

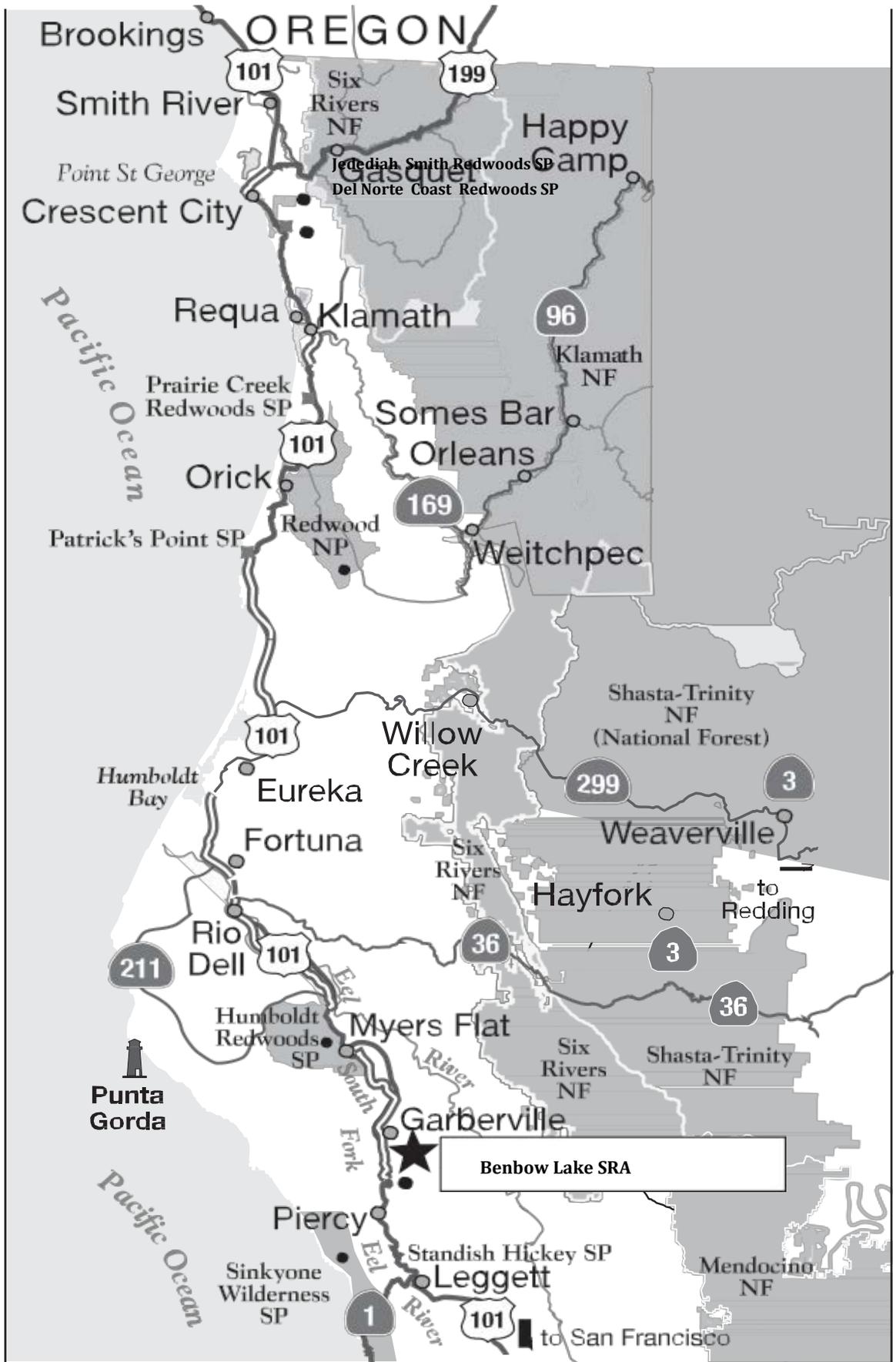


**DRAFT Initial Study
Mitigated Negative Declaration
Benbow Lake State Recreation Area
Dam Removal Project**



September 2015

State of California
Department of Parks and Recreation
North Coast Redwoods District



MITIGATED NEGATIVE DECLARATION

**PROJECT: Dam Removal Project
Benbow Lake State Recreation Area**

LEAD AGENCY: Department of Parks and Recreation

AVAILABILITY OF DOCUMENTS: The Initial Study for this Mitigated Negative Declaration is available for review at:

- North Coast Redwoods District Headquarters
California State Parks
3431 Fort Avenue
Eureka, California 95503
- Northern Service Center
One Capitol Mall, Suite 410
Sacramento, California 95814
- Garberville Library
715 Cedar Street
Garberville, California 95542
- Internet Address: [http://www.parks.ca.gov/CEQA Notices](http://www.parks.ca.gov/CEQA_Notices)

PROJECT DESCRIPTION:

DPR proposes to remove the non-historic Benbow Dam to facilitate fish passage and improve habitat for aquatic species, including Coho, Chinook and Steelhead in the South Fork of the Eel River in Benbow Lake State Recreation Area in southern Humboldt County, northwestern California; approximately 70 road miles south of Eureka and 2 miles south of Garberville, California.

A copy of the Initial Study is attached; questions or comments regarding this Initial Study/Mitigated Negative Declaration may be addressed to:

Brad Michalk
California State Parks
Northern Service Center
One Capitol Mall, Ste. 410
Email: CEQANSC@parks.ca.gov
Fax: 916-445-8883

Submissions must be in writing and postmarked or received by fax or email no later than October 9, 2015. The originals of any faxed document must be received by regular mail within ten working days following the deadline for comments, along with proof of successful fax transmission. Email or fax submissions must include full name and address. All comments will be included in the final environmental document for this project and become part of the public record.

Pursuant to Section 21082.1 of the California Environmental Quality Act, the California Department of Parks and Recreation (DPR or California State Parks) has independently reviewed and analyzed the Initial Study and Draft Mitigated Negative Declaration for the proposed project and finds that these documents reflect the independent judgment of DPR. DPR, as lead agency, also confirms that the project requirements and mitigation measures detailed in these documents are feasible and will be implemented as stated in the Mitigated Negative Declaration.

Jeff Bomke
District Superintendent
North Coast Redwoods District

Date

Brad Michalk
Environmental Coordinator
Northern Service Center

Date

TABLE of CONTENTS

<u>Chapter/Section</u>	<u>Page</u>
Table of Contents	
CHAPTER 1	1
INTRODUCTION	1
1.1 Introduction and Regulatory Guidance	1
1.2 Lead Agency	1
1.3 Purpose and Document Organization.....	2
1.4 Summary of Findings.....	3
CHAPTER 2	5
PROJECT DESCRIPTION	5
2.1 Introduction.....	5
2.2 Project Location.....	5
2.3 Project Background	5
2.4 Need for the project.....	7
2.5 Project Objectives.....	10
2.6 Project Description	10
2.6 Project Requirements	12
2.7 Project Implementation.....	20
2.8 Visitation to Benbow Lake State Recreation area	21
2.9 Consistency with Local Plans and Policies.....	21
2.10 Discretionary Approvals.....	21
2.11 Related Projects	22
CHAPTER 3	23
I. AESTHETICS.....	25
II. AGRICULTURAL and FOREST RESOURCES.....	28
III. AIR QUALITY.....	30
IV. BIOLOGICAL RESOURCES.....	34
V. CULTURAL RESOURCES.....	45
VI. GEOLOGY AND SOILS.....	56
VII. GREENHOUSE GAS EMISSIONS.....	61
VIII. HAZARDS AND HAZARDOUS MATERIALS.....	64
IX. HYDROLOGY AND WATER QUALITY.....	68
X. LAND USE AND PLANNING.....	76
XI. MINERAL RESOURCES.....	77
XII. NOISE.....	78
XIII. POPULATION AND HOUSING.....	82
XIV. PUBLIC SERVICES.....	83
XV. RECREATION.....	85
XVI. TRANSPORTATION/TRAFFIC.....	88
XVII. UTILITIES AND SERVICE SYSTEMS.....	91
CHAPTER 4	93
MANDATORY FINDINGS OF SIGNIFICANCE	93
CHAPTER 5	95
SUMMARY OF MITIGATION MEASURES	95

CHAPTER 6	97
REFERENCES	97
CHAPTER 7	105
REPORT PREPARATION	105
Figure 1 Project Location	5
Figure 2: Benbow Dam.....	25
Figure 3 Benbow Inn courtesy of Jassy-50 via Flickr	49
Figure 4 Benbow Dam courtesy of B Hartford J Strong via Flickr	51
Figure 5: Eel River Watershed	68

Appendices

- A** **Maps**
- B** **Project Plans**
- C** **Sensitive Species List**
- D** **Acronyms & Definitions**

CHAPTER 1

INTRODUCTION

1.1 Introduction and Regulatory Guidance

The Initial Study/Mitigated Negative Declaration (IS/MND) was prepared by the California Department of Parks and Recreation (DPR) to evaluate the potential environmental effects of the proposed Dam Removal Project at Benbow Lake State Recreation Area, Humboldt County, California. This document was prepared in accordance with the California Environmental Quality Act (CEQA), Public Resources Code §21000 *et seq.*, and the State CEQA Guidelines, California Code of Regulations (CCR) §15000 *et seq.*

An Initial Study is conducted by a lead agency to determine if a project may have a significant effect on the environment [CEQA Guidelines §15063(a)]. If there is substantial evidence that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) must be prepared, in accordance with CEQA Guidelines §15064(a). However, if the lead agency determines that revisions in the project plans or proposals made by or agreed to by the applicant mitigate the potentially significant effects to a less-than-significant level, a Mitigated Negative Declaration may be prepared instead of an EIR [CEQA Guidelines §15070(b)]. The lead agency prepares a written statement describing the reasons a proposed project would not have a significant effect on the environment and, therefore, why an EIR need not be prepared. This IS/MND conforms to the content requirements under CEQA Guidelines §15071.

1.2 Lead Agency

The lead agency is the public agency with primary approval authority over the proposed project. In accordance with CEQA Guidelines §15051(b)(1), "the lead agency will normally be an agency with general governmental powers, such as a city or county, rather than an agency with a single or limited purpose." The lead agency for the proposed project is DPR. The contact person for the lead agency regarding specific project information is:

Patrick Vaughan
Engineering Geologist
P.O. Box 2006
Eureka, California 95502-2006
Phone: 707-445-6547
Email: Patrick.Vaughan@parks.ca.gov

Questions or comments regarding this Initial Study/Mitigated Negative Declaration should be submitted to:

Brad Michalk
California State Parks
Northern Service Center
One Capitol Mall, Ste. 410
Email: CEQANSC@parks.ca.gov
Fax: 916-445-8883

Submissions must be in writing and postmarked or received by fax or email no later than October 9, 2016. The originals of any faxed document must be received by regular mail within ten working days following the deadline for comments, along with proof of successful fax transmission. Email or fax submissions must include full name and address. All comments will be included in the final environmental document for this project and become part of the public record.

1.3 Purpose and Document Organization

The purpose of this document is to evaluate the potential environmental effects of the proposed Dam Removal Project at Benbow Lake State Recreation Area. Mitigation measures and project requirements have also been incorporated into the project to eliminate any potentially significant impacts or reduce them to a less-than-significant level.

This document is organized as follows:

- Chapter 1 - Introduction.

This chapter provides an introduction to the project and describes the purpose and organization of this document.

- Chapter 2 - Project Description.

This chapter describes the reasons for the project, scope of the project, project objectives and project requirements.

- Chapter 3 - Environmental Setting, Impacts, and Mitigation Measures.

This chapter identifies the significance of potential environmental impacts, explains the environmental setting for each environmental issue, and evaluates the potential impacts identified in the CEQA Environmental (Initial Study) Checklist. Mitigation measures are incorporated, where appropriate, to reduce potentially significant impacts to a less than significant level.

- Chapter 4 - Mandatory Findings of Significance.

This chapter identifies and summarizes the overall significance of any potential impacts to natural and cultural resources, cumulative impacts, and impact to humans, as identified in the Initial Study.

- Chapter 5 - Summary of Mitigation Measures.

This chapter summarizes the mitigation measures incorporated into the project as a result of the Initial Study.

- Chapter 6 - References.

This chapter identifies the references and sources used in the preparation of this IS/MND.

- Chapter 7 - Report Preparation

This chapter provides a list of those involved in the preparation of this document.

1.4 Summary of Findings

Chapter 3 of this document contains the Environmental (Initial Study) Checklist that identifies the potential environmental impacts (by environmental issue) and a brief discussion of each impact resulting from implementation of the proposed project.

Based on the IS and supporting environmental analysis provided in this document, the proposed Dam Removal Project would result in less than significant impacts for the following issues: aesthetics, agricultural resources, air quality, biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources, noise, population and housing, public services, recreation, transportation/traffic, and utilities and service systems.

In accordance with §15064(f) of the CEQA Guidelines, a MND shall be prepared if the proposed project will not have a significant effect on the environment after the inclusion of mitigation measures in the project. Based on the available project information and the environmental analysis presented in this document, there is no substantial evidence that, after the incorporation of mitigation measures, the proposed project would have a significant effect on the environment.

CHAPTER 2 PROJECT DESCRIPTION

2.1 Introduction

This Initial Study/Mitigated Negative Declaration (IS/MND) has been prepared by the California Department of Parks and Recreation (DPR or California State Parks) to evaluate the potential environmental effects of the proposed Dam Removal Project at Benbow Lake State Recreation Area (BLSRA), located in Humboldt County, California. The proposed project would remove the Benbow Dam to restore the natural flow to the South Fork of the Eel River (SFER) and allow for better fish passage.

2.2 Project Location

BLSRA is located approximately 2-miles south of the town of Garberville, west of Highway 101, on the SFER. Presently, BLSRA encompasses about 1,200 acres of parkland including 75 campsites and a day-use/picnic area. Township 4S, Range 3E, NE 1/4 of SW 1/4 of SW 1/4 of Section 36, Humboldt Base Meridian, USGS 7.5' Garberville, CA Quadrangle

2.3 Project Background

Benbow Dam is a hollow core, ogee concrete dam (about 60 feet wide by 300 feet long by 20 feet high) that spans the SFER at a constriction of the river banks. During the summer months of June through September, approximately 40 steel I-beams were inserted into vertical sockets in the dam spillway. Wooden flashboards were then placed between the I-beams to add an additional 9 feet of height above the spillway crest.

Annual seasonal dam installation created an approximately 123 acre, recreational lake that served the southern Humboldt County community between about mid-June and mid-September. The seasonal dam has not been installed since 2007 due to the need for extensive repairs and additional studies to permit its continued operation. The dam contributes to the impediment of fish passage to the uppermost sub-basin of the SFER, which is about 437 square miles in area upstream from the dam. Approximately 100 river miles of more accessible stream will result from the project (measured from figure 41-1 NMFS draft 2012 Coho recovery plan – based on current Coho use patterns – the

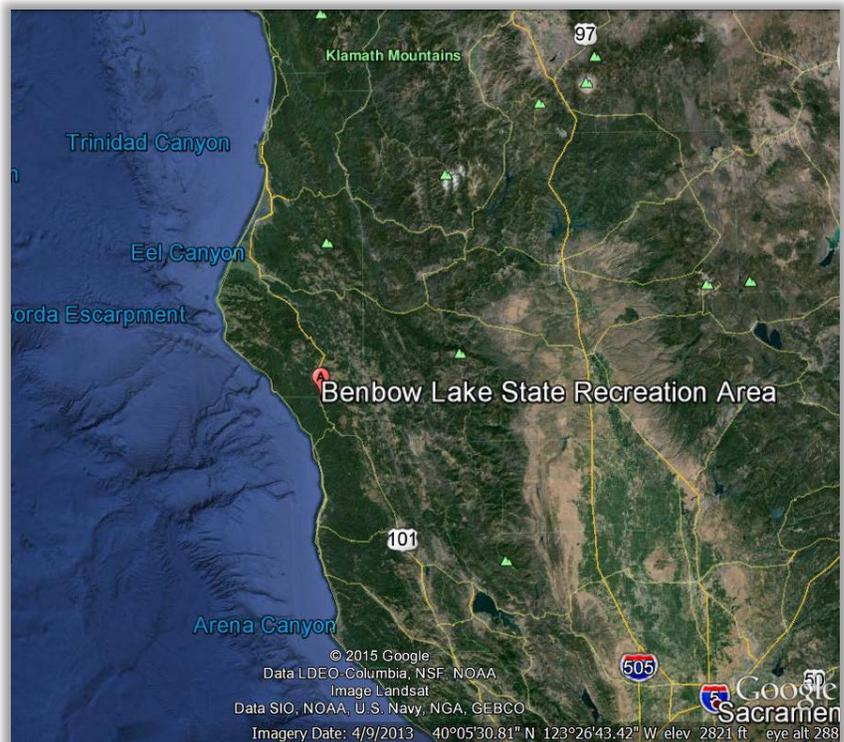


Figure 1 Project Location

length of actual restorable and Coho and other restorable salmonids streams is much greater). A map of the upper SFER sub-basin is provided with a USGS topographic map of the project site in the attached information. A regional map may be found on (sheet 1 in the design plans by Questa Engineering, attached as Appendix B) and an ownership map (sheet 2, attached).

Most of the northern bank of the lake is comprised of Franciscan sandstone bedrock and debris slides. River gravel buries rip rap on the bank of an alluvial terrace that underlies the park day-use area. More extensive landslide-bearing slopes, smaller bedrock outcrops, and alluvial terrace deposits comprise the southern bank of the lake.

Benbow Dam is a feature associated with the Benbow Inn, which is listed on the National Register of Historic Places (NHRP) and the California Register of Historical Resources (CRHR). The Benbow family resided in the Arcata, Eureka and Fortuna areas of Humboldt County. In 1922 the Benbow family purchased a 1,288 acre ranch from Ernest Linser. The ranch, located along the confluence of the SFER's mainstem and its eastern branch, provided the family with a place for summer vacations. In 1925 the family formed the Benbow Development Company and by 1926 they had constructed the Benbow Hotel, a nine-hole golf course, horse stables and a subdivision for private residences. In 1929 the Benbow Company commissioned a study for dam site locations.

Construction of the dam began in 1931. With the completion of the dam, the Benbow Company provided water and electrical power to the hotel, Garberville and the Benbow valley with a 312 KVA Western Electric Company Generator. The lake also provided the hotel with recreational opportunities such as boating, swimming and fishing.

The dam has been modified since its initial construction. The associated powerhouse was destroyed by a fire in the 1950's; the original operator's house and winch house have been removed; the high line was re-rigged in 1959; the foundation on the downstream side of the dam was repaired in 1960 and again in 1961; the high line cable way was replaced in 1963; and a stream bed fish passage facility was installed in 1977 (resulting in the removal of 90 linear feet of the historic ogee, six crest plates and 20 I-beam sockets - concrete from this modification is located on the left bank upstream from the dam and is proposed for removal during this project). A new winch house was constructed in the 1980's. In 2000, the concrete in the ogee section of the dam was observed to be eroding and deteriorating and the rebar exposed in several areas, especially on the north end of the structure; the concrete aprons were also eroding and fractured; the steel crest plates and sheet metal flashing were badly rusted and some loose due to erosion of the nuts that secure them to the crest of the dam; one crest plate was missing on the south end, and the fish passage facility slots and the aprons were extensively eroded. Repairs to some of these elements were made in 2002 but in 2008 the Division of Dam Safety required that State Parks do a structural evaluation of the dam to continue its operation.

Old growth redwoods have fallen along the left bank of the river upstream from the dam due, in part, to more recent impingement from the historically fluctuating delta at the east branch-SFER confluence. Lacustrine wave attack during the lake's establishment contributed to the bank erosion, sedimentation and tree loss (Madej 2001) and saturation by the lake contributed to inhibition of riparian establishment, which would

help protect the bank. Since 2008, CSP has not installed the dam's flashboards due to the need for assessments of, and repairs to, the structural integrity of the dam (per the Department of Water Resources Division of Dam Safety), the need for additional studies to obtain environmental clearance, the annual cost of the dam installation and the cost of these items in aggregate in light of CSP's declining funding over the last several years. Over time the dam has the potential to become a liability without maintenance. Additionally, removal of the dam has positive environmental effects. CSP, along with its partners, American Rivers and NOAA Fisheries and with review support from the California Department of Fish and Wildlife (CDFW), commissioned a consulting study by Questa Engineering (2012, attached) to examine the effects of dam removal on the environment and nearby infrastructure, including the abutments for CALTRANS and County bridges upstream and other private property within the area of potential effect. These agencies have been consulted about the project throughout the engineering study and they have concurred with the findings of the engineering study. The report shows no significant adverse engineering effects from the dam removal. This engineering study helped meet task SONCC-SFER.3.1.9.1 in NMFS draft Coho recovery plan regarding the need for a planning document to remove Benbow Dam.

A public meeting was held in February 2012 at the Benbow golf course to review the results of the engineering study and inform the public that the dam would not be re-installed. The meeting was lightly to moderately attended, (approximately 20 to 25 individuals) and while many recounted fond memories of the lake, they understood the rationale behind the project and thus there was no strong sentiment expressed against removing the dam.

2.4 Need for the project

Fish counts at the Benbow dam between 1938 and 1973 reveal a declining trend for all salmonids. While this trend is not unique to Benbow dam, the site has been a long term monitoring point to help assess fish recovery in the SFER. In the 1930's salmonid populations passing the dam were estimated at about 20,000 Chinook and 15-17,000 Coho. Through 2010 the Eel River Coho adult population was thought to number about 500, Chinook about 1000, and Steelhead about 2,000 (Yoshiyama and Moyle, 2010). While fish population reports vary due to counting methods, timing of studies, and other factors examining current trends only winter run Steelhead were projected by Yoshiyama and Moyle to survive extinction over the next 50 years. However, Higgs (2015) indicates the Eel River fall run Chinook population exceeded 10,000 between 2012 and 2015, indicating the short-term extinction potential for that population is lower than the earlier estimate. However, to ensure continuity of the most recently reported trend (which was limited to Chinook), removing the dam is a keystone activity in helping to increase access for salmonids to and from the upper basin and to improving waterflow, temperature and sediment conditions in the immediate reach as well as farther downstream.

Removing the dam will reduce velocities for higher flows downstream from the dam and at the fish passage slot. Fish migration past the dam will be improved and require less effort for migrating species. One-dimensional HEC-RAS analysis supports the inference that the dam is a fish barrier during certain winter flows (see attached analysis

in design report by Questa Engineering – p. 31 and image 7, p.33 in the same report). The barrier is approximately 60-foot wide parallel to the channel thalweg.

According to Roelofs et al. (1993, citing Kubicek [1977]) the lower main-stem of the SFER has summer water temperatures that usually exceed lethal limits for salmonids. The lake has elevated water temperatures at the scale of the lake (123 acres and about 13,700 linear feet of stream bank [or 27,400 linear feet for both banks]). The lake has less diurnal change than tributaries that enter it; there is limited thermal stratification within the lake and temperatures at 4 to 5 meters depth are 1 to 3 degrees Centigrade (C) cooler than surface temperatures. Waters in the uppermost impoundment are cooler but also lack thermal stratification. Thermal refugia, such as springs, were reported to be much rarer by divers along the lake shoreline than along the flowing mainstem. Diel temperatures downstream from the dam have had dampened ranges as far as Sproul Creek (~2 river miles downstream) and possibly beyond. At night lake temperatures remain high while nearby rivers cool. Temperatures in the lake have been classified as marginal to lethal for salmonids (in excess of 20 degrees C). This temperature range can lead to increased susceptibility to predation and have health effects on salmonids. The lake also restricts the rate of flow and decreases flow downstream through enhanced evaporation (about 78 river miles of river are downstream).

The dam is also a barrier to downstream wood migration; some of the wood creates a potential aquatic hazard when in the lake. Large logs, some of which have failed from old growth stands on the left bank ~2000 feet upstream from the dam, have been caught up in the dam, inhibiting their re-distribution throughout the system and presenting a hazard to navigation. Emergency log removal can have its own impacts due to the need to cross the river with heavy equipment during higher flows, potentially when fish are present. Logs on the left bank have also been manipulated in the past either to inhibit their impacts to the dam structure should they begin to migrate, or to minimize the hazard they present to swimmers or boaters on the lake.

Eliminating the potential for lake re-establishment will eliminate the potential for wave attack and erosion, which can remove up to 6 inches of soil per summer locally (estimated at ~250 tons of sediment/year, Madej 2001), on the alluvial left bank of the lake where old growth redwoods are toppling into the river. Progradation of a delta from the east branch at its confluence with the SFER aggravates the erosive condition at this location. The lake also inhibits establishment of riparian vegetation that would help protect the eroding bank and provide shade. Observation of new riparian vegetation in the area along the park day use area and on the delta at the SFER confluence with its eastern branch since the dam installation ceased in 2008 indicates the potential for riparian vegetation recovery.

Removal of the dam also eliminates the structure itself as a public safety issue. The dam is located nearly astride the Garberville fault zone. Although the Garberville fault zone does not have Alquist-Priolo fault zoning or designation, the USGS has assigned it a relatively short recurrence interval of 100-220 years for a magnitude 6.8+ earthquake. Therefore, the dam may be vulnerable to either earthquake or river flow, and it currently requires a structural assessment before continued operation. Failure could result in the distribution of dam components that could require additional, less controlled removal (and likely more aquatic disturbance) to eliminate navigation and public safety hazards. A detailed analysis of earthquake effects has not been completed and would likely be

one of the required studies for reinstalling the dam. However, best professional judgment suggests that if the dam was to fail when the lake was present or the lake was to experience a seiche, a wave of water could result that would jeopardize downstream users. While the wave would not likely be higher than extremely high winter flows, its generation during the summer could adversely affect species and habitat that are seasonally present downstream. Other public health and safety benefits include reducing lake heating which has encouraged the growth of algal blooms and parasites. The lake has been posted for these potential human and animal health hazards in the past. The lake may also enhance weathering of, and pore water pressure changes in, the earth materials at landslide toes along the length of the lake, though no draw down or lake filling episodes of landsliding have been reported.

Finally, dam removal eliminates annual installation impacts, which typically involved construction of a temporary road for equipment access for flashboard installation. The road traversed both the east branch and the mainstem of the SFER, requiring crossing installation. While it has been a permitted activity during past seasonal dam installation, removal of or non-installation of the dam flash boards will eliminate an annual gravel bar disturbance (and risk of hydrocarbon incidents) at a scale of about 3000 feet by 12 feet and about 300 feet by 150 feet during gravel access road construction and installation staging (within the lower half of the lake reach). Riparian disturbance associated with lake bed preparation at the park day use area is also eliminated.

Unique Opportunities

The dam's removal presents some unique opportunities. For example, monitoring the response of yellow-legged frogs, which are abundant on gravel bars upstream from the dam, has been initiated. Dr. Sarah Kuperberg (Questa design report, p. 21). The documentation of historical aspects of the dam will help fill a void in region-wide dam history. If more dams are removed in the future, documentation of key sites will help inform methodology and obviate the need to document every dam that is removed as part of future endeavors. Documentation of the dam removal and the fishery effects over time will be a part of historical information that is distributed for educational purposes through signage and videography.

Removal of the dam will also enable development of riverine recreational activities, such as kayaking, which will be enhanced by development of a slightly steeper stream grade through the lake reach and removal of a potential navigation hazard at the dam. CSP intends to emphasize riverine recreational activities in the park once the dam is removed.

Fiscal Concerns (*budget crisis and park closures*)

Removal of the dam would help save CSP direct annual flashboard installation costs of approximately \$30,000 as well as dam upgrade and maintenance costs. In addition, the cost of annual and/or longer term permitting development and reviews for staff both internal and external to CSP will be eliminated. Precipitation in northwestern California is expected to remain stable or increase slightly in the face of climate change. If flood frequencies or severity increase in the region in response to climate change, eliminating the dam will enable natural response in the reach affected by the dam and minimize maintenance costs due to potentially more damaging flows, both to the dam and banks proposed for revegetation. More frequent or energetic high flows due to changes in the timing or frequency of flooding also argues for removal of the dam as a seasonal

barrier. Climate change-driven summer temperatures may increase somewhat in northwestern California, making stream temperature improvements more critical.

Dam removal may facilitate other future river restoration activities by other agencies and/or non-profits although none are currently planned or in development. Dam removal may also facilitate other future recreation opportunities to transform the park into a river park with foot and bike trails, and relocate the Day Use infrastructure closer to the river. However, the project includes only removal of the dam and restoration of the river channel.

2.5 Project Objectives

The mission of the California Department of Parks and Recreation is to provide for the health, inspiration, and education of the people of California by helping to preserve the state's extraordinary biological diversity, protecting its most valued natural and cultural resources, and creating opportunities for high-quality recreation. This is also stated in the California's Recreation Policy adopted by the California State Park and Recreation Commission on September 23, 2005.

This project would help restore the natural flow of the SFER and reestablish fish passage. In addition, due to lack of funding for maintenance, the dam structure continues to degrade, becoming an ever-increasing safety hazard to the public.

2.6 Project Description

DPR proposes to remove the non-historic Benbow Dam to facilitate fish passage and habitat improvement for aquatic species, including Coho, Chinook and Steelhead in the SFER in BLSRA in southern Humboldt County, northwestern California; approximately 70 road miles south of Eureka and 2 miles south of Garberville, California. Specific work would include:

Pre-Construction

- The spring prior to construction, a biologist certified in the survey and relocation of yellow-legged frogs will visit the project site and relocate any egg masses observed within 500 feet of all proposed work areas including upstream and downstream extents of diversion channels. The survey will include a summary of the number and location of egg masses found. Exotic plants on the left bank at the dam will be removed by hand before ground disturbance activities at that location.

Construction Phase 1

- Conduct pre-construction biological surveys and measures;
 - Pre-construction biological surveys;
 - ✓ Avian
 - ✓ Amphibian
 - Conduct worker training regarding biological and cultural sensitivity issues specific to the project;

- Install temporary exclusionary fencing and remove/relocate sensitive aquatic species from river crossing locations;
- Utilize existing gravel access road on the slope above the north bank of the river (**Appendix B, Sheet 2**) to demolish and remove cableway anchorage system;
- Install temporary bridges and/or culverts at river crossing locations (**Appendix B, Sheet 2**) – if culverts are used at the East Branch crossing they will meet fish passage requirements;
- Remove temporary exclusionary fencing from crossing areas to maintain fish passage;
- Install bio-exclusionary fencing around impact areas first; then commence access road grading and staging including the addition of fill at, and removal of the existing boat ramp in the day use area;
- Install traffic control & staging;
- Relocate fish and amphibians from dam site;
- Construct siltation basin and install pumping/dewatering facilities (**Appendix B, Sheet 3**);
- Excavate and remove buried concrete along left channel bank (**Appendix B, Sheet 7**);
- Remove cableway and anchorage systems (left and right banks) to the ground surface as well as the winch house and storage building. About 1 foot of the anchor footing will be removed and filled with soil to create a medium for plant growth;
- Excavate and demolish southern section of Benbow Dam (**Appendix B, Sheets 2, 3, 5, 6, 7**);
- Grade bank and install erosion control fabric/mats (**Appendix B, Sheet 7, 9**);

Construction Phase 2

- Grade diversion channel;
- Install temporary exclusionary fencing and remove/relocate fish and amphibians from channel crossing location (**Appendix B, Sheet 4**);
- Install temporary flatcar bridge for crossing diversion channel (**Appendix B, Sheet 4**);
- Install bio-exclusionary fencing around work areas (**Appendix B, Sheet 4**);
- Remove temporary exclusionary fencing from crossing areas to maintain fish passage;
- Open diversion channel;
- Excavate and demolish northern section of Benbow Dam (**Appendix B, Sheets 2, 4, 5, 6**);
- Grade and re-contour channel, decompact access road and repair day use irrigation system if needed, and/or fencing damaged to provide access;
- Plant riparian area at confluence and along southern dam slope and other disturbed areas (**Appendix B, Sheet 8**). Re-treatment of weeds may accompany planting and will be addressed during subsequent plant monitoring. Herbicides will not be used to remove weeds. Willow cuttings used for the planting will be collected outside of Willow Flycatcher and Yellow-breasted Chat breeding season, February 1 through September 15;
- Remove biological fencing and site closure signs.

2.6 Project Requirements

Under CEQA, the Department of Parks and Recreations has the distinction of being considered a lead agency, a public agency that has a primary responsibility for carrying out or approving a project and for implementing CEQA; a responsible agency, a public agency other than the lead agency that has responsibility for carrying out or approving a project and for complying with CEQA; and a trustee agency, a state agency having jurisdiction by law over natural resources affected by a project that are held in trust for the people for the State of California. With this distinction comes the responsibility to ensure that actions that protect both cultural and natural resources are always incorporated into all projects. Therefore, DPR has created a list of Project Requirements that are included in project design to reduce impacts to resources.

DPR has developed a list of Standard Project Requirements (SPR) that are actions that have been standardized statewide for the use of avoiding significant project-related impacts to the environment. From this list, standard project requirements are assigned, as appropriate, to all projects. For example, projects that include ground-disturbing activities, such as trenching would always include standard project requirements addressing the inadvertent discovery of archaeological artifacts. However, for a project that replaces a roof on an historic structure, ground disturbance would not be necessary; therefore standard project requirements for ground disturbance would not be applicable and would not be assigned to the project.

DPR also makes use of Specific Project Requirements (PSR). These are project requirements that are developed to address project impacts for projects that have unique issues; they would not typically be standardized for projects statewide.

Table 1: Project Requirements	
Element/Title	Requirement
SPR AESTHETICS 1	Visual Quality
	Contractor will store all project-related materials outside of the viewshed of adjacent residences.
SPR AIR 1	Air Quality
	<ul style="list-style-type: none"> ▪ All active construction areas will be watered at least twice daily during dry, dusty conditions. ▪ All trucks hauling soil, sand, or other loose materials on public roads will be covered or required to maintain at least two feet of freeboard. ▪ All equipment engines will be maintained in good condition, in proper tune (according to manufacturer's specifications), and in compliance with all State and federal requirements. ▪ Excavation and grading activities will be suspended when sustained winds exceed 25 miles mph, instantaneous gusts exceed 35 mph, or dust from construction might obscure driver visibility on public roads. ▪ Earth or other material that has been transported onto paved streets by trucks, construction equipment, erosion, or other project-related activity will be promptly removed.

PSR BIO 1	Special Status Plant Species
	<p>Surveys for special status plant species, including coast fawn lily, Humboldt County fuchsia, and streamside daisy within the project area will be conducted within the project area by a DPR-approved biologist during the appropriate blooming periods or when identity can be confirmed. Occurrences of these species within the project area will be flagged or otherwise marked identified onsite. Where possible, occurrences of these species will be avoided and protected from construction activities. Those locations where avoidance is not possible will be subject to the following conditions:</p> <ul style="list-style-type: none"> ▪ Prior to construction plants will be carefully excavated and transplanted nearby in suitable habitat. All transplant work will be conducted under the direction of a DPR-approved biologist. ▪ Transplanting will occur during the dormant growing season (i.e. late fall) when the plants are least disturbed and can be watered by natural precipitation.
PSR BIO 2	Anadromous Fish
	<p>A Biological Opinion (BO) prepared by the NOAA Fisheries through consultation with the USACE under provisions of Section 7 of the federal Endangered Species Act (ESA) will be required prior to the start of work. All conditions described in the BO will be implemented. In addition, the project will be subject to the following conditions, regardless of their appearance in the BO:</p> <ol style="list-style-type: none"> 1. Prior to the start of construction a DPR-approved biologist will conduct a training session for all construction personnel involved with the project. At a minimum, the training will include a description of anadromous species and their habitat and the measures that will be implemented for this project to protect these species. The training session will include instruction in the appropriate protocol to follow in the event that fish are encountered or found onsite. Handouts with photos of anadromous species will be provided to construction personnel. The North Coast Redwoods District Aquatic Invasive Species Decontamination Policy (developed on June 8, 2009) will be reviewed during the training. 2. The duration of work activities in the active stream channel will be limited to the time of year when adult and juvenile anadromous salmonid migration is minimal. Proposed start of work activities will not occur sooner than June 15 and will not be initiated until: <ol style="list-style-type: none"> a. River flow at Benbow Dam is less than 200cfs. This is determined as the average discharge taken from the USGS Leggett and USGS Miranda gages; and b. Dive surveys by a qualified biologist have determined the presence or absence of salmonids to determine subsequent mitigations outlined in the BO. c. Work in the active river channel may continue as long as the river flow at the USGS Miranda gage remains below 150cfs. 3. Minimize impacts associated with fish rescue activities. The capture and relocation method appropriate to minimize disturbance and exhaustion of salmonids, and maximize the efficiency of their relocation and/or capture will be used.

	<p>Salmonids will be counted as they are captured and/or relocated by a DPR-approved biologist. The following rules apply for relocating fish:</p> <ul style="list-style-type: none"> ▪ Notify NOAA Fisheries/DFW a minimum of 48 hours prior to capture and relocation of salmonids to provide NOAA Fisheries/DFW staff an opportunity to participate. ▪ The NOAA Fisheries “Guidelines for Electrofishing Waters Containing Salmonids Listed Under the Endangered Species Act” (June 2000) will be followed during any electrofishing. ▪ Handling of salmonids will be minimized. Salmonids will be kept in cool, shaded, aerated water protected from noise or jostling any time they are not in the stream and fish will not be removed from this water except to be released. ▪ Salmonids will not be overcrowded into buckets; allowing a minimum of 6 cubic inches per young-of year (YOY) individual and more for larger/older fish. ▪ Make every effort to not mix salmonid size-classes so that predation is minimized, or provide a stable YOY escape shelter that will not move and crush fish while transportation takes place. ▪ Species identification and length estimates will be made visually without handling fish. If a positive identification cannot be made, state this fact rather than handling fish to make a positive identification. Length estimates are used to estimate age class, no population estimates or growth rates will be determined from this information. ▪ Include indication of the level of accuracy of ocular estimates; e.g., 10 to 20 YOY steelhead/resident rainbow/cutthroat, 5 to 9 salmon, probably all Coho. ▪ All estimates of number of captured salmonids and approximate lengths by species will be submitted to the NOAA FISHERIES Arcata Office and DFW Eureka Office within five days of their capture and release.
PSR BIO 3	Foothill Yellow-Legged Frog
	<ol style="list-style-type: none"> 1. Prior to the start of construction a DPR-approved biologist will conduct a training session for all construction personnel involved with the project. At a minimum, the training will include a description of this species and its’ habitat and the measures that will be implemented to protect this species. The training session will include instruction in the appropriate protocol to follow in the event a foothill legged-frog is encountered or found onsite. Handouts with photos of this species will be provided to construction personnel. 2. In the spring before any ground-disturbing construction activities begin a DPR-approved biologist familiar with foothill yellow-legged frog and able to identify its’ egg masses will conduct surveys for this species within the project area. Any egg masses located during the survey will be removed from work areas, placed in containment structures, and relocated to areas suitable for rearing. 3. Appropriate bio-exclusionary fencing, as determined by a

	<p>DPR-approved biologist, will be placed in active work areas to prevent foothill yellow-legged frog or other wildlife species from entering work sites.</p> <p>4. At the discretion of the DPR-approved biologist additional surveys for foothill yellow-legged frog may be conducted during dewatering and diversion activities. Any egg masses or frogs located during these surveys will be removed from work areas, placed in containment structures, and relocated to suitable habitat outside of the work area, as determined by the DPR-approved biologist.</p>
PSR BIO 4	Northern Western Pond Turtle
	<p>1. Prior to the start of construction a DPR-approved biologist will conduct a training session for all construction personnel involved with the project. At a minimum, the training will include a description of this species and its' habitat and the measures that will be implemented to protect this species. The training session will include instruction in the appropriate protocol to follow in the event a northern western pond turtle is encountered or found onsite. Handouts with photos of this species will be provided to construction personnel.</p> <p>2. Before any ground-disturbing construction activities begin, a DPR-approved biologist familiar with northern western pond turtle will conduct surveys for this species to determine the presence of this species within the project site. If juvenile or adult turtles are found on the project site then individuals will be removed and released in a suitable location outside the project site.</p> <p>3. As described in Specific Project Requirement BIO-3: Foothill Yellow-legged Frog above bio-exclusionary fencing will be placed in active work areas to prevent northern western pond turtle from entering work sites.</p> <p>4. At the discretion of the DPR-approved biologist periodic monitoring may be conducted to insure bio-exclusionary fencing is functioning properly and that no turtles are inhabiting work areas.</p>
SPR BIO 5	Raptors and Migratory Birds
	<p>If construction-related activities exceeding ambient noise levels are conducted between February 1 through and August 31 then focused surveys for nesting migratory bird and raptor species will be conducted by a DPR-approved biologist before construction activities occur in these months to identify active nests. The following requirements apply to the surveys:</p> <ul style="list-style-type: none"> ▪ Surveys for active raptor nests will be conducted within a 500-foot radius of the project area no more than 7 days prior to the beginning of construction. If active nests are located within a 500-foot radius of the project then, on a case by case basis, an appropriate buffer will be established at the discretion of a DPR-approved biologist, in order to facilitate construction activities during the low flow period of the South Fork of the Eel River, as required by the NOAA Fisheries. No construction activities will occur within buffer zones until the young have fledged and the young will no longer be impacted by construction activities, as

	<p>determined by the DPR-approved biologist.</p> <ul style="list-style-type: none"> Surveys for active migratory bird nests will be conducted within a 150-foot radius of the project no more than 7 days prior to the beginning of construction. If active nests are located within a 150-foot radius of the nest site then, on a case by case basis, an appropriate buffer will be established at the discretion of a DPR-approved biologist, in order to facilitate construction activities during the low flow period of the South Fork of the Eel River, as required by the NOAA Fisheries. No construction activities will occur within buffer zones until the young have fledged and the young will no longer be impacted by construction activities, as determined by the DPR-approved biologist.
PSR BIO 6	Sensitive Bat Species
	<p>Humane one-way exclusion that would allow bats to exit but not return to the structure will be installed on the pipes extending from the dam spillway in mid-September prior to the year of dam demolition. After allowing enough time (approximately one week) for any bats to escape, permanent exclusion will be installed in the pipes.</p> <p>Just prior to demolition of sheds, stacks of flashboards and dam structures, a DPR-approved biologist with bat expertise and training will survey the targeted structures for roosting bats and if any are found, they will be removed and released away from the project site onto the bark of trees nearby.</p> <p>DPR will consult and work closely with the California Department of Fish and Wildlife on all bat measures and follow their guidance.</p>
SPR BIO 7	Sudden Oak Death
	<p>All project activities and property or equipment that could spread <i>Phytophthora ramorum</i> to new locations will be subject to Best Management Practices (including proper sanitation measures) developed by the California Oak Mortality Task Force and available online at http://www.suddenoakdeath.org/</p>
SPR CULT 1	Previously Undocumented Resources
	<p>If previously unknown cultural resources (including but not limited to dark soil containing shell, bone, flaked stone, ground stone, or deposits of historic material) are discovered, work shall immediately cease within 10 feet of the find(s) and notify the State's Representative of the location and description of the find(s). Contractors shall be directed to other project tasks. Contractors shall not work in the area until receipt of written approval from the State's Representative to resume activity in the area of the discovery.</p>
SPR CULT 2	Archaeological Monitoring
	<p>Contractors shall allow on-site archaeological/Native American monitoring at the discretion of the DPR-approved archaeologist/Native American monitor.</p>
SPR CULT 3	Pre-Construction Environmental Sensitivity Training
	<p>Prior to the start of any on-site construction activities, Contractor shall ensure that employees, sub-contractors, or workers who will be working on-site for more than two days attend DPR-Archaeologist taught archaeology sensitivity training.</p>

SPR CULT 4	Human Remains Discovery
	<p>In the event that human remains are discovered, work will cease immediately in the area of the find and the project manager/site supervisor will notify the appropriate DPR personnel. Any human remains and/or funerary objects will be left in place or returned to the point of discovery and covered with soil. The DPR Sector Superintendent (or authorized representative) will notify the County Coroner, in accordance with §7050.5 of the California Health and Safety Code, and the Native American Heritage Commission (or Tribal Representative). If a Native American monitor is on-site at the time of the discovery, the monitor will be responsible for notifying the appropriate Native American authorities.</p> <p>The local County Coroner will make the determination of whether the human bone is of Native American origin. If the Coroner determines the remains represent Native American interment, the NAHC in Sacramento and/or tribe will be consulted to identify the most likely descendants and appropriate disposition of the remains. Work will not resume in the area of the find until proper disposition is complete (PRC §5097.98). No human remains or funerary objects will be cleaned, photographed, analyzed, or removed from the site prior to determination.</p> <p>If it is determined the find indicates a sacred or religious site, the site will be avoided to the maximum extent practicable. Formal consultation with the State Historic Preservation Office and review by the Native American Heritage Commission/Tribal Cultural representatives will occur as necessary to define additional site mitigation or future restrictions.</p>
PSR CULT 5	Environmentally Sensitive Area
	The areas outside of the construction road in the vicinity of CA-HUM-218 will be enclosed within a non-permanent, non-ground disturbing, temporary construction fencing.
PSR HAZ 1	Hazardous Materials

	<p>Contractors shall clean, fuel, and repair (other than emergency repairs) all equipment outside park boundaries, whenever possible. For re-fueling heavy equipment during the project, the designated refueling site by the dam shall be used (Appendix B, Sheet 2), and appropriate containment barriers shall be in place. Before initial entry into the work site (or re-entry if used on another project) all heavy equipment (including but not limited to excavators, loaders, and bulldozers) shall be steam cleaned to inhibit the spread of exotic species and to help illustrate leaks to be repaired, if present. Contaminated water, sludge, spill residue, or other hazardous compounds will be disposed of outside park boundaries at a lawfully authorized destination.</p> <p>Contractors shall have a spill response kit with absorbent pads and confinement tubes and a five gallon bucket to capture fuel or oil leaks. Materials that are contaminated shall be contained and disposed of at an approved location.</p> <p>If toxic materials from past land uses are discovered, work shall stop at that location until a qualified hazardous waste cleanup contractor is notified and appropriate disposition of the material is determined.</p>
SPR HAZ 2	Fire Prevention
	<ul style="list-style-type: none"> ▪ Prior to the start of construction, the contractor will develop a Fire Safety Plan for DPR approval. The plan will include the emergency calling procedures for both the California Department of Forestry and Fire Protection (CDF) and local fire department(s). ▪ Contractor shall require that all heavy equipment be equipped with spark arrestors or turbo-charging (eliminates sparks in exhaust) and have fire extinguishers on-site. ▪ Construction crews will park vehicles a minimum of 10 feet from flammable material, such as dry grass or brush. At the end of each workday, construction crews will park heavy equipment over a non-combustible surface to reduce the chance of fire. DPR personnel will have a State Park radio at the Park, which allows direct contact with CalFire and a centralized dispatch center, to facilitate the rapid dispatch of control crews and equipment in case of a fire. Prior to the start of on-site construction activities, contractor will clean and repair (other than emergency repairs) all equipment outside the project site boundaries. ▪ Under dry conditions, a filled water truck and/or fire engine crew will be onsite during activities with the potential to start a fire. ▪ The contractor will designate and/or locate staging and stockpile areas in the designated staging area or on other paved surfaces to prevent leakage of oil, hydraulic fluids, etc. into the SFER. ▪ Contractors shall have firefighting hand tools on site and each vehicle shall have an appropriately-sized and fully charged fire extinguisher.
SPR HAZ 3	Rubbish

	The project area shall be kept clear of trash to avoid attracting predators. All food and garbage will be placed in sealed containers and regularly removed from the site. Following construction, any trash, debris, or rubbish remaining within the work limits shall be collected and hauled off to an appropriate facility.
PSR HYDRO 1	Erosion and Sediment Control and Pollution Prevention
	Contractor shall adhere to a DPR and Water Quality Control agency approved Storm Pollution Prevention Plan (SWPPP) that identifies the pre-, during and post- <u>wildlife-friendly</u> Best Management Practices (BMPs) to be used in all construction areas to reduce or eliminate the discharge of soil; sand, surface water runoff; stockpile management; spill prevention from equipment; and dust control during all excavation, grading, and trenching. The SWPPP will outline water quality monitoring methods, and spill prevention and materials storage requirements for explosives and fertilizers. Acceptable nitrate levels will be adhered to if designated by the Regional Water Quality Control Board. Blasting will be suspended if monitoring indicates unacceptable pollutant levels. Seed from grasses and sedges native to the park and/or the South Fork of the Eel River will be used for erosion control.
SPR NOISE 1	Construction Activities
	<ul style="list-style-type: none"> ▪ Internal combustion engines used for project implementation will be equipped with a muffler of a type recommended by the manufacturer. Equipment and trucks used for Project-related activities will utilize the best available noise control techniques (e.g., engine enclosures, acoustically attenuating shields or shrouds, intake silencers, ducts, etc.) whenever necessary. ▪ Contractor will locate stationary noise sources and staging areas as far from potential sensitive noise receptors, as possible. If they must be located near potential sensitive noise receptors, stationary noise sources will be muffled or shielded, and/or enclosed within temporary sheds. ▪ Construction activities will generally be limited to the daylight hours, Monday – Friday. If work during weekends or holidays is required, no work will occur on those days before 8:00 a.m. or after 5:00 p.m. ▪ All motorized construction equipment will be shut down when not in use. Idling of equipment and haul trucks will be limited to 5 minutes.
PSR NOISE 2	Written notification

	<p>Written notification of construction activities will be provided to any and all off-site noise-sensitive receptors (e.g., residential land uses) located within 1,500 feet of locations where powered construction equipment and/or power tools will be operated. Notification will include anticipated dates and hours during which construction activities including blasting, are anticipated to occur and contact information, including a daytime telephone number, of the project representative. Blasting shall occur only within the designated window; law enforcement and emergency services agencies shall be notified about the blasting schedule Recommendations to assist noise-sensitive land uses in reducing interior noise levels (e.g., closing windows and doors) will also be included in the notification. Explosives shall not be used until a blasting plan has been approved by relevant regulatory agencies.</p>
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2.7 Project Implementation

Dam removal would start during the summer or early fall, and continue for approximately 3-5 months. Additional stream and bank restoration work may extend beyond this window. Work would occur only during daylight hours and would be scheduled to incur the least amount of impact to visitors; however, weekend work could be implemented to accelerate construction or address emergency or unforeseen circumstances. Explosives may be used to help disaggregate concrete. A blasting plan will be submitted for agency review and approval before implementation. During construction, partial closures of the day use areas would be required for the safety of visitors and staff.

Heavy equipment, such as backhoe, excavator, grader, bulldozer, loader, compressor, water truck, and dump truck would be used during construction as would explosives for concrete demolition. Most equipment would be transported to the site and remain until associated work is completed. Transport vehicles for material or equipment delivery trucks, and crew vehicles would also be present intermittently at the site. Staging areas for equipment would be confined to the existing parking areas and open spaces as shown on Sheet 2 although existing parking at the day use may be utilized as/if necessary. Longer term staging will also be available behind a locked gate at the park maintenance yard east from Highway 101 (see GIS map).

Planting for erosion control would occur at the end of the dam construction and during the following winter to maximize soil moisture when the planting occurred. Post rainy season irrigation could occur for 1 to 2 years for drier sites to help ensure plant vigor during early rooting. Saws, shovels, hoedads, pry bars, augers, weed wrenches and propane torches, weed fabric, weed-free topsoil, mulch and compost, and fertilizer may be used to help propagate the plants and manage weeds. Water sources for irrigation and construction dust control will comply with Regional Water Quality Control Board permit requirements. Nearly all of the water used for the intended purposes, except that consumed by plants, will percolate back into the groundwater table that supports the river.

Best Management Practices (BMPs) would be incorporated into this project design to ensure that the natural and cultural resources in and around the project area are

adequately protected during and after construction. The BMPs discussed in this document and used in the implementation of this project were obtained from the *California Stormwater Quality Association (CSQA), Stormwater Best Management Practices Construction Handbook*. Temporary BMPs would be used to keep sediment on-site throughout the duration of the project; during construction, BMPs would be checked daily, maintained, and modified as needed. BMPs would be used after construction to stabilize the site and minimize erosion.

The Department of Parks and Recreation has consistently referenced CSQA BMPs and has identified them as an acceptable standard for use in all State Parks.

2.8 Visitation to Benbow Lake State Recreation area

The proposed project would remove the existing Benbow Dam on the South Fork Eel River

Year	Paid Day Use	Free Day Use	Camping	Total	Boat Launches
2004	8317	22517	9485	40,319	0
2005	3136	5954	6214	15,304	0
2006	6636	9585	7474	23,695	0
2007	12,375	17,783	9562	39,720	0
2008	2201	18,170	6482	26,853	0
2009	2534	9751	7063	19,348	0
2010	1194	14,305	1758	17,257	0
2011	1541	7900	6452	15,893	0
2012	3407	6276	0	9683	0
2013	2324	4110	0	6434	0
2014	985	2169	0	3154	0
Total	44650	118520	54490	217,660	0
Average	4059	10775	5449	19787	0

Source: DPR Field Operations, 2014

The Day Use area is open year round; however, due to budget cuts in recent years and a shortage of staffing North Coast Redwoods District has put in place service reductions, resulting in the closure of Benbow Lake State Recreation Area campground. In addition, the campground may not be open during the work.

2.9 Consistency with Local Plans and Policies

The proposed project to remove the Benbow Dam is consistent with local plans and policies including the County of Humboldt General Plan to provide quality recreational opportunities and protect resources. Although BLSRA does not have a General Plan, work to repair, replace, or rehabilitate existing facilities or to protect public health and safety are permitted under PRC § 5002.2 (c). All proposed work would occur within the boundaries of BLSRA.

2.10 Discretionary Approvals

DPR has approval authority of the proposed dam removal project. This project does require discretionary approvals from the following:

Humboldt County – Encroachment Permit
U.S. Army Corps of Engineers - 404 Permit
U.S. Fish and Wildlife Service (USFWS)
National Marine Fisheries Service (NOAA)
California Department of Fish and Wildlife (CDFW) - 1601/1603 – Lake and Streambed
Alteration Permit
Department of Water Resources, Division of Safety of Dams – Dam Removal
Application
California Regional Water Quality Control Board – 401 Certification
U.S. Department of the Interior (National Park Service)

2.11 Related Projects

Major repairs were done to the Benbow Dam in 2002 and only minor maintenance since. Other projects in the park since 2002 include on-going general maintenance of the park facilities, a previous installation of a new restroom and replacement of one other restroom. District maintenance has proposed construction of a short access road to the stage in the day use area and a new small parking area at the north end of the day use area. Additionally, accessibility improvements will be undertaken on five campsites, the Campfire Center and the Front Loop Meadow Restroom in 2016. The latter projects however, are located outside of the project area.

CHAPTER 3 ENVIRONMENTAL CHECKLIST

PROJECT INFORMATION

1. Project Title: Benbow Lake Dam Removal Project
2. Lead Agency Name & Address: California Department of Parks and Recreation
3. Contact Person & Phone Number: Patrick Vaughan
707-445-6547
4. Project Location: Benbow Lake State Recreation Area
5. Project Sponsor Name & Address: California Department of Parks and Recreation
North Coast Redwoods
3431 Fort Ave
Eureka, CA 95503-3828
6. General Plan Designation: State Recreation Area
7. Zoning: Recreation
8. Description of Project:

DPR proposes to remove the non-historic Benbow Dam to facilitate fish passage and habitat improvement for aquatic species, including Coho, Chinook and Steelhead in the South Fork of the Eel River (SFER) in Benbow Lake State Recreation Area (BLSRA) in southern Humboldt County, northwestern California; approximately 70 road miles south of Eureka and 2 miles south of Garberville, California..
9. Surrounding Land Uses & Setting: Refer to Chapter 3 of this document (Section IX, Land Use Planning)
10. Approval Required from Other Public Agencies: Refer to Chapter 2, Section 2.9

1. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact", as indicated by the checklist on the following pages.

- | | | |
|--|---|---|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Agricultural Resources | <input type="checkbox"/> Air Quality |
| <input type="checkbox"/> Biological Resources | <input type="checkbox"/> Cultural Resources | <input type="checkbox"/> Geology/Soils |
| <input type="checkbox"/> Hazards & Hazardous Materials | <input type="checkbox"/> Hydrology/Water Quality | <input type="checkbox"/> Land Use/Planning |
| <input type="checkbox"/> Mineral Resources | <input type="checkbox"/> Noise | <input type="checkbox"/> Population/Housing |
| <input type="checkbox"/> Public Services | <input type="checkbox"/> Recreation | <input type="checkbox"/> Transportation/Traffic |
| <input type="checkbox"/> Utilities/Service Systems | <input type="checkbox"/> Mandatory Findings of Significance | <input checked="" type="checkbox"/> None |

DETERMINATION

On the basis of this initial evaluation:

I find that the proposed project **COULD NOT** have a significant effect on the environment and a **NEGATIVE DECLARATION** will be prepared.

I find that, although the original scope of the proposed project **COULD** have had a significant effect on the environment, there **WILL NOT** be a significant effect because revisions/mitigations to the project have been made by or agreed to by the applicant. A **MITIGATED NEGATIVE DECLARATION** will be prepared.

I find that the proposed project **MAY** have a significant effect on the environment and an **ENVIRONMENTAL IMPACT REPORT** or its functional equivalent will be prepared.

I find that the proposed project **MAY** have a "potentially significant impact" or "potentially significant unless mitigated impact" on the environment. However, at least one impact has been adequately analyzed in an earlier document, pursuant to applicable legal standards, and has been addressed by mitigation measures based on the earlier analysis, as described in the report's attachments. An **ENVIRONMENTAL IMPACT REPORT** is required, but it must analyze only the impacts not sufficiently addressed in previous documents.

I find that, although the proposed project could have had a significant effect on the environment, because all potentially significant effects have been adequately analyzed in an earlier EIR or Negative Declaration, pursuant to applicable standards, and have been avoided or mitigated, pursuant to an earlier EIR, including revisions or mitigation measures that are imposed upon the proposed project, all impacts have been avoided or mitigated to a less-than-significant level and no further action is required.

Brad Michalk
Environmental Coordinator

Date

ENVIRONMENTAL ISSUES

I. AESTHETICS.

ENVIRONMENTAL SETTING

The seasonal dam that creates Benbow Lake is located within the scenic Benbow Valley, two miles south of the small town of Garberville just west of US Highway 101. Surrounded by a mixed forest of Douglas-fir, ancient redwoods, oaks and madrones, the Benbow Dam is located downstream of the confluence of the South Fork of the Eel River (SFER) and East Branch of the SFER. Native Americans and early pioneers settled in the valley as it afforded abundant hunting and fishing opportunities, as well as timber.

The dam has been a fixture in the valley since it was constructed in 1931, to provide a hydropower source for the surrounding valley and is the only impoundment on the South Fork Eel River. The dam is a hollow core, ogee concrete dam (about 60 feet wide by 300 feet long by 20 feet high) that spans the SFER at a constriction of the river banks. Annual seasonal dam installation created an approximately 123-acre, recreational lake that served the southern Humboldt County community between mid-June and mid-September. During the other 9 months of the year, the dam impoundment structure is removed and the river maintains a relatively natural appearance outside of the concrete substructure components. Until maintenance issues forced a halt to annual installation in 2008, the Lake had been used exclusively for recreation purposes.



Figure 2: Benbow Dam

Removal of the Benbow Dam's concrete substructure will not significantly alter the viewshed of the area due to the fact that the dam was a seasonal feature. The removal of the dam's substructure would result in the restoration of the natural riverbed contours and riparian corridors of the SFER and the East Branch of the SFER.

	<u>POTENTIALLY SIGNIFICANT IMPACT</u>	<u>LESS THAN SIGNIFICANT WITH MITIGATION</u>	<u>LESS THAN SIGNIFICANT IMPACT</u>	<u>NO IMPACT</u>
WOULD THE PROJECT:				
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Criteria for Determining Significance

The analysis of determining the significance of impacts of the Proposed Action to Aesthetics is based on criteria I a-d, described in the environmental checklist above.

DISCUSSION

- a) A scenic vista is defined as a viewpoint that provides expansive views of a highly valued landscape for the benefit of the general public. Scenic vistas of the project area occur from Highway 101, the Benbow Inn and other locations. Because the creation of Benbow Lake is dependent on the yearly placement of the seasonal dam structure, the end result of the permanent removal of the Benbow Dam's substructure is considered to be beneficial. The natural river riparian landscape will be restored within the setting of both the Park and the Historic Benbow Inn. Area visitors will be treated to an especially attractive and inviting addition to the already inspiring landscape. No impact would result.
- b) While the removal of the dam will permanently alter the seasonal scenic lake it will restore the scenic natural river riparian resource. Although the historic dam may be visible from some locations of U.S. Highway 101, it is not designated as a scenic highway in Humboldt County. (California Scenic Highway Mapping System) Therefore, no impact would result.
- c) A specific area's value as parkland can include consideration of the factors, including aesthetics, which contribute to its visual character and sense of place. These are the intrinsic values that pertain to the essential and inherent nature of a place -- aspects that are not necessarily defined by law, science, or economics. Sense of place identifies a site's uniqueness from all other places. It describes the distinctive characteristics that a site possesses; this includes the elements that determine the uniqueness of its landscape, resources, development, and its history. These characteristics are part of what makes a particular site a worthwhile park unit. Components of a site's identity include:
 - Physical features and appearance - Consist of the actual physical structure, characteristics, and all visible features of a place. This includes physiography, natural features, cultural features, land use, development intensities, visual quality, community character, climate, seasonal changes, etc.;
 - Observable activities, functions, and events - How inhabitants or visitors interact with a space, i.e. how the landscape, coast, and the built environment are occupied or used

(activity levels and use intensities). This can also include resource activities or events such as whale or bird migrations;

- Meanings and symbols - Concept of place as a cultural artifact, a place's meaning or value beyond its physical elements. This includes people's experiential responses (emotions, feelings, and physical/intellectual stimulation) when they visit a park, and what they later remember about their visit.

With completion of the project, the visual character of the site will no doubt be different from the recreational lake setting that was present in the summer up until 2007. The lake has been a tourist attraction and recreational site for generations of Southern Humboldt County residents and visitors and this history had created a unique sense of place. With removal of the dam, BLSRA will no longer have the lake which lends its name to the park unit and a change to the park name may be implemented at a future date reflecting the new condition.

CEQA Section 15125(a) requires that the description of the physical environmental conditions (from both a local and regional perspective) in the vicinity of the project must reflect the conditions that exist at the time the environmental analysis is commenced. Since no lake-related recreation activities have occurred in BLSRA since 2007, the analysis of the environmental impacts must use a free-flowing river as the baseline for which impacts to aesthetic resources, particularly with respect to existing visual character.

The project entails removal of a concrete dam structure that has not been functional since 2007. The river will be returned to its natural condition, consistent with its designation as a National Wild and Scenic River.

Work on the project will begin during the summer when most visitation occur. As with any deconstruction/removal project, there would be some temporary decreases in the visual appeal in the area immediately affected by the dam removal. Furthermore, the dam and/or haul road may be visible from two or three residential properties on the north side of the river, and the Benbow Inn. Fencing to define the work areas will be as low profile as needed to help exclude wildlife, control dust and sediment, and maintain public safety. The work site would be closed to the public during actual removal of the dam, further reducing any visual impact. Upon completion of the dam removal, the temporary access road will be removed and the area restored to a natural-appearing condition. With Implementation of **Standard Project Requirement AESTHETICS 1 – VISUAL QUALITY**, temporary impacts on visual quality would remain less than significant.

SPR AESTHETICS 1 – VISUAL QUALITY

Contractor will store all project-related materials outside of the viewshed of adjacent residences.

- d) Lighting is not an element of this project; no new light source(s) would be introduced into the landscape at any time. All construction work would be limited to daylight hours, eliminating the need for work lights. This project would create no new source of light or glare; therefore, no impact would result.

II. AGRICULTURAL and FOREST RESOURCES.

ENVIRONMENTAL SETTING

Benbow Lake State Recreation Area is a 1,142 acre park located in southern Humboldt County, California. The BLSRA is surrounded by forest/timber lands, agriculture lands and residential (zoned by Humboldt County as Timber Production Zone, Agriculture Exclusive and residential-single family). These areas are generally populated by small landowners who conduct small scale "homesteading", including livestock grazing, small orchards, and gardens. The park is zoned "Recreation" by Humboldt County and does not support any agricultural operations or farmland. State Park lands, by definition, cannot be used for commercial agricultural or forestry purposes. The project area encompasses no land under a Williamson Act contract and no Williamson Act land is located in the vicinity of the project.

	<u>POTENTIALLY SIGNIFICANT IMPACT</u>	<u>LESS THAN SIGNIFICANT WITH MITIGATION</u>	<u>LESS THAN SIGNIFICANT IMPACT</u>	<u>NO IMPACT</u>
WOULD THE PROJECT*:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code §4526), or timberland zoned Timberland Production (as defined by government Code § 51104(g))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

* In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997), prepared by the California Department of Conservation as an optional model for use in assessing impacts on agricultural and farmland.

Criteria for Determining Significance

The analysis of determining the significance of impacts of the Proposed Action to Agricultural Resources is based on criteria II a-e, described in the environmental checklist above.

DISCUSSION

- a-b) As stated in the Environmental Setting above, BLSRA does not support any agricultural operations. No land within BLSRA is zoned as prime agricultural land, or is used for grazing purposes, as defined by the United States Department of agriculture land inventory and monitoring criteria (modified for California). The nearest prime agricultural land is located in the Tooby Flat area, approximately 1 ½ miles to the north (Humboldt County). This project would have no impact on any category of California Farmland, conflict with any existing zoning for agricultural use or Williamson Act contract. No Impact.
- c) BLSRA does not support and is not zoned for timber production. The project would take place entirely within BLSRA and would have no impact on any timber zoning or cause rezoning of any land. No Impact.
- d) BLSRA is located within a forest area dominated by redwood and Douglas fir trees. There would be no loss of forestland or conversion of land to non-forest use. No Impact.
- e) As the project involves removal of a dam there would be no conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use. No impact.

III. AIR QUALITY.

ENVIRONMENTAL SETTING

Benbow Lake State Recreation Area (BLSRA) is in Humboldt County, part of the North Coast Air Basin (Basin) and North Coast Unified Air Quality Management District. Frequent rains, ocean winds, generally very low levels of commuter traffic, and a small industrial base result in relatively clean air throughout all of Humboldt and surrounding counties. The area surrounding this project is wooded and, aside from the minimal development, relatively pristine. Emissions from vehicles travelling US Highway 101, which bisects the Benbow Valley, are relatively minor, even during the peak summer months.

Air Quality Designations

The California Air Resources Board (CARB) makes state area designations for ten criteria pollutants (an air pollutant for which acceptable levels of exposure can be determined and for which an ambient air quality standard has been set): ozone, suspended particulate matter (PM₁₀), fine particulate matter (PM_{2.5}), carbon monoxide, nitrogen dioxide, sulfur dioxide, sulfates, lead, hydrogen sulfide and visibility reducing particles (VRPs) (CalEPA 2011 (b)). At the state level (in the project area), ozone and PM₁₀ are designated as non-attainment; PM_{2.5} and VRPs are designated unclassified; and nitrogen dioxide, sulfur dioxide, hydrogen sulfide, sulfates, carbon monoxide and lead are designated as attainment (CalEPA 2011 (c)).

A pollutant is designated “attainment” if the state standard for that pollutant was not violated at any site in the area for a three year period. If there was at least one violation of a state standard for a pollutant in the area, it is designated as “non-attainment” for that pollutant. If there are not enough data available to determine whether the standard is exceeded in an area, the area is designated as “unclassified”. Non-attainment/transitional is a subcategory of the non-attainment designation; an area is designated non-attainment/transitional to signify the area is close to attaining the standard for that pollutant (CalEPA 2003).

The Clean Air Act, which was last amended in 1990, requires the United States Environmental Protection Agency (USEPA) to set National Ambient Air Quality Standards (NAAQS) for widespread pollutants from numerous and diverse sources considered harmful to public health and the environment. The Clean Air Act established two types of national air quality standards. Primary standards set limits to protect public health, including the health of “sensitive” populations such as asthmatics, children and the elderly. Secondary standards set limits to protect public welfare, including protection against visibility impairment, damage to animals, crops, vegetation and buildings (USEPA 2011 (c)).

In contrast to the state area designations the USEPA makes national area designations for five criteria pollutants: ozone (8 hour standard; the national 1 hour standard was revoked in June 2005), PM₁₀, carbon monoxide, nitrogen dioxide and sulfur dioxide (CalEPA 2011(c)). The USEPA has set NAAQS for six principal pollutants, which are called criteria pollutants, these are: lead, ozone, particulate matter (PM), carbon monoxide, nitrogen dioxide and sulfur dioxide, pollutants considered harmful to public health and the environment (USEPA 2011(c)). At the national level (in the project area), ozone, carbon monoxide, PM_{2.5}, and nitrogen dioxide are designated unclassified/attainment; PM₁₀ and sulfur dioxide are designated unclassified (CalEPA 2011 (c)).

If an area does not meet (or contributes to ambient air quality in a nearby area that does not meet) the national primary or secondary ambient air quality standard for the pollutant, it is

designated as non-attainment. If an area meets the national primary or secondary ambient air quality standard for that pollutant, it is designated as in-attainment. An area that cannot be classified on the basis of available information as meeting or not meeting the national primary or secondary ambient air quality standard for the pollutant is designated as unclassifiable (USEPA 2011(a)).

Because of local conditions, Humboldt County is currently in attainment with California standards for carbon monoxide, hydrogen sulfide, lead, ozone, nitrogen dioxide, sulfur dioxide, and sulfides. The Basin is in non-attainment with California standards for particulate matter (PM10), but is currently unclassified for visibility reducing particles (VRP's), but PM10 (which includes dust and smoke particles) is a VRP. With respect to federal standards, the North Coast Air Basin is in an unclassified/attainment zone for both carbon monoxide and ozone and remains unclassified for particulate matter.

Air Quality Attainment Status		
Pollutant	State Status	National Status
Ozone	Attainment	Attainment
PM10	Non-attainment	Attainment
PM2.5	Attainment	Attainment
Carbon Monoxide	Attainment	Attainment
Nitrogen Monoxide	Attainment	Attainment
Sulfur Dioxide	Attainment	Attainment
Sulfates	Attainment	No Federal Standard
Lead	Attainment	Attainment

Source: CARB 2012

Sensitive Receptors

Sensitive receptors include individuals as well as groups relating to specific land uses. Some individuals are considered to be more “sensitive” than others to air pollutants. The reasons for greater sensitivity than average include health problems, proximity to the emission source, or duration of exposure to air pollutants. Land uses such as primary and secondary schools, hospitals, and convalescent homes are considered to be sensitive receptors to poor air quality because the very young, the elderly and infirm are more susceptible to respiratory infections and other air quality related health problems than the general public. Residential uses are considered sensitive receptors because people in residential areas are often at home for extended periods of time, so they can be exposed to pollutants for extended periods. Recreational areas are considered moderately sensitive to poor air quality because vigorous exercise associated with recreation places a high demand on the human respiratory function. Sensitive receptors in the proposed project area include recreational users (trail-users, campers, etc.) and visitors to the nearby Benbow Inn.

	<u>POTENTIALLY SIGNIFICANT IMPACT</u>	<u>LESS THAN SIGNIFICANT WITH MITIGATION</u>	<u>LESS THAN SIGNIFICANT IMPACT</u>	<u>NO IMPACT</u>
WOULD THE PROJECT*:				
a) Conflict with or obstruct implementation of the applicable air quality plan or regulation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations (e.g., children, the elderly, individuals with compromised respiratory or immune systems)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

* Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied on to make these determinations.

Criteria for Determining Significance

The analysis of determining the significance of impacts of the Proposed Action to Air Quality is based on criteria III a-e, described in the environmental checklist above.

DISCUSSION

- a) The proposed project would not conflict or obstruct the implementation of any applicable air quality management plan for the BLSRA. All work would be in accordance with applicable air quality plans and regulations. No impact.
- b) The proposed project would not emit air contaminants at a level that by themselves would violate any air quality standard or contribute to a permanent or long-term emission of dust. The proposed project would involve the use of equipment and materials that would emit ozone precursors. Increased emission of dust (particulate matter) could contribute to existing non-attainment conditions, which could interfere with achieving the projected attainment standards. Integration of **Standard Project Requirement AIR 1** in project design would reduce impacts to less than significant.

SPR AIR 1 - AIR QUALITY

- **All active construction areas will be watered at least twice daily during dry, dusty conditions.**
- **All trucks hauling soil, sand, or other loose materials on public roads will be covered or required to maintain at least two feet of freeboard.**

- All equipment engines will be maintained in good condition, in proper tune (according to manufacturer's specifications), and in compliance with all State and federal requirements.
- Excavation and grading activities will be suspended when sustained winds exceed 25 miles mph, instantaneous gusts exceed 35 mph, or dust from construction might obscure driver visibility on public roads.
- Earth or other material that has been transported onto paved streets by trucks, construction equipment, erosion, or other project-related activity will be promptly removed.

c) See b) above.

d) As mentioned above, the proposed project would generate equipment exhaust emissions for the duration of the project. Various sensitive receptors (nearby day use/campground users) may be present in the general area and could be affected. Integration of **Standard Project Requirement AIR 1** in project design would reduce impacts to less than significant.

e) Construction activities do not usually emit offensive odors and any odors released are generally confined to the vicinity of the source. Although construction activities occurring in association with the proposed project could generate airborne odors with the operation of construction vehicles (i.e. diesel exhaust), these emissions would only occur during the daytime hours and would generally be restricted to the immediate vicinity of the project site. Integration of **Standard Project Requirement AIR 1** in project design would reduce impacts to less than significant.

IV. BIOLOGICAL RESOURCES.

ENVIRONMENTAL SETTING

Benbow Lake State Recreation Area is an 1142-acre park unit in southern Humboldt County that includes an approximately 5-mile reach of the SFER and a stand of old growth redwood forest. Bordering BLSRA to the west is the small community of Benbow. The more populous community of Garberville is situated about 3 miles north of the park.

Vegetation/Habitat

Most of BLSRA supports a *Sequoia sempervirens* Forest Alliance vegetation type, as defined in Sawyer et al (2009), which conforms to the National Vegetation Classification Standard adopted by the federal government (USGS 2010). *Pseudotsuga menziesii* – *Notholithocarpus densiflorus* Forest Alliance type, *Quercus chrysolepis* Forest Alliance, shrub lands, or annual grasslands comprise the vegetation in drier park locations, such as south facing slopes. Willows and white alder (*Alnus rhombifolia*) predominate on floodplain locations, which are subject to annual inundation from high river flows.

Vegetation types immediately adjacent to, and extending slightly into the project area consists of *Sequoia sempervirens* Forest Alliance on the left bank of the SFER and a mixture of the *Pseudotsuga menziesii* – *Notholithocarpus densiflorus* Forest Alliance type and shrub lands on slopes above the right bank of the river.

Redwood (*Sequoia sempervirens*) dominates the canopy of the *Sequoia sempervirens* Forest Alliance, which also includes tanbark oak (*Notholithocarpus densiflorus*), Douglas-fir (*Pseudotsuga menziesii*), big leaf maple (*Acer macrophyllum*), and California bay laurel (*Umbellularia californica*). Common shrub and herbaceous species include California huckleberry (*Vaccinium ovatum*), western sword fern (*Polystichum munitum*), California blackberry (*Rubus ursinus*), California hazelnut (*Corylus cornuta* var. *californica*), redwood sorrel (*Oxalis oregona*), trail plant (*Adenocaulon bicolor*), thimbleberry (*Rubus parviflorus*), wild ginger (*Asarum caudatum*), and poison oak (*Toxicodendron diversilobum*).

Douglas- fir and tanbark oak dominate the canopy of the *Pseudotsuga menziesii*-*Notholithocarpus densiflorus* Forest Alliance. Other common canopy species include madrone (*Arbutus menziesii*), California bay laurel, California black oak (*Quercus kelloggii*), and canyon live oak (*Quercus chrysolepis*). Poison oak dominates the shrub layer.

Native coyote brush (*Baccharis pilularis*) and non-native grass species such as dogtail grass (*Cynosurus echinatus*) and wild oats (*Avena barbata*) dominate areas of shrubland. Those areas dominated by coyote brush are classified as *Baccharis pilularis* Shrubland Alliance. Poison oak is a common component of shrubland vegetation types.

Non-native grasses and forbs dominate annual grasslands. Commonly encountered species include non-native species such as orchard grass (*Dactylis glomerata*), crane's bill geranium (*Geranium molle*), rough cat's-ear (*Hypochaeris radicata*) and native species found in the park that include, harvest brodiaea (*Brodiaea elegans*), California poppy (*Eschscholzia californica*), blue wild-rye (*Elymus glaucus*), and purple needle-grass (*Stipa pulchra*). Species native the South Fork of the Eel sub-basin include: tomcat clover (*Trifolium wildenovii*), small fescue (*Festuca (Vulpia) microstachys*), California brome (*Bromus carinatus*), and meadow barley (*Hordeum brachyantherum* ssp. *californicum*).

Most of the project area consists of a partially vegetated gravel-covered floodplain. Riparian species comprise the floodplain vegetation, including native narrow-leaved willow (*Salix exigua*), arroyo willow (*Salix lasiolepis*), sapling-size black cottonwood (*Populus trichocarpa*), and white alder. The ground-layer vegetation includes non-native species such as fennel (*Foeniculum vulgare*), black mustard (*Brassica nigra*), and storksbill (*Erodium* sp.). This vegetation occurs in discontinuous stands that are subject to annual inundation from high flows of the SFER.

SPECIAL-STATUS SPECIES

Sensitive biological resources that occur or potentially occur in or near the proposed project site are discussed in this section. Special-status species (sensitive species) are defined as plants and animals that are legally protected or that are considered sensitive by federal, state, or local resource conservation agencies and organizations. Specifically, this includes species listed as State or federally Threatened or Endangered, those considered as candidates for listing as Threatened or Endangered, species identified by the US Fish and Wildlife Service (USFWS) and/or California Department of Fish and Wildlife's (DFW) as Species of Special Concern (SSC), animals identified by CDFW as Fully Protected or Protected (FP, P), and plants considered by the California Native Plant Society (CNPS) to be rare, threatened, or endangered. Also included are habitats that are considered critical for the survival of a listed species or have special value for wildlife species and plant communities that are unique or of limited distribution.

All special-status species and their habitats were evaluated for potential impacts from the proposed Benbow Dam Removal Project. Existing available data was collected and reviewed to determine the proximity of special status plants, animals, and their habitats to the project area. Queries of the California Department of Fish and Wildlife's California Natural Diversity Database (CDFW 2014), the California Native Plant Society's On-line Inventory, Eighth Edition (CNPS 2014), and the U.S. Fish and Wildlife Service (USFWS 2014a) were conducted for special-status species and habitats within the Garberville and eight surrounding 7½ -minute United States Geological Society (USGS) quadrangle maps (Piercy, Harris, Noble Butte, Miranda, Fort Seward, Ettersburg, Bear Harbor, and Briceland). Additionally, consultation with the California Department of Fish and Wildlife and the U.S. Fish and Wildlife Service was conducted.

Special-status plant and animal species are described below along with their potential to occur within the project area and the potential impacts to these species from project implementation.

Plant Species

Thirty-five special status species have been identified by the California Natural Diversity Database (CNDDDB), CNPS¹, and U.S. Fish and Wildlife Service (USFWS) as occurring or having a potential to occur within the Garberville and eight surrounding 7½ -minute United States Geological Society (USGS) quadrangle maps (Piercy, Harris, Noble Butte, Miranda, Fort Seward, Ettersburg, Bear Harbor, and Briceland).

¹ California Native Plant Society (CNPS) Rare Plant Ranks: 1A = presumed extinct in California; 1B = rare or endangered in California and elsewhere; 2 = rare or endangered in California, more common elsewhere; 3 = need more information; 4 = plants of limited distribution. Threat code extensions are: .1 = seriously endangered in California; .2 = fairly endangered in California; and .3 not very endangered in California

Within the project footprint habitat is extremely limited for any special status plant species; however, marginally suitable habitat is available for the following two species.

Special-Status Plant Species that are Known to Occur, or Could Potentially Occur within the Project Area

- **Coast fawn lily** (*Erythronium revolutum*) – Fawn lily is a CNPS Rare Plant Rank 2B.2 perennial herb that blooms from March through August. This species inhabits mesic locations in bogs, fens, broadleaved upland forest, and North Coast coniferous forest habitats of Del Norte, Humboldt, Mendocino, Siskiyou, Sonoma, Tehama, and Trinity Counties. It occurs at elevations ranging from sea level to approximately 5200 feet above mean sea level (amsl). Low to moderate quality habitat for fawn lily occurs on the forested fringes of the project site.
- **Humboldt County fuchsia** (*Epilobium septentrionale*) – Humboldt County fuchsia is a CNPS Rare Plant Rank 4.3 perennial herb that blooms from July through September. It occurs at elevations of approximately 150 feet to 5900 feet amsl in broadleaved upland forest and North Coast coniferous forest habitats of Humboldt, Mendocino, Siskiyou, and Trinity Counties. The closest reported location to the project area for this species is from a 1935 collection from rocks along the South Fork of the Eel River approximately 1.5 miles north in or near present day Tooby Memorial Park. Marginally suitable habitat exists within the project area for this species.
- **Streamside daisy** (*Erigeron biolettii*) – Streamside daisy is a CNPS Rare Plant Rank 3 perennial herb that blooms from June through October. It occurs at elevations of approximately 100 feet to 3600 feet amsl in broadleaved upland forest, cismontane woodland, and North Coast coniferous forest habitats of Humboldt County south through Mendocino, Marin, Napa, Sonoma, and Solano Counties. The closest reported locations to the project area for this species are from collections made in 1928 and 1936. The 1928 record describes a collection on rocky slopes along the East Branch of the South Fork of the Eel River approximately 0.6 mile east of the project area. The 1936 record describes a collection on dry bluffs along the South Fork of the Eel River more than 1 mile from the project area. Marginally suitable habitat exists within the project area for this species.

Wildlife Species

Wildlife is abundant in BLSRA due to its location within a coniferous and deciduous mixed forest with an adjacent river. The variety of wildlife found in the park unit includes, but is not limited to, mule deer (*Odocoileus hemionus*), western grey squirrel (*Sciurus griseus*), raccoon (*Procyon lotor*), belted kingfisher (*Ceryle alcyon*), red-tailed hawk (*Buteo jamaicensis*), Steller's jay (*Cyanocitta stelleri*), Pacific banana slug (*Ariolimax columbianus*), western fence lizard (*Sceloporus occidentalis*) and Northern Pacific tree frog (*Pseudacris regilla regilla*).

The proposed Benbow Dam removal project occurs approximately 0.65 mile from Highway 101 with a fairly dense mixed coniferous forest to the immediate south and more sparse mixed woodland to the immediate north. Fifteen special status wildlife species have been identified by the CNDDDB as occurring or having a potential to occur within the Garberville and eight surrounding 7½ -minute United States Geological Society (USGS) quadrangle maps (Piercy, Harris, Noble Butte, Miranda, Fort Seward, Ettersburg, Bear Harbor, and Briceland). Special-status wildlife species that have been documented in BLSRA or could potentially occur near the project site are described below.

Special-Status Plant Species that are Known to Occur, or Could Potentially Occur within the Project Area

- **Coho Salmon**, Southern Oregon/Northern California Evolutionarily Sustainable Unit (ESU) (*Oncorhynchus kisutch*). This federal and state Threatened species occurs in the Eel River and its tributaries, including the SFER.
- **Steelhead**, Northern California ESU (*Oncorhynchus mykiss*). Steelhead is a federal Threatened species that occurs in the Eel River and its tributaries, including the SFER.
- **Chinook Salmon**, California Coastal ESU (*Oncorhynchus tshawytscha*). This federal and state Threatened species occurs in the Eel River and its tributaries, including the SFER.
- **Foothill Yellow-Legged Frog** (*Rana boylei*). Foothill yellow-legged frog is a California Species of Special Concern that occurs in clear rivers and creeks with gravel or rock substrate and sunny banks in forest or woodland habitats (Jennings and Hayes 1994). Suitable habitat for this highly aquatic frog occurs in the SFER and recent breeding surveys (Questa 2012) confirmed the presence of this species within a 2.5 mile reach of the river that encompasses the project footprint.
- **Coastal Tailed Frog** (*Ascaphus truei*). This California Species of Special Concern generally inhabits cold, clear, rocky streams in forested areas (Stebbins 2003). The habitat is cold, fast moving streams with cobblestone bottoms; these frogs are mostly aquatic but adults may emerge during cool, wet conditions to forage terrestrially. Breeding season is from May through September; females deposit their eggs under rocks in fast-moving streams (CaliforniaHerps 2014). Threats to this species include activities that result in sedimentation of suitable stream environments. The SFER is not suitable habitat.
- **Southern Torrent Salamander** (*Rhyacotriton variegatus*). This California Species of Special Concern inhabits cold and clear, well-shaded streams, seeps, and waterfalls (Stebbins 2003). Within a mixed conifer habitat these salamanders prefer cold, well shaded permanent streams and seepages (CNDDDB). Threats to this species include activities that result in sedimentation or water removal in suitable habitat. There is no suitable habitat for southern torrent salamander within or adjacent to the project site.
- **Northern Western Pond Turtle** (*Clemmys marmorata marmorata*). The northern western pond turtle is a California Species of Special Concern that inhabits still or slow moving aquatic habitats with submerged or emergent vegetation and also requires open basking sites and sandy or loose soil sites to lay eggs (Jennings and Hayes 1994, CaliforniaHerps 2014). Mating usually occurs in April and May and females then lay eggs in upland nest locations. Aquatic habitat and suitable egg-laying sites occur at or near the project site.
- **Marbled Murrelet** (*Brachyramphus marmoratus*). This State Endangered and federal Threatened species is known to occur in nearby Humboldt Redwoods SP (approximately 21 miles away). Marbled murrelet is a seabird that spends most of its life in marine environments, but ventures inland to old growth forests to breed (USFWS 2014a). The breeding season for this species is March 24 through September 15. Marbled murrelets primarily use old growth forests to nest (characterized by large trees, a multistoried stand, and moderate to high canopy closure), but also use residual old growth stands. For breeding purposes trees must have large branches or deformities for nest platforms, with

the occurrence of suitable platforms being more important than tree size alone (USFWS 1997). Major threats to the species include loss of habitat, predation, and various impacts in their marine habitat. Although potentially suitable habitat is present adjacent to the project site marbled murrelet has not been detected at the project site.

- **Northern Spotted Owl** (*Strix occidentalis caurina*). Northern spotted owl (NSO) is a federal Threatened species known to occur at BLSRA, though no breeding has been confirmed. The breeding season for this species is February 1 through August 31. Northern spotted owls generally occur in older forest habitats because these forest types provide suitable nesting, roosting, and foraging opportunities (USFWS 2014a). Stands occupied by northern spotted owls often have high canopy cover with a layered overstory, multiple tree species, and a large tree component. Old growth forest habitat suitable for northern spotted owl nesting occurs adjacent to the project site; however, DPR biologists have conducted multiple years of protocol level surveys in BLSRA and have determined that no breeding is occurring in the park (Amber Transou, pers.comm.).
- **Willow Flycatcher** (*Empidonax traillii*). This State Endangered species is known to occur in Humboldt Redwoods SP approximately 21 miles north, however, there is only 2 confirmed breeding record for this species in Humboldt County in recent times. Breeding habitat generally consists of extensive, dense willow thickets along riparian or other wetland areas. The riparian area in close proximity to the project site provides a suitable location for nesting, though the habitat is limited. The breeding season for this species is February 1 through September 15. There is suitable habitat for willow flycatcher along the SFER; however the absence of confirmed breeding records of this species in southern Humboldt County makes this species an unlikely breeder in the project area.
- **Yellow-breasted Chat** (*Icteria virens*). This California Species of Special Concern nests locally in well-developed riparian vegetation along inland river valleys in Humboldt County (Harris 1991). The breeding season for this species is February 1 through September 15. Typical nesting habitat is dominated by willows and alders and contains a dense shrub layer. There is suitable nesting habitat for yellow-breasted chat along the SFER adjacent to the project site. There are numerous records in eBird from Southern Humboldt Community Park (Tooby Memorial Park) approximately 1.7 miles north.
- **Osprey** (*Pandion haliaetus*). Osprey is a California Species of Special Concern that builds large stick nests in treetops or snags in open forests within fifteen miles of a good fish-producing body of water (DFG 2014). There are two records in the CNDDDB for Osprey: One record, from 1998, is for a nest on the west side of Benbow Lake near the dam and the other record, from 1996, is for a nest along the west side of the SFER between Richardson Grove State Park and BLSRA. An eBird record from 25 April 2013 indicates an Osprey on a nest, near the Benbow Dam Rd. and trail that is used yearly. The breeding season for osprey is February 1 through September 15.
- **Bald Eagle** (*Haliaeetus leucocephalus*) (nesting and wintering). This State Endangered species was recently delisted under the Federal Endangered Species Act (USFWS 2014b). The bald eagle is also protected under the Bald and Golden Eagle Protection Act (BGEPA) and the Migratory Bird Treaty Act (MBTA). Bald eagles in California can be either year-round residents or winter migrants. Nest trees are often in very large trees in close proximity to water and breeding season generally occurs between January and July (USFWS 2007). Suitable nesting and wintering habitat occurs in or near the project site.

Bald eagle nesting has occurred in recent years less than a mile from the project area in dense redwood forest habitat (Amber Transou, pers.comm.).

- **Sensitive Bat Species.** The project area is within the potential range of several sensitive bat species including Townsend's big-eared bat (*Corynorhinus townsendii*), a State Candidate Threatened species, and the pallid bat (*Antrozous pallidus*) and western red bat (*Lasiurus blossevillii*), both California Species of Special Concern. Other bat species identified as medium to high conservation concern by the Western Bat Working Group with some potential to occur in or near Benbow Lake SRA include, but are not limited to, the hoary bat (*Lasiurus cinereus*), Yuma myotis (*Myotis yumanensis*), silver-haired bat (*Lasionycteris noctivagans*) long-eared myotis (*Myotis evotis*), and long-legged myotis (*Myotis volans*).

A pallid bat was collected in 1936 at Richardson Grove State Park, which is approximately 3 miles to the south (CNDDDB 2014). Suitable roosting and/or breeding habitat for this species are potentially available adjacent to the project area. Preferred habitat includes tree cavities, the underside of bridges, and rock crevices (Zeiner et. al. 1990). An exit survey was conducted by DPR biologists on August 11, 2015 and identified bats (species not determined) using the dam, but not the shed and winch house structures. A second exit survey will be conducted in mid-September. Local bat expert, J. Szewczak inspected the dam and associated structures for suitable bat habitat and bat sign on September 7, 2015. He concluded that the structures and most of the dam would support mostly day roosting only, perhaps some night roosting by individuals, and no maternal colonies. Based on guano present, use is light, and the main bat species is not Townsend's big-eared bat, but likely *Myotis yumanensis*, due to the proximity of a roosting colony at the nearby Benbow Inn. A small amount of suspect Townsend's big-eared bat guano was found and collected in one of the sheds for analysis.

SENSITIVE NATURAL COMMUNITIES

Sensitive plant communities are those that are regionally uncommon or unique, unusually diverse, or of special concern to local, state, and federal agencies. Removal or substantial degradation of these plant communities constitutes a significant adverse impact under CEQA. The California Department of Fish Game's California Natural Diversity Database (CNDDDB) maintains a list of the state's plant communities (also known as alliances) and identifies those of high inventory priority due to their rarity and threat. These are considered sensitive natural communities by regulatory agencies.

The CDFW classifies the *Sequoia sempervirens* Forest Alliance as a sensitive natural community. As described above in the vegetation/habitat section a narrow strip of this plant community occurs within the project area.

Riparian habitat does occur within the project area in scattered stands subject to annual inundation; however none of these willow-dominated vegetation types are identified as sensitive in the CNDDDB.

SUDDEN OAK DEATH

Discovered in 1995, Sudden Oak Death (SOD) is caused by the pathogen *Phytophthora ramorum*, which has infected and killed thousands of tanoak, coast live oak, Shreve oak, and California black oak trees in coastal forests from Humboldt County to Monterey County (COMTF 2014). This water mold also infects many other species, including California bay

laurel (*Umbellularia californica*), Pacific madrone (*Arbutus menziesii*), California buckeye (*Aesculus californica*), coast redwood, Douglas-fir, big leaf maple (*Acer macrophyllum*), California honeysuckle (*Lonicera hispidula* var. *vacillans*), California coffeeberry (*Rhamnus californica*), toyon (*Heteromeles arbutifolia*), rhododendron (*Rhododendron* spp.), manzanita (*Arctostaphylos* spp.) and huckleberry (*Vaccinium* spp.).

SOD may be spread when host plants, wood chips, burls, other host plant products or soils contaminated with the pathogen’s spores are moved to previously uninfected areas (COMTF 2014). SOD thrives in cool, wet to moist climates, and living plants and its spores can be found in soil and water as well as plant material. The risk of SOD spread is greatest in muddy areas and during rainy weather where spore-harboring hosts are present. Detached plant leaves, organic material, and soil, which may harbor spores of the pathogen, are more likely to stick to vehicles, equipment, and humans when they are wet.

Humboldt County is one of 14 California counties to have confirmed SOD findings and is under state and federal quarantine regulations governing the movement of affected plants or plant material out of the quarantined area (COMTF 2014). The California County Agricultural Commissioners are the enforcement agents for state and federal regulations governing *Phytophthora ramorum*.

WETLANDS AND WATERS OF THE UNITED STATES

The federal Clean Water Act (CWA) defines wetlands as lands that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. The U.S. Army Corps of Engineers (USACE) has jurisdictional authority of wetlands under provisions found in Section 404 of the CWA. Typically, USACE-jurisdictional wetlands meet three criteria: hydrophytic vegetation, hydric soils, and wetland hydrology. No USACE-jurisdictional wetlands occur within the project footprint.

Waters of the U.S. (aka Other Waters) are regulated by the USACE under Section 404 of the CWA. These are defined as all waters used in interstate or foreign commerce, waters subject to the ebb and flow of the tide, all interstate waters including interstate wetlands and all other waters such as: intrastate lakes, rivers, streams, mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, and natural ponds. Based on this definition the South Fork of the Eel River constitutes a Water of the U.S. and is subject to regulation by the USACE and the California Regional Water Quality Control Board (RWQCB) under sections 404 and 401 of the CWA, respectively.

Pursuant to Fish and Game Code Section 1600 et seq., the DFW regulates any work undertaken in or near a river, stream, or lake that flows at least intermittently through a bed or channel. Proposed construction activities for this project are subject to DFW jurisdictional authority.

	<u>POTENTIALLY SIGNIFICANT IMPACT</u>	<u>LESS THAN SIGNIFICANT WITH MITIGATION</u>	<u>LESS THAN SIGNIFICANT IMPACT</u>	<u>NO IMPACT</u>
WOULD THE PROJECT:				
a) Have a substantial adverse effect, either directly or through habitat modification, on any species	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

identified as a sensitive, candidate, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service?

- | | | | | |
|--|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c) Have a substantial adverse effect on federally protected wetlands, as defined by §404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Criteria for Determining Significance

The analysis of determining the significance of impacts of the Proposed Action to Biological Resources is based on criteria **IV** a-f, described in the environmental checklist above.

DISCUSSION

This project proposes to remove the Benbow Dam located on the SFER. Removal activities include establishing temporary access roads, river crossings and a diversion channel. Approximately 13,000 tons of structurally reinforced concrete that make up the dam, banks and associated spillway will be removed. Following removal of the dam, restoration of the active river channel will be undertaken by elimination of the temporary diversion channel and access roads and stabilization of the riparian bank through the placement of erosion-control fabric and plantings of locally obtained willows, alder and redwoods.

- a) (i) **Special status plant species.**
 Suitable to marginally suitable habitat occurs within the project area for fawn lily, Humboldt County fuchsia and streamside daisy. Although unlikely, these and other species may potentially occur at locations where ground disturbance is proposed. Integration of **Specific Project Requirement Bio1 - Special Status Plant Species** would ensure that project impacts remain at a less than significant level.

PSR BIO 1 - SPECIAL STATUS PLANT SPECIES

Surveys for special status plant species, including fawn lily, Humboldt County fuchsia, and streamside daisy within the project area will be conducted within the project area by a DPR-approved biologist during the appropriate blooming periods or when identity can be confirmed. Occurrences of these species within the project area will be flagged or otherwise marked identified onsite. Where possible, occurrences of these species will be avoided and protected from construction activities. Those locations where avoidance is not possible will be subject to the following conditions:

- **Prior to construction plants will be carefully excavated and transplanted nearby in suitable habitat. All transplant work will be conducted under the direction of a DPR-approved biologist. Transplanting will occur during the dormant growing season (i.e. late fall) when the plants are least disturbed and can be watered by natural precipitation.**

(ii) Salmon, steelhead, foothill yellow-legged frog, and northern western pond turtle.

The Eel River and its tributaries such as the SFER provide suitable habitat for several special status fish, amphibian, and reptile species, as stated in the Environmental Setting above. Within the project area the SFER and its tributary the East Branch of the SFER do not provide suitable breeding or aquatic habitat for coastal tailed frog and southern torrent salamander. There is marginal aquatic habitat and suitable egg-laying sites at or near the project site for northern western pond turtle. Breeding surveys in 2012 for foothill yellow-legged frog have established the presence of this species within the project footprint. The presence of Coho salmon, Chinook salmon, and steelhead at the Benbow Dam site has been documented by Roelofs et al (1992) and Questa (2012).

Currently the existing dam structures (e.g. fish ladder) and river channel topography inhibit free fish migration and passage. Implementation of the project, which includes restoration of the active river channel, would ensure that impacts to aquatic organisms (primarily anadromous fish) would remain at a less than significant level; however, a temporary increase in soil erosion and increased sedimentation of the nearby SFER could occur during construction of the proposed project. Integration of **Standard Project Requirement HYDRO-1: Erosion and Sediment Control and Pollution Prevention, HAZ-1. Standard Project Requirement: Spill Prevention** (See Chapter 2, Project Description) would ensure that any potential impact from erosion, sedimentation, and contaminants on aquatic species remains at a less than significant level.

Integration of **Specific Project Requirement BIO-2: Anadromous Fish, Specific Project Requirement BIO-3: Foothill Yellow-legged Frog and Specific Project Requirement BIO-4: Northern Western Pond Turtle** would ensure any project impacts to these species would remain at a less than significant level.

(iii) Raptors and migratory birds.

As described in the Environmental Setting above, suitable nesting habitat for bald eagle, northern spotted owl, osprey, and various species of migratory birds exists within or adjacent to the project area. Other avian species not identified in the Environmental Setting may also be present during the breeding season within or adjacent to the project area. Construction activities that generate noise above ambient levels could impact nesting birds if conducted during the breeding season. Integration of **Standard Project Requirement Bio-5: Raptors and Migratory Birds** would ensure that project impacts remain at a less than significant level.

(iv) Sensitive Bat Species

Suitable breeding habitat for Townsend's big-eared bat, pallid bats and other bat species occurs in locations in or adjacent to the project area, as described in the Environmental Setting above. Integration of **Standard Project Requirement Bio-6: Sensitive Bat Species** would ensure that project impacts these species remain at a less than significant level.

STANDARD PROJECT REQUIREMENT BIO-6: SENSITIVE BAT SPECIES

Humane one-way exclusion that would allow bats to exit but not return to the structure will be installed on the pipes extending from the dam spillway in mid-September prior to the year of dam demolition. After allowing enough time (approximately one week) for any bats to escape, permanent exclusion will be installed in the pipes.

Just prior to demolition of sheds, stacks of flashboards and dam structures, a DPR-approved biologist with bat expertise and training will survey the targeted structures for roosting bats and if any are found, they will be removed and released away from the project site onto the bark of trees nearby.

DPR will consult and work closely with the California Department of Fish and Wildlife on all bat measures and follow their guidance.

- b) As described in the Environmental Setting, riparian habitat occupies scattered stands on the SFER floodplain. This project would result in the removal of at most one willow and one alder where the haul road passes along the terrace edge near the west end of the day use area. This is a less than significant impact to this habitat. In addition, the last phase of the project would enhance the riparian habitat through plantings of cuttings from willows, cottonwoods, and alder found in the park, as directed by a DPR-approved biologist.

Limited redwood forest habitat (formally known as Sequoia sempervirens Forest Alliance) occurs on the edges of the project area. An estimated 5 redwood trees, with diameters at breast height of 2"(2), 5", 6", and 9", will need to be removed to gain access via a gravel ramp from the gravel bar to a refueling apron outside of the channel at the left bank of the dam. Redwood limbs at the refueling apron will need to be cut or tied back to achieve equipment access. This is a less than significant impact to this habitat.

The haul road would be configured to avoid other existing vegetation, other than non-native grass at the day use area, which would be restored and/or protected from compaction by the use of track plates.

- c) No federally protected wetlands, as defined in Section 404 of the federal CWA, occur within the project footprint. As described in the Environmental Setting above, the SFER does constitute a Water of the U.S. and is subject to regulation by the USACE and the RWQCB under sections 404 and 401 of the CWA, respectively. Proposed project activities are also subject to DFW regulation as defined in the Fish and Game Code Section 1600 et seq. Work activities would create temporary impacts to the river channel, including temporary access roads, river crossings (two railcar bridges and culverts to cross active channels), a diversion channel, and a coffer dam of native onsite material.

This project will require issuance of 401 and 404 permits and a DFW 1602 Lake or Streambed Alteration Agreement prior to the start of work to address these temporary

impacts. All permit/agreement conditions would be implemented, ensuring that any potential impacts remain at a less than significant level.

- d) The proposed project could temporarily affect fish passage; however, project implementation would result in the elimination of a seasonal impoundment and allow for normal, natural fish migration that occurs seasonally in response to lowering stream flows.

Temporary Impacts to fisheries resources would be addressed by Integration of **Specific Project Requirement BIO-2: Anadromous Fish**. Some of these impacts result from temporary river channel alterations and temporary water quality degradation. Project requirements would include timing of dam removal to minimize impacts to resident and migrating fish. Studies by Roelofs et al (1992) and others have determined that the majority of fish migration to cooler water refugia is accomplished when river flows drop below approximately 200cfs. During this time, the majority of adult salmonids will have moved to summer holding habitat upstream or downstream of the project site in search of cooler and more hospitable stream temperatures. Also, most outmigration of juvenile fish will have occurred.

Other measures to minimize impacts would include screening, diversion channels, and electro-fishing with relocation of fish in the active project area by a DPR-approved biologist with the proper permits to handle federally listed fish species.

- e) As stated in the Environmental Setting above, Humboldt County is subject to state and federal quarantine regulations for the pathogen *Phytophthora ramorum*, which causes the often fatal disease known as Sudden Oak Death in numerous species of native plants, especially oaks. Project activities could inadvertently transport this disease to new uninfected locations through pathogen spores in soil or on infected plant material that stick to construction vehicles, equipment, or personnel. Implementation of **Specific Project Requirement Bio-7: Sudden Oak Death** (see Chapter 2, Project Description) would ensure any potential impacts remain at a less than significant level.
- f) This project would not conflict with any Habitat Conservation Plans, Natural Communities Conservation Plans, or other approved habitat conservation plans. No impact.

V. CULTURAL RESOURCES.

ENVIRONMENTAL SETTING

Prehistoric Context

The following discussion of the historical setting of the project area is adapted from the *Archaeological Site Evaluation Report*, prepared by Kevin Dalton, and Chico State University. That report was completed after a summer field season conducting minimal sub-surface investigations into the archaeological sites located within Benbow Lake State Recreation Area in 2013. The Report (Dalton, et al 2014), is currently in draft form. *An Archaeological Survey Report for The Benbow Dam Removal Project, Benbow Lake State Recreation Area, Humboldt County, California* was prepared by Steven M. Hilton in January 2015 (Hilton 2015). The reader is referred to the final draft of these reports for additional information about the historical background of the larger BLSRA area.

The project area is located within the ethnographic territory of the Sinkyone people. The Sinkyone tribe has often been divided into two linguistically different groups: the Lolangkok Sinkyone, who were located on the lower part of the SFER and a section of the main Eel River, and the Shelter Cove Sinkyone who occupied the area from the SFER to the coast (Baumhoff 1958:184). According to Baumhoff (1958) the Benbow area was located within the territory of the Shelter Cove Sinkyone.

The Sinkyone are located within the Athabascan linguistic area (Kroeber 1925:145). The most extensive Athabascan ethnography comes from Baumhoff's (1958) California Athabascan Groups. This work is composed mainly upon the unpublished field notes of Pliny Earle Goddard and C.H. Merriam. The collaboration of Goddard and Merriam's work by Baumhoff provides tribal boundaries, village locations, and place names, among other cultural information. More ethnographic information exists for the Sinkyone than most of the Athabascan groups (Baumhoff 1958:184). Nomland (1935) also provides primary information that offers additional insight.

The Shelter Cove Sinkyone coastal territory extends from Spanish Flat south to Usal Creek. Major places of habitation were centered along the upper reaches of the Mattole River and the SFER, including its major tributaries (Levulett 1985:53). The northern neighbors include the Mattole and Lolangkok Sinkyone. To the east were the Lassik and Eel River Wailaki. The southern neighbors were the Cahto and Coast Yuki. The territory of the Shelter Cove Sinkyone is approximately 960 square kilometers, with an estimated population of about 2,145 individuals according to Baumhoff's (1958:223) population estimates, which were derived from all previous ethnographic data available. It has been stated by Cook (1997:108), Rich and Rhode (2001:10-11), Steele et al. (2010:15) and Nomland (1935:149) that there was an Indian massacre at the current site of the Benbow Campground that almost completely wiped out the Shelter Cove Sinkyone people. To date, however, no such massacre location has been documented archaeologically.

Eighteen villages and place names have been recorded for the Shelter Cove Sinkyone territory (Levulett 1985:54). The locations of the sites are primarily along the coast and along rivers, which implies a dependence on sea and riverine resources. However, the more inland territory is greatly unknown archaeologically. According to Kroeber (1925:145), permanent village sites were occupied in the stream valleys during the winter and the summer was spent in the mountains and hills.

Prehistoric Subsistence Practices

Shelter Cove Sinkyone subsistence is characterized by seasonality that shows a syncretism between the Northwest Coast style of marine and riverine resources and the coastal Californian oak woodland resources. Hunting, which was mainly seasonal, functioned as the main source of food and clothing for the Shelter Cove Sinkyone. Shelter Cove Sinkyone populations depended on hunting deer, elk, black bear, grizzly bear, and various other small land mammals. Large sea mammals, such as seals and sea lions were also hunted (Nomland 1935:152).

Prehistoric Technology and Material Culture

The Shelter Cove Sinkyone had two general types of houses. According to Nomland (1935:157) the dwellings were excavated (semi-subterranean) which conflicts with Kroeber (1925:146) who stated that the dwellings were not excavated. Clothing for both men and women was made from hides with little ornamentation except for ceremonial occasions (Nomland 1935:158). Summer dress was of de-haired skins. Bear hides were used for blankets and winter clothing, while rabbit fur was only used for blankets (Nomland 1935:153).

The Shelter Cove Sinkyone were adept at woodworking, lithic technology, and basket making. Both dugout canoes and log rafts were constructed from primarily redwood trees (Baumhoff 1958:194; Kroeber 1925:147; Levulett 1985:64; Nomland 1935:156). Bone and antler were fashioned into awls, deer-bone hunting knives, musical instruments (Nomland 1935:156), elkhorn chisels (Baumhoff 1935:194), and elkhorn spoons (Nomland 1935:156; Kroeber 1925:147). Taxidermy was practiced in support of hunting practices as a method of camouflage (Nomland 1935:152). Basket weaving technology was elaborated into both functional and decorative forms, including decorative hats for women, rope and string made from iris leaf fiber, fishing traps and nets, cradle boards, hopper baskets, cooking baskets, and storage vessels made out of spruce and redwood root fiber with overlay patterns of bracken fern, maiden hair, and red alder (Kroeber 1925:147-148; Levulett 1985:62-63; Nomland 1935:156).

ARCHAEOLOGICAL CONTEXT

The earliest cultural manifestation in northwest California, referred to as the Post Pattern, is represented by a limited number of ephemeral sites and isolated artifacts confined to coastal and lacustrine habitats, none of which lie within or in close proximity to the project area (Hildebrandt 2007:86-87). The characteristic artifacts of this period include large, Clovis-like (fluted, lanceolate, and concave-based) projectile points and chipped stone crescents.

Lower Archaic Period (8,500 to 5,000 B.P.)

In comparison to the Paleoindian Period, much more is known about the Lower Archaic and the Borax Lake Pattern that defines it as a result of greater site densities throughout the interior of northwest California that date to this time. Although the Borax Lake Pattern extends to the Clear Lake Basin and Santa Rosa Plain in the south, along its northern distribution this pattern is represented by large Borax Lake wide-stemmed dart points with indented bases (predominately made of chert), seriated bifaces, ovoid flake tools, dome scrapers, handstones, millingslabs, edge-flaked spalls, and an overall paucity of obsidian artifacts (suggesting a lack of exchange with surrounding obsidian-rich localities; Hildebrandt and Hayes 1993; Hildebrandt and Levulett 2002:305-306). Given that such assemblages are present at sites located across a wide range of environmental contexts, including those in areas above 4,500 feet AMSL, subsistence patterns were most likely based on large foraging territories where

generalized hunting and gathering by small, highly mobile family groups took place at seasonally available resource patches. The similar array of artifact types at Borax Lake Pattern sites additionally suggests that these resources served as base camps for similar types of activities rather than more specialized tasks.

Middle Archaic Period (5,000 to 2,500 B.P.)

This period is represented by the Mendocino Pattern, which first appears in several places throughout the region around approximately 5,000 years B.P. (Hildebrandt 2007:91). Hildebrandt and Hayes (1983, 1984) initially described what they termed the Willits Pattern during the Pilot Ridge-South Fork Mountain project, but the pattern has subsequently become more commonly referred to as the Mendocino Pattern today. Unlike the previous Borax Lake tradition, which was represented by predominately upper elevation base camps used by highly mobile foragers, the Mendocino Pattern is oriented toward the use of larger, low elevation residential sites along major waterways that sustained higher populations by more heavily exploiting locally available salmon and acorn resources. Hildebrandt and Hayes (1993) argue that a shift toward more sedentary lowland subsistence strategies dependent on storage occurred in response to declining upland resource productivity. Such declines, in turn, coincide with the Neo-glacial cooling trend beginning between 2,800 and 3,300 B.P. (Hildebrandt and Hayes 1993:115). Evidence of initial coastal resource exploitation is evident in Mendocino Pattern components at sites along the Mattole River as well (Levulett and Hildebrandt 1987:27-28).

Upper Archaic Period (2,500 to 1,100 B.P.)

The Upper Archaic Period is marked by the continuation of the Mendocino Pattern in many respects, but with higher artifact densities, more variable toolkits, and broader artifact categories in cultural deposits. Much like the Middle Archaic, sites dating to this time are found throughout the central North Coast Ranges in moderate density. While large side and corner-notched projectile points continue to appear, shouldered lanceolate and leaf shaped points are also present in site assemblages, and obsidian becomes the preferred toolstone for flaked stone tool production (as opposed to chert during the Middle Archaic). The presence of obsidian in the region over the duration of the Upper Archaic indicates that complex exchange systems allowed for regular, sustained trade to occur between local and non-local social groups (Hildebrandt and Hayes 1984).

Salmon and acorn procurement and storage continue to contribute greatly to the subsistence patterns of local and neighboring groups. The handstone and millingslab technologies present in Middle Archaic assemblages are almost entirely replaced by bowl mortars and pestles at this time, indicating further elaboration of the acorn complex (Basgall 1987). Bone tools and fishing weights are present in assemblages also, illustrating a continued reliance on fisheries to regional subsistence systems.

Late or Emergent Period (1,100 to 150 B.P.)

The Emergent Period in northwest coastal prehistory is represented by the Gunther Pattern, which dates from ca. 1,100 years B.P. to historic contact and characterizes the material cultures of several ethnographically documented tribes, including the Sinkyone, Wailaki, Lassik, Mattole, and Nongatl. This pattern exemplifies some of the most socially complex hunter-gatherer populations to have relied predominately on marine and/or riverine resources throughout the entirety of California (Fredrickson 1984; Kroeber 1925; Loud 1918). First described by Loud (1918) as the Tolowa Pattern at the Gunther Island site (CA-HUM-67), subsequent revisions to the initial pattern have led to it being more commonly referred to as

the Gunther Pattern today. In comparison to the preceding Mendocino Pattern, even higher degrees of sedentism and cultural elaboration (e.g., well-developed woodworking technologies, riverine fishing specialization, wealth consciousness) are evidenced, with structurally complex, permanent coastal sites often exhibiting well-defined houses, cemeteries, artifact caches, and midden or refuse areas with faunal assemblages that are dominated by seals, sea lion, and marine fish (Hildebrandt 2007:93-94). These sites concentrated ever-increasing populations in villages around Humboldt Bay, coastal lagoons, along the coastline, and adjacent to major river ways such as the Eel River.

Post-Contact Period (150 B.P. to Present)

Following contact with Russian fur traders, Spanish explorers, Euro-American settlers, and United States government officials, the traditional lifeways of Native northern Californians such as the Sinkyone, Wailaki, Lassik, Mattole, and Nongatl were dramatically altered in terms of material, economic, social, and ideological culture (Elsasser 1978). As Euro-American settlers converged on the region, exploiting its natural resources and displacing entire native communities from their traditional homelands, indigenous northern Californians were forced to relocate to reservations and adopt Western traditions. Assimilation and acculturation pressures changed settlement patterns and procurement strategies significantly. Bottle and window glass were used to make flaked tools and projectile points, and glass beads replaced clamshell disc beads, dentalium, and obsidian as central trade items. Despite the hardships that Native Americans in northwest California faced following culture contact, the indigenous populations of the area did not disappear. Rather, they adapted to cultural disruptions and continue to proudly call northwest California their home to this day.

HISTORICAL CONTEXT

General History of the Benbow Area

For most of its lengthy run through southern Humboldt County, the SFER winds between steep-sided mountain ridges, leaving a series of fertile flats on the inside of bends in the river. The larger tributaries to the South Fork, such as the East Branch and Sproul Creek, also created alluvial flats near their mouths, while upstream on them were often smaller, creekside benchlands that were hospitable for habitation. Several locations near what later became the Benbow area thus served as village sites for members of the Tokubbe tribal group. The South Fork Eel region subsequently attracted Euro-Americans, who came into the area during the 1850s and 1860s.

The low flat east of the river was the site of the most important intersection in early day southern Humboldt County. Trails became roads, and by 1898 four of them met on the flat: from the west came the Briceland Road that connected with Shelter Cove; from the north came the road from Garberville that ran all the way north to Humboldt Bay; from the southwest came the Kenny Road that ran out nearly to the ocean and then down to the Mendocino Coast; and from the east came the Spruce Grove Road that ran up the East Branch before rising to the ridge and connecting with both the Mail Ridge Road and the original road from Eureka to Mendocino County (Lentell 1898)..

Over the next five decades a series of owners developed the property as a ranch that eventually encompassed 1,288 acres. In 1922 the parcel was purchased, along with some adjacent land, by the Benbow family (Cook and Hawk 1997:36).

The Benbow Inn

The Benbow Inn opened in July 1926 (Nash 1988a:8). In 1931 the family completed a dam on the South Fork that turned the upstream section of the river into a small lake, thus adding to the amenities already provided by the Inn. Benbow became a stopping place of great renown, with such celebrities as Clark Gable, Spencer Tracy, Joan Fontaine, and Jeanette McDonald



Figure 3 Benbow Inn courtesy of Jassy-50 via Flickr

signing the guest register. Edgar Rice Burroughs stopped by, but did not set his next Tarzan novel in the redwoods. Best-selling author Harold Bell Wright was also a guest (Nash 1988b:14-18), and he indeed used the Benbow Inn, Shelter Cove, and the nearby forest as the setting for his final novel, *The Man Who Went Away* (Wright 1942).

By 1948 Garberville, which sat astride the north-south route, had a population of over 600. It

provided key services to the many outlying ranches and to an expanding local timber industry, but it was tourism that seasonally, at least, made the town thrive. For travelers who failed to stop at the Hartsook Inn, the Eel River Lodge, or the Benbow Inn, Garberville offered three hotels and eight auto courts. The forests that drew tourists also drew loggers. The housing boom that followed the end of World War II made itself felt throughout Humboldt County, and the southern Humboldt area was soon dotted with both sawmills and shingle mills. By 1952 Garberville had thirteen mills, Alderpoint six, Briceland ten, Fort Seward four, Miranda ten, and Phillipsville one, for a total of forty-four mills in the southernmost part of the County (Humboldt Times, January 13, 1952:8-10). Meanwhile, the Save-the-Redwoods League and the DPR system were combining efforts to increase the size of the area's redwood parklands. Even during the Depression the League managed to attract donors, so that by the end of the 1930s it had purchased over 30,000 acres of forestland at a cost of six million dollars (Rohde and Rohde 1992:40). Many of the parcels thus acquired were along the lower section of the South Fork, for which the Garberville area served as the southern gateway.

Finally, the gateway received its own state park site. In 1958, DPR purchased 207 acres of land for its "Benbow project," a total that eventually increased to 1,200 acres (Benbow Lake 1999). The portion of the BLSRA on the west side of the South Fork came to include at least three historical features. On the southwestern side of the river, opposite the mouth of the East Branch, was the site of the Hi Thrap mill (Benbow Lake 1999), which was set up in "about 1914" to cut timbers for bridges then being constructed for the Redwood Highway (Cook 1997:(2)124). In the easternmost campground loop was the site of both the Tokubbe village of

Kostcisundun (Goddard 1907a:35), and a later cabin that belonged to Tokubbe informant Albert Smith and his wife Sallie (Cook 1997:(3)117). No other uses of the area west of the river, prior to its development as part of the BLSRA, have been documented.

Highway 101

The stretch of the South Fork upstream from the East Branch did not become a major transportation corridor until the completion of the Redwood Highway in 1918 (Cook 1997:(11)13). There was no road south of the East Branch until sometime between 1898 and 1911, when a short spur route was built off the older road that went up the East Branch. Jose Domingo Smith, who had a small ranch on the trail, recorded much of the route's history by keeping a diary in which he noted the travelers who came past his doorstep (Cook 1997(11)13). On August 25, 1899, for example, he noted that "Albert Smith and his old woman come [sic] here today" (Cook 1997:(11) 36).

The original highway ran along the east side of the river as it passed the BLSRA campground (Belcher 1922:11). In 1969 the Redwood Highway was converted into a four-lane freeway through the area (Nash 1988b:14). The new routing took the roadway over the center of the campground, requiring users of the facility to pass under a freeway bridge to reach the campground's northern section. The BLSRA campground served the public during the ensuing decades until budgetary restraints forced its closure in 2012. The future of the campground is uncertain.

Cultural Resources Inventory

Inventory results

The entire project area was subjected to intensive pedestrian archaeological survey in 1987 by Valerie A. Levulett. Two Associate State Archaeologists, Greg Collins and Steven Hilton, walked the majority of the project area during a pedestrian survey and project meeting in September 2014. These field visits took place in September 2014 to provide recommendations for specific avoidance measures and treatment plans that are provided below.

The area within the Area of Direct Impact (ADI), including all access routes were inspected for cultural resources. The ADI consists of natural and unaltered soil deposition within the Eel River channel, some pavement near the Day Use Area, artificial fill, erosion deposits of material, and vegetation. The proposed project access routes and work proposed at the Benbow Dam has a very low probability to uncover intact archaeological resources.

The records search did reveal that numerous historical resources and archaeological sites have been recorded in the general area of the APE. The resources are both prehistoric and historic in context. Of the eight sites, and one isolate located within ½ mile of the APE, only three are located near the present APE. One (CA-HUM-218) is the location of noted prehistoric archaeological material; the other two of these resources are historical in context, and include the Benbow Dam, and the Benbow Inn. All of the cultural resources are discussed further below in order to identify the archaeological context of the entire project area, as well as provide a historical context for the Benbow Inn and Dam.

Cultural Resources within the APE

CA-HUM-218 consists of fragments of identified prehistoric human remains reportedly found during the Highway 101 construction in 1966. The location was originally recorded by Ritter et al., in 1969. The site was reported to State Parks during the excavation and fill work

associated with the construction of Highway 101, in 1966. Also reported was evidence of midden soil grading downslope towards the Eel River, however, the Primary Site Record, produced in 1982 from hand written notes, reports that any evidence of that midden has been covered with the silt deposited during the 1964 flood. Archaeological investigations conducted in 1986 failed to identify any cultural resources within the area identified as CA-HUM-218. According to the regional archaeologist at the time, E. Breck Parkman, the remains were re-buried near a large Douglas fir tree near the northern end of the day-use area. During the 2014 site visit, the area identified as CA-Hum-218 and the re-burial site were subjected to intensive pedestrian survey. There was no evidence of the previously identified archaeological site, re-burial area, or a large Douglas fir tree.

The Benbow Dam was constructed in 1931 by the owners of **The Benbow Inn** (discussed above) to create a seasonal recreational use lake and to generate electricity. The dam is not a unique type of dam or hydroelectric feature in California. It is related to the Benbow Inn, a NRHP-listed property, and has significance under Criterion A for its association with the development of local and regional tourism. However, the dam has been significantly modified by the removal of the powerhouse, the loss of the original concrete fish ladder and major reconstruction.



Figure 4 Benbow Dam courtesy of B Hartford J Strong via Flickr

	<u>POTENTIALLY SIGNIFICANT IMPACT</u>	<u>LESS THAN SIGNIFICANT WITH MITIGATION</u>	<u>LESS THAN SIGNIFICANT IMPACT</u>	<u>NO IMPACT</u>
WOULD THE PROJECT:				
a) Cause a substantial adverse change in the significance of a historical resource, as defined in §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource, pursuant to §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Criteria for Determining Significance

The analysis of determining the significance of impacts of the Proposed Action to Cultural Resources is based on criteria V a-c, described in the environmental checklist above.

DISCUSSION

a) In 2013, State Parks and American Rivers, Inc. hired PAR Environmental Services, Inc. (PAR) to assist with the compliance efforts for the Benbow Dam Project. Documentation included an assessment of the dam in light of National Register of Historic Places (NRHP) and California Register of Historical Resources (CRHR) criteria, as well as its relationship to a potential historic district and/or a cultural landscape associated with the Benbow Inn. PAR recommended The Benbow Dam as not eligible for listing in the NRHP or CRHR based upon the lack of integrity of the dam, in a report titled National Register of Historic Places Evaluation, Benbow Dam, Humboldt County, California completed by PAR Environmental Services, Inc, 2013.

On January 27, 2014 The NOAA sent a letter to the California State Historic Preservation Officer (SHPO) requesting concurrence with the findings of the 2013 PAR report stating that the Benbow Dam was not eligible for listing in the NRHP or CRHR due to its lack of integrity. The NOAA also requested concurrence with their finding that the entire undertaking would not affect historic properties.

In February 2014, State Parks' Archaeology, History, and Museum Division's (AHM) disagreed with the findings provided in the PAR report, and recommended that that the Benbow Dam, though lacking integrity is still eligible for the NRHP as a contributor to the Benbow Inn Historical District, or a heretofore unrecorded and unidentified "Benbow Lake Cultural Landscape". The California State Parks' Department Preservation Officer (DPO) requested that the SHPO review the PAR report and AHM's justification for evaluation of eligibility "the Benbow Dam appears to be eligible for the National and California registers as a contributor to a historic district containing significant landscape elements associated with the Benbow Inn". The DPO requested SHPO's review to "provide us with a final assessment as to the potential eligibility of the Benbow Dam and its status as a historical resource".

In March 2014, a letter was sent to the NOAA from the California SHPO requesting

additional information regarding the Area of Potential Effect, and on-going consultation with interested parties for The Benbow Dam removal. The information requested a further iteration of the project description and summary characterization of both the Area of Potential Effect (APE) and the Area of Direct Impact (ADI).

The requested information was presented to SHPO with a letter from the NOAA in September 2014. The letter contained all the requested information, letters of consultation, and a request that the SHPO concur with the findings of the 2013 PAR report that the Benbow Dam is not eligible for listing in the NRHP or CRHR due to the loss of integrity, and “concurrence with NOAA’s overall project finding of no historic properties affected as defined in 36 CFR 800.4(d)(1).

The SHPO responded to both California State Parks’ AHM division and The NOAA on October 15, 2014. The letters stated that the SHPO did not agree with AHM’s determination that Benbow Dam appears eligible for the NRHP as a contributor to a historic district because “the Dam has experienced a substantial loss of integrity”. The October 15, 2014 letter to NOAA concurred with NOAA’s findings “that Benbow Dam is individually not eligible for listing on the NRHP under all four criteria because of a loss of integrity”. The SHPO could not concur with NOAA’s finding of no historic properties affected, however, the **SHPO did concur that the proposed undertaking would have no adverse effect on historic properties due to the historic property**, The Benbow Inn, being located within the indirect APE. As designed, this proposed project would have **No Impact**.

For the purposes of this project, it is assumed that there is both a potential historic district and a cultural landscape associated with the Benbow Inn. Benbow Dam is considered a non-contributing element to this potential district or cultural landscape. The Benbow Dam has been extensively modified and no longer impounds water. The lack of ability to create Benbow Lake, once an integral part of the Benbow Inn and its landscape, represents a significant loss of integrity. As a result, the dam no longer contributes to a potential historic district or landscape associated with the inn as a functioning property. However the Benbow Dam and Benbow Lake are part of the varied fabric that created and highlighted the tourism industry in southern Humboldt County. The Benbow Lake and Inn are historical products of the expansion of tourism to the majestic California redwoods. As such, the removal of the Benbow Dam is an example of the evolution of tourism and recreation of the local area.

The Benbow Inn was built to provide a respite to weary travelers amongst the towering redwoods. The deterioration of the Benbow Dam and the evolution of the Benbow Inn Historical District and Landscape are evident throughout the APE. The historical context of the Benbow Dam bears witness to an evolution of the recreational opportunities provided by the Benbow Inn. The Benbow Dam went through structural changes based upon the needs of the Benbow Inn and the surrounding community. Originally built in order to provide electricity and water to the Benbow Inn, the resulting water impoundment, Benbow Lake was used as an enhancement to the Eel River and the Benbow Inn to provide recreation opportunities to Inn visitors and economic opportunities to the Benbow Inn owners. From its’ very genesis the Benbow Dam caused problems with the passage of migrating fish within the Eel River system. Systematic changes were made to the

dam throughout its existence to provide fish passage. The Benbow Inn has adapted its use as a recreational facility throughout this evolution. The Inn utilized the power created by the dam, adapted recreational opportunities to the creation of the lake, and now the Inn has adapted to not having a man-made impoundment. Naturally created pools of water within the river that may develop with the new hydrology at the site after the dam is removed, could provide recreational opportunities. The health and vigor of migrating fish that will potentially occur due to the removal of the Benbow Dam can also be promoted by the Benbow Inn. The removal of the Benbow Dam will allow park visitors the opportunity to see and experience a free flowing Eel River that provides recreational opportunities without adversely affecting cultural and natural resources.

Removal of the Benbow Dam will not have an adverse effect upon the historical significance of the Benbow Inn, the Benbow Inn historical district or landscape; rather the removal of the Benbow Dam is merely another step in the evolution of the Benbow Inn cultural landscape. The removal of the Benbow Dam will not change the historical significance of the Benbow Inn. Visitors to both the Inn and the Park will be able to experience the natural beauty of the Eel River and surrounding areas. Historical significance will be maintained by the continued use of the Benbow Inn, and Benbow Lake State Recreation Area to provide a respite from travelling and recreational opportunities to experience the natural and cultural benefits of The Eel River.

- b) As stated in the Environmental Setting above, archaeological sites are located within the proposed project area, and there are archaeological sites close to the proposed project area of direct impact. Additionally, buried archaeological deposits in this area are not unusual and are very important to the understanding of the past.

Construction and rehabilitation activities related to this proposed project, including but not limited to earth movement, plant removal and planting, staging areas, or operation of equipment could significantly impact unrecorded archaeological deposits located within the proposed project area. Adherence to **Standard Project Requirements CULT – 1 Previously Undocumented Resources, CULT 2 - Archaeological Monitoring, CULT 3 - Pre-Construction Environmental Sensitivity Training, and Specific Project Requirement CULT 5 - Environmentally Sensitive Area**, would ensure impacts to archaeological resources remains less than significant.

SPR CULT 1 - PREVIOUSLY UNDOCUMENTED RESOURCES

If previously unknown cultural resources (including but not limited to dark soil containing shell, bone, flaked stone, ground stone, or deposits of historic material) are discovered, work shall immediately cease within 10 feet of the find(s) and notify the State’s Representative of the location and description of the find(s). Contractors shall be directed to other project tasks. Contractors shall not work in the area until receipt of written approval from the State’s Representative to resume activity in the area of the discovery.

SPR CULT 2 - ARCHAEOLOGICAL MONITORING

Contractors shall allow on-site archaeological/Native American monitoring at

the discretion of the DPR-approved archaeologist/Native American monitor.

SPR CULT 3 - Pre-Construction Environmental Sensitivity Training.

Prior to the start of any on-site construction activities, Contractor shall ensure that employees, sub-contractors, or workers who will be working on-site for more than two days attend DPR-Archaeologist taught archaeology sensitivity training.

PSR CULT 5 - Environmentally Sensitive Area.

The areas outside of the construction road in the vicinity of CA-HUM-218 will be enclosed within a non-permanent, non-ground disturbing, temporary construction fencing.

- c) In many of California's historic townsites and rural communities discoveries have been made of Native American and non-Native American human bone including non-Anglo. A single isolated discovery of human remains was documented and recorded near the proposed project area. The area of reported human remains is outside of the current project area of direct impact. The area containing human remains will be delineated prior to construction activities as required in **PSR CULT 5 - Environmentally Sensitive Area.**

However, there is always a potential of unanticipated discoveries of human bone. If any human remains or burial artifacts were identified, implementation of **Standard Project Requirement CULT 4 - Human Remains Discovery** would ensure that impacts remain at a less than significant level.

SPR CULT 4 - HUMAN REMAINS DISCOVERY

In the event that human remains are discovered, work will cease immediately in the area of the find and the project manager/site supervisor will notify the appropriate DPR personnel. Any human remains and/or funerary objects will be left in place or returned to the point of discovery and covered with soil. The DPR Sector Superintendent (or authorized representative) will notify the County Coroner, in accordance with §7050.5 of the California Health and Safety Code, and the Native American Heritage Commission (or Tribal Representative). If a Native American monitor is on-site at the time of the discovery, the monitor will be responsible for notifying the appropriate Native American authorities.

The local County Coroner will make the determination of whether the human bone is of Native American origin. If the Coroner determines the remains represent Native American interment, the NAHC in Sacramento and/or tribe will be consulted to identify the most likely descendants and appropriate disposition of the remains. Work will not resume in the area of the find until proper disposition is complete (PRC §5097.98). No human remains or funerary objects will be cleaned, photographed, analyzed, or removed from the site prior to determination.

If it is determined the find indicates a sacred or religious site, the site will be avoided to the maximum extent practicable. Formal consultation with the State Historic Preservation Office and review by the Native American Heritage Commission/Tribal Cultural representatives will occur as necessary to define additional site mitigation or future restrictions.

VI. GEOLOGY AND SOILS.

ENVIRONMENTAL SETTING

The rocks of the Franciscan Complex that occur in the Coast Range, including BLSRA, form generally north-northwest to west-northwest trending belts. These belts of rock are younger to the west because they were progressively scraped off of the seafloor and attached to the North American continent as the Pacific Ocean seafloor was thrust under the North American plate. The Coastal Belt (Pliocene to Late Cretaceous) of the Franciscan Complex underlies most of the park unit. The weakly metamorphosed Central Belt rocks within the park unit consist of meta-sandstone, meta-argillite, and mélangé (a matrix of clayey, sheared argillite and fine-grained sandstone). The Coastal Belt is further subdivided into tectono-stratigraphic terranes, which are defined by the complex relationships of their rock types, deformation characteristics, and topographic expression (DPR 2001).

The Benbow Dam project site occupies a generally west trending valley bounded by rocks of the Yager terrain, a tectono-stratigraphic unit, composed primarily of argillite, sandstone and conglomerate (McLaughlin et al., 2000). McLaughlin et al. consider the unit to be Paleocene to late Eocene in age based on fossil assemblages within the unit. The dam is about 2000 feet northeast from a mapped trace of the Maacama-Garberville fault zone.

Rocks exposed in stream banks and valley walls near the dam display relatively tight, northwest-trending folds. Bedding of moderately bedded sandstone bedrock dips about 30 to 40 degrees into the hillside at the right abutment (Mapliave 1939), a condition favorable to slope stability. The Maacama-Garberville fault zone is considered by the United States Geological Survey to be active (USGS 2014) though it does not have Alquist Priolo zonation by the state of California. The Garberville fault is currently thought to have a maximum probable earthquake of M7.5 with a 220-year recurrence (USGS 2014).

Field observations by DPR staff from the North Coast Redwoods District indicate that bedding orientation changes near the right abutment of the dam and although air photo interpretation suggests the presence of vague lineations a few thousand feet northwest of the dam, continuous alignment of these lineations did not appear to coincide with the dam location. Deformation due to co-seismic folding is conceivable although there is no direct geomorphic evidence for late Quaternary folding at the dam location (Patrick Vaughan, Engineering geologist, personal communication). Issues regarding the Maacama-Garberville fault zone were brought to the attention of project managers and engineers for their consideration during the 2002 repair of the dam. Inspectors from the California Division of Dam Safety were on site during critical phases of the repair work and were provided designs for their review (Department of Water Resources, 2002).

Spittler (1983) mapped several a debris slide amphitheater bounding the right (north) abutment of the dam, including a debris slide directly upslope. above Field and aerial photo review by State Parks engineering geologist Patrick Vaughan confirms a shallow debris slide, a short distance downstream from the right abutment; this shallow debris slide is apparent on aerial imagery obtained in 1941. Another well vegetated debris slide, a short distance upstream from the right abutment, is first apparent on aerial imagery that dates to 1963. Although these debris slides bound the bedrock outcrop at the right abutment they do not directly overlie the dam. The bedrock ridge at the abutment has a low potential for instability in light of its bedding

orientation. Furthermore dam removal will occur during the drier summer months, when instability is less likely. There are no known reports of reactivation of the nearby debris slides or impacts to the dam or destabilization of other slopes resulting from dam operations.

Low fluvial terraces, comprised mostly of stratified, unconsolidated silt, sand and cobbles, and vegetated with old growth and second growth trees, flank much of the left side of the river within the project area; these lowermost terraces were inundated during the historic flood of 1964 and are clearly Holocene in age. An extensive flight of fluvial terraces estimated to range in age from early Holocene to mid-Pleistocene is located just downstream from the dam (Bickner, 1992). Lower floodplain terraces and cobbly gravels occupy the channel.

Paleontological sites have been reported within the Yager terrain unit in the general vicinity of the dam but none have been reported within the confines of the area that might be affected by project activities (McLaughlin et al. 2000).

Soils

The National Cooperative Soil Survey of the USDA Natural Resources Conservation Service (NRCS 2015) has identified three soil map units for the project area. These are: Water and Fluvents, 0-2 percent slopes; Sproulish-Canoe creek-Redwohly complex, 30-50 percent slopes, dry; and Parkland, dry-Garberville, dry complex, 2 to 9 percent slopes.

Water and Fluvents, 0-2 percent slopes.

Most of the project area has been mapped as this type, which consists of frequently flooded alluvium that reaches an average maximum depth of 59 inches. Water comprises 60% of this map unit, Fluvents and similar soils 35%, and 5% consists of minor components (Riverwash and Rock Outcrop). It is somewhat excessively drained.

Sproulish-Canoe creek-Redwohly complex (30-50% slopes)

This map unit is a complex of the Sproulish (50%), Canoe creek (20%) and Redwohly (15%) soil types. The parent material for the Sproulish and Canoe creek components is colluvium derived from sandstone and/or colluvium derived from mudstone and/or residuum. The parent material for the Redwohly component is derived from residuum weathered from sandstone and/or residuum weathered from mudstone. Permeability is moderately slow to moderate and the available water capacity ranges from high for the Sproulish component to moderate for the Canoe creek component and low for the Redwohly component. Minor components of this soil type are Canoe creek and similar soils (5%), Gibson creek and similar soils (5%), Sproulish and similar soils (3%), and Redwoodhouse and similar soils (2%) (NRCS 2015).

Parkland, dry-Garberville, dry complex, 2 to 9 percent slopes.

This map unit is a complex of the Parkland, dry (50%) and Garberville, dry (40%), and 10% minor components (Coolyork, Burgsblock, and Tannin). The parent material for Parkland and Garberville is alluvium derived from mixed sedimentary sources. Average soil depth for both soils is 71 inches. Parkland soils are moderately well drained and runoff is high. Garberville soils are well drained with medium runoff.

<u>POTENTIALLY SIGNIFICANT IMPACT</u>	<u>LESS THAN SIGNIFICANT WITH MITIGATION</u>	<u>LESS THAN SIGNIFICANT IMPACT</u>	<u>NO IMPACT</u>
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WOULD THE PROJECT:

- a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury,

or death involving:

- | | | | | |
|--|--------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map, issued by the State Geologist for the area, or based on other substantial evidence of a known fault? (Refer to Division of Mines and Geology Special Publication 42.) | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| ii) Strong seismic ground shaking? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| iii) Seismic-related ground failure, including liquefaction? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| iv) Landslides? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Result in substantial soil erosion or the loss of topsoil? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c) Be located on a geologic unit or soil that is unstable, or that would become unstable, as a result of the project and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1997), creating substantial risks to life or property? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste disposal systems, where sewers are not available for the disposal of waste water? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| f) Directly or indirectly destroy a unique paleontological resource or site, or unique geologic feature? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Criteria for Determining Significance

The analysis of determining the significance of impacts of the Proposed Action to Geology and Soils is based on criteria VI a-f, described in the environmental checklist above.

DISCUSSION

The project proposes to remove reinforced concrete making up the dam, banks and associated spillway, restore the active river channel by removing the temporary diversion channel and access roads, and provide riparian bank stabilization through the placement of erosion control fabric and plantings of locally obtained willows, alder and redwood trees.

- a) The proposed action does not have the potential to expose people or structures to potential adverse effects. See individual responses to Items a (I-IV) below.
 - i. The project site is not located within an Alquist-Priolo Earthquake Fault Zone (APEFZ) as designated by the California Geological Survey (CGS). The dam is not currently operated as an impoundment and dam integrity is not a concern. Also, the distance from mapped traces of the Garberville fault zone and the absence of Holocene geomorphic evidence of surface rupture in alignment with the dam means there is a low potential for ground surface rupture. Ground deformation at the dam is conceivable but

- unlikely. Removing the dam and its associated features would eliminate any risk to people or structures. Less than significant impact.
- ii. Although strong seismic shaking could affect the existing dam structure, as stated above the dam is not currently operated as an impoundment and structural integrity is not an issue. No impact.
 - iii. The potential exposure period for liquefaction and area of affect is marginally greater than would occur in the absence of the dam. Once dam removal is complete there are no structures that might be affected by liquefaction. Less than significant impact.
 - iv. Very shallow debris sliding near the downstream end of the dam's right abutment or from slopes that helped define the lake's impoundment, could generate debris, but with removal of the dam there would be no impacts to structures or people. Implementation of Mitigation Measure GEO 1 – Debris Slides will ensure that exposure to landslide hazards will be reduced to a less than significant impact.

MITIGATION MEASURE GEO 1 – DEBRIS SLIDES

Prior to initiating any work within the debris slide area, the Project Engineer will educate all construction workers about the location of the debris slides, the conditions in which additional debris slides may potentially occur and the procedures necessary to avoid such rock fall.

- b) The project could create temporary unstable soil conditions and increased erosion during ground disturbing activities; however **Project Specific Requirement HYDRO-1: Erosion and Sediment Control and Pollution Prevention** and post dam removal bank stabilization methods utilizing erosion control fabric and plantings of locally native riparian species and native grasses or non-reproducing annual grasses, would address all soil erosion concerns. In addition, project activities within the river basin would be primarily conducted during the dry season when river flows and soil saturation are lowest. Less than significant impact.

PSR HYDRO 1 - EROSION AND SEDIMENT CONTROL AND POLLUTION PREVENTION

Contractor shall adhere to a DPR and Water Quality Control agency approved Storm Pollution Prevention Plan (SWPPP) that identifies the pre-, during and post- wildlife-friendly Best Management Practices (BMPs) to be used in all construction areas to reduce or eliminate the discharge of soil; sand, surface water runoff; stockpile management; spill prevention from equipment; and dust control during all excavation, grading, and trenching. The SWPPP will outline water quality monitoring methods, and spill prevention and materials storage requirements for explosives and fertilizers. Acceptable nitrate levels will be adhered to if designated by the Regional Water Quality Control Board. Blasting will be suspended if monitoring indicates unacceptable pollutant levels.

- c) The dam's right abutment is located downslope from a mapped debris slide amphitheater that appears to post-date original dam construction. Removal of the dam would not exacerbate or increase current baseline conditions. In the past the seasonal operation of the Benbow Dam inhibited the establishment of riparian plants that could protect the banks against erosion. Additionally, wind driven erosion across Benbow Lake and high flow impingement were the primary causes of bank retreat at alluvial terraces. Removal of the

Benbow Dam would reduce the effect of high flow impingement by increasing the sediment transport capacity in the South Fork of the Eel River (Questa 2012). Less than significant impact.

- d) No known expansive soils underlie the dam. In addition, its removal would eliminate any risk to people or structures. No impact.
- e) The project does not involve the installation of a septic system or leach field. No impact.
- f) No known paleontological resources exist within the project area, nor are they likely to be encountered by the proposed work. No impact.

VII. GREENHOUSE GAS EMISSIONS

ENVIRONMENTAL SETTING

California is the fifteenth largest emitter of greenhouse gases (GHGs) in the world, representing about two percent of worldwide emissions. In an effort to help curb global warming, new state laws regulating GHGs were enacted in 2006. Assembly Bill 32, the Global Warming Solutions Act, requires the State to implement a series of actions to achieve a reduction in GHG emissions to 1990 levels by 2020 (Humboldt County, 2012).

Through AB 32, the statewide cap for 2020 GHG emissions has been set at 427 million metric tons of carbon dioxide equivalents (MMTCO₂E). Reducing GHG emissions to this level means cutting approximately 30% from business-as-usual emission levels projected for 2020, or about 10% from today's levels. On a per capita basis, that means reducing our annual emissions of 14 tons of carbon dioxide for every person in California down to about 10 tons per person by 2020 (Humboldt County, 2012).

In December 2009, the Natural Resource Agency adopted amendments to the *Guidelines for Implementation of the California Environmental Quality Act* addressing the significance of impacts for greenhouse gas emissions (California Natural Resources Agency, 2009). Section 15064.4 of the amended CEQA Guidelines states: "A lead agency should make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project."

The project site is located in southern Humboldt County, approximately 3 miles south of Garberville California, within the North Coast Air Basin (NCAB). The North Coast Unified Air Quality Management District (NCUAQMD) is a regional environmental regulatory agency (one of thirty-five local air agencies in California) whose primary responsibility is controlling air pollution from stationary sources. The NCAB is comprised of three air districts, the NCUAQMD, the Mendocino County AQMD and the Northern Sonoma County Air Pollution Control District (North Coast Unified Air Quality Management District).

The entire NCAB is currently designated as nonattainment for the state 24-hour PM₁₀ standard. The attainment plans, rules and regulations, and criteria pollutant attainment status are different for each of the three districts in the NCAB. The air in Humboldt County is considered to be "in attainment" of state and federal ambient air quality standards except for the state's 24-hour PM₁₀ standard (see Section III, Air Quality). The two pollutants of greatest concern are ozone and particulate matter. The County's sunny climate, pollution trapping mountains and valleys and increasing population all contribute to increased levels (NCUAQMD: Air Quality – 2014).

In 2011, the NCUAQMD adopted Rule 111 (Federal Permitting Requirements for Sources of GHGs) into the District rules, to establish a threshold above which New Source Review (NSR) and federal Title V applies, and to establish federally enforceable limits on potential to emit GHGs for stationary sources (North Coast Unified Air Quality Management District). California State Parks (CSP) has developed a "Cool Parks" initiative to address climate change within the State Park system. Cool Parks proposes that CSP itself as well as resources under its care adapt to the environmental changes resulting from climate change. In order to fulfill the Cool Parks initiative, CSP is dedicated to using alternative energy sources, low emission vehicles, recycling and reusing supplies and materials, and educating staff and visitors on climate change (CSP, 2008).

	<u>POTENTIALLY SIGNIFICANT IMPACT</u>	<u>LESS THAN SIGNIFICANT WITH MITIGATION</u>	<u>LESS THAN SIGNIFICANT IMPACT</u>	<u>NO IMPACT</u>
WOULD THE PROJECT:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environmental?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Criteria for Determining Significance

The analysis of determining the significance of impacts of the Proposed Action to Greenhouse Gas Emissions is based on criteria VII a-b, described in the environmental checklist above.

DISCUSSION

a) i) Greenhouse Gas Emissions In 2002 the California legislature declared that global climate change was a matter of increasing concern for the state’s public health and environment, and enacted laws requiring the state Air Resources Board (ARB) to control GHG emissions from motor vehicles (Health & Safety Code §32018.5 et seq.). CEQA Guidelines define greenhouse gases to include carbon dioxide (CO₂), nitrous oxide (N₂O), hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. The California Global Warming Solutions Act of 2006 (Assembly Bill 32) definitively established the state’s climate change policy and set GHG reduction targets (Health & Safety Code §38500 et seq.). The State set its target at reducing greenhouse gases to 1990 levels by 2020.

According to Recommendations by the Association of Environmental Professionals on How to Analyze GHG Emissions and Global Climate change in CEQA Documents (March 5, 2007), an individual project does not generate enough GHG emissions to significantly influence global climate change. Rather, global climate change is a cumulative impact. This means that a project may participate in a potential impact through its incremental contribution combined with the contributions of all other sources of GHG. In assessing cumulative impacts, it must be determined if a project’s incremental effect is “cumulatively considerable.” (CEQA Guidelines §15064(i)(1) and §15130).

In 2011 the CEQA Guidelines, Section 15064.4 Appendix G were modified to include thresholds of significance for Greenhouse Gases. The project would have potential significant impacts if the project would:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment;
- Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

Due to the nature of the proposed project (dam removal), DPR has determined that it is

appropriate to assess potential GHG impacts qualitatively – as allowed by CEQA Guidelines §15064.4(a)2.

The proposed project could produce GHGs: 1) during fuel combustion while the dam is being removed. Project vehicles and equipment would likely include the following: 2 large excavators, likely with stingers (hydraulic attachments designed to break up concrete); a loader; a dozer, a water truck and several 20 yard trucks. Some minor changes in types of equipment may be needed depending on the contractor hired to complete the project. Not all vehicles and equipment would operate simultaneously. Some equipment would only be operating during certain stages of the project depending on the work being done. The proposed project would be under various stages of construction for approximately 120 days but the construction-related greenhouse gas emissions would be short-term. Therefore, the project construction phase would not significantly increase greenhouse emissions.

Standard Project Requirement AIR 1 – Air Quality as noted in Section III above, would require all construction related equipment engines to be maintained and properly tuned up (according to manufacturer’s specifications), and in compliance with all state and federal requirements. This requirement is designed to reduce project-related emissions of CO₂ and N₂O.

ii) Climate Change and Sea Level Rise - Because of the project’s location and nature of the project itself, the project will not contribute to sea level rise nor will it be susceptible to it. Therefore, no impact.

- b. The State has not developed specific GHG thresholds of significance for use in preparing environmental analyses under CEQA, and the NCUAQMD has not adopted GHG thresholds to determine significance. The Association of Environmental Professionals’ document *Alternative Approaches to Analyzing Greenhouse Gas Emissions and Global Climate Change in CEQA Documents*, states that emissions for criteria pollutants tend to follow similar patterns as the emissions for GHG emissions” (AEP, 2007). Therefore, it is reasonable to assume that if all other pollutants from the Project are determined to be less than significant, the CO₂ emissions will also be less than significant. The proposed Benbow Lake Dam Removal would not violate Humboldt County’s air quality standards and would not result in a cumulatively considerable increase in emissions. Therefore, the proposed Dam Removal Project would not generate significant GHG emissions and would therefore not conflict with the current State and Humboldt County guidelines or any applicable plans, policies or regulations concerning GHG emissions.

To reduce potential GHG emissions due to project activities, the project would implement **Standard Project Requirement AIR 1 – Air Quality** to limit impacts to air quality and reduce GHG emissions during project activities. Implementation of this project requirement would ensure that the project would have a less than significant impact.

VIII. HAZARDS AND HAZARDOUS MATERIALS.

ENVIRONMENTAL SETTING

Hazardous materials include all flammable, reactive, corrosive, or toxic substances which, because of these properties, pose potential harm to the public or environment. Hazardous materials such as agricultural chemicals, pesticides, and various commercial chemical substances are used, stored, or produced in BLSRA.

The California Department of Environmental Protection (CALEPA) has the responsibility for compiling (pursuant to Government Code §65962.5) information on hazardous material sites in California that together are known as the “Cortese” list. A review of this Cortese list(s) found there are no known hazardous sites within the project area. There are two occurrences of Leaking Underground Fuel Tank at the Benbow Inn however these have both been cleaned up and the case closed by the California State Water Board (State Water Resources Control Board). Two 55-gallon drums and a few five-gallon buckets and tools used for operating the dam were removed from a storage shed near the dam in 2013. Oil was disposed of at Asbury Environmental Services. The absence of spills was noted at the time of clean up.

Airports

The Garberville Airport is located approximately 1.3 miles (diagonally) and over 2 miles over surface roads from the project site. The airport is run by Humboldt County, open for public use and flights are restricted to daylight hours (AirNav.com).

Fire Hazards

The California Department of Forestry and Fire Protection (CalFire) lists the fire hazard severity for BLSRA as High (CalFire 2007) and is designated as a State Responsibility Area in the event of a fire. According to the Humboldt County GIS mapping the project site is located within the Garberville Fire PDAA response district.

Schools

The nearest school, Southern Humboldt Community School, is located approximately ¾ of a mile from the proposed project site.

	<u>POTENTIALLY SIGNIFICANT IMPACT</u>	<u>LESS THAN SIGNIFICANT WITH MITIGATION</u>	<u>LESS THAN SIGNIFICANT IMPACT</u>	<u>NO IMPACT</u>
WOULD THE PROJECT:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and/or accident conditions involving the release of hazardous materials, substances, or waste into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

school?

- | | | | | |
|--|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| d) Be located on a site which is included on a list of hazardous materials sites, compiled pursuant to Government Code §65962.5, and, as a result, create a significant hazard to the public or environment? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| e) Be located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport? If so, would the project result in a safety hazard for people residing or working in the project area? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| f) Be located in the vicinity of a private airstrip? If so, would the project result in a safety hazard for people residing or working in the project area? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| h) Expose people or structures to a significant risk of loss, injury, or death from wildland fires, including areas where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Criteria for Determining Significance

The analysis of determining the significance of impacts of the Proposed Action to Hazards and Hazardous Materials is based on criteria VIII a-h, described in the environmental checklist above.

DISCUSSION

- a) Project construction/demolition is not expected to create a hazard to the public due to routine use of hazardous materials. Construction would require the use of heavy equipment and vehicles that use diesel fuel, gasoline, oil, and hydraulic fluid. The proposed project may also require the use of explosives as part of the concrete dam removal process. Hazardous materials used during construction would be transported, used, and stored in accordance with state and federal regulations regarding hazardous materials. Implementation of **Project Specific Requirement HAZ - 1 Hazardous Materials** as noted above in Section VI, Geology and Soils will ensure impacts from the project remain less than significant.
- b) Project construction would require the use of heavy equipment and vehicles that use diesel fuel, gasoline, oil, and hydraulic fluid. A propane torch may be used to treat exotic plant starts. Hazardous materials used during construction would be transported, used, and stored in accordance with state and federal regulations regarding hazardous materials. The proposed Project would not be located on a site that is included on a list of hazardous material sites compiled pursuant to Government Code 65962.5. Implementation of **Standard Project Requirement HAZ 3 – Rubbish** will ensure that trash and garbage will not be released into the environment.

SPR HAZ 3 – RUBBISH

The project area shall be kept clear of trash to avoid attracting predators. All food and garbage will be placed in sealed containers and regularly removed from the site. Following construction, any trash, debris, or rubbish remaining within the work limits shall be collected and hauled off to an appropriate facility.

- c) The project is not located within one-quarter mile of any school and no schools are proposed for this area. No impact.
- d) BLSRA is not included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5. No area within the project site is currently restricted or known to have hazardous materials present. If encountered construction specifications require the clean-up of hazardous materials. Therefore, no impact would occur with project development.
- e) As noted in the Environmental Setting above, the project site is located within two miles of a public airport. Because the Project area is located outside of the designated referral area for the Garberville Airport and the proposed Project would not result in a safety hazard due to the proximity of the airport, this impact would be less than significant.
- f) The project is not located within two miles of a private air strip. No impact.
- g) All construction activities associated with the project would occur within the boundaries of BLSRA and work would not restrict access to or block any public road outside the immediate construction area. Construction work may require use of the existing service roads; however, minimum access requirements for emergency vehicles would be maintained at all times. Therefore, the impact of this project would be less than significant.
- h) Heavy equipment can get very hot during the warmer part of the work season; this equipment is sometimes in close proximity to flammable vegetation. Improperly outfitted exhaust systems or friction between metal parts crushing concrete/rocks could generate sparks. **Standard Project Requirement Hazards 2** will ensure that impacts from fire will remain at a less than significant level.

SPR HAZ 2 – FIRE PREVENTION

- **Prior to the start of construction, the contractor will develop a Fire Safety Plan for DPR approval. The plan will include the emergency calling procedures for both the California Department of Forestry and Fire Protection (CDF) and local fire department(s).**
- **Contractor shall require that all heavy equipment be equipped with spark arrestors or turbo-charging (eliminates sparks in exhaust) and have fire extinguishers on-site.**
- **Construction crews will park vehicles a minimum of 10 feet from flammable material, such as dry grass or brush. At the end of each workday, construction crews will park heavy equipment over a non-combustible surface to reduce the chance of fire. DPR personnel will have a State Park radio at the Park, which allows direct contact with CalFire and a centralized dispatch center, to facilitate the rapid dispatch of control crews and equipment in case of a fire. Prior to the start of on-site construction activities, contractor will clean and repair (other than emergency repairs) all equipment outside the project site boundaries.**
- **Under dry conditions, a filled water truck and/or fire engine crew will be onsite during activities with the potential to start a fire.**

- **The contractor will designate and/or locate staging and stockpile areas in the designated staging area or on other paved surfaces to prevent leakage of oil, hydraulic fluids, etc. into the SFER.**
- **Contractors shall have firefighting hand tools on site and each vehicle shall have an appropriately-sized and fully charged fire extinguisher.**

The safety plan developed for each project is reviewed by all project staff and includes job site characteristics to reduce the potential for fire. In addition, because most areas within the project site are adjacent to the wetted perimeter of the river and on gravel bars, the chance of igniting a wildland fire is significantly reduced. Burn permits will be adhered to for disposal of and burning of exotic plants.

IX. HYDROLOGY AND WATER QUALITY.

ENVIRONMENTAL SETTING

Climate and Precipitation

The region is classified as a Mediterranean climate, characterized by cold rainy winters and hot, dry summers. The majority of precipitation occurs between October and May with an average of 58 inches per year (Wikipedia 2013).

Watershed – Surface Water

The SFER drains a long, narrow and mountainous watershed of 689 square miles, which constitutes approximately twenty percent of the 3,684 square mile Eel River drainage basin. The SFER sub-basin includes portions of Humboldt and Mendocino counties and runs

generally parallel to the Pacific coast, with its north-south extent approximately marked by Weott and Laytonville, California respectively (Wiki). The SFER is listed as a sediment and temperature impaired waterbody, which are waters that are too polluted or otherwise degraded to meet the water quality standards set by states, territories, or authorized tribes, by the U.S. Environmental Protection Agency, in accordance with Section 303(d) of the Clean water Act (USEPA 1999, 2014).

The SFER begins near Iron Mountain at an elevation of 2,500 feet, with its headwaters near the headwaters of Ten Mile River to the south near Laytonville, CA. The National Wild and Scenic River² section of the SFER begins at the meeting of its first tributary, Section Four Creek on the left bank. The SFER begins to parallel U.S. Highway 101 near its confluence with Rattlesnake Creek on the right bank and passes through the Admiral William Standley State Recreation Area (SRA), Smithe Redwoods State Reserve, Standish Hickey State Recreation Area (SRA) and Richardson Grove State Park on its way to BLSRA.



Figure 5: Eel River Watershed

² Wild River Areas are those rivers or sections of rivers that are (generally) free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted. These represent vestiges of primitive America.

Flooding

As with much of northern California, large winter storms in 1955 and 1964 led to widespread flooding, landsliding and noticeable changes in the rivers and streams. In the SFER this flooding led to the loss of old growth redwoods in the area of what is now Humboldt Redwoods State Park (EPA 1999). Due to these two flood events, most residents now live in the hills above the flood plain.

One hundred-year flows are well below the least elevated residential structure in the vicinity (north side of the river between the dam and Benbow Inn) though the day use area in the park would be inundated during such an event; however, the predicted maximum water surface elevation will decrease during flooding as a result of the dam removal (Questa 2012).. Bank shear could have a very minor increase along the bank at the residence north from the SFER at the confluence with the East Branch.

Water Quality Regulation

The SFER is within the jurisdiction of the North Coast Regional Water Quality Control Board (NCRWQCB). Per the requirements of the Clean Water Act (CWA), and the California Porter-Cologne Act, the NCRWQCB has prepared a Water Quality Control Plan for the watersheds under its jurisdiction. The North Coast Regional Water Quality Control Board Basin Plan (NCRWQCBBP) identifies beneficial uses that exist or have the potential to exist in each water body, establishes water quality objectives for each water body to protect beneficial uses or allow their restoration and provides an implementation program that achieves water quality objectives. Per the requirements of CWA Section 303(c), the NCRWQCBBP is reviewed every three years and revised as necessary to address problems with the plan, and meet new legislative requirements. Beneficial uses for the SFER Hydrologic Area, which includes the Weott, Benbow and Laytonville Hydrologic Subareas, include:

- municipal and domestic water supply;
- agricultural supply;
- industrial service supply;
- groundwater recharge;
- freshwater replenishment;
- navigation;
- contact and non-contact water recreation;
- commercial and sport fishing;
- warm and cold water freshwater habitat;
- wildlife habitat;
- rare, threatened or endangered species habitat;
- migration of aquatic organisms; and,
- spawning.

Potential beneficial uses include:

- industrial process supply;
- hydropower generation; and,
- aquaculture (NCRWQCB 2011: Basin Plan Documents; Beneficial uses).

Water Quality

According to a 1999 Total Maximum Daily Load (TMDL) report by the U.S. EPA, “the amount of sediment washed through the Eel River is legendary.” A 1971 report by Brown and Ritter claimed the Eel River was one of the highest sediment producing rivers in the world, carrying

fifteen times as much sediment as the muddy Mississippi River, but the study was conducted during a time of widespread soil disturbance from road building and timber harvesting. Sedimentation of tributary streams in the SFER has reached record levels, with sediment from Cuneo Creek, a tributary to Bull Creek, burying two bridges with more than 30 feet of sediment (EPA 1999). Elevated water temperatures, those > 79.7 F for at least 100 continuous minutes, in most tributaries and the main stem SFER negatively affect anadromous salmonids during summer months (Kubicek 1977). More than half the main stem and major tributaries are considered thermally lethal, > 82.4 F for at least 100 continuous minutes, during some portion of the summer (Trush 1992). Temperatures in the channel reach within the vicinity of BLSRA are marginal for most salmonids, greater or equal to 26.5 F in the winter and up to, but not including 82.4 F in the summers for at least 100 continuous minutes in most summers, and lethal in others (Kubicek 1977). The range reported near the dam by Kubicek is quite broad; temperatures associated with past dive surveys during dam installation showed maximum June temperatures in excess of 21 degrees C (or 69 degrees F); this range would be lethal to salmonids per the current TMDL guidance for temperature in the SFER.

Water Intake

A small private infiltration well is located 1,100 lineal feet below the Benbow dam along the right channel bank. The depth of the well is unknown but it is buried into an alluvial bar next to a steep bedrock bank. The infiltration well associated pump gather shall subsurface flow from the SFER and lifts the water approximately 300 vertical feet to a private residence (Questa Engineering Corporation, 2012).

	<u>POTENTIALLY SIGNIFICANT IMPACT</u>	<u>LESS THAN SIGNIFICANT WITH MITIGATION</u>	<u>LESS THAN SIGNIFICANT IMPACT</u>	<u>NO IMPACT</u>
WOULD THE PROJECT:				
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge, such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through alteration of the course of a stream or river, in a manner which would result in substantial on- or off-site erosion or siltation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Substantially alter the existing drainage pattern of the site or area, including through alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in on- or off-site flooding?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

drainage systems or provide substantial additional sources of polluted runoff?

- | | | | | |
|--|--------------------------|-------------------------------------|--------------------------|-------------------------------------|
| f) Substantially degrade water quality? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| g) Place housing within a 100-year flood hazard area, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map, or other flood hazard delineation map? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| h) Place structures that would impede or redirect flood flows within a 100-year flood hazard area? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| i) Expose people or structures to a significant risk of loss, injury, or death from flooding, including flooding resulting from the failure of a levee or dam? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| j) Result in inundation by seiche, tsunami, or mudflow? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Criteria for Determining Significance

The analysis of determining the significance of impacts of the Proposed Action to Hydrology and Water Quality is based on criteria **IX** a-j, described in the environmental checklist above.

DISCUSSION

- a) BLSRA is within the jurisdiction of the North Coast Regional Water Quality Control Board (NCRWQCB). According to the NCRWQCB, construction activities disturbing one or more acres are required to obtain a National Pollution Discharge Elimination System (NPDES) General Activity Stormwater Permit. This permit controls construction and operation activities, and ensures that the project would not exceed the limitations of receiving waters, and thus would not exceed water quality standards. The general permit requires the permittee to employ BMPs before, during, and after construction. The primary objective of BMPs is to reduce non-point source pollution into waterways.

To comply with Section 402 of the Clean Water Act, the project proponent would be required to develop a Stormwater Pollution Prevention Plan (SWPPP) that describes the site, runoff, erosion and sediment controls, means of waste disposal, implementation of approved local plans, control of post-construction sediment and erosion control measures and maintenance responsibilities, and non-stormwater management controls. BMPs would be determined in the SWPPP and would act to reduce water quality impacts, including erosion and siltation, to the extent practicable.

To comply with Section 404(d) of the Federal Clean Water Act, authorization from the Secretary of the Army, acting through the Corps of Engineers, is required for the discharge of dredged or fill material into all waters of the United States. Waters of the United States include traditionally navigable waters, interstate waters, their tributaries, and adjacent wetlands. These categories include most wetlands, intermittent and ephemeral streams where there is an established ordinary high water mark, and areas subject to the ebb and flow of the tide. An initiation package is being completed as part of the permitting for the site. The purpose of the initiation package is to review the proposed project in sufficient detail to determine to what extent the proposed action may affect any of the threatened, endangered, proposed, or sensitive species and designated or proposed critical habitats.

The initiation package will be prepared in accordance with legal requirements set forth under regulations implementing Section 7 of the Endangered Species Act (50 CFR 402; 16 U.S.C. 1536 (c)) (USFWS, 2007).

Pursuant to Section 401 of the Clean Water Act, projects that require a Corps permit for discharge of dredge or fill material must obtain a water quality certification or a waiver that confirms a project complies with state water quality standards before the Corps permit is valid. State water quality is regulated/administered by the State Water Resources Control Board and its nine Regional Water Quality Control Boards (RWQCBs). The state also maintains independent regulatory authority over the placement of waste, including fill, into waters of the State under the Porter-Cologne Act.

Refer to the Project Requirements in the Biological Resources section for information on obtaining the required permits. Additionally, **Standard Project Requirement HAZ 1 - Hazardous Materials** as noted in Section VIII, Hazards and Hazardous Materials and **Specific Project Requirement HYDRO 1 - Erosion and Sediment Control and Pollution Prevention** as noted in Section VI, Geology and Soils along with construction plans would control releases of pollutants into the SFER. Less than significant impact.

- b) The gravel bar above the infiltration well already experiences deposition and scour of gravel and cobble sediments during infrequent flood events (5-yr, 10-yr, >20-yr). Removal of Benbow Dam will not cause increased scour but may initiate localized deposition near the infiltration well. Course gravel and cobble deposition on the infiltration well will not significantly change well capacity or performance as the size and character of deposited sediments are consistent with sediments currently surrounding the well. Additionally, because the well draws water from gravel interstices much lower in the profile of the bed, no significant reduction in well capacity or performance is anticipated (Questa Engineering Corporation, 2012).

Water, drafted from bermed sumps adjacent to the river or imported in water trucks, may be required as necessary to minimize fugitive dust during dry, dusty conditions, maintain haul road integrity and/or for irrigating plantings. However, these types of days are relatively infrequent because of the climatic conditions of the area. Surface grading will be required as necessary to restore the streambed where the concrete dam was removed, to develop and later remove; a percolation basin, a temporary haul road, and gravel bridge abutments, and to shape the left (south) river bank near the dam in preparation for planting. However, with the exception of the re-shaped bank these features are temporary in nature and will be in place only during the drier summer months, Reshaping of the bank will not substantially alter the volume or direction of groundwater flow. Therefore, the project would not substantially affect groundwater recharge. Less than significant impact.

- c) Removal of the in stream structures will restore the river to its natural condition. Although the project will release built-up sediment that is expected to help fill a scour hole on the downstream side of the dam, hydraulic modeling (Questa Engineering Corporation, 2012) indicates a larger pool will develop upstream from the dam. The annual operation of Benbow Dam and the presence of fish passage slots in the dam have helped maintain a high degree of geomorphic continuity along the river. Sediment has not accumulated in large volumes (limited to a localized gravel bar [9,700 cubic yards] on the left bank upstream from the dam (Questa Engineering Corporation, 2012)). A slight increase in shear stress, which could generate erosion, on the bank at a private residence north from the

river could occur based on hydraulic analysis but is not expected to be significant. Lowering of flood waters due to dam removal will lead to less saturation of the upper portion of the banks flanking the river, which will favor their stability. Pre-, during and post- wildlife-friendly Best Management Practices (BMPs) will be used in all construction areas to reduce or eliminate the discharge of soil; sand, surface water runoff; stockpile management; spill prevention from equipment; and dust control during all excavation, grading, and trenching. Implementation of **Specific Project Requirement HYDRO 1 - Erosion and Sediment Control and Pollution Prevention** will help keep siltation to a less than significant level.

- d) The Benbow Dam was not constructed for flood protection; it was constructed to provide a reliable source of power to the Benbow Inn and surrounding community as well as providing a recreational amenity. Removal of in stream structures will permit the river to find its natural course, compatible with current and future sediment loading and flow regimes; this in and of itself will not result in on or off-site flooding. The sediment impoundment upstream from the dam will help fill a scour hole downstream. Dispersal of any remnant sediment from the dam site through the system is inconsequential in terms of raising the bed elevation in the context of annual bedloading in the SFER (c.f. Brown and Ritter 1971). However, the average annual precipitation of 68.78 inches (U.S. climate data 2014), most of which falls between mid-October and mid-April. Because the dam impounded only summer flows its absence will not affect the winter flow regime, other than eliminating an obstacle to flow that locally raises the surface water elevation and impedes flood conveyance (Questa Engineering Corporation 2012), when flooding is most likely. Removal of the dam eliminates the potential for structure failure and summer flooding. Removal of the dam will lower the average water surface elevation near the dam (Questa 2012).No impact.
- e) This project would not create or contribute runoff water, which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff. No impact.
- f) Removal of the dam will lower river surface water elevations and thus the elevation of bank saturation, which will help promote bank stability. Permanent elimination of the impoundment also eliminates the potential for wind fetch-driven erosion of, and sedimentation from, the alluvial banks.

Project implementation would entail extensive work in the river bed. However, implantation of the project was designed to divert and dewater work areas so that none of the demolition work occurs in water. Permitted levels of acceptable turbidity and work stoppage conditions will be specified by control agencies. Temporary sanitary and trash facilities for workers at the dam site will be provided by the contractor and park restrooms will be made available for work closer to the day use area. Hydraulic fluids for heavy equipment working the river shall not contain organophosphate ethers and equipment refueling will occur on concrete pads. As such, the work will not degrade water quality, provided compliance with **Standard Project Requirement HAZ 1 - Hazardous Materials** as noted in in Section VIII, Hazards and Hazardous Materials and **Specific Project Requirement HYDRO 1 - Erosion and Sediment Control and Pollution Prevention** as noted in Section VI, Geology and Soils.

See discussion a) above. Impacts to water quality will be less than significant with implementation of **Standard Project Requirement HAZ 1 - Hazardous Materials** and

Specific Project Requirement HYDRO 1 - Erosion and Sediment Control and Pollution Prevention and PSR HAZ 3 - Rubbish.

PSR HAZ 3 - RUBBISH

The project area shall be kept clear of trash to avoid attracting predators. All food and garbage will be placed in sealed containers and regularly removed from the site. Following construction, any trash, debris, or rubbish remaining within the work limits shall be collected and hauled off to an appropriate facility.

The project may require the use of nitrogen-containing explosives to expedite the concrete removal process. Much of the nitrogen in explosives is believed to be lost to the atmosphere in gaseous form following the blast. However, the residual nitrogen in the spoils has the potential to pollute surface waters. Implementation of **Mitigation Measure HYDRO -1** will reduce potential impacts on water quality from blasting to a less than significant level.

MITIGATION MEASURE HYDRO-1;

- **Explosives will consist of the least water soluble mixture, lowest nitrogen content and lowest rate of release suitable to the objective for their use.**
 - **The Storm Water Pollution Prevention Plan will outline water quality monitoring methods, and spill prevention and materials storage requirements for explosives and fertilizers. Acceptable nitrate levels will be adhered to as designated by the Regional Water Quality Control Board. Blasting will be suspended if unacceptable nitrate levels or water conditions are approached until or if appropriate conditions allow.**
 - **All contracted employees and State Parks representatives will be educated regarding the potential for nitrate pollution.**
- g) This project entails only removal of an existing dam and restoration of the original riverine system. It involves no placement of structures, and therefore will not place housing in a 100-year flood hazard area. No impact.
- h) This project involves the removal of a structure, so it will not impede or significantly redirect flood flows within a 100-year flood hazard area. The 100-year flow overtops the dam structure. Because removal of the dam will increase flood flow conveyance, the area of inundation during a 100-year flood will decrease slightly (Questa Engineering Corporation 2012). No impact.
- i) This project involves the removal of an in-stream structure; it will not expose people or structures to a risk of loss, injury or death from flooding. Work will not proceed until the river has attained summer time flows, which are unlikely to be associated with flooding, based on more than 70 years of flow record. Flow or sediment containment structures recommended for the work have been designed by a California licensed civil engineer to accommodate anticipated summer flows (Questa Engineering Corporation 2012). Please refer to discussion d) above. No impact.
- j) The project area is approximately 12 miles away from the ocean, and will not contribute to inundation by oceanic seiche or tsunamis. Elimination of the dam structure also eliminates the potential for lake-derived seiche. The dry season and location of the dam removal work

will contribute to avoidance of areas susceptible to mudflow. Planting will occur during the winter but planting sites are on terraces, which are not prone to mudflow. No impact.

X. LAND USE AND PLANNING.

ENVIRONMENTAL SETTING

Current use of park lands within the general vicinity of the project site include primarily passive recreational activities, such as touring, picnicking, swimming, fishing, boating and observing nature. Adjacent non-park lands include a nine-hole golf course, the Historic Benbow Inn, several small retail businesses, a Recreational Vehicle Park, and approximately 200 private residences. All construction activities associated with this project would occur within the boundaries of BLSRA. The park is wholly owned and operated by California State Parks.

The area is zoned for recreation in Humboldt County.

	<u>POTENTIALLY SIGNIFICANT IMPACT</u>	<u>LESS THAN SIGNIFICANT WITH MITIGATION</u>	<u>LESS THAN SIGNIFICANT IMPACT</u>	<u>NO IMPACT</u>
WOULD THE PROJECT:				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with the applicable land use plan, policy, or regulation of any agency with jurisdiction over the project (including, but not limited to, a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Criteria for Determining Significance

The analysis of determining the significance of impacts of the Proposed Action to Land Use and Planning is based on criteria X a-c, described in the environmental checklist above.

DISCUSSION

- a) The project will not divide an established community because none exists within the boundaries of BLSRA. No impact.
- b) BLSRA has no governing General Plan at this time. However, this project is consistent with all applicable state and local land use plans, policies, and regulations. Work proposed for this project is in compliance with PRC §5002.2(c), and, with certification of this Mitigated Negative Declaration, would be in compliance with CEQA. The project is also in compliance with all conservation plans, policies, and ordinances that apply to the project and/or surrounding area. No impact.
- b) There are no applicable HCP's or NCCP's associated with the project area. No impact.

XI. MINERAL RESOURCES.

ENVIRONMENTAL SETTING

No significant mineral resources have been identified within the boundaries of the BLSRA. Mineral resource extraction is not permitted under the Resource Management Directives of the Department of Parks and Recreation.

Mineral resource extraction is not permitted within State Park property.

	<u>POTENTIALLY SIGNIFICANT IMPACT</u>	<u>LESS THAN SIGNIFICANT WITH MITIGATION</u>	<u>LESS THAN SIGNIFICANT IMPACT</u>	<u>NO IMPACT</u>
WOULD THE PROJECT:				
a) Result in the loss of availability of a known mineral resource that is or would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Criteria for Determining Significance

The analysis of determining the significance of impacts of the Proposed Action to Mineral Resources is based on criteria **XI** a-b, described in the environmental checklist above.

DISCUSSION

- a) The project would not result in the loss of availability of a known mineral resource because no known mineral resources exist within the BLSRA and resource extraction is not allowed in State Park units. No impact.
- b) The project would not result in the loss of availability of a locally important mineral resource recovery site because none exists within the BLSRA and resource extraction is not allowed in State Park units. No impact.

XII. NOISE.

ENVIRONMENTAL SETTING

BLSRA is located in a rural, sparsely populated area of Humboldt County approximately 3 miles south of Garberville with relatively low levels of traffic and no industrial noise. The park unit is bisected and bordered by US Highway 101 and rugged forested terrain, surrounded by steep mountains. A few noise sensitive land uses (residential) are located immediately to the north and east of the proposed work. The residences and the Benbow Inn to the east are more distant (~2000 feet or more from the dam and 400 feet from the haul road). A bend in the river helps shield the inn and a residence to the east from noise at the dam. The east side of the Benbow Inn is about 300 feet from noise impacts associated with Highway 101; seasonal festivals and concerts are centered on a stage in the BLSRA day use area about 800 feet southeast from the Inn. Residences in forested terrain to the north from the dam are about 750 to 825 feet away in plan view and about 300 vertical feet above the dam. However, all construction activities associated with the project would occur within the park boundaries.

Vehicle traffic from Highway 101, a four-lane State Highway, is the primary source of noise for this property along with very occasional air traffic consisting of small private planes, Coast Guard helicopters, and California Department of Forestry and Fire Protection (CDF) firefighting aircraft. Noise is defined as unwanted sound and is known to have several adverse effects on people, including hearing loss, speech and sleep interference, physiological responses, and annoyance. Based on these known adverse effects of noise, the federal government, the State of California, and many local governments have established criteria to protect public health and safety and to prevent disruption of certain activities.

Noise is commonly described in “Ldn,” that expresses average sound level over a 24-hour period in decibels (dB), the standard measure of pressure exerted by sound. Ldn includes a 10 dB penalty for sounds between 10 P.M. and 7 A.M., when background noise is lower and people are most sensitive to noise. Because decibels are logarithmic units of measure, a change of 3 decibels is hardly noticeable, while a change of 5 decibels is quite noticeable and an increase of 10 decibels is perceived as a doubling of the noise level. A change from 50dB to 60dB increases the percentage of the population that is highly annoyed at the noise source by about 7 percent, while an increase from 50 dB to 70 dB increases the annoyed population by about 25 percent. Sounds as faint as 10 decibels are barely audible, while noise over 120 decibels can be painful or damaging to hearing.

	<u>POTENTIALLY SIGNIFICANT IMPACT</u>	<u>LESS THAN SIGNIFICANT WITH MITIGATION</u>	<u>LESS THAN SIGNIFICANT IMPACT</u>	<u>NO IMPACT</u>
WOULD THE PROJECT:				
a) Generate or expose people to noise levels in excess of standards established in a local general plan or noise ordinance, or in other applicable local, state, or federal standards?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Generate or expose people to excessive groundborne vibrations or groundborne noise levels?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- c) Create a substantial permanent increase in ambient noise levels in the vicinity of the project (above levels without the project)?
- d) Create a substantial temporary or periodic increase in ambient noise levels in the vicinity of the project, in excess of noise levels existing without the project?
- e) Be located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport? If so, would the project expose people residing or working in the project area to excessive noise levels?
- f) Be in the vicinity of a private airstrip? If so, would the project expose people residing or working in the project area to excessive noise levels?

Criteria for Determining Significance

The analysis of determining the significance of impacts of the Proposed Action to Noise is based on criteria **XII** a-f, described in the environmental checklist above.

DISCUSSION

a) Construction and demolition work will occur over a period of approximately 120 days depending on weather conditions. The nearest residence is approximately 750 feet away (in plan view) from the dam, where the majority of the work will occur. The Benbow Inn is about 0.6 mile from the dam. An RV campground and golf course as well as a residential subdivision are located approximately 1 mile away from the dam. Dump truck traffic to haul materials from the dam will be no closer (~400 feet) to the Benbow Inn than Highway 101. A residence between the dam and the Benbow Inn residence will be within about 500 feet of the project’s haul road.

As noted in the Project Implementation Section 2.7, the project would involve the use of heavy equipment, such as backhoe, excavator, grader, bulldozer, loader, compressor, water truck and dump truck during construction as would explosives for concrete demolition.

Table 1 Construction Equipment Noise at 50 Feet	
Equipment	Noise Level at 50 Feet
Earthmoving	
Front Loaders	75-79
Backhoes	75-85
Dozers	75-80
Tractors	75-80
Graders	75-85
Pavers	80-89
Trucks	75-82
Material handling	
Concrete Mixers	75-85
Crane	75-83
Concrete Crushers	75-85
Stationary	
Pumps	75-76
Generator	75-78
Compressors	75-81
Other	
Saws	75-78
Vibrators	75-76

Source: U.S. EPA 1971

The project would have a less than significant impact on the exposure of persons to or generation of noise levels in excess of applicable standards. Noise generated during construction will be temporary and intermittent and therefore will have a less than significant impact. Residents, motorists and other users in the area may hear periodic high volume noises during construction, as they drive in close proximity to the construction activity. Due to the brief duration of exposure, and with implementation of **Standard Project Requirement NOISE 1 and Specific Project Requirement NOISE 2**, noise impacts to those living in or traveling through the vicinity of the project will have a less than significant impact. After project is complete, noise levels will return to pre-construction levels and will not result in a permanent increase in ambient noise.

SPR NOISE 1 – CONSTRUCTION ACTIVITIES

- **Internal combustion engines used for project implementation will be equipped with a muffler of a type recommended by the manufacturer. Equipment and trucks used for Project-related activities will utilize the best available noise control techniques (e.g., engine enclosures, acoustically attenuating shields or shrouds, intake silencers, ducts, etc.) whenever necessary.**
- **Contractor will locate stationary noise sources and staging areas as far from potential sensitive noise receptors, as possible. If they must be located near potential sensitive noise receptors, stationary noise sources will be muffled or shielded, and/or enclosed within temporary sheds.**
- **Construction activities will generally be limited to the daylight hours, Monday – Friday. If work during weekends or holidays is required, no work will occur on those days before 8:00 a.m. or after 5:00 p.m.**

PSR NOISE 2 – WRITTEN NOTIFICATION

Written notification of construction activities will be provided to any and all off-site noise-sensitive receptors (e.g., residential land uses) located within 1,500 feet of locations where powered construction equipment and/or power tools will be operated. Notification will include anticipated dates and hours during which construction activities including blasting, are anticipated to occur and contact information, including a daytime telephone number, of the project representative. Blasting shall occur only within the designated window. Recommendations to assist noise-sensitive land uses in reducing interior noise levels (e.g., closing windows and doors) will also be included in the notification. Explosives shall not be used until a blasting plan has been approved by relevant regulatory agencies.

- b) The project will by necessity, generate groundborne vibrations and higher groundborne noise levels. Modest and temporary vibration may occur as a result of construction activities potentially including heavy equipment such as jackhammers, backhoes, and heavy trucks, and other equipment that are known to produce noticeable noise and ground borne vibration. Additionally, the mass of the concrete superstructure may necessitate the potential use of explosives if the heavy equipment proves to be inadequate to facilitate removal. Due to the brief duration of exposure, and with implementation of **Standard Project Requirements Noise 1 – Construction Activities and Project Specific Requirement Noise 2 – Written Notification**, impacts resulting from groundborne vibrations or groundborne noise levels will be less than significant.

- c) Project-related noise will occur only during actual preparation, deconstruction and removal phases of the work. Once removal is complete, all noise-generating equipment will be removed from the site. The project will not create any source that would contribute to a substantial permanent increase in ambient noise levels in the vicinity of the project. No Impact.
- d) The project will create temporary or periodic increases in ambient noise levels in the vicinity of the project exceeding noise levels existing without the project. However, incorporation of **Standard Project Requirements Noise 1 – Construction Activities** and **Specific Project Requirement Noise 2 – Written Notification** will ensure the impact on temporary or periodic increases in ambient noise will be less than significant.
- e) Although the project is within 2 miles of an airport, the project would not expose people living or working in the area to excessive levels of noise. Less than significant impact.
- f) The project is not within 2 miles of a private airstrip; therefore no impact.

XIII. POPULATION AND HOUSING.

ENVIRONMENTAL SETTING

The communities surrounding or in the vicinity of BLSRA are small and mostly residential with small businesses, hotels, and service stations spread across northern Mendocino and southern Humboldt counties. These communities are primarily supported by agricultural activities and tourism during the summer months.

Construction and State Park staff generally live in the nearby small cities of Fortuna, Eureka, Arcata, Redway, Leggett, and Garberville.

The entire project area is owned by State Parks, although an encroachment permit will be obtained from Humboldt County where the haul road enters the right-of-way to Benbow Drive.

	<u>POTENTIALLY SIGNIFICANT IMPACT</u>	<u>LESS THAN SIGNIFICANT WITH MITIGATION</u>	<u>LESS THAN SIGNIFICANT IMPACT</u>	<u>NO IMPACT</u>
WOULD THE PROJECT:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Criteria for Determining Significance

The analysis of determining the significance of impacts of the Proposed Action to Population and Housing is based on criteria **XIII** a-c, described in the environmental checklist above.

DISCUSSION

a-c) The project includes no component that would induce population growth in the area either directly or indirectly. It has no housing component and all work would take place within the confines of the park boundaries, with no additions or changes to the existing local infrastructure. It would neither modify nor displace any existing housing and would displace no one, either temporarily or permanently. Therefore, it would have no impact on population growth or housing in the area. No impact.

XIV. PUBLIC SERVICES.

ENVIRONMENTAL SETTING

California State Park Rangers patrol Benbow Lake State Recreation Area (BLSRA), with primary patrol occurring in campgrounds and public use areas. The Ranger staff is informed each year as to the location, staffing, and type of projects being implemented in the BLSRA vicinity. CAL FIRE, the California Highway Patrol, the Humboldt County Sherriff and State Parks dispatch center will be notified about the blasting schedule if explosives are employed on the project.

The California Department of Forestry and Fire Protection (CAL FIRE) provides fire protection for the project areas. CAL FIRE maintains fire stations in Garberville and Leggett, both within minutes to under an hour away from BLSRA area. The CAL FIRE Air Attack base is located in Rohnerville, approximately 45 miles from BLSRA. There are no schools within an impacted distance.

	<u>POTENTIALLY SIGNIFICANT IMPACT</u>	<u>LESS THAN SIGNIFICANT WITH MITIGATION</u>	<u>LESS THAN SIGNIFICANT IMPACT</u>	<u>NO IMPACT</u>
WOULD THE PROJECT:				
a) Result in significant environmental impacts from construction associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Criteria for Determining Significance

The analysis of determining the significance of impacts of the Proposed Action to Public Services is based on criteria **XIV a**, described in the environmental checklist above.

DISCUSSION

a) The project may require the use of propane torches to eradicate non-native plant species. Fire history in the area of BLSRA shows that the majority of fires have occurred accidentally or by arson, along roads that were open to park visitors. No fire roads in the park would be closed to service and emergency vehicles, and all emergency access routes will would be maintained in good traveling condition. The CDF Air Attack Base in Rohnerville is approximately 45 miles from BLSRA, reducing response time in case of a fire. During the construction phase, DPR staff and/or contracting staff would have radios

on site at all times to ensure immediate direct contact to CDF fire dispatchers and crews. All heavy equipment and service vehicles would be required to carry a fire extinguisher and hand tools which can be used to help fight fire. The project would have a less than significant impact on fire protection. Implementation of **Standard Project Requirement Hazard 2** would ensure impacts on Fire Protection will remain less than significant.

SPR HAZARDS 2 - FIRE PREVENTION

Contractor shall require that all heavy equipment be equipped with spark arrestors or turbo-charging (eliminates sparks in exhaust). At the end of each workday, Contractor shall park heavy equipment over asphalt, or concrete to reduce chance of fire. If all local asphalt or concrete at the dam has been removed due to the project, heavy equipment shall park over bare ground with drip pans to inhibit petroleum discharges to soil.

Contractor shall require that construction crews park vehicles away from flammable material, such as dry grass or brush.

Contractor shall ensure that all internal combustion engines used for any purpose at the job site are equipped with a muffler of a type recommended by the manufacturer and that all equipment and trucks used for construction utilize the best available noise control techniques (e.g., engine enclosures, acoustically attenuating shields or shrouds, intake silencers, ducts, etc.) whenever feasible and necessary.

Contractors shall have firefighting hand tools on site and each vehicle shall have an appropriately-sized and fully charged fire extinguisher.

BLSRA maintains Ranger police protection year-round, with primary patrols in campgrounds and public use areas. State Park Rangers have full law enforcement authority and only require assistance from local police/sheriff as backup for unusual situations. No additional demands on Rangers or local police are expected as a result of this project.

No schools exist within or adjacent to the project area. No changes would occur that would affect existing schools or require additional schools or school personnel. No impact.

The project, as a whole, or in part, would have a less than significant effect on any public services.

XV. RECREATION.

ENVIRONMENTAL SETTING

The proposed project is located within the boundaries of BLSRA, an approximately 1,200-acre destination park with a long history, and a great deal of recreational use. In 1922 the Benbow family purchased a 1,288 acre ranch . The ranch, located along the confluence of the SFER’s mainstem and its eastern branch, provided the family with a place for summer vacations. In 1925 the Benbow family formed the Benbow Development Company and by 1926 they had constructed the Benbow Hotel, a nine-hole golf course, horse stables and a subdivision for private residences. Construction of the dam began in 1931 and the park, known now as BLSRA has remained a major tourist attraction and recreational site for 70+ years and has been a part of DPR since the late 1950s.

Annual seasonal dam installation created an approximately 123 acre, recreational lake that served the southern Humboldt County community between about mid-June and mid-September. Installation of the wooden flashboards signified the beginning of summer for surrounding residents. When filled, the lake supported various water sport activities including kayaking, power boating, swimming.

Current facilities within the park consist of campsites, a large public parking lot, a large day use picnic area, a stage for performances and special events, a series of trails, and two public restrooms. Hiking and picnicking are other popular summer time activities, while salmon and steelhead fishing are popular in the winter. BLSRA is also the site of an annual arts and music festival that occurs in the early summer.

Benbow Lake more and more frequently had existed for only two months a year, and only in years of sufficient rainfall. In 2002, State Parks did not install the dam due to the need for major repairs. As of 2008 faced with costs of maintaining the aging structure, re-installing and removing it each season, complying with permitting and current environmental regulations, operation of the dam had become prohibitive, particularly with cuts to State Park’s budget. The flashboards have not been installed since 2007, and no lake-related recreational activities have occurred in BLSRA since. Paid day use visitor attendance declined precipitously from its high point of over 12,000 in 2007, to under 1,000 in 2014.

	<u>POTENTIALLY SIGNIFICANT IMPACT</u>	<u>LESS THAN SIGNIFICANT WITH MITIGATION</u>	<u>LESS THAN SIGNIFICANT IMPACT</u>	<u>NO IMPACT</u>
WOULD THE PROJECT:				
a) Increase the use of existing neighborhood and regional parks or other recreational facilities, such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Criteria for Determining Significance

The analysis of determining the significance of impacts of the Proposed Action to Recreation is based on criteria **XV** a-b, described in the environmental checklist above.

DISCUSSION

- a) As noted above, although BLSRA had been a major tourist attraction and recreational site for Southern Humboldt families for 70+ years, the flashboards have not been installed since 2007, and no lake-related recreational activities have occurred in BLSRA since.

CEQA Section 15125(a) requires that the description of the physical environmental conditions in the vicinity of the project must reflect the conditions that exist at the time the environmental analysis is commenced, from both a local and regional perspective. Since no lake-related recreation activities have occurred in BLSRA since 2007, the analysis of the environmental impacts considers a free-flowing river as the baseline for assessing impacts to recreational facilities. While the loss of the lake may represent an experiential impact to the generations of Southern Humboldt County residents who recreated at BLSRA, the demise of the lake occurred in 2008 when annual installation of the flashboards was discontinued. DPR had remained committed to operating the lake for 50 years until increasing costs, complex permitting requirements and increasing environmental regulations forced an end to the annual flashboard installation.

Portions of the Eel River and its tributaries have received both State (1972) and Federal (1981) Wild and Scenic River designation, a title which is meant to protect the river from dams and ensure that environmental concerns rank equally with development and industry. The South Fork is designated from its confluence with the main stem to the Section Four Creek confluence (U.S. Fish & Wildlife Service).

As a listed National Wild and Scenic river, the Eel River is preserved for possessing outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values. Rivers so designated are preserved in their free-flowing condition and are not dammed or otherwise impeded. National Wild and Scenic River designation essentially vetoes the licensing of new hydropower projects on or directly affecting the river. It also provides very strong protection against bank and channel alterations that adversely affect river values, protects riverfront public lands from oil, gas and mineral development, and creates a federal reserved water right to protect flow-dependent values.

Designation as a Wild and Scenic River is not the same as a National Park designation, and generally does not confer the same level of protection as a Wilderness Area designation. However, Wild and Scenic designation protects the free-flowing nature of rivers in non-federal areas, something the Wilderness Act and other federal designations cannot do. Removal of the dam is consistent with both state and federal Wild and Scenic River designations.

Hiking Trails/Day Use Area

Hiking in BLSRA is limited to the Thrap Mill Trail and Pioneer Trails; numerous other trails are located in nearby State Park units. The Thrap Mill Trail continues to the dam and the construction area will be closed to the public; therefore the trail access will terminate to

the east during the project. Noise from the project will be audible at the trail segment closest to the dam but this would be temporary.

Camping

The campground is typically open just after Memorial Day. Due to the ongoing budget cuts and resulting shortages in staffing, the North Coast Redwoods District has been forced to keep the campground closed during the summer of 2015. However, there are 74 campgrounds within 50 miles of BLSRA, including State Park-managed Albee Creek, Hidden Springs and Burlington campgrounds (State of California). Regardless, the closure of the campground is a budgetary issue unrelated to the dam removal project and thus, is not considered an impact.

Removal of the dam will not result in an increase in the use of other nearby recreational facilities to the point that deterioration of those facilities will occur or be accelerated. Therefore, no impact will result.

- b) The project entails removing an existing dam and will not necessitate the construction or expansion of any other recreation facilities. Therefore, no impact will result.

XVI. TRANSPORTATION/TRAFFIC.

ENVIRONMENTAL SETTING

Benbow Lake State Recreation Area (BLSRA) is located approximately 2 miles south of Garberville, directly off US Highway 101. Public access to BLSRA is via US Highway 101 to Benbow Lake Road a Humboldt County-maintained paved road. There is no public vehicular access to the project site; access is restricted to authorized vehicles. Vehicle access to the south side of the river has historically been via a low-water crossing east of the dam.

Traffic on US Highway 101 is generally moderate throughout the year with seasonal increases in traffic occurring from late spring through early fall, coinciding with vacation months and summer travel. Annual visitation to the park during the warmer months of the year averages 21,000. The peak traffic month for this area (usually July or August) reported a modest average daily average of 5500 vehicles (California Department of Transportation, 2013).

Visitors to BLSRA represent a small portion of those using US Highway 101, but the highway extends the length of California and is a main thoroughfare for those traveling north to Oregon or south to central and southern California. Prearranged special events temporarily increase traffic and congestion in the general vicinity of BLSRA, but these are infrequent events, traffic is controlled, and delays are temporary.

The nearest airport is located approximately 2 miles to the northwest in Garberville. The airport serves only small aircraft, no commercial planes.

	<u>POTENTIALLY SIGNIFICANT IMPACT</u>	<u>LESS THAN SIGNIFICANT WITH MITIGATION</u>	<u>LESS THAN SIGNIFICANT IMPACT</u>	<u>NO IMPACT</u>
WOULD THE PROJECT:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Cause a change in air traffic patterns, including either an increase in traffic levels or a change in location, that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Contain a design feature (e.g., sharp curves or a dangerous intersection) or incompatible uses (e.g., farm equipment) that would substantially increase hazards?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- | | | | | |
|--|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| e) Result in inadequate emergency access? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| f) Result in inadequate parking capacity? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| g) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Criteria for Determining Significance

The analysis of determining the significance of impacts of the Proposed Action to Transportation/Traffic is based on criteria **XVI** a-g, described in the environmental checklist above.

DISCUSSION

- a) The project entails removal of a non-functioning dam. State Parks estimates that 13,000 tons of concrete comprising approximately 500 truckloads will be hauled off. The truck schedule will vary, as the contractor will probably break up a section of the dam, haul off the debris, and then move on to the next section. During debris removal, this could mean three or four trucks an hour moving on and off the site, and at other times only one or two trucks per day. The capacity for rural freeways is 4,000 to 18,500 average daily trips. Congestion on US Highway 101 in southern Humboldt County is considered to be approximately 50% under capacity (North Coast Branch of the American Society of Civil Engineers, 2014). As such, the temporary increase in traffic resulting from construction personnel and debris removal will have a negligible contribution on the amount of traffic traversing Highway 101 in the vicinity of the project. Less than significant impact.
- b) Per XVI(a) discussion above, the impact on congestion and traffic count resulting from the additional of construction vehicles to normal traffic on US Highway 101 or any connecting county-maintained roads would be minimal and have no impact on the acceptable level of service (LOS) for this area. Removal of the dam, which has not been functional for nearly 8 years, will not change visitation patterns at BLSRA. Less than significant impact.
- c) The project site and BLSRA itself is not located within an airport land use plan although is 1.3 miles from the Garberville airport. Nothing in the proposed project would in any way affect or change existing air traffic patterns in the area. Therefore, no impact would occur as a result of this project.
- d) Access to the dam will require construction of a temporary haul road from Benbow Lake Road, along the southwest side of the day use area, on alluvial terraces along the SFER and terminating at the dam on the south side of the river. As noted in Section a) above, State Parks estimates that removal of the dam will generate about 500 truckloads of concrete.

Although the project site will be closed to the public, it is likely that most all of the other areas within the park will remain open to the public during construction. The day use area is a popular location for fishermen, kayakers and others, to access the river but that access will be impeded by the haul road. Heavy truck traffic has the potential to create a conflict and safety issue with recreational users' access to the river.

A limited amount of work, such as removal of the right bank cableway anchorage systems, will necessitate access from Benbow Dam Road, which provides access to several residences on the north side of the river. However, the project engineer indicates that this route would not be used for concrete removal nor would it be used as heavy equipment access.

As noted above, the SFER receives frequent use by kayakers and others through the dam area. During the 3-5 month project implementation period, demolition activities could present a hazard to these recreational users. Impacts to traffic, pedestrian and recreationists' safety will be reduced to a less than significant level with implementation of **Mitigation Measure Traffic 1 – Traffic Control Plan.**

MM TRAFFIC 1 – TRAFFIC CONTROL PLAN

Prior to commencing construction, the contractor shall prepare a traffic control plan that includes the following components:

- **Exclusionary fencing will be placed along both sides of the haul road in the Day Use Area and as necessary to exclude non-construction personnel.**
- **Pedestrian access to the river from the day use area will be maintained, either through a gate through the exclusionary fencing or via the paved park road that will intersect the haul road near its exit onto Lake Benbow Drive.**
- **The pedestrian access across the haul road will be located where adequate site distance can be accomplished.**
- **The pedestrian access will be clearly delineated and signed in both directions of the haul road and on both sides where pedestrians would be crossing.**
- **Access for the residences along Benbow Dam Road will be maintained throughout project implementation. Should closure of this road be necessary for any period of time, contractor shall provide adequate advanced notification to all of the residents.**
- **The construction area shall be clearly signed both upstream and downstream as closed to kayakers and other recreational river users, and a safe area provided where they are able to disembark and carry their craft around the area where the work will occur.**

- e) All construction activities associated with the project will occur within the boundaries of BLSRA and work will not restrict access to, or block any public road. The haul road construction will necessitate an encroachment permit from Humboldt County for connecting to Benbow Lake Road.

Construction work may require use of the existing service roads; however, minimum access requirements for emergency vehicles would be maintained at all times. Therefore, the impact of this project on emergency access or response would be less than significant.

- f) The project does not include any element requiring an increase in overall parking capacity at the park; existing facilities are adequate for current regular use and temporary procedures are already in place to provide additional parking and traffic control during special events. As noted in XV(b) above, visitation is expected to remain comparable with previous years. No impact.

- g) There are no policies, plans, or programs supporting alternative transportation that apply to this project. No impact.

XVII. UTILITIES AND SERVICE SYSTEMS.

ENVIRONMENTAL SETTING

Benbow Lake State Recreation Area (BLSRA) is located within the county of Humboldt. Surface water is supplied to the project area by precipitation, runoff during storm events, and the SFER. Benbow Water Company in Benbow supplies potable water to BLSRA. Pacific Gas and Electric Company (PG&E) supplies electricity and various other vendors, including Blue Star Gas Company, Amerigas, and Suburban Gas Company supply LPG. Viacom provides telephone service; cable TV service is supplied by Starstream Cable. There is no sewage collection or sewage treatment plant in the Benbow valley. Individual septic tanks and leach fields provide wastewater treatment for the entire area, including BLSRA. Refuse collection and disposal is performed by park staff and transported to a neighboring licensed landfill.

	<u>POTENTIALLY SIGNIFICANT IMPACT</u>	<u>LESS THAN SIGNIFICANT WITH MITIGATION</u>	<u>LESS THAN SIGNIFICANT IMPACT</u>	<u>NO IMPACT</u>
WOULD THE PROJECT:				
a) Exceed wastewater treatment restrictions or standards of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Would the construction of these facilities cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Would the construction of these facilities cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Have sufficient water supplies available to serve the project from existing entitlements and resources or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in a determination, by the wastewater treatment provider that serves or may serve the project, that it has adequate capacity to service the project's anticipated demand, in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Comply with federal, state, and local statutes and regulations as they relate to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Criteria for Determining Significance

The analysis of determining the significance of impacts of the Proposed Action to Utilities and Service Systems is based on criteria **XVII** a-g, described in the environmental checklist above.

DISCUSSION

- a) BLSRA, including the project site, is within the jurisdiction of the North Coast Regional Water Quality Control Board. This project has no wastewater component and would result in a negligible increase in demand on existing systems. All aspects of the project would be in compliance with RWQCB regulations and standards. (See Hazmat Mitigation Measures regarding potential impacts from accidents, spills, or upset.) No impact.
- b) The proposed project would not result in the expansion of the existing wastewater treatment facilities or the construction of new facilities. Portable toilets will be placed on-site during construction and serviced regularly, in compliance with county sanitary regulations. No impact.
- c) This project would not create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems, provided properly engineered drainage systems are in place and Hydrology Mitigation Measures are fully implemented. No significant impact.
- d) The water supply for the project area is provided by park's internally supported water distribution system or from subsurface flow near the river to which the park has water rights; no new entitlements for water will be required by the project. Current supplies are adequate for existing demands and the minimal additional demands associated with the proposed construction, and projected future use. Flow that is extracted for irrigation or dust control will substantially return to the river via percolation through the gravel bars. No significant impact.
- e) The proposed work would not significantly increase the park's wastewater or solid waste disposal needs; therefore, this project would have no significant impact.
- f) Refer to Item "e" above.
- g) The concrete, steel and redwood from dam disaggregation will be hauled to a recycling facility and/or re-used as salvage. Its disposal will be documented to satisfy agency requirements (Regional Water Quality Control Board). Waste from daily work activities and that can attract salmonid predators will be stored in appropriate receptacles and removed daily or as needed.

CHAPTER 4
MANDATORY FINDINGS OF SIGNIFICANCE

	<u>POTENTIALLY SIGNIFICANT IMPACT</u>	<u>LESS THAN SIGNIFICANT WITH MITIGATION</u>	<u>LESS THAN SIGNIFICANT IMPACT</u>	<u>NO IMPACT</u>
WOULD THE PROJECT:				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Have the potential to eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means the incremental effects of a project are considerable when viewed in connection with the effects of past projects, other current projects, and probably future projects?)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Have environmental effects that will cause substantial adverse effects on humans, either directly or indirectly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

DISCUSSION

- a) The project entails the removal of a non-functioning concrete dam structure from a river with both state and federal designation as a wild and scenic river. Currently the existing dam structures (e.g. fish ladder) and river channel topography inhibit free fish migration and passage. Implementation of the project, which includes restoration of the active river channel, would reduce or eliminate impacts to anadromous fish and other aquatic organisms. Therefore, no impact would result.
- b) The Benbow Dam and Benbow Lake are part of the varied fabric that created and highlighted the tourism industry in southern Humboldt County during the first half of the 20th century. However, the Benbow Dam has been extensively modified and no longer impounds water. The inability to create Benbow Lake due to increasingly complex environmental restrictions and funding uncertainties, once an integral part of the Benbow Inn and its landscape, represents a significant loss of integrity. As a result, the dam no longer contributes to a potential historic district or landscape associated with the inn as a functioning property. Therefore, the project will not have the potential to eliminate important examples of the major periods of California history or prehistory.
- c) Major repairs were done to the Benbow Dam in 2002 and only minor maintenance work has occurred since. Other projects in the park since 2002 include on-going general maintenance of the park facilities, a previous installation of a new restroom and

replacement of one restroom. Additionally, accessibility improvements will be undertaken on five campsites, the Campfire Center and the Front Loop Meadow Restroom in 2016. Finally, a short access road to the stage in the day use area as well as a new small parking area is proposed at the north end of the day use area.

DPR contacted the Humboldt County Planning Department about any development projects within the past year, located within a one-mile radius of the project site. There were a total of 15 projects within the one mile radius ranging from minor lot line adjustments to a ten-room addition to the historic Benbow Inn.

Additionally, information was also requested about any major projects occurring within the watersheds of the South Fork of the Eel River and East Branch of the South Fork of the Eel River extending south to the Mendocino County line. A total of 14 projects were found within this area (including many of the same projects within the one-mile radius). Projects consisted primarily of special events, lot line adjustments and projects involving the Benbow Inn (Zoellner, 2015).

The project entails the removal of a non-functioning concrete dam structure from a river and restoring its natural riverine function. Work on the Project could occur simultaneously with other projects in the immediate vicinity, and while impacts to local air quality, noise and transportation/traffic could occur, these are expected to be individually and cumulatively less than significant.

- d) As indicated in the impact analyses Sections discussions in Chapter 3, the proposed project will have no environmental effects that will cause substantial adverse effects on humans, either directly or indirectly with incorporation of Standard Project Requirements, Project Specific Requirements and Mitigation Measures where noted.

CHAPTER 5

SUMMARY OF MITIGATION MEASURES

The following mitigation measures would be implemented by DPR as part of the Benbow Dam Removal Project.

AESTHETICS

- No mitigation measures required

AGRICULTURAL RESOURCES

- No mitigation measures required

AIR QUALITY

- No mitigation measures required

BIOLOGICAL RESOURCES

- No mitigation measures required

CULTURAL RESOURCES

- No mitigation measures required

GEOLOGY AND SOILS

MITIGATION MEASURES GEO-1

Prior to initiating any work within the debris slide area, the Project Engineer will educate all construction workers about the location of the debris slides, the conditions in which additional debris slides may potentially occur and the procedures necessary to avoid such rock fall.

HAZARDS AND HAZARDOUS MATERIALS

MITIGATION MEASURES HAZMAT-1

- Smoking shall be prohibited in the vicinity of explosives at a distance determined by the licensed-blaster-in-charge.
- A licensed-blaster-in-charge will design and oversee the blasting program to achieve an acceptable level of blasting efficiency that maximizes material fragmentation, and minimizes flyrock, ground vibration and air blast.

HYDROLOGY AND WATER QUALITY

MITIGATION MEASURES HYDRO-1

- Explosives will consist of the least water soluble mixture, lowest nitrogen content and lowest rate of release suitable to the objective for their use.
- The Storm Water Pollution Prevention Plan will outline water quality monitoring methods, and spill prevention and materials storage requirements for explosives and fertilizers. Acceptable nitrate levels will be adhered to as designated by the Regional Water Quality Control Board. Blasting will be suspended if unacceptable nitrate levels or water conditions are approached until or if appropriate conditions allow.
- All contracted employees and State Parks representatives will be educated regarding the potential for nitrate pollution.

LAND USE AND PLANNING

- No mitigation measures required

MINERAL RESOURCES

- No mitigation measures required

NOISE

- No mitigation measures required

POPULATION AND HOUSING

- No mitigation measures required

PUBLIC SERVICES

- No mitigation measures required

RECREATION

- No mitigation measures required

TRANSPORTATION/TRAFFIC

MITIGATION MEASURES TRANS-1

Prior to commencing construction, the contractor shall prepare a traffic control plan that includes the following components:

- Exclusionary fencing will be placed along both sides of the haul road in the Day Use Area and as necessary to exclude non-construction personnel.
- Pedestrian access to the river from the day use area will be maintained, either through a gate through the exclusionary fencing or via the paved park road that will intersect the haul road near its exit onto Lake Benbow Drive.
- The pedestrian access across the haul road will be located where adequate site distance can be accomplished.
- The pedestrian access will be clearly delineated and signed in both directions of the haul road and on both sides where pedestrians would be crossing.
- Access for the residences along Benbow Dam Road will be maintained throughout project implementation. Should closure of this road be necessary for any period of time, contractor shall provide adequate advanced notification to all of the residents.
- The construction area shall be clearly signed both upstream and downstream, as closed to kayakers and other recreational river users, and a safe area provided where they are able to disembark and carry their craft around the area where the work will occur.

UTILITIES AND SERVICE SYSTEMS

- No mitigation measures required

CHAPTER 6

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Noise

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CHAPTER 7

REPORT PREPARATION

California Department of Parks and Recreation

Northern Service Center

Monica Aleman

Stephanie Coleman

Patricia DuMont

Steve Hilton

Dan Kopp

Roy Martin

Brad Michalk

North Coast District

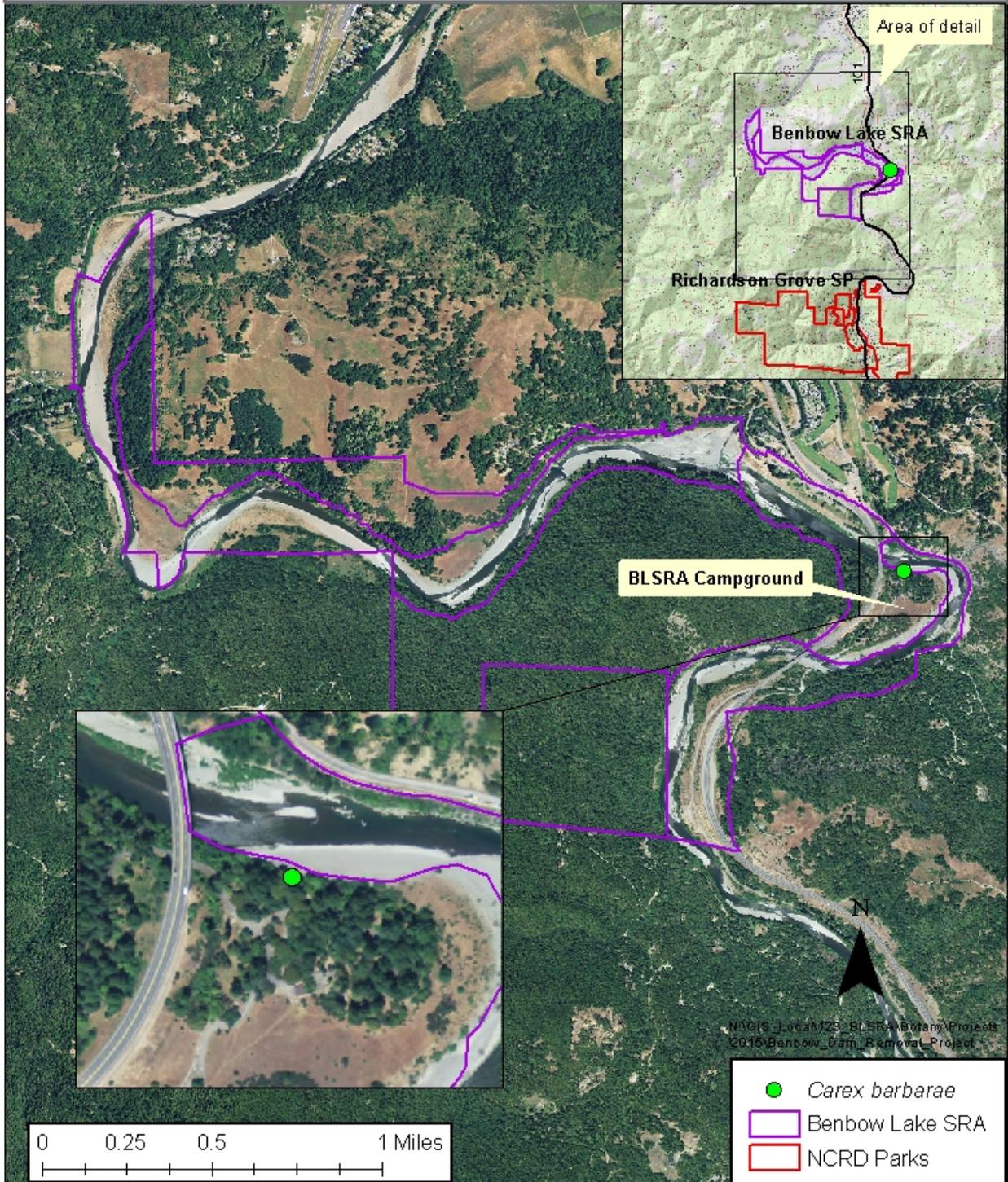
Greg Collins

Patrick Vaughan

Amber Transou

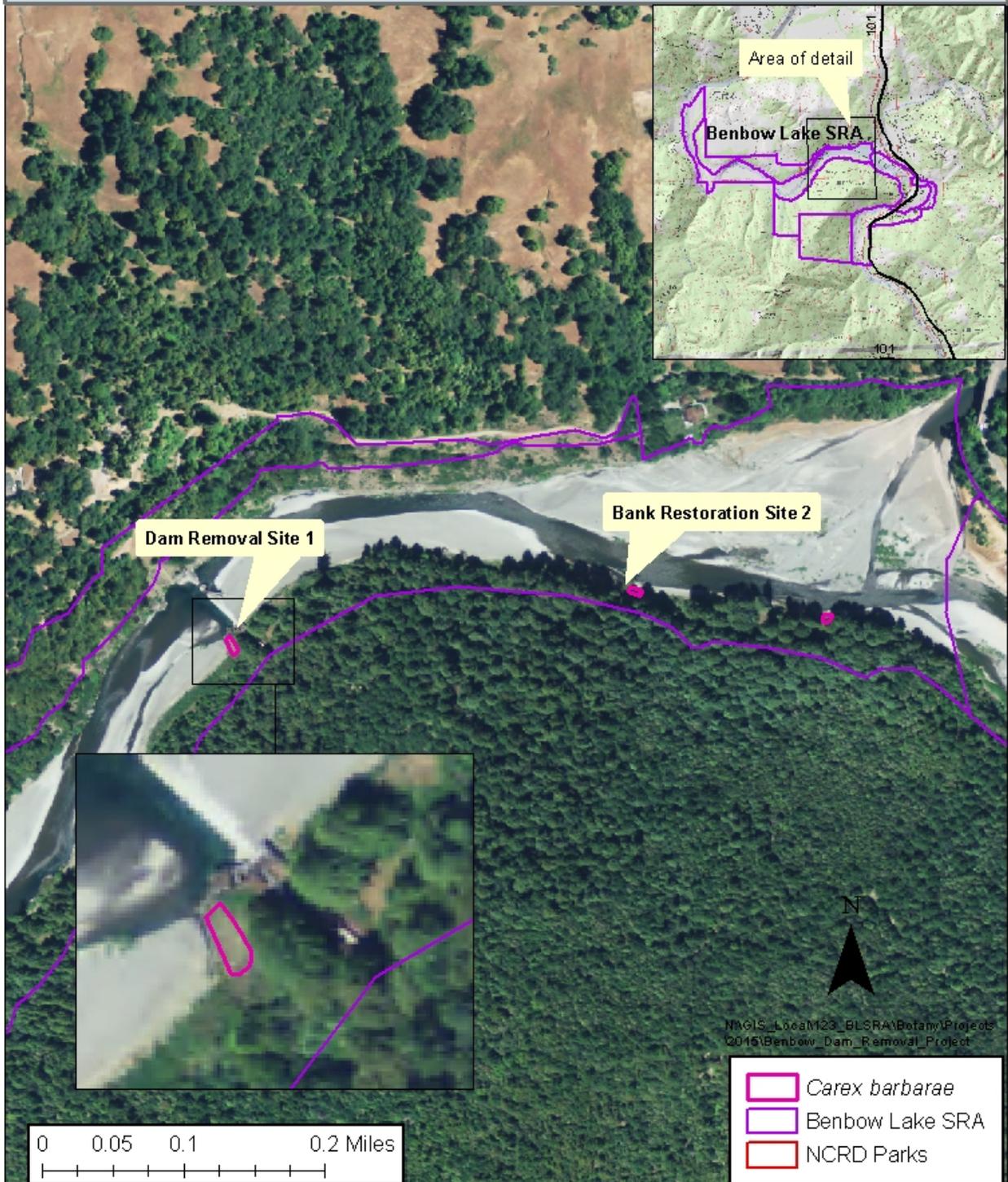
Carol Wilson

APPENDIX A
MAPS

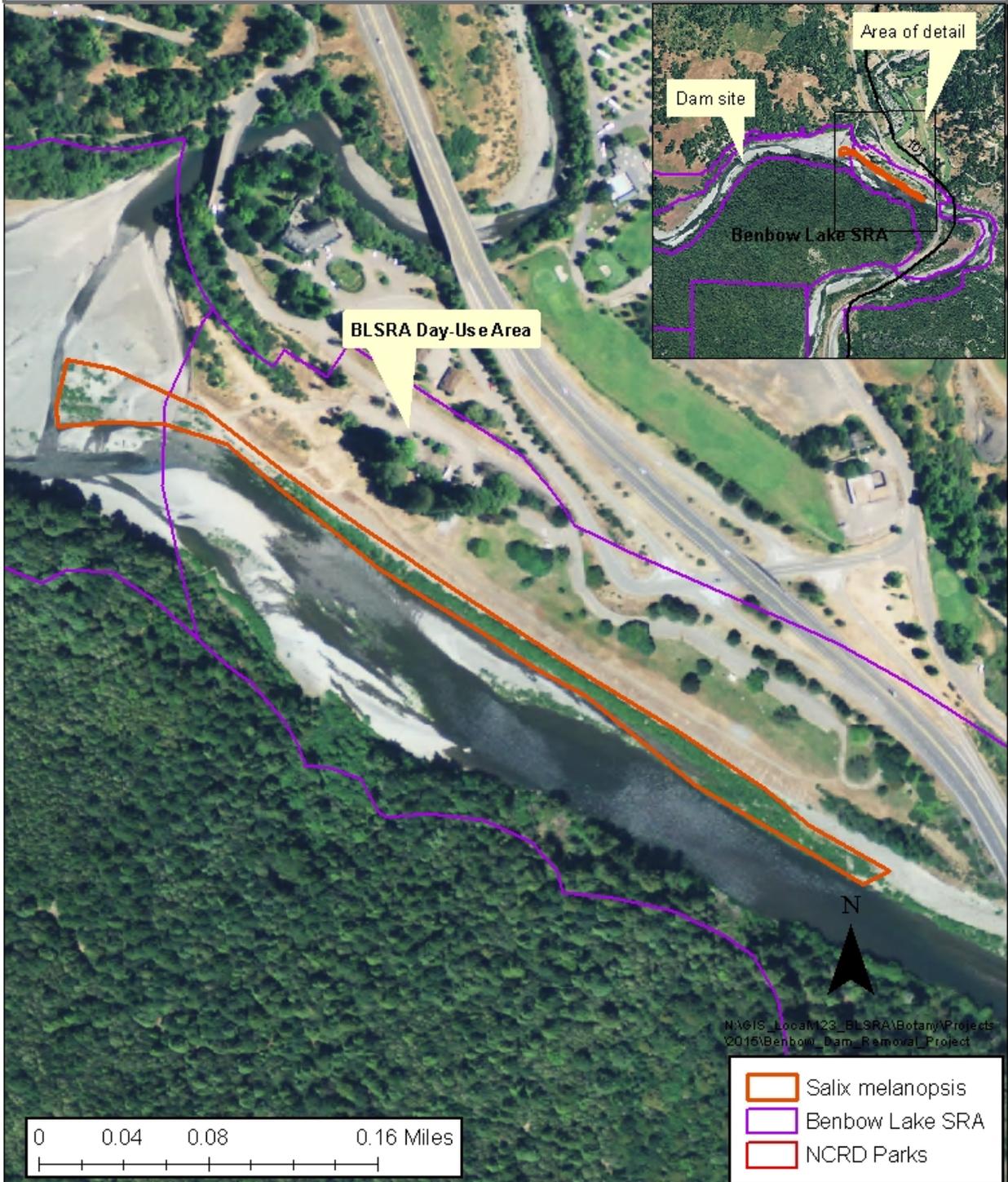


**Benbow Lake State Recreation Area (BLSRA)
Dam Removal Project**

**Figure 1: Map of Santa Barbara sedge
(*Carex barbarae*)**

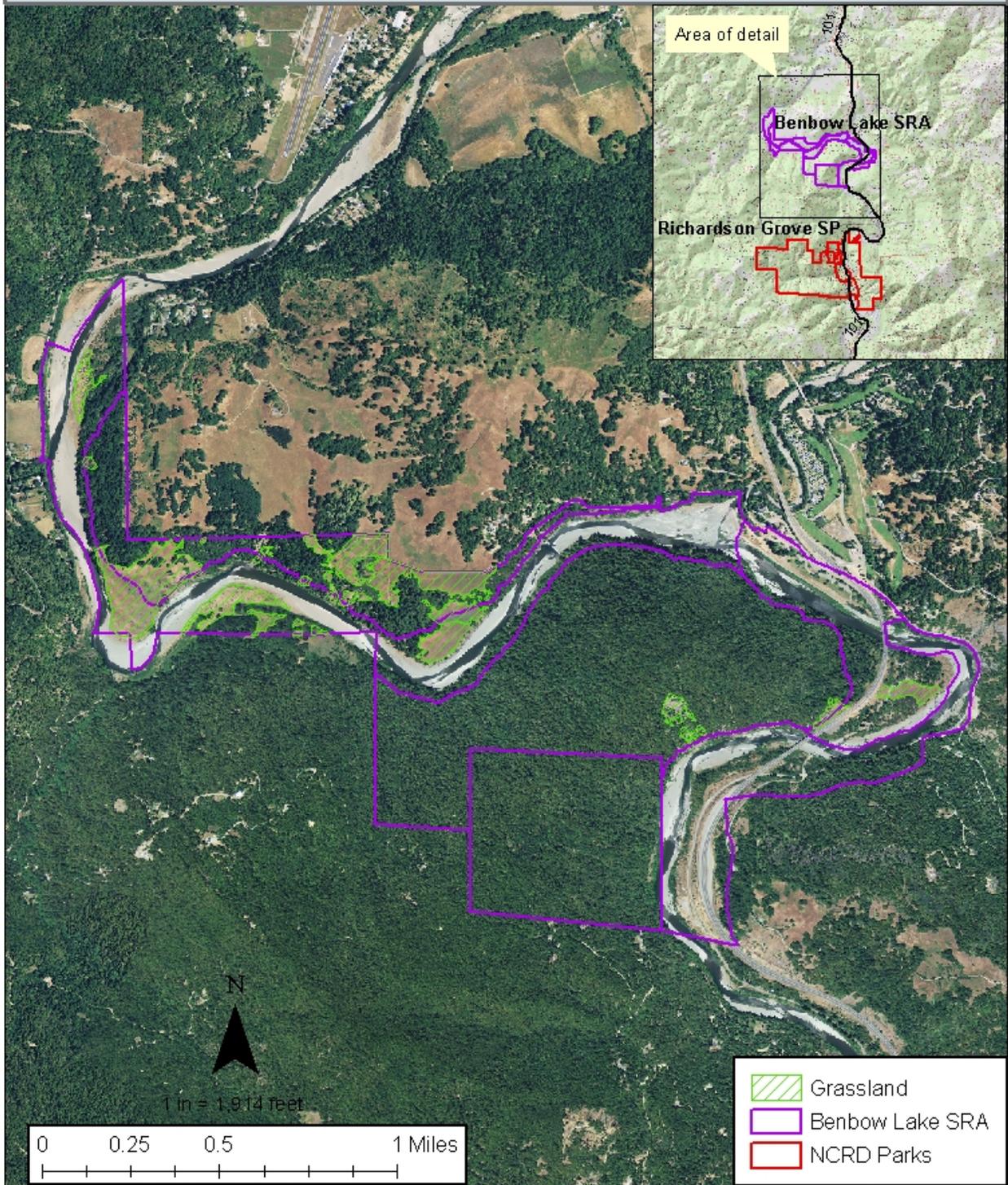


Benbow Lake State Recreation Area (BLSRA) Dam Removal Project Figure 2: Map of Santa Barbara sedge (*Carex barbarae*) within or near project area



**Benbow Lake State Recreation Area (BLSRA)
Dam Removal Project**

**Figure 3: Map of dusky sandbar willow
(Salix melanopsis) near project area**



**Benbow Lake State Recreation Area (BLSRA)
Vegetation Management Statement**

**Figure 4: Map of grassland
habitat within the Park**



Figure 5. Construction features for Benbow dam removal



Photo base is 2012 NAIP image

Figure 6 - Trolley cable near the Benbow Dam

APPENDIX B

PROJECT PLANS



ACQUISITION &
DEVELOPMENT DIVISION
One Capitol Mall
Sacramento, CA
95814-3229

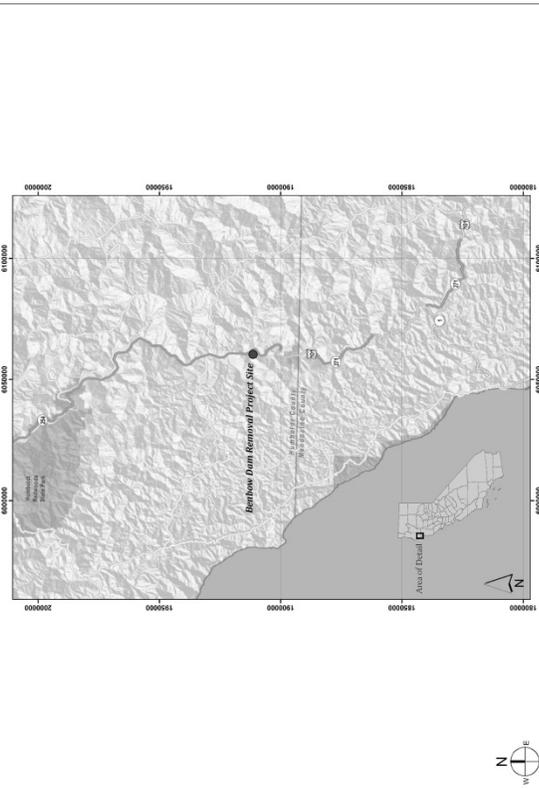


QUESTA
A DIVISION OF
QUESTA HOLDINGS, INC.
10000 BUCKLE UP DRIVE
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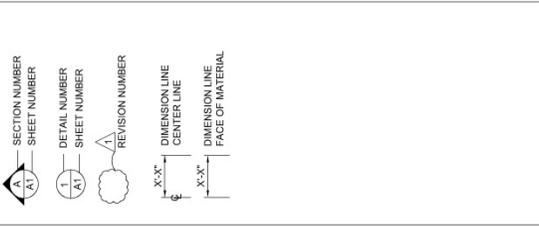
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2	ACCESS & STAGING
3	PHASE 1 WATER DIVERSION
4	PHASE 2 WATER DIVERSION
5	DEMOLITION OVERVIEW
6	DEMOLITION DETAILS
7	BANK DEMOLITION & STABILIZATION
8	RIPARIAN BANK PLANTING
9	DETAILS

CALIFORNIA DEPARTMENT OF PARKS AND RECREATION ACQUISITION AND DEVELOPMENT DIVISION BENBOW STATE PARK, NORTH COAST REDWOODS DISTRICT BENBOW DAM REMOVAL PROJECT

CSFM # XX-XX-XX-XXXX



VICINITY MAP NAD 83 SP ZONE 1 US FT GRID

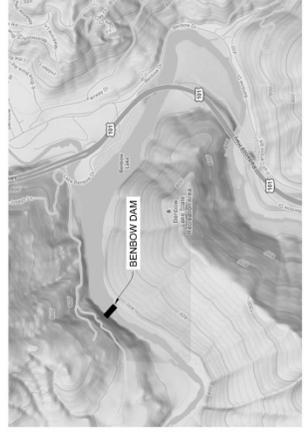


MATERIAL LEGEND

GENERAL NOTES

- 1-ALL MATERIALS SHOWN OR NOTED ON THE PLANS ARE EXISTING UNLESS CALLED OUT OTHERWISE.
- 2-THE CONTRACTOR SHALL VISIT THE SITE AND REVIEW THE HISTORICAL DAM AS-BUILTS TO VERIFY ALL DIMENSIONS. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE STATE REPRESENTATIVE FOR RESOLUTION BEFORE PROCEEDING WITH THAT PORTION OF THE WORK.
- 3-ALL WORK SHALL COMPLY WITH THE CURRENT EDITION OF THE FOLLOWING LISTED CODES, AND ALL OTHERS HAVING JURISDICTION OVER THE WORK.
 - 2010 EDITION OF THE CALIFORNIA BUILDING CODE.
 - 2010 EDITION OF THE CALIFORNIA FIRE CODE.
 - 2010 EDITION OF THE CALIFORNIA ENERGY CODE.
 - 2010 EDITION OF THE CALIFORNIA ELECTRICAL CODE.
 - 2010 EDITION OF THE CALIFORNIA GREEN BUILDING STANDARDS CODE.
 - 2010 EDITION OF THE CALIFORNIA PLUMBING STANDARDS FEDERAL ACCESSIBILITY STANDARDS.
- 4-CONDUCT ALL WORK IN ACCORDANCE WITH THE LATEST SAFETY RULES AND REGULATIONS OF ALL AUTHORITIES AND AGENCIES HAVING JURISDICTION OVER THE WORK.
- 5-ALL WORK SHALL BE IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS. WHERE DETAILED INFORMATION OR CLARIFICATION IS REQUIRED, THE WATER SHALL BE BROUGHT TO THE STATE REPRESENTATIVE FOR WRITTEN RESOLUTION.
- 6-THE CONTRACTOR SHALL NOT SCALE THE DRAWINGS, BUT SHALL VERIFY ALL DIMENSIONS ON THE DRAWINGS. IF A DISCREPANCY OCCURS OR NO DIMENSION IS GIVEN, THE CONTRACTOR SHALL NOTIFY THE STATE REPRESENTATIVE FOR WRITTEN CLARIFICATION BEFORE PROCEEDING WITH THAT PORTION OF THE WORK.

BUILDING CODE REVIEW



LOCATION MAP

APPROVAL

BENBOW DAM REMOVAL PROJECT
DEPARTMENT OF PARKS AND RECREATION
NORTH COAST REDWOODS DISTRICT
TITLE SHEET

DRAWING NO.

1

1 of 9

REVISIONS	DATE



ACQUISITION &
DEVELOPMENT DIVISION
One Capitol Mall
Sacramento, CA
95814-3229



QUESTA ENGINEERING, INC.
1000 S. COLLETT AVENUE
SACRAMENTO, CA 95811
TEL: 916.486.1100
WWW.QUESTAENGINEERING.COM

DATE OF DESIGN: 06-26-2012
DATE OF APPROVAL: 06-26-2012
DATE OF REVISION: 06-26-2012

DESIGNED: S. TEMPLE
DRAWN: A. FULTON
CHECKED: S. TEMPLE
DATE: 06-26-2012

REVISIONS
DATE

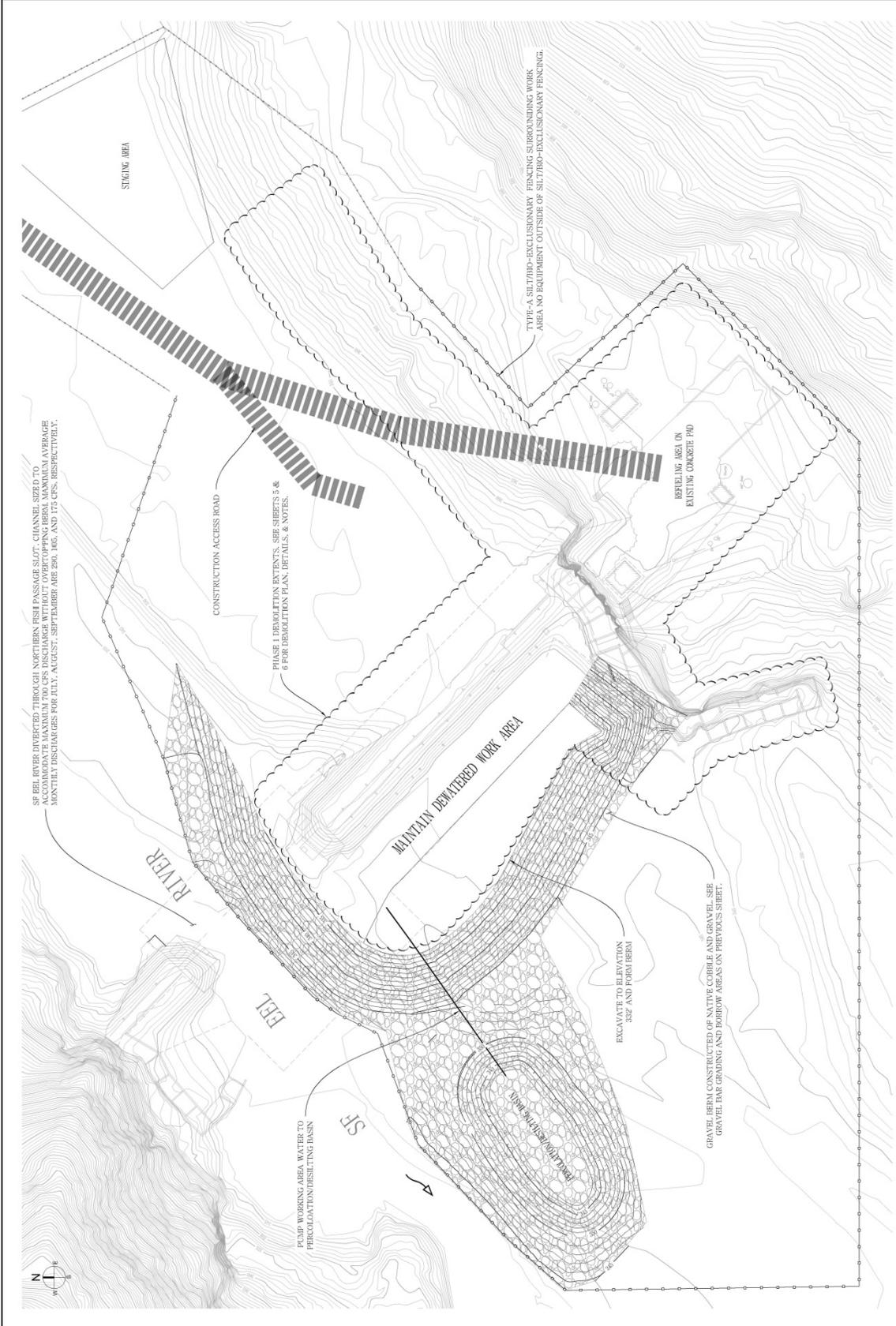
BENBOW DAM REMOVAL PROJECT
DEPARTMENT OF PARKS AND RECREATION
NORTH COAST REDWOODS DISTRICT
PHASE 1 WATER DIVERSION

DRAWING NO.

SHEET NO.

3

3 OF 9



PHASE 1 WATER DIVERSION PLAN
PLAN VIEW
SCALE: 1" = 20'



ACQUISITION &
DEVELOPMENT DIVISION
One Capitol Mall
Sacramento, CA
95814-3229



QUESTA
A MAIN TRAINING CORP. COMPANY
10000 FIVE MILE AVENUE, SUITE 100
DUBLIN, CA 94568
TEL: 916.253.1000
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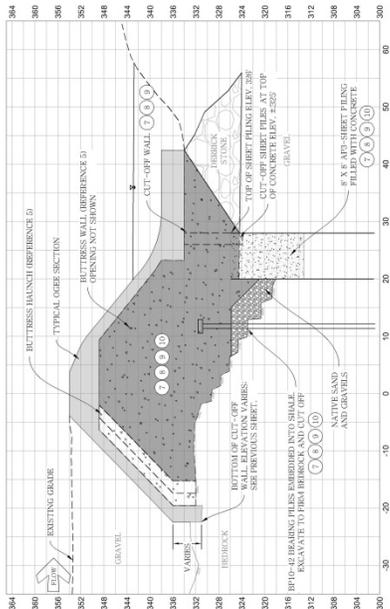
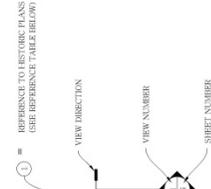
DESIGNED: S. TEMPLER
DRAWN: A. FULTON
CHECKED: S. TEMPLER
DATE: 06-26-2012

NO.	REVISIONS	DATE
1		

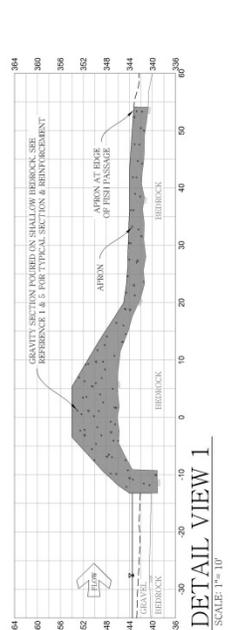
BENBOW DAM REMOVAL PROJECT
BENBOW STATE PARK
DEPARTMENT OF PARKS AND RECREATION
NORTH COAST REDWOODS DISTRICT
DEMOLITION DETAILS

DRAWING NO.
SHEET NO. 6
6 OF 9

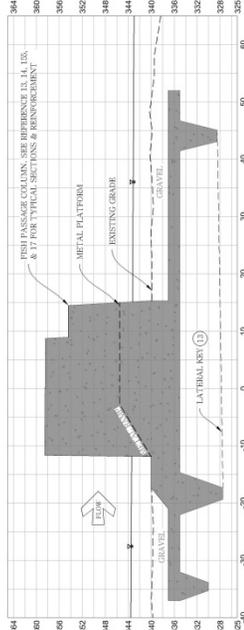
- DEMOLITION NOTES:**
- CONTRACTOR SHALL BRIDGE FISH AND BEHROVE ALL CONCRETE AND IRON COMPONENTS UNLESS OTHERWISE DIRECTED IN THE FIELD BY THE ENGINEER.
 - STEEL SHEET PILES SHALL BE CUT OFF AT THE INTERFACE OF FISH AND BEHROVE. CONTRACTOR SHALL EXCAVATE TO THE REQUIRED ELEVATION BEFORE CUTTING SHEET PILES.
 - BEARING PILES SHALL BE CUT OFF AT THE INTERFACE OF FISH AND BEHROVE. CONTRACTOR SHALL EXCAVATE TO THE GRADED ELEVATION BEFORE CUTTING PILES.
 - ALL DECKS HAVE BEEN MADE TO CLEARLY INDICATE HEAD OR COMPONENTS TO BE DEMOLISHED AND REMOVED. SOME DRAWINGS, THEREFORE, THE CONTRACTOR IS DIRECTED TO THE SPECIFIC DETAILS NOT REPRESENTED ON SHEETS 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.



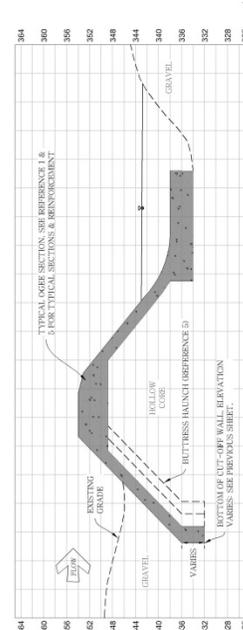
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SECTION THROUGH BUTTRESSES 14-18
SCALE: 1" = 10'



DETAIL VIEW 1
SCALE: 1" = 10'

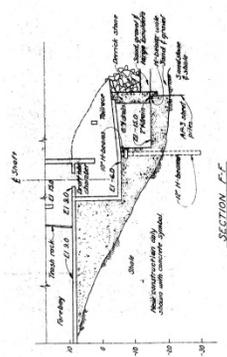


DETAIL VIEW 2
SCALE: 1" = 10'

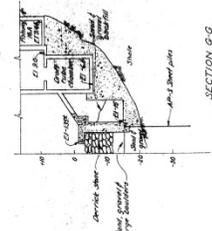


DETAIL VIEW 3
SCALE: 1" = 10'

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SECTION E-E
SCALE: 1" = 10'



SECTION G-G
SCALE: 1" = 10'

HISTORIC SECTION VIEWS
SCALE: NOT TO SCALE
REFERENCE 10



ACQUISITION &
DEVELOPMENT DIVISION
One Capitol Mall
Sacramento, CA
95814-3229



QUESTA ENGINEERING CORPORATION
10000 FIVE MILE AVENUE
SUITE 100
DUBLIN, CALIFORNIA 94568
TEL: 925-835-1100
FAX: 925-835-1101
WWW.QUESTA-ENG.COM

DESIGNED: S. TEMPLE
DRAWN: A. FULTON
CHECKED: S. TEMPLE
DATE: 06-26-2012

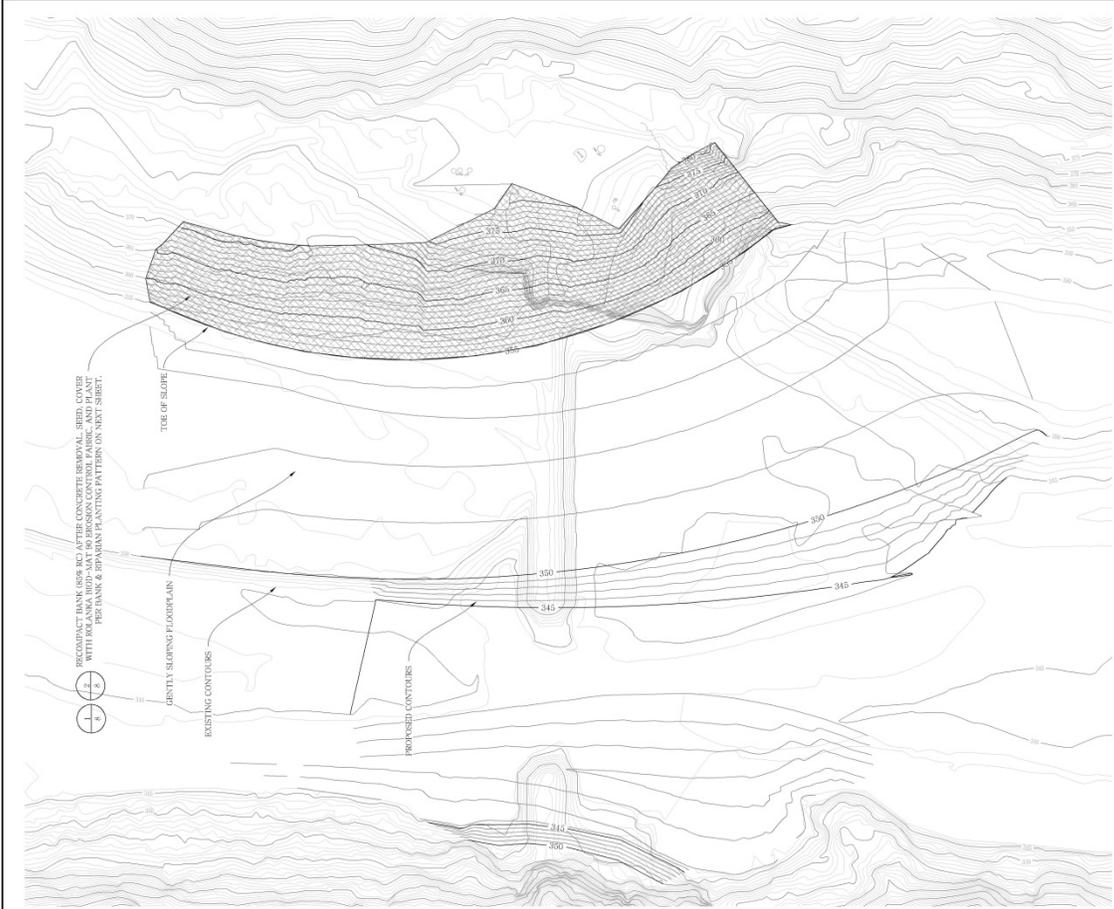
NO.	REVISIONS	DATE

BENBOW DAM REMOVAL PROJECT
BENBOW STATE PARK
DEPARTMENT OF PARKS AND RECREATION
NORTH COAST REDWOODS DISTRICT
BANK DEMOLITION & STABILIZATION

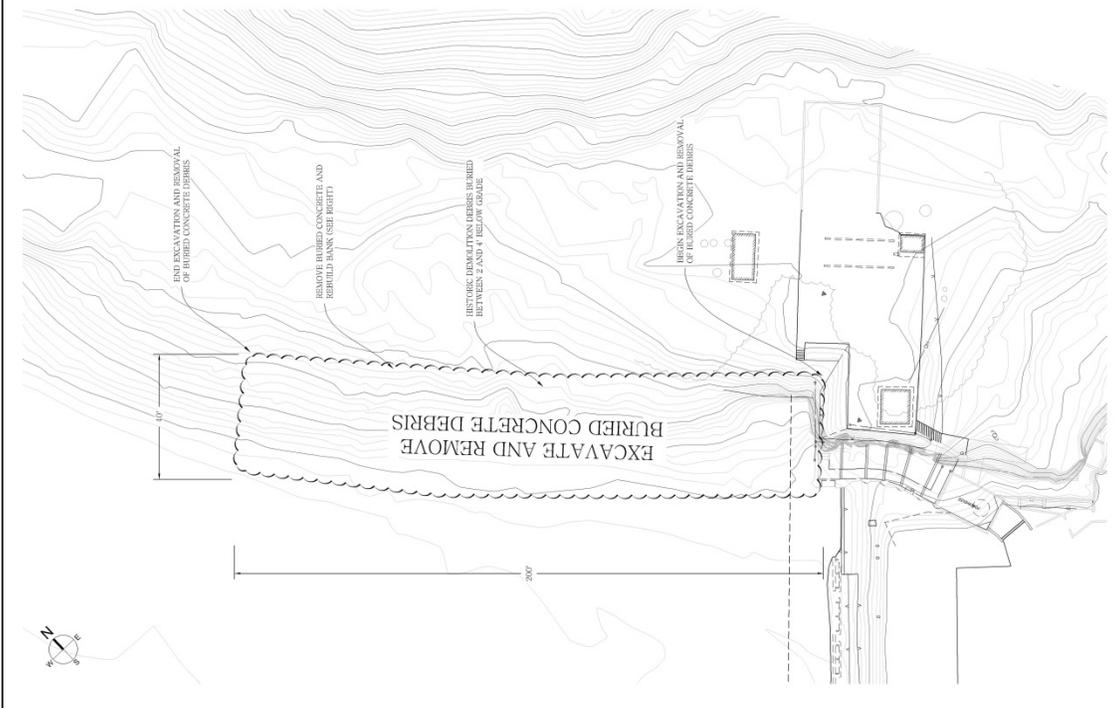
DRAWING NO.

SHEET NO.
7

7 OF 9



FINAL GRADING & STABILIZATION
SCALE: 1" = 30'



BURIED CONCRETE DEBRIS REMOVAL (LEFT BANK)
SCALE: 1" = 30'



ACQUISITION &
DEVELOPMENT DIVISION
One Capitol Mall
Sacramento, CA
95814-3229



ON BEHALF OF THE NATIONAL FOREST
Approval of this plan does not authorize or
guarantee any specific results or
representations. Final approval is
subject to the applicable laws and regulations
governing the project and the
project site at all times. Date

DATE: 06-26-2012
DESIGNED: S. TEMPLE
DRAWN: A. FULTON
CHECKED: S. TEMPLE

NO.	REVISIONS	DATE

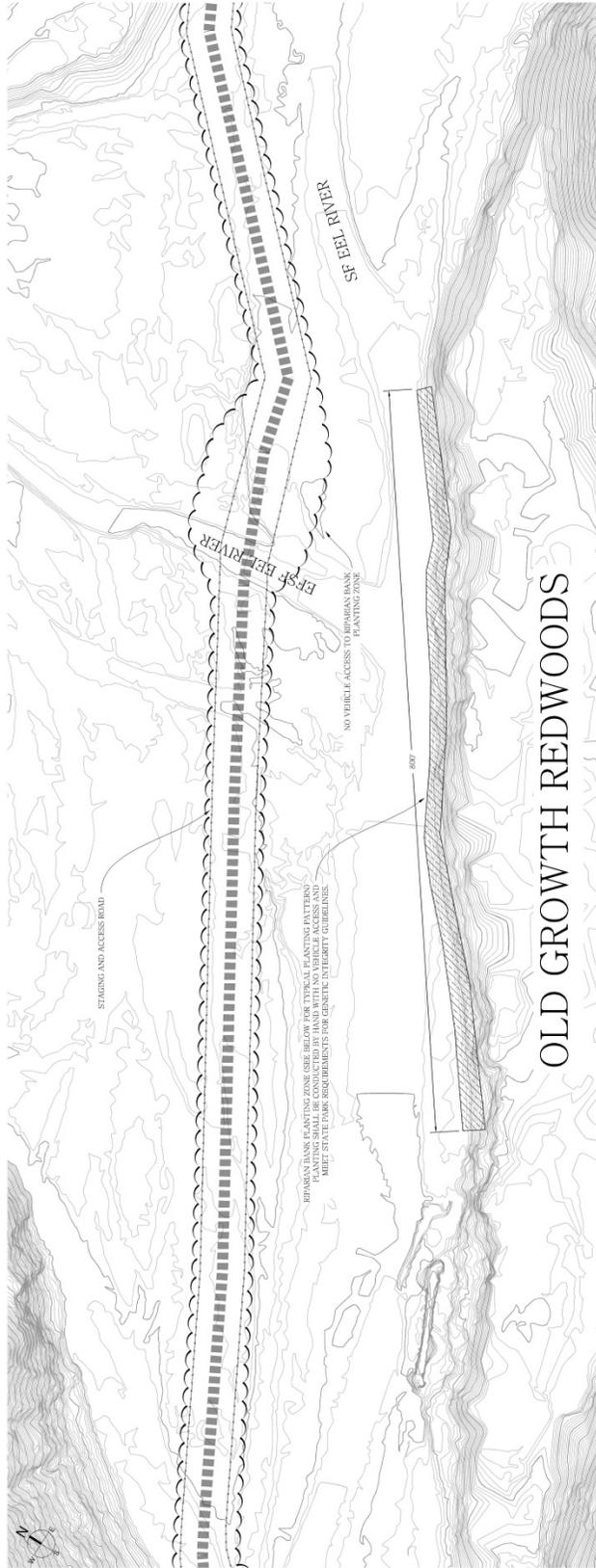
BENBOW DAM REMOVAL PROJECT
BENBOW STATE PARK
DEPARTMENT OF PARKS AND RECREATION
NORTH COAST REDWOODS DISTRICT
RIPARIAN BANK PLANTING

DRAWING NO.

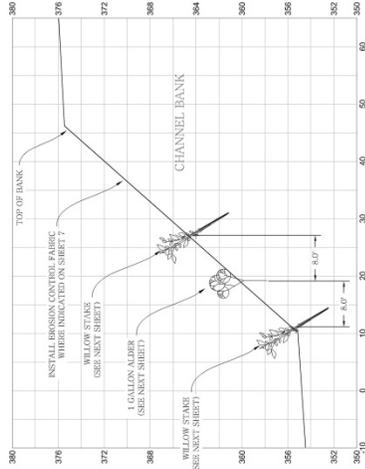
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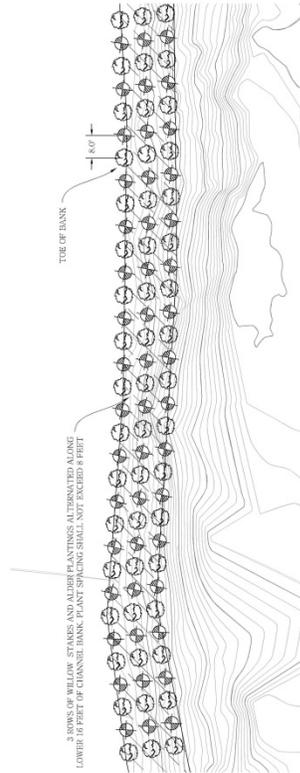
8 OF 9



1 RIPARIAN BANK PLANTING
SCALE: 1" = 60'



2 TYPICAL BANK & RIPARIAN PLANTING
SECTION VIEW
SCALE: 1" = 20' (H), 1" = 10' (V)



1 TYPICAL BANK & RIPARIAN PLANTING
PLAN VIEW
SCALE: 1" = 20'



ACQUISITION & DEVELOPMENT DIVISION
 One Capitol Mall
 Sacramento, CA
 95814-3229

QUESTA
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 1000 J STREET, SUITE 200
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 TEL: 916.441.1100
 FAX: 916.441.1101
 WWW.QUESTACONSULTING.COM

DATE: 06-26-2012
 CHECKED: S. TEMPLE
 DRAWN: A. FULTON
 DESIGNED: S. TEMPLE

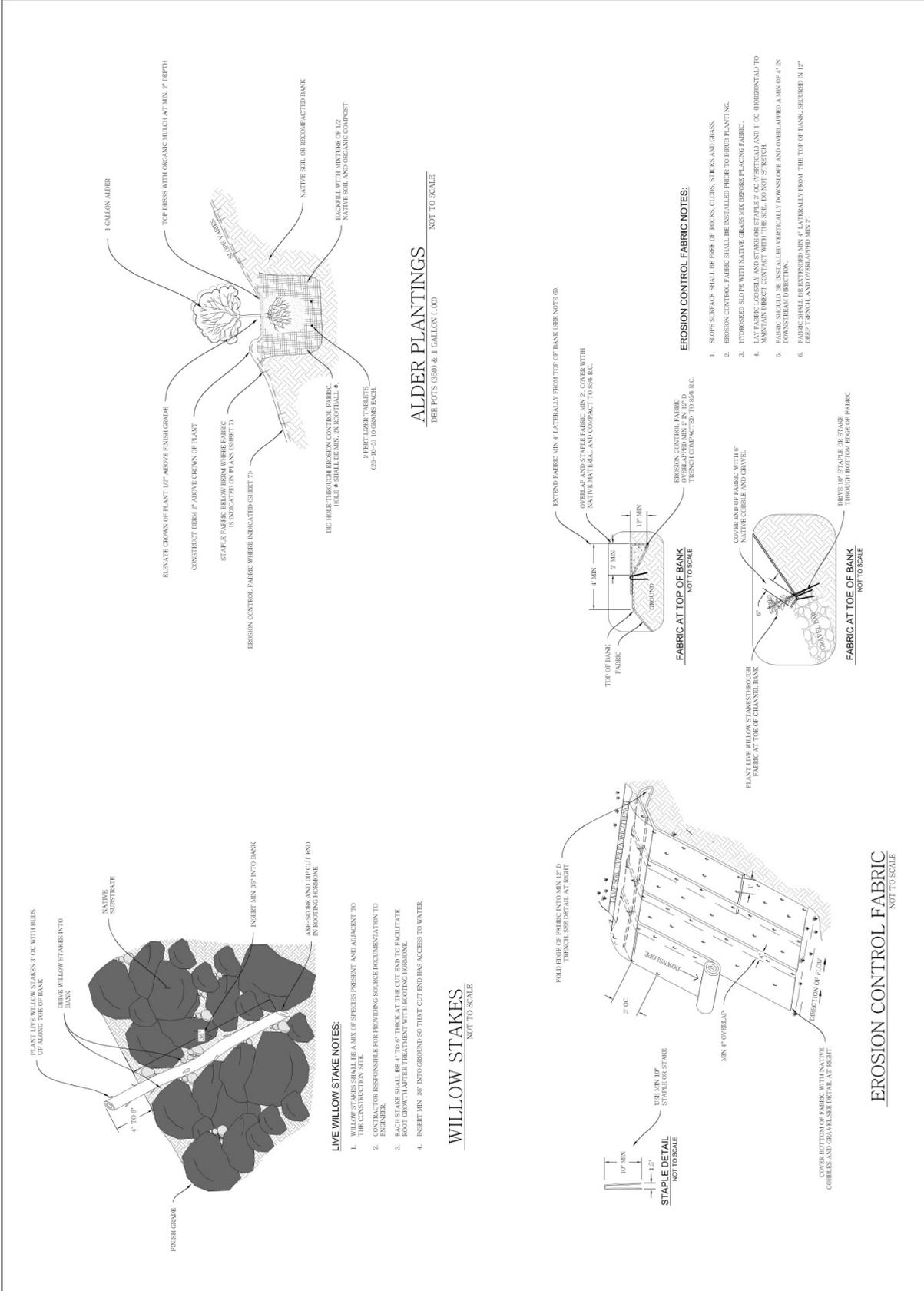
DATE: 06-26-2012
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DATE: 06-26-2012
 CHECKED: S. TEMPLE
 DRAWN: A. FULTON
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NO.	REVISIONS	DATE

DEPARTMENT OF PARKS AND RECREATION
 BENDOW STATE PARK
 BENDOW DAM REMOVAL PROJECT
 NORTH COAST REDWOODS DISTRICT
 DETAILS

DRAWING NO.
 SHEET NO. **9**
 9 OF 9



ALDER PLANTINGS
 DIE POTS (550) & 1 GALLON (100)
 NOT TO SCALE

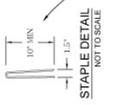
LIVE WILLOW STAKE NOTES:

1. WILLOW STAKES SHALL BE A MIX OF SPECIES PRESENT AND ADJACENT TO THE CONSTRUCTION SITE.
2. CONTRACTOR RESPONSIBLE FOR PROVIDING SOURCE DOCUMENTATION TO BROWNER.
3. STAKES SHALL BE 1/2" TO 3/4" DIAM. AT THE CUT END FOR FACILITATE ROOT GROWTH AFTER TREATMENT WITH ROOTING HORMONE.
4. INSERT MIN. 36" INTO GROUND SO THAT CUT END HAS ACCESS TO WATER.

WILLOW STAKES
 NOT TO SCALE

EROSION CONTROL FABRIC NOTES:

1. SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS AND GRASS.
2. EROSION CONTROL FABRIC SHALL BE INSTALLED PRIOR TO HERB PLANTING.
3. HYDRISED SLOPE WITH NATIVE GRASS MIX BEFORE PLACING FABRIC.
4. LAY FABRIC LOOSELY AND STAKE OR STAKE 3 OC (VERTICAL) AND 1 OC (HORIZONTAL) TO MAINTAIN DIRECT CONTACT WITH THE SOIL. DO NOT STRETCH.
5. FABRIC SHOULD BE INSTALLED VERTICALLY DOWNSLOPE AND OVERLAPPED A MIN. OF 4" IN DOWNSTREAM DIRECTION.
6. FABRIC SHOULD BE INSTALLED A MIN. 4" AWAY FROM THE TOP OF BANK, SECURED IN 12" DEEP TRENCH, AND OVERLAPPED MIN. 2"



EROSION CONTROL FABRIC
 NOT TO SCALE

APPENDIX C

SENSITIVE SPECIES LIST

CNPS *California Native Plant* Rare and Endangered Plant Inventory

Plant List

33 matches found. [Click on scientific name for details](#)

Search Criteria

Found in 9 Quads around 40123A7

Scientific Name	Common Name	Family	Lifeform	Rare Plant Rank	State Rank	Global Rank
<u>Arabis mcdonaldiana</u>	McDonald's rockcress	Brassicaceae	perennial herb	1B.1	S3	G3
<u>Arctostaphylos stanfordiana ssp. raichei</u>	Raiche's manzanita	Ericaceae	perennial evergreen shrub	1B.1	S1	G3T1
<u>Astragalus agnicidus</u>	Humboldt County milk-vetch	Fabaceae	perennial herb	1B.1	S3	G3
<u>Astragalus rattanii var. rattanii</u>	Rattan's milk-vetch	Fabaceae	perennial herb	4.3	S4	G4T4
<u>Calamagrostis bolanderi</u>	Bolander's reed grass	Poaceae	perennial rhizomatous herb	4.2	S4	G4
<u>Calamagrostis foliosa</u>	leafy reed grass	Poaceae	perennial herb	4.2	S3	G3
<u>Cardamine pachystigma var. dissectifolia</u>	dissected-leaved toothwort	Brassicaceae	perennial rhizomatous herb	1B.2	S2	G3G5T2Q
<u>Castilleja litoralis</u>	Oregon coast paintbrush	Orobanchaceae	perennial herb (hemiparasitic)	2B.2	S3	G4G5T4
<u>Castilleja mendocinensis</u>	Mendocino Coast paintbrush	Orobanchaceae	perennial herb (hemiparasitic)	1B.2	S2	G2
<u>Ceanothus foliosus var. vineatus</u>	Vine Hill ceanothus	Rhamnaceae	perennial evergreen shrub	1B.1	S1	G3T1
<u>Ceanothus gloriosus var. exaltatus</u>	glory brush	Rhamnaceae	perennial evergreen shrub	4.3	S4	G4T4
<u>Coptis laciniata</u>	Oregon goldthread	Ranunculaceae	perennial rhizomatous herb	4.2	S3	G4
<u>Cypripedium californicum</u>	California lady's-slipper	Orchidaceae	perennial rhizomatous herb	4.2	S4	G4
<u>Epilobium septentrionale</u>	Humboldt County fuchsia	Onagraceae	perennial herb	4.3	S4	G4
<u>Erigeron biolettii</u>	streamside daisy	Asteraceae	perennial herb	3	S3?	G3?
<u>Eriogonum kelloggii</u>	Kellogg's buckwheat	Polygonaceae	perennial herb	1B.2	S2	G2
<u>Erythronium revolutum</u>	coast fawn lily	Liliaceae	perennial bulbiferous herb	2B.2	S3	G4
<u>Gentiana setigera</u>	Mendocino gentian	Gentianaceae	perennial herb	1B.2	S1	G2
<u>Gilia capitata ssp. pacifica</u>	Pacific gilia	Polemoniaceae	annual herb	1B.2	S2	G5T3T4

<u>Kopsiopsis hookeri</u>	small groundcone	Orobanchaceae	perennial rhizomatous herb (parasitic)	2B.3	S1S2	G4G5
<u>Lilium rubescens</u>	redwood lily	Liliaceae	perennial bulbiferous herb	4.2	S3	G3
<u>Listera cordata</u>	heart-leaved twayblade	Orchidaceae	perennial herb	4.2	S4	G5
<u>Lomatium engelmannii</u>	Engelmann's lomatium	Apiaceae	perennial herb	4.3	S3	G4
<u>Mitellastrum caulescens</u>	leafy-stemmed mitrewort	Saxifragaceae	perennial rhizomatous herb	4.2	S4	G5
<u>Montia howellii</u>	Howell's montia	Montiaceae	annual herb	2B.2	S3	G3G4
<u>Piperia candida</u>	white-flowered rein orchid	Orchidaceae	perennial herb	1B.2	S3	G3
<u>Pityopus californicus</u>	California pinefoot	Ericaceae	perennial herb (achlorophyllous)	4.2	S4	G4G5
<u>Sedum laxum ssp. eastwoodiae</u>	Red Mountain stonecrop	Crassulaceae	perennial herb	1B.2	S2	G5T2
<u>Sidalcea malachroides</u>	maple-leaved checkerbloom	Malvaceae	perennial herb	4.2	S3	G3
<u>Silene campanulata ssp. campanulata</u>	Red Mountain catchfly	Caryophyllaceae	perennial herb	4.2	S3	G5T3Q
<u>Tracyvina rostrata</u>	beaked tracyvina	Asteraceae	annual herb	1B.2	S1	G1
<u>Usnea longissima</u>	Methuselah's beard lichen	Parmeliaceae	fruticose lichen (epiphytic)	4.2	S4	G4
<u>Viburnum ellipticum</u>	oval-leaved viburnum	Adoxaceae	perennial deciduous shrub	2B.3	S3?	G4G5

Suggested Citation

CNPS, Rare Plant Program. 2015. Inventory of Rare and Endangered Plants (online edition, v8-02). California Native Plant Society, Sacramento, CA. Website <http://www.rareplants.cnps.org> [accessed 08 September 2015].

Search the Inventory	Information	Contributors
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<u>Advanced Search</u>	<u>About the Rare Plant Program</u>	<u>The California Lichen Society</u>
<u>Glossary</u>	<u>CNPS Home Page</u>	
	<u>About CNPS</u>	
	<u>Join CNPS</u>	

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CALIFORNIA DEPARTMENT OF
FISH and WILDLIFE RareFind

Query Summary:

Taxonomic Group **IS** (Fish **OR** Amphibians **OR** Reptiles **OR** Birds **OR** Mammals **OR** Mollusks **OR** Arachnids **OR** Crustaceans **OR** Insects)
AND Quad **IS** (Bear Harbor (3912388) **OR** Briceland (4012318) **OR** Ettersburg (4012328) **OR** Fort Seward (4012326) **OR** Garberville (4012317)
OR Harris (4012316) **OR** Miranda (4012327) **OR** Noble Butte (3912386) **OR** Piercy (3912387))

CNDDB Element Query Results

Scientific Name	Common Name	Taxonomic Group	Element Code	Total Occs	Returned Occs	Federal Status	State Status	Global Rank	State Rank	CA Rare Plant Rank	Other Status
Accipiter cooperii	Cooper's hawk	Birds	ABNKC12040	103	2	None	None	G5	S4	null	CDFW_WL-Watcl List IUCN_LC-Least Concern
Antrozous pallidus	pallid bat	Mammals	AMACC10010	402	1	None	None	G5	S3	null	BLM_S-Sensitive CDFW_SSC-Species of Specie Concern IUCN_LC-Least Concern USFS_S-Sensitiv WBWG_H-High Priority
Aquila chrysaetos	golden eagle	Birds	ABNKC22010	312	2	None	None	G5	S3	null	BLM_S-Sensitive CDF_S-Sensitive CDFW_FP-Fully Protected CDFW_WL-Watcl List IUCN_LC-Least Concern USFWS_BCC-Birds of Conservation Concern
Arborimus pomom	Sonoma tree vole	Mammals	AMAFF23030	214	5	None	None	G3	S3	null	CDFW_SSC-Species of Specie Concern IUCN_NT-Near Threatened
Bombus caliginosus	obscure bumble bee	Insects	IIHYM24380	178	5	None	None	G4?	S1S2	null	IUCN_VU-Vulnerable
Empidonax traillii brewsteri	little willow flycatcher	Birds	ABPAE33041	1	1	None	Endangered	G5T3T4	S1S2	null	USFWS_BCC-Birds of Conservation Concern
Emys marmorata	western pond turtle	Reptiles	ARAAD02030	1146	5	None	None	G3G4	S3	null	BLM_S-Sensitive CDFW_SSC-Species of Specie

											Concern IUCN_VU-Vulnerable USFS_S-Sensitiv
Falco peregrinus anatum	American peregrine falcon	Birds	ABNKD06071	38	1	Delisted	Delisted	G4T4	S3S4	null	CDF_S-Sensitive CDFW_FP-Fully Protected USFWS_BCC-Birds of Conservation Concern
Noyo intersessa	Ten Mile shoulderband	Mollusks	IMGASC5070	3	1	None	None	G2	S2	null	null
Oncorhynchus kisutch	coho salmon - southern Oregon / northern California ESU	Fish	AFCHA02032	5	3	Threatened	Threatened	G4T2Q	S2?	null	AFS_TH-Threatened CDFW_SSC-Species of Specie Concern
Oncorhynchus mykiss irideus	summer-run steelhead trout	Fish	AFCHA0213B	20	1	None	None	G5T4Q	S2	null	CDFW_SSC-Species of Specie Concern
Pandion haliaetus	osprey	Birds	ABNKC01010	482	3	None	None	G5	S4	null	CDF_S-Sensitive CDFW_WL-Watch List IUCN_LC-Least Concern
Pekania pennanti	fisher - West Coast DPS	Mammals	AMAJF01021	680	1	Proposed Threatened	Candidate Threatened	G5T2T3Q	S2S3	null	BLM_S-Sensitive CDFW_SSC-Species of Specie Concern USFS_S-Sensitiv
Rana boylei	foothill yellow-legged frog	Amphibians	AAABH01050	810	2	None	None	G3	S3	null	BLM_S-Sensitive CDFW_SSC-Species of Specie Concern IUCN_NT-Near Threatened USFS_S-Sensitiv
Rhyacotriton variegatus	southern torrent salamander	Amphibians	AAAAJ01020	172	1	None	None	G3G4	S2S3	null	CDFW_SSC-Species of Specie Concern IUCN_LC-Least

APPENDIX D

ACRONYMS & DEFINITIONS

AMSL
Cfs

Above Mean Sea Level
Cubic Feet per Second