

APPENDIX E7

SYCAMORE ASSOCIATES BIOLOGICAL ASSESSMENT

Appendix E7 includes SSWD's CFW Reservoir Project BA prepared by Sycamore Associates.

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Camp Far West Reservoir Project BA



Biological Assessment

Camp Far West Reservoir Project
Yuba, Placer, and Nevada Counties, CA
FERC No. P-2997

July 2013

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Biological Assessment

Camp Far West Reservoir Project
Yuba, Placer, and Nevada Counties, CA
FERC No. P-2997

July 2013

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Summary

The Camp Far West Reservoir Project (Project) proposes to increase the spillway capacity to accommodate the Probable Maximum Flood (PMF) in order to comply with Federal Energy Regulatory Commission (FERC) regulations. The Project will also raise the maximum pool elevation to recapture approximately 10,000 acre-feet of water storage area that has been lost as a result of siltation. The Project is located at the Camp Far West Reservoir in the Bear River Basin in northern central California, approximately 7 miles northeast of the town of Wheatland. The Camp Far West Reservoir is in parts of three counties: Nevada, Placer, and Yuba. The Biological Study Area (BSA) for the Project occupies about 2,079 acres, most of which is occupied by the Reservoir itself (1,792 acres).

The proposed Project consists of lowering the existing uncontrolled spillway crest to increase discharge capacity to accommodate the PMF. To recapture water storage lost as a result of siltation, the maximum pool elevation will be raised from the current 300 foot elevation to 305 feet. This will be accomplished by installing Obermeyer Spillway Gates which will be raised to maintain the maximum pool level at 305 feet. The Obermeyer Spillway Gates are controlled using inflatable air bladders, which can be adjusted by controlling pressure in the bladders to raise or lower water elevation. Raising the maximum pool elevation by five feet would allow South Sutter Water District (SSWD) full use of the existing water right. Camp Far West Dam and Reservoir would continue to be operated to provide irrigation water to users, meet Bear River in-stream flow requirements for fish, and to generate power. During construction work on the spillway, a temporary construction staging area will be in the adjacent bed of the Reservoir, when the water level is low and the area is dry.

Before construction of the Project, SSWD is required to comply with FERC's three-stage consultation process. FERC requires identification of pertinent issues and concerns associated with the proposed action. The biological field studies and preparation of this biological assessment partially fulfills the requirements of Stage 2. FERC must comply with Executive Orders and other federal laws including the Federal Endangered Species Act (FESA) and the National Environmental Policy Act (NEPA) before authorizing the Project. As the lead local agency, SSWD is responsible for compliance with the California Environmental Quality Act (CEQA).

The BSA provides potential habitat for federal-threatened valley elderberry longhorn beetle (VELB), California red-legged frog (CRLF), and Layne's ragwort. The Project may affect, but is not likely to adversely affect VELB or CRLF. A floristic botanical survey was conducted and

Layne's ragwort was not found. The project will not affect Layne's ragwort. The BSA does not contain essential fish habitat (EFH) for Pacific salmon.

The State-endangered bald eagle is present at the Reservoir and an active nest was observed near the BSA. Bald eagle has been delisted from the federal ESA. The nest is near the Bear River outlet into Reservoir, away from where construction will occur at the spillway. Two osprey nests were observed on high-voltage electrical towers near the BSA, also away from the spillway. The Project will not affect bald eagle or osprey. The BSA provides potential habitat for burrowing owl, Swainson's hawk, northern harrier, and white-tailed kite, but none were observed during field surveys.

Other special-status species with the potential to occur in the BSA were not observed during field surveys. Two California Native Plant Society Rank 4 plants were found in the BSA. Plants of Rank 4 may or may not be considered special-status at the discretion of the CEQA lead agency.

The Project will result in the expansion of the surface area of the Reservoir. Most of the Reservoir is bordered by blue oak woodland, interior live oak woodland, or annual grassland. Channels and wetlands around the Reservoir margin will be inundated during the wet season by the 5 foot higher maximum pool elevation that will result from the Project.

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List of Abbreviated Terms

ac	acre(s)
BMP	Best Management Practice
BSA	Biological Study Area
Cal-IPC	California Invasive Plant Council
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CFWR; Reservoir	Camp Far West Reservoir
CNDDDB	California Natural Diversity Database
CNPS	California Native Plant Society
Corps	U.S. Army Corps of Engineers
CRLF	California red-legged frog
CWA	Clean Water Act
CDFW	California Department of Fish and Wildlife
DPS	Distinct Population Segment
EFH	Essential Fish Habitat
ESU	Evolutionarily Significant Unit
FERC	Federal Energy Regulatory Commission
FESA	Federal Endangered Species Act
FPA	Federal Power Act
ft	foot/feet
FYLF	Foothill yellow-legged frog
ICD	Initial Consultation Document
MBTA	Migratory Bird Treaty Act
mi	mile(s)
NEPA	National Environmental Policy Act
NFH	National Fish Hatchery
NMFS	National Marine Fisheries Service (a division of National Oceanic and Atmospheric Administration)
NPDES	National Pollutant Discharge Elimination System
NWI	National Wetlands Inventory
OHWM	ordinary high water mark
PFMC	Pacific Fishery Management Council
PMF	Probable Maximum Flood
quad	USGS topographic quadrangle
RWQCB	Regional Water Quality Control Board
SSC	California Species of Special Concern
SSWD	South Sutter Water District
SWPPP	Stormwater Pollution Prevention Plan
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VELB	Valley Elderberry Longhorn Beetle
WPT	Western pond turtle

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Chapter 1. Introduction

1.1. Project History

The Camp Far West Reservoir (CFWR; Reservoir), owned and operated by the South Sutter Water District (SSWD), was constructed in 1963 to provide irrigation water. The Reservoir was licensed as a hydropower energy facility by the Federal Energy Regulatory Commission (FERC) in 1981. In 2005, the Probable Maximum Flood (PMF) was recalculated for the Camp Far West Hydroelectric project and identified that the spillway capacity was less than the PMF. The spillway capacity was consequently deemed inadequate. The spillway capacity needs to be increased to comply with FERC regulations and pass the PMF without overtopping the dam.

Additionally, recent bathymetric surveys indicated that approximately 10,000 acre-feet of water storage has been lost as a result of siltation. When the dam was built, the Reservoir had a surface area of 2,020 acres (ac) and storage volume of 104,000 acre feet at the normal maximum storage pool elevation of 300 feet (ft). Based on the recent surveys, the current reservoir surface area is 1,886 acres with a storage capacity of approximately 93,740 acre feet at the maximum normal water surface elevation of 300 ft.

In conjunction with increasing the spillway capacity of the dam as required by FERC, the SSWD desires to raise the maximum pool level from the current elevation of 300 feet to 305 feet to recapture the storage area that has been lost. Raising the maximum pool level at Camp Far West Dam requires an amendment to the existing Camp Far West Hydroelectric Project (FERC Project No. 2997) license in accordance with the FERC. This type of modification is a non-capacity-related change. Non-capacity amendments are typically not required to follow FERC's three-stage consultation process as outlined in Federal Power Act (FPA) Regulations 18 CFR, Part 4, Section 4.38. However, a non-capacity-related change that includes any repair, modification, or reconstruction of an existing dam that would result in a significant change in the normal maximum surface area or elevation of an existing impoundment as identified in 18 CFR, Part 4, Section 4.38 (a)(6)(v), is required to comply with FERC's three-stage consultation process. The amendment to Camp Far West Hydroelectric Project is classified as a non-capacity-related amendment, because changes to the normal maximum water surface elevation are proposed, the provisions of 18 CFR, part 4, Section 4.38 (three-stage consultation process) would apply.

Briefly put, the three-stage consultation process involves:

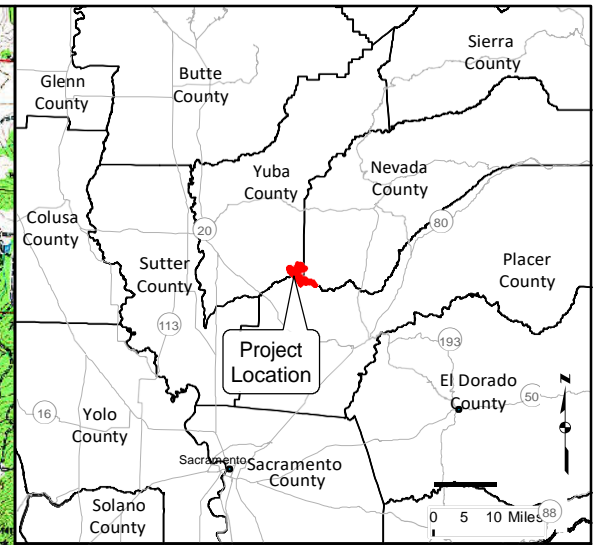
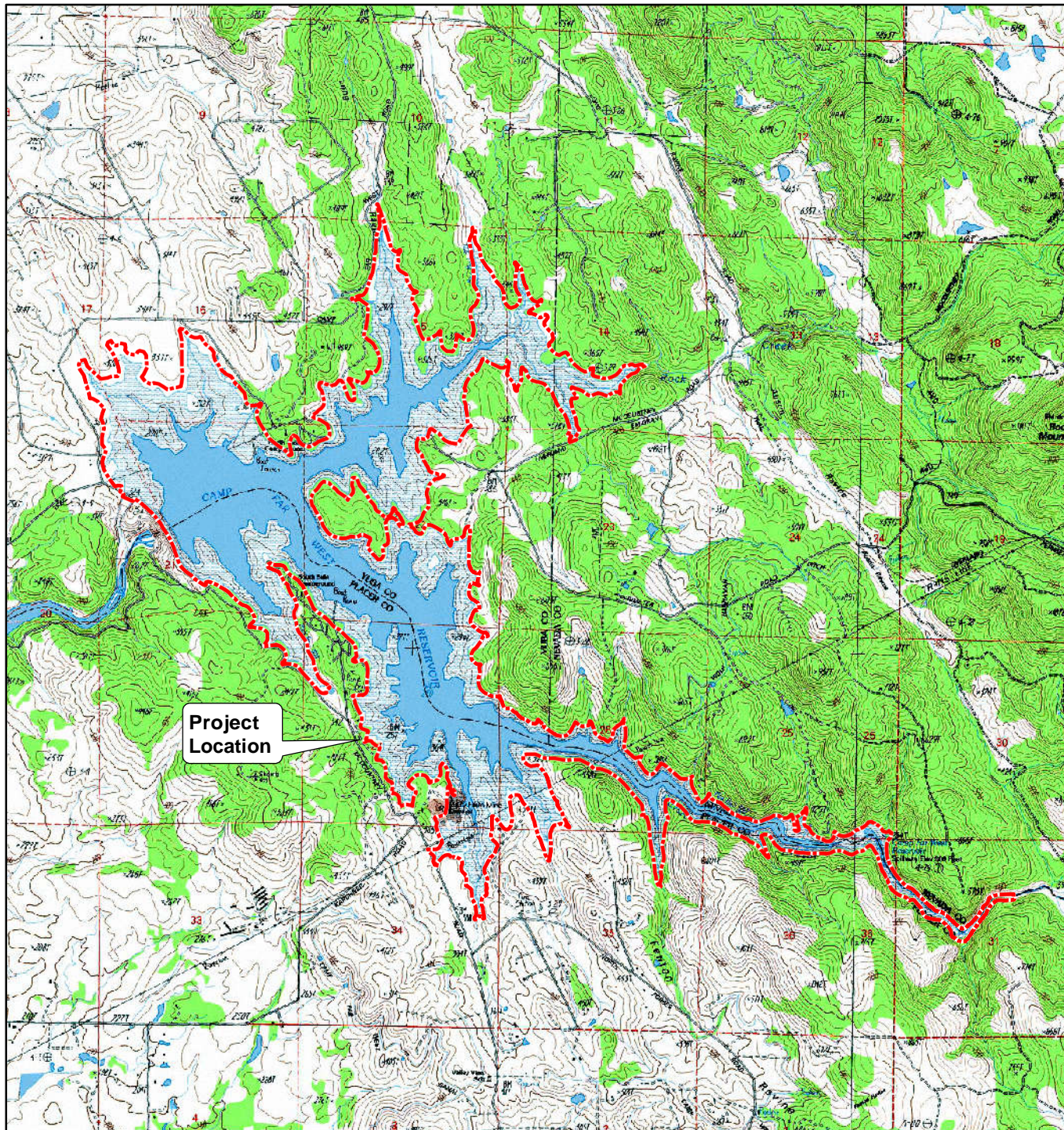
- *Stage 1* – Applicant prepares an Initial Consultation Document (ICD). Special studies scopes, if any, will be determined in the Stage 1 consultation negotiations with the resource agencies. Applicant conducts joint agency/public meeting and site visit. Resource agencies and tribes provide written comments.
- *Stage 2* – Completion of the studies requested during the first stage, determination of appropriate mitigation measures, and preparation and review of a draft application.
- *Stage 3* – Provision of a final amendment application to the FERC and stakeholders incorporating information generated during the first two stages of consultation.

The Camp Far West facility consists of the main earthfill dam; three smaller earthfill dams, an overflow spillway, the outlet works, and a powerhouse. FERC Regulation 18 CFR, Part 4, Section 4.38(b)(2) requires identification of pertinent issues and concerns associated with the proposed action. The ICD prepared for Stage 1 requires a biological field survey of affected shoreline to fully identify and evaluate potential impacts on biological resources that would be affected by the change in normal water surface elevation. The biological field studies and preparation of this BA partially fulfills the requirements of Stage 2.

1.2. Project Description

The Biological Study Area (BSA) for the Camp Far West Reservoir Project (Project) is located in the Sierra Nevada foothills, approximately 7 miles northeast of the town of Wheatland. The Reservoir impounds the waters of both the Bear River and Rock Creek near what was formerly the confluence of the two streams. The BSA is in parts of three counties: Nevada, Placer, and Yuba (Figure 1, Figure 2). The BSA is primarily located on the Camp Far West USGS topographic quad (T14N, R6E, Sections 14, 15, 16, 17, 21, 22, 25, 26, 27, 28, 24, 25, and 36); a small segment of the BSA along the Bear River is located on the Wolf USGS topographic quad (T14N, R7E, Sections 31 and 36). Photographs of the BSA are in Appendix D.

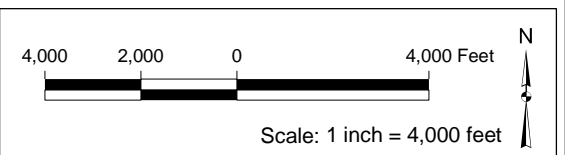
The approximately 1,792 acre Reservoir has approximately 29 miles of shoreline. Water levels reach their maximum around January and start to decrease in April or May. The lowest water levels are typically in September or October. The BSA extends up to approximately the 310-315 foot contour around the Reservoir. The area included in the BSA around the Reservoir margin is wider where the slope is gentle and much narrower where the slope is steep.



Camp Far West Reservoir Project
Yuba, Nevada and Placer Counties, CA
23 July 2013

Figure 1. Project Location Map

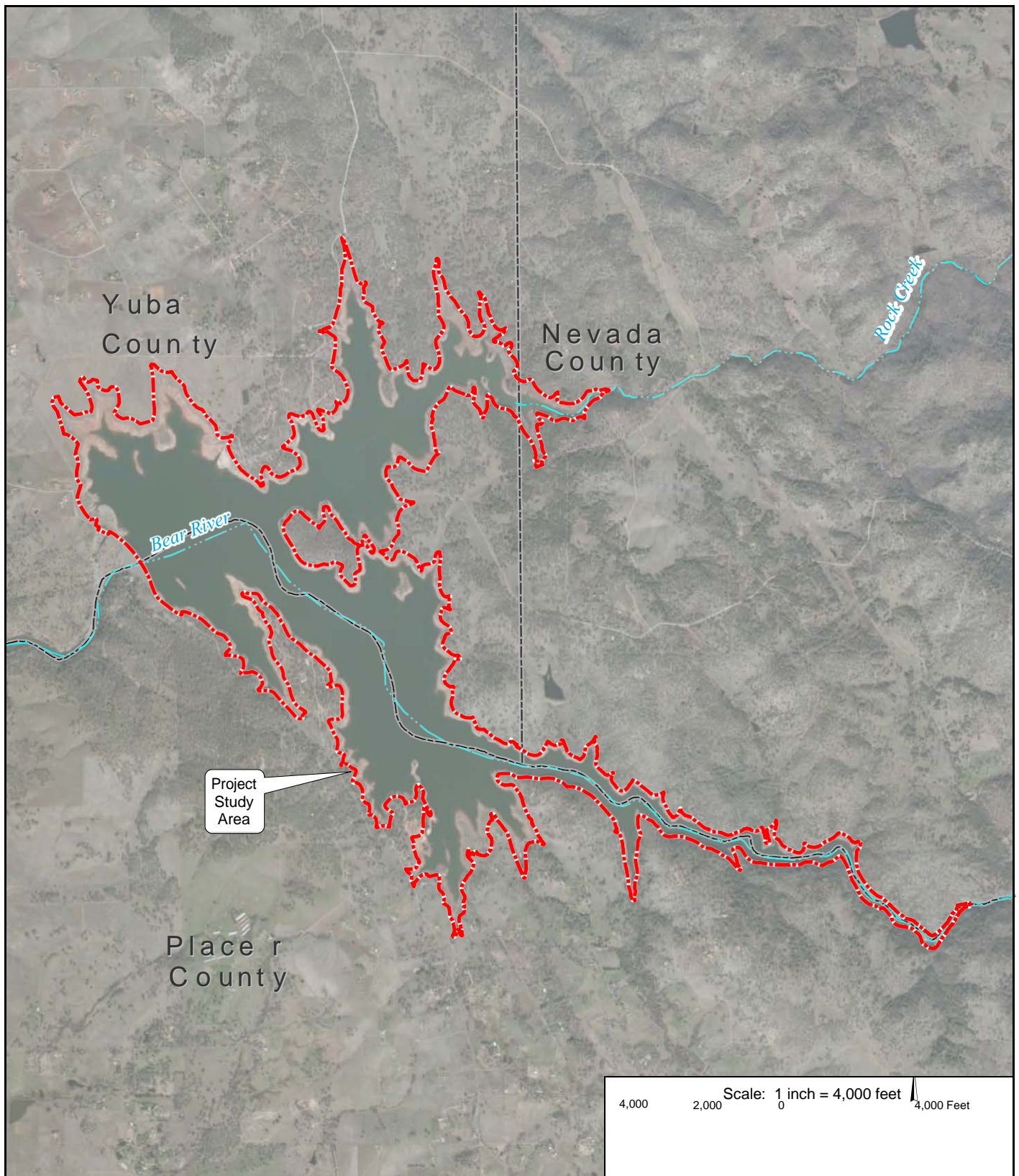
 Project Location



SYCAMORE
Environmental
Consultants, Inc.

Camp Far West & Wolf, CA (1995)
 CASIL California USGS Digital Raster Graphics (DRG),
 7.5 Minute (C) Series, Albers Nad83 Mosaics (MrSID)
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Camp Far West
Reservoir Project
Yuba, Nevada and
Placer Counties, CA
23 July 2013

- Project Study Area (PSA)
- NHD Flow lines
- County Boundary



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Aerial Photograph: 2 February 2012
UC-G, US-CA-Sacramento Microsoft Imagery
ESRI ArcGIS Basemap Layer

Figure 2. Aerial Photograph

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There are two alternatives: the No Project Alternative and the Proposed Spillway Modification Alternative.

No Project Alternative

Under the No Project Alternative, the spillway capacity would not be increased and would continue to be out of compliance with FERC regulations. Additionally, the Reservoir would continue to not retain the full storage allowed by the existing water right.

Proposed Spillway Modification Alternative

The spillway modification project consists of lowering the existing uncontrolled spillway crest to increase discharge capacity using an ogee shape for the lowered spillway and installing Obermeyer Spillway Gates to simulate a new ogee spillway with a crest at elevation 296.3 ft. Obermeyer Spillway Gates are comprised of a row of bottom hinged steel gate panels supported on their downstream side by inflatable air bladders. By controlling the pressure in the bladders, the water elevation maintained by the gates can be adjusted within the system control range (full inflation to full deflation). The spillway gates are anchored to the foundation structure. The air bladders are clamped over the anchor bolts and connected to the air supply pipes, and the air bladder hinge flaps are fastened to the gate panels. The individual steel gate panels will be fabricated in 20-foot widths designed to withstand two feet of overtopping while in the raised position. The gaps between adjacent panels are spanned by reinforced interpanel seals clamped to adjacent gate panel edges. Two concrete piers would be constructed along the length of the spillway to create three separate sections of gates. At each pier and abutment a low-friction lip seal is affixed to the gate panel edge which moves along the stainless steel abutment plate.

SSWD intends to raise the maximum pool level from its current 300 foot elevation to 305 foot elevation to recapture the water storage lost as a result of siltation. The Obermeyer Gates will be operated to maintain the pool elevation at 305 feet. The storage capacity at 305 ft is 103,570 acre-feet. Raising the normal water pool elevation by five feet allows SSWD to recoup the storage loss within the Reservoir resulting from siltation and allows full use of the existing water right. With the proposed changes, the pool elevation will be between 300 and 305 ft for 5 to 6 months of the year.

Camp Far West Dam and Reservoir would continue to be operated to provide irrigation water to users, meet Bear River in-stream flow requirements for fish, and to generate power. Generally, operations of the reservoir and power plant would not change except that there would be more head to generate power and the Reservoir would be maintained at a higher level. The proposed operations of the Reservoir will follow the same seasonal fluctuations seen

currently. With implementation of the proposed project, approximately 10,000 acre-feet of water currently spilled over the spillway channel into the downstream river will under the proposed Project be stored within the Reservoir and released later in the year by SSWD for consumptive uses within the confines of their existing water right. Annual inflows and outflows of the Reservoir would not change, but seasonal spills would be decreased and consumptive water releases would be increased seasonally. Under the proposed conditions, the Reservoir would still be drawn down to the same minimum pool.

Raising the maximum pool by five feet should not impact the water quality of the Reservoir. There will be no change in the inflows to the reservoir, nor any new sources of contamination. Releases will continue to be made for irrigation and hydropower from the existing intake structures in the reservoir, thus there is unlikely to be any effect on temperature or other water quality parameters downstream.

Chapter 2. Study Methods

An evaluation of biological resources was conducted to determine whether any special-status plant or wildlife species, or their habitat, or sensitive habitats occur in the BSA. Data on special-status species and habitats known in the area were obtained from state and federal agencies. Maps and aerial photographs of the BSA and surrounding areas were reviewed. A field survey was conducted to determine the habitats present. The field survey, map review, and a review of the biology of evaluated species and habitats were used to determine the special-status species and sensitive habitats that could occur in the BSA.

Special-status species in this BA are those listed (or candidate or proposed) under the federal or state endangered species acts, under the California Native Plant Protection Act, as a California species of special concern or fully protected by the California Department of Fish and Wildlife (CDFW), or that are Ranked 1 or 2 by the California Native Plant Society (2013a). Special-status natural communities in this BA are waters, wetlands, riparian communities, and any natural community ranked S1, S2, or S3 by CDFW (2010). A jurisdictional delineation of wetlands and waters was separately prepared for the BSA (Sycamore Environmental 2013). The results of the delineation are incorporated into this BA for the purposes of impact identification.

2.1. Regulatory Requirements

The purpose of the BA is to document biological studies and perform analyses and evaluations necessary to satisfy the legal requirements of State and federal statutes. These statutes include:

- National Environmental Policy Act (NEPA) (42 U.S.C. 4321 et seq.);
- Section 404 of the Clean Water Act (33 U.S.C. 1251-1376);
- Section 401 Water Quality Certification (33 U.S.C. 1341);
- Section 402 of the Clean Water Act (33 U.S.C. 1342)
- Section 10 of the Rivers and Harbors Act (33 U.S.C. 401 et seq.);
- Section 1602 of the California Fish and Game Code pertains to streambed alterations;
- Federal Endangered Species Act (16 U.S.C. 1531-1543);
- Fish and Wildlife Coordination Act (16 U.S.C. 661-666);
- National Wild and Scenic Rivers Act (16 U.S.C. 1271-1287);
- Executive Order 11990, Protection of Wetlands (May 24, 1977);
- California Environmental Quality Act (P.R.C. 21000 et seq.);
- California Endangered Species Act (California Fish and Game Code 2050 et seq.);
- Native Plant Protection Act (California Fish and Game Code 1900-1913);

- California Wild and Scenic Rivers Act (P.R.C. 5093.50 et seq.);
- Migratory Bird Treaty Act of 1918 (16 U.S.C. 703-711);
- Magnuson-Stevens Fishery Conservation and Management Act (as amended through 11 October 1996);
- Executive Order 13112, Invasive Species (3 February 1999).

Section 404 Permit - U.S. Army Corps of Engineers (Corps)

The Corps and the U.S. Environmental Protection Agency regulate the discharge of dredge and fill material into “waters of the United States” under Section 404 of the Clean Water Act (33 U.S.C. 1344). The Corps issues permits for certain dredge and fill activities in waters of the U.S. pursuant to the regulations in 33 CFR 320-330.

Section 401 Water Quality Certification - Regional Water Quality Control Board

Under Section 401 of the Clean Water Act (33 U.S.C. 1341), applications for a federal permit or license for any activity that may result in a discharge to a water body, require a State Water Quality Certification to ensure that the proposed activity complies with state water quality standards.

Section 402 of the Clean Water Act - NPDES Phase II Permit - Regional Water Quality Control Board

Section 402(p) of Clean Water Act establishes a permit under the National Pollution Discharge Elimination System Permit (NPDES) program for discharges of storm water resulting from ground disturbing construction activities, such as grading. For ground disturbing construction activities in excess of one acre (ac) a NPDES Phase II permit from the RWQCB is required. The preparation of a Stormwater Pollution Prevention Plan (SWPPP) is a requirement of the NPDES Phase II permit.

Federal Endangered Species Act (FESA)

FESA defines take (Section 9) and prohibits taking of a federal-listed endangered or threatened animal without an Incidental Take Permit (16 U.S.C. 1532, 50 CFR 17.3). If a federal-listed animal could be harmed, harassed, injured, or killed by a project, a Section 7 consultation is initiated by a federal agency or a Section 10 consultation is initiated by a local agency or private applicant. Formal consultations culminate with a Biological Opinion and may result in the issuance of an Incidental Take Permit.

Federal Migratory Bird Treaty Act (MBTA)

All migratory birds are protected under the federal MBTA of 1918 (16 U.S.C. 703-711). The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 CFR Part 10 including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR Part 21). Any construction-related disturbance that causes direct injury, death, nest abandonment, or forced fledging of migratory birds, is restricted under the MBTA. Any removal of active nests during the breeding season or any disturbance that results in the abandonment of nestlings is considered a ‘take’ of the species under federal law.

Section 1602 Streambed Alteration Agreement – CA Department of Fish and Wildlife

Section 1602 of the DFW Code requires any person, government agency, or public utility proposing any activity that will divert or obstruct the natural flow or change the bed, channel or bank of any river, stream, or lake, or proposes to use any material from a streambed, must first notify DFW of such proposed activity.

California Endangered Species Act (CESA)

CESA prohibits take of wildlife and plants listed as threatened or endangered by the California Fish and Game Commission. “Take” is defined under California Fish and Game Code as any action or attempt to “hunt, pursue, catch, capture, or kill.” CESA allows exceptions for take that occurs during otherwise lawful activities. Section 2081 of the California Fish and Game Code describes the requirements needed for incidental take applications under CESA. Incidental take of state-listed species may be authorized if an applicant submits a plan that minimizes and mitigates the impacts of take.

California Fish and Game Code

The California Fish and Game Code defines ‘take’ (Section 86) and prohibits ‘taking’ of a species listed as threatened or endangered under CESA (California Fish and Game Code Section 2080) or otherwise fully protected, as defined in California Fish and Game Code Sections 3511, 4700, and 5050.

Other Special-Status Species Classifications

Other special-status species classifications evaluated in this BA include California Species of Special Concern (SSC), species on lists 1B and 2 of the California Native Plant Society (CNPS 2013a), plants listed under the California Native Plant Protection Act, and active raptor nests.

Invasive Plant Species

Section 5.5 evaluates invasive plant species in the study area. Executive Order 13112, issued 3 February 1999, directs federal agencies, whose actions may affect the status of invasive plant species, to use relevant programs and authorities to prevent the introduction of invasive species, control existing populations of such species, monitor populations of such species, and provide for the restoration of native species.

The California Invasive Plant Council (Cal-IPC) maintains an inventory of invasive nonnative plants that threaten wildland areas of California (Cal-IPC 2006). Assessments are based on Warner et al. (2003; “Criteria for Categorizing Non-Native Plants that Threaten Wildlands”). The Cal-IPC inventory involves evaluation of ecological impacts, invasive potential, and ecological distribution. Species receive an overall rating of High, Moderate, or Limited. Ratings are defined below (Cal-IPC 2006).

High: “These species have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. Most are widely distributed ecologically.”

Moderate: “These species have substantial and apparent-but generally not severe-ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal, though establishment is generally dependent upon ecological disturbance. Ecological amplitude and distribution may range from limited to widespread.”

Limited: “These species are invasive, but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score. Their reproductive biology and other attributes result in low to moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but these species may be locally persistent and problematic.”

2.2. Studies Required

A list was obtained from the U.S. Fish and Wildlife Service (USFWS), Sacramento Field Office (Appendix A). The list identifies federal-listed, candidate, or proposed species that potentially occur in or could be affected by projects on the Camp Far West Quad or in Nevada, Placer, or Yuba County.

The California Natural Diversity Database (CNDDDB) was queried for known occurrences of special-status species in or near the BSA (Camp Far West Quad and the eight surrounding quads including Wolf; Appendix B). The California Native Plant Society (CNPS) online inventory of rare and endangered plants was queried for known occurrences of special-status plants in or near the BSA (Camp Far West Quad and the eight surrounding quads including Wolf; Appendix B).

Data received from USFWS, CNDDDB, and CNPS were used to compile a table of regional species and habitats of concern (Table 2). The CNDDDB tracks other species that have not been designated by CDFW as a California species of special concern; these species were not evaluated as special-status species in this BA. Biological surveys consisted of walking through the BSA to determine if any special-status species or their habitat were present. Wildlife species observed, their sign, and potential habitats were recorded. Appendix C is a list of plant and wildlife species observed during surveys. Photographs of the BSA are in Appendix D. Botanical surveys are described below in Section 2.3.

2.3. Personnel and Survey Dates

Fieldwork for the general biological survey was conducted concurrently with fieldwork for the jurisdictional delineation and floristic botanical survey. Fieldwork for the jurisdictional delineation was conducted by Chuck Hughes, M.S., Mike Bower, M.S., and/or Jessica Orsolini on 5, 7, 8, 12–14 and 27 March, and on 1 and 9 April 2013. A follow-up visit by boat to the south side of part of the Bear River reach of the BSA was made on 6 June 2013 to do fieldwork in difficult access areas.

Floristic botanical surveys were conducted in accordance with CDFW (2009) protocol. The surveys were timed to coincide with the evident and identifiable period of special-status plants for which potential habitat may be present. In addition to a botanical survey concurrent with the delineation fieldwork on the days above, an additional botanical survey was conducted by Chuck Hughes, M.S., Mike Bower, M.S., and/or Juliette Robinson on 2, 6, 14, 16, 17, and 22 May, and 4 and 6 June 2013. Approximately 63 person-hours were spent on-site during the surveys in May and June, which were timed specifically for the evident and identifiable period of special-status plants known from the area. An additional approximately 130 person-hours were spent on-site during surveys in March and April. Time during March and April was split between fieldwork for the jurisdictional delineation and botanical fieldwork. The botanical surveys consisted of walking through the BSA systematically to look for all vascular plants present. In general, transects were walked within 20–30 feet of each other, depending on the width of the BSA in a particular area along the margin of the Reservoir. Frequent deviations and stops were made to search areas of particular interest, such as rock outcrops, wetlands, or

channels. An additional approximately 48 person-hours were spent keying plant specimens collected in the field. All identifications were made by Chuck Hughes or Mike Bower. All plants observed are listed in Appendix C, and plants for which voucher collections were made are noted.

2.4. Limitations That May Influence Results

There were two elevation contour datasets available for the production of figures. One was lines digitized from the 300 and 320 foot contours on the USGS topographic quads (20 foot contour interval), and an intermediate 305 foot contour interpolated from those lines. The second was a set of 1 foot contour intervals generated from the National Elevation Dataset, based on a grid point spacing of one per 10 meters (about 33 feet). Neither dataset has enough resolution to adequately depict the high water mark of the Reservoir at the scale of the biological resources map. In the field, the ordinary high water mark (OHWM) was located with a sub-meter accurate GPS around most of the Reservoir. Where the OHWM could not be located with GPS, it was estimated with a georeferenced aerial photo. The OHWM is approximately at the known elevation of the Reservoir spillway, 300 feet. Once the OHWM line was established, the BSA boundary and impact lines were estimated based on Data from the NED dataset, GPS data from the field, field notes, and aerial photographs.

Four small islands in the Reservoir (on sheets 5, 7, 9, and 14 in Appendix E) were not accessed during the survey due to water levels. The islands were viewed with binoculars and no elderberry shrubs were observed. The islands are not in areas with soils that have a heightened probability of rare plants, and do not contain any habitats different than habitats along the main shoreline. Other islands in the Reservoir were accessible and were surveyed on foot along with the main shoreline.

Part of the BSA along southern edge of the Bear River reach is very steep and vegetation is thick. One small segment contains a cliff at a rock outcrop. There is no SSWD access to this area other than by boat. This area was accessed by a boat provided by SSWD on 6 June 2013. The boat was moored in several spots in this reach and the shoreline surveyed for channels, wetlands, and special-status species, but the foot survey did not include the entire reach. In other areas, the boat moved slowly along as the shoreline was scanned with binoculars. No other problems or limitations were encountered that may have influenced the results.

Chapter 3. Results: Environmental Setting

3.1. Description of the Existing Biological and Physical Conditions

3.1.1. Biological Study Area

The BSA is located at the CFWR east of the community of Wheatland in the western foothills of the Sierra Nevada Mountains. The BSA is south of Beale Air Force Base and the Spenceville Wildlife Area operated by the CDFW. The BSA includes the Reservoir and the approximately 29 mile long shoreline. The topography around the Reservoir consists mostly of rolling hills with slopes ranging from 2 to 30 percent. In the Bear River reach of the reservoir the slopes are much steeper. Most of the land around the margin of the Reservoir consists of blue oak woodland and is grazed by cattle, including the recreational areas during the winter and early spring when there is little or no public use. Land in the vicinity of the BSA is mostly rural residences and cattle ranching.

The BSA includes part of the Camp Far West Dam and spillway. The spillway is concrete and the dam is lined with rip-rap. There are two recreational areas, one on the north shore of the Reservoir and one on the south shore. Each recreational area is open to the public and includes a campground and boat ramp. The recreational area on the north shore is open to the public year-round, the recreational area on the south shore is only open in the summer.

The Dairy Farm Mine, operated during the 1920s and 1930s, is located on the south shore of the reservoir in Placer County. An open pit mine at this location is inundated when the water levels in the reservoir are high, and the pit is hydraulically isolated when water levels are low (Alpers et. al. 2008).

3.1.2. Physical Conditions

The BSA is primarily located on the Camp Far West USGS topographic quad (T14N, R6E, Sections 14, 15, 16, 17, 21, 22, 25, 26, 27, 28, 24, 25, and 36); a small segment of the BSA along the Bear River is located on the Wolf quad (T14N, R7E, Sections 31 and 36). The BSA is in the Upper Bear Hydrologic Unit (hydrologic unit code 18020126). Its centroid is 39.048214° north, 121.301277° west, UTM coordinate 647,000 meters E, 4,323,500 meters N, Zone 10N (WGS84). Elevation in the BSA is approximately 300 feet above sea level.

Soil series in the BSA are: Auburn, Argonaut, Boomer, Rescue, Ricecross, Riverwash, Rock Land, Rock Outcrop, and Sobrante. More detailed soil information is in the Jurisdictional Delineation Report (Sycamore Environmental 2013).

3.1.3. Biological Conditions in the BSA

Biological communities are defined by species composition and relative abundance. Natural communities described below were mapped at the alliance level and correlate where applicable with Sawyer et al. (2009) and CDFW (2010). The locations of biological communities and other features are shown in Appendix E. The acreages of biological communities in the BSA are in Table 1. Special-status biological communities include those with rarity rankings of S1-S3 in CDFW (2010). Invasive plant species in the BSA are discussed in Section 5.5. Plant and wildlife species observed are in Appendix C.

3.1.3.1. CAMP FAR WEST RESERVOIR

The Reservoir level varies widely and may fall by more than a hundred feet in elevation in the dry season. Patchy, widely-spaced woody vegetation has established itself in some places around the reservoir below the ordinary high water mark. Where present, this vegetation consists primarily of California button willow (*Cephalanthus occidentalis*), willow (*Salix* sp.), and the nonnative invasive Scarlet sesban (*Sesbania punicea*).

3.1.3.2. BLUE OAK WOODLAND

This tree canopy of this woodland is discontinuous and dominated by blue oak (*Quercus douglasii*; Photo 3). Interior live oak (*Q. wislizeni*) and grey pine (*Pinus sabiniana*) are also common in the tree canopy. The shrub layer is mostly absent. The herb layer is dominated by nonnative annual grasses, and both native and nonnative forbs, similar to the annual brome grassland.

3.1.3.3. BLUE OAK WOODLAND - RECREATIONAL USE

This community is the same as the blue oak woodland, but the level of disturbance is higher due to public use (Photo 1). This community includes the developed campgrounds, and some adjacent day use areas where vehicles, fishing, and other recreational activities are common. The herb layer in this community is generally more disturbed by vehicle and foot traffic, invasive weeds are more common, and some areas are mowed.

3.1.3.4. ANNUAL BROME GRASSLAND

This community is dominated by nonnative grasses and forbs such as bromes (*Bromus* sp.), wild oat (*Avena* sp.), silver hair grass (*Aira caryophyllea*), medusa head (*Elymus caput-medusae*), fescues (*Festuca* sp.), filaree (*Erodium* sp.), and clover (*Trifolium* sp.). Native plants, mostly forbs, occur at relatively low abundances. Few trees or shrubs are present (Photo 2).

Table 1. Natural Communities in the BSA

Natural Community	Vegetation Alliance and DFG Alliance Code	Rarity Rank¹	Acreage
Camp Far West Reservoir	--	--	1,792
Blue Oak Woodland	<i>Quercus douglasii</i> Woodland Alliance (71.020.00)	G4 S4	133.41
Blue Oak Woodland - Recreational Use	<i>Quercus douglasii</i> Woodland Alliance (71.020.00)	G4 S4	57.75
Annual Brome Grassland	<i>Bromus (diandrus, hordeaceus)-</i> <i>Brachypodium distachyon</i> Semi-natural Herbaceous Stands (42.026.00)	--	49.63
Interior Live Oak Woodland	<i>Quercus wislizeni</i> Woodland Alliance (71.080.00)	G4 S4	30.24
Grey Pine Woodland	<i>Pinus sabiniana</i> Woodland Alliance (87.130.00)	G4 S4	5.20
Dam and Spillway	--	--	3.53
Dairy Farm Mine	--	--	1.38
Bear River	--	--	1.05
Rock Creek	--	--	0.30
Intermittent Channels	--	--	0.67
Ephemeral Channels	--	--	0.16
Seasonal Pond	--	--	0.10
Seasonal Wetlands	--	--	0.08
Seasonal Wetland Swales	--	--	0.22
Seeps	--	--	0.46
Emergent Wetlands	--	--	1.02
Irrigated Wetlands	--	--	1.48
Scrub-Shrub Wetland	--	--	0.24
Total:			2078.92

¹ CDFW (2010). State (S) ranks of 1-3 are considered of high priority for inventory. Where associations of high priority for inventory occur within the alliance, those associations were checked to determine if they occurred in the BSA.

3.1.3.5. INTERIOR LIVE OAK WOODLAND

The tree canopy of this woodland is dominated by interior live oak. This woodland is more dense than the blue oak woodland and tree canopy gaps are uncommon (Photo 5). Blue oak, grey pine, and California buckeye (*Aesculus californica*) are also common in the tree canopy. The shrub layer is patchy, and where present is dominated by western poison oak (*Toxicodendron diversilobum*). The herb layer is sparser than the blue oak woodland and contains a higher component of native forbs.

3.1.3.6. GREY PINE WOODLAND

The discontinuous tree canopy of this woodland is dominated by grey pine, and contains some of the steepest slopes in the BSA (Photo 4). Interior live oak is also common in the tree canopy. The shrub layer is patchy and dominated by toyon (*Heteromeles arbutifolia*). The herb layer is heavily dominated by the invasive nonnative false brome (*Brachypodium distachyon*). This community occurs in a “rock land” mapping unit, with some Rescue series soils mapped nearby (USDA 2013). Rescue series soils are known to support high-densities of special-status plants in some areas, such as the Pine Hill area of El Dorado County. As a result, this community was considered to be the only potential habitat in the BSA for some of the special-status plants evaluated in Section 4.6.

3.1.3.7. DAM AND SPILLWAY

This area includes the Camp Far West Dam and adjacent spillway. The dam is covered with rip-rap along the high water level of the Reservoir. The dam slope above the rip-rap is mostly covered with nonnative invasive annual grasses and forbs (Photo 12). A few shrubs grow in the rip-rap along the high water line. There are no trees. The spillway consists of concrete.

3.1.3.8. DAIRY FARM MINE

The Dairy Farm Mine is no longer in operation. The pit of the mine is now within the Reservoir, but partially dries out in summer when the water level falls sufficiently. The margin of the Reservoir adjacent to the pit consists of rock cliffs (Photo 8). This area of the BSA includes some adjacent areas disturbed as a result of the mine where vegetation is mostly absent.

3.1.3.9. CHANNELS AND WETLANDS

Conditions in the channels and wetlands, including Bear River and Rock Creek, are discussed in the jurisdictional delineation report (Sycamore Environmental 2013).

3.2. Regional Species and Habitats of Concern

Data received from USFWS, CNDDDB, DFW, and CNPS were used to compile a table of regional species and habitats of concern (Table 2). Table 2 provides a general habitat description for each species and a rationale as to why habitat is either present or absent from the BSA.

Table 2. Regional Species and Habitats of Concern

Scientific Name	Common Name	Federal Status ^a	State Status ^a	General Habitat Description	Habitat Present/ Absent ^c	Rationale
Invertebrates						
<i>Branchinecta conservatio</i>	Conservancy fairy shrimp	E, CH	--	Occurs in vernal pools found on several different landforms, geologic formations and soil types. Observations suggest this species is often found in pools that are relatively large, and turbid, at elevations ranging from 16 to 5,577 ft. Known from a few isolated populations distributed over Central and Southern California (USFWS 2005).	Absent	There are no vernal pools in the BSA. Critical habitat for this species does not occur in the BSA (USFWS 2013b).
<i>Branchinecta lynchi</i>	Vernal pool fairy shrimp	T, CH	--	Exist only in vernal pools or vernal pool-like habitats. Currently found in 28 counties across the Central Valley and coast ranges of CA. Occupies a variety of vernal pool habitats (USFWS 2005).	Absent	There are no vernal pools in the BSA. Critical habitat for this species does not occur in the BSA (USFWS 2013b).
<i>Desmocerus californicus dimorphus</i>	Valley elderberry longhorn beetle	T, CH	--	Requires an elderberry shrub (<i>Sambucus mexicana</i> or <i>Sambucus racemosa</i> var. <i>microbotrys</i>) as a host plant (USFWS 1999a).	Present	See text.
<i>Lepidurus packardii</i>	Vernal pool tadpole shrimp	E, CH	--	Occurs in vernal pools and sometimes other areas of similar hydrology across the Central Valley of CA and in the San Francisco Bay area. Requires a minimum of about 25 days to mature, and usually inhabits large, deep vernal pools that pool continuously for many months (USFWS 2005). They can also make use of smaller pools that are present as part of a larger vernal pool complex (Witham et al. 1998), and they may be able tolerate temporary dry conditions (USFWS 2005).	Absent	There are no vernal pools in the BSA. Critical habitat for this species does not occur in the BSA (USFWS 2013b).
Fish						
<i>Acipenser medirostris</i>	Green sturgeon (southern DPS)	T, CH	SSC	Anadromous fish that occupy freshwater rivers from the Sacramento River up through British Columbia. Spawning confirmed in only two CA rivers: Sacramento River (including the Feather River) and Klamath River basin. The Eel River no longer sustains a spawning run. Some spawning may take place in the San Joaquin River. Spawning occurs between March and July, in deep fast water. Preferred spawning habitat is large cobble, but can range from clean sand to bedrock (Moyle 2002). Federal listing includes all spawning populations south of the Eel River (CDFW 2011).	Absent	There is no habitat for this species in the BSA. The Camp Far West Diversion Dam and the Camp Far West Dam, located at the west end of the lake and on the Bear River, are total barriers to fish passage (Calfish 2013). Critical habitat for this species does not occur in the BSA (NMFS 2009)

Scientific Name	Common Name	Federal Status ^a	State Status ^a	General Habitat Description	Habitat Present/ Absent ^c	Rationale
<i>Hypomesus transpacificus</i>	Delta smelt	T, CH	E	Euryhaline (tolerant of a wide salinity range) species that is confined to the San Francisco Estuary, principally in the Delta and Suisun Bay. Currently found only from the San Pablo Bay upstream through the Delta in Contra Costa, Sacramento, San Joaquin, Solano, and Yolo cos. Can be washed into San Pablo Bay during high-outflow periods, but do not establish permanent populations there (Moyle 2002).	Absent	The BSA is outside the geographic range of this species. There is no habitat for this species in the BSA. Critical habitat for this species does not occur in the BSA (USFWS 2013b).
<i>Oncorhynchus</i> (=Salmo) <i>clarki henshawi</i>	Lahontan cutthroat trout	T	--	Non-anadromous stream-spawning salmonid known from both lake and river habitats. Known only from three natural populations: 1) Western Lahontan basin comprised of Truckee, Carson, and Walker river basins; 2) Northwestern Lahontan basin comprised of Quinn River, Black Rock Desert, and Coyote Lake basins; and 3) Humboldt River basin (USFWS 1994).	Absent	The BSA is outside the geographic range of this species. There is no habitat for this species in the BSA.
<i>Oncorhynchus mykiss</i>	Steelhead – Central Valley distinct population segment (DPS)	T, CH	--	Anadromous salmonid historically distributed throughout the Sacramento and San Joaquin river drainages. While steelhead are found elsewhere in the Sacramento River system, the principal remaining wild populations are a few hundred fish that spawn annually in Deer and Mill Creeks in Tehama County and a population of unknown size in the lower Yuba River. With the possible exception of a small population in the lower Stanislaus River, steelhead appear to have been extirpated from the San Joaquin basin (Moyle 2002). Spawning occurs in small tributaries on coarse gravel beds in riffle areas (Busby et al. 1996). Federal listing includes all runs in the Sacramento & San Joaquin Rivers and their tributaries (CDFW 2011).	Absent	There is no habitat for this species in the BSA. The Camp Far West Diversion Dam and the Camp Far West Dam, located at the west end of the lake and on the Bear River, are total barriers to fish passage (Calfish 2013). Critical habitat for this species occurs below the Camp Far West Diversion Dam, but does not occur in the BSA (USFWS 2013b).
<i>Oncorhynchus tshawytscha</i>	Chinook salmon - Central Valley spring-run evolutionarily significant unit (ESU)	T, CH	T	Anadromous salmonid historically distributed throughout the Sacramento and San Joaquin river drainages. Extant populations spawn in the Sacramento River and its tributaries (Moyle 2002). Populations in the San Joaquin River are believed to be extirpated (NMFS 1998). The state listing is for the Sacramento River Drainage. The Federal listing includes populations spawning in the Sacramento River and its tributaries (CDFW 2011).	Absent	There is no habitat for this species in the BSA. The Camp Far West Diversion Dam and the Camp Far West Dam, located at the west end of the lake and on the Bear River, are total barriers to fish passage (Calfish 2013). Critical habitat for this species does not occur in the BSA (USFWS 2013b).

Scientific Name	Common Name	Federal Status ^a	State Status ^a	General Habitat Description	Habitat Present/ Absent ^c	Rationale
<i>Oncorhynchus tshawytscha</i>	Chinook salmon – winter-run Sacramento River ESU	E, CH	E	Winter-run Chinook salmon originally spawned in cold waters of the McCloud, Pit, and upper Sacramento Rivers, but are presently found only in the mainstem Sacramento River, below Keswick Dam (Moyle 2002). Emigrates predominately as fry and subyearlings and enters the Sacramento/ San Joaquin Basin from December through July and spawns from April through July. Adult female Chinook will prepare a spawning bed in a stream with suitable gravel composition, water depth, and velocity (McGinnis 1984).	Absent	There is no habitat for this species in the BSA. The Camp Far West Diversion Dam and the Camp Far West Dam, located at the west end of the lake and on the Bear River, are total barriers to fish passage (Calfish 2013). Critical habitat for this species does not occur in the BSA (USFWS 2013b).
Amphibians						
<i>Ambystoma californiense</i>	California tiger salamander, central population	T, CH	T, SSC	Occurs in grassland, oak savannah, and edges of mixed woodland and lower elevation coniferous forest. Spends much time underground in mammal burrows. Requires pools lasting approximately 10 weeks or longer to complete larval development (Jennings and Hayes 1994). Usually breeds in temporary ponds such as vernal pools but may also breed in slower parts of streams and some permanent waters (Stebbins 2003). The state listing refers to the entire range of the species. The federal threatened listing is only for the Central Valley population. The Sonoma and Santa Barbara populations are federally listed as endangered (CDFW 2013).	Absent	There is no habitat for this species in the BSA. Critical habitat for this species does not occur in the BSA (USFWS 2013b).
<i>Rana boylei</i>	Foothill yellow-legged frog	--	SSC	Occurs in woodland and forest areas near streams and rivers, especially near riffles where there are exposed rocks. Requires permanent streams in which to reside (CWHR 2013).	Present	See text.
<i>Rana draytonii</i>	California red-legged frog	T, CH	SSC	Inhabits quiet pools of streams, marshes, and occasionally ponds with dense, shrubby, or emergent vegetation. Requires permanent or nearly permanent pools for larval development (CWHR 2013; USFWS 2010). The range of CA red-legged frog extends from near sea level to approximately 5,200 ft, though nearly all sightings have occurred below 3,500 ft. CRLF was probably extirpated from the floor of the Central Valley before 1960 (USFWS 2002).	Present	See text.

Scientific Name	Common Name	Federal Status ^a	State Status ^a	General Habitat Description	Habitat Present/Absent ^c	Rationale
<i>Rana sierrae</i> (= <i>muscosa</i>)	Sierra Nevada yellow-legged frog	C	CE, SSC	Occurs in the Sierra Nevada from Plumas Co. to Fresno Co, north of the ridge dividing the middle and south forks of the Kings River and east of the Sierra Nevada crest. Elevation range in the Sierra extends from 4,500 ft to over 11,980 ft. Associated with streams, lakes, and ponds in montane riparian, lodgepole pine, sub-alpine conifer, and wet meadow habitat types. Always encountered within a few feet of water (CWHR 2013). Federal candidate status refers to all populations that occur north of the Tehachapi Mountains in the Sierra Nevada (CDFW 2011).	Absent	The BSA is below the elevation range of this species.
Reptiles						
<i>Emys marmorata</i>	Western pond turtle	--	SSC	Prefers aquatic habitats with abundant vegetative cover and exposed basking sites such as logs. Associated with permanent or nearly permanent water in a wide variety of habitat types, normally in ponds, lakes, streams, irrigation ditches, or permanent pools along intermittent streams (CWHR 2013).	Present	See text.
<i>Phrynosoma blainvillii</i>	Coast horned lizard	--	SSC	Occurs in valley-foothill hardwood, conifer and riparian habitats, as well as in pine-cypress, juniper and annual grassland habitats, especially sandy areas, washes, flood plains and wind-blown deposits. Needs loose soil for cover and reproduction. Occurs in the Sierra Nevada foothills from Butte Co. to Kern Co. and throughout the central and southern California coast. Found chiefly below 2,000 ft in the northern end of its range and 3,000 ft in the southern end (CWHR 2013).	Present	See text.
<i>Thamnophis gigas</i>	Giant garter snake	T	T	Endemic to the Central Valley of California, where they occupy a variety of agricultural, managed, and natural wetlands, including their waterways and adjacent upland habitats. Agricultural wetlands include irrigation and drainage canals, ricelands, marshes, sloughs, ponds, small lakes, and low gradient streams. Essential habitat consists of the following: 1) adequate water during the snake's active season (early spring through mid-fall); 2) emergent, herbaceous wetland vegetation, such as cattails and bulrushes; 3) upland habitat with grassy banks and openings in waterside vegetation for basking; and 4) higher elevation uplands for cover and refuge during the snake's inactive season in winter. Inhabits small mammal burrows during winter dormancy (USFWS 1999b).	Absent	The BSA is outside the geographic range of this species. There is no habitat for this species in the BSA.

Scientific Name	Common Name	Federal Status ^a	State Status ^a	General Habitat Description	Habitat Present/Absent ^c	Rationale
Birds						
<i>Agelaius tricolor</i>	Tricolored blackbird	--	SSC	Common locally throughout the Central Valley and in coastal districts from Sonoma Co. south. Breeds near freshwater, preferably in emergent wetland of tall, dense cattails or tules, and also in thickets of willow, blackberry, tall herbs and wild rose. The nesting area is highly colonial, supporting a minimum of 50 pairs (CWHR 2013). Nesting colonies are of concern to CDFW (2011).	Absent	Suitable nesting habitat does not occur in the BSA.
<i>Ammodramus savannarum</i>	Grasshopper sparrow	--	SSC	An uncommon and local summer resident and breeder in foothills and lowlands west of Cascade-Sierra Nevada crest from Mendocino and Trinity cos, south to San Diego. Occurs in dry, dense grasslands, especially with scattered shrubs for perching. A thick cover of grasses and forbs is essential for concealment. Nests are built of grasses and forbs in slight depression in ground hidden by a clump of grasses or forbs. Usually nests solitarily from early April to mid-July. May form semicolonial breeding groups of 3-12 pairs (CWHR 2013). Nesting sites are of concern to CDFW (2011).	Absent	Suitable nesting habitat does not occur in the BSA.
<i>Asio otus</i>	Long-eared owl	--	SSC	Uncommon yearlong resident throughout the state except the Central Valley and southern CA deserts where it is an uncommon winter visitor. Requires dense, riparian or live oak thickets near meadow edges, and nearby woodland and forest habitats. Also found in dense conifer stands at higher elevations (CWHR 2013). Nesting sites are of concern to CDFW (2011).	Absent	Suitable nesting habitat does not occur in the BSA.
<i>Athene cunicularia</i>	Burrowing owl	--	SSC	Yearlong resident of open, dry grassland and desert habitat, and in grass, forb, and open shrub stages of pinyon-juniper and ponderosa pine habitats. Uses small mammal burrows, often ground squirrel, for roosting and nesting cover (CWHR 2013). Burrowing sites and some wintering sites are of concern to CDFW (2011).	Present	See text.
<i>Buteo swainsoni</i>	Swainson's hawk	--	T	Uncommon breeding resident and migrant in the Central Valley, Klamath Basin, Northeastern Plateau, Lassen Co., and Mojave Desert. Nests in stands with few trees in juniper-sage flats, in riparian areas and in oak savannah in the Central Valley. Forages in adjacent grasslands or suitable grain or alfalfa fields, or livestock pastures. Feeds on small birds, rodents, mammals, reptiles, large arthropods, amphibians, and, rarely, fish (CWHR 2013). Nesting sites are of concern to CDFW (2011).	Present	See text.

Scientific Name	Common Name	Federal Status ^a	State Status ^a	General Habitat Description	Habitat Present/Absent ^c	Rationale
<i>Circus cyaneus</i>	Northern harrier	--	SSC	Occurs in annual grassland up to lodgepole pine and alpine meadow habitat as high as 10,000 ft. Breeds from sea level to 5,700 ft in the Central Valley and Sierra Nevada, and up to 3,600 ft in northeastern California. Frequents meadows, grasslands, open rangelands, desert sinks, fresh and saltwater emergent wetland, but seldom found in wooded areas. Uses tall grasses and forbs in wetland, or at wetland/field border, for cover. Roosts and nests on ground in shrubby vegetation, usually at marsh edge. Mostly nests in emergent wetland or along rivers or lakes, but may nest in grasslands, grain fields, or on sagebrush flats several miles from water (CWHR 2013). Nesting sites are of concern to CDFW (2011).	Present	See text.
<i>Coccyzus americanus occidentalis</i>	Western yellow-billed cuckoo	C	E	Uncommon to rare summer resident of valley foothill and desert riparian habitats in scattered locations in CA. Breeding populations known from the Colorado River (southeast CA border), Sacramento and Owens valleys, along the South Fork of the Kern River (Kern Co.), along the Santa Ana River (Riverside Co.), and along the Amargosa River (Inyo & San Bernardino cos). They may also nest along San Luis Rey River (San Diego Co.). Nests in dense cover of deciduous trees and shrubs, especially willows, which usually about a slow-moving watercourse, backwater or seep. Also utilizes adjacent orchards, especially walnuts, in the Central Valley (CWHR 2013). Nesting sites are of concern to CDFW (2011).	Absent	The BSA is outside the current known range of this species. Suitable nesting habitat does not occur in the BSA.
<i>Dendroica petechia brewsteri</i>	Yellow warbler	--	SSC	Breeding distribution includes coast range in Del Norte Co., east to Modoc plateau, south along the coast range to Santa Barbara and Ventura cos. and along the western slope of Sierra Nevada south to Kern Co. Also breeds along the eastern side of CA from the Lake Tahoe area south through Inyo Co. and in several southern CA mountain ranges and throughout most of San Diego Co. Breeds in riparian woodlands from coastal and desert lowlands up to 8,000 ft in the Sierra Nevada. Also breeds in montane chaparral, and in open ponderosa pine and mixed conifer habitats with substantial amounts of brush. Usually found in riparian deciduous habitats in summer. In migration, visits woodland, forest, and shrub habitats (CWHR 2013). Nesting sites are of concern to CDFW (2011).	Absent	Suitable nesting habitat does not occur in the BSA.

Scientific Name	Common Name	Federal Status ^a	State Status ^a	General Habitat Description	Habitat Present/Absent ^c	Rationale
<i>Elanus leucurus</i>	White-tailed kite	--	FP	Yearlong resident in coastal and valley lowlands; rarely found away from agricultural areas. Inhabits herbaceous and open stages of most habitats mostly in cismontane CA. Substantial groves of dense, broad-leafed deciduous trees are used for nesting and roosting. Nest placed near top of dense oak, willow, or other tree stand located near open foraging area. Forages in undisturbed, open grasslands, meadows, farmlands, and emergent wetlands (CWHR 2013). Nesting sites are of concern to CDFW (2011).	Present	See text.
<i>Haliaeetus leucocephalus</i>	Bald eagle	D	E, FP	Occurs along coasts, rivers, and large, deep lakes and reservoirs in CA. Nests mostly in Butte, Lake, Lassen, Modoc, Plumas, Shasta, Siskiyou, and Trinity cos. More widespread as a winter migrant. Requires large bodies of water, or free flowing rivers with abundant fish, and adjacent snags or other perches. Nests in large, old-growth, or dominant live tree with open branchwork, especially ponderosa pine (CWHR 2013). Nesting and wintering sites are of concern to CDFW (2011).	Present	See text.
<i>Laterallus jamaicensis coturniculus</i>	California black rail	--	T, FP	Resident in saline, brackish, and fresh emergent wetlands in the Bay Area, Delta, coastal southern CA, the Salton Sea, and the lower Colorado River. Typically occurs in tidal emergent wetlands dominated by pickleweed, in brackish marshes supporting bulrushes in association with pickleweed (CWHR 2013). Populations have also been found in Yuba, Butte, and Nevada cos. An additional population was discovered in 2003 in Placer Co. The Placer birds are thought to be non-migratory based on observations made throughout the year (CDFW 2011). In freshwater habitats, black rails are restricted to breeding in marshes with stands of tule, cattail, bulrush, and sedge. These sites are very shallow (usually less than 3 cm) but require perennial water. A narrow range of conditions is required for occupancy and successful breeding. Water depth is an important parameter for successful nest sites as rising water levels can prevent nesting or flood nests and reduce access to foraging habitat. Too little water will lead to abandonment of the site until the water source is reestablished. In the foothills of the central Sierra Nevada, rails occur in marshes ranging from 0.5 ac to 25 ac in size, with 32% of occupied sites in wetlands less than 0.75 ac. (Technology Associates 2009)	Absent	There is no habitat for this species in the BSA. Wetlands in the BSA experience regular water fluctuations which are not suitable for CA black rail nesting habitat.

Scientific Name	Common Name	Federal Status ^a	State Status ^a	General Habitat Description	Habitat Present/Absent ^c	Rationale
<i>Riparia riparia</i>	Bank swallow	--	T	Found primarily in riparian and other lowland habitats in CA west of the deserts during the spring-fall period. In summer, restricted to riparian, lacustrine, and coastal areas with vertical banks, bluffs, and cliffs with fine textured sandy soils, into which in digs nesting holes. Approx. 75% of breeding population in CA occurs along banks of the Sacramento and Feather rivers in the northern Central Valley. Other colonies are known from the central coast from Monterey to San Mateo cos., and northeastern CA in Shasta, Siskiyou, Lassen, Plumas, and Modoc cos. Colonial breeder, with 10 to 1,500, typically 100-200, nesting pairs (CWHR 2013). Nesting sites are of concern to CDFW (2011).	Absent	Suitable nesting habitat does not occur in the BSA.
Mammals						
<i>Corynorhinus townsendii</i>	Townsend's big-eared bat	--	SSC	Found throughout CA in all but subalpine and alpine habitats, and may be found at any season throughout its range. Most abundant in mesic habitats. Requires caves, mines, tunnels, buildings, or other human-made structures for roosting. May use separate sites for night, day, hibernation, or maternity roosts. Hibernation sites are cold but not below freezing. Maternity roosts are warm. Gleans from brush or trees or feeds along habitat edges. Shows high site fidelity if undisturbed; extremely sensitive to disturbance of roosting sites (CWHR 2013).	Absent	There are no caves, mines, tunnels, or buildings suitable for roosting habitat for this species.
<i>Lasiurus blossevillii</i>	Western red bat	--	SSC	The western red bat is a tree bat associated with cottonwoods in riparian areas at elevations below 6,500 ft. They especially favor roosts where leaves form a dense canopy above and branches do not obstruct the bats' flyway below. Western red bats are also known to roost in orchards, especially in the Sacramento Valley. Western red bats typically feed along forest edges, in small clearings, or around street lights (BCI 2012). Day roosts typically in edge habitats adjacent to streams or open fields, orchard, and sometimes urban areas. Occasionally uses caves (WBWG 2005).	Absent	There are no cottonwood riparian areas or orchards in the BSA.

Scientific Name	Common Name	Federal Status ^a	State Status ^a	General Habitat Description	Habitat Present/Absent ^c	Rationale
<i>Martes pennanti (pacific)</i> DPS	Pacific fisher	C	SSC	Permanent resident of the Sierra Nevada, Cascades, Klamath Mountains, and the North Coast Range. Occurs above 3,200 ft in the Sierra Nevada and Cascades (Jameson and Peeters 2004). Occurs in coniferous or deciduous riparian habitats with intermediate to large trees and closed canopies. Dens in protected cavities, brush piles, logs, or under an upturned tree. Hollow logs, trees, and snags are especially important. Mostly nocturnal and crepuscular (CWHR 2013). Federal candidate status refers to the distinct population segment in WA, OR & CA (CDFW 2011).	Absent	The BSA is below the elevation range of this species.
Plants /CNPS ^b						
<i>Balsamorhiza macrolepis</i>	Big-scale balsamroot	--	--/ 1B.2	Perennial herb found in chaparral, cismontane woodland, and valley and foothill grassland, sometimes serpentinite soils, from 300 to 5,100 ft. Known from the Sierra Nevada foothills, central high Sierra Nevada, Sacramento Valley, and eastern San Francisco Bay Area (Baldwin et al. 2012). Blooms March through July (CNPS 2013a, Baldwin et al. 2012).	Present	See text.
<i>Calystegia stebbinsi</i>	Stebbins' morning-glory	E	E/ 1B.1	Perennial rhizomatous herb found in serpentine or gabbroic soils in chaparral openings and cismontane woodland from 607 to 3,576 ft. Known from fewer than 20 occurrences in El Dorado and Nevada cos. (CNPS 2013a). Blooms April through July (CNPS 2013a, Baldwin et al. 2012).	Absent	The BSA is outside the localized range of this species.
<i>Ceanothus roderickii</i>	Pine Hill ceanothus	E	R/ 1B.2	Perennial evergreen shrub found in serpentine or gabbroic soils in chaparral and cismontane woodland from 804 to 2,067 ft. Known from El Dorado Co. (CNPS 2013a). Blooms April through June (CNPS 2013a, Baldwin et al. 2012).	Absent	The BSA is outside the localized range of this species.
<i>Downingia pusilla</i>	Dwarf downingia	--	--/ 2.2	Annual herb found in mesic valley and foothill grassland, and vernal pools, from 3 to 1,460 ft. Known from the Outer North Coast Ranges, Inner North Coast Ranges, Sacramento Valley, north and central San Joaquin Valley, and northern San Francisco Bay Area. Blooms March through May (CNPS 2013a, Baldwin et al. 2012).	Present	See text.
<i>Fremontodendron decumbens</i>	Pine Hill flannelbush	E	R/ 1B.2	Perennial evergreen shrub found on rocky gabbroic and serpentine soil in chaparral and cismontane woodland from 1,394 to 2,493 ft. Known from fewer than 20 occurrences in El Dorado and Nevada cos. Uncertain about distribution or identity in Yuba Co. (CNPS 2013a). Blooms April through July (CNPS 2013a, Baldwin et al. 2012).	Absent	The BSA is outside the localized range of this species.

Scientific Name	Common Name	Federal Status ^a	State Status ^a	General Habitat Description	Habitat Present/Absent ^c	Rationale
<i>Galium californicum</i> ssp. <i>sierrae</i>	El Dorado bedstraw	E	R/ 1B.2	Perennial herb found on gabbroic soils in chaparral, cismontane woodland, and lower montane coniferous forest from 328 to 1,919 ft. Known from approximately ten occurrences in El Dorado Co. (CNPS 2013a). Blooms March through July (CNPS 2013a, Baldwin et al. 2012).	Absent	The BSA is outside the localized range of this species.
<i>Gratiola heterosepala</i>	Boggs Lake hedge-hyssop	--	E/ 1B.2	Annual herb found on clay soil in shallow water of vernal pools and lake margins from 30 to 7,790 ft. Known from the inner North Coast Ranges, Cascade Range, north and central Sierra Nevada foothills, Great Central Valley, and Modoc Plateau in California. Blooms April through September (CNPS 2013a, Baldwin et al. 2012).	Present	See text.
<i>Ivesia webberi</i>	Webber's ivesia	C	--/ 1B.1	Perennial herb found on sandy or gravelly soils in volcanic ash Great Basin scrub, lower montane coniferous forest, and pinyon and juniper woodland from 3,281 to 6,808 ft. Known from fewer than fifteen occurrences over its range. In CA, known only from Sierra and Dog Valleys in Lassen, Plumas and Sierra cos. (CNPS 2013a). Blooms May through July (CNPS 2013a, Baldwin et al. 2012).	Absent	The BSA is outside the elevation and geographic range of this species.
<i>Juncus leiospermus</i> var. <i>ahartii</i>	Ahart's dwarf rush	--	--/ 1B.2	Annual herb found in mesic valley and foothill grassland from 100 to 750 ft. Known from approximately 10 occurrences in Butte, Calaveras, Placer, Sacramento, Tehama, and Yuba cos. (CNPS 2013a). Blooms March through May (CNPS 2013a, Baldwin et al. 2012).	Present	See text.
<i>Legenere limosa</i>	Legenere	--	--/ 1B.1	Annual herb found in vernal pools from 3 to 2,887 ft. Known from Alameda, Lake, Monterey, Napa, Placer, Sacramento, Santa Clara, Shasta, San Joaquin, San Mateo, Solano, Sonoma, Tehama and Yuba cos. Presumed extirpated from Stanislaus Co. (CNPS 2013a). Blooms April through June (CNPS 2013a, Baldwin et al. 2012).	Absent	There are no vernal pools in the BSA.
<i>Navarretia myersii</i> ssp. <i>myersii</i>	Pincushion navarretia	--	--/ 1B.1	Annual herb found in vernal pools that are often acidic from 66 to 1,083 ft. Known from fewer than 20 occurrences in Amador, Calaveras, Merced, Placer and Sacramento cos. (CNPS 2013a). Blooms April through May (CNPS 2013a, Baldwin et al. 2012).	Absent	There are no vernal pools in the BSA.
<i>Orcuttia viscida</i>	Sacramento Orcutt grass	E, CH	E / 1B.1	Annual herb found in vernal pools from 98 to 328 ft. Known from approximately 10 occurrences in Sacramento Co. (CNPS 2013a). Blooms April through July (CNPS 2013a, Baldwin et al. 2012).	Absent	There are no vernal pools in the BSA. The BSA is outside the known geographic range of this species. The BSA is not located with critical habitat for this species (USFWS 2013b).

Scientific Name	Common Name	Federal Status ^a	State Status ^a	General Habitat Description	Habitat Present/Absent ^c	Rationale
<i>Packera</i> (= <i>Senecio</i>) <i>layneae</i>	Layne's ragwort (=butterweed)	T	R/ 1B.2	Perennial herb found on rocky serpentinite or rocky gabbroic soil in chaparral and cismontane woodland from 656 to 3,280 ft. Known from Butte, El Dorado, Placer, Tuolumne and Yuba cos. (CNPS 2013a). Blooms April through August (CNPS 2013a, Baldwin et al. 2012).	Present	See text.
<i>Pseudobahia</i> <i>bahiifolia</i>	Hartweg's golden sunburst	E	E / 1B.1	Annual herb found on clay, often acidic, soil in cismontane woodland and valley and foothill grassland from 49 to 492 ft. Known from El Dorado, Fresno, Madera, Merced, Stanislaus, and Tuolumne cos. Presumed extirpated from Yuba Co. (CNPS 2013a). Blooms March through May (CNPS 2013a, Baldwin et al. 2012).	Absent	There are no clay soils in the BSA.
<i>Rorippa</i> <i>subumbellata</i>	Tahoe yellow-cress	C	E/ 1B.1	Perennial rhizomatous herb found on decomposed granitic beaches in lower montane coniferous forest and meadows and seeps from 6,217 to 6,234 ft. Known in CA only from Lake Tahoe area in El Dorado and Placer cos. Presumed extirpated in Nevada Co (CNPS 2013a). Blooms May through September (CNPS 2013a, Baldwin et al. 2012).	Absent	The BSA is below the elevation range of this species. The BSA is outside the localized range of this species.
Natural Communities						
Northern Hardpan Vernal Pool		--	--/ --	A low emergent wetland community dominated by annual herbs and grasses on very acidic soils with an iron-silicon cemented hardpan. Evaporation (not runoff) dries pools in spring creating concentric bands of vegetation. Occurs primarily on old alluvial terraces on the east side of the Great Valley from Tulare or Fresno County north to Shasta County (Holland 1986).	Absent	This community type does not occur in the BSA.

^a **Status:** Candidate (C); Candidate Endangered (CE); Candidate Threatened (CT); Delisted (D); Endangered (E); Critical Habitat (CH); Fully Protected (FP); Proposed (P); Proposed Critical Habitat (PCH); Proposed Endangered (PE); Proposed Threatened (PT); Species of Special Concern (SSC); Species of Local Concern (SLC); State Rare (R); Threatened (T).

^b **CNPS List.** 1A = Presumed Extinct in CA; 1B = Rare or Endangered in CA and elsewhere; 2 = R/E in CA and more common elsewhere. **CNPS List Decimal Extensions:** .1 = Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat); .2 = Fairly endangered in California (20-80% occurrences threatened); .3 = Not very endangered in California (<20% of occurrences threatened or no current threats known).

^c **Absent** = No habitat present and no further work needed. **Present** = habitat is, or may be present.

Chapter 4. Results: Biological Resources, Discussion of Impacts and Mitigation

Species of concern identified in Table 2 as having potential habitat present in the BSA are further discussed in this chapter. Wetlands and waters potentially subject to CWA jurisdiction, birds listed under the Federal Migratory Bird Treaty Act, birds listed under CA Fish and Game Code 3503.5, and impacts to sensitive natural communities are also discussed. Table 3 estimates the acreage of each natural community that will be affected by Project.

Table 3. Affected Natural Communities

Natural Community	Existing Acreage in the BSA	Acreage Affected by Seasonal Inundation
Blue Oak Woodland	133.41	58.49
Blue Oak Woodland - Recreational Use	57.75	24.53
Annual Brome Grassland	49.63	22.18
Interior Live Oak Woodland	30.24	13.10
Grey Pine Woodland	5.20	1.95
Dam and Spillway	3.53	1.51
Dairy Farm Mine	1.38	0.61
Uplands Subtotal:	281.14	122.37
Camp Far West Reservoir	1,792	-- ¹
Bear River	1.05	0.65
Rock Creek	0.30	0.24
Intermittent Channels	0.67	0.28
Ephemeral Channels	0.16	0.09
Seasonal Pond	0.10	0.10
Waters Subtotal:	1,794.28	1.36
Seasonal Wetlands	0.08	0.03
Seasonal Wetland Swales	0.22	0.12
Seeps	0.46	0.13
Emergent Wetlands	1.02	0.68
Irrigated Wetlands	1.48	0.92
Scrub-Shrub Wetland	0.24	0.10
Wetlands Subtotal:	3.50	1.98
Total:	2,078.92	125.71

¹ The Reservoir will increase in size by approximately the acreage of other areas affected, 125.71 acres.

The upland communities in the BSA are not considered sensitive natural communities by CDFW (2010). The acreage of these communities that will be below the new OHWM of Camp Far West Reservoir is negligible relative to the extent of these communities in the vicinity of the Reservoir. The Reservoir itself will increase in extent as a result of the Project. Project effects on channels and wetlands are discussed below.

4.1. Natural Communities of Special Concern

4.1.1. Discussion of Bear River and Rock Creek

4.1.1.1. SURVEY RESULTS

Bear River and Rock Creek are both perennial tributaries to the Reservoir. Riparian communities along both waters are limited by the extent of bedrock at the surface. Riparian vegetation is mostly absent along the Bear River due to the lack of soil and highly scoured bedrock (Photo 6). Vegetation is also limited by bedrock at Rock Creek, but there are some areas of sediment and some riparian vegetation occurs in a band generally a few feet wide (Photo 7). Fish from the Reservoir have access to both waters under existing conditions.

4.1.1.2. AVOIDANCE AND MINIMIZATION EFFORTS

No avoidance and minimization efforts for the Bear River or Rock Creek are proposed.

4.1.1.3. PROJECT IMPACTS

The Project will result in seasonally higher water along approximately 470 feet (0.646 acre) of the Bear River and along 295 feet (0.243 acre) of Rock Creek. From approximately January through May, the affected areas of Bear River and Rock Creek will have up to five feet more inundation. The depth of inundation will diminish farther upstream in the affected area of each watercourse. During the dry season, conditions will be similar to existing dry season conditions. Microtopography at the mouth of Rock Creek is diverse and complex with elevation changes of several feet. Riparian vegetation is expected to shift and reestablish in the area of the mouth of Rock Creek. Under existing conditions California button willow (*Cephalanthus occidentalis*) grows just below the mouth of Rock Creek, below the OHWM of the Reservoir. Over the course of years, the California button willow is expected to reestablish uphill along Rock Creek.

4.1.1.4. COMPENSATORY MITIGATION

No compensatory mitigation for the Bear River or Rock Creek is proposed.

4.1.1.5. CUMULATIVE EFFECTS

No cumulative effects were identified.

4.1.2. Discussion of Ephemeral Channels

4.1.2.1. SURVEY RESULTS

The ephemeral channels flow sporadically in response to precipitation during the wet season and too briefly to support a riparian community. Most have narrow, 1 to 2 foot wide beds of cobble or scoured soil.

4.1.2.1. AVOIDANCE AND MINIMIZATION EFFORTS

No avoidance and minimization efforts for ephemeral channels are proposed.

4.1.2.2. PROJECT IMPACTS

Approximately 0.09 acre of ephemeral channels will be inundated with up to 5 feet of water from about January through May. Substantial wet season inundation will cover the channels during most of the season when they normally flow. Some woody vegetation that occurs sporadically in small draws below the existing Reservoir OHWM, such as California button willow and willow, may establish in the former ephemeral channels. In general, the ephemeral channels are expected to convert to habitat similar to the conditions that currently exist in the near-shore area below the Reservoir OHWM (photo 9).

4.1.2.3. COMPENSATORY MITIGATION

No compensatory mitigation for the ephemeral channels is proposed.

4.1.2.4. CUMULATIVE EFFECTS

No cumulative effects were identified.

4.1.3. Discussion of Intermittent Channels

4.1.3.1. SURVEY RESULTS

The hydrology for the intermittent channels includes dry season hydrology inputs, from either natural or artificial sources. About 11 of the 24 intermittent channels likely receive irrigation runoff. Some of the intermittent channels have riparian vegetation, but the riparian communities are mostly patchy or not well developed.

4.1.3.2. AVOIDANCE AND MINIMIZATION EFFORTS

No avoidance and minimization efforts for the intermittent channels are proposed.

4.1.3.3. PROJECT IMPACTS

Approximately 0.28 acre of intermittent channel will be inundated with up to 5 feet of water from about January through May. Where present, much of the existing riparian vegetation along the intermittent channels is expected to withstand the wet season inundation that will result from the Project. Upland vegetation next to the channels will not persist and is expected to convert to habitat similar to the conditions that currently exist just below OHWM along some of the intermittent channels (Photo 10).

4.1.3.4. COMPENSATORY MITIGATION

No compensatory mitigation for the intermittent channels is proposed.

4.1.3.5. CUMULATIVE EFFECTS

No cumulative effects were identified.

4.1.4. Discussion of Seasonal Wetlands and Seasonal Wetland Swales

4.1.4.1. SURVEY RESULTS

The hydrology for seasonal wetlands and seasonal wetland swales is primarily surface runoff from wet season storms. There is little or no dry season wetland hydrology. As a result, these features tend to be dominated by annual vegetation or low perennial vegetation that can survive the dry season by dying back to underground storage structures.

4.1.4.2. AVOIDANCE AND MINIMIZATION EFFORTS

No avoidance and minimization efforts for seasonal wetlands and swales are proposed.

4.1.4.3. PROJECT IMPACTS

Approximately 0.03 acre of seasonal wetland and 0.12 acre of seasonal wetland swale will be inundated with up to 5 feet of water from about January through May. Substantial wet season inundation is expected to shift the vegetation communities present in the wetlands. Cover of annual vegetation is expected decrease. Existing herbaceous perennial wetland vegetation may persist with the seasonal inundation. Some woody vegetation that occurs sporadically below the existing Reservoir OHWM, such as California button willow and willow, may establish in the former seasonal wetland areas. In general, the seasonal wetlands and swales are expected to convert to habitat similar to the conditions that currently exist in the near-shore area below the Reservoir OHWM (photo 11).

4.1.4.4. COMPENSATORY MITIGATION

No compensatory mitigation for the seasonal wetlands and swales is proposed.

4.1.4.5. CUMULATIVE EFFECTS

No cumulative effects were identified.

4.1.5. Discussion of Seeps, Emergent Wetlands, Scrub-Shrub Wetland, and Irrigated Wetlands

4.1.5.1. SURVEY RESULTS

The hydrology for the seeps, emergent wetlands, scrub-shrub wetland, and irrigated wetlands includes dry season hydrology inputs, from either natural or artificial sources. Surface runoff from wet season storms may be a supplemental source of hydrology, depending on landscape position. Vegetation in these wetlands is dominated by perennial hydrophytes. Most of the dominant plants in the seeps and emergent wetlands consist of species capable of withstanding periods of dry conditions, suggesting that these wetlands do typically dry by late-summer or fall. The irrigated wetlands may experience more dry-season hydrology, but vegetation is mostly kept low by grazing.

4.1.5.2. AVOIDANCE AND MINIMIZATION EFFORTS

No avoidance and minimization efforts for the seeps, emergent wetlands, scrub-shrub wetland, and irrigated wetlands are proposed.

4.1.5.3. PROJECT IMPACTS

Approximately 0.13 acre of seep, 0.68 acre of emergent wetland, 0.10 acre of scrub-shrub wetland, and 0.92 acre of irrigated wetland will be inundated with up to 5 feet of water from about January through May. The vegetation communities present in these wetlands may change less than the seasonal wetlands because these wetlands are influenced primarily by dry season hydrological inputs, and the existing perennial hydrophytic vegetation is more likely to withstand the wet season inundation that will result from the Project. In general, although the seeps, emergent wetlands, and irrigated wetlands will be inundated for much of the wet season, the dry season conditions in these wetlands is expected to be similar to current conditions.

4.1.5.4. COMPENSATORY MITIGATION

No compensatory mitigation for the seeps, emergent wetlands, scrub-shrub wetland, and irrigated wetlands is proposed.

4.1.5.5. CUMULATIVE EFFECTS

No cumulative effects were identified.

4.2. Special-Status Invertebrates

4.2.1. Discussion of Valley Elderberry Longhorn Beetle (VELB; *Desmocerus californicus dimorphus*)

VELB was listed as a federal threatened species on 8 August 1980, with critical habitat for this species designated at the time of listing. In a 5 Year Review for VELB, USFWS recommended VELB be delisted (USFWS 2006). USFWS received a petition to delist VELB in September 2010 based on the analysis and recommendations contained in the most recent 5-year review for the species. USFWS determined that the petition presented substantial information indicating that delisting of VELB may be warranted, and initiated a status review of the species in August 2011. USFWS completed a 12-month finding on 2 October 2012 which proposed removal of VELB from the list of federal endangered and threatened wildlife and remove designation of critical habitat (USFWS 2012). A 60-day comment period was subsequently opened and ended 3 December 2012. The comment period was reopened for 30 days on 23 January 2013, with a closing on 22 February 2013 (USFWS 2013a). A ruling for delisting has not been finalized.

VELB is a two centimeter long beetle that is found only in association with its host plant elderberry (*Sambucus mexicana*). Adults emerge from mid-March through June. Adults feed on foliage, perhaps also the flowers, and mate during this period. The females then lay eggs on living elderberry plants. The first larval instar bores through the center of the elderberry stem and develops for one to two years while feeding on the elderberry pith. Prior to pupation, the larva chews a hole through the bark and plugs it with wood shavings. The larva crawls back into its pupal chamber, metamorphoses, and emerges as an adult (USFWS 2006).

The elderberry host plant for VELB occurs in a variety of habitats, most commonly in riparian forests and margins and adjacent grassy savannas. Elderberry shrubs are also known to occur in oak woodland and mixed chaparral-foothill woodland (USFWS 1991). At the time of listing, loss of riparian habitat was identified as a major threat to VELB (USFWS 2006). VELB is found in population clusters that are unevenly distributed across available host plants. Host plants are typically large and mature plants, though how the beetle selects a particular host is unknown. Exit holes are circular or slightly oval, and between 7 and 10 mm in diameter (USFWS 1991).

Range: Endemic to the Central Valley. When VELB was listed in 1980, it was known from less than 10 locations on the American River, Putah Creek, and the Merced River in the Central Valley. Currently, VELB is known throughout the Central Valley from southern Shasta County south to Fresno County, and from the east side of the Coast Range to the foothills of the Sierra Nevada. There are records for VELB in Kern County, but they have not been verified (USFWS 2006).

Critical Habitat: Critical habitat for VELB occurs in Sacramento County (USFWS 1980). The BSA is not in critical habitat for VELB. Although not officially designated critical habitat, the American River Parkway just west of Nimbus Dam, and Putah Creek at Solano Lake Park are considered essential habitat (USFWS 1980). The BSA is not in essential habitat for VELB.

Known Records: The closest CNDDDB record for VELB is located approximately 6.6 miles southwest of the Reservoir at a Wildlands mitigation bank. Habitat at the site consists of elderberry woodland, elderberry savannah, and riparian. Exit holes were observed at several locations in July 1999. Four newly-emerged beetles were observed in April 2003.

4.2.1.1. SURVEY RESULTS

Two elderberry shrubs were observed in the BSA (Table 4). No exit holes were observed. Both shrubs were in upland communities near the margin of the Reservoir. The USFWS (1999a) Conservation Guidelines discuss “riparian” as a vegetation community, not merely a landscape setting near water, because riparian forests with an elderberry shrub component are important for VELB ecology. Both elderberry shrubs in the BSA are considered not riparian because historically they would have been far above the Bear River, and currently they do not occur within a riparian vegetation community. The USFWS (1999a) assumes all elderberry shrubs in the Sierra Nevada below 3,000 ft elevation are occupied by VELB.

Table 4. Elderberry Shrubs

Elderberry Shrub	Stems 1-3 inches in diameter	Stems 3-5 inches in diameter	Stems > 5 inches in diameter	Located in Riparian Habitat?	Exit Holes Observed?
EB 1	0	0	1	No	No
EB 2	0	1	0	No	No
Total	0	1	1	--	--

4.2.1.2. AVOIDANCE AND MINIMIZATION EFFORTS

EB 2 is at approximately 310 feet elevation (Photo 13). The Project will result in a maximum pool elevation of 305 feet. Elderberries are a common component of riparian forests near seasonally high water. Most roots are in the upper foot of soil and the new pool elevation will be about 5 feet below EB 2. The Project will not affect EB 2.

4.2.1.3. PROJECT IMPACTS

EB 1 is at approximately 305 feet elevation (Photo 12). The soil around EB 1 will be seasonally inundated by the Project, and could lead to the decline or death of EB 1. Although elderberries commonly occur in riparian forests that may experience brief and occasional flood events, elderberry shrubs generally are not found in locations where they are annually flooded on an extended basis, especially at a time of year at which the shrub will be breaking bud and growing leaves.

EB 1 is not in a riparian forest or stand of multiple elderberry shrubs where populations of VELB are more likely to occur. No exit holes were observed in EB 1. The nearest known record is about 6.6 miles away and VELB are poor dispersers. There is no evidence that EB 1 is occupied by VELB, other than that the shrub is in the Sierra Nevada foothills, which together with the Central Valley and parts of the Coast Ranges constitute the range of the subspecies. The Project may affect, but is not likely to adversely affect VELB.

4.2.1.4. COMPENSATORY MITIGATION

The proposed project will require at least informal consultation with USFWS for VELB. The Project could follow the “Conservation Guidelines for the Valley Elderberry Longhorn Beetle” (USFWS 1999a). The 1999 Guidelines would require transplantation of affected shrubs to suitable habitat elsewhere, and the planting of additional seedlings of both elderberry and other native riparian trees and shrubs. Based on the 1999 Guidelines, the Project would need to plant at least three elderberry seedlings and three associated native riparian plants. If, at the discretion of USFWS, the affected shrub is not a suitable transplant candidate, the numbers of additional elderberry seedlings planted will be increased.

Alternatively, SSWD could mitigate Project impacts to VELB through the purchase of VELB mitigation credits as approved by the USFWS. The amount of mitigation credits is based on the same parameters in the 1999 Guidelines as for elderberry shrub transplantation.

4.2.1.5. CUMULATIVE EFFECTS

No cumulative effects were identified. The Project will not cause a change in land use at or around the Reservoir.

4.3. Special-Status Amphibians

4.3.1. Discussion of Foothill Yellow-Legged Frog (FYLF; *Rana boylei*)

FYLF is a CDFW species of special concern (CDFW 2011). This species occurs in or near perennial rocky streams in a variety of habitats, including valley-foothill hardwood, valley-foothill hardwood-conifer, valley-foothill riparian, ponderosa pine, mixed conifer, coastal scrub, mixed chaparral, and wet meadows (CWHR 2013). FYLF most often use streams and rivers near riffles where there are rocks (Stebbins 2003). FYLF require permanent streams in which to reside (Verner and Boss 1980). In California, breeding and egg laying usually occurs at the end of spring flooding and may commence any time from mid-March to May, depending on local water conditions. The breeding season generally lasts two weeks. Egg clusters are attached to gravel or rocks in moving water near stream margins. Eggs hatch in about five days. Tadpoles require water for at least 3 or 4 months while completing their aquatic development (CWHR 2013).

Nonnative bullfrogs have been implicated in FYLF decline in the Sierra. Nonnative centrarchid fishes (sunfish) readily eat *Rana* eggs, and, where introduced into foothill streams, may also contribute to local FYLF extirpation (CWHR 2013).

Range: FYLF occur in the Coast Ranges from the Oregon border south to the Transverse Mountains in Los Angeles County, in most of northern California west of the Cascade crest, and along the western flank of the Sierra south to Kern County. An isolated population has been reported in San Joaquin County on the floor of the Central Valley. Isolated populations are also known from the mountains of Los Angeles County (CWHR 2013). FYLF have not been observed south of the Transverse Ranges since 1970 (Jennings and Hayes 1994). Its elevation range extends from near sea level to 6,370 ft in the Sierra (CWHR 2013).

Known Records: The closest CNDDDB record for FYLF is located approximately 14.6 mi east of the BSA at Dog Bar Bridge along the Bear River. Habitat consists of a backwater pool, edgewater, glide and run. Substrates include cobble and boulder. Two juveniles were observed in September 2007 and two juveniles were observed in June 2008.

4.3.1.1. SURVEY RESULTS

FYLF were not observed during the biological field surveys. The BSA occurs at the western edge of the range of FYLF (CWHR 2013). Rock Creek and the Bear River in the BSA provide potential habitat for FYLF. The Reservoir does not provide the necessary moving water or cobble substrate for FYLF breeding habitat.

4.3.1.2. AVOIDANCE AND MINIMIZATION EFFORTS

The Project will not impact FYLF, therefore no avoidance and minimization efforts are necessary. See Project Impacts discussion below.

4.3.1.1. PROJECT IMPACTS

The Project will raise water levels up to 5 feet in FYLF habitat from approximately January to April/May. The CDFW conducted a fish survey in April 2012 using electroshock and, among other species, found several sunfish species in the Reservoir (Mead and Hunt 2012). Under existing conditions, the sunfish species have access to FYLF habitat in the BSA when the Reservoir is full or near-full. There are no barriers to fish passage in the BSA. The Project's seasonally increased water elevation will occur during the same timeframe as the current high water and will not increase the area accessible to sunfish.

The maximum water levels in the Reservoir will (and currently do) occur in winter and spring. The higher water levels will overlap with the start of the FYLF breeding season. Approximately 470 linear feet of the Bear River and 295 linear feet of Rock Creek will be seasonally inundated during the FYLF breeding season during the project, hindering or delaying the ability of FYLF to lay eggs in those areas. Both watercourses have similar potential FYLF habitat for miles upstream of the BSA. If FYLF are present, they may be able to still lay eggs in the affected area as the Reservoir level recedes. The project will not have a substantial adverse effect on FYLF.

4.3.1.2. COMPENSATORY MITIGATION

No compensatory mitigation is proposed.

4.3.1.3. CUMULATIVE EFFECTS

No adverse cumulative effects were identified. This Project will not cause a change in land use at or around the Reservoir.

4.3.2. Discussion of California Red-Legged Frog (CRLF; *Rana draytonii*)

The CRLF was listed as a federal-threatened species on 23 May 1996 (FR 61:25813-25833). The CRLF inhabits quiet pools of streams, marshes, and occasionally ponds (CWHR 2013). CRLF habitat is characterized by dense, shrubby riparian vegetation associated with deep (>2 ft), still, or slow-moving water (Jennings and Hayes 1994). Although CRLF can breed in temporary or permanent streams or ponds, populations probably cannot be maintained in temporary water bodies unless the surrounding area contains suitable aestivation habitat as well as migration corridors linking the breeding habitat to the aestivation habitat. CRLF have

been observed using migration corridors that consist of undisturbed habitats, such as grasslands and riparian areas, as well as relatively disturbed habitats, such as closely grazed fields, plowed agricultural land, areas with maturing crops, and pastureland. Aestivation habitat must provide sufficient moisture for survival during the nonbreeding season, sufficient cover to moderate temperature extremes, and protection from predators (Fellers and Kleeman 2007). Ephemeral channels, which flow only in response to storm events and contain surface water for a few hours or days continuously, are not breeding or aestivation habitat.

Breeding occurs from January to July (peak in February) in the south, and March to July in the north (CWHR 2013), though is likely influenced by local precipitation and ambient temperature. CRLF typically breed after significant rainfall and after the cold periods of winter have passed. Female CRLF deposit egg masses on emergent vegetation so that the masses float on the surface of the water. Embryos hatch in 1-4 weeks depending on water temperature. The tadpoles metamorphose within 3-5 months, usually from July through September (Cook 1997).

During summer, CRLF often disperse from their breeding habitat to forage and seek aestivation habitat if water is not available. Aestivation habitat is essential for the survival of CRLF within a watershed (USFWS 1996). During dry periods, CRLF are rarely encountered far from water. Summer habitat could include spaces under boulders or rocks and organic debris, such as downed trees or logs; or industrial debris, such as drains and watering troughs (USFWS 2002). Most CRLF do not disperse farther than the nearest suitable non-breeding habitat. In rare instances, CRLF have been documented to travel up to a mile from their breeding areas (Fellers and Kleeman 2007).

Introduced aquatic vertebrates and invertebrates including bullfrogs, crayfish, and various species of fishes, especially bass, catfish (*Ictalurus* spp.), sunfish (*Lepomis* spp.), and mosquitofish (*Gambusia affinis*) are predators on one or more life stages of CRLF and have been a significant factor in the decline of CRLF (USFWS 2002).

Range: CRLF are endemic to California and Baja California, Mexico (USFWS 2002). They occur along the Coast Ranges from Mendocino County south and in portions of the Sierra Nevada and Cascade ranges (CWHR 2013). Its elevation range extends from near sea level to approximately 5,200 ft, though nearly all sightings have occurred below 3,500 ft (USFWS 2002). CRLF historically occurred through Pacific slope drainages from the vicinity of Redding (Shasta County) inland and to Point Reyes (Marin County) southward to the Santo Domingo River drainage in Baja California, Mexico (Jennings and Hayes 1994). CRLF is

now known only from isolated localities in the Sierra Nevada, northern Coast, and northern Transverse Ranges (USFWS 2002).

Critical Habitat: Critical habitat was designated for CRLF in April 2006 (USFWS 2006) and revised in March 2010 (USFWS 2010). The closest critical habitat for CRLF is located in Nevada County, northeast of Nevada City, approximately 23 miles northeast of the BSA (USFWS 2010). The critical habitat designation identifies the physical and/or biological features essential to the conservation of CRLF that may require special management consideration or protection. The features are known as the primary constituent elements, and are as follows:

- 1) aquatic breeding habitat consisting of standing bodies of fresh water (with salinities less than 4.5 ppt), including natural and manmade ponds, slow-moving streams or pools within streams, and other ephemeral or permanent water bodies that typically become inundated during winter rains and hold water for a minimum of 20 weeks in all but the driest of years;
- 2) aquatic non-breeding habitat that includes freshwater pond and stream habitats, as described above, that may not hold water long enough for the species to complete its aquatic life cycle but which provide for shelter, foraging, predator avoidance and aquatic dispersal of juvenile and adult CRLF;
- 3) upland habitat adjacent to or surrounding breeding and non-breeding aquatic and riparian habitat up to a distance of one mile in most cases (i.e., depending on surrounding landscape and dispersal barriers) including various vegetation types such as grassland, woodland, forest, wetland, or riparian areas that provide shelter, forage, and predator avoidance for the CRLF. Upland features are also essential in that they are needed to maintain the hydrologic, geographic, topographic, ecological, and edaphic features that support and surround the aquatic, wetland, riparian habitat; and
- 4) dispersal habitat that includes accessible upland or riparian habitat within and between occupied or previously occupied sites that are located within one mile of each other, and that support movement between such sites (USFWS 2010).

Recovery Plan: USFWS prepared a Recovery Plan for CRLF to protect existing populations within 8 recovery units throughout California. The BSA is in two recovery units: CRLF Recovery Unit 1, which is defined as Sierra Nevada Foothills and Central Valley and CRLF Recovery Unit 2, which is defined as the North Coast Range Foothills and Western Sacramento River Valley. Within recovery units are core areas representing 35 focused areas

that will allow for long-term viability and reestablishment of CRLF populations. The BSA is in not located in a core area (USFWS 2002).

Known Records: The closest CNDDDB record for CRLF occurs on the Georgetown Quad. Two CRLF records occur on this quad. The locations are considered sensitive information by CNDDDB and the exact locations are suppressed. The center of the Georgetown quad is located approximately 25.4 miles east-southeast of the BSA. The records are from 2009 and habitat at both sites consists of a series of small pools/ wet areas. The stream channel is occasionally scoured.

4.3.2.1. SURVEY RESULTS

No CRLF were observed during the biological fieldwork. The USFWS issued a *Revised Guidance on Site Assessments and Field Surveys for the California Red-legged Frog* (Guidance) in August 2005. The Guidance provides information to assess the likelihood of CRLF presence in the vicinity of a project site. The Guidance recommends that the following questions be answered when assessing habitat for CRLF in the vicinity of a project site:

1. Is the project site within the current or historic range of CRLF?

The BSA is located in the historic range of CRLF as shown on Figure 3 in the “Recovery Plan for the California Red-legged Frog” (USFWS 2002).

Only the eastern edge of the BSA at Rock Creek and the Bear River is located in the current range of CRLF as mapped by CWHR (2013).

CRLF appears on the USFWS list that identifies federal-listed species that could potentially occur in or could be affected by projects on the Camp Far West quad and in Nevada, Placer, and Yuba counties.

The BSA is located within two recovery units: CRLF Recovery Unit 1, which is defined as Sierra Nevada Foothills and Central Valley and CRLF Recovery Unit 2, which is defined as the North Coast Range Foothills and Western Sacramento River Valley. The BSA is in not located in a core area (USFWS 2002).

There are three records for CRLF in central Placer County and one record in Yuba County on the CRLF distribution map in *Amphibian and Reptile Species of Special Concern in California*. The mapped records in Placer County are labeled as “extinct based on verified museum record” and the mapped record in Yuba County is labeled as “extinct based on verified sighting” (Jennings and Hayes 1994).

There are no CNDDDB records for CRLF on the Camp Far West or eight adjacent quads.

The Project site does not occur within the CRLF designated critical habitat. The closest critical habitat for CRLF is located approximately 23 miles northeast of the BSA (USFWS 2010).

2. Are there known records of CRLF at the site or within a one mile radius of the site?

There are no known occurrences of CRLF in the BSA.

No CNDDDB records for CRLF occur within one mile of the BSA. The closest CNDDDB record occurs approximately 25.4 miles east-southeast of the BSA. Information about the closest CNDDDB record is described in Section 4.3.2 above.

The California Academy of Sciences, Department of Herpetology, has no collections of CRLF from Placer, Nevada, or Yuba counties (California Academy of Sciences 2013).

The University of California, Berkeley Museum of Vertebrate Zoology has no collections of CRLF from Nevada or Yuba counties and has collections of CRLF from three locations in Placer County. Three specimens were collected from a site 0.5 mi northeast of Dutch Flat in June and July 1939; one specimen was collected from Auburn in April 1956; and one specimen was collected from Michigan Bluff in August 1916 (Museum of Vertebrate Zoology 2013).

3. What are the habitats within the project site and within one mile of the project boundary?

Upland communities in the BSA are blue oak woodland, blue oak woodland with recreational use, interior live oak woodland, gray pine woodland, and annual brome grassland. Aquatic communities in the BSA are the Reservoir, Rock Creek, Bear River, intermittent and ephemeral channels, and wetlands. The Reservoir does not provide breeding habitat for CRLF due to a lack of emergent vegetation and CRLF are not known from large reservoirs or lakes. The Bear River does not provide breeding habitat for CRLF due to the bedrock bed and banks, resulting lack of emergent vegetation, and the swiftly flowing water. The intermittent and ephemeral channels, seasonal pond, and wetlands do not provide breeding habitat due to a lack of sufficient water depth and/or duration. Pools in Rock Creek in the BSA provide potential breeding habitat for CRLF.

Upland areas within one mile of the BSA primarily consist of blue and interior live oak woodland with large parcel residences and cattle ranching. Annual brome grassland occurs northwest of the Reservoir with large parcel residences.

Aerial images from various dates were examined in Google Earth and the USFWS online National Wetlands Inventory (NWI) map was examined to determine aquatic habitats within one mile of the BSA. The NWI identifies eight ponds, five drainages, and two marshes within one mile of the PSA. Numerous ponds are visible within one mile of the BSA on Google Earth images. The majority of the ponds are impoundments along ephemeral and intermittent drainages, some with additional irrigation inputs. Ponds identified on the NWI map and aerial photos within one mile of the BSA could provide potential breeding habitat for CRLF.

4.3.2.2. AVOIDANCE AND MINIMIZATION EFFORTS

The Project will not impact CRLF, therefore no avoidance and minimization efforts are necessary. See Project Impacts discussion below.

4.3.2.3. PROJECT IMPACTS

The Project will not increase the access of nonnative fish to new areas. The seasonally higher water levels resulting from the Project are unlikely to substantially alter potential CRLF breeding conditions. Emergent vegetation will continue to grow, and can be expected to expand marginally outward from Rock Creek. Seasonally deeper pools in Rock Creek created as a result of the Project will not decrease potentially available CRLF breeding habitat. Emergent vegetation used for egg attachment, which becomes submerged by the increased water levels, is expected to regrow on the bank, just upslope of where it currently exists. The Project will not affect dispersal opportunities for CRLF. The Project may affect, but is not likely to adversely affect CRLF.

4.3.2.4. COMPENSATORY MITIGATION

No compensatory mitigation is proposed.

4.3.2.5. CUMULATIVE EFFECTS

No adverse cumulative effects were identified. This Project will not cause a change in land use at or around the Reservoir.

4.4. Special-Status Reptiles

4.4.1. Discussion of Western Pond Turtle (*Emys marmorata*)

Western pond turtle (WPT) is a California species of special concern (CDFW 2011). WPT is associated with permanent or nearly permanent water in a wide variety of habitat types, normally in ponds, lakes, streams, irrigation ditches, or permanent pools along intermittent streams. WPT require basking sites such as partially submerged logs, rocks, mats of floating vegetation, or open mud banks (CWHR 2013). They are omnivorous generalists and opportunistic predators that prey upon small insects, aquatic invertebrates, fish, frogs, snakes, and small mammals. They also eat aquatic plant material and carrion (Stebbins 2003).

Two distinct habitats may be used for oviposition. Along large slow-moving streams, eggs are deposited in nests constructed in sandy banks. Along foothill streams, females may climb hillsides, sometimes traveling up to 325 ft to find a suitable nest site. Nests have been observed in many soil types from sandy to very hard. Soil must usually be at least 4 inches deep for nesting. Nests must have a relatively high internal humidity for eggs to develop and hatch properly. Generally, 3 to 11 eggs are laid from March to August depending on local conditions and are incubated for approximately 73 to 80 days (CWHR 2013).

Range: WPT occur throughout California west of the Sierra-Cascade crest. They are absent from desert regions, except the Mojave Desert along the Mojave River and its tributaries. Elevation range extends from near sea level to 4,690 feet (CWHR 2013).

Known Records: The two closest CNDDDB records for WPT are approximately 2.8 miles north of the BSA along Dry Creek. Habitat at this location consists of the area at the bottom of a gentle rifle and the top of a glide section of creek with a gravel bottom. One radio-tagged turtle was captured and one untagged turtle was observed in March 2008. Signals of other tagged turtles were also detected in the area, but were not seen. A third CNDDDB record of WPT occurs on the Gold Hill Quad west of the BSA. The location is considered sensitive information by CNDDDB and the exact location is suppressed. The center of the Gold Hill Quad is located approximately 7.6 mi southeast of the BSA. The record is from 2010 and habitat consists of blue oak woodland with a network of ponds and seasonal creeks.

4.4.1.1. SURVEY RESULTS

No WPT were observed during fieldwork, but they could occur in the BSA. The Reservoir, the Bear River, and Rock Creek are perennial water bodies that provide potential habitat for WPT.

4.4.1.2. AVOIDANCE AND MINIMIZATION EFFORTS

No avoidance and minimization efforts for WPT are proposed.

4.4.1.3. PROJECT IMPACTS

The Project will result in seasonally higher water levels in the Reservoir, up to a maximum pool elevation of 305 feet instead of the current 300 feet. Under current conditions the water level in the Reservoir fluctuates widely on a seasonal basis. The Project will not impact WPT.

4.4.1.4. COMPENSATORY MITIGATION

No compensatory mitigation is proposed.

4.4.1.5. CUMULATIVE EFFECTS

No cumulative effects were identified. This Project will not cause a change in land use at or around the Reservoir.

4.4.1. Discussion of Coast Horned Lizard (*Phrynosoma blainvillii*)

Coast horned lizard is a California species of special concern (CDFW 2011). They are uncommon to common in valley-foothill hardwood, conifer, riparian, pine-cypress, juniper, and annual grassland habitats. Within these habitats, they especially use sandy areas, washes, floodplains, and wind-blown deposits. Coast horned lizards forage on the ground in open areas, usually between shrubs and often near ant nests. Coast horned lizards burrow into loose soil to avoid extreme heat and predators. Periods of inactivity and winter hibernation are spent burrowed into the soil under surface objects such as logs or rocks, in mammal burrows, or in crevices (CWHR 2013).

The reproductive season for coast horned lizard varies from year to year and geographically depending on local conditions. Egg-laying in southern California has been reported from late May through June (CWHR 2013).

Range: Coast horned lizards occur in the Sierra Nevada foothills from Butte County to Kern County and throughout the central and southern California coast. The elevation range extends up to 4,000 feet in the Sierra Nevada foothills and up to 6,000 feet in the mountains of southern California, though they are primarily found below 2,000 feet in the north and 3,000 feet in the south (CWHR 2013). Coast horned lizards have a spotty distribution from Shasta Lake southward along the edges of the Sacramento Valley into much of the South Coast Ranges, San Joaquin Valley, and Sierra Nevada foothills to northern Los Angeles, Santa Barbara and Ventura counties (Jennings and Hayes 1994).

Known Records: The closest CNDDDB record for coast horned lizard is located approximately 12 miles northeast of the BSA around the Nevada County landfill. Habitat at this location consists of chaparral dominated by manzanita, with some gray pine, yellow pine, MacNab cypress, blue oak, black oak, and live oak. Two adult lizards were found in a leachfield area during fieldwork conducted from 1974 to 1995.

4.4.1.1. SURVEY RESULTS

No coast horned lizards were observed in the BSA during fieldwork. Upland areas around the margin of the Reservoir may provide potential habitat for coast horned lizard.

4.4.1.2. AVOIDANCE AND MINIMIZATION EFFORTS

No avoidance and minimization efforts for coast horned lizards are proposed.

4.4.1.3. PROJECT IMPACTS

The Project will result in impacts to potential coast horned lizard habitat. If there is a population of coast horned lizard around the Reservoir margin, the Project's marginal impacts to uplands, relative to the surrounding landscape of extensive woodlands, would not significantly impact the population. The Project will not substantially adversely affect coast horned lizard.

4.4.1.4. COMPENSATORY MITIGATION

No compensatory mitigation is proposed.

4.4.1.5. CUMULATIVE EFFECTS

No cumulative effects were identified. This Project will not cause a change in land use at or around the Reservoir.

4.5. Special-Status Birds

4.5.1. Birds of Prey and Birds Listed by the Migratory Bird Treaty Act Discussion

Fish and Game Code 3503.5 protects all birds in the orders Falconiformes and Strigiformes (collectively known as birds of prey). Birds of prey include raptors, falcons, and owls. Most bird species, including species that are resident in California, are protected under the federal Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C. 703-711). The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 CFR Part 10 including feathers or other parts, nests, eggs, or products, except as allowed by

implementing regulations (50 CFR 21). Any disturbance that causes direct injury, death, nest abandonment, or forced fledging of migratory birds, is restricted under the MBTA. Any removal of active nests during the breeding season or any disturbance that results in the abandonment of nestlings is considered a 'take' of the species under federal law.

4.5.1.1. SURVEY RESULTS

The BSA provides nesting habitat for many species of birds. Nests of bald eagle, osprey, turkey vulture, Canada goose, great blue heron, killdeer, tree swallow, cliff swallow, and bushtit were detected in or around the BSA during surveys, and the nests of many other species are expected to occur. Bald eagle and osprey are protected under Fish and Game Code 3503.5 and the observed nest locations are indicated in Appendix E. Bald eagle is also state-endangered and is discussed in Section 4.5.1. Two active osprey nests were observed, both on high-voltage electrical towers outside of but near the BSA. The nest locations are indicated in Appendix E.

4.5.1.2. AVOIDANCE AND MINIMIZATION EFFORTS

No avoidance and minimization efforts are necessary. See Project Impacts discussion below.

4.5.1.3. PROJECT IMPACTS

The nesting season is generally considered to be 15 February to 31 August. Water levels typically reach their maximum in the Reservoir in January and start to decrease in April or May. The Project will not impact the nests of ground or shrub nesting birds around the perimeter of the Reservoir because the reservoir will be full or receding at the time the nesting season begins. No nests will be inundated with rising water, and low-nesting birds can establish nests above the water level.

4.5.1.4. COMPENSATORY MITIGATION

No compensatory mitigation is proposed for birds of prey or MBTA birds.

4.5.1.5. CUMULATIVE EFFECTS

No cumulative effects were identified. This Project will not cause a change in land use at or around the Reservoir.

4.5.2. Discussion of Burrowing Owl (*Athene cunicularia*)

Burrowing owl is a CDFW species of special concern (CDFW 2011). Burrowing owls inhabit open, dry grassland and desert habitats, and in grass, forb, and open shrub stages of pinyon-juniper and ponderosa pine habitats (CWHR 2013, Shuford and Gardali 2008). Main habitat components include burrows for roosting and nesting, and relatively short vegetation with sparse shrubs and taller vegetation (Shuford and Gardali 2008). Burrowing owls most commonly use ground squirrel burrows, but they may also use badger, coyote, and fox holes or dens; or human-made structures such as culverts, piles of concrete rubble, pipes and nest boxes (CWHR 2013, Shuford and Gardali 2008). An active nest chamber is often lined with excrement, pellets, debris, grass and feathers (CWHR 2013). This species also thrives in highly altered human landscapes. In agricultural areas, owls nest along roadsides, under water conveyance structures, and near and under runways and similar structures. In urban areas, burrowing owls persist in low numbers in highly developed parcels, busy urban parks, and adjacent to roads with heavy traffic. In the Imperial Valley, owls are able to excavate their own burrows in soft earthen banks of ditches and canals (Shuford and Gardali 2008).

Burrowing owls are a semi-colonial species that breeds in California from March through August, with peak in April and May, though breeding can begin as early as February and extend into December (Shuford and Gardali 2008, CWHR 2013). The female typically lays two to 10 eggs and young emerge from the burrow in about two weeks. The young are able to fly by week four (CWHR 2013). A large proportion of adults show strong nest site fidelity, though both young and adults have a high dispersal rate (Shuford and Gardali 2008).

Burrowing owls will perch in open sunlight in the early morning, and move to shade or the burrow when hot (CWHR 2013). Owls typically feed on a broad range of arthropods, but also feed on small rodents, birds, amphibians, reptiles, and carrion. Foraging usually occurs close to their burrow. The greatest threat to burrowing owls is habitat loss and degradation from rapid urbanization of farmland in the core of the Central and Imperial valleys (Shuford and Gardali 2008). Burrow sites and some wintering sites are of concern to CDFW (2011).

Range: Burrowing owls are a year round resident in most of the state, particularly in the Central Valley, San Francisco Bay region, Carrizo Plain, and Imperial Valley (Shuford and Gardali 2008). This species is generally absent from the humid coastal counties north of Marin and mountainous areas above 5,300 feet (CWHR 2013, Shuford and Gardali 2008). This species has declined along the central and southern coast, but large populations remain in agricultural areas in the Central and Imperial valleys, often on private lands (Shuford and Gardali 2008).

Known Records: The closest CNDDDB record for burrowing owl is from 1906 and is located approximately 8.2 miles south of the BSA. The location mapped is based off the collection information on a museum record at the Museum of Vertebrate Zoology (UC Berkeley).

4.5.2.1. SURVEY RESULTS

Burrowing owls were not observed during the biological fieldwork. Several ground squirrels and burrows which could provide burrowing owl habitat were observed around the perimeter of the Reservoir in the BSA during the biological fieldwork.

4.5.2.2. AVOIDANCE AND MINIMIZATION EFFORTS

No avoidance and minimization efforts are necessary. See Project Impacts discussion below.

4.5.2.3. PROJECT IMPACTS

Burrowing owls typically nest from March through August. Water levels typically reach their maximum in the Reservoir in January and start to decrease in April and May. The Project will not impact burrowing owl because the reservoir will be full or receding at the time the nesting season begins. No nests will be inundated with rising water.

4.5.2.4. COMPENSATORY MITIGATION

No compensatory mitigation is necessary for burrowing owl.

4.5.2.5. CUMULATIVE EFFECTS

No cumulative effects were identified. This Project will not cause a change in land use at or around the Reservoir.

4.5.3. Discussion of Swainson's hawk (*Buteo swainsoni*)

Swainson's hawk is state listed as threatened (CDFW 2011). Swainson's hawks breed from late March to late August, with peak activity late May through July. Between two to four eggs are incubated for 25 to 28 days (CWHR 2013). Throughout its range, Swainson's hawks nest almost exclusively in trees. In a few instances, they have been recorded nesting on cliffs, coulees, structures, and the ground, but these sites are rarely used (BLM 2006). Nesting habitat includes stands with few trees in juniper-sage flats, riparian areas, and in oak savannah in the Central Valley. Nests are built on a platform of sticks, bark, and fresh leaves in a tree, bush, or utility pole from 4 to 100 feet above the ground (CWHR 2013). Swainson's hawk will often return to areas where they nested the previous year (NatureServe 2011). Nesting sites are of particular concern to CDFW (2013).

Swainson's hawk forage in grasslands or suitable grain or alfalfa fields, or livestock pastures adjacent to nesting areas. They feed on mice, gophers, ground squirrels, rabbits, large arthropods, amphibians, reptiles, birds, and rarely, fish (CWHR 2013).

Range: Swainson's hawk is a breeding resident and migrant in the Central Valley, Klamath Basin, Northeastern Plateau, Lassen County, and Mojave Desert with very limited breeding reported from Lanfair Valley, Owens Valley, Fish Lake Valley, and Antelope Valley (CWHR 2013).

Known Records: The closest CNDDDB record for Swainson's hawk is located approximately 4.9 miles south-southwest of the BSA along Coon Creek. A nesting pair was observed in April 2009 in a large valley oak tree in a riparian corridor dominated by valley oaks, willows, black walnuts, and cottonwoods with rangeland to the south. The success of the nest is unknown.

4.5.3.1. SURVEY RESULTS

CFWR is located at the eastern edge of the range of Swainson's hawk. No Swainson's hawks were observed during the biological surveys. Trees in and adjacent to the BSA provide potential nesting habitat.

4.5.3.2. AVOIDANCE AND MINIMIZATION EFFORTS

No avoidance and minimization efforts are necessary. See Project Impacts discussion below.

4.5.3.3. PROJECT IMPACTS

Swainson's hawks nest in tree canopies which would be above the high water line. Swainson's hawks breed from late March to late August. Water levels typically reach their maximum in the Reservoir in January and start to decrease in April and May. The Project will not impact Swainson's hawk nesting efforts because the reservoir will be full or receding at the time the nesting season begins. No nests will be inundated with rising water.

4.5.3.4. COMPENSATORY MITIGATION

No compensatory mitigation is necessary for Swainson's hawk.

4.5.3.5. CUMULATIVE EFFECTS

No cumulative effects were identified. This Project will not cause a change in land use at or around the Reservoir.

4.5.4. Discussion of Northern Harrier (*Circus cyaneus*)

Northern harriers breed and forage in a variety of open (treeless) habitats that provide adequate vegetative cover, an abundance of suitable prey, and scattered hunting, plucking, and lookout perches such as shrubs and fence posts. In California, such habitats include freshwater marshes, brackish and saltwater marshes, wet meadows, weedy borders of lakes, rivers and streams, annual and perennial grasslands, vernal pool complexes, weed fields, ungrazed or lightly grazed pastures, low-growing crop fields, sagebrush flats, and desert sinks (Shuford and Gardali 2008). Northern harriers feed mostly on voles and other small mammals, birds, frogs, small reptiles, crustaceans, insects, and rarely on fish.

Northern harriers nest on the ground, mostly in emergent wetland or along rivers or lakes (CWHR 2013), and generally within patches of dense vegetation in undisturbed areas (Shuford and Gardali 2008). Nests are large mounds of sticks on wet areas or a smaller cup of grasses on dry sites. Breeding occurs from April to September with peak activity June through July. Single clutches are produced annually. The nesting period lasts about 53 days (CWHR 2013).

Range: Northern harrier occurs from annual grassland up to lodgepole pine and alpine meadow habitats, as high as 10,000 feet. It breeds from sea level to 5,700 feet in the Central Valley and Sierra Nevada, and up to 3,600 feet in northeast California. Northern harrier is a permanent resident of the northeastern plateau and coastal areas and a less common resident of the Central Valley (CWHR 2013).

Known Records: Thirteen records of northern harrier nests from 2000 are recorded in CNDDDB in an area about 4.5 miles northwest of the BSA on Beale Air Force Base.

4.5.4.1. SURVEY RESULTS

A northern harrier was observed foraging in the BSA during fieldwork. Most of the BSA is poor nesting habitat for northern harrier because it is well-grazed and the grass is short. The emergent wetlands, irrigated wetlands and edges of the scrub-shrub wetland provide better potential nesting habitat. No northern harrier nests were observed in the BSA during fieldwork.

4.5.4.2. AVOIDANCE AND MINIMIZATION EFFORTS

No avoidance and minimization efforts are necessary. See Project Impacts discussion below.

4.5.4.3. PROJECT IMPACTS

Northern harrier typically nests from April to September. Water levels typically reach their maximum in the Reservoir in January and start to decrease in April and May. The Project

will not impact northern harrier because the reservoir will be full or receding at the time the nesting season begins. No nests will be inundated with rising water.

4.5.4.4. COMPENSATORY MITIGATION

No compensatory mitigation is necessary for northern harrier.

4.5.4.5. CUMULATIVE EFFECTS

No cumulative effects were identified. This Project will not cause a change in land use at or around the Reservoir.

4.5.5. Discussion of White-Tailed Kite (*Elanus leucurus*)

White-tailed kite is a fully protected species by CDFW. White-tailed kites occur in herbaceous and open stages of most habitats in cismontane California. Areas with substantial groves of dense, broad-leaved deciduous trees are used for nesting and roosting. They also roost in saltgrass and Bermuda grass in southern California. White-tailed kites breed from February to October, with peak activity occurring from May to August. Nests are typically located near the top of dense oak, willow, or other tree stands from 20 to 100 ft above the ground, and are often located near an open foraging area with a dense population of voles (CWHR 2013). Nesting sites are of particular concern to CDFW (2011).

Range: White-tailed kites are a common to uncommon yearlong resident in coastal and valley lowlands in cismontane California, and are rarely found far from agricultural areas (CWHR 2013).

Known Records: The closest CNDDDB records for white-tailed kites are located approximately 13 miles from the BSA; one is located to the south and the other is located to the northwest. The record to the south is located on a 240 acre ranch. Habitat consists of a blue oak woodland/riparian habitat associated with antelope creek. The site is surrounded by smaller ranchettes. A nest was observed in June 2003 with newly-fledge young observed in July 2003. The record to the northwest is of a nest located in a black locust tree surrounded by annual grassland, abandoned/fallow farmland, rice fields, and seasonal wetlands. Two adults were observed using the nest in February 2003.

4.5.5.1. SURVEY RESULTS

White-tailed kites were observed flying over the BSA during the biological surveys. No nests were observed. Trees in and adjacent to the BSA provide potential nesting habitat.

4.5.5.2. AVOIDANCE AND MINIMIZATION EFFORTS

No avoidance and minimization efforts are necessary. See Project Impacts discussion below.

4.5.5.3. PROJECT IMPACTS

White-tailed kites nest in tree canopies which would be above the high water line. White-tailed kite peak breeding activity occurs from May to August. Water levels typically reach their maximum in the Reservoir in January and start to decrease in April and May. The Project will not impact white-tailed kite nesting efforts because the reservoir will be full or receding at the time the nesting season begins. No nests will be inundated with rising water.

4.5.5.4. COMPENSATORY MITIGATION

No compensatory mitigation is necessary for white-tailed kite.

4.5.5.5. CUMULATIVE EFFECTS

No cumulative effects were identified. This Project will not cause a change in land use at or around the Reservoir.

4.5.1. Discussion of Bald Eagle (*Haliaeetus leucocephalus*)

Bald eagle was listed as State endangered in 1971 with revisions to the listing in 1980 (CDFW 2013). Bald eagle is CDFW fully protected (CDFW 2011). At the federal level, bald eagle is protected by the Bald and Golden Eagle Protection Act of 1940, as amended. Bald eagle was federally delisted pursuant to the Endangered Species Act in 2007 (USFWS 2007). Bald eagles occur along coasts, rivers, and large, deep lakes and reservoirs inland. They require large bodies of water, or free-flowing rivers with abundant fish, and adjacent snags or other perches. Bald eagles perch high in large, stoutly limbed trees, snags, broken-topped trees, or on rocks near water. They roost communally in winter in dense, sheltered, remote conifer stands. They build stick platform nests approximately 50 to 200 ft above the ground in large, old growth, or dominant live trees with open branch work, especially ponderosa pines. Generally the largest tree in a stand is used to build the nest. Bald eagles nest most frequently in stands with less than 40% canopy, but usually with some foliage shading the nest, located near a permanent water source. Bald eagles breed from February through July, with peak activity from March to June. Bald eagles usually do not begin nesting if human disturbance is evident (CWHR 2013). Nesting and wintering sites are of concern to CDFW (CDFW 2011).

Range: Bald eagles are a permanent resident, and uncommon winter migrant, now restricted to breeding mostly in Butte, Lake, Lassen, Modoc, Plumas, Shasta, Siskiyou, and Trinity

counties. About half of the wintering population is in the Klamath Basin. Bald eagles are more common at lower elevations and are not found in the high Sierra Nevada (CWHR 2013).

Known Records: The closest CNDDDB record for bald eagle is located approximately 19 miles southeast of the BSA at Folsom Lake on North Fork American River. The nest was located in a gray pine tree at the Anderson Island Natural Preserve. Folsom Lake is used for recreation and is surrounded by oaks, gray pines, and California buckeye with an annual grassland understory. The nest was observed as active in 2005, 2006, and 2008 through 2013.

4.5.1.1. SURVEY RESULTS

Adult bald eagles were observed flying over the BSA along the north shore and along the Bear River reach in March and April 2013. A juvenile bald eagle was observed on the west shore of the Reservoir on 6 May 2013. A potential active nest was identified in April along the Bear River reach. The nest was confirmed on 6 June 2013 with the observation of two juveniles perched on the edge of the nest and an adult perched in another tree nearby. The nest is in a ponderosa pine, uphill and outside of the BSA. The approximate location of the nest is indicated on Sheet 12 in Appendix E. Most of the trees in the BSA are not of sufficient stature to provide nesting habitat for bald eagles.

4.5.1.2. AVOIDANCE AND MINIMIZATION EFFORTS

No avoidance and minimization efforts are necessary. See Project Impacts discussion below.

4.5.1.3. PROJECT IMPACTS

The bald eagle nest is in a tree outside the BSA and well above the area that will be inundated by the Project. The Project will not impact bald eagle.

4.5.1.4. COMPENSATORY MITIGATION

No compensatory mitigation is necessary for bald eagle.

4.5.1.5. CUMULATIVE EFFECTS

No cumulative effects were identified. This Project will not cause a change in land use at or around the Reservoir.

4.6. Special-Status Plant Species

Plants designated CNPS Rank 4 (plants of limited distribution) are not included in the definition of special-status plants in this document, but can be included in CEQA review at the discretion of the CEQA lead agency. Two CNPS Rank 4 plant species were found in the BSA, and two more may occur, but the specimens in the PSA could not be conclusively identified at the time of survey.

The two CNPS Rank 4 species identified in the BSA were Brandegee's clarkia (*Clarkia biloba* ssp. *brandegeae*) and Sierra foothills brodiaea (*Brodiaea sierrae*). Both species were found on the south side of the Bear River reach of the reservoir, and the locations are marked on sheet 12 in Appendix E. CNDDDB forms for the species are in Appendix F. The CNDDDB does not track CNPS Rank 4 species in the digital database, but does maintain records of reported occurrences of the species should the status change.

Two small occurrences, just a few feet across each, of Brandegee's clarkia were observed. Eight plants were observed in the easternmost occurrence, and an estimated one hundred plants were observed in the westernmost occurrence. Both occurrences were on very steep slopes with noticeable effects of soil erosion, and relatively low cover of other herbaceous species. Both small occurrences are more than 5 feet above the existing OHWM of the Reservoir and are not expected to be affected by the Project.

An estimated one hundred individuals of Sierra foothills brodiaea were found growing in rock outcrops within several feet above the OHWM of the Reservoir. The raised Reservoir level is expected to reduce the numbers of these plants, because this upland species would not be expected to persist in areas with months of inundation.

Two individuals of lily (*Lilium* sp.) were observed in approximately the same location as Sierra foothills brodiaea. One individual was vegetative and the other was in bud. The individual in bud did not have sufficiently mature floral development to conclusively identify the species. The plants could be CNPS Rank 4 Humboldt lily (*L. humboldtii* ssp. *humboldtii*).

Mosquito fern (*Azolla* sp.) was observed in seep 3. The specimens were in a vegetative state and could not be conclusively identified to species, but could be CNPS Rank 4 Mexican mosquito fern (*A. microphylla*). Mosquito fern is a small (up to 3 centimeters wide) floating aquatic plant. It opportunistically grows in areas of full sun and inundation with calm water, or saturated mud. Although mosquito fern was only observed in seep 3, it may occur in many locations around the Reservoir margin at different times of the spring, summer, and fall, when the right aquatic conditions exist at a particular location and water elevation. As a free

floating plant that disperses via aquatic spores, the proposed Project changes to seasonal water elevation are not expected to affect Mosquito fern.

4.6.1. Discussion of Big-Scale Balsamroot (*Balsamorhiza macrolepis* var. *macrolepis*)

Big-scale balsamroot is a perennial herb found on open grassy or rocky slopes in chaparral, cismontane woodland, and valley and foothill grassland, sometimes on serpentinite soils, from 300 to 5,100 ft. It blooms March through July (CNPS 2013a, Baldwin et al. 2012).

Range: Known from the Sierra Nevada foothills, central high-Sierra Nevada, Sacramento Valley, and eastern San Francisco Bay Area (Baldwin et al. 2012).

Known Records: The closest CNDDDB record for big-scale balsamroot is located approximately 9.4 miles south of the south shore of the Reservoir. Habitat at the site consists of sandy hillsides. This species was locally frequent at this site in 1939.

4.6.1.1. SURVEY RESULTS

The BSA provides potential habitat for big-scale balsamroot, especially around rock outcrops near the mouth of Rock Creek, and along the Bear River Reach of the Reservoir. Big-scale balsamroot was not observed during the floristic survey conducted during the evident and identifiable period.

4.6.1.2. AVOIDANCE AND MINIMIZATION EFFORTS

No avoidance or minimization efforts are proposed.

4.6.1.3. PROJECT IMPACTS

The Project will not impact big-scale balsamroot.

4.6.1.4. COMPENSATORY MITIGATION

No compensatory mitigation is proposed.

4.6.1.5. CUMULATIVE EFFECTS

No cumulative effects were identified. This Project will not cause a change in land use at or around the Reservoir.

4.6.2. Discussion of Dwarf Downingia (*Downingia pusilla*)

Dwarf downingia is an annual herb found in mesic valley and foothill grassland, vernal pools, and roadside ditches mostly below 500 feet. Blooms March through May (CNPS 2013a, Baldwin et al. 2012).

Range: Known from the southern Outer North Coast Ranges, Inner North Coast Ranges, Sacramento Valley, north and central San Joaquin Valley, and northern San Francisco Bay Area (Baldwin et al. 2012).

Known Records: The closest CNDDDB record for dwarf downingia is located approximately 4.9 miles southwest of the south shore of the Reservoir. Habitat at the site consists of a graded terrace with standing water until May. Approximately 850 plants were observed at this location in 2005.

4.6.2.1. SURVEY RESULTS

The BSA is near the edge of the range of dwarf downingia. Seasonal wetlands and swales in the BSA may provide potential habitat for dwarf downingia. Dwarf downingia was not observed during the floristic survey conducted during the evident and identifiable period.

4.6.2.2. AVOIDANCE AND MINIMIZATION EFFORTS

No avoidance or minimization efforts are proposed.

4.6.2.3. PROJECT IMPACTS

The Project will not impact dwarf downingia.

4.6.2.4. COMPENSATORY MITIGATION

No compensatory mitigation is proposed.

4.6.2.5. CUMULATIVE EFFECTS

No cumulative effects were identified. This Project will not cause a change in land use at or around the Reservoir.

4.6.3. Discussion of Boggs Lake Hedge-Hyssop (*Gratiola heterosepala*)

Boggs Lake hedge-hyssop is an annual herb found on clay soil in shallow water of vernal pools and lake margins from 30 to 7,790 feet. It blooms April through September (CNPS 2013a, Baldwin et al. 2012).

Range: Known from the inner North Coast Ranges, Cascade Range, north and central Sierra Nevada foothills, Great Central Valley, and Modoc Plateau in California (Baldwin et al. 2012).

Known Records: The closest CNDDDB record for Boggs Lake hedge-hyssop is located approximately 8 miles south of the south shore of the Reservoir. Fewer than 200 plants were observed at the site in 1989.

4.6.3.1. SURVEY RESULTS

Seasonal wetlands, swales, and the margin of the Reservoir may provide potential habitat for Boggs Lake hedge-hyssop. Boggs Lake hedge-hyssop was not observed during the botanical survey conducted during the evident and identifiable period. The similar bractless hedge-hyssop (*Gratiola ebracteata*) was common in some of the wetlands in the BSA and along the margin of the Reservoir as the water receded. The plants were checked repeatedly around the Reservoir margin and all specimens were bractless hedge-hyssop.

4.6.3.2. AVOIDANCE AND MINIMIZATION EFFORTS

No avoidance or minimization efforts are proposed.

4.6.3.3. PROJECT IMPACTS

The Project will not impact Boggs Lake hedge hyssop.

4.6.3.4. COMPENSATORY MITIGATION

No compensatory mitigation is proposed.

4.6.3.5. CUMULATIVE EFFECTS

No cumulative effects were identified. This Project will not cause a change in land use at or around the Reservoir.

4.6.4. Discussion of Ahart's Dwarf Rush (*Juncus leiospermus* var. *aharti*)

Ahart's dwarf rush is an annual herb found in mesic valley and foothill grassland from 100 to 750 ft. It blooms March through May (CNPS 2013a, Baldwin et al. 2012).

Range: Known from approximately 10 occurrences in Butte, Calaveras, Placer, Sacramento, Tehama, and Yuba counties (CNPS 2013a).

Known Records: The closest CNDDDB record for Ahart's dwarf rush is located approximately 8.3 miles south of the Reservoir. Habitat at the site consists of vernal pools and swales on gopher turnings, generally along pool margins. Approximately 45 plants were observed in 1990.

4.6.4.1. SURVEY RESULTS

Seasonal wetlands and swales in the BSA may provide potential habitat for Ahart's dwarf rush. Ahart's dwarf rush was not observed during the botanical survey conducted during the evident and identifiable period.

4.6.4.2. AVOIDANCE AND MINIMIZATION EFFORTS

No avoidance or minimization efforts are proposed.

4.6.4.3. PROJECT IMPACTS

The Project will not impact Ahart's dwarf rush.

4.6.4.4. COMPENSATORY MITIGATION

No compensatory mitigation is proposed.

4.6.4.5. CUMULATIVE EFFECTS

No cumulative effects were identified. This Project will not cause a change in land use at or around the Reservoir.

4.6.5. Discussion of Layne's ragwort (*Packera* (=Senecio)layneae)

Layne's ragwort is a perennial herb found on rocky serpentinite or rocky gabbroic soil in chaparral and cismontane woodland from 656 to 3,280 ft. It blooms April through August (CNPS 2013a, Baldwin et al. 2012).

Range: Known from Butte, El Dorado, Placer, Tuolumne and Yuba counties (CNPS 2013a).

Known Records: The closest CNDDDB record of Layne's ragwort is located approximately 26 miles east-southeast of the Reservoir. Habitat consists of open areas along a road on serpentine soil. An unknown number of plants were seen in 1980, less than 1,000 scattered individuals were seen in 1982, less than 10,000 plants were seen over 150 acres in 1983, and approximately 500 plants were observed in cleared areas under the power lines in 2007.

4.6.5.1. SURVEY RESULTS

The grey pine woodland may provide potential habitat for Layne's ragwort. Layne's ragwort was not observed during the botanical survey conducted during the evident and identifiable period.

4.6.5.2. AVOIDANCE AND MINIMIZATION EFFORTS

No avoidance or minimization efforts are proposed.

4.6.5.3. PROJECT IMPACTS

The Project will not impact Layne's ragwort.

4.6.5.4. COMPENSATORY MITIGATION

No compensatory mitigation is proposed.

4.6.5.5. CUMULATIVE EFFECTS

No cumulative effects were identified. This Project will not cause a change in land use at or around the Reservoir.

Chapter 5. Results: Permits and Technical Studies for Special Laws or Conditions

5.1. Federal Endangered Species Act (FESA) Consultation Summary

FESA defines “take” (section 9) and prohibits “taking” of a listed endangered or threatened species (16 U.S.C. 1532, 50 CFR 17.3). If a federal-listed species could be harmed by a project, then section 7 or 10 consultations must be initiated and an Incidental Take Permit must be obtained (16 U.S.C. 1539, 50 CFR 13).

Section 7 of FESA states that all federal departments and agencies shall, in consultation with and with the assistance of the Secretary of the Interior/Commerce, insure that any actions authorized, funded, or carried out by them do not jeopardize the continued existence of federal-listed or proposed species or result in adverse modification of designated critical habitat, unless an exception has been granted by the Endangered Species Committee (16 USC 1536(a)(2)).

Section 9(a)(1) of FESA and federal regulation pursuant to section 4(d) of FESA prohibit the take of endangered and threatened fish and wildlife species. Take is defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct.

Harass is defined by USFWS as an intentional or negligent act or omission which creates the likelihood of injury to a listed species by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. Harm is defined by USFWS to include significant habitat modification or degradation that results in death or injury to listed species by impairing behavioral patterns including breeding, feeding, or sheltering.

Based on the following criteria, a Biological Assessment evaluates the potential effects of an action on federal-listed species or critical habitat to determine whether or not the species or its habitat is likely to be adversely affected by the action (USFWS & NMFS 1998):

1. Based on the best available scientific and commercial data, is the species: a) likely to be found in the area; b) potentially found in the area; or c) unlikely to be found in the area.

2. If a species is unlikely to occur in or migrate through the BSA due to lack of suitable habitat or the BSA is outside of the known range of the species, it was determined that the project would have no effect on the species.
3. If it is reasonably foreseeable for a species to occur in the BSA, further analysis of the species' life history and habitat requirements, and the suitability of habitat for any life stage of the species, was made.
4. If suitable habitat for a species was determined to occur in the BSA, an analysis of the potential effects to the species was conducted. Details of life history and habitat requirements for potentially affected species were evaluated to ascertain the likelihood and severity of impact. Technical assistance was requested from resource agencies regarding the likelihood and timing of occurrence for species.
5. A determination was then made of the type of effect in accordance with terminology used by USFWS (USFWS & NMFS 1998) for listed species and/or designated critical habitat pursuant to FESA. The types of determinations based on USFWS terminology are listed in Table 5. A summary of FESA consultations for the Project are in Table 6.
6. If a conclusion was reached that the project "may affect" a federal-listed species, reasonable and prudent mitigation measures were developed to ensure that "take" would not occur or if "take" was anticipated, it would be minimal.

Table 5. Types of Federal Consultation Determinations

Determination	Course of Action
No effect	No incidental take will occur. No incidental take statement is required. No consultation with USFWS is required.
May affect, is not likely to adversely affect	No incidental take will occur. USFWS may concur in writing during informal consultation.
May affect, is likely to adversely affect	Incidental take is anticipated to occur. A formal section 7 consultation is required to obtain an Incidental Take Statement. During consultation, USFWS will make the determination that the project is or is not likely to jeopardize the continued existence of the species or adversely modify critical habitat.
Is likely to jeopardize the continued existence of the species or adversely modify critical habitat	If the project is likely to jeopardize the continued existence of the species or adversely modify critical habitat, conference with the Secretary of the Department of Interior is required.

Table 6 summarizes potential Project effects on federal-listed species. The Project will have no effect on federal-listed species or critical habitat.

Table 6. Summary of FESA Consultation Requirements

Scientific Name	Common Name	Federal Status ¹	No Effect	May affect, is not likely to adversely affect	May affect, is likely to adversely affect
Invertebrates					
<i>Branchinecta conservatio</i>	Conservancy fairy shrimp	E, CH	X		
<i>Branchinecta lynchi</i>	Vernal pool fairy shrimp	T, CH	X		
<i>Desmocerus californicus dimorphus</i>	Valley elderberry longhorn beetle	T, CH		X	
<i>Lepidurus packardii</i>	Vernal pool tadpole shrimp	E, CH	X		
Fish					
<i>Acipenser medirostris</i>	Green sturgeon (southern DPS)	T, CH	X		
<i>Hypomesus transpacificus</i>	Delta smelt	T, CH	X		
<i>Oncorhynchus</i> (=Salmo) <i>clarki henshawi</i>	Lahontan cutthroat trout	T	X		
<i>Oncorhynchus mykiss</i>	Central Valley steelhead DPS	T, CH	X		
<i>Oncorhynchus tshawytscha</i>	Central Valley spring-run Chinook salmon ESU	T, CH	X		
<i>Oncorhynchus tshawytscha</i>	Winter-run Chinook salmon, Sacramento River ESU	E, CH	X		
Amphibians					
<i>Ambystoma californiense</i>	California tiger salamander, central population	T, CH	X		
<i>Rana draytonii</i>	California red-legged frog	T, CH		X	
<i>Rana sierrae</i> (=muscosa)	Sierra Nevada yellow-legged frog	C	X		

Scientific Name	Common Name	Federal Status ¹	No Effect	May affect, is not likely to adversely affect	May affect, is likely to adversely affect
Reptiles					
<i>Thamnophis gigas</i>	Giant garter snake	T	X		
Birds					
<i>Coccyzus americanus occidentalis</i>	Western yellow-billed cuckoo	C	X		
Mammals					
<i>Martes pennanti (pacifica)</i> DPS	Pacific fisher	C	X		
Plants					
<i>Calystegia stebbinsii</i>	Stebbins' morning-glory	E	X		
<i>Ceanothus roderickii</i>	Pine Hill ceanothus	E	X		
<i>Fremontodendron decumbens</i>	Pine Hill flannelbush	E	X		
<i>Galium californicum ssp. sierrae</i>	El Dorado bedstraw	E	X		
<i>Ivesia webberi</i>	Webber's ivesia	C	X		
<i>Orcuttia viscida</i>	Sacramento Orcutt grass	E, CH	X		
<i>Packera (=Senecio) layneae</i>	Layne's ragwort (=butterweed)	T	X		
<i>Pseudobahia bahiifolia</i>	Hartweg's golden sunburst	E	X		
<i>Rorippa subumbellata</i>	Tahoe yellow-cress	C	X		

¹ E = Federal Endangered; T = Federal Threatened; C = Federal Candidate, CH = Critical Habitat

5.2. California Endangered Species Act (CESA) Consultation Summary

No take of California state-listed species will occur as a result of this Project.

5.3. Wetlands and Other Waters Coordination Summary

5.3.1.1. SURVEY RESULTS

A jurisdictional delineation was prepared for the BSA (Sycamore Environmental 2013). The Reservoir is a waters of the U.S. Other, much smaller wetlands and channels around the margin of the Reservoir also occur. Ephemeral channels in the BSA may not meet the “significant nexus” standard for waters of the U.S.

5.3.1.2. AVOIDANCE AND MINIMIZATION EFFORTS

The Project avoids direct construction impacts to most of the wetlands and waters in the BSA. Construction will occur on the concrete spillway of the dam, and temporary construction staging will be on the adjacent bed of the Reservoir during the dry season when the water level is below that elevation.

5.3.1.3. PROJECT IMPACTS

The staging area on the bed of the Reservoir is mostly unvegetated when the water level is low, and no materials will remain after construction is finished. The Project will not have direct construction impacts to the Reservoir. The Reservoir will increase in size as a result of the Project. Wetlands and channels near the existing margin of the Reservoir will be seasonally inundated with up to five feet of water during the wet season. The seasonal inundation is expected shift the dominant vegetation in and around the wetlands and channels, generally resulting in the absence of upland vegetation, and a possible increase in perennial hydrophytic vegetation.

5.3.1.4. COMPENSATORY MITIGATION

No compensatory mitigation is proposed.

5.3.1.5. CUMULATIVE EFFECTS

No cumulative effects were identified.

5.4. Essential Fish Habitat (EFH)

Under the Magnuson-Stevens Fishery Conservation and Management Act, the Pacific Fishery Management Council (PFMC) manages salmon fisheries through the designation of EFH and monitoring of threats to that habitat from both fishing and non-fishing activities. Salmon EFH includes all those streams, lakes, ponds, wetlands, and other water bodies currently or historically accessible to salmon in Washington, Oregon, Idaho, and California. Salmon EFH excludes areas upstream of longstanding naturally impassible barriers (i.e. natural waterfalls in existence for several hundred years), but includes aquatic areas above all artificial barriers except specifically named impassible dams. Essential habitat types identified by NMFS for

salmon include juvenile rearing areas, juvenile migration corridors, areas for growth and development into adulthood, adult migration corridors, and spawning areas (65 FR 7773).

The BSA is not located in designated EFH for Pacific salmon. The BSA is located in the Upper Bear hydrologic unit which is not designated as EFH (NMFS 2008). Complete fish barriers occur downstream of the BSA in the Bear River, including the Camp Far West Diversion Dam and the Camp Far West Dam (CalFish 2013).

5.5. Evaluation of Invasive Plant Species (EO 13112)

5.5.1.1. SURVEY RESULTS

Invasive plants are a subset of nonnative plants that spread into undisturbed ecosystems and generally negatively impact native plants and alter ecosystem processes (Cal-IPC 2006). Invasive plant species occur in the BSA and several are rated as “High” by Cal-IPC relative to their ecological impact, invasive potential, and ecological distribution (Appendix C).

5.5.1.2. AVOIDANCE AND MINIMIZATION EFFORTS

No avoidance and minimization efforts are proposed.

5.5.1.3. PROJECT IMPACTS

The direct construction work that will occur as a result of the Project is limited to the existing concrete spillway, and the nearby staging area that will be on the exposed bed of the Reservoir during the dry season when the water level is low. Under existing conditions, these areas are nearly unvegetated, and will remain so as a result of the Project. Work conducted for the Project is unlikely to cause or promote the introduction or spread of invasive plants.

The five foot higher maximum pool elevation that will result from the Project will shift the boundary between the Reservoir and the bordering habitats. Invasive plants occur both just below the OHWM of the reservoir (such as scarlet sesban), and just above (such as Himalayan blackberry and Medusa-head). Although the project may shift the boundary between such areas by several feet, no substantive change in the extent of invasive species will occur. The limited scope of this Project precludes effective eradication of the invasive species from the BSA. The proposed construction work and seasonally higher water elevation in the existing Reservoir will not cause an increase in the dispersal of invasive plants.

5.5.1.4. COMPENSATORY MITIGATION

No compensatory mitigation is proposed.

5.5.1.5. CUMULATIVE EFFECTS

No cumulative effects were identified.

Chapter 6. References

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Chapter 7. Preparers

Jeffery Little, A.A., Sacramento City College, Sacramento, CA. Over 20 years experience with preparation of NEPA/CEQA, ESA, and Caltrans compliance documents and project permitting. He holds a CDFW Scientific Collecting Permit (#801073-03), and a CDFW Rare, Threatened and Endangered Plant Voucher Collecting Permit (#08018).

Responsibilities: Project Manager.

Chuck Hughes, M.S., Plant Biology, Michigan State University, East Lansing, MI. Over 10 years experience preparing biological evaluations and impact analyses. He is a Professional Wetland Scientist (2029), an ISA Certified Arborist (WE-6885A) with a tree risk assessment qualification, holds a CDFW Scientific Collecting Permit (SC-7617) and Plant Voucher Collecting Permit (#2081(a)-12-16-V), and is listed on a USFWS recovery permit for fairy/tadpole shrimp (TE799564-3). His B.S. degree (UC Davis) is in environmental horticulture and urban forestry, with an emphasis in plant biodiversity.

Responsibilities: Assistant Project Manager, report preparation, fieldwork.

Michael Bower, M.S., Ecology, University of California, Davis, CA. Seven years experience preparing biological evaluations and impact analyses. He holds a CDFW Scientific Collecting Permit (SC-11497) and CDFW Rare, Threatened and Endangered Plant Voucher Collecting Permit (2081(a)-09-14-V). He is a certified Ecologist (Ecological Society of America) and a Professional Wetland Scientist (#2230). His B.S. degree (St. Mary's College) is in environmental science.

Responsibilities: Fieldwork.

Jessica Orsolini, B.S., Wildlife Biology, University of Montana, Missoula, MT. Nine years experience preparing biological technical documents and impact analyses. She is an ISA Certified Arborist (WE-7845A) with a tree risk assessment qualification, holds a USFWS recovery permit for California tiger salamander (TE43610A-0), a CDFW Rare, Threatened and Endangered Plant Voucher Collecting Permit (2081(a)-10-06-V), and a CDFW Scientific Collecting Permit (SC-9305).

Responsibilities: Fieldwork, report preparation.

Leane S. Dunn, M.F., Urban Forestry, University of California, Berkeley, CA. Eight years experience preparing biological technical documents and impact analyses. She is an ISA Certified Arborist (WE-7368AU), holds a CDFW Scientific Collecting Permit (SC-9306), and a CDFW Rare, Threatened and Endangered Plant Voucher Collecting Permit (#2081(a)-11-09-V). Her B.S. degree (Cal Poly, San Luis Obispo) is in ecology and systematic biology with an emphasis on entomology.

Responsibilities: Report preparation.

Juliette Robinson, B.S., Environmental Biology, Humboldt State University, Arcata, CA. Two years experience conducting plant and wildlife surveys, preparing biological evaluations, permit applications, and other documents used in the CEQA/NEPA process.

Responsibilities: Fieldwork.

Aramis Respall, GIS Analyst/ CAD Operator. Over 20 years experience in drafting and spatial analysis using AutoCAD and ArcGIS for public and private projects. He provides geospatial analysis and support for projects involving geodesy, hydrology, watersheds, project impact analysis, CNDDB occurrences, and critical habitat information.

Responsibilities: Figure preparation and spatial analysis.

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Appendix A USFWS Letter

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United States Department of the Interior
FISH AND WILDLIFE SERVICE

Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825



June 17, 2013

Document Number: 130617022202

R. John Little Ph.D.
Sycamore Environmental Consultants Inc.
6355 Riverside Blvd. Suite C
Sacramento, CA 95831

Subject: Species List for Camp Far West

Dear: Dr. Little

We are sending this official species list in response to your June 17, 2013 request for information about endangered and threatened species. The list covers the California counties and/or U.S. Geological Survey 7½ minute quad or quads you requested.

Our database was developed primarily to assist Federal agencies that are consulting with us. Therefore, our lists include all of the sensitive species that have been found in a certain area *and also ones that may be affected by projects in the area*. For example, a fish may be on the list for a quad if it lives somewhere downstream from that quad. Birds are included even if they only migrate through an area. In other words, we include all of the species we want people to consider when they do something that affects the environment.

Please read Important Information About Your Species List (below). It explains how we made the list and describes your responsibilities under the Endangered Species Act.

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be September 15, 2013.

Please contact us if your project may affect endangered or threatened species or if you have any questions about the attached list or your responsibilities under the Endangered Species Act. A list of Endangered Species Program contacts can be found [here](#).

Endangered Species Division



U.S. Fish & Wildlife Service
Sacramento Fish & Wildlife Office
Federal Endangered and Threatened Species that Occur in
or may be Affected by Projects in the Counties and/or
U.S.G.S. 7 1/2 Minute Quads you requested
Document Number: 130617022202
Database Last Updated: September 18, 2011

Quad Lists

Listed Species

Invertebrates

- Branchinecta lynchi*
vernal pool fairy shrimp (T)
- Desmocerus californicus dimorphus*
valley elderberry longhorn beetle (T)
- Lepidurus packardii*
vernal pool tadpole shrimp (E)

Fish

- Hypomesus transpacificus*
delta smelt (T)
- Oncorhynchus mykiss*
Central Valley steelhead (T) (NMFS)
Critical habitat, Central Valley steelhead (X) (NMFS)
- Oncorhynchus tshawytscha*
Central Valley spring-run chinook salmon (T) (NMFS)
winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

- Rana draytonii*
California red-legged frog (T)

Reptiles

- Thamnophis gigas*
giant garter snake (T)

Quads Containing Listed, Proposed or Candidate Species:

CAMP FAR WEST (543D)

County Lists

Nevada County

Listed Species

Invertebrates

- Branchinecta lynchi*
vernal pool fairy shrimp (T)
- Desmocerus californicus dimorphus*
valley elderberry longhorn beetle (T)
- Lepidurus packardii*
vernal pool tadpole shrimp (E)

Fish

Hypomesus transpacificus
delta smelt (T)

Oncorhynchus (=Salmo) clarki henshawi
Lahontan cutthroat trout (T)

Oncorhynchus mykiss
Central Valley steelhead (T) (NMFS)
Critical habitat, Central Valley steelhead (X) (NMFS)

Oncorhynchus tshawytscha
Central Valley spring-run chinook salmon (T) (NMFS)
Critical Habitat, Central Valley spring-run chinook (X) (NMFS)
winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

Rana draytonii
California red-legged frog (T)
Critical habitat, California red-legged frog (X)

Rana sierrae
Mountain yellow legged frog (PX)

Reptiles

Thamnophis gigas
giant garter snake (T)

Plants

Calystegia stebbinsii
Stebbins's morning-glory (E)

Fremontodendron californicum ssp. decumbens
Pine Hill flannelbush (E)

Senecio layneae
Layne's butterweed (=ragwort) (T)

Candidate Species

Amphibians

Rana muscosa
mountain yellow-legged frog (C)

Mammals

Martes pennanti
fisher (C)

Plants

Ivesia webberi
Webber's ivesia (C)

Placer County

Listed Species

Invertebrates

Branchinecta conservatio

Conservancy fairy shrimp (E)

Branchinecta lynchi

Critical habitat, vernal pool fairy shrimp (X)

vernal pool fairy shrimp (T)

Desmocerus californicus dimorphus

Critical habitat, valley elderberry longhorn beetle (X)

valley elderberry longhorn beetle (T)

Lepidurus packardii

Critical habitat, vernal pool tadpole shrimp (X)

vernal pool tadpole shrimp (E)

Fish

Hypomesus transpacificus

delta smelt (T)

Oncorhynchus (=Salmo) clarki henshawi

Lahontan cutthroat trout (T)

Oncorhynchus mykiss

Central Valley steelhead (T) (NMFS)

Critical habitat, Central Valley steelhead (X) (NMFS)

Oncorhynchus tshawytscha

Central Valley spring-run chinook salmon (T) (NMFS)

winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

Ambystoma californiense

California tiger salamander, central population (T)

Rana draytonii

California red-legged frog (T)

Critical habitat, California red-legged frog (X)

Rana sierrae

Mountain yellow legged frog (PX)

Reptiles

Thamnophis gigas

giant garter snake (T)

Plants

Calystegia stebbinsii

Stebbins's morning-glory (E)

Ceanothus roderickii

Pine Hill ceanothus (E)

Galium californicum ssp. sierrae

El Dorado bedstraw (E)

Orcuttia viscida

Critical habitat, Sacramento Orcutt grass (X)

Sacramento Orcutt grass (E)

Senecio layneae

Layne's butterweed (=ragwort) (T)

Candidate Species

Amphibians

Rana muscosa

mountain yellow-legged frog (C)

Birds

Coccyzus americanus occidentalis

Western yellow-billed cuckoo (C)

Mammals

Martes pennanti

fisher (C)

Plants

Rorippa subumbellata

Tahoe yellow-cress (C)

Yuba County

Listed Species

Invertebrates

Branchinecta conservatio

Conservancy fairy shrimp (E)

Branchinecta lynchi

Critical habitat, vernal pool fairy shrimp (X)

vernal pool fairy shrimp (T)

Desmocerus californicus dimorphus

valley elderberry longhorn beetle (T)

Lepidurus packardii

Critical habitat, vernal pool tadpole shrimp (X)

vernal pool tadpole shrimp (E)

Fish

Acipenser medirostris
green sturgeon (T) (NMFS)

Hypomesus transpacificus
delta smelt (T)

Oncorhynchus mykiss
Central Valley steelhead (T) (NMFS)
Critical habitat, Central Valley steelhead (X) (NMFS)

Oncorhynchus tshawytscha
Central Valley spring-run chinook salmon (T) (NMFS)
Critical Habitat, Central Valley spring-run chinook (X) (NMFS)
winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

Ambystoma californiense
California tiger salamander, central population (T)

Rana draytonii
California red-legged frog (T)
Critical habitat, California red-legged frog (X)

Reptiles

Thamnophis gigas
giant garter snake (T)

Plants

Pseudobahia bahiifolia
Hartweg's golden sunburst (E)

Senecio layneae
Layne's butterweed (=ragwort) (T)

Candidate Species

Amphibians

Rana muscosa
mountain yellow-legged frog (C)

Birds

Coccyzus americanus occidentalis
Western yellow-billed cuckoo (C)

Mammals

Martes pennanti
fisher (C)

Key:

(E) *Endangered* - Listed as being in danger of extinction.

(T) *Threatened* - Listed as likely to become endangered within the foreseeable future.

(P) *Proposed* - Officially proposed in the Federal Register for listing as endangered or threatened.

(NMFS) Species under the Jurisdiction of the [National Oceanic & Atmospheric Administration Fisheries Service](#). Consult with them directly about these species.

Critical Habitat - Area essential to the conservation of a species.

(PX) *Proposed Critical Habitat* - The species is already listed. Critical habitat is being proposed for it.

(C) *Candidate* - Candidate to become a proposed species.

(V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.

(X) *Critical Habitat* designated for this species

Important Information About Your Species List

How We Make Species Lists

We store information about endangered and threatened species lists by U.S. Geological Survey 7½ minute quads. The United States is divided into these quads, which are about the size of San Francisco.

The animals on your species list are ones that occur within, **or may be affected by** projects within, the quads covered by the list.

- Fish and other aquatic species appear on your list if they are in the same watershed as your quad or if water use in your quad might affect them.
- Amphibians will be on the list for a quad or county if pesticides applied in that area may be carried to their habitat by air currents.
- Birds are shown regardless of whether they are resident or migratory. Relevant birds on the county list should be considered regardless of whether they appear on a quad list.

Plants

Any plants on your list are ones that have actually been observed in the area covered by the list. Plants may exist in an area without ever having been detected there. You can find out what's in the surrounding quads through the California Native Plant Society's online [Inventory of Rare and Endangered Plants](#).

Surveying

Some of the species on your list may not be affected by your project. A trained biologist and/or botanist, familiar with the habitat requirements of the species on your list, should determine whether they or habitats suitable for them may be affected by your project. We recommend that your surveys include any proposed and candidate species on your list. See our [Protocol](#) and [Recovery Permits](#) pages.

For plant surveys, we recommend using the [Guidelines for Conducting and Reporting Botanical Inventories](#). The results of your surveys should be published in any environmental documents prepared for your project.

Your Responsibilities Under the Endangered Species Act

All animals identified as listed above are fully protected under the Endangered Species Act of 1973, as amended. Section 9 of the Act and its implementing regulations prohibit the take of a federally listed wildlife species. Take is defined by the Act as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect" any such animal.

Take may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or shelter (50 CFR§17.3).

Take incidental to an otherwise lawful activity may be authorized by one of two procedures:

- If a Federal agency is involved with the permitting, funding, or carrying out of a project that may result in take, then that agency must engage in a formal [consultation](#) with the Service.

During formal consultation, the Federal agency, the applicant and the Service work together to avoid or minimize the impact on listed species and their habitat. Such consultation would result in a biological opinion by the Service addressing the anticipated effect of the project on listed and proposed species. The opinion may authorize a limited level of incidental take.

- If no Federal agency is involved with the project, and federally listed species may be taken as part of the project, then you, the applicant, should apply for an incidental take permit. The Service may issue such a permit if you submit a satisfactory conservation plan for the species that would be affected by your project.

Should your survey determine that federally listed or proposed species occur in the area and are likely to be affected by the project, we recommend that you work with this office and the California Department of Fish and Game to develop a plan that minimizes the project's direct and indirect impacts to listed species and compensates for project-related loss of habitat. You should include the plan in any environmental documents you file.

Critical Habitat

When a species is listed as endangered or threatened, areas of habitat considered essential to its conservation may be designated as critical habitat. These areas may require special management considerations or protection. They provide needed space for growth and normal behavior; food, water, air, light, other nutritional or physiological requirements; cover or shelter; and sites for breeding, reproduction, rearing of offspring, germination or seed dispersal.

Although critical habitat may be designated on private or State lands, activities on these lands are not restricted unless there is Federal involvement in the activities or direct harm to listed wildlife.

If any species has proposed or designated critical habitat within a quad, there will be a separate line for this on the species list. Boundary descriptions of the critical habitat may be found in the Federal Register. The information is also reprinted in the Code of Federal Regulations (50 CFR 17.95). See our [Map Room](#) page.

Candidate Species

We recommend that you address impacts to candidate species. We put plants and animals on our candidate list when we have enough scientific information to eventually propose them for listing as threatened or endangered. By considering these species early in your planning process you may be able to avoid the problems that could develop if one of these candidates was listed before the end of your project.

Species of Concern

The Sacramento Fish & Wildlife Office no longer maintains a list of species of concern. However, various other agencies and organizations maintain lists of at-risk species. These lists provide essential information for land management planning and conservation efforts. [More info](#)

Wetlands

If your project will impact wetlands, riparian habitat, or other jurisdictional waters as defined by section 404 of the Clean Water Act and/or section 10 of the Rivers and Harbors Act, you will need to obtain a permit from the U.S. Army Corps of Engineers. Impacts to wetland habitats require site specific mitigation and monitoring. For questions regarding wetlands, please contact Mark Littlefield of this office at (916) 414-6520.

Updates

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem.

However, we recommend that you get an updated list every 90 days. That would be September 15, 2013.

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Appendix B California Natural Diversity Database and California Native Plant Society Inventory Queries

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California Department of Fish and Game
Natural Diversity Database
CNDDB List for Camp Far West and 8 Adjacent Quads

Scientific Name	Common Name	Element Code	Federal Status	State Status	Global Rank	State Rank	CNPS	CDFG
1 <i>Agelaius tricolor</i>	tricolored blackbird	ABPBXB0020			G2G3	S2		SC
2 <i>Ammodramus savannarum</i>	grasshopper sparrow	ABPBXA0020			G5	S2		SC
3 <i>Ardea herodias</i>	great blue heron	ABNGA04010			G5	S4		
4 <i>Asio otus</i>	long-eared owl	ABNSB13010			G5	S3		SC
5 <i>Athene cunicularia</i>	burrowing owl	ABNSB10010			G4	S2		SC
6 <i>Balsamorhiza macrolepis</i>	big-scale balsamroot	PDAST11061			G2	S2	1B.2	
7 <i>Branchinecta conservatio</i>	Conservancy fairy shrimp	ICBRA03010	Endangered		G1	S1		
8 <i>Branchinecta lynchi</i>	vernal pool fairy shrimp	ICBRA03030	Threatened		G3	S2S3		
9 <i>Buteo swainsoni</i>	Swainson's hawk	ABNKC19070		Threatened	G5	S2		
10 <i>Circus cyaneus</i>	northern harrier	ABNKC11010			G5	S3		SC
11 <i>Clarkia biloba ssp. brandegeae</i>	Brandegee's clarkia	PDONA05053			G4G5T4	S4	4.2	
12 <i>Corynorhinus townsendii</i>	Townsend's big-eared bat	AMACC08010			G4	S2S3		SC
13 <i>Dendroica petechia brewsteri</i>	yellow warbler	ABPBX03018			G5T3?	S2		SC
14 <i>Desmocerus californicus dimorphus</i>	valley elderberry longhorn beetle	IICOL48011	Threatened		G3T2	S2		
15 <i>Downingia pusilla</i>	dwarf downingia	PDCAM060C0			G2	S2	2.2	
16 <i>Emys marmorata</i>	western pond turtle	ARAAD02030			G3G4	S3		SC
17 <i>Gratiola heterosepala</i>	Boggs Lake hedge-hyssop	PDSCR0R060		Endangered	G2	S2	1B.2	
18 <i>Juncus leiospermus var. ahartii</i>	Ahart's dwarf rush	PMJUN011L1			G2T1	S1	1B.2	
19 <i>Lasiurus blossevillii</i>	western red bat	AMACC05060			G5	S3?		SC
20 <i>Lasiurus cinereus</i>	hoary bat	AMACC05030			G5	S4?		
21 <i>Laterallus jamaicensis coturniculus</i>	California black rail	ABNME03041		Threatened	G4T1	S1		
22 <i>Lathyrus sulphureus var. argillaceus</i>	dubious pea	PDFAB25101			G1G2	S1S2	3	
23 <i>Legenere limosa</i>	legenere	PDCAM0C010			G2	S2.2	1B.1	
24 <i>Lepidurus packardi</i>	vernal pool tadpole shrimp	ICBRA10010	Endangered		G3	S2S3		
25 <i>Linderiella occidentalis</i>	California linderiella	ICBRA06010			G3	S2S3		
26 <i>Myotis yumanensis</i>	Yuma myotis	AMACC01020			G5	S4?		
27 <i>Navarretia myersii ssp. myersii</i>	pincushion navarretia	PDPLM0C0X1			G1T1	S1	1B.1	
28 <i>Northern Hardpan Vernal Pool</i>	Northern Hardpan Vernal Pool	CTT44110CA			G3	S3.1		
29 <i>Oncorhynchus tshawytscha</i>	chinook salmon - Central Valley spring-run ESU	AFCHA0205A	Threatened	Threatened	G5	S1		
30 <i>Riparia riparia</i>	bank swallow	ABPAU08010		Threatened	G5	S2S3		

CNPS *California Native Plant* Rare and Endangered Plant Inventory

Plant List

11 matches found. *Click on scientific name for details*

Search Criteria

Found in 9 Quads around 39121A3

Scientific Name	Common Name	Family	Lifeform	Rare Plant Rank	State Rank	Global Rank
Azolla microphylla	Mexican mosquito fern	Azollaceae	annual / perennial herb	4.2	S3.2?	G5
Balsamorhiza macrolepis	big-scale balsamroot	Asteraceae	perennial herb	1B.2	S2	G2
Brodiaea sierrae	Sierra foothills brodiaea	Themidaceae	perennial bulbiferous herb	4.3	S3	G3
Clarkia biloba ssp. brandegeae	Brandegee's clarkia	Onagraceae	annual herb	4.2	S4	G4G5T4
Downingia pusilla	dwarf downingia	Campanulaceae	annual herb	2.2	S2	G2
Fritillaria agrestis	stinkbells	Liliaceae	perennial bulbiferous herb	4.2	S3.2	G3
Gratiola heterosepala	Boggs Lake hedge-hyssop	Plantaginaceae	annual herb	1B.2	S2	G2
Juncus leiospermus var. ahartii	Ahart's dwarf rush	Juncaceae	annual herb	1B.2	S1	G2T1
Lathyrus sulphureus var. argillaceus	dubious pea	Fabaceae	perennial herb	3	S1S2	G1G2
Legenere limosa	legenere	Campanulaceae	annual herb	1B.1	S2.2	G2
Navarretia myersii ssp. myersii	pincushion navarretia	Polemoniaceae	annual herb	1B.1	S1	G1T1

Suggested Citation

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Appendix C Plant and Wildlife Species Observed

Plant Species Observed

FAMILY	SCIENTIFIC NAME	COMMON NAME	NI ¹	CAL-IPC RATING ²
LYCOPHYTES				
Selaginellaceae	<i>Selaginella hansenii</i> ⁶	Spike-moss	N	
FERNS				
Azollaceae	<i>Azolla</i> sp.	Mosquito fern	N	
Equisetaceae	<i>Equisetum arvense</i>	Common horsetail	N	
	<i>Equisetum hyemale</i> ssp. <i>affine</i>	Common scouring rush	N	
Marsileaceae	<i>Marsilea vestita</i> ssp. <i>vestita</i>	Water-clover	N	
Polypodiaceae	<i>Polypodium calirhiza</i>	Polypody	N	
Pteridaceae	<i>Adiantum jordanii</i>	California maidenhair	N	
	<i>Pellaea mucronata</i> var. <i>mucronata</i>	Bird's-foot fern	N	
	<i>Pentagramma triangularis</i>	Goldback fern	N	
GYMNOSPERMS				
Pinaceae	<i>Pinus ponderosa</i>	Ponderosa pine	N	
	<i>Pinus sabiniana</i>	Foothill pine	N	
MAGNOLIIDS				
Aristolochiaceae	<i>Aristolochia californica</i>	Pipevine	N	
EUDICOTS				
Adoxaceae	<i>Sambucus nigra</i> ssp. <i>caerulea</i>	Blue elderberry	N	
Anacardiaceae	<i>Toxicodendron diversilobum</i>	Western poison oak	N	
Apiaceae	<i>Anthriscus caucalis</i>	Bur-chervil	I	
	<i>Daucus pusillus</i>		N	
	<i>Eryngium castrense</i>	Great Valley coyote-thistle	N	
	<i>Lomatium marginatum</i> var. <i>marginatum</i>	Lomatium	N	
	<i>Lomatium utriculatum</i>		N	
	<i>Perideridia kelloggii</i>	Yampah	N	
	<i>Sanicula bipinnata</i>	Poison sanicle	N	
	<i>Sanicula bipinnatifida</i>	Purple sanicle, shoe buttons	N	
	<i>Sanicula crassicaulis</i>	Sanicle	N	
	<i>Scandix pecten-veneris</i>	Venus' needle	I	
	<i>Tauschia hartwegii</i>	Tauschia	N	
	<i>Torilis arvensis</i>	Tall sock-destroyer	I	Moderate
Apocynaceae	<i>Apocynum cannabinum</i>	Indian hemp	N	
	<i>Asclepias cordifolia</i>	Purple milkweed	N	
	<i>Asclepias fascicularis</i>	Narrow-leaf milkweed	N	
Asteraceae	<i>Achillea millefolium</i>	Yarrow	N	
	<i>Achyrrachaena mollis</i>	Blow-wives	N	
	<i>Ambrosia psilostachya</i>	Western ragweed	N	
	<i>Anthemis cotula</i>	Mayweed	I	
	<i>Artemisia douglasiana</i>	Mugwort	N	
	<i>Baccharis pilularis</i> ssp. <i>consanguinea</i>	Coyote brush	N	
	<i>Baccharis salicifolia</i> ssp. <i>salicifolia</i> ⁶	Mule fat	N	
	<i>Bellis perennis</i>	English daisy	I	
	<i>Bidens</i> sp.	Bidens	--	
	<i>Brickellia californica</i>	California brickellbush	N	
	<i>Calycadenia truncata</i>	Rosin weed	N	

FAMILY	SCIENTIFIC NAME	COMMON NAME	NI ¹	CAL-IPC RATING ²
	<i>Carduus pycnocephalus</i> ssp. <i>pycnocephalus</i>	Italian thistle	I	Moderate
	<i>Centaurea melitensis</i>	Tocalote	I	Moderate
	<i>Centaurea solstitialis</i>	Yellow star-thistle	I	High
	<i>Chondrilla juncea</i>	Skeleton weed	I	Moderate
	<i>Cichorium intybus</i>	Chicory	I	
	<i>Cirsium occidentale</i> var. <i>venustum</i>	Venus thistle	N	
	<i>Cirsium vulgare</i>	Bull thistle	I	Moderate
	<i>Cotula australis</i>	Australian cotula	I	
	<i>Erigeron foliosus</i> var. <i>hartwegii</i>	Leafy fleabane	N	
	<i>Erigeron sumatrensis</i>	Tropical horseweed	I	
	<i>Eriophyllum lanatum</i> var. <i>grandiflorum</i>	Common woolly sunflower	N	
	<i>Gamochaeta coarctata</i> ⁶	Cudweed	I	
	<i>Gnaphalium palustre</i>	Cudweed	N	
	<i>Grindelia camporum</i>	Gumplant	N	
	<i>Hedynois cretica</i> ⁶	Crete weed	I	
	<i>Helenium puberulum</i>	Sneezeweed	N	
	<i>Holocarpa</i> sp.	Tarweed	N	
	<i>Holozonia filipes</i>	Whiteweed	N	
	<i>Hypochaeris glabra</i>	Smooth cat's-ear	I	Limited
	<i>Hypochaeris radicata</i>	Rough cat's-ear	I	Moderate
	<i>Lagophylla glandulosa</i>	Hare-leaf	N	
	<i>Lasthenia gracilis</i>	Common goldfields	N	
	<i>Leontodon saxatilis</i>	Hairy hawkbit	I	
	<i>Leucanthemum vulgare</i>	Ox-eye daisy	I	Moderate
	<i>Logfia filaginoides</i>	California cottonrose	N	
	<i>Logfia gallica</i>	Daggerleaf cottonrose	I	
	<i>Madia exigua</i>	Tarweed	N	
	<i>Madia gracilis</i>	Gumweed	N	
	<i>Madia subspicata</i>	Tarweed	N	
	<i>Matricaria discoidea</i>	Pineapple weed	I	
	<i>Micropus californicus</i> var. <i>californicus</i>	Cottontop	N	
	<i>Microseris</i> sp.	Microseris	N	
	<i>Psilocarphus brevissimus</i> var. <i>brevissimus</i>	Dwarf woollyheads	N	
	<i>Senecio vulgaris</i>	Common groundsel	I	
	<i>Silybum marianum</i>	Milk thistle	I	Limited
	<i>Soliva sessilis</i>		I	
	<i>Sonchus asper</i> ssp. <i>asper</i>	Prickly sow thistle	I	
	<i>Taraxacum officinale</i>	Common dandelion	I	
	<i>Uropappus lindleyi</i>	Silverpuffs	N	
	<i>Wyethia angustifolia</i>	Mule's ears	N	
	<i>Xanthium strumarium</i>	Cocklebur	N	
Betulaceae	<i>Alnus rhombifolia</i>	White alder	N	
Boraginaceae	<i>Amsinckia intermedia</i>	Common fiddleneck	N	
	<i>Eriodictyon californicum</i>	California yerba santa	N	
	<i>Nemophila heterophylla</i>	Nemophila	N	
	<i>Phacelia cicutaria</i> var. <i>cicutaria</i>		N	
	<i>Plagiobothrys fulvus</i> var. <i>campestris</i>	Field popcornflower	N	

FAMILY	SCIENTIFIC NAME	COMMON NAME	NI ¹	CAL-IPC RATING ²
	<i>Plagiobothrys greenii</i>	Greene's spiny-nut popcornflower	N	
	<i>Plagiobothrys nothofulvus</i>	Rusty popcornflower	N	
	<i>Plagiobothrys scriptus</i>	Scridgee's popcornflower	N	
	<i>Plagiobothrys stipitatus</i> var. <i>micranthus</i>	Great Valley popcornflower	N	
	<i>Plagiobothrys tenellus</i>	Pacific popcornflower	N	
Brassicaceae	<i>Athysanus pusillus</i>	Athysanus	N	
	<i>Cardamine oligosperma</i>		N	
	<i>Draba verna</i> ⁶		I	
	<i>Hirschfeldia incana</i>	Summer mustard	I	Moderate
	<i>Lepidium campestre</i>	Peppergrass	I	
	<i>Lepidium nitidum</i>	Peppergrass	N	
	<i>Nasturtium officinale</i>	Water cress	N	
	<i>Sisymbrium officinale</i>	Hedge mustard	I	
	<i>Thysanocarpus curvipes</i>	Fringepod	N	
Campanulaceae	<i>Githopsis pulchella</i> ssp. <i>pulchella</i> var. <i>glabra</i>	Bluecup	N	
	<i>Heterocodon rariflorum</i> ⁶		N	
Caprifoliaceae	<i>Lonicera interrupta</i>	Honeysuckle	N	
Caryophyllaceae	<i>Cerastium glomeratum</i>	Sticky mouse-ear chickweed	I	
	<i>Petrorhagia dubia</i>	Proliferous pink	I	
	<i>Sagina decumbens</i> ssp. <i>occidentalis</i>	Western pearlwort	N	
	<i>Scleranthus annuus</i> ssp. <i>annuus</i>	Knawel	I	
	<i>Silene gallica</i>	Small-flower catchfly	I	
	<i>Stellaria media</i>	Common chickweed	I	
	<i>Stellaria nitens</i>	Shining chickweed	N	
Convolvulaceae	<i>Calystegia occidentalis</i> ssp. <i>occidentalis</i>	Morning-glory	N	
	<i>Convolvulus arvensis</i>	Bindweed	I	
	<i>Cuscuta</i> sp. (on <i>Xanthium</i>)	Dodder	--	
	<i>Dichondra donelliana</i>	Dichondra	N	
Crassulaceae	<i>Crassula aquatica</i>		N	
	<i>Crassula connata</i>	Pygmy-weed	N	
	<i>Dudleya cymosa</i> ssp. <i>cymosa</i>	Dudleya	N	
	<i>Sedella pumila</i>		N	
Cucurbitaceae	<i>Marah fabacea</i>	California man-root	N	
Datisceae	<i>Datisca glomerata</i>	Durango root	N	
Ericaceae	<i>Arctostaphylos viscida</i> ssp. <i>viscida</i>	Manzanita	N	
Euphorbiaceae	<i>Chamaesyce maculata</i>	Spotted spurge	I	
	<i>Croton setigerus</i>	Turkey-mullein	N	
	<i>Euphorbia peplus</i>	Petty spurge	I	
Fabaceae	<i>Acemisson americanus</i> var. <i>americanus</i>	Deervetch	N	
	<i>Acemisson glaber</i> var. <i>glaber</i>	California broom	N	
	<i>Acemisson micranthus</i>	Deervetch, deerweed	N	
	<i>Acemisson wrangelianus</i>	Deervetch, deerweed	N	
	<i>Amorpha californica</i> var. <i>californica</i>	False indigo	N	
	<i>Cercis occidentalis</i>	Western redbud	N	
	<i>Hoita macrostachya</i>		N	
	<i>Lathyrus jepsonii</i> var. <i>californicus</i>	Wild pea	N	
	<i>Lotus corniculatus</i>	Bird's-foot trefoil	I	

FAMILY	SCIENTIFIC NAME	COMMON NAME	NI ¹	CAL-IPC RATING ²
	<i>Lupinus bicolor</i>	Miniature lupine	N	
	<i>Lupinus microcarpus</i> var. <i>microcarpus</i>	Chick lupine	N	
	<i>Lupinus nanus</i>		N	
	<i>Medicago polymorpha</i>	California burclover	I	Limited
	<i>Melilotus albus</i>	White sweetclover	I	
	<i>Melilotus indicus</i>	Sourclover	I	
	<i>Sesbania punicea</i> ⁶	Scarlet sesban	I	High
	<i>Spartium junceum</i>	Spanish broom	I	High
	<i>Trifolium campestre</i>	Hop clover	I	
	<i>Trifolium ciliolatum</i> ⁶	Foothill clover	N	
	<i>Trifolium depauperatum</i> var. <i>depauperatum</i>	Dwarf sack clover	N	
	<i>Trifolium dubium</i>	Little hop clover	I	
	<i>Trifolium glomeratum</i>	Clustered clover	I	
	<i>Trifolium hirtum</i>	Rose clover	I	Moderate
	<i>Trifolium oliganthum</i>	Few-flowered clover	N	
	<i>Trifolium repens</i>	White clover	I	
	<i>Trifolium striatum</i> ⁶	Knotted clover	I	
	<i>Trifolium subterraneum</i>	Subterranean clover	I	
	<i>Trifolium variegatum</i>		N	
	<i>Trifolium willdenovii</i>	Tomcat clover	N	
	<i>Vicia hirsuta</i>	Vetch	I	
	<i>Vicia sativa</i>	Vetch	I	
	<i>Vicia villosa</i>	Hairy vetch, winter vetch	I	
Fagaceae	<i>Quercus douglasii</i>	Blue oak	N	
	<i>Quercus kelloggii</i>	California black oak	N	
	<i>Quercus lobata</i>	Valley oak	N	
	<i>Quercus xmorehus</i>	Oracle oak	N	
	<i>Quercus wislizeni</i> var. <i>wislizeni</i>	Interior live oak	N	
Gentianaceae	<i>Cicendia quadrangularis</i>	Timwort	N	
	<i>Zeltnera muehlenbergii</i>	Monterey centaury	N	
Geraniaceae	<i>Erodium botrys</i>	Filaree	I	
	<i>Erodium cicutarium</i>	Redstem filaree	I	Limited
	<i>Erodium moschatum</i>	Greenstem filaree	I	
	<i>Geranium dissectum</i>	Cranesbill, geranium	I	Limited
	<i>Geranium molle</i>	Cranesbill, geranium	I	
Grossulariaceae	<i>Ribes</i> sp.	Gooseberry	N	
	<i>Philadelphus lewisii</i>	Wild mock orange	N	
Haloragaceae	<i>Myriophyllum</i> sp.	Water-milfoil	--	
Hypericaceae	<i>Hypericum anagalloides</i>	Tinker's penny	N	
	<i>Hypericum concinnum</i>	Gold-wire	N	
	<i>Hypericum perforatum</i> ssp. <i>perforatum</i>	Klamathweed	I	Moderate
	<i>Hypericum scouleri</i>	Hypericum	N	
Lamiaceae	<i>Lamium amplexicaule</i>	Henbit	I	
	<i>Lavandula</i> sp. ³	Lavender	I	
	<i>Marrubium vulgare</i>	Horehound	I	Limited
	<i>Mentha pulegium</i>	Pennyroyal	I	Moderate
	<i>Mentha</i> sp.	Mint	--	
	<i>Monardella sheltonii</i>	Monardella	N	
	<i>Pogogyne</i> sp.		N	
	<i>Scutellaria californica</i>	Skullcap	N	

FAMILY	SCIENTIFIC NAME	COMMON NAME	NI ¹	CAL-IPC RATING ²
	<i>Stachys stricta</i>	Hedge-nettle	N	
	<i>Trichostema</i> sp.	Blue curls	N	
Linaceae	<i>Linum bienne</i>	Flax	I	
Lythraceae	<i>Lythrum hyssopifolia</i>		I	Limited
Menyanthaceae	<i>Nymphoides peltata</i>	Water fringe	I	
Molluginaceae	<i>Mollugo verticillata</i>	Carpet-weed	I	
Montiaceae	<i>Calandrinia ciliata</i>	Red maids	N	
	<i>Claytonia parviflora</i> ssp. <i>parviflora</i>		N	
	<i>Claytonia perfoliata</i>	Miner's lettuce	N	
	<i>Montia fontana</i>	Water chickweed	N	
Moraceae	<i>Ficus carica</i>	Edible fig	I	Moderate
	<i>Morus alba</i>	White mulberry	I	
Myrsinaceae	<i>Anagallis arvensis</i>	Scarlet pimpernel	I	
	<i>Anagallis minima</i>	Chaffweed	N	
	<i>Lysimachia nummularia</i> ⁶	Creeping-jenny	I	
Oleaceae	<i>Fraxinus dipetala</i>	California ash	N	
	<i>Fraxinus latifolia</i>	Oregon ash	N	
	<i>Olea europaea</i>	Olive	I	
Onagraceae	<i>Clarkia biloba</i> ssp. <i>brandegeae</i> ⁶	Brandegee's clarkia	N	
	<i>Clarkia purpurea</i> ssp. <i>quadrivulnera</i> ⁶	Four-spot	N	
	<i>Clarkia unguiculata</i> ⁶	Clarkia	N	
	<i>Epilobium ciliatum</i> ssp. <i>ciliatum</i>	Willowherb	N	
	<i>Epilobium densiflorum</i>	Willowherb	N	
	<i>Ludwigia peploides</i> ssp. <i>montevidensis</i>	Water primrose	I	High
Orobanchaceae	<i>Bellardia trixago</i>	Mediterranean linseed	I	
	<i>Castilleja attenuata</i>	Valley tassels	N	
	<i>Castilleja affinis</i> ssp. <i>affinis</i>	Paintbrush, owl's-clover	N	
	<i>Castilleja lineariloba</i>	Owl's-clover	N	
	<i>Cordylanthus pilosus</i> ssp. <i>trifidus</i>	Bird's-beak	N	
	<i>Parentucellia viscosa</i>		I	Limited
	<i>Triphysaria eriantha</i> ssp. <i>eriantha</i>	Butter-and-eggs	N	
	<i>Triphysaria pusilla</i>	Triphysaria	N	
Oxalidaceae	<i>Oxalis micrantha</i>	Dwarf wood-sorrel	I	
Papaveraceae	<i>Eschscholzia caespitosa</i> ⁶	Poppy	N	
	<i>Eschscholzia lobbii</i>	Frying pans	N	
Phrymaceae	<i>Mimulus cardinalis</i>	Monkeyflower	N	
	<i>Mimulus guttatus</i>	Monkeyflower	N	
Plantaginaceae	<i>Callitriche</i> sp.	Water-starwort	N	
	<i>Collinsia sparsiflora</i> var. <i>collina</i>	Chinese-houses	N	
	<i>Gratiola ebracteata</i> ⁶	Bractless hedge-hyssop	N	
	<i>Keckiella breviflora</i> var. <i>breviflora</i>	Bush penstemon	N	
	<i>Kickxia</i> sp.	Kickxia	I	
	<i>Plantago coronopus</i>		I	
	<i>Plantago erecta</i>		N	
	<i>Plantago lanceolata</i>	English plantain	I	Limited
	<i>Plantago major</i>	Common plantain	I	
	<i>Veronica anagallis-aquatica</i>	Water speedwell	I	
	<i>Veronica arvensis</i>	Speedwell	I	
	<i>Veronica peregrina</i> ssp. <i>xalapensis</i>	Purslane speedwell	N	
Polemoniaceae	<i>Collomia grandiflora</i>	Large-flowered collomia	N	
	<i>Gilia capitata</i> ssp. <i>mediomontana</i>	Bluehead gilia	N	

FAMILY	SCIENTIFIC NAME	COMMON NAME	NI ¹	CAL-IPC RATING ²
	<i>Gilia tricolor</i>	Bird's-eye gilia	N	
	<i>Leptosiphon bicolor</i>		N	
	<i>Leptosiphon filipes</i>		N	
	<i>Microsteris gracilis</i>		N	
	<i>Navarretia intertexta</i> ssp. <i>intertexta</i> ⁶	Navarretia	N	
	<i>Navarretia leucocephala</i> ssp. <i>leucocephala</i> ⁶	Navarretia	N	
	<i>Navarretia pubescens</i>	Navarretia	N	
Polygonaceae	<i>Eriogonum nudum</i>	Wild buckwheat	N	
	<i>Eriogonum umbellatum</i> ^{4,6}	Sulphur flower	N	
	<i>Persicaria amphibia</i>	Water smartweed	N	
	<i>Persicaria hydropiper</i>	Waterpepper	I	
	<i>Pterostegia drymarioides</i> ⁶	Woodland threadstem	N	
	<i>Rumex acetosella</i>	Sheep sorrel	I	Moderate
	<i>Rumex conglomeratus</i>	Dock	I	
	<i>Rumex crispus</i>	Curly dock	I	Limited
	<i>Rumex pulcher</i>	Fiddle dock	I	
Portulacaceae	<i>Portulaca oleracea</i>	Purslane	I	
Primulaceae	<i>Dodecatheon clevelandii</i> ssp. <i>patulum</i>	Shooting star	N	
	<i>Dodecatheon hendersonii</i>	Shooting star	N	
Ranunculaceae	<i>Clematis lasiantha</i>	Chaparral clematis	N	
	<i>Delphinium variegatum</i> ssp. <i>variegatum</i>	Royal larkspur	N	
	<i>Ranunculus aquatilis</i> var. <i>aquatilis</i>	Buttercup	N	
	<i>Ranunculus bonariensis</i> var. <i>triseptus</i>	Buttercup	N	
	<i>Ranunculus hebecarpus</i>	Buttercup	N	
	<i>Ranunculus muricatus</i>	Buttercup	I	
	<i>Ranunculus occidentalis</i> var. <i>occidentalis</i>	Buttercup	N	
	<i>Thalictrum</i> sp.	Meadow-rue	N	
	<i>Ceanothus cuneatus</i> var. <i>cuneatus</i>	Buckbrush	N	
	<i>Frangula californica</i> ssp. <i>tomentella</i>	California coffee berry	N	
Rosaceae	<i>Rhamnus ilicifolia</i>	Hollyleaf redberry	N	
	<i>Aphanes occidentalis</i>		N	
	<i>Cercocarpus betuloides</i> var. <i>betuloides</i>	Birch-leaf mountain-mahogany	N	
	<i>Heteromeles arbutifolia</i>	Toyon	N	
	<i>Prunus</i> sp.		--	
	<i>Rosa californica</i>	California rose	N	
	<i>Rosa rubiginosa</i>	Sweet-brier	I	
	<i>Rubus armeniacus</i>	Himalayan blackberry	I	High
	<i>Cephalanthus occidentalis</i>	California button willow	N	
	<i>Galium aparine</i>	Goose grass	N	
Rubiaceae	<i>Galium divaricatum</i>	Lamarck's bedstraw	I	
	<i>Galium murale</i>	Tiny bedstraw	I	
	<i>Galium parisiense</i>	Wall bedstraw	I	
	<i>Galium porrigens</i> var. <i>tenue</i>	Climbing bedstraw	N	
	<i>Sherardia arvensis</i>	Field madder	I	
	<i>Salix fremontii</i> ssp. <i>fremontii</i>	Fremont cottonwood	N	
	<i>Salix gooddingii</i>	Goodding's black willow	N	
Salicaceae	<i>Salix laevigata</i>	Red willow	N	

FAMILY	SCIENTIFIC NAME	COMMON NAME	NI ¹	CAL-IPC RATING ²
	<i>Salix lasiolepis</i>	Arroyo willow	N	
Sapindaceae	<i>Aesculus californica</i>	California buckeye	N	
Saxifragaceae	<i>Lithophragma bolanderi</i> ⁶	Woodland star	N	
	<i>Micranthes californica</i> ⁶	Saxifrage	N	
Scrophulariaceae	<i>Verbascum blattaria</i>	Moth mullein	I	
	<i>Verbascum thapsus</i>	Woolly mullein	I	Limited
Urticaceae	<i>Urtica urens</i>	Dwarf nettle	I	
Valerianaceae	<i>Plectritis ciliosa</i>		N	
	<i>Valerianella locusta</i>	Corn salad	I	
Verbenaceae	<i>Phyla nodiflora</i>		N	
	<i>Verbena litoralis</i>	Vervain	I	
Viscaceae	<i>Arceuthobium campylopodum</i>	Western dwarf mistletoe	N	
	<i>Phoradendron serotinum</i> ssp. <i>macrophyllum</i>	American mistletoe	N	
	<i>Phoradendron serotinum</i> ssp. <i>tomentosum</i>	American mistletoe	N	
Vitaceae	<i>Vitis californica</i> ⁶	California wild grape	N	
MONOCOTS				
Agavaceae	<i>Chlorogalum angustifolium</i>	Soap plant	N	
	<i>Chlorogalum pomeridianum</i> var. <i>pomeridianum</i>	Soap plant	N	
Alismataceae	<i>Alisma triviale</i>	Water-plantain	N	
Alliaceae	<i>Allium peninsulare</i> var. <i>peninsulare</i> ⁶	Onion	N	
Araceae	<i>Lemna valdiviana</i>	Duckweed	N	
Cyperaceae	<i>Carex barbarae</i>	Whiteroot sedge	N	
	<i>Carex nudata</i>	Torrent sedge	N	
	<i>Carex praegracilis</i>	Black creeper	N	
	<i>Carex</i> sp. (group 11D-H)	Sedge	N	
	<i>Carex stipata</i> var. <i>stipata</i>	Awl-fruited sedge	N	
	<i>Carex vulpinoidea</i>	Brown fox sedge	I	
	<i>Cyperus eragrostis</i>	Nutsedge	N	
	<i>Cyperus niger</i>	Nutsedge	N	
	<i>Eleocharis pachycarpa</i>	Spikerush	I	
	<i>Eleocharis</i> sp.	Spikerush	N	
	<i>Schoenoplectus acutus</i> var. <i>occidentalis</i>	Common tule	N	
Iridaceae	<i>Iris pseudacorus</i>	Iris	I	
	<i>Sisyrinchium bellum</i>	Western blue-eyed-grass	N	
	<i>Sisyrinchium elmeri</i>	Elmer's blue-eyed-grass	N	
Juncaceae	<i>Juncus acuminatus</i>	Tapered rush	N	
	<i>Juncus balticus</i> ssp. <i>ater</i>	Baltic rush	N	
	<i>Juncus bufonius</i> var. <i>occidentalis</i> ⁶	Western toad rush	N	
	<i>Juncus capitatus</i>	Dwarf rush	I	
	<i>Juncus effusus</i>	Soft rush	N	
	<i>Juncus</i> sp. (iris-leaved)	Iris-leaved rush	N	
	<i>Juncus tenuis</i>	Slender rush	N	
	<i>Juncus usitatus</i>	Australian rush	I	
	<i>Luzula subsessilis</i>	Hairy wood rush	N	
Juncaginaceae	<i>Triglochin scilloides</i>	Flowering-quillwort	N	
Liliaceae	<i>Calochortus albus</i>	White globe lily	N	
	<i>Calochortus luteus</i>	Calochortus	N	

FAMILY	SCIENTIFIC NAME	COMMON NAME	NI ¹	CAL-IPC RATING ²
	<i>Erythronium multiscapideum</i> ^{5,6}	Fawn lily	N	
	<i>Fritillaria micrantha</i>	Brown bells	N	
	<i>Lilium</i> sp.	Lily	N	
Orchidaceae	<i>Spiranthes porrifolia</i>	Ladies tresses	N	
Poaceae	<i>Aegilops triuncialis</i>	Barbed goat grass	I	High
	<i>Aira caryophyllea</i>	Silver hair grass	I	
	<i>Andropogon virginicus</i> var. <i>virginicus</i>	Broomsedge bluestem	I	
	<i>Avena barbata</i>	Slender wild oat	I	Moderate
	<i>Avena fatua</i>	Wild oat	I	Moderate
	<i>Brachypodium distachyon</i> ⁶	False brome	I	Moderate
	<i>Bromus berterianus</i>	Chilean chess	N	
	<i>Bromus diandrus</i>	Ripgut grass	I	Moderate
	<i>Bromus hordeaceus</i>	Soft chess	I	Moderate
	<i>Bromus laevipes</i>	Woodland brome	N	
	<i>Bromus madritensis</i> ssp. <i>madritensis</i>	Foxtail chess	I	
	<i>Bromus sterilis</i>	Poverty brome	I	
	<i>Briza maxima</i>	Large quaking grass	I	Limited
	<i>Briza minor</i>	Small quaking grass	I	
	<i>Cynodon dactylon</i>	Bermuda grass	I	Moderate
	<i>Cynosurus echinatus</i>	Bristly dogtail grass	I	Moderate
	<i>Dactylis glomerata</i>	Orchard grass	I	Limited
	<i>Deschampsia elongata</i> ⁶	Slender hair grass	N	
	<i>Elymus caput-medusae</i>	Medusa head	I	High
	<i>Elymus elymoides</i> var. <i>elymoides</i> ⁶	Squirreltail	N	
	<i>Elymus glaucus</i>	Blue wild-rye	N	
	<i>Festuca bromoides</i>	Brome fescue	I	
	<i>Festuca microstachys</i>	Fescue	N	
	<i>Festuca myuros</i>	Rattail sixweeks grass	I	Moderate
	<i>Festuca perennis</i>	Rye grass	I	Moderate
	<i>Gastridium phleoides</i>	Nit grass	I	
	<i>Glyceria declinata</i>	Low manna grass	I	Moderate
	<i>Holcus lanatus</i>	Common velvet grass	I	Moderate
	<i>Hordeum marinum</i> ssp. <i>gussoneanum</i>	Mediterranean barley	I	Moderate
	<i>Hordeum murinum</i> ssp. <i>leporinum</i>	Hare barley	I	Moderate
	<i>Leersia oryzoides</i>	Rice cutgrass	N	
	<i>Melica torreyana</i>	Torrey's melic	N	
	<i>Muhlenbergia rigens</i>	Deer grass	N	
	<i>Panicum acuminatum</i> var. <i>fasciculatum</i>	Pacific panic grass	N	
	<i>Panicum capillare</i>	Witch grass	N	
	<i>Paspalum dilatatum</i>	Dallis grass	I	
	<i>Paspalum distichum</i>	Knot grass	N	
	<i>Phalaris arundinacea</i>	Reed canary grass	N	
	<i>Poa annua</i>	Annual blue grass	I	
	<i>Poa bulbosa</i>		I	
	<i>Poa secunda</i> ssp. <i>secunda</i>	One-sided blue grass	N	
	<i>Polypogon interruptus</i>	Ditch beard grass	I	
	<i>Polypogon monspeliensis</i>	Annual beard grass	I	Limited
	<i>Polypogon viridis</i>	Water beard grass	I	
	<i>Stipa pulchra</i>	Purple needle grass	N	
	<i>Stipa lemmonii</i> var. <i>lemmonii</i>	Lemmon's needle grass	N	

FAMILY	SCIENTIFIC NAME	COMMON NAME	N/I ¹	CAL-IPC RATING ²
Potamogetonaceae	<i>Potamogeton diversifolius</i>	Diverse-leaved pondweed	N	
Tecophilaeaceae	<i>Odontostomum hartwegii</i>	Odontostomum	N	
Themidaceae	<i>Brodiaea appendiculata</i>	Brodiaea	N	
	<i>Brodiaea elegans</i> ssp. <i>elegans</i>	Harvest brodiaea	N	
	<i>Brodiaea coronaria</i>	Garland brodiaea	N	
	<i>Brodiaea sierrae</i>	Sierra Foothills brodiaea	N	
	<i>Dichelostemma capitatum</i> ssp. <i>capitatum</i>	Blue dicks	N	
	<i>Dichelostemma multiflorum</i>	Wild hyacinth	N	
	<i>Dichelostemma volubile</i>	Twining brodiaea, snake lily	N	
	<i>Triteleia bridgesii</i>	Triteleia	N	
	<i>Triteleia hyacinthina</i> ⁶	White brodiaea	N	
	<i>Triteleia ixioides</i> ssp. <i>scabra</i>		N	
	<i>Triteleia laxa</i>	Ithuriel's spear	N	
Typhaceae	<i>Typha angustifolia</i>	Narrow-leaved cattail	N/I	

¹ N = Native; I = Introduced.

² High/Moderate/Limited = CAL-IPC Inventory; reflects level of each species' negative ecological impact in California.

³ Horticultural waif. Two plants observed growing, apparently naturalized, along the western margin of the reservoir.

⁴ Only a few plants observed on some rock outcrops along the edge of the Bear River reach of the BSA. Specimen keys to var. *polyanthum* in Baldwin et al. (2012) but that taxon now treated as a misapplied name of CA plants in var. *dumosum* (Jepson Flora Project 2013). Specimen does not have the inflorescence branching pattern or rusty-woolly abaxial leaf surfaces of var. *ahartii*.

⁵ Leaves lack typical mottles. Plants growing in deep shade.

⁶ Voucher specimen deposited at the herbarium at the UC Davis Center for Plant Diversity.

Wildlife Species Observed.

COMMON NAME	SCIENTIFIC NAME
REPTILES	
Garter snake	<i>Thamnophis</i> sp.
Gopher snake	<i>Pituophis melanoleucus catenifer</i>
Northern alligator lizard	<i>Gerrhonotus coeruleus</i>
Western fence lizard	<i>Sceloporus occidentalis</i>
AMPHIBIANS	
Bullfrog	<i>Lithobates catesbeiana</i>
Pacific treefrog	<i>Pseudacris regilla</i>
Western toad	<i>Bufo boreas</i>
BIRDS	
Acorn woodpecker	<i>Melanerpes formicivorus</i>
American coot	<i>Fulica americana</i>
American crow	<i>Corvus brachyrhynchos</i>
American kestrel	<i>Falco sparverius</i>
American robin	<i>Turdus migratorius</i>
American white pelican ⁴	<i>Pelecanus erythrorhynchos</i>
Bald eagle	<i>Haliaeetus leucocephalus</i>
Belted kingfisher	<i>Ceryle alcyon</i>
Bewick's wren	<i>Thryomanes bewickii</i>
Black phoebe	<i>Sayornis nigricans</i>
Black-headed grosbeak	<i>Pheucticus melanocephalus</i>
Brewer's blackbird	<i>Euphagus cyanocephalus</i>
Bushtit	<i>Psaltiriparus minimus</i>
California gull	<i>Larus californicus</i>
California quail	<i>Callipepla californica</i>
Canada goose	<i>Branta canadensis</i>
Cassin's vireo	<i>Vireo cassinii</i>
Cliff swallow	<i>Hirundo pyrrhonota</i>
Common merganser	<i>Mergus merganser</i>
Common raven	<i>Corvus corax</i>
Cormorant	<i>Phalacrocorax</i> sp.
Dark-eyed junco	<i>Junco hyemalis</i>
European starling	<i>Sturnus vulgaris</i>
Graylag goose	<i>Anser anser</i>
Great blue heron	<i>Ardea herodias</i>
House finch	<i>Carpodacus mexicanus</i>
Hummingbird	--
Killdeer	<i>Charadrius vociferus</i>
Lark sparrow	<i>Chondestes grammacus</i>
Lesser goldfinch	<i>Carduelis psaltria</i>
Mallard	<i>Anas platyrhynchos</i>
Mourning dove	<i>Zenaida macroura</i>
Northern flicker	<i>Colaptes auratus</i>
Northern harrier	<i>Circus cyaneus</i>
Northern mockingbird	<i>Mimus polyglottos</i>
Northern rough-winged swallow	<i>Stelgidopteryx serripennis</i>
Nuttall's woodpecker	<i>Picoides nuttallii</i>
Oak titmouse (Plain titmouse)	<i>Baeolophus inornatus</i>
Osprey	<i>Pandion haliaetus</i>
Red-shouldered hawk	<i>Buteo lineatus</i>

COMMON NAME	SCIENTIFIC NAME
Red-tailed hawk	<i>Buteo jamaicensis</i>
Red-winged blackbird	<i>Agelaius phoeniceus</i>
Rock dove	<i>Columbia livia</i>
Rufous-crowned sparrow	<i>Aimophila ruficeps</i>
Ruby-crowned kinglet	<i>Regulus calendula</i>
Sandhill crane ⁵	<i>Grus canadensis</i>
Song sparrow	<i>Melospiza melodia</i>
Spotted towhee	<i>Pipilo maculatus</i>
Tree swallow	<i>Tachycineta bicolor</i>
Turkey vulture	<i>Cathartes aura</i>
Western bluebird	<i>Sialia mexicana</i>
Western grebe	<i>Aechmophorus occidentalis</i>
Western kingbird	<i>Tyrannus verticalis</i>
Western scrub-jay	<i>Aphelocoma californica</i>
Western meadowlark	<i>Sturnella neglecta</i>
White-breasted nuthatch	<i>Sitta carolinensis</i>
White-crowned sparrow	<i>Zonotrichia leucophrys</i>
White-tailed kite	<i>Elanus leucurus</i>
Wild turkey	<i>Meleagris gallopavo</i>
Wilson's snipe	<i>Gallinago delicata</i>
Yellow-billed magpie	<i>Pica nuttalli</i>
Yellow-rumped warbler	<i>Dendroica coronata</i>
MAMMALS	
Black-tailed jackrabbit	<i>Lepus californicus</i>
California ground squirrel	<i>Spermophilus beecheyi</i>
Coyote ¹	<i>Canis latrans</i>
Mule deer	<i>Odocoileus hemionus</i>
Muskrat	<i>Ondatra zibethicus</i>
Raccoon ²	<i>Procyon lotor</i>
River otter	<i>Lutra canadensis</i>
Striped skunk	<i>Mephitis mephitis</i>
Western gray squirrel	<i>Sciurus griseus</i>
Wild pig ³	<i>Sus scrofa</i>

¹ Scat and call.² Tracks.³ Soil disturbance and heard.⁴ No nesting colonies observed.⁵ Overhead only.

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Appendix D Photographs



Photo 1. Blue oak woodland - Recreational Use in the campground on the north side of the Reservoir (Sheet 3; 7 March 2013).

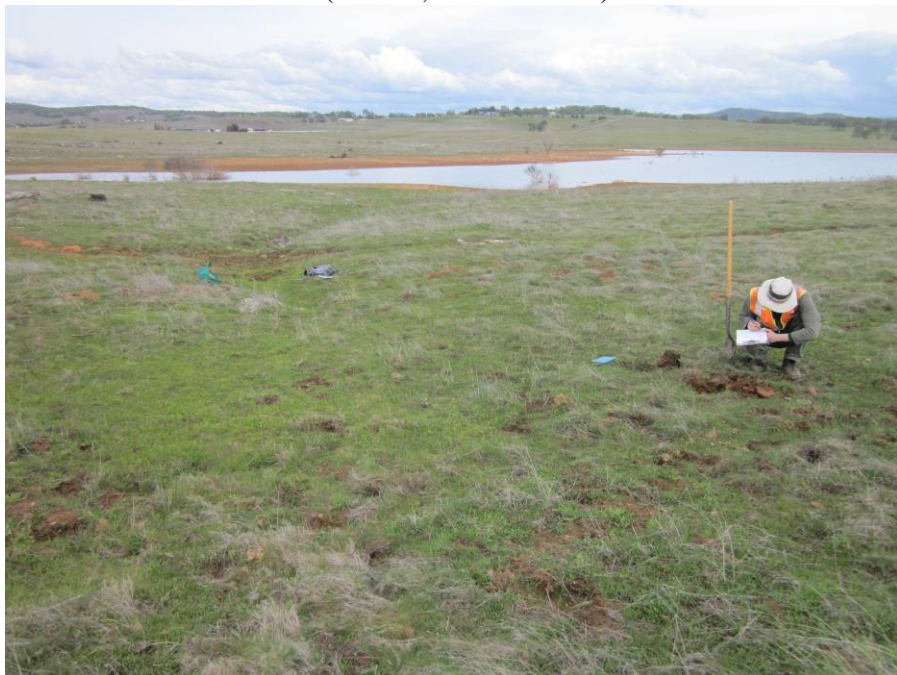


Photo 2. Annual brome grassland near seasonal wetland swale 1 (Sheet 1; 7 March 2013).



Photo 3. Blue oak woodland along the Bear River reach of the BSA. The arrow indicates osprey nest #1 (Sheet 10; 9 April 2013).



Photo 4. The BSA is narrow in this steep area of grey pine woodland (Sheet 11; 9 April 2013).



Photo 5. Interior live oak woodland around the mouth of Channel 51 (Sheet 11; 9 April 2013).



Photo 6. The Bear River just upstream of the end of the Reservoir (Sheet 12; 9 April 2013).



Photo 7. View west along Rock Creek. The Reservoir is in the background (Sheet 6; 12 March 2013).



Photo 8. The pit of the Dairy Farm Mine (Sheet 14; 12 March 2013).



Photo 9. Typical conditions just below the high water mark of the Reservoir. Blue oak woodland - recreation use is above the high water mark (Sheet 15; 5 March 2013).



Photo 10. The bed of the Reservoir just below intermittent Channel 64. Some woody vegetation persists. A willow tree is on the left and a California button willow shrub is on the right (Sheet 14; 14 May 2013).



Photo 11. The tip of an inlet of the Reservoir at seasonal wetland swale 10. The high water mark of the Reservoir is near the fallen tree branch. (Sheet 7; 16 May 2013).



Photo 12. View north below the high water mark on the Reservoir side of the Camp Far West Dam. The arrow indicates elderberry shrub 1 (Sheet 16; 4 June 2013).



Photo 13. The arrow indicates the base of elderberry shrub 2 (Sheet 7; 27 March 2013).



Photo 14. View north of a relatively high and flat area of the bed of the Reservoir near the spillway that will be used for construction staging. The arrow indicates the bridge over the spillway just visible on the left (Sheet 1; 4 June 2013).



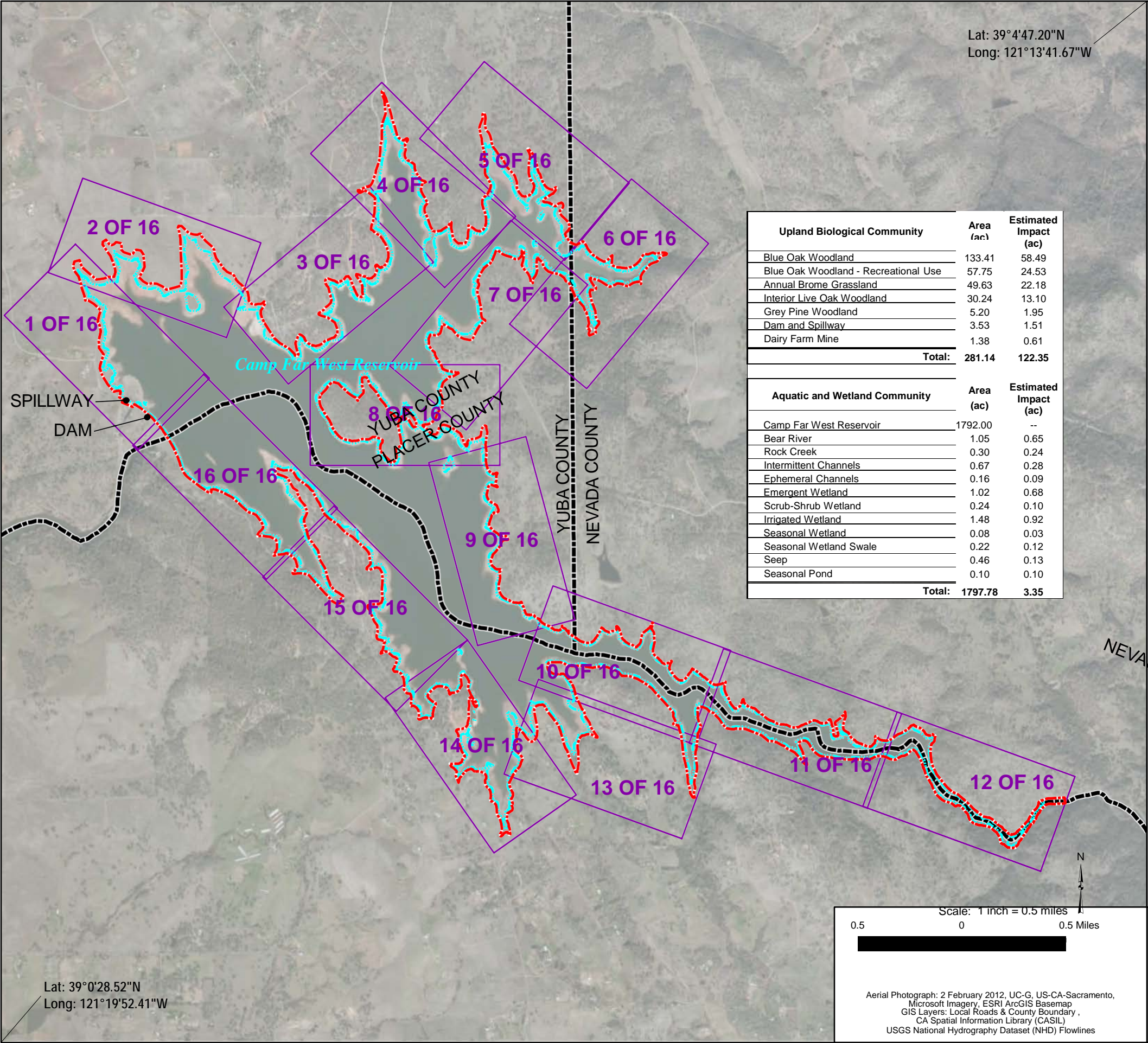
Photo 15. The bald eagle nest (Sheet 12; 9 April 2013).



Photo 16. The arrow on the right indicates two juvenile bald eagles perched on the nest. The arrow on the left indicates an adult perched nearby (Sheet 12; 6 June 2013).

Appendix E Biological Resources Map

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Feature	Sheet	Area (ac)	Impact Area (ac)	Feature	Sheet	Hydrology	Average Width (ft)	Length (ft)	Area (ac)	Impact Length (ft)	Impact Area (ac)
Seasonal Wetland(SW)				Camp Far West Reservoir	All	Perennial	--	--	1,792	--	--
SW 1	3	0.010	--	Bear River	12	Perennial	91.0	500	1.045	470	0.646
SW 2	4	0.020	0.015	Rock Creek	6	Perennial	34.3	386	0.304	295	0.243
SW 3	4	0.004	0.004	Seasonal Pond	4	--	--	--	0.104	--	0.103
SW 4	14	0.033	--	Channel (CH)							
SW 5	16	0.010	0.01	CH 1	1	Intermittent	2.5	349	0.020	174	0.010
Total SW	--	0.077	0.029	CH 2	2	Ephemeral	2.1	330	0.016	225	0.011
Emergent Wetland (EW)				CH 3	3	Intermittent	4.0	27	0.002	--	--
EW 1	2	0.041	0.033	CH 4	3	Ephemeral	1.0	72	0.002	46	0.001
EW 2	3	0.024	0.015	CH 5	3	Ephemeral	1.0	102	0.002	65	0.001
EW 3	4	0.024	0.024	CH 6	3	Ephemeral	1.0	62	0.001	62	0.001
EW 4	5	0.259	0.171	CH 7	3	Ephemeral	1.0	117	0.003	65	0.001
EW 5	9	0.031	0.031	CH 8	4	Intermittent	4.0	253	0.023	74	0.007
EW 6	10	0.023	0.018	CH 9	4	Ephemeral	1.0	102	0.002	28	0.001
EW 7	13	0.084	0.084	CH 10	4	Intermittent	5.1	547	0.064	237	0.028
EW 8	14	0.081	0.034	CH 11	4	Ephemeral	1.0	160	0.004	85	0.002
EW 9	13	0.055	0	CH 12	4	Ephemeral	2.0	143	0.007	59	0.003
EW 10	15	0.161	0.133	CH 13	4	Ephemeral	1.0	46	0.001	46	0.001
EW 11	8	0.235	0.135	CH 14	5	Ephemeral	1.5	235	0.008	133	0.005
Total EW	--	1.018	0.678	CH 15	6	Ephemeral	1.0	98	0.002	60	0.001
Scrub-Shrub Wetland (SS)				CH 16	6	Intermittent	2.0	89	0.004	35	0.002
SS 1	14	0.236	0.102	CH 17	6	Intermittent	17.6	265	0.107	178	0.075
Irrigated Wetland (IW)				CH 18	6	Ephemeral	2.0	172	0.008	109	0.005
IW 1	10	0.051	0.017	CH 19	7	Ephemeral	2.0	92	0.004	52	0.002
IW 2	13	0.629	0.368	CH 20	8	Ephemeral	3.0	175	0.012	119	0.008
IW 3	13	0.024	0.023	CH 21	8	Ephemeral	1.0	69	0.002	39	0.001
IW 4	13	0.069	0.052	CH 22	9	Ephemeral	1.0	87	0.002	50	0.001
IW 5	13	0.161	0.100	CH 23	9	Ephemeral	2.0	141	0.006	36	0.002
IW 6	13	0.550	0.359	CH 24	9	Ephemeral	1.0	97	0.002	44	0.001
Total IW	--	1.484	0.919	CH 25	9	Ephemeral	2.0	62	0.003	20	0.001
Seep				CH 26	10	Ephemeral	4.0	100	0.009	44	0.004
SEEP 1	2	0.117	0.013	CH 27	10	Ephemeral	1.0	53	0.001	9	0.000
SEEP 2	2	0.003	0.003	CH 28	10	Ephemeral	2.0	48	0.002	27	0.001
SEEP 3	2	0.002	0.002	CH 29	10	Intermittent	2.0	93	0.004	40	0.002
SEEP 4	3	0.032	0.008	CH 30	10	Intermittent	1.0	169	0.004	55	0.001
SEEP 5	3	0.024	0.001	CH 31	10	Ephemeral	1.0	132	0.003	46	0.001
SEEP 6	3	0.020	0	CH 32	10	Ephemeral	2.0	94	0.004	70	0.003
SEEP 7	9	0.065	0.024	CH 33	10	Ephemeral	1.0	25	0.001	--	--
SEEP 8	14	0.048	0.039	CH 34	11	Intermittent	3.0	145	0.010	48	0.003
SEEP 9	15	0.146	0.044	CH 35	11	Intermittent	2.0	117	0.005	36	0.002
Total Seep	--	0.457	0.134	CH 36	11	Intermittent	5.0	299	0.034	124	0.014
Seasonal Wetland Swale (SWS)				CH 37	11	Ephemeral	1.0	95	0.002	42	0.001
SWS 1	1	0.009	0.007	CH 38	12	Ephemeral	1.0	74	0.002	26	0.001
SWS 2	2	0.026	0.014	CH 39	12	Intermittent	2.0	31	0.001	17	0.001
SWS 3	2	0.011	0.006	CH 40	12	Intermittent	2.0	75	0.003	25	0.001
SWS 4	2	0.048	0.014	CH 41	12	Ephemeral	3.0	19	0.001	10	0.001
SWS 5	2	0.001	0.001	CH 42	12	Ephemeral	2.0	32	0.001	15	0.001
SWS 6	3	0.017	0.004	CH 43	12	Ephemeral	1.0	20	less than 0.001	8	0.000
SWS 7	3	0.004	0.003	CH 44	12	Ephemeral	2.0	22	0.001	12	0.001
SWS 8	4	0.005	0.002	CH 45	12	Ephemeral	1.0	50	0.001	17	0.000
SWS 9	5	0.095	0.069	CH 46	12	Intermittent	7.0	37	0.006	19	0.003
SWS 10	7	0.004	0.003	CH 47	12	Ephemeral	5.0	41	0.005	26	0.003
Total SWS	--	0.220	0.123	CH 48	12	Ephemeral	5.0	34	0.004	18	0.002
Total Wetlands	--	3.492	1.985	CH 49	12	Ephemeral	1.0	20	less than 0.001	10	0.000
				CH 50	12	Ephemeral	2.0	33	0.002	17	0.001
				CH 51	11	Intermittent	6.0	130	0.018	49	0.007
				CH 52	11	Ephemeral	1.0	54	0.001	29	0.001
				CH 53	11	Ephemeral	1.0	41	0.001	21	0.000
				CH 54	13	Ephemeral	1.0	65	0.001	32	0.001
				CH 55	13	Ephemeral	1.0	71	0.002	14	0.000
				CH 56	13	Intermittent	20.0	393	0.180	214	0.098
				CH 57	10	Ephemeral	2.0	44	0.002	30	0.001
				CH 58	10	Ephemeral	1.0	41	0.001	21	0.000
				CH 59	13	Ephemeral	1.0	83	0.002	46	0.001
				CH 60	13	Intermittent	6.0	259	0.036	48	0.007
				CH 61	13	Intermittent	6.0	509	0.070	231	0.032
				CH 62	13	Intermittent	3.0	182	0.013	109	0.008
				CH 63	14	Ephemeral	2.0	206	0.009	100	0.005
				CH 64	14	Intermittent	6.0	270	0.037	161	0.022
				CH 65	14	Intermittent	4.0	90	0.008	60	0.006
				CH 66	14	Intermittent	3.0	73	0.005	50	0.003
				CH 67	14	Ephemeral	1.0	105	0.002	51	0.001
				CH 68	14	Ephemeral	1.0	71	0.002	20	0.000
				CH 69	14	Ephemeral	1.5	98	0.003	62	0.002
				CH 70	14	Ephemeral	1.5	69	0.002	28	0.001
				CH 71	15	Ephemeral	1.0	69	0.002	34	0.001
				CH 72	15	Ephemeral	1.0	89	0.002	28	0.001
				CH 73	15	Intermittent	1.0	147	0.003	43	0.001
				CH 74	15	Ephemeral	1.0	205	0.005	128	0.003
				CH 75	15	Ephemeral	1.0	60	0.001	57	0.001
				CH 76	16	Intermittent	5.0	106	0.012	54	0.006
Sub-Total Channels	--	9,280	0.833						4,522	0.427	
Total	--	10,166	1,794.286						5,287	1.419	

Camp Far West Reservoir Project
Yuba, Nevada and Placer Counties, CA
24 July 2013

Figure 3. Biological Resources Map

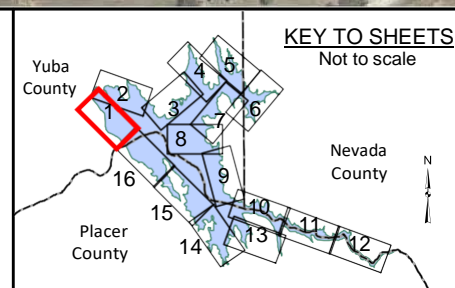


KEY TO SHEETS



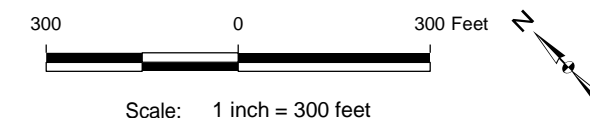
Camp Far West Reservoir Project
Yuba, Nevada and Placer Counties, CA
24 July 2013

Figure 3.
Biological Resources Map



- Biological Study Area (BSA)
- OHWM
- Channel (CH)
- Estimated Limits of Impact
- Biological Community Boundary

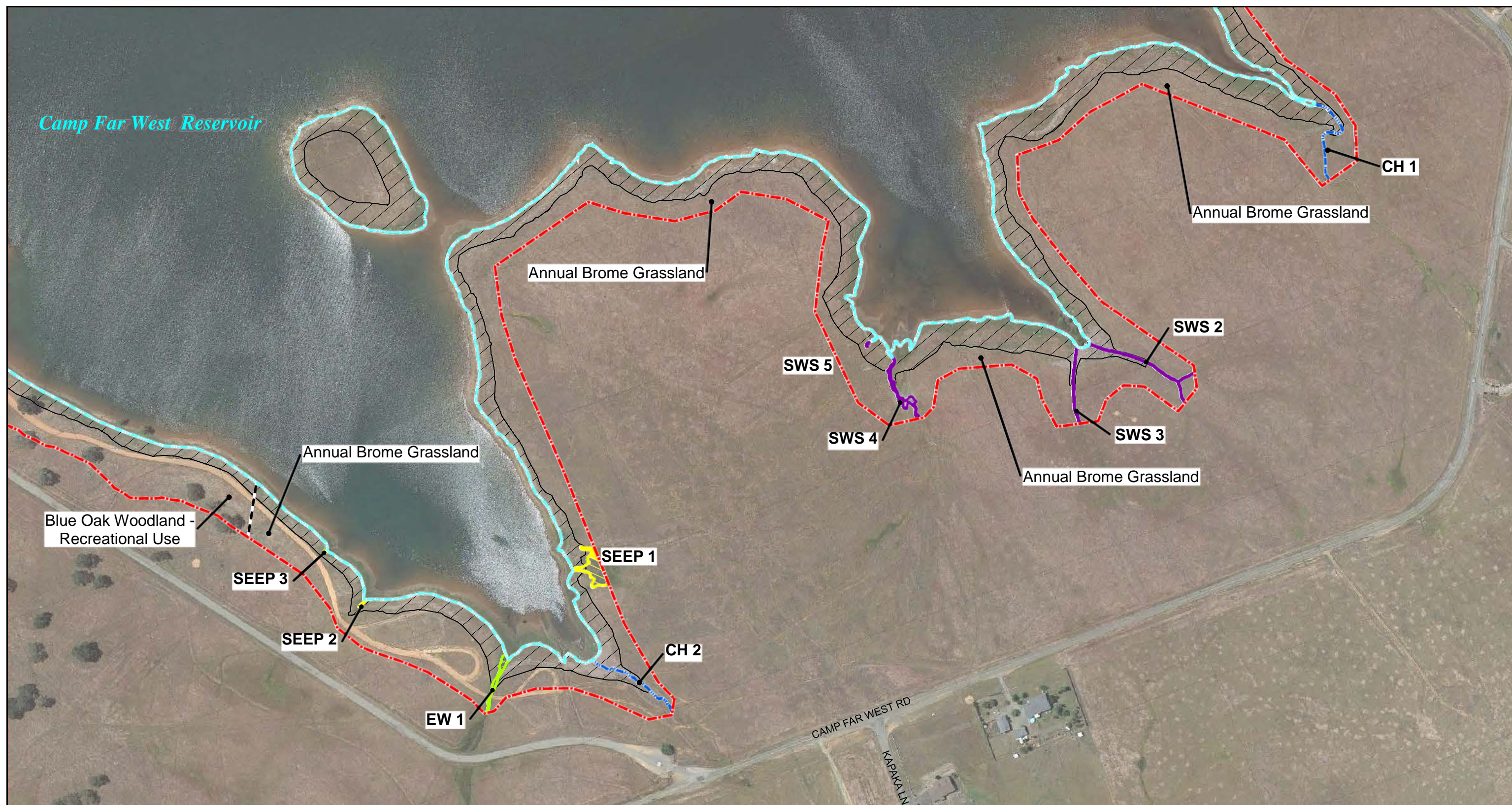
- Seasonal Wetland Swale (SWS)



Aerial Photograph: 13 June 2011, Google Earth Pro

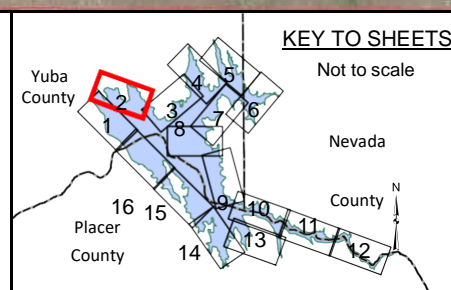
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SHEET 1 OF 16



Camp Far West Reservoir Project
Yuba, Nevada and Placer Counties, CA
24 July 2013

Figure 3.
Biological Resources Map



- Biological Study Area (BSA)
- OHWM
- Channel (CH)
- Estimated Limits of Impact
- Biological Community Boundary

- Emergent Wetland (EW) Seasonal
- Wetland Swale (SWS) Seep



Scale: 1 inch = 300 feet

Aerial Photograph: 13 June 2011, Google Earth Pro

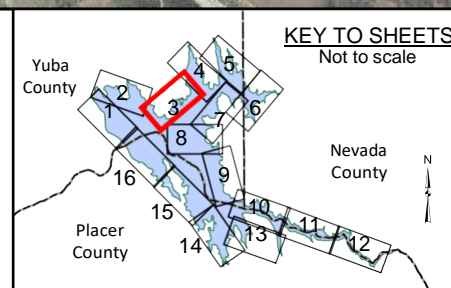


SHEET 2 OF 16



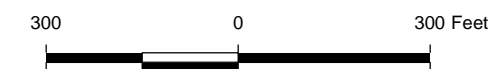
Camp Far West Reservoir Project
Yuba, Nevada and Placer Counties, CA
24 July 2013

Figure 3.
Biological Resources Map



- Biological Study Area (BSA)
- OHWM
- Channel (CH)
- Estimated Limits of Impact
- Biological Community Boundary

- Emergent Wetland (EW)
- Seasonal Wetland (SW)
- Seasonal Wetland Swale (SWS)
- Seasonal Pond (SP)
- Seep



Scale: 1 inch = 300 feet

Aerial Photograph: 13 June 2011, Google Earth Pro

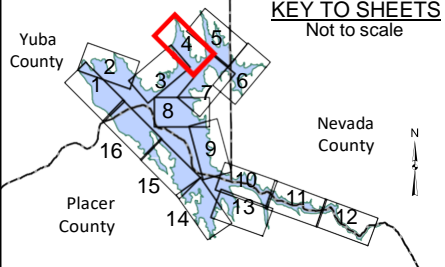


SHEET 3 OF 16



Camp Far West Reservoir Project
Yuba, Nevada and Placer Counties, CA
24 July 2013

Figure 3.
Biological Resources Map



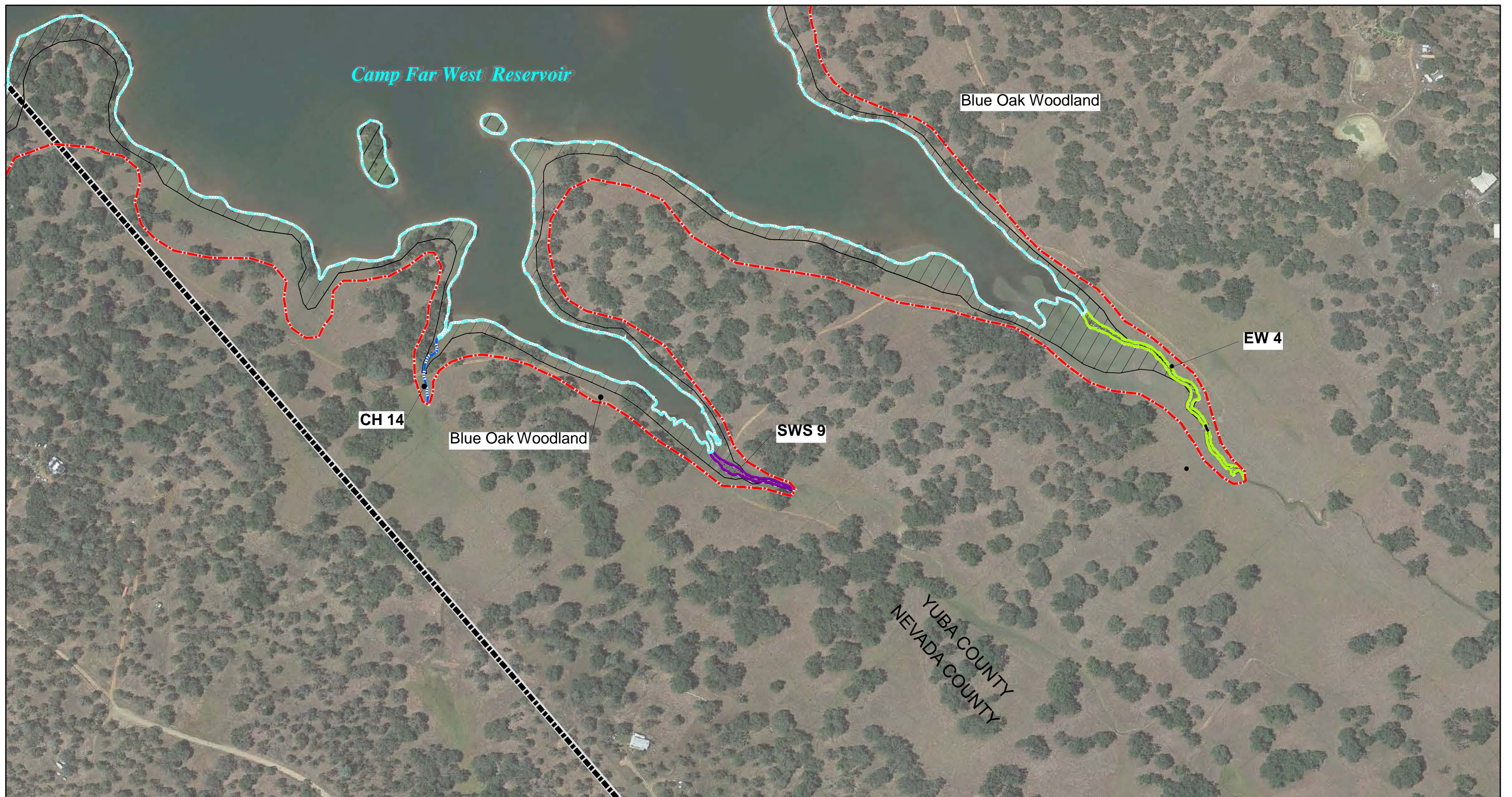
- KEY TO SHEETS**
Not to scale
- Biological Study Area (BSA)
 - OHWM
 - Channel (CH)
 - Estimated Limits of Impact Biological Community Boundary

- Emergent Wetland (EW)
- Seasonal Wetland (SW)
- Seasonal Wetland Swale (SWS)
- Seasonal Pond (SP)



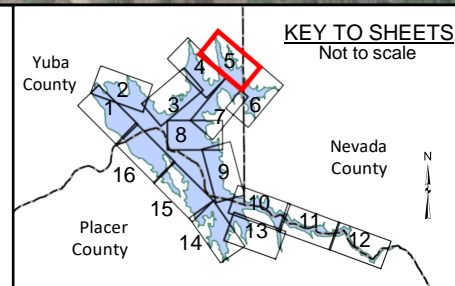
Aerial Photograph: 13 June 2011, Google Earth Pro





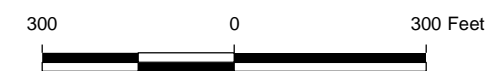
Camp Far West Reservoir Project
Yuba, Nevada and Placer Counties, CA
24 July 2013

Figure 3.
Biological Resources Map



- Biological Study Area (BSA)
- OHWM
- Channel (CH)
- Estimated Limits of Impact
- Biological Community Boundary

- Emergent Wetland (EW)
- Seasonal Wetland Swale (SWS)

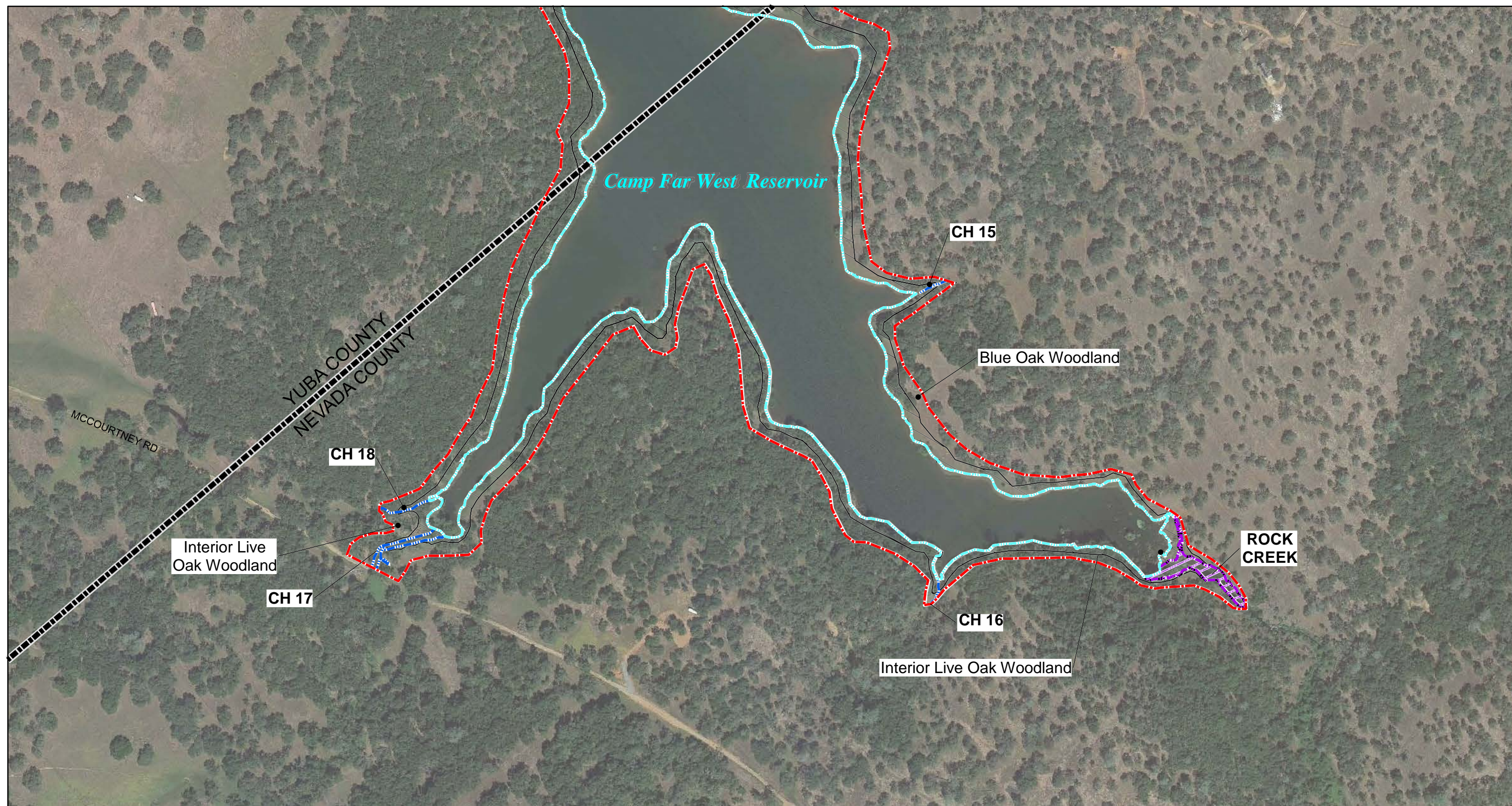


Scale: 1 inch = 300 feet

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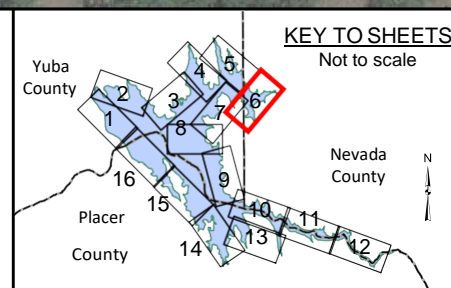
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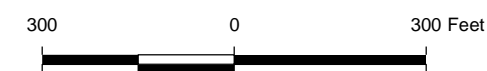


Camp Far West Reservoir Project
Yuba, Nevada and Placer Counties, CA
24 July 2013

Figure 3.
Biological Resources Map



- Biological Study Area (BSA)
- OHWM
- Channel (CH)
- Rock Creek
Estimated Limits of Impact
- Biological Community Boundary



Scale: 1 inch = 300 feet

Aerial Photograph: 13 June 2011, Google Earth Pro

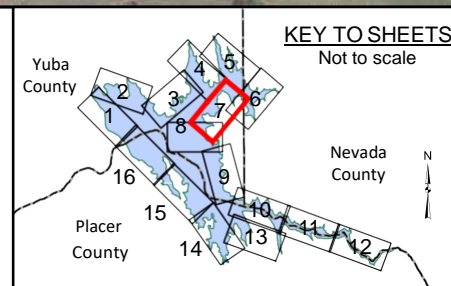
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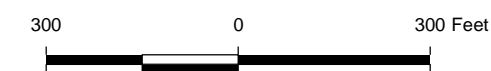
Camp Far West Reservoir Project
Yuba, Nevada and Placer Counties, CA
24 July 2013

Figure 3.
Biological Resources Map



- Biological Study Area (BSA)
- OHWM
- Channel (CH)
- ★ Elderberry Shrub
- Estimated Limits of Impact
- Biological Community Boundary

- Seasonal Wetland Swale (SWS)



Scale: 1 inch = 300 feet

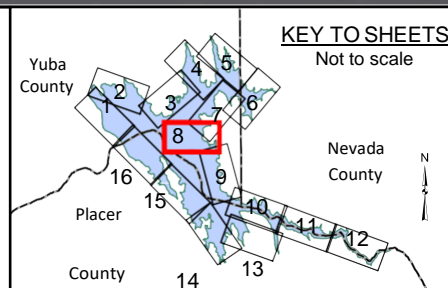
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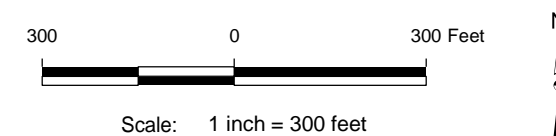
Camp Far West Reservoir Project
Yuba, Nevada and Placer Counties, CA
24 July 2013

Figure 3
Biological Resources Map



- Biological Study Area (BSA)
- OHWM
- Channel (CH)
- ✦ Elderberry Shrub
- Estimated Limits of Impact
- Biological Community Boundary

- Emergent Wetland (EW)



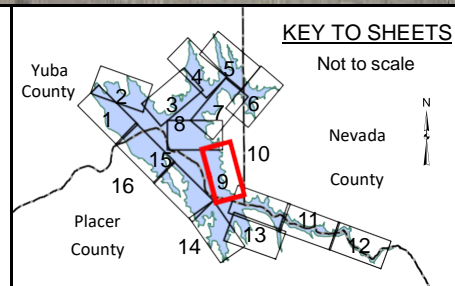
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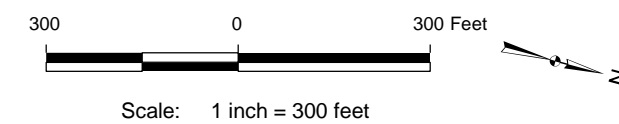
Camp Far West Reservoir Project
Yuba, Nevada and Placer Counties, CA
24 July 2013

Figure 3.
Biological Resources Map



- KEY TO SHEETS**
- Not to scale
- Yuba County
- Placer County
- Nevada
- County
- Estimated Limits of Impact
- Biological Community Boundary

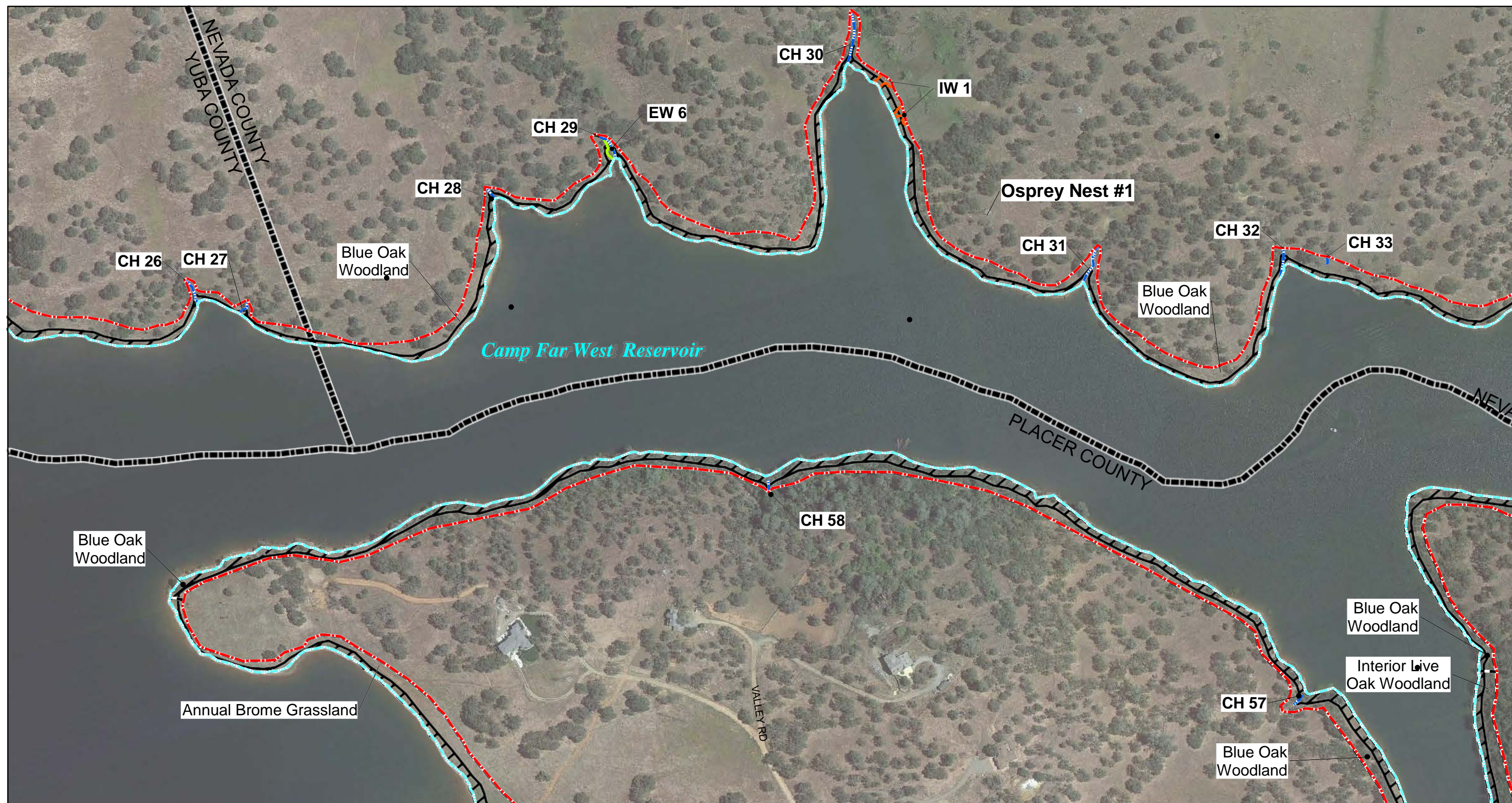
- Biological Study Area (BSA)
- OHWM
- Channel (CH)
- Emergent Wetland (EW)
- Seep



Aerial Photograph: 13 June 2011, Google Earth Pro

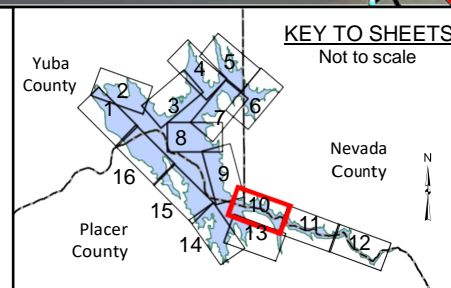
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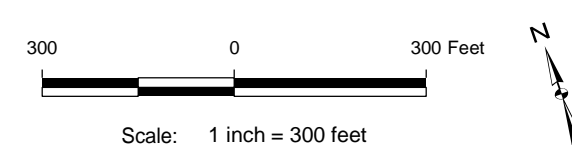
Camp Far West Reservoir Project
Yuba, Nevada and Placer Counties, CA
24 July 2013

Figure 3.
Biological Resources Map



- Biological Study Area (BSA)
- OHWM
- Channel (CH)
- Estimated Limits of Impact
- Biological Community Boundary

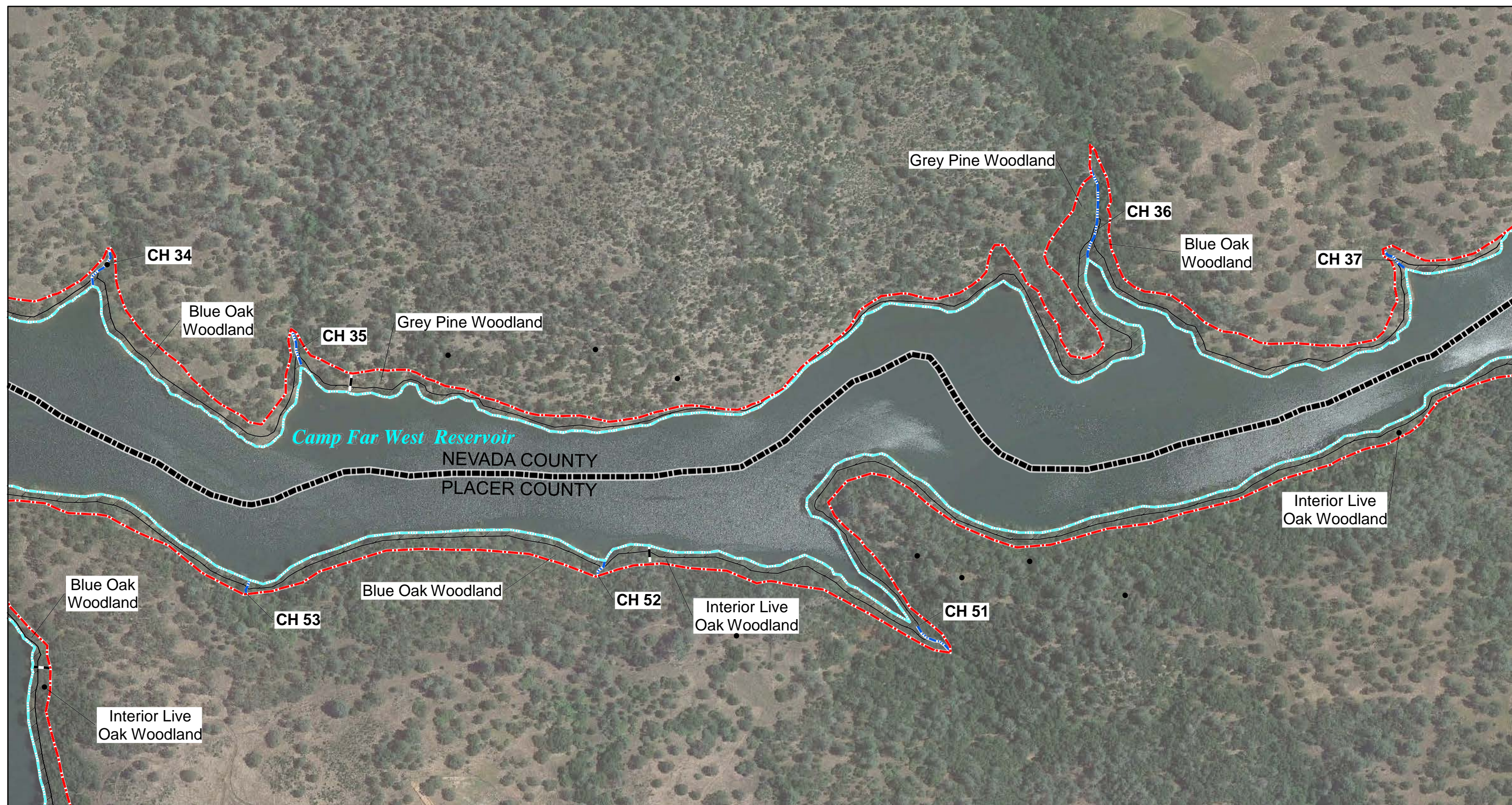
- Emergent Wetland (EW)
- Irrigated Wetland (IW)
- Osprey Nest



Aerial Photograph: 13 June 2011, Google EarthPro

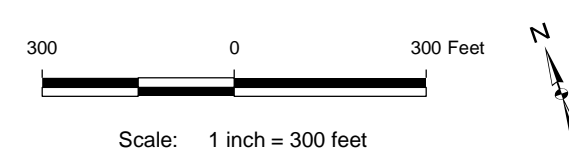
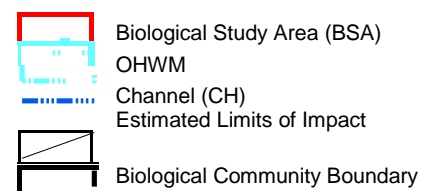
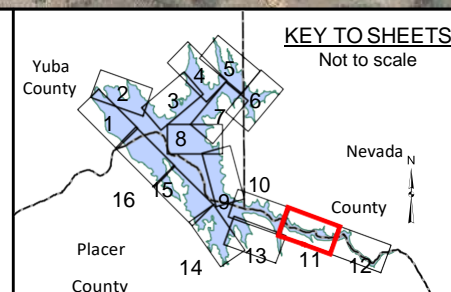
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SHEET 10 OF 16



Camp Far West Reservoir Project
Yuba, Nevada and Placer Counties, CA
24 July 2013

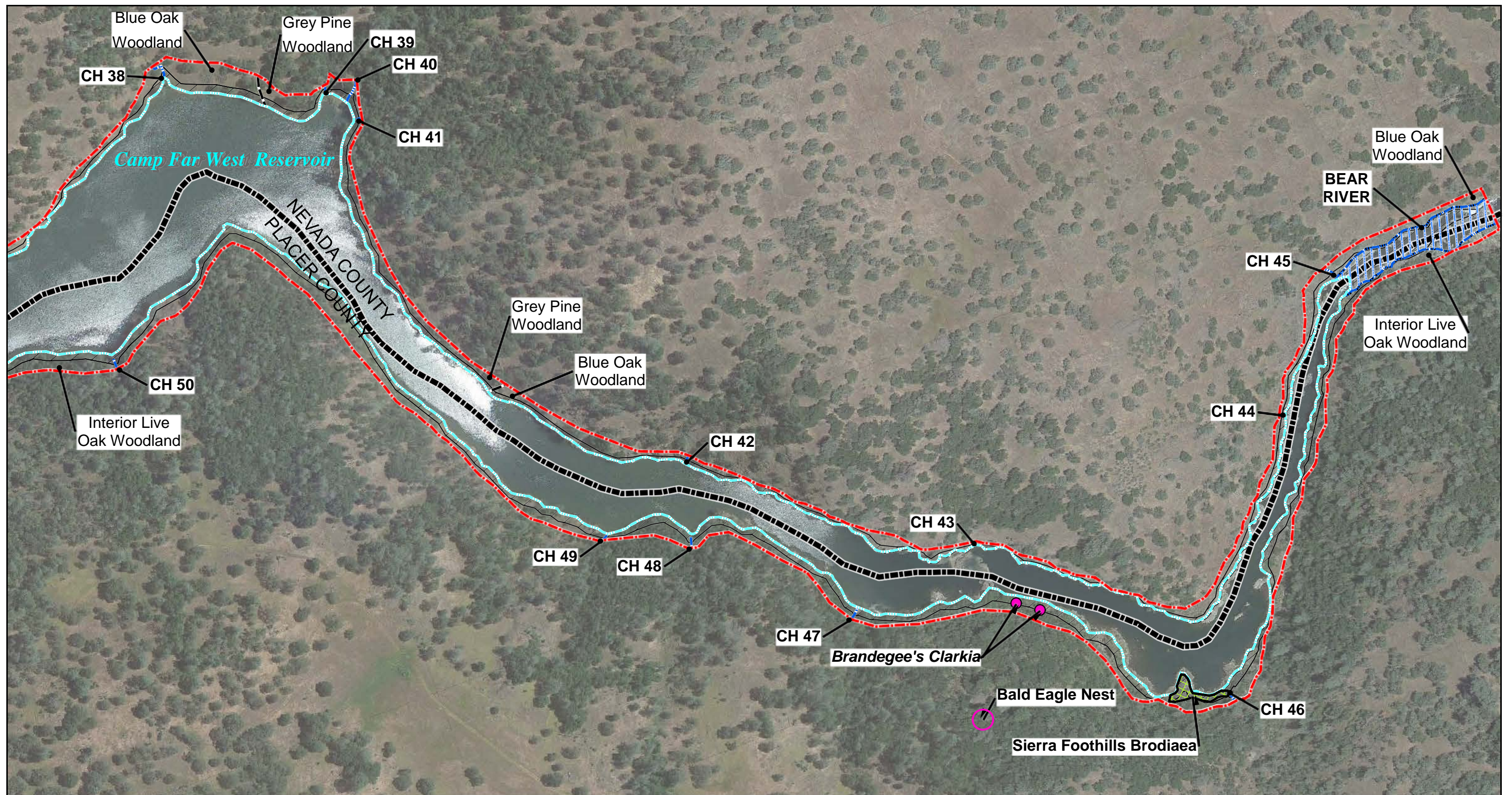
Figure 3.
Biological Resources Map



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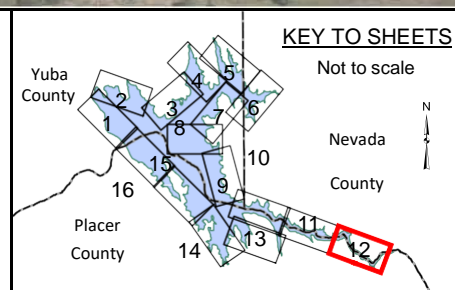
SHEET 11 OF 16

Aerial Photograph: 13 June 2011, Google Earth Pro



Camp Far West Reservoir Project
Yuba, Nevada and Placer Counties, CA
24 July 2013

Figure 3.
Biological Resources Map



- Biological Study Area (BSA)
- OHWM
- Channel (CH)
- Bear River
- Estimated Limits of Impact
- Biological Community Boundary

- Bald Eagle Nest
- Brandeggee's Clarkia
- Sierra Foothills Brodiaea

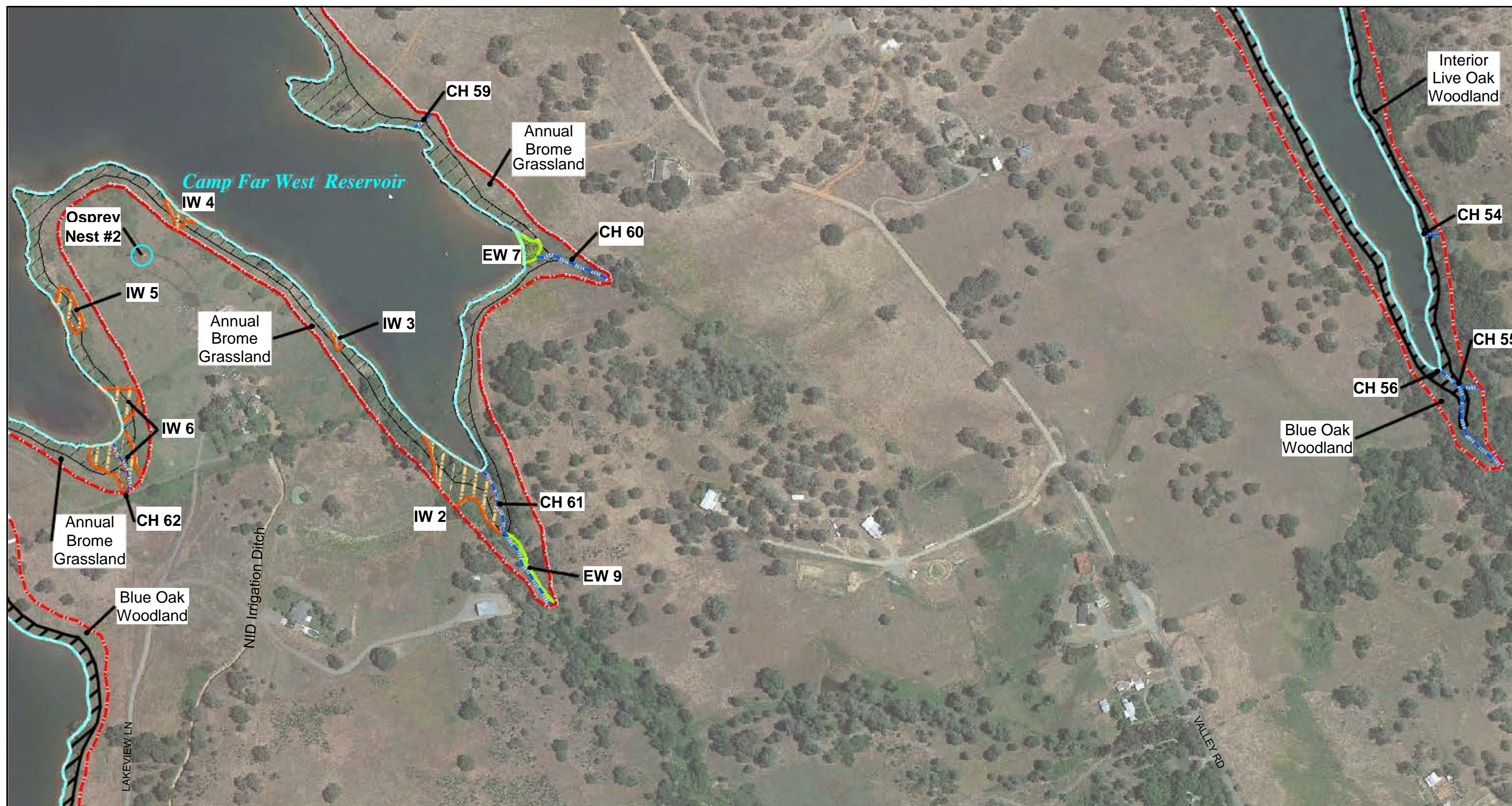
300 0 300 Feet

Scale: 1 inch = 300 feet

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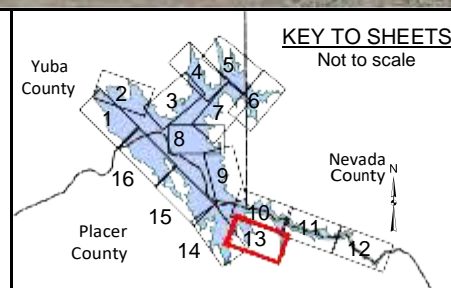
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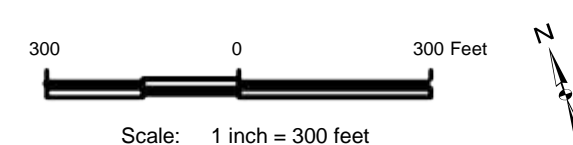
Camp Far West Reservoir Project
Yuba, Nevada and Placer Counties, CA
24 July 2013

Figure 3.
Biological Resources Map



- KEY TO SHEETS**
Not to scale
- Biological Study Area (BSA)
 - OHWM
 - Channel (CH)
 - Estimated Limits of Impact
 - Biological Community Boundary

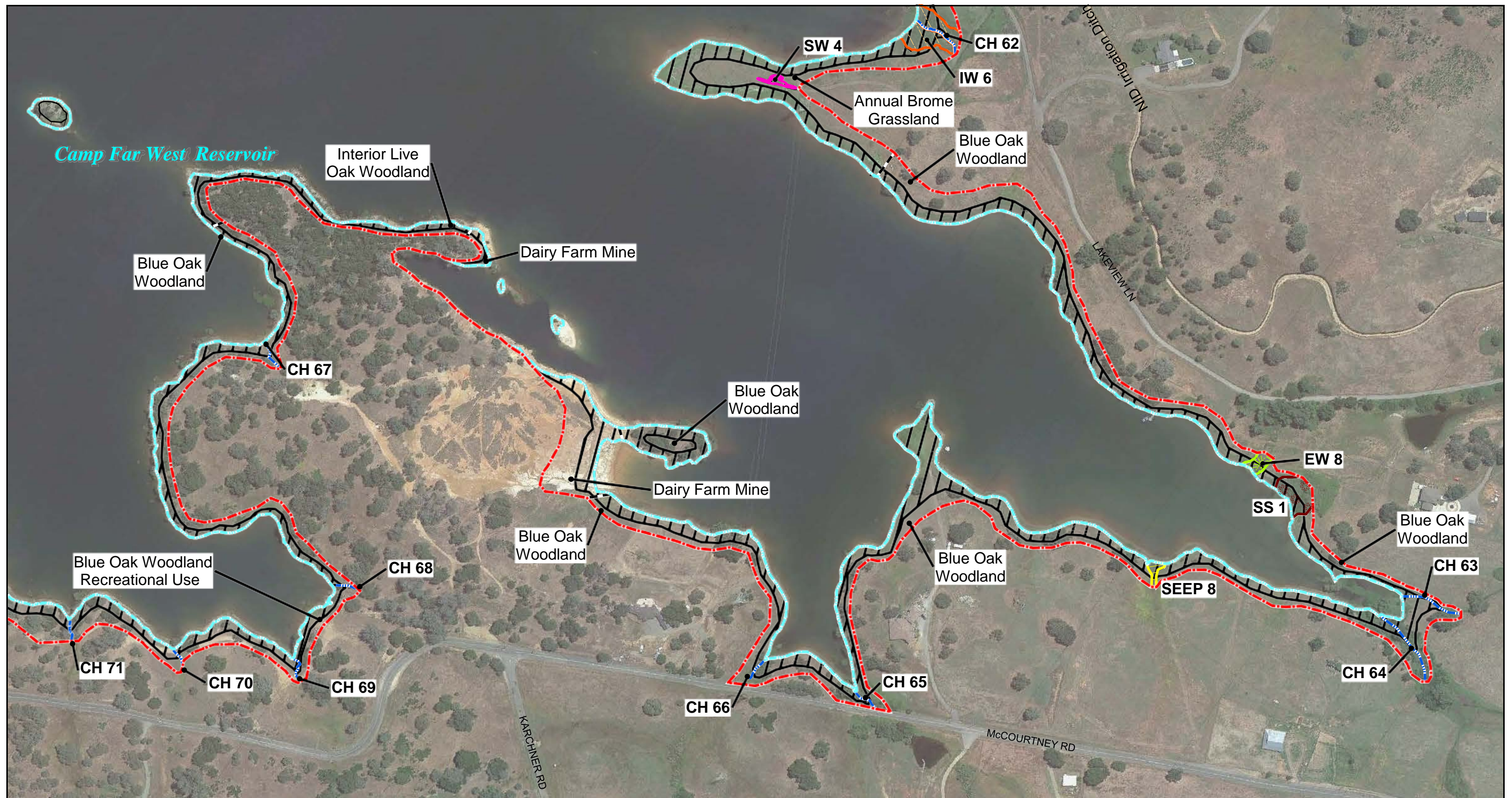
- Emergent Wetland (EW)
- Irrigated Wetland (IW)
- Osprey Nest



Aerial Photograph: 13 June 2011, Google Earth Pro

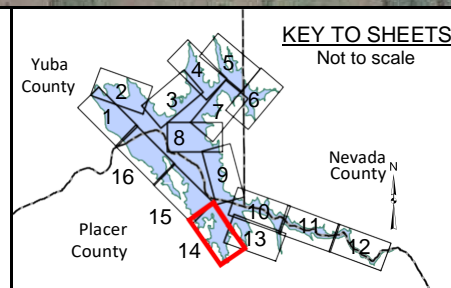
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SHEET 13 OF 16



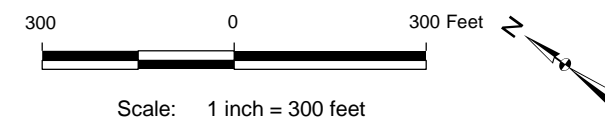
Camp Far West Reservoir Project
Yuba, Nevada and Placer Counties, CA
24 July 2013

Figure 3.
Biological Resources Map



- Biological Study Area (BSA)
- OHWM
- Channel (CH)
- Estimated Limits of Impact
- Biological Community Boundary

- Emergent Wetland (EW)
- Scrub-Shrub Wetland (SS)
- Irrigated Wetland (IW)
- Seasonal Wetland (SW)
- Seep



Aerial Photograph: 13 June 2011, Google Earth Pro

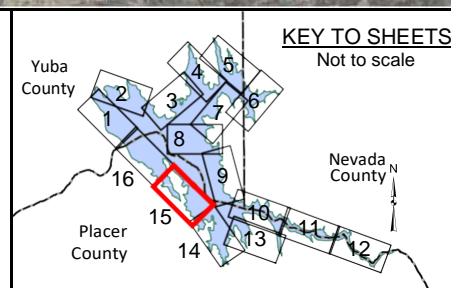
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SHEET 14 OF 16



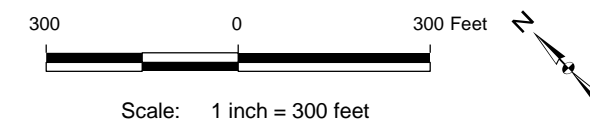
Camp Far West Reservoir Project
Yuba, Nevada and Placer Counties, CA
24 July 2013

Figure 3.
Biological Resources Map



- KEY TO SHEETS**
Not to scale
- Biological Study Area (BSA)
 - OHWM
 - Channel (CH)
 - Estimated Limits of Impact
 - Biological Community Boundary

- Emergent Wetland (EW)
- Seep



Aerial Photograph: 13 June 2011, Google Earth Pro

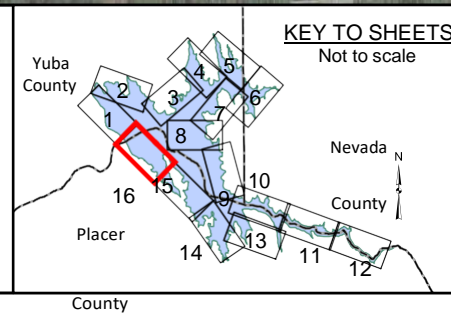


SHEET 15 OF 16



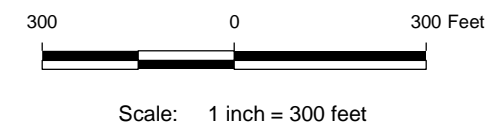
Camp Far West Reservoir Project
Yuba, Nevada and Placer Counties, CA
24 July 2013

Figure 3.
Biological Resources Map



- Biological Study Area (BSA)
- OHWM
- Channel (CH)
- Estimated Limits of Impact
- Biological Community Boundary

- Seasonal Wetland (SW)
- Elderberry Shrub



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Appendix F CNDDDB Forms

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For Office Use Only

Source Code _____ Quad Code _____

Elm Code _____ Occ. No. _____

EO Index No. _____ Map Index No. _____

Date of Field Work (mm/dd/yyyy): 06/06/2013

Reset

California Native Species Field Survey Form

Send Form

Scientific Name: *Haliaeetus leucocephalus*

Common Name: Bald Eagle

Species Found?

☒ Yes
☐ No

If not, why?

Total No. Individuals 3 Subsequent Visit? ☒ yes ☐ no

Is this an existing NDDDB occurrence? ☒ no ☐ unk.

Yes, Occ. #

Collection? If yes:

Number

Museum / Herbarium

Reporter: Chuck Hughes

Address: Sycamore Environmental, 6355 Riverside Blvd.,
Suite C, Sacramento, CA 95831

E-mail Address: chuck.hughes@sycamoreenv.com

Phone: (916) 427-0703

Plant Information

Phenology: _____% vegetative
_____% flowering
_____% fruiting

Animal Information

1 2
adults # juveniles # larvae # egg masses # unknown
☐ ☐ ☒ ☐ ☐
wintering breeding nesting rookery burrow site other

Location Description (please attach map AND/OR fill out your choice of coordinates, below)

Near where the Bear River empties into the Camp Far West Reservoir.

County: Placer Landowner / Mgr.: Private

Quad Name: Wolf Elevation: 480 feet

T R Sec , ¼ of ¼, Meridian: H ☐ M ☐ S ☐

Source of Coordinates (GPS, topo. map & type): GoogleEarth

T R Sec , ¼ of ¼, Meridian: H ☐ M ☐ S ☐

GPS Make & Model

DATUM: NAD27 ☐ NAD83 ☐ WGS84 ☒

Horizontal Accuracy _____ meters/feet

Coordinate System: UTM Zone 10 ☒ UTM Zone 11 ☐ OR Geographic (Latitude & Longitude) ☐

Coordinates: 652,066 E; 4,320,632 N

Habitat Description (plants & animals) plant communities, dominants, associates, substrates/soils, aspects/slope:

Animal Behavior (Describe observed behavior, such as territoriality, foraging, singing, calling, copulating, perching, roosting, etc., especially for avifauna):

Small stand of ponderosa pine, surrounded by oak woodland. The nest is about 350 feet south of Camp Far West Reservoir. Two juveniles observed on nest, and one adult perched nearby, on 6 June 2013. The nest tree is a ponderosa pine that emerges from the surrounding, lower oak canopy. One adult and one juvenile observed perching/flying elsewhere around Reservoir margin in May 2013.

Please fill out separate form for other rare taxa seen at this site.

Site Information Overall site/occurrence quality/viability (site + population): ☒ Excellent ☐ Good ☐ Fair ☐ Poor

Immediate AND surrounding land use: Cattle grazing in grassy areas nearby. A few rural residences about a mile away. Recreation on Reservoir.

Visible disturbances: None

Threats: None known.

Comments: Birds and nest observed from boat on Reservoir and from north bank of Reservoir.

Determination: (check one or more, and fill in blanks)

- ☐ Keyed (cite reference): _____
☐ Compared with specimen housed at: _____
☒ Compared with photo / drawing in: Sibley Guide
☒ By another person (name): Mike Bower, Jessica Orsolini
☒ Other: Experience with species.

Photographs: (check one or more) Slide Print Digital

Plant / animal ☐ ☐ ☒
Habitat ☐ ☐ ☐
Diagnostic feature ☐ ☐ ☐

May we obtain duplicates at our expense? yes ☒ no ☐

For Office Use Only

Source Code _____ Quad Code _____
Elm Code _____ Occ. No. _____
EO Index No. _____ Map Index No. _____

Date of Field Work (mm/dd/yyyy): 06/06/2013

Reset

California Native Species Field Survey Form

Send Form

Scientific Name: *Clarkia biloba ssp. brandegeae*

Common Name: Brandegee's clarkia

Species Found? ☒ Yes ☐ No If not, why? _____
Total No. Individuals ~100 Subsequent Visit? ☐ yes ☒ no
Is this an existing NDDB occurrence? ☒ no ☐ unk.
Yes, Occ. # _____
Collection? If yes: 385 UC Davis
Number Museum / Herbarium

Reporter: Chuck Hughes
Address: Sycamore Environmental, 6355 Riverside Blvd.,
Suite C, Sacramento, CA 95831
E-mail Address: chuck.hughes@sycamoreenv.com
Phone: (916)427-0703

Plant Information

Phenology: 0% vegetative 75% flowering 25% fruiting

Animal Information

adults # juveniles # larvae # egg masses # unknown
☐ ☐ ☐ ☐ ☐
wintering breeding nesting rookery burrow site other

Location Description (please attach map AND/OR fill out your choice of coordinates, below)

Near where the Bear River empties into the Camp Far West Reservoir.

County: Placer Landowner / Mgr.: South Sutter Water District
Quad Name: Wolf Elevation: 315 feet
T R Sec , ¼ of ¼, Meridian: H M S Source of Coordinates (GPS, topo. map & type): GoogleEarth
T R Sec , ¼ of ¼, Meridian: H M S GPS Make & Model _____
DATUM: NAD27 ☐ NAD83 ☐ WGS84 ☒ Horizontal Accuracy _____ meters/feet
Coordinate System: UTM Zone 10 ☒ UTM Zone 11 ☐ OR Geographic (Latitude & Longitude) ☐
Coordinates: 652,088 E; 4,320,744 N

Habitat Description (plants & animals) plant communities, dominants, associates, substrates/soils, aspects/slope:

Animal Behavior (Describe observed behavior, such as territoriality, foraging, singing, calling, copulating, perching, roosting, etc., especially for avifauna):

Steep, northern aspect slope in oak woodland dominated by blue oak, interior live oak, and grey pine. Specimens observed in very steep microtopography where some erosion is occurring.

Please fill out separate form for other rare taxa seen at this site.

Site Information Overall site/occurrence quality/viability (site + population): ☐ Excellent ☒ Good ☐ Fair ☐ Poor

Immediate AND surrounding land use: No human land use nearby other than recreation/fishing on the Reservoir surface.

Visible disturbances: Specimens growing in area of minor erosion/slumping. Unclear if completely natural or affected by Reservoir.

Threats: Water District intends to raise maximum Reservoir pool elevation by 5 ft, but that is below these occurrences.

Comments:

Determination: (check one or more, and fill in blanks)

- ☒ Keyed (cite reference): The Jepson Manual, 2nd Edition
☐ Compared with specimen housed at: _____
☐ Compared with photo / drawing in: _____
☐ By another person (name): _____
☐ Other: _____

Photographs: (check one or more) Slide Print Digital

Plant / animal ☐ ☐ ☒
Habitat ☐ ☐ ☒
Diagnostic feature ☐ ☐ ☒

May we obtain duplicates at our expense? yes ☒ no ☐

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Source Code _____ Quad Code _____
Elm Code _____ Occ. No. _____
EO Index No. _____ Map Index No. _____

Date of Field Work (mm/dd/yyyy): 04/01/2013

Reset

California Native Species Field Survey Form

Send Form

Scientific Name: *Pandion haliaetus*

Common Name: Osprey

Species Found? ☒ Yes ☐ No If not, why? _____

Total No. Individuals 4 Subsequent Visit? ☒ yes ☐ no

Is this an existing NDDDB occurrence? ☒ no ☐ unk.
Yes, Occ. # _____

Collection? If yes: _____
Number _____ Museum / Herbarium _____

Reporter: Chuck Hughes

Address: Sycamore Environmental, 6355 Riverside Blvd.,
Suite C, Sacramento, CA 95831

E-mail Address: chuck.hughes@sycamoreenv.com

Phone: (916) 427-0703

Plant Information

Phenology: _____% vegetative _____% flowering _____% fruiting

Animal Information

4
adults # juveniles # larvae # egg masses # unknown
☐ wintering ☐ breeding ☒ nesting ☐ rookery ☐ burrow site ☐ other

Location Description (please attach map AND/OR fill out your choice of coordinates, below)

Both nests near the margin of Camp Far West Reservoir.

County: First Nest: Nevada, Second Nest: Placer Landowner / Mgr.: Private

Quad Name: Camp Far West Elevation: 350 feet

T R Sec , ¼ of ¼, Meridian: H M S Source of Coordinates (GPS, topo. map & type): GoogleEarth

T R Sec , ¼ of ¼, Meridian: H M S GPS Make & Model _____

DATUM: NAD27 ☐ NAD83 ☐ WGS84 ☒ Horizontal Accuracy _____ meters/feet

Coordinate System: UTM Zone 10 ☒ UTM Zone 11 ☐ OR Geographic (Latitude & Longitude) ☐

Coordinates: First Nest: 649,548 E; 4,322,045
Second Nest: 648,653 E; 4,321,558

Habitat Description (plants & animals) plant communities, dominants, associates, substrates/soils, aspects/slope:

Animal Behavior (Describe observed behavior, such as territoriality, foraging, singing, calling, copulating, perching, roosting, etc., especially for avifauna):

First nest on top of high voltage tower surrounded by blue oak woodland, about 200 feet from Reservoir. One adult flying near nest and one sitting in nest on 1 April 2013.

Second nest on top of high voltage tower surrounded by irrigated pasture, about 200 feet from Reservoir. One adult flying near nest and one sitting in nest on 14 May 2013.

Please fill out separate form for other rare taxa seen at this site.

Site Information Overall site/occurrence quality/viability (site + population): ☐ Excellent ☒ Good ☐ Fair ☐ Poor

Immediate AND surrounding land use: First nest surrounded by grazed oak woodland. Second nest with rural residences nearby.

Visible disturbances: None

Threats: None known.

Comments:

Determination: (check one or more, and fill in blanks)

- ☐ Keyed (cite reference): _____
☐ Compared with specimen housed at: _____
☒ Compared with photo / drawing in: Sibley Guide
☒ By another person (name): Mike Bower, Jessica Orsolini
☒ Other: Familiarity with species.

Photographs: (check one or more) Slide Print Digital

Plant / animal ☐ ☐ ☒
Habitat ☐ ☐ ☐
Diagnostic feature ☐ ☐ ☐

May we obtain duplicates at our expense? yes ☒ no ☐

For Office Use Only

Source Code _____ Quad Code _____
Elm Code _____ Occ. No. _____
EO Index No. _____ Map Index No. _____

Date of Field Work (mm/dd/yyyy): 06/06/2013

Reset

California Native Species Field Survey Form

Send Form

Scientific Name: *Brodiaea sierrae*

Common Name: Sierra Foothills Brodiaea

Species Found? ☒ Yes ☐ No If not, why?

Total No. Individuals ~100 Subsequent Visit? ☐ yes ☒ no

Is this an existing NDDDB occurrence? ☒ no ☐ unk.
Yes, Occ. # _____

Collection? If yes: _____
Number _____ Museum / Herbarium _____

Reporter: Chuck Hughes

Address: Sycamore Environmental, 6355 Riverside Blvd.,
Suite C, Sacramento, CA 95831

E-mail Address: chuck.hughes@sycamoreenv.com

Phone: (916) 427-0703

Plant Information

Phenology: 0% vegetative 100% flowering _____% fruiting

Animal Information

adults # juveniles # larvae # egg masses # unknown
☐ ☐ ☐ ☐ ☐
wintering breeding nesting rookery burrow site other

Location Description (please attach map AND/OR fill out your choice of coordinates, below)

Near where the Bear River empties into the Camp Far West Reservoir.

County: Placer Landowner / Mgr.: South Sutter Water District

Quad Name: Wolf Elevation: 310

T _____ R _____ Sec _____, _____ 1/4 of _____ 1/4, Meridian: H ☐ M ☐ S ☐ Source of Coordinates (GPS, topo. map & type): GoogleEarth

T _____ R _____ Sec _____, _____ 1/4 of _____ 1/4, Meridian: H ☐ M ☐ S ☐ GPS Make & Model _____

DATUM: NAD27 ☐ NAD83 ☐ WGS84 ☒ Horizontal Accuracy _____ meters/feet

Coordinate System: UTM Zone 10 ☒ UTM Zone 11 ☐ OR Geographic (Latitude & Longitude) ☐

Coordinates: 652,245 E; 4,320,605 N

Habitat Description (plants & animals) plant communities, dominants, associates, substrates/soils, aspects/slope:

Animal Behavior (Describe observed behavior, such as territoriality, foraging, singing, calling, copulating, perching, roosting, etc., especially for avifauna):

Rock outcrop in oak woodland along the margin of the Camp Far West Reservoir.

Please fill out separate form for other rare taxa seen at this site.

Site Information Overall site/occurrence quality/viability (site + population): ☐ Excellent ☒ Good ☐ Fair ☐ Poor

Immediate AND surrounding land use: Recreation on the adjacent Reservoir. No other land use visible.

Visible disturbances: None.

Threats: The water district intends to raise the maximum pool elevation of the Reservoir by 5 ft, which will seasonally inundate part of this occurrence.

Comments:

Determination: (check one or more, and fill in blanks)

- ☒ Keyed (cite reference): The Jepson Manual, 2nd Edition
☐ Compared with specimen housed at: _____
☐ Compared with photo / drawing in: _____
☐ By another person (name): _____
☐ Other: _____

Photographs: (check one or more) Slide Print Digital

Plant / animal ☐ ☐ ☐
Habitat ☐ ☐ ☒
Diagnostic feature ☐ ☐ ☐

May we obtain duplicates at our expense? yes ☒ no ☐