 (PacifiCorp 2006). Site activities likely included intensive fishing, hunting, and gathering of resources. Rock art (cupule boulders) at this and other proposed districts reinforce identification of these specific landscapes as communally identified places (PacifiCorp 2006). All eight of these sites are part of the proposed Phase II study.

The second possible archaeological district was identified for the mouth of Shovel Creek, in California (PacifiCorp 2006). Termed the Shovel Creek District, this area consists of five precontact archaeological sites considered to represent an important tribal crossroads. The sites include archaeological remains from the dense midden and rock cupules at CA-SIS-2578 (Locus 1); the bedrock milling stations, lithic scatter, and recorded house pit features at CA-SIS-2567; and the midden and lithic scatter at CA-SIS-1839H. One additional site, a salmon-calling location at the creek's mouth (CA-SIS-2578 [Locus 2]), was noted as possibly not retaining archaeological data of scientific value, but yet might be considered to contribute to the district's importance and NRHP eligibility as a Shasta heritage site, under Criterion A (PacifiCorp 2006:6-22). The contribution of an unrecorded Modoc cremation site (identified in an 1884 photograph) was noted as unknown, although this site was considered as one of the five sites encompassing the proposed district. Although available information on these five sites was noted as limited, the area appeared to contain data that would contribute to the sum of the sites at this location (PacifiCorp 2006). None of the five Shovel Creek sites are within the Project ADI and thus are not considered as part of the proposed Phase II study.

The third possible archaeological district consists of three precontact sites at the mouth of Fall Creek, in California. Termed the Fall Creek District, associated sites included CA-SIS-2239/3923, CA-SIS-2403, and CA-SIS-3933. The extensive and multifaceted cultural remains noted at these sites suggested that the area was extensively used during the late precontact period, reflecting village settlements and an important fishing complex (PacifiCorp 2006). All three of the proposed Fall Creek District sites are located within the current Project's ADI and included in the proposed Phase II study.

In addition to these three proposed districts, PacifiCorp (2006) noted that several other locations along the Klamath River corridor, outside of the Project boundary and APE for its relicensing project, exhibited significant concentrations of potentially related archaeological sites that could be considered archaeological districts. These other locations, comprising archaeological sites in the Laik'elmi/Frain Ranch area, at Keno Dam, and around Gorr Island, are also outside of the current Project area.

Subsequent to the archaeological district discussions advanced by PacifiCorp in 2006, the BLM has newly designated the Upper Klamath River Stateline Archaeological District (BLM 2016) along the Klamath River, in California, less than 0.5 mile from the California-Oregon border. The district encompasses three precontact village sites (contributing) and one lithic scatter (noncontributing). Archaeological research indicates site use in the district extended from ca. 1,000 years before the Common Era (BCE) or earlier to possibly as late as 1840 BCE (BLM 2016). The district was determined eligible for the NRHP at the local level of significance under Criterion D in the areas of



Precontact Archaeology, Native American Ethnic Heritage, Commerce, Economics, Religion, and Politics/Government. The California SHPO concurred with the district's eligibility for the NRHP.

The preceding review follows an integrated approach for assessing the NRHP eligibility for archaeological sites subject to Phase II investigations. In this approach, the investigation will consider sites under two different rubrics: for their potential significance as individual properties (sites) or for their potential significance and/or contributions as part of a larger archaeological district. To arrive at this determination, archaeological testing and analysis results will inform inter-site analyses and assessments to identify the contextual environment, trends, patterns, linkages, and continuity between the individual sites that may point towards association with each other as a larger archaeological district(s). Once individual sites are assessed for NRHP eligibility, interrelationships between sites will be assessed for visual, or landscape, continuity or common component based upon identified features, artifact assemblages, and informational themes. While this Phase II study has posited specific research themes, identification of districts may not be limited to association with those research themes, because of the fluid and non-vacuous nature of archaeological research.

If analyses support the establishment of an archaeological district(s) within the Project area, associated resources will be determined as contributing or noncontributing elements to the district. District boundaries will be based on the shared relationship among its constituent properties. The district will be assessed for its NRHP significance using the four criteria of evaluation (Criteria A, B, C, and D) and the seven aspects of integrity (location, design, setting, materials, workmanship, feeling, and association) (NPS 1997, 2000), keeping in mind that noncontributing properties can assist to convey contextual information, but must also possess aspects of integrity to maintain the potential district's integrity (NPS 1997).

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## **Chapter 8: References**

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## 8. REFERENCES

### Advisory Council on Historic Preservation (ACHP)

- 1980 Treatment of Archeological Properties: A Handbook. Advisory Council on Historic Preservation. Washington, DC.

### Aikens, C. M.

- 1993 *Archaeology of Oregon*. US Department of the Interior, Bureau of Land Management.

### Aikens, C. M., and D. L. Jenkins (editors)

- 1994 Archaeological Researches in the Northern Great Basin: Fort Rock Archaeology since Cressman. *University of Oregon Anthropological Papers* 50. Eugene, Oregon.

### Aikens, C. M., and R. Minor

- 1978 Obsidian Hydration Dates for the Klamath Prehistory. Tebiwa: *Miscellaneous Papers of the Idaho State Museum of Natural History* 4.

### Ames, K. M., D. E. Dumond, J. Galm, and R. Minor

- 1998 The Prehistory of the Southern Plateau. In *Plateau*, edited by Deward E. Walker, Jr. pp. 103-119, *Handbook of North American Indians* 12, William G. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

### Ames, K. L., and D. G. Maschner

- 1999 *Peoples of the Northwest Coast: Their Archaeology and Prehistory*. Thames and Hudson, London.

### Anderson, A., and D. L. Cole

- 1964 *Salt Cave Dam Reservoir Archaeological Project 1963. Interim Report: Excavations at Site SC-1*. Report to Pacific Power and Light Company (COPCO Division). Manuscript on file at the Museum of Natural History, University of Oregon, Eugene.

### Anderson, D.

- 1974 Beswick or Klamath Hot Springs. In *The Siskiyou Pioneer: Upper Klamath River Issue*, pp. 33-37. Siskiyou County Historical Society, Yreka, California.

### Anderson, Adrian D., and David L. Cole

- 1964 Salt Caves Dam Reservoir Archaeological Project – 1963. Interim Report. Excavations at Site SC-1. University of Oregon Museum of Natural History, Eugene, Oregon. Submitted to Pacific Power & Light Company (COPCO Division).

### Antevs, E.

- 1940 Age of Artifacts below Peat Bed in Lower Klamath Lake, California. *Carnegie Institution of Washington Yearbook* 39:307-309.
- 1955 Geologic-Climatic Dating in the West. *American Antiquity* 20:317-337.

Bancroft, Hubert Howe

- 1888 *Annals of the California Gold Era: Being That Part of the Author's Series on the History of California Covering the Gold Discovery Period, 1848-1859*. Bancroft, New York.

Barnowsky, C. W., P. M. Anderson, and P. J. Bartlein

- 1987 The Northwestern U.S. During Deglaciation; Vegetational History and Paleoclimatic Implications. In *The Geology of North America, Volume K-3, North America and Adjacent Oceans during the Last Deglaciation*, pp. 289-321, edited by W.F. Ruddiman and H.E. Wright, Jr. Geological Society of America, Boulder, Colorado.

Barrett, S. A.

- 1910 The Material Culture of the Klamath Lake and Modoc Indians of Northeastern California and Southern Oregon. *University of California Publications in American Archaeology and Ethnology* 5(4):239-292.

Barrett, S. R.

- 2009 *Anthropology. A Student's Guide to Theory and Method*. 2nd Edition. University of Toronto Press.

Barry, J. N.

- 1933 Astorians Who Became Permanent Settlers. *The Washington Historical Quarterly* 24(3):221-301.

Basgall, M. E.

- 1987 Paleoindian Occupation in Central-eastern California: The Komodo Site. *Current Research in the Pleistocene* 4:50-54.

Basgall, M. E. and W. R. Hildebrandt

- 1989 Prehistory of the Sacramento River Canyon, Shasta County, California. *Center for Archaeological Research at Davis, Publication No. 9*, University of California, Davis.

Baxter, P. W. and T. J. Connolly

- 2015 Chapter 14: Obsidian Use in the Willamette Valley and Adjacent Western Cascades of Oregon. In *Toolstone Geography of the Pacific Northwest*, edited by Terry L. Ozburn and Ron L. Adams, pp. 218-233. Archaeology Press, Simon Fraser University.

Beaton, John

- 1991 Paleoindian Occupation Greater than 11,000 Years B.P. at Tule Lake, Northern California. *Current Research in the Pleistocene* 8:5-7.

Beck, R. K.

- 2008 Transport Distance and Debitage Assemblage Diversity: An Application of the Field Processing Model to Southwestern Utah Toolstone Procurement Sites. *American Antiquity* 73(4):759-780.

Beckham, S. D.

- 2006 Historical Landscape Overview of the Upper Klamath River Canyon of Oregon and California. *Cultural Resource Series No. 13. Bureau of Land Management, Oregon State Office.* US Department of the Interior.

Bend Bulletin

- 1960 "Agreement Made on Power Merger: PP&L Due to Absorb COPCO Firm." 30 December. Bend, Oregon

Bennyhoff James A., and Robert F. Heizer

- 1958 Cross-dating Great Basin Sites by California Shell Beads. *University of California, Archaeological Survey Report* 42:60–92.

Bennyhoff, James A., and Richard E. Hughes

- 1987 Shell Bead and Ornament Exchange Networks between California and the Western Great Basin. *Anthropological Papers of the American Museum of Natural History New York* 64(2):80- 175.

Berg, Francis

- 1996 *Archaeological Reconnaissance of the Silva Land Exchange Project, Siskiyou County, California.* Report on file, USDI Bureau of Land Management, Redding, California.

Berreman, J. V.

- 1937 Tribal Distribution in Oregon. *Memoirs of the American Anthropological Association* No. 47. American Anthropological Association, Menasha, Wisconsin.

Bevill, Russell, Michael S. Kelly, and Elena Nilsson

- 1994 *Archaeological Data Recovery at 35D037, A Pre-Mazama Site on the South Umpqua River, Douglas County, Southwest Oregon.* Mountain Anthropological Research, Chico, California. Submitted to US Department of Agriculture, Umpqua National Forest, Roseburg, Oregon.

Binford, L. R.

- 1963 A Proposed Attribute List for the Description and Classification of Projectile Points. In *Miscellaneous Studies in Typology and Classification* by A. White, et al., *University of Michigan Museum of Anthropology, Anthropological Paper* 19, Ann Arbor.
- 1972 *An Archaeological Perspective.* Academic Press, New York.

Bird, D. W., and J. F. O'Connell

- 2006 Behavioral Ecology and Archaeology. *Journal of Archaeological Research* 14:143-188.

Bowden, J.

- 2002 Land, Lumber Companies and Mills in the Klamath Basin – 1864 – 1950. The Timber Industry in the Klamath Basin. *The Journal of the Shaw Historical Library* 16. Oregon Institute of Technology.



- 2003 *Railroad Logging in the Klamath Country*. Oso Publishing Company, Hamilton, Montana.
- Bower, John
- 1986 *In Search of the Past: An Introduction to Archaeology*. The Dorsey Press, Chicago.
- Boyle, J. C.
- 1962 Honoring John C. Boyle [program pamphlet]. Presented to Luncheon Program Guests, Winema Hotel, Klamath Falls, Oregon, June 25 (item #2016.002.0435, Klamath County Museum).
- 1976 *50 Years on the Klamath*. Klocker Printery, Medford, Oregon. First printing 1976, second printing 1982.
- Brauner, D., and R. Nisbet, Jr.
- 1983 *The Reevaluation of Cultural Resources within the Applegate Lake Project Area, Jackson County, Oregon; Phase III: Archaeological Salvage of Sites 35JA52 and 35JA53*. Department of Anthropology, Oregon State University, Corvallis. Submitted to US Army Corps of Engineers, Portland District.
- Bright, W.
- 1978 Karok. In *California*, edited by Robert F. Heizer, pp. 180-189. *Handbook of North American Indians* 8, William G. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.
- Broughton, J. M.
- 1994 Late Holocene Resource Intensification in the Sacramento Valley, California: The Vertebrate Evidence. *Journal of Archaeological Science* 21:501-514.
- Broughton, J. M., and J. F. O'Connell
- 1999 On Evolutionary Ecology, Selectionist Archaeology, and Behavioral Archaeology. *American Antiquity* 64:153-165.
- Bureau of Land Management (BLM)
- 2010 *Reclamation Managing Water in the West: Environmental Assessment Resighini Rancheria Water Resources Development Project*. USDI, Bureau of Land Management. [usbr.gov](http://usbr.gov).
- 2016 National Register of Historic Places Registration Form for the Upper Klamath River Stateline Archaeological District, Beswick Vicinity, Siskiyou County. On file, Bureau of Land Management, Redding, California.
- Burnett, Peter
- 1851 State of the State Address, January 6, 1851. Electronic document, [http://governors.library.ca.gov/addresses/s\\_01-Burnett2.html](http://governors.library.ca.gov/addresses/s_01-Burnett2.html), accessed March 1, 2019.

Butler, Virginia

- 2018 Luther Cressman (1897-1944). The Oregon Encyclopedia. Electronic document, available [https://oregonencyclopedia.org/articles/cressman\\_luther\\_1897\\_1994\\_/](https://oregonencyclopedia.org/articles/cressman_luther_1897_1994_/), accessed January 17, 2019.

Butler, V. L. and J. E. O'Connor

- 2004 9,000 Years of Fishing on the Columbia River. *Quaternary Research* 62(1):1-8.

Byron, Earl, and Jeff Tupen

- 2017 Mussels of the Upper Klamath River, Oregon and California. California Fish and Game 10(3):21-26. Electronic document, [https://www.researchgate.net/publication/319040881\\_Mussels\\_of\\_the\\_upper\\_klamath\\_River\\_Oregon\\_and\\_California](https://www.researchgate.net/publication/319040881_Mussels_of_the_upper_klamath_River_Oregon_and_California), accessed January 4, 2018.

California Office of Historic Preservation (OHP)

- 1990 *Archaeological Resource Management Reports (ARMR): Recommended Content and Format*. California Office of Historic Preservation, Sacramento, California.

California-Oregon Power Company (Copco)

- 1923 The California Oregon Power Company Klamath County Survey (available at University of Oregon, Knight Library, call no. 330.979591, C128).

Callahan, Errett

- 1979 The Basics of Biface Knapping. In *The Eastern Fluted Point Tradition: A Manual for Flintknappers and Lithic Analysts*. *Archaeology of Eastern North American* 7:1-180.

California Department of Transportation (Caltrans)

- 2013 *Work Camps: Historic Context and Archaeological Research Design*. Cultural Studies Office, Division of Environmental Analysis, California Department of Transportation, Sacramento.

Cardno ENTRIX

- 2012 *Klamath Secretarial Determination Cultural Resources Report*. Cardno ENTRIX, Inc. Prepared for the US Bureau of Reclamation.

Chatters, J.

- 1986 *Shell of *Margaritifera margaritifera falcata* as a Source of Paleoenvironmental and Cultural Data, Pit 3, 4, 5, Shasta County, California*. Archaeological Report 86-5, Central Washington Archaeological Survey, Central Washington University, Ellensburg, Washington.

Cheatham, Richard D.

- 1990 Archaeological Investigations at Collier State Park. *Current Archaeological Happenings in Oregon* 15(2):7-11.

- 1991 Archaeological Investigations at the Williamson River Bridge Site (35KL677): A Riverside Fishing Camp in Klamath County, Oregon. *Oregon State Museum of Anthropology Report 91-7*. University of Oregon, Eugene.

Cheatham, Richard D., Mark Robinson, Thomas J. Connolly, Guy L. Tasa, Vivien J. Singer, Dorothy E. Freidel Melissa Cole Darby, Nancy A. Stenholm, and Cheryl Allen

- 1995 Archaeological Investigations at the Bezuksewas Village (35KL778), Klamath County, Oregon. *Oregon State Museum of Anthropology Report 95-5*. University of Oregon, Eugene.

City of Klamath Falls

- 1986a *Application for License Salt Caves Hydroelectric Project Volume III: Exhibit E, Sections 4.0 Report on Historic and Archaeological Resources*. Submitted to Federal Energy Regulatory Commission, Washington D.C.

- 1986b *Draft: Application for License Salt Caves Hydroelectric Project Second Stage Consultation*. Confidential Report on Historic and Archaeological Resources. Submitted to Federal Energy Regulatory Commission, Washington D.C.

Clauder, D. S.

- 1964 Klamath Lake R. R. *The Western Railroader for the Western Rail Fan* 27(3).

Cleland, J.

- 1997a *Prehistory of the Middle Pit River, Northeastern California, Archaeological Investigations at Lake Britton, Pit 3, 4, and 5 Project*. KEA Environmental, Inc., San Diego, California. Submitted to Pacific Gas and Electric Company, San Francisco, California.

- 1997b Cultural Chronology. In *Prehistory of the Middle Pit River, Northeastern California*, edited by J.H. Cleland, pp. 69-78. KEA Environmental, Inc., San Diego and Dames and Moore, Inc., Chico. Submitted to Pacific Gas and Electric Company, San Francisco, California.

Clewett, S. E., and E. Sundahl

- 1982a *Clikapudi Archaeological District: 1981 Field Research*. Shasta College Archaeology Lab, Redding. Submitted to USDA Forest Service, Shasta-Trinity National Forests, Redding.

- 1982b *Archaeological Testing for the Hartnell Avenue Extension Project, Redding, California*. Shasta College Archaeology Lab, Redding.

- 1983 *Archaeological Excavations at Squaw Creek, Shasta County, California*. Shasta College Archaeology Lab, Redding. Submitted to USDA Forest Service, Shasta-Trinity National Forests, Redding.

Cole, David L.

- 1965 *Preliminary Report Archaeological Excavations at the Keno Development*. Manuscript on file, Oregon State Museum of Anthropology, University of Oregon, Eugene.

Collins, M. B.

- 1975 Lithic Technology as a Means of Processual Inference. In *Lithic Technology Making and Using Stone Tools*, edited by Earl Swanson, pp. 15-34. Mouton Publishers, The Hague.

Connolly, Thomas J.

- 1987 *Archaeological Survey of the Green Springs Highway-Midland Junction Section, The Dalles-California Highway (US 97), Klamath County*. Report on file, Oregon Department of Transportation, Salem.
- 2011 Archaeology, History, and Community: An Enduring Legacy at Beatty, Klamath County. *Oregon Historical Quarterly* 112(1):107-110.

Connolly, Thomas J., and Guy L. Tasa

- 1993 *Cemetery Discovered During Construction of the Klamath River Bridge. The Dalles-California Highway (US 97), Klamath County*. Report on file, Oregon Department of Transportation, Salem.

Cooper, Martha Alice

- 1973 As Told To Me, May 5, 1948. *Klamath Echoes* 11:87-88. Klamath Falls, Oregon.

Coville, Frederick

- 1897 Notes on the Plants Used by the Klamath Indians of Oregon. *US Government Printing Office* 5(2). Washington, D.C.
- 1904 Wokas, a Primitive Food of the Klamath Indians. *United States National Museum (Report of 1902)*, pp. 725-739. Washington, D.C.

Covina Argus Newspaper

- 1920 "Klamath Hot Springs: Noted Mineral Springs in a Country Where Fish and Game Abound." December 10, page 24. Covina, California.

Cressman, Luther S.

- 1937 The Wikiup Damsite No. I Knives. *American Antiquity*, 3(1), 53-67.
- 1940 Studies on Early Man in south Central Oregon. *Carnegie Institution of Washington Yearbook* 39:300-306. Washington, D.C.
- 1942 Archaeological Researches in the Northern Great Basin. *Carnegie Institute of Washington Publication* 538. Washington, D.C.
- 1956 Klamath Prehistory. *Transactions of the American Philosophical Society* 46(4). Philadelphia.
- 1960 *Archaeological Work in the Iron Gate Reservoir, Siskiyou County, California*. Prepared by the University of Oregon and the California-Oregon Power Co. for Mr. J. C. Boyle, Vice President and General Manager, COPCO.

Cressman, Luther S., and John Wells

- 1962 *Salt Caves Dam Reservoir Interim Report*. Prepared by the University of Oregon for Pacific Power and Light Company.

Cressman, Luther S., and Michael D. Olien

- 1962 *Salt Caves Dam Reservoir Interim Report*. Prepared by the University of Oregon for Pacific Power and Light Company.

1963

Cressman, Luther S., H. Williams, and A. D. Krieger

- 1940 *Early Man in Oregon. University of Oregon Monographs, Studies in Anthropology* 3. Eugene.

Cumming, A. M., and Allan Dunn

- 1911 *"The Klamath Region."* California for the Sportsman – Southern Pacific.

Curtis, Edward S.

- 1924 *The Shasta*. In *The North American Indian Being a Series of Volumes Picturing and Describing the Indians of the United States, The Dominion of Canada, and Alaska*, edited by Frederick Webb Hodge, pp. 105-126. Johnson Reprint Company, New York.

Daily Siskiyou News

- 2018 "Siskiyou County through the Lens: Klamath River Area." 26 March. Yreka, California. Electronic document, <http://www.siskiyoudaily.com/photogallery/ca/20180326/photogallery/326009999/PH/1?start=2>, accessed June 20, 2018.

Dalldorf, G.

- 2013 *Extended Phase I Geoarchaeological Investigations at CA-SIS-329, Siskiyou County, CA, Collier SRRA Project: PM 58.0, ES 02-4E6700; E-FIS 0212000031.0, 03A1577*. Pacific Legacy, Inc., El Dorado Hills, California. Prepared for the California Department of Transportation, District 2, Redding, California.

Daniels, B. I.

- 2003 *Resilience of the Shasta Indian Community, 1850-1990*. Unpublished Master's thesis, Department of Anthropology, San Francisco State University.
- 2006 *Shasta Nation TCP Study*. Prepared for PacifiCorp, Portland, Oregon.

Davis, Wilbur A.

- 1968 *Salvage Archaeology of the Lost Creek Dam Reservoir: Final Report*. Report of the Oregon State University, Corvallis. Submitted to the National Park Service.
- 1970 *Lost Creek Archaeology 1968, Final Report*. Report of the Oregon State University, Corvallis. Submitted to the National Park Service.

Deich, L.

- 1977 Fluted Point Base from Western Oregon. *Current Archaeological Happenings in Oregon* 2(1).

Delacorte, Michael

- 1995 Desert Side-notched Points as a Numic Population marker in the West-Central Great Basin. Paper presented at the 29th Annual Meeting of the Society for California Archaeology, Eureka, California.
- 1997 *Cultural Change along the Eastern Sierra Nevada/Cascade Front, History of Findings, Volume I*. Far Western Anthropological Research Group, Archaeological Research Service, and J.R.P. Historical Consulting. Prepared for Tuscarora Gas Transmission Company, Reno.

Delacorte, Michael, and Mark E. Basgall

- 2006 *Archaeological Assessment of Seven Prehistoric Loci at CA-BUT-362/H at McCabe Creek, Butte County, California, Oroville Facilities Relicensing FERC Project No. 2100*. Archaeological Research Center, Department of Anthropology, California State University, Sacramento. Prepared for the State of California, The Resources Agency, Department of Water Resources, Sacramento.

DeSantis, Vincent P.

- 1989 *The Shaping of Modern America: 1877-1920, Second Edition*. Forum Press, Arlington Heights, Illinois.

Deur, Douglas

- 2003 *Summary Report: Traditional Cultural Properties and Sensitive Resource Study Klamath Tribes, Klamath Hydroelectric Project FERC Licensing Documentation*. Submitted to The Klamath Tribes, PacifiCorp, and CH2M Hill.
- 2009 A Caretaker Responsibility: Revisiting Klamath and Modoc Traditions of Plant Community Management. *Journal of Ethnobiology* 29. 296-322.
- 2011 *The Klamath Tribes: An Ethnographic Assessment of Cultural Resource Impacts. Prepared for Secretarial Determination Klamath Hydroelectric Project EIS*. Submitted to The Klamath Tribes and the US Bureau of Reclamation and California Department of Fish and Game.

Dicken, S. N.

- 1980 Pluvial Lake Modoc, Klamath County, Oregon and Modoc and Siskiyou Counties, California. *Oregon Geology* 42:11, 179-187.

Dicken, S. N., and E. F. Dicken

- 1985 The Legacy of Ancient Lake Modoc: A Historical Geography of the Klamath Lakes Basin. Copyright by Samuel N. Dicken and Emily F. Dicken. Electronic document, [http://www.oregon.gov/oprd/HCD/OHC/docs/klamath\\_klamathbasin\\_context.pdf](http://www.oregon.gov/oprd/HCD/OHC/docs/klamath_klamathbasin_context.pdf), accessed March 22, 2018.

Dillon, Richard

- 1975 *Siskiyou Trail The Hudson's Bay Fur Company Route to California*. McGraw-Hill Book Company.

Dixon, R.B.

- 1907 The Shasta. *Bulletin of the American Museum of Natural History* 17(5):381-498. American Museum of Natural History, New York.

Dixon, R. B., and A. L. Kroeber

- 1913 Relationship of the Indian Languages of California. *Science* 37 (945):225.

Doremus, Holly D., and A. Dan Tarlock

- 2008 *Water War in the Klamath Basin: Macho Law, Combat Biology, and Dirty Politics*. Island Press, Washington D.C.

Drew, H. J.

- 1974 Early Transportation on Klamath Waterways. *Klamath County Museum Research Paper Number 6*. Klamath County Museum, Klamath Falls, Oregon (available at the Oregon Historical Society).
- 1979 Pages from The Past. *Klamath County Museum Research Paper Number 8*. Klamath County Museum, Klamath Falls, Oregon (available at the Oregon Historical Society).

Drucker, Philip A.

- 1936 A Karuk World-Renewal Ceremony at Panaminik. *University of California Publications in American Archaeology and Ethnology* 35(3): 23–28.

DuBois, C.

- 1939 The 1870 Ghost Dance. *University of California Anthropological Records* 3(1):1-151.

Dunn, Robert A., Lawson M. Smith, Hollis H. Allen, and Hugh M. Taylor

- 1996 Managing Historic Properties in Drawdown Zones at Corps of Engineers Reservoirs: Three Case Studies. *US Army Corps of Engineers Technical Report EL-96-14*. Washington DC.

Dyck, John

- 1982 A Clovis Point from Southwest Oregon. *Ohio Archeologist* 32(2):32.

East, Claudia

- 2015 Yreka History: The Chinese in Yreka. Electronic document: [http://yrekahistory.blogspot.com/2015/12/the-chinese-in-yreka.html?\\_sm\\_au\\_=iVVFIkHI5pDnF4FH](http://yrekahistory.blogspot.com/2015/12/the-chinese-in-yreka.html?_sm_au_=iVVFIkHI5pDnF4FH), accessed July 22, 2019.

Eerkens, J.

- 2003 Towards a Chronology of Brown Ware Pottery in the Western Great Basin: A Case Study from Owens Valley. *North American Archaeologist* 24(1):1-27.



Eerkens, J. W., J. R. Ferguson, M.D. Glascock, C.E. Skinner, and S. A. Waechter

2007 Reduction Strategies and Geochemical Characterization of Lithic Assemblages: A Comparison of Three Case Studies from Western North America. *American Antiquity* 72(3):585-597.

Elliott, Daniel R.

1990 *Historical Archaeology at the Tate Creek Logging Camp, CA-SIS-1535-H, of the McCloud River Lumber Company, Siskiyou County, California*. USDA, Shasta-Trinity National Forests.

Epley, Malcolm

1964 Camp Day. *Klamath Echoes* 1: 11-12. Klamath Falls, Oregon.

Erlandson, Jon M., Douglas J. Kennett, Brendan J. Culleton, Ted Goebel, Greg C. Nelson, and Craig Skinner

2014 Eyed Bone Needles from a Younger Dryas Paleoindian Component at Tule Lake Rock Shelter, Northern California. *American Antiquity* 79(4):776-781.

Evening Herald [Klamath Falls]

1920 "Keno Clippings." The Evening Herald. 22 November, p. 3. Klamath Falls, Oregon.

1925 "Klamath Has Remarkable Poultry Ranch; Chickens Are Raised On Rim Of Canyon." 6 April. Klamath Falls, Oregon.

1929 "Lamm Builds Road." The Evening Herald. 2 November. Klamath Falls, Oregon.

Fagan, John L., Robert M. Burnett, David V. Ellis, Melissa Lee, Jo Reese, Billy Ray Roulette, Douglas C. Wright, Julia J. Wilt, and John S. Witherow

1992 Northwest Pipeline System Expansion Project: Cultural Resources Assessment Report: Oregon Segments Phase 2: Testing, Site Evaluation, and Impact Assessment. *Archaeological Investigations Northwest Report No. 23*. Portland, Oregon.

Fagan, J. L., D. C. Wilson, T. J. Hills, S. Hess, J. Wollin, E. E. Forgeng

1994 *Cultural Resources Inventory and Site Testing Plans for the Proposed Pacific Gas Transmission Company's Medford Extension, Volume 1*. Prepared for CH2M HILL, Corvallis, Oregon, and Pacific Gas Transmission Company, Sacramento, California, by Archaeological Investigations Northwest, Inc.

Federal Register

2008 Notice of Inventory Completion: Phoebe A. Hearst Museum of Anthropology, University of California, Berkeley, Berkeley, CA. Electronic document, <https://www.federalregister.gov/documents/2008/08/29/E8-20092/notice-of-inventory-completion-phoebe-a-hearst-museum-of-anthropology-university-of-california>, accessed January 9, 2019.

## Federal Works Agency

- 1941 Inventory of the County Archives of Oregon. No. 18. Klamath County. Works Projects Administration. Oregon Historical Records Survey (available at Klamath Falls Library).

## Felton, David L., Frank Lortie, and Peter D. Schulz

- 1984 The Chinese Laundry on Second Street: Archeological Investigations at the Woodland Opera House Site. In *The Chinese Laundry on Second Street: Papers on Archeology at the Woodland Opera House Site. California Archaeological Reports* 24:1-120. State of California, Department of Parks and Recreation, Sacramento.

## Federal Energy Regulatory Commission (FERC)

- 2007 Final Environmental Impact Statement for Hydropower License, Klamath Hydroelectric Project FERC Project No. 2082-027. November 2007. pp. 2-14; 3-62 through 3-94; and 3-539 through 3-543.

## Flenniken, J. J.

- 1981 Replicative Systems Analysis: A Model Applied to the Vein Quartz Artifacts from the Hoko River Site. Washington State University Laboratory of Anthropology Reports of Investigations No. 59. Washington State University, Pullman.

## Ford, Phil

- 1969 "Strictly Fishing At Copco Lake." *The Times* (San Mateo). July 3.

## Foster, D.

- 2002 Refuges and Reclamation: Conflicts in the Klamath Basin, 1904-1964. *Oregon Historical Quarterly* 103 (2): 150-187.

## Foster, John M., Roberta S. Greenwood, and Ann Duffield

- 1988 Work Camps in the Upper Santa Ana River Canyon (Contract No. DACW09-86-D-0034). Greenwood and Associates. Report to U.S. Army Corps of Engineers, Los Angeles District. Los Angeles, California.

## Franklin, J. F., and C. T. Dyrness

- 1973 Natural Vegetation of Oregon and Washington. USDA Forest Service Technical Report PNW-8. US Government Printing Office, Washington, D.C.

## Fredrickson, D. A.

- 1973 Early Cultures of the North Coast Ranges, California. Ph.D. Dissertation, University of California, Davis.
- 1984 The North Coastal Region. In *California Archaeology*, pp. 471-527, edited by Michael J. Moratto. Academic Press, Inc.

## French, Eugene H.

- 1990 Cottonwood – Henley and Fort Klamath. In *Cottonwood Henley 1851- Hornbrook 1887- Klamathon 1888-1909*, edited by Eugene French, p. 26.

French, H.

- 1915 Siskiyou County, California. Issued by The Board of Supervisors and the Panama-Pacific International Exposition Commission of Siskiyou County, California. Electronic document, <http://soda.sou.edu/awdata/060307a1.pdf>, accessed July 10, 2018.

Friedman, Irving, R. S. Smith, and William D. Long

- 1966 The Hydration of Natural Glass and the Formation of Perlite. *Bulletin of the Geological Society of America* 77:323-330.

Fuller, B. T.

- 1998 Immunological Identification of Ancient Proteins on Grinding Stones by CIEP Analysis and the Use of OCR to Date Archaeological Soil Samples. Senior Thesis, Pomona College, Claremont, California.

Gates, T.

- 2003 *Ethnographic Riverscape: Regulatory Analysis. Klamath Hydroelectric Project FERC No. P-2082-027*. Prepared by Yurok Tribe Heritage Preservation Office for PacifiCorp.

Gatschet, Albert S.

- 1890 The Klamath Indians of Southwest Oregon. US Geographical and Geological Survey of the Rocky Mountain Region. *Contributions to North American Ethnology* 2(1, 2).

Gauntt, T.

- 2012 Hall of Fame: Prospect No. 1 Honored for 100 Years of Operation. Hydro Review. Electronic document, <https://www.hydroworld.com/articles/hr/print/volume-31/issue-07/articles/hall-of-fame-prospect-no-1-honored-for-100-years-of-operation.html>, accessed October 22, 2018.

Gifford, Edward W.

- 1939a Karok Field Notes. Bancroft Library, University of California, Berkeley.  
1939b Karok Narratives. Bancroft Library, University of California, Berkeley.  
1940 Karok Field Notes. Bancroft Library, University of California, Berkeley  
1947 Californian Shell Artifacts. *University of California Anthropological Records* 9(1). Berkeley.

Gladfelter, B. G.

- 1977 Geoarchaeology: the Geomorphologist and Archaeology. *American Antiquity* 42(4):519-538.

Gleason, S. M.

- 2001 In Search of the Intangible: Geophyte Use and Management along the Upper Klamath River Canyon. Unpublished Ph.D. dissertation, University of California–Riverside.

- 2003 Paleoethnobotanical Analysis of Paradise Craggy, CA-SIS-1066. In *Test Excavations at Paradise Craggy Village (CA-SIS-1066/H), Upper Klamath River, Northern California* by Joanne M. Mack. United States Department of the Interior, Bureau of Land Management, Redding Resource Area, Redding, California.
- Gobalet, K. W.
- 2018 Comments on the Evaluation of Fish Remains from Several Archaeological Sites on the Klamath River, Oregon, and California. Unpublished manuscript in the possession of the author and researcher Joanne Mack.
- Gobalet, Kenneth W., and Terry L. Jones
- 1995 Prehistoric Native American Fisheries of the Central California Coast. *Transaction of the American Fisheries Society* 124 (6).
- Goddard, Pliny Earle
- 1903 Life and Culture of the Hupa. *University of California Publications in Archaeology and Ethnology*, Volume 1, Number 1. Berkeley, California
- Grayson, Donald K.
- 1976 The Nightfire Island avifauna and the Altithermal. In *Holocene Climates and Ecological Change in the Great Basin*, edited by R. Elston, *Nevada Archaeological Survey Research Reports* No. 6.
- 1993 *The Desert's Past: A Natural Prehistory of the Great Basin*. Smithsonian Institution Press, Washington and London.
- Guernsey, J.
- 1957 Basin Potential Outlined At Teacher Session: Speakers Emphasize Natural Resources. *Herald and News*. 1 September. Klamath Falls, Oregon.
- Hall, Betty
- 2009 Historical Records of the Klamath River Its People and Fish. Manuscript in possession of the author.
- Hall, Betty Lou, and Monica Jae Hall
- 2004 Shasta Nation. *Images of America Series*, Arcadia Publishing.
- Hamilton, J. B., G. L. Curtis, S. M. Snedaker, and D. K. White
- 2005 Distribution of Anadromous Fishes in the Upper Klamath River Watershed Prior to Hydropower Dams – A Synthesis of the Historical Evidence. *Fisheries* 30(4).
- Hamilton, John B., Dennis W. Rondorf, William R. Tinniswood, Ryan J. Leary, Tim Mayer, Charleen Gavette, and Lynne A. Casal
- 2016 The Persistence and Characteristics of Chinook Salmon Migrations to the Upper Klamath River Prior to Exclusion by Dams. *Oregon Historic Society Quarterly* 117 (3): 326-377.

Hamusek, Blossom, and Jeffrey Haney

- 2001 *Archaeological Investigations for A-'chit'-ter-rah'kah—A Portion of CA-SIS-329 along the Klamath River in Siskiyou County, California*. California Department of Transportation, District 2, Redding, California.

Hamusek, B., E. W. Ritter, and J. A. Burcell

- 1996 *A Cultural Resource Survey of Eastern Shasta Valley, Siskiyou County, California*. Bureau of Land Management, Redding.
- 1997 *Archaeological Explorations in Shasta Valley, California*. Cultural Resources Publications, Bureau of Land Management, Redding, California.

Hansen, Henry P.

- 1947 Postglacial Forest Succession, Climate, and Chronology in the Pacific Northwest. *Transactions of the American Philosophical Society* 37.

Hassan, F. A.

- 1979 Geoarchaeology: The Geologist and Archaeology. *American Antiquity* 44(2):267-270.

Hatch, E.

- 1973 *Theories of Man and Culture*. Columbia University Press, New York.

Hayden, B. E.

- 1941 Water, The Life Giver. In *The History of Klamath County, Oregon*. Klamath County Historical Society, Klamath Falls, Oregon.

Haynal, P.

- 2000 Termination and Tribal Survival - The Klamath Tribes of Oregon. *Oregon Historical Quarterly* 101. 271-301. Oregon Historical Society.

Hazelett, S.

- 2010 'Let Us Honor Those To Whom Honor Is Due': The Discovery of the Final Link in the Southern Route to Oregon. *Oregon Historical Quarterly* 111(2):220-248.

Heileman, W. H.

- 1908 The Klamath Irrigation Project. US Reclamation Service (Southern Oregon Historical Society, John C. Boyle Collection, Box 3, Vol. 7, Set #2/Klamath River).

Heffner, Sarah

- 2018 Yreka Project. *PAR Environmental Newsletter* 22(1-2):8-9. Sacramento, California.

Heffner, Sarah C., with contributions by Andrea E. Maniery

- 2019 Archaeological Investigations of 委李架埠 Yreka's Chinese Community. California State Parks Cultural Resources Division *Publications in Cultural Heritage* 36. McClellan, California. In-press.

Heizer, Robert F.

- 1942 Massacre Lake Cave, Tule Lake Cave, and Shore Line Sites. In *Archaeological Researches in the Northern Great Basin*, edited by L.S. Cressman, pp. 121-134. Carnegie Museum of Washington Publications, Washington D.C.

Heizer, M., J. Dexter, and B. O'Neill

- 2009 Macrobotanical Analysis at the John C. Boyle Village Site. In *Archaeological Investigations at the Klamath River (Spencer) Bridge, Klamath County, Oregon*, by Brian O'Neill and Thomas J. Connolly, pp. 57-61. *Museum of Natural and Cultural History and State Museum of Anthropology University of Oregon Museum Report* 2009-065.

Helfrich, Devere

- 1966 Klamath Lake Railroad. *Klamath Echoes* (3):56.
- 1969 Keno and Vicinity. *Klamath Echoes* 7:47-50. Klamath Falls, Oregon.
- 1971 The Applegate Trail. *Klamath Echoes* 9:1-106.
- 1973 Martin Frain, Pioneer of Klamath County. *Klamath Echoes* 11:101.

Hendryx, Michael, and James T. Rock (editors)

- 1990 The Chinese in Siskiyou County, a Glimpse from Yreka. *Siskiyou Pioneer* 6(3). Yreka, California.

Henry, S. L.

- 1991 Consumers, Commodities, and Choices: A General Model of Consumer Behavior. *Historical Archaeology* 25(2):3014.

Herald and News

- 1948 "Car Caravan Retraces Old Emigrant Road In Tour Of Early Day Historic Spots." July 15. Klamath Falls, Oregon.
- 1953 "Fire Levels Old Mill Site." 17 January. Klamath Falls, Oregon.
- 1957a "Topsy Grade Trip Scenic Day's Drive." July 14. Klamath Falls, Oregon.
- 1957b "Historical Group Plans Field Trip." May 31. Klamath Falls, Oregon.

Hescock, S.

- 2014 Geoarchaeological Research within Five River Miles of the Upper Klamath River Canyon: Use of Pedogenic Properties to Calculate Alluvial Terrace Age. Master's Thesis, Oregon State University.

Hessig, Alice Overton

- 1978 *Looking Back: The California-Oregon Stage Road from Ager, California to Topsy, Oregon*. Printers Inc., Carson City, Nevada.

Hester, Thomas Roy

- 1973 Chronological Ordering of Great Basin Prehistory. *Contributions of the University of California Archaeological Research Facility* 17.

Hewes, Gordon W.

- 1947 Aboriginal Use of Fishery Resources in Northwestern North America. Ph.D. dissertation, University of California, Berkeley.

Hinds, N. E.

- 1952 Evolution of the California Landscape. *California Division of Mines Bulletin* 158. Sacramento.

Holt, Catherine

- 1946 Shasta Ethnography. *University of California Anthropological Records* 3(3). Berkeley.
- 1991 Plants, Humans, and Culture: An Edible Model of Consumer Behavior. *Historical Archaeology* 25(2):46-61.

Holtz, Preston E.

- 1977 Geology of the Yreka Quadrangle, Siskiyou County, California. Geological Survey Bulletin 1436, USDI, Geological Survey. United States Government Printing Office, Washington, D. C.

Hoover, M., H., R. E. Rensch, and W. Abeloe

- 2002 *Historic Spots in California*. Fifth Edition. Stanford University Press, Stanford, California.

Howe, Carrol B.

- 1968 *Ancient Modocs of California and Oregon*. Binford and Mort.

Hughes, Richard E.

- 1983 Exploring Diachronic Variability in Obsidian Procurement Patterns in Northeast California and Southcentral Oregon: Geochemical Characterization of Obsidian Sources and Projectile Points by Energy Dispersive X-ray Fluorescence. Ph.D. dissertation, Department of Anthropology, University of California, Davis.
- 1985 Obsidian Sources. In Nightfire Island Later Holocene Lakemarsh Adaptation on the Western Edge of the Great Basin, by C. Garth Sampson, pp. 245-268. *University of Oregon Anthropological Papers* 33, Eugene.
- 1986 Diachronic Variability in Obsidian Procurement Patterns in Northeast California and Southcentral Oregon: Geochemical Characterization of Obsidian Sources and Projectile Points by energy Dispersive X-ray Fluorescence. *University of California Publications Anthropology* (17). University of California Press, Berkeley.
- 1988 The Coso Volcanic Field Reexamined: Implications for Obsidian Sourcing and Hydration Dating Research. *Geoarchaeology* 3:253-265.



- 1989 A New Look at Mono Basin Obsidians. In *Current Directions in California Obsidian Studies*, edited by R.E. Hughes, pp. 1-12. *Contributions to the University of California Archaeological Research Facility* 48, Berkeley.
- 1994a Mosaic Patterning in Precontact California-Great Basin Exchange. In *Precontact Exchange Systems in North America*, edited by T. Baugh and J.E. Ericson, pp. 363-383. Plenum Press, New York.
- 1994b X-Ray Fluorescence Letter Report on artifacts from Sites CA-SIS-1198 and 35KL791, June 10. Geochemical Research Laboratory, Portola Valley.
- 1997 On Reliability, Validity, and Scale in Obsidian Sourcing Research. In *Unit Issues in Archaeology: Measuring Time, Space, and Material*, edited by A. F. Ramenofsky and A. Steffen, pp. 103-114. University of Utah Press, Salt Lake City.

Huelsbeck, D. R.

- 1991 Faunal Remains and Consumer Behavior: What Is Being Measured? *Historical Archaeology* 25(2):62-76.

Jenkins, Bill

- 1960 "Copco Lake Proposed As New Park Site." *Herald and News* [Klamath Falls]. January 10.

Jenkins, Richard C.

- 2000 Investigation of a Siskiyou County Bead Collection. *Society for California Archaeology Newsletter* 34(4), pp. 34-35.

Jensen, Peter M.

- 1986 Application for License: Salt Caves Hydroelectric Project Initial Stage Consultation. Section 4.0 Report on Historic and Archaeological Resources. Submitted to the City of Klamath Falls, Oregon.

Jensen, P. M., and A. Farber

- 1982 *Archaeological Data Recovery Program at CA-SIS-342 on 02-Sis-97 P.M. 41.5 to 42*. Submitted to California Department of Transportation, Sacramento.

Jensen and Associates

- 1987 *Additional Information Supporting: Report on Historical and Archaeological Resources for the Salt Caves Hydroelectric Project, Klamath County, Oregon (FERC No. 10199-000)*. Prepared for the City of Klamath Falls, Klamath Falls, Oregon and Resource Management International, Inc., Sacramento, California.

Jester, D.

- 2016 "Siskiyou Supes Adopt Shasta Tribal Homeland Map." Siskiyou Daily News, Yreka, California. Electronic document: <http://www.siskiyoudaily.com/article//20160915//NEWS//160919839>.

Johnson, Jerald J.

- 1966 Archaeological Investigations at 4-SIS-258. Unpublished manuscript.

Johnson, L.

- 1969a *The Klamath Basin Archaeological Project. Research proposal submitted to the National Science Foundation.* Manuscript on file, Museum of Natural History, University of Oregon, Eugene.
- 1969b Obsidian Hydration Rate for the Klamath Basin of California and Oregon. *Science* 165:1354-1356.

Johnson, C.G., Jr., R. R. Clausnitzer, P. J. Mehringer, Jr., and C. D. Oliver

- 1994 Biotic and Abiotic Processes of Eastside Vegetation: The Effects of Management on Plant and Community Ecology, and on Stand and Landscape Vegetation Dynamics. General Technical Report PNW-GTR-322. US Forest Service Pacific Northwest Research Station, Portland.

Johnston, J., and E. Nilsson

- 1983 *Archaeological Investigations at the Meek Site, CA-SIS-900, Siskiyou County, California.* Mountain Anthropological Research, Yreka, California. Submitted to Siskiyou County Department of Public Works, Yreka.

Jones, J. Roy

- 1953 *Saddle Bags in Siskiyou.* News-Journal Print Shop, Yreka, California.
- 1971 *The Land of Remember.* Naturegraph Publishers, Inc., Happy Camp, California.

Jones, John W.

- 2011 *Test Excavations at Site 35KL3594 Keno, Klamath County, Oregon.* Native-X Inc. Archaeological Services, Reno. Prepared for Hart Crowser, Beaverton, Oregon.

Jones, T. L., and W. Hildebrandt

- 1995 Reasserting a Prehistoric Tragedy of the Commons: Reply to Lyman. *Journal of Anthropological Archaeology* 14:78-98.

Justice, Noel D.

- 2002 *Stone Age Spear and Arrow Points of California and the Great Basin.* Indiana University Press, Bloomington, Indiana.

Keeley, Lawrence H.

- 1980 *Experimental Determination of Stone Tool Uses: A Microwear Analysis.* University of Chicago Press.

Kelly, Michael S., Elena Nilsson, and James H. Cleland

- 1987 *Archaeological Investigations at Lake Britton, California: Pit 3, 4, 5 Project (License No. 233) Archaeological Testing.* Wirth Environmental Services, San Diego. Submitted to Pacific Gas and Electric Company, San Francisco.

Kelly, R. L.

1985 Hunter-Gatherer Mobility and Sedentism: A Great Basin Study. Unpublished Ph.D. Dissertation, Department of Anthropology, University of Michigan, Ann Arbor.

1988 The Three Sides of a Biface. *American Antiquity* 53:717-734.

Kidd, Kenneth E., and Martha Ann Kidd

1970 A Classification System for Glass Beads for the Use of Field Archaeologists, Canadian Historic Sites: *Occasional Papers in Archaeology and History* No. 1.

King, Jerome H., William R. Hildebrandt, and Sharon A. Waechter

2016 *Part I – Overview, A Class I Cultural Resources Overview and Existing Information Inventory for the Northwest California Integrated Resource Management Plan, Bureau of Land Management Redding and Arcata Field Offices*. Far Western Anthropological Research Group, Inc., Davis, California. Submitted to Bureau of Land Management Redding and Arcata Field Offices, California.

King, Thomas

2004 First Salmon: The Klamath Cultural Riverscape and the Klamath River Hydroelectric Project. Prepared for Klamath River Intertribal Fish and Water Commission. Electronic document, <https://sipnuuk.karuk.us/digital-heritage/first-salmon-klamath-cultural-riverscape-and-klamath-river-hydroelectric-project>, accessed March 4, 2019.

Kirkby, A., and M. J. Kirkby

1976 Geomorphic Processes and the Surface Survey of Archaeological sites in Semi-Arid Areas. In *Geoarchaeology: Earth Science and the Past*, edited by D.A. Davidson and M. L. Shackley, pp. 229-253. Duckworth, London.

*Klamath News*

1926 “Keno Poultryman Meeting Success In New Industry.” August 6. Klamath Falls, Oregon.

1936 “Ten Years Ago In Klamath.” July 7. Klamath Falls, Oregon.

Klamath County Historical Society (KCHS)

1973 “Stage Coach to Linkville.” *Klamath Echoes*. Klamath Falls, Oregon.

1984 The History of Klamath Country Oregon. Klamath County Historical Society. On file at the University of Washington Special Collections, Seattle, Washington.

2006 “Early Highways and Byways: The Automobile in Klamath County.” *Trumpeter*, No. 80, December.

Klamath River Renewal Corporation (KRRC)

2018 Definite Plan for the Lower Klamath Project. Klamath River Renewal Corporation. Prepared for the Federal Regulatory Energy Commission (FERC).

#### Klamath Tribes

- 2003 Klamath Tribes History. Prepared by Klamath Tribes, Chiloquin, Oregon.
- 2019 History. Prepared by the Klamath Tribes, Chiloquin, Oregon. Electronic document, Available at: <http://klamathTribes.org/history/>.

#### Klein, T. H.

- 1991 Nineteenth-Century Ceramics and Models of Consumer Behavior. *Historical Archaeology* 25(2):77-91.

#### Kramer, G.

- 2003a *Klamath Hydroelectric Project. Federal Energy Regulatory Commission (FERC). Project No. 2082. Historic Context Statement.* Prepared for PacifiCorp, Portland, Oregon, Under Contract for CH2M-Hill, Corvallis, Oregon.
- 2003b *Klamath Hydroelectric Project. FERC No. 2082. Historic Context Statement.* Prepared for PacifiCorp, Portland, Oregon. June.

#### Krebs, J. R., and N. B. Davies (eds.)

- 1997 *Behavioral Ecology: An Evolutionary Approach*, Fourth Edition. Blackwell Science, Oxford.

#### Krech, S., J. R. McNeill, and C. Merchant

- 2004 *Encyclopedia of World Environmental History: A-E*. Routledge, London.

#### Kroeber, A. L.

- 1925 *Handbook of the Indians of California*. Issue 78. US Government Printing Office, Washington, D.C.

#### Kroeber, Alfred L., and Samuel A. Barrett

- 1960 Fishing among the Indians of Northwestern California. *University of California Anthropological Records* 21(1):1-210. Berkeley.

#### Kroeber, Alfred L., and E. W. Gifford

- 1949 World Renewal Cult System of Native Northwest California. *University Of California Anthropological Papers* No. 13. University of California Press, Berkeley And Los Angeles.

#### Lahren, Sylvester, Jr.

- 1998 Kalispel. In *Plateau*, edited by Deward E. Walker, Jr., pp. 283-296. *Handbook of North American Indians* 12, William G. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

#### LaLande, Jeff

- 1987 *First Over the Siskiyou: Peter Skene Ogden's 1826-1827 Journey Through the Oregon-California Borderlands*. Oregon Historical Society Press, Portland.

- 1990 Summary Report on the 1989 Obsidian Sourcing Project. USDA Forest Service, Rogue River National Forest, Medford.
- 2018 Fort Umpqua (HBC Fort, 1836-1853). Electronic document, [https://oregonencyclopedia.org/articles/fort\\_umpqua/#.Xlly00JKjcs](https://oregonencyclopedia.org/articles/fort_umpqua/#.Xlly00JKjcs), accessed December 14, 2018.
- LaLande, J. M., and J. Fagan
- 1982 Clovis Point: Possible Clovis Point Find – Butte Falls. *Current Archaeological Happenings in Oregon* 7(1):10.
- LaLande, Jeff, Eric W. Ritter, and James J. Barnes
- 2015 *Archaeology of a Chinese Mining Camp (Site CA-SIS-1801-H) Located Near Hawkinsville/Yreka, Siskiyou County, California*. Cultural Resource Publications: Archaeology. Bureau of Land Management, Redding, California.
- La Malfa, D.
- 2017 H.R. 3535 – Ruffey Rancheria Restoration Act of 2017. Electronic document, <https://www.congress.gov/bill/115th-congress/house-bill/3535/text>.
- Lamm, W. E.
- 1960 *Lumbering in Klamath*. Klamath Falls, Oregon.
- Layton, Thomas N.
- 1973 Temporal Ordering of Surface-Collected Obsidian Artifacts by Hydration Measurement. *Archaeometry* 15(1):129-232.
- 1981 Traders and Raiders: Aspects of TransBasin and California Plateau Commerce, 1800-1830. *Journal of California and Great Basin Anthropology* 3(1):127-137.
- LeeDecker, C. H.
- 1991 Historical Dimensions of Consumer Research. *Historical Archaeology* 25(2):30-45.
- Leitritz, E.
- 1970 A History of California's Fish Hatcheries 1870 – 1960. Fish Bulletin 150. California Department of Fish and Game. Electronic document: [http://content.cdlib.org/view?docId=kt5k4004bd&brand=calisphere&doc.view=entire\\_text](http://content.cdlib.org/view?docId=kt5k4004bd&brand=calisphere&doc.view=entire_text), accessed June 18, 2018.
- Lenihan, Daniel J., Toni L. Carrell, Stephen Fosberg, Larry Murphy, Sandra L. Rayl, and John A. Ware
- 1981 *The Final Report of the National Reservoir Inundation Study, Volume I*. United States Department of the Interior, National Park Service, Southwest Cultural Resources Center, Santa Fe, New Mexico.
- Leonhardy, F. C.
- 1961 The Cultural Position of the Iron Gate Site. Master's thesis Graduate School of the University of Oregon.

- 1967 The Archaeology of a Late Precontact Village in Northwestern California. *University of Oregon Museum of Natural History Bulletin* No. 4.

Lillard, Jeremiah B., Robert F. Heizer, and Franklin Fenenga

- 1939 An Introduction to the Archeology of Central California. Sacramento City Unified School District, Sacramento, California.

Lydon, Philip A.

- 1993 Chert from Willow Creek Quarry Site. Letter dated December 1993. On file, USDI Bureau of Land Management, Redding Field Office.

Mack, Joanne M.

- 1979 Archaeological Investigations in the Salt Cave Locality: Subsistence Uniformity and Cultural Diversity on the Klamath River, Oregon. Unpublished doctoral dissertation, Department of Anthropology, University of Oregon, Eugene.
- 1983 Archaeological Investigations in the Salt Cave Locality: Subsistence Uniformity and Cultural Diversity on the Klamath River, Oregon. *University of Oregon Anthropological Papers* 29. Eugene.
- 1986 Siskiyou Utility Ware and the Distribution of Fired Clay in South-Central Oregon. In *Pottery of Great Basin and Adjacent Areas*, edited by Suzanne Griset, pp. 63-70. University of Utah Anthropological Papers No. 111, Salt Lake City.
- 1987 Elk Creek Ceramics. In *Data Recovery at Sites 35KA27, 35JA59, and 35JA100, Elk Creek Lake Project, Jackson County, Oregon, Vol. 2: Appendix J*, edited by R. M. Pettigrew and C.G. Lebow, pp. J-1-J-25. Submitted to US Army Corps of Engineers, Portland District, Portland, Oregon.
- 1988 Ceramics from the Lorenzen Site. *Proceedings of the Society for California Archaeology*, Volume 1. Department of Sociology and Anthropology, Pomona College, Claremont, California.
- 1989 Archaeology of the Upper Klamath River. Department of Sociology and Anthropology, Pomona College.
- 1990 Ceramic Figurines of the Western Cascades of Southern Oregon and Northern California. *New World Figurine Project*, Vol. 1. Research Press, Provo, Utah.
- 1991 Klamath River Canyon Prehistory and Ethnology. *US Department of the Interior, Bureau of Land Management, Cultural Resources Series* No.8.
- 1992 *Northwest Hunters and Traders: Report for the Summer of 1992 Field Season*. Department of Sociology and Anthropology, Pomona College, Claremont, California.
- 1993 Prehistoric Upland Sites within the Upper Klamath River Drainage. Paper presented at the 27th Annual Meeting of the Society for California Archaeology, Asilomar, California.
- 1994a *Northwest Hunters and Traders: Report for the Summer of 1993 Field Season*. Department of Sociology and Anthropology, Pomona College, Claremont, California.



- 1994b Appendix: 35JA189 Ceramics. In *Archaeological Investigations at Two Sites on the Upper Rogue River (35JA189 and 35JA190) Southwest Oregon*, by Thomas J. Connolly, Jane E. Benjamin, Brian L. O'Neill, and Dennis L. Jenkins, pp. 115-126. University of Oregon Anthropological Papers 48. Department of Anthropology and Oregon State Museum of Anthropology, University of Oregon, Eugene.
- 1995 *Preliminary Report on the Upper Klamath River Canyon Project: Summer of 1994 Archaeological Testing, Site Evaluation Report, and Ethnobotanical Report*. Prepared for US Department of the Interior, Bureau of Land Management Lakeview District, Klamath Falls Resource Area and Ukiah District, Redding Resource Area. Pomona College, Claremont, California.
- 1996 *Preliminary Report on the Upper Klamath River Canyon Project: Summer of 1995 Archaeological Testing Report on CA-SIS-1198 and CA-SIS-1721 Site Evaluation Report, and Ethnobotanical Report*. Prepared for US Department of the Interior, Bureau of Land Management Lakeview District, Klamath Falls Resource Area and Ukiah District, Redding Resource Area. Pomona College, Claremont, California.
- 1999 *Report on the Upper Klamath River Canyon: Summers of 1996 and 1997 Archaeological Testing Report on CA-SIS-1198 and CA-SIS-1721, Site Evaluation Report and Ethnobotanical Report (incomplete draft)*. Prepared for US Department of Interior, Bureau of Land Management, Ukiah District, Redding Resource Area, Redding, California.
- 2003 *Draft: Test Excavation at Paradise Craggy Village (CA-SIS-1066H), Upper Klamath River, Northern California*. United States Department of the Interior, Bureau of Land Management, Redding Resource Area, Redding, California.
- 2006 Blue Gulch Ceramics and the Ceramics from the Upper Rogue River. In *The Archaeology of the Western Cascades of Southwest Oregon*, edited by Mark Treskov and Amy Cohen, pp. 163-170. Southern Oregon University Laboratory of Anthropology Research Report 2006-2. Ashland, Oregon.
- 2011a On the Role of Siskiyou Utility Ware as a Social Network Marker in Late Precontact Northern California and Southern Oregon. In *Perspectives on Precontact Trade and Exchange in California and the Great Basin*, edited by Richard E. Hughes, pp. 114-134. University of Utah Press.
- 2011b Siskiyou Utility Ware: A Late Precontact Southern Cascades Horizon Marker. In *Pacific Coast Archeological Society Quarterly* 47(1&2): pp. 11-28.
- 2012 *Test Excavation at Geese Flying (CA-SIS-2135) and Wise Eagle (CA-SIS-2136), Upper Klamath River Northern California*. Prepared for United States Department of the Interior, Bureau of Land Management, Redding Resource Area, Redding, California.
- 2015a Comparison of Two Shasta Villages' Obsidian Source Use. *Society for California Archaeology Proceedings* 29:33-38.
- 2015b Upper Klamath River Obsidian Use Frequencies: Distance-To-Source and Additional Variables. In *Toolstone Geography of the Pacific Northwest*, edited by Terry L. Ozbun



and Ron L. Adams, pp. 234-242. Archaeology Press, Simon Fraser University, Burnaby, Canada.

2016 Upper Klamath River Obsidian Use Frequencies: Update 2016. Paper presented at the Annual Meeting of the Society for California Archaeology.

2017 Unexpected Explanation for the Use of Over Ten Obsidian Sources during the Late Precontact in the Upper Klamath River Drainage. Paper presented at the Society for California Archaeology Meeting.

MacDonald, J. F.

2009 *Stage Coaches and Stations, Eastern Oregon: 1850-1920*. Western Places, Lake Oswego, Oregon.

McArthur, Lewis A.

1974 *Oregon Geographic Names, 4th Edition*. Oregon Historical Society, Portland, Oregon. Printed by Edwards Brothers, Ann Arbor, Michigan.

McCready, A.

1950 "Flying Weather Makers Introduce New Act into Repertoire, Chase Fog from Umpqua Area to Speed Dam-Building Job." *Oregonian* 15 October. Portland, Oregon.

McGuire, Kelly R.

1985 *Test Excavations at Sheepy East 1, Lower Klamath Lake, Siskiyou County, California*. Far Western Anthropological Research Group, Inc., Davis. Submitted to United States Bureau of Reclamation, Sacramento.

2002 Boundary Lands: Archaeological Investigations along the California-Great Basin Interface, Nevada State Museum Anthropological Papers No. 24.

Medford Mail Tribune

1937 "Forest Affords Fishing, Camping and Scenic Trips." July 16. Medford, Oregon.

1957 "Golden Spike Linked States 70 Years Ago." 15 December. Medford, Oregon.

1959 "Past 11 Years Notable for Power Company." 26 July. Medford, Oregon.

1960a "Preliminary Work on Iron Gate Dam Starts." 10 April. Medford, Oregon.

1960b "Three-Tribal Boundary Site Found, Explored; Archaeological Site in Copco' Irongate Project". 30 October. Medford Oregon.

Mehring, P. J., Jr.

1985 Late-Quaternary Pollen Records from the Interior Pacific Northwest and Northern Great Basin of the United States. In *Pollen Records of Late Quaternary North American Sediments*, edited by V.M. Bryant, Jr. and R.G. Holloway, pp. 167-189. American Association of Stratigraphic Palynologists. Dallas, Texas.

Meighan, C.

- 1955 Archaeology of the North Coast Ranges, California. *Reports of the University of California Archaeological Survey* 30: 1-39.

Merriam, C. Hart

- 1926 Source of the Name Shasta. *Journal of the Washington Academy of Sciences* 16(19):552-525.
- 1967 Ethnographic Notes on California Indian Tribes. Volume II. Ethnological Notes on Northern and Southern California Indian Tribes. *University of California Archaeological Survey* No. 68, Part II. University of California, Department of Anthropology, Berkeley.
- 1976 Ethnogeographic and Ethnosynonymic Data from Northern California Tribes. *Contributions to Native California Ethnology from the C. Hart Merriam Collection*, No. 1. Archaeological Research Facility, Department of Anthropology, University of California, Berkeley.

Mikkelsen, P.

- 1997 South Fork Valley/Madeline Plains Synopsis (Volume III). In *Cultural Change along the Eastern Sierra Nevada/Cascade Front, History of Findings, Volume I* by Michael Delacorte. Far Western Anthropological Research Group, Archaeological Research Service, and J.R. P. Historical Consulting. Prepared for Tuscarora Gas Transmission Company, Reno.

Miller, C. D.

- 1980 Potential Hazards from Future Eruptions in the Vicinity of Mount Shasta Volcano, Northern California. *US Geological Survey Bulletin* 1503.

Milliken, R. T., and A. Schwitalla

- 2012 *California and Great Basin Olivella Shell Bead Guide*. Left Coast Press, Inc.

Modoc Tribe

- 2019 History. Electronic document, <http://www.modoctribe.com/index.php/history>, electronic document, accessed February 21, 2019.

Moratto, M. J.

- 1984 *California Archaeology*. INFOTEC Development, Inc., Sonoma, California and the California Academy of Sciences, San Francisco, California.

Moratto, M. J. (editor)

- 1995 *Archaeological Investigations PGT-PG&E Pipeline Expansion Project, Idaho, Washington, Oregon, and California, Volume V Technical Studies*. Infotec Research, Inc., and Far Western Anthropological Research Group, Inc. Submitted to Pacific Gas Transmission Company, Portland, Oregon.

Most, S.

- 2018 Klamath Basin Project (1906). Electronic document, [https://oregonencyclopedia.org/articles/klamath\\_basin\\_project\\_1906\\_/#.W0Ubf02WzZM](https://oregonencyclopedia.org/articles/klamath_basin_project_1906_/#.W0Ubf02WzZM), accessed July 10, 2018.

Motz, Lee, Eric W. Ritter, and James Rock

- 1986 Glass Trade Beads from Two Shasta Sites in Siskiyou County, California. *Journal of California and Great Basin Anthropology* 8(1).

Mulineaux D. R., and R. E. Wilcox

- 1980 Stratigraphic Subdivision of Holocene Air-fall Tephra from the Climatic Series of Mount Mazama, Oregon. *EOS (American Geophysical Union Transactions)* 61, 65.

Muto, Guy R.

- 1971 A Technological Analysis of the Manufacture of Lithic Artifacts. Master's thesis, Idaho State University, Pocatello.

National Park Service (NPS)

- 1997a *National Register Bulletin 15: How to Apply the National Register Criteria for Evaluation*. US Department of the Interior, National Park Service.
- 1997b *National Register Bulletin 38: Guidelines for Evaluating and Documenting Traditional Cultural Properties*. US Department of the Interior, National Park Service.
- 2000 *National Register Bulletin 36: Guidelines for Evaluating and Registering Archaeological Properties*. US Department of the Interior, National Park Service.
- 2015 Modoc Homeland. Lava Beds National Monument California. Electronic document, <https://www.nps.gov/labe/learn/historyculture/modochomeland.htm>.

Natural Resources Conservation Service (NRCS)

- 2018 Klamath River Basin. Electronic document, [https://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/home/?cid=nrcs143\\_023523](https://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/home/?cid=nrcs143_023523), accessed February 15, 2019.

Neel, Alden

- 2016 State of California Archaeological Site Record Form for CA-030-2127. On file, Bureau of Land Management, Redding, California.
- 2019 E-mail Correspondence between Alden Neel and Elena Nilsson. On file, AECOM, Chico, California.

Newman, T. M., and L. S. Cressman.

- 1959 *Final Report on Archaeological Salvage Program in the Big Bend Project of Copco on the Klamath River, Oregon*. Prepared for Mr. J. C. Boyle, Vice President and General Manager of California Oregon Power Co.

Nilsson, Elena

- 1985 Artifact Variation as a Measure of Cultural Affinity: A Study of Surface Lithic Assemblages from Shasta and Modoc Indian Territories, California. Unpublished Master's thesis, Department of Anthropology, California State University, Los Angeles.
- 1987 *Archaeological Test Excavations at CA-SIS-154, CA-SIS-1103, and CA-SIS-1105, Siskiyou County, California*. Report prepared by Mountain Anthropological Research, Redding, California. Report submitted to the Siskiyou County Department of Public Works, Yreka, California.
- 1988 *Archaeological Test Excavations at the Ager III Sites: CA-Sis-331, CA-SIS-332, CA-SIS-1281, and CA-SIS-1282, Siskiyou County, California*. Report prepared by Mountain Anthropological Research, Redding, California. Report submitted to the Siskiyou County Department of Public Works, Yreka, California.
- 1991 Coming of Age: Archaeological Research within Shasta Valley, Siskiyou County, California. Paper presented at the Twenty-fifth Annual Meeting of the Society for California Archaeology, Sacramento.

Nilsson, Elena, and Michael S. Kelly

- 1991 *Prehistory of the Upper Rogue River Region: Archaeological Inventory and Evaluation within the Elk Creek Lake and Lost Creek Lake Project Areas, Jackson County, Southwest Oregon*. 2 vols. Mountain Anthropological Research, Chico, California. Submitted to U. S. Army Corps of Engineers, Portland District, Contract No. DACW57-89-C-0067.

Nilsson, Elena, K. Morgan Banks, and Gregory Greenway

- 1989 *Archaeological Data Recovery Investigations at CA-Sis-900: A Late Prehistoric Site in Shasta Valley, California*. Mountain Anthropological Research, Redding. Submitted to Siskiyou County Department of Public Works, Yreka.

Nilsson, Elena, Russell W. Bevill, and Michael S. Kelly

- 2000 *Archaeological Investigations along the California-Great Basin Interface: The Alturas Transmission Line Project, Volume III: Prehistoric Archaeological Studies: The Alturas Project Segment*. Dames & Moore, Chico, California. Submitted to Far Western Anthropological Research Group, Inc., Davis, California.

Nilsson, Elena, Kathleen Hull, and Russell Bevill

- 1996 Archaeological Inventory of the Proposed Orwick Land Exchange, Scott Mountain, Siskiyou County, California. Dames and Moore, Chico. Submitted to Bureau of Land Management, Redding.

Nissen, Karen M., and Eric W. Ritter

- 1986 Cupped Rock Art in North-Central California: Hypothesis Regarding Age and Social/Ecological Context. American Rock Art Research Association Volume 11, pp. 58-75.

*Oakland Tribune*

1953 Early Celebrations. 18 January: p. 65. Oakland, California.

1955 Strange Orientals. 8 May: p. 77. Oakland, California.

O'Connell, J. F., K. T. Jones, and S. R. Simms

1982 Some Thoughts on Prehistoric Archaeology in the Great Basin. In *Man and Environment in the Great Basin*, edited by David B. Madsen and James F. O'Connell, pp. 227-240. Society for American Archaeology Papers No. 2. Washington, D.C.

Oetting, A. C.

1993 *An Archaeological Survey Along Line 19, A Pacific Power & Light Company 115 kV Transmission Line Between the Klamath River, California, and the Rogue River*. Report No. 149 prepared by Heritage Research Associates for Pacific Power and Light Company.

1996 *Archaeological Inventory and Evaluation of the Orwick BLM Land Exchange Parcels, Siskiyou County, California*. Report prepared by Heritage Research Associates, Eugene, Oregon.

O'Neill, Brian

2005 *Preliminary Results of Archaeological Testing at Sites 35KL1941 and 35KL1943, in the Klamath River, (Spencer) Bridge Vicinity along OR 66*. Museum of Natural and Cultural History and State Museum of Anthropology, Eugene, Oregon.

O'Neill, Brian, and Thomas J. Connolly

2009 Archaeological Investigations at the Klamath River (Spencer) Bridge, Klamath County, Oregon. *Museum of Natural and Cultural History and State Museum of Anthropology University of Oregon Museum Report 2009-065*.

Oregon State Historic Preservation Office (Oregon SHPO)

2013 Guidelines for Conducting Field Archaeology in Oregon. Minor Revisions 2016. Oregon State Historic Preservation Office Salem, Oregon.

2015 State of Oregon Guidelines for Reporting on Archaeological Investigations. Oregon State Historic Preservation Office Salem, Oregon.

Orr, Elizabeth L., and William N. Orr

2012 *Oregon Geology*. Oregon State University Press, Corvallis.

Orser, Charles E., Jr., and Brian M. Fagan

1995 *Historical Archaeology*. HarperCollins College Publishers, New York.

Osborn, Alan J.

2014 Eye of the Needle: Cold Stress, Clothing, and Sewing Technology During the Younger Dryas Cold Event in North America. *American Antiquity* 79(1):45-68.

Oudemans, T. F.

- 2007 Applying Organic Residue Analysis in Ceramic Studies, a Functional Approach. Electronic document: [https://www.researchgate.net/publication/257829823\\_Applying\\_organic\\_residue\\_analysis\\_in\\_ceramic\\_studies\\_-\\_a\\_functional\\_approach](https://www.researchgate.net/publication/257829823_Applying_organic_residue_analysis_in_ceramic_studies_-_a_functional_approach), accessed January 8, 2018.

PacifiCorp

- 2004 *Cultural Resources, Exhibit 6.0. Final Technical Report: Klamath Hydroelectric Project (FERC Project No. 2082)*. PacifiCorp. Portland, Oregon.
- 2006 *Revised Draft Historic Properties Management Plan. Klamath Hydroelectric Project (FERC Project No. 2082)*. Portland, Oregon. March.

Pacific Power (Pacific Power & Light Company)

- 1961 Stockholder Pamphlet. July 10 (University of Oregon, Knight Library, HD9685.U7 P33 1961 July).

Pacific Rural Press

- 1902 Volume 64, No. 21. November 22.

Paine, Lauran

- 1959 *Conquest of the Great Northwest*. Robert M. McBride Co. Inc., New York.

Pettigrew, Richard M., and Clayton G. Lebow

- 1987 *Data Recovery at Sites 35JA27, 35JA59, and 35JA100, Elk Creek Lake Project, Jackson County, Oregon*. Infotec Research Inc. Submitted to US Army Corps of Engineers, Portland District, Portland, Oregon.

Pettigrew, Richard M., and Craig E. Skinner

- 1994 Obsidian Hydration Studies in Central Oregon: The Results of the First Cut. Paper presented at the 59th Annual Meeting of the Society for American Archaeology, Anaheim.

Pettigrew, Richard M., William Hildebrandt, and Patricia Mikkelsen

- 1995 Projectile Point Typology. In *Archaeological Investigations PGT-PG&E Pipeline Expansion Project, Idaho, Washington, Oregon, and California*, Volume V Technical Studies, edited by M. J. Moratto, pp. 1-1 to 1-72. Infotec Research, Inc., and Far Western Anthropological Research Group, Inc. Submitted to Pacific Gas Transmission Company, Portland, Oregon.

Pierce, G., and D. Blanchard

- 2011 *Chasing the Trail – The Mapping of the Applegate Trail*. Smith Bates Printing and Design (printers), Klamath Falls, Oregon.

Pilling, A. R.

- 1978 Yurok. In *California*, edited by Robert F. Heizer, pp. 221-224. *Handbook of North American Indians* 8, William G. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Prasciunas, M. M.

- 2007 Bifacial Cores and Flake Production Efficiency: An Experimental Test of Technological Assumptions. *American Antiquity* 72(2):334-348.

Raven, C.

- 1984 Northeastern California. In *California Archaeology* by Michael J. Moratto, pp. 431-469. Academic Press, Orlando.

Raven, C. M., S. K. Goldberg, M. J. Moratto, and K. Morgan Banks

- 1984 *Archaeological Investigations in the Sacramento River Canyon. Volume I: Report of Testing at Seven Aboriginal Sites*. Infotec Research, Inc. Submitted to California Department of Transportation, Sacramento.

Ray, Verne F.

- 1963 *Primitive Pragmatists: The Modoc Indians of Northern California*. University of Washington Press, Seattle.

Rensch, H. E., E. G. Rensch, and Mildred Brooke Hoover

- 1933 *Historic Spots in California*. Stanford University Press, California.

Resighini Rancheria

- 2020 Resighini Rancheria Website. Available at <http://resighinirancheria.com>, accessed May 4, 2020.

Rippon, Cy

- 1949 "Apple-Seed John of Pokegama." *Siskiyou County Historical Society Yearbook* (1)4:30.Yreka.

Ritter, E. W.

- 1989 *Sheep Rock Shelter (CA-SIS-266): Archaeological Test Excavations in Shasta Valley*. Report on file at the Bureau of Land Management, Redding, California.

Ritter, E. W., and H. Crew

- 1985 *Lithic Variability from Selected Prehistoric Sites in the Mt. Dome Region of Siskiyou County, California*. Manuscript of file, Bureau of Land Management, Redding.

Robbins, P.

- 2004 *Political Ecology: A Critical Introduction*. Blackwell Publishing.



Rogge, A. E., Melissa Keane, and D. Lorne McWaters

- 1994 The Historical Archaeology of Dam Construction Camps in Central Arizona, Vol. 1, Synthesis. *Dames & Moore Intermountain Cultural Resources Services, Research Paper*, 10. Phoenix, Arizona.

Rogge, A. E., D. Lorne McWaters, Melissa Keane, and Richard P. Emanuel

- 1995 *Raising Arizona's Dams: Daily Life, Danger, and Discrimination in the Dam Construction Camps of Central Arizona, 1890s-1940s*. University of Arizona Press, Tucson.

Rondeau, M.

- 2007 Analysis of a Debitage Sample from CA-SIS-1066, Siskiyou County, California. In *Draft: Test Excavation at Paradise Craggy Village (CA-SIS-1066H), Upper Klamath River, Northern California* by Joanne Mack (2003). United States Department of the Interior, Bureau of Land Management, Redding Resource Area, Redding, California.

Rouse, I.

- 1960 The Classification of Artifacts in Archaeology. *American Antiquity* 25:313-323.

Ruhge, Justin

- 2019 Historic California Posts, Camps, Stations, and Airfields: Fort Jones, Siskiyou County. Electronic document: <http://militarymuseum.org/FtJones.html>, accessed March 6, 2019.

#### *Sacramento Bee*

- 1917 "Great Power Project on Klamath near Completion: California-Oregon Power Company Rushes Finishing Touches." 8 November. Sacramento, California.
- 1957 "COPCO plans to Employ 900 on 2 Power Project". 6 July. Sacramento, California.
- 1967 "Pacific Power Aides Hold Meeting in Yreka." 29 September. Sacramento, California.

#### *Sacramento Daily Union*

- 1854a Indian Disturbance. 24 January: p. 2. Sacramento, California.
- 1854b Indian Difficulties in the North. 14 February: p. 2. Sacramento, California.
- 1854c Indian Affairs at the North. 1 April: p. 2. Sacramento, California.
- 1854d Prospect of an Indian War at the North. 20 May: p. 3. Sacramento, California.
- 1854e More Indian Depredations. 27 May: p. 2. Sacramento, California.
- 1854f Further Indian Difficulties. 3 June: p. 2. Sacramento, California.

#### *Sacramento Union*

- 1908 Mines and Mining, Trinity County. 12 October. Sacramento, California.

Salter, J.

- 2003 *White Paper on Behalf of the Karuk Tribe of California: A Context Statement Concerning the Effects of the Klamath Hydroelectric Project on Traditional Resource Uses and Cultural Patterns of the Karuk People within the Klamath River Corridor.* Prepared for the Karuk Tribe and PacifiCorp.

Salter, J., and C. Tucker

- 2010 *Karuk Cultural Impacts of Dam Removal.* Prepared by the Karuk Tribe for use in the development of environmental reports associated with the Secretarial Public Trust Determination on Klamath Dam Removal.

Sampson, C. G.

- 1985 Nightfire Island: Later Holocene Lakemarsh Adaptation on the Western Edge of the Great Basin. *University of Oregon Anthropological Papers* 33.

San Francisco Chronicle

- 1923 Yreka Chinatown Razed by Flames; Joss House Saved. 24 November: p. 4. San Francisco, California.

San Francisco Examiner

- 1886 California Clippings. 23 September: p. 5. San Francisco, California.

San Francisco Sunday Call

- 1909 "Where Shovel Creek Reaches the Klamath, the Famous Fishing and Hunting Ground of Northern California." June 27. San Francisco, California.

Sapir, Edward

- 1929 Central and North American Languages. In *Selected Writing of Edward Sapir in Language, Culture and Personality*, pp. 169-178, edited by David G. Mandelbaum, University of California Press, Berkeley.

Sarna-Wojcicki, A. M., K. R. Lajoie, C. E. Meyer, D. P. Adam, and H. J. Rieck

- 1991 Tephrochronologic Correlation of Upper Neogene Sediments Along the Pacific Margin, Conterminous United States. In *The Geology of North America, Volume K-2, Quaternary Non-Glacial Geology: Conterminous United States*, edited by R. B. Morrison, pp. 117-140. Geological Society of America, Boulder, Colorado.

Schaefer, Christopher E.

- 1995 Obsidian Distribution Patterns within the Upper Klamath River Drainage. Pomona College.

Schiffer, Michael B.

- 1986 Radiocarbon Dating and the "Old Wood" Problem: The Case of the Hohokam Chronology. *Journal of Archaeological Science* 13:13-30.
- 1987 *Formation Processes of the Archaeological Record.* University of Utah Press.

Schuyler, Robert L.

- 1978 Indian-Euro-American Interaction: Archaeological Evidence from Non-Indian Sites. In California, *Handbook of North American Indians*, Vol. 8, edited by Robert F. Heizer, pp. 69-79. Smithsonian Institution, Washington, D. C.

Silverston, Mark D., Margaret J. Markwyn, Mark Walker, Michael G. Delacorte, and Mark Basgall

- 2005 *Archaeological and Historical Resources Inventory Report, Oroville Facilities Relicensing FERC Project No. 2100*. Sonoma State University and California State University, Sacramento, Rohnert Park, California.

Shalk, R. F.

- 1983 *The 1978 and 1979 Excavations at Strawberry Island in the McNary Reservoir*. Laboratory of Archaeology and History, Washington State University, Pullman.

Shasta Indian Nation

- 2018 Our Story. Website. [http://www.shastaindiannation.org/our\\_story.html](http://www.shastaindiannation.org/our_story.html), accessed December 2018.

Shoup, Laurence H.

- 1989 1989 Cultural Resources Overview and National Register of Historic Places Significance Evaluation of Relief Dam and Vicinity, Stanislaus National Forest, Vol. 1, with A. Glenn Caruso. Report to Pacific Gas and Electric Company, San Francisco, CA.

Shoup, Laurence H., and Suzanne Baker

- 1981 *Speed Power, Production, and Profit: Railroad Logging in the Gooseneck District, Klamath National Forest, 1900-1956*. Archaeological Consultants, Oakland, California. Prepared for USDA, Klamath National Forest, Yreka.

Shipley, William F.

- 1978 Native Languages of California. In *California*, edited by Robert F. Heizer, pp. 80-90. *Handbook of North American Indians* 8, William G. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Silver, S.

- 1978 Shastan People. In *California*, edited by Robert F. Heizer, pp. 221-224. *Handbook of North American Indians* 8, William G. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Sisemore, L. (editor)

- 1941 *History of Klamath County, Oregon: Its Resources and Its People*. Liney Sisemore (editor-in-chief), Rachel Applegate Good, Harry Schultz, and Howard Schuyler. Klamath Falls, Oregon.

Siskiyou Daily News

- 2019 Yreka's Chinatown is Focus of Presentation. 27 June. Electronic document, <https://www.siskiyoudaily.com/news/20190627/yrekas-chinatown-is-focus-of-presentation>, accessed July 18, 2019.

#### Siskiyou Pioneer

- 1974 Upper Klamath River Issue. *Siskiyou Pioneer* 4(7). Siskiyou County Historical Society, Yreka, California.
- 1982 200 Place Names of Siskiyou County. *Siskiyou Pioneer* 5(5). Siskiyou County Historical Society, Yreka, California.
- 1995 Bogus-Beswick Issue. *Siskiyou Pioneer* 6(8). Siskiyou County Historical Society, Yreka, California.

#### Sletteland, T.

- 1984 *Archaeological Test Excavations at Coyote Hill Rockshelter (CA-SIS-833)*. Unpublished manuscript in possession of the author.

#### Sloan, K.

- 2003 *Ethnographic Riverscape: Klamath River Yurok Tribe Ethnographic Inventory*. Prepared by the Yurok Tribe Culture Department for PacifiCorp, Portland.
- 2011 *Yurok and the Klamath River: Yurok Historical Content and Data for Assessing Current Conditions and the Effects of the Proposed Klamath Restoration Project on Yurok Tribal Trust Assets and Yurok Resources of Cultural and Religious Significance*. Report Prepared for the Department of Interior Bureau of Indian Affairs for use in the Secretarial Determination Overview Report and NEPA/CEQA Analysis.

#### Smith, E. A.

- 2000 Three Styles in the Evolutionary Analysis of Human Behavior. In *Adaptation and Human Behavior: An Anthropological Perspective*, edited by L. Cronk, N. Chagnon, and W. Irons, pp. 27-46. Aldine de Gruyter, New York.

#### Smith, S.

- 2006 *Pollen Analysis for Four Archaeological Sites, Siskiyou County, California: CA-SIS1198 (Coyote's Paw), CA-SIS-1721 (Freedom Site), CA-SIS-2136 (Wise Eagle), and CA-SIS-1066 (Paradise Craggy)*. Submitted to Redding Resource Area, Bureau of Land Management. Redding, California.

#### Smith, C. E., and W. D. Weymouth

- 1952 Archaeology of the Shasta Dam Area, California. *University of California Archaeological Survey Reports* 18:1-35, 43-49. Berkeley.

#### Southern Oregon University (SOU)

- 2005 The Siskiyou Trail: The Archaeology of an Emigrant Wagon Road. Electronic document, <https://web.archive.org/web/20050914141814/http://www.sou.edu/SOCIOL/arch/siskiyou.htm>, accessed January 17, 2019.

Spier, L.

- 1930 Klamath Ethnography. *University of California Publications in American Archaeology and Ethnology* 30. University of California Press, Berkeley.

Sprout, Sidney, J. C. Boyle, and A. C. Sprout

- 1913 Siskiyou Electric Power & Light Company Report of Work on Klamath River Project No. 1, 1912-1913. In *California-Oregon Power Company Klamath River Projects 1 & 2 Progressive Reports, 1912-1913*. California-Oregon Power Company. On file, Southern Oregon Historical Society, Medford.

Squier, Robert J.

- 1956 Recent Excavation and Survey in Northeastern California. *University of California Archaeological Survey Reports* 33. University of California, Berkeley.

Squier, R. J., and G.L. Grosscup

- 1952 An Archaeological Survey of Lava Beds National Monument, California, 1952. *University of California Archaeological Survey*, Berkeley. Submitted to Lava Beds National Monument, Tulelake.

Stern, T.

- 1998 Klamath and Modoc. In *Plateau*, edited by Deward E. Walker, Jr., pp. 446-466. *Handbook of North American Indians* 12, William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Stevenson, Alexander E.,

- 2011 Using Archaeological Fish Remains to Determine the Native Status of Anadromous Salmonids in the Upper Klamath Basin (Oregon, USA) Through mtDNA and Geochemical Analysis" (2011). Master of Science, Department of Anthropology, Portland State University.

Steward, J. H.

- 1938 Basin-Plateau Aboriginal Socio-Political Groups. *Bureau of American Ethnology Bulletin* 120. Washington, D. C.
- 1955 *Theory of Culture Change*. University of Illinois Press, Urbana.
- 1972 *Theory of Culture Change: The Methodology of Multilinear Evolution*. Paperback Edition. University of Illinois Press, Urbana.

Stillwater Sciences

- 2018 *Lower Klamath Project License Surrender, Volume I. State Clearinghouse No. 2016122047*. Prepared by Stillwater Sciences, Berkeley, California, for the California State Water Resources Control Board, Sacramento. December 2018. Electronic document, [https://www.waterboards.ca.gov/waterrights/water\\_issues/programs/water\\_quality\\_cert/lower\\_klamath\\_ferc14803\\_deir.html](https://www.waterboards.ca.gov/waterrights/water_issues/programs/water_quality_cert/lower_klamath_ferc14803_deir.html), access January 23, 2019.

Stumpf, G. D.

- 1979 Gold Mining in Siskiyou County, 1850-1900. *Occasional Paper No. 2, Siskiyou County Historical Society*, Yreka, California.

Sullivan, Tammy, Eric W. Ritter, Richard Silva, James Barnes, John Hitchcock, Richard Jenkins, James Rock, Claude Singleton, Kathleen Moody, Larry Alexander, and Ann Wagner

- 2005 *An Archaeological Study of the Yreka Trail, Siskiyou County, California*. Bureau of Land Management, Northern California Resource Center, United States Forest Service, California Department of Forestry and Fire Protection, and Siskiyou County, Historical Society. Submitted to Northern California Resource Center, Fort Jones, California.

Sunset Magazine

- 1961 "Montague to Redding." May edition. Electronic document, [https://archive.org/stream/sunset126maysout/sunset126maysout\\_djvu.txt](https://archive.org/stream/sunset126maysout/sunset126maysout_djvu.txt), accessed July 3, 2018.

Surovell, T. A.

- 2009 *Toward a Behavioral Ecology of Lithic Technology, Cases from Paleoindian Archaeology*. The University of Arizona Press. Tucson.

Swartz, B. K., Jr.

- 1961 *A Preliminary Archaeological Survey along the Proposed Highway, Lava Beds National Monument, California*. Submitted to Lava Beds National Monument, Tulelake.
- 1963 *Basic Data Report of Materials Obtained from Survey Under Permit Between the National Park Service and the Klamath County Museum, June 1961, and Excavation Under Contract 4-10-0434-877 between the National Park Service and Arizona State Museum, July-August 1962*. Submitted to Lava Beds National Monument, Tulelake.
- 1964 Archeological Investigations at Lava Beds National Monument, California. Unpublished Ph.D. dissertation, Department of Anthropology, University of Arizona.

Tasa, G. L.

- 1996 Human Remains from Columbia Plywood property, Klamath Falls, Oregon. Letter submitted on May 3, 1996 to Gordon Bettles, Cultural Heritage Specialist, Klamath Tribes. On file, Oregon State Historic Preservation Office.

Tasa, G. L., and T. J. Connolly

- 1997 Archaeological Recovery and Reburial at the Klamath River Bridge Cemetery Site (35KL1121). *Oregon State Museum of Anthropology Report 97-2*, University of Oregon, Eugene.

Taylor, George V.

- 1965 *A General History by Years of the California Oregon Power Company and Its Predecessors in the Electric Industry in Southern Oregon and Northern California*. Unpublished manuscript on file, Southern Oregon Historical Society, Medford.



Tennant, C.

- 2010 Freshwater Mussels of the Klamath River: A Personal and Scientific Account. Electronic document, [https://nrm.dfg.ca.gov\\_Cristine\\_Tennant\\_Final\\_Thesis%20\(3\).pdf](https://nrm.dfg.ca.gov_Cristine_Tennant_Final_Thesis%20(3).pdf), accessed January 11, 2019.

Theodoratus, Dorothea J, Myreleen M. Ashman, Helen McCarthy, and Donna L. Genetti

- 1990 *Klamath River Canyon Ethnology Study*. Prepared by Theodoratus Cultural Research, Inc., Fair Oaks. Submitted to USDI, Bureau of Land Management, Lakeview District Office, Lakeview, Oregon.

Thomas, D. H.

- 1970 Archaeology's Operational Imperative: Great Basin Projectile Points as a Test Case. Archaeological Survey Report, University of California, Los Angeles, pp. 31-60.
- 1981 How to Classify the Projectile Points from Monitor Valley, Nevada. *Journal of California and Great Basin Anthropology* 3(1):7-43.

Thompson, R. S., C. Whitlock, P. J. Bartlein, S. P. Harrison, and W. G. Spaulding

- 1993 *Climate Changes in the Western United States since 18,000 yr. B.P. In Global Climates Since the Last Glacial Maximum*, edited by H.E. Wright, Jr., J.E. Krutzback, T. Webb III, W.F. Ruddiman, F.A. Street-Perrott, and P.J. Bartlein, pp. 468-513. University of Minnesota Press, Minneapolis.

Tiley, Shelly, Mike Taggart, Lisa Shapiro, and Pat Welsh

- 2007 *Phase III Data Recovery Report for Archaeological Investigations at Precontact Site CA-SHA-726/H for Cayton Creek Bridge Replacement and Highway Rehabilitation Project, SR 89, Shasta County, California*. Pacific Legacy, Inc., Cameron Park, California. Report submitted to the California Department of Transportation Northern Region, District 03, Marysville.

Todt, Donn L.

- 2007 Upriver and Downriver: A Gradient of Tobacco Intensification along the Klamath River, California. *Journal of California and Great Basin Anthropology* 2(1):1-14.

Todt, Donn L., and Nan Hannon

- 1998 Plant Food Resource Ranking on the Upper Klamath River of Oregon and California: A Methodology with Archaeological Implications. *Journal of Ethnobiology* 18(2):273-308.

Tveskov, Mark, Kelly Derr, Nicole Norris, and Richard Silva

- 2001 Archaeological Investigations of the Siskiyou Trail. *SOULA Research Report 2001-1*. Department of Sociology and Anthropology, Southern Oregon University, Ashland.



Tushingham, Shannon, Charles M. Snyder, Korey J. Brownstein, William J. Damitio, and David R. Gang

- 2018 Biomolecular Archaeology Reveals Ancient Origins of Indigenous Tobacco Smoking in North American Plateau. *Proceedings of the National Academy of Sciences of the United States of America* 115(46):11742-11747.

United States Bureau of Reclamation and California Department of Fish and Game (USBR and CDFG)

- 2011 *Klamath Facilities Removal Draft EIS/EIR*. US Department of Interior, Bureau of Reclamation and California Department of Fish and Game.
- 2012 *Klamath Facilities Removal Final EIS/EIR*. US Department of Interior, Bureau of Reclamation and California Department of Fish and Game.

United States Environmental Protection Agency (EPA)

- 2013 United States Environmental Protection Agency Level III Ecoregions of the Continental United States. Revised April 2013. Electronic document, [ftp://newftp.epa.gov/EPA/DataCommons/ORD/Ecoregions/us/Eco\\_Level\\_III\\_US.pdf](ftp://newftp.epa.gov/EPA/DataCommons/ORD/Ecoregions/us/Eco_Level_III_US.pdf).

United States Fish and Wildlife Service and United States Bureau of Reclamation (USFWS and USBR)

- 2000 The Trinity River Mainstem Fishery Restoration Environmental Impact Statement/Report, Hoopa Valley Tribe and Trinity County.

Van Bueren, Thad M.

- 1989 *Cultural Resources Overview and National Register of Historic Places Significance Evaluation of Relief Dam and Vicinity*, Stanislaus National Forest, Vol. 2, Confidential Site Records and Maps. Report to Pacific Gas and Electric Company, San Francisco, California.

Vaughan, Trudy, and Elena Nilsson

- 1987 *Archaeological Test Excavations at CA-SIS-1207, the Louie Site, Siskiyou County, California*. Coyote & Fox and Mountain Anthropological Research. Prepared for the Siskiyou County Department of Public Works, Yreka, California.

Voegelin, E. (Wheeler)

- 1942 Culture Element Distributions, XX: Northeast California. *University of California Anthropological Records* 7(2):47-252.

Voget, Fred W.

- 1998 With Cressman at Catlow Cave, 1935 and 1937: A Personal Note. *Bulletin of the History of Archaeology* 8(2):1-7.

Waechter, Sharon, and D. Craig Young

- 2015 *Archaeological Evaluation Report for Site CA-SIS-329 for the Randolph C. Collier, SRRA Water/Wastewater Project (Water/Sewer) (EA 02-4E670; EFIS 0212000031-0) and OSHA Break Room (EA 02-4G300; EFIS 0213000099-0)*. Far Western

*Anthropological Research*. Submitted to California Department of Transportation, Region 1 and District 2, Redding, California.

Wallace, W. J.

- 1978 Hupa, Chilula, and Whilkut. In *California*, edited by Robert F. Heizer, pp. 164-179. *Handbook of North American Indians* 8, William G. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Wallace, W. J., and E.S. Taylor

- 1952 Excavation of Sis-13, a Rock Shelter in Siskiyou County, California. *University of California Archaeological Survey Reports* 15:13-39. Berkeley.

Waterman, T. T.

- 1920 Yurok Geography. *University of California Publications in American Archaeology and Ethnology* 13(2):35-102. Berkeley.

Waterman, T.T., and A. L. Kroeber

- 1934 Yurok Marriages. *University of California Publications in American Archaeology and Ethnology* 35(1):1-14. Berkeley.

Watson, Sandralea

- 1978 *Sojourners in a Golden Land: The Chinese in Yreka, Siskiyou County, 1853-1950*. Cultural Heritage Section, California State Parks and Recreation. Report on file, Siskiyou County Museum, Yreka, California.

Wells, H. Laurenz

- 1881 *History of Siskiyou County, California, Illustrated with Views of Residences, Business Buildings and Natural Scenery and Containing Portraits and Biographies of its Leading Citizens and Pioneers*. D.J. Stewart & Co., Oakland, California.

West, G. James, Wallace Woolfenden, James A. Wanket, and R. Scott Anderson

- 2007 Late Pleistocene and Holocene Environments. In *California Prehistory: Colonization, Culture, and Complexity*, edited by Terry L. Jones and Kathryn Klar, pp. 11-34. Altamira Press, Walnut Creek, California.

Western Historical Publishing Company (WHPC)

- 1905 *An Illustrated History of Central Oregon Embracing Wasco, Sherman, Gilliam, Wheeler, Crook, Lake and Klamath Counties*. Western Historical Publishing Company, Spokane, WA.

Whistler, K. W.

- 1977 Wintun Prehistory: An Interpretation Based on Linguistic Reconstruction of Plant and Animal Nomenclature. *Berkeley Linguistics Society* 3:157-74, University of California, Berkeley.

White, L. A.

- 1959 *The Evolution of Culture*. McGraw-Hill, New York.

Wigand, Peter, and Nowak, C.

- 1992 Dynamics of Northwest Nevada Plant Communities during the Last 30,000 Years. In *The History of Water: Eastern Sierra Nevada, Owens Valley, White-Inyo Mountains*. White Mountain Research Station Symposium Volume 4, Edition: 1. University of California White Mountain Research Station, editors: C. A. Hall Jr, V. Doyle-Jones, B. Widawski, pp.40-62.

Wilson, Douglas, John L. Fagan, Eric E. Forgeng, Timothy J. Hills, and Judith S. Chapman

- 1995 *Testing and Evaluation of Sites and Isolates, Recommendations for National Register Eligibility, Assessment of Effects, and Historic Property Treatment Plans for Significant Sites Along Pacific Gas Transmission Company's Medford Extension*. 2 vols. PGT Project Report #10, Revised. Archaeological Investigations Northwest, Inc. Report No. 74. Prepared for Pacific Gas Transmission Company, San Francisco.

Wilson, D. C., T. L. Ozbun, J. J. Wilt, and J. S. Chapman

- 1996 *Volume I: Expanding the Archaeology of the Klamath Basin and Cascade Range of Southern Oregon*. PGT Project Report No. 19. *Results of Treatment of Cultural Resources in Pacific Gas Transmission Company's Medford Extension Pipeline Project*. Archaeological Investigations Northwest, Inc. Report No. 114, prepared for Pacific Gas Transmission Company, Portland, Oregon.

Wilt, Julie

- 2011 *Results of a Cultural Resource Investigation of the Proposed Klamath Bioenergy Facility, Klamath Falls, Oregon*. CH2M Hill, Portland, Oregon. Prepared for Klamath Falls Bioenergy, Bellevue, Washington.

Winterhalder, B., and E. A. Smith

- 1992 Evolutionary Ecology and the Social Sciences. In *Evolutionary Ecology and Human Behavior*, edited by E. A. Smith and B. Winterhalder, pp. 3-23. Aldine de Gruyter, New York.
- 2000 Analyzing Adaptive Strategies: Human Behavioral Ecology at Twenty-Five. *Evolutionary Anthropology* 9(2):51-72.

Winthrop, Kathryn (editor)

- 1983 *Klamath National Forest and the C. C. C. Winthrop Associates Cultural Research, Ashland, Oregon*. Prepared for USDA, Klamath National Forest, Yreka.

Winthrop, Kathryn R., Dennis J. Gray, and Robert H. Winthrop

- 1987 *Oak Knoll Historic Data Recovery Project Sites #05-05-51-49 and #05-05-51-50, Klamath National Forest*. Winthrop Associates Cultural Research, Ashland, Oregon. Prepared for USDA, Klamath National Forest, Yreka.

Wohlgemuth, Eric

- 2015 *Appendix A: Archaeobotanical Analysis Charred Plant Remains from a Midden Sample at CA-SIS-329. In Archaeological Evaluation Report for Site CA-SIS-329 for the Randolph C. Collier, SRRA Water/Wastewater Project (Water/Sewer) (EA 02-4E670; EFIS 0212000031-0) and OSHA Break Room (EA 02-4G300; EFIS 0213000099-0).* Far Western Anthropological Research. Submitted to California Department of Transportation, Region 1 and District 2, Redding, California.

Wright, George F.

- 1954 *Stories by George F. Wright.* Unpublished manuscript on file, Siskiyou County Museum, Yreka.

Wynne, Floyd L.

- 1957 "New Klamath River Canyon Power Development Project Viewed". *Herald and News*. June 30. Klamath Falls, Oregon.



