

Study 5.2

ESA-LISTED WILDLIFE – VALLEY ELDERBERRY LONGHORN BEETLE STUDY

February 2016

1.0 Project Nexus

South Sutter Water District's (SSWD) continued operation and maintenance (O&M) of the Camp Far West Hydroelectric Project (Project) and Project recreation have a potential to affect valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) or VELB, a wildlife species listed as threatened under the federal Endangered Species Act (ESA).

2.0 Study Goals and Objectives

The goal of this ESA-Listed Wildlife – Valley Elderberry Longhorn Beetle Study (Study) is to provide information to determine whether continued Project O&M or recreational use of Project facilities may have an adverse effect on VELB.

The objective of this Study is to gather the information necessary to meet the Study goal. Specifically, this Study will gather information, including: 1) identify and map the location of appropriate blue elderberry (*Sambucus nigra* ssp. *caerulea*) shrubs, the host plant for VELB; 2) classify habitat where blue elderberry shrubs are found into riparian or non-riparian,¹ and whether the shrubs are isolated or clumped; and 3) classify blue elderberry shrub stem size; and 4) document the presence or absence of VELB or evidence of VELB indicators on the blue elderberry shrubs when surveys are performed.

This Study does not include Section 7 ESA informal consultation with the United States Department of the Interior, Fish and Wildlife Service (USFWS).

The Study does not include the development of potential requirements in the new license.

3.0 Existing Information and Need for Additional Information

Existing, relevant and reasonably available information regarding VELB in the Project Vicinity² is provided in Section 3.2.5 of SSWD's Pre-Application Document (PAD). Based on this information, two elderberry shrubs were observed during surveys for the 2013 Biological

¹ For the purpose of this Study, riparian habitat is "the vegetation zone and other biological resources contiguous to and affected by surface and subsurface hydrologic features of perennial or intermittent lotic (lakes) and lentic (rivers, streams, or drainage ways) water bodies." (USFWS 1997).

² In this Study, "Project Vicinity" refers to the area surrounding the Project on the order of USGS 1:24,000 topographic quadrangle.

Assessment, though no exit holes were present. Both shrubs were in upland communities near the margin of the Camp Far West Reservoir (Sycamore Associates 2013).

Additional information, which will be provided by this Study, is needed to address the study goal. The Study will develop information regarding the specific location of blue elderberry shrubs, and any indications of VELB use, in relation to Project facilities, Project O&M activities, Project recreation, and any other Project-related activities that might affect VELB.

4.0 Study Methods and Analysis

4.1 Study Area

The Study Area consists of four specific areas, each with a 100-foot-wide buffer around them, within the existing Federal Energy Regulatory Commission (FERC) Project Boundary: 1) the North Shore Recreation Area (NSRA); 2) the South Shore Recreation Area (SSRA); 3) the Camp Far West Dam and associated dikes and Spillway; and 4) the Camp Far West Dam Powerhouse, for a total of 505 acres. The facilities are described in Section 2 of SSWD's PAD, and shown in Figure 4.1-1.

If SSWD proposes an addition to the Project, the Study Area will be expanded, if necessary, to include areas potentially affected by the addition.

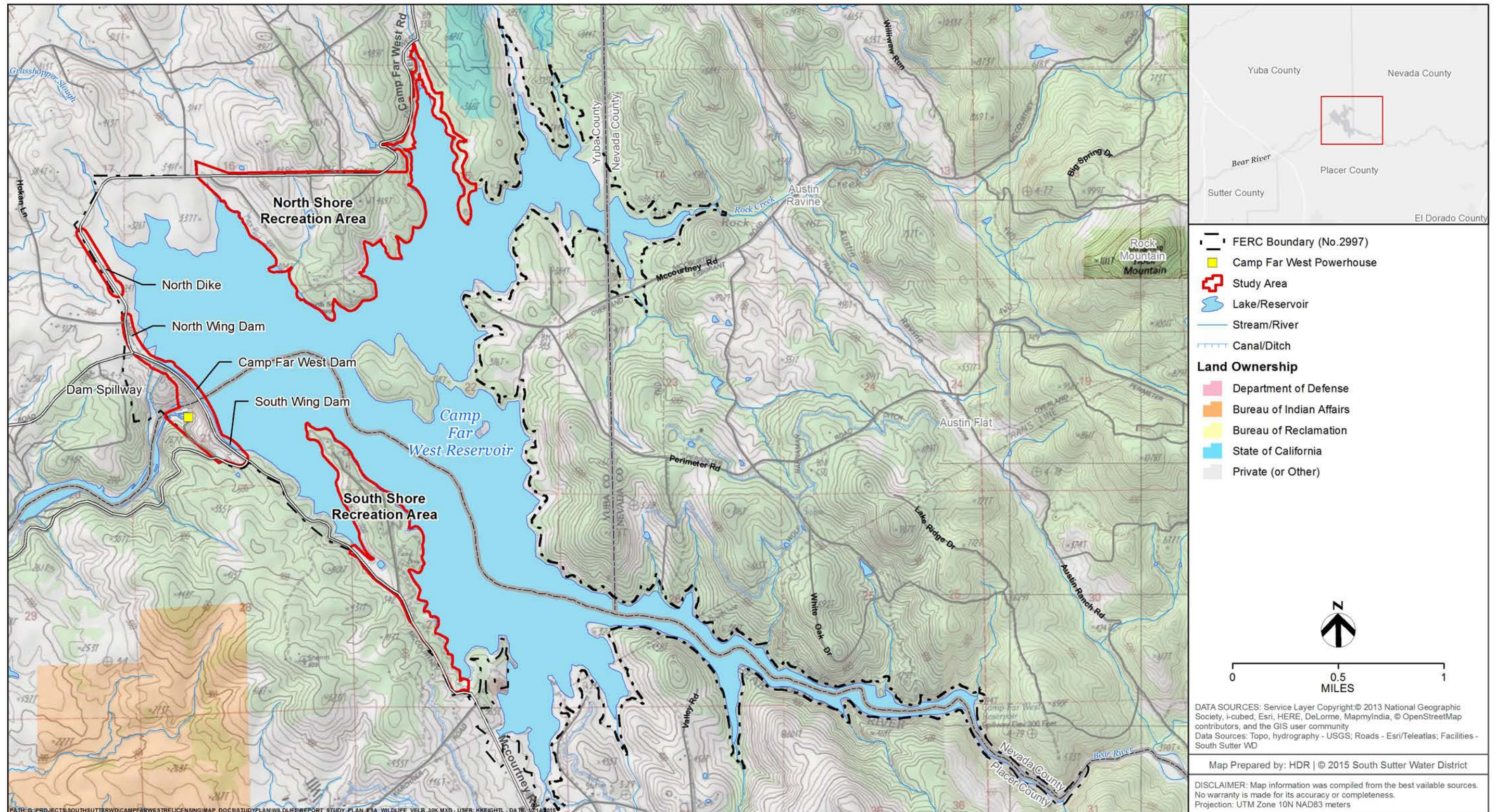


Figure 4.1-1. Study Area for ESA-listed Wildlife Valley Elderberry Longhorn Beetle.

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4.2 General Concepts and Procedures

The following general concepts and practices apply to all SSWD relicensing studies:

- Personal safety is the most important consideration of each fieldwork team.
- If required for the performance of the study, SSWD will make a good faith effort to obtain permission to access private property well in advance of initiating the study. SSWD will only enter private property if such permission has been provided by the landowner.
- SSWD will acquire all necessary agency permits and approvals prior to beginning fieldwork for a study that requires them.
- Field crews may make variances to the study plan in the field to accommodate actual field conditions and unforeseen problems. When a variance is made, the field crew will follow to the extent applicable the protocols in and intent of the study plan.
- When SSWD becomes aware of a variance to the study plan, SSWD will issue an e-mail to FERC, United States Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NMFS), USFWS, California Department of Fish and Wildlife (Cal Fish and Wildlife) and the State Water Resources Control Board (SWRCB) describing the variance and reason for the variance. SSWD will summarize in its Draft Application for New License (DLA) and in its Final Application for New License (FLA) all study plan variances.
- SSWD's performance of the study does not presume that SSWD is responsible in whole or in part for measures that may arise from the study.
- If Global Positioning System (GPS) data are required by a study plan, they will be collected using either a Map Grade Trimble GPS (i.e., sub-meter data collection accuracy under ideal conditions), a Recreation Grade Garmin GPS unit (i.e., 3 meter data collection accuracy under ideal conditions), or similar units. GPS data will be post-processed and exported from the GPS unit into Geographic Information System (GIS) compatible file format in an appropriate coordinate system using desktop software. The resulting GIS file will then be reviewed by both field staff and SSWD's consultant's relicensing GIS analyst. Metadata will be developed for deliverable GIS data sets. Upon request, GIS maps will be provided to NMFS, USFWS, Cal Fish and Wildlife or SWRCB in a form, such as ESRI Shapefiles, GeoDatabases, or Coverage with appropriate metadata. Metadata will be Federal Geographic Data Committee compliant.
- SSWD's field crews conducting relicensing studies will record incidental records of aquatic, botanical and wildlife species observed during the performance of a study. All incidental observations will be reported in the DLA and FLA. The purpose of this effort is not to conduct a focused study (i.e., no effort in addition to the specific field tasks identified for the specific study plan) or to make all field crews experts in identifying all species, but only to opportunistically gather data during the performance of a relicensing study. Species included for incidental observation will include, but are not limited to: bald eagle (*Haliaeetus leucocephalus*); golden eagle (*Aquila chrysaetos*); osprey

(*Pandion haliaetus*); any bats or positive sign of bats; Chinook salmon (*Oncorhynchus tshawytscha*) and steelhead (*O. mykiss*), including redds and carcasses; northern western pond turtle (*Actinemys marmorata*); foothill yellow-legged frog (*Rana boylei*); American bullfrog (*Lithobates catesbeianus*), and aquatic invasive species.

- Field crews will be trained on, provided with, and use materials (e.g., Quat disinfectant) for decontaminating their boots, waders, and other equipment between water-based study sites. Major concerns are amphibian chytrid fungus, and invasive invertebrates (e.g., zebra mussel, *Dreissena polymorpha*).
- If in the performance of a study, SSWD observes an ESA-listed or special-status species, within 30 days of the observation SSWD will submit to Cal Fish and Wildlife's California Natural Diversity Database a record, on the appropriate form, of the observation.
- If a study plan requires collection and reporting of time series data, the data will be provided at a minimum in HEC-DSS format. A viewer for these files (HEC-DSSVue) can be obtained from the United States Army Corps of Engineers at the following website as of March 2008: <http://www.hec.usace.army.mil/software/hec-dss/hecdssvue-dssvue.htm> in both Microsoft® Excel and *.DSS formats.
- If a field crew encounters human remains during field work, all work within a 100-foot radius of the discovery will stop immediately. The field crew will not disturb the remains in any way, secure the area to the best of its ability, mark the location with flagging tape in such a way as to not draw attention to the remains, and record the location using a GPS unit or plot the location by hand on a map if no GPS unit is available. As soon as possible thereafter, the field crew will contact SSWD and the relicensing Cultural Resources Lead to report the discovery. SSWD will report the finding and initiate the appropriate steps required under State of California and federal law to address the discovery. Any human remains encountered will be treated with respect, and the field crew members will keep the location confidential and will not disclose the location of the discovery to the public or to any other study crews. The field crew will keep a log of all calls/contacts it makes regarding the discovery and that details the event. Work will not proceed in the secured area of the discovery until provided clearance by SSWD.

4.3 Methods

The Study will be completed in seven steps: 1) map known occurrences of blue elderberry shrub and VELB; 2) conduct field surveys for blue elderberry plants; 3) conduct surveys for evidence of VELB; 4) prepare data and quality assure/quality control (QA/QC) data; and 5) prepare report. Each step is described below.

4.3.1 Step 1 – Map Known Occurrences

SSWD will identify and map known occurrences of blue elderberry shrubs and VELB within the Study Area, and prepare field maps for use by field survey teams. The maps will include aerial

imagery, Project features, and known elderberry plant and VELB occurrences. Survey timing will be planned based on herbarium collection dates.

4.3.2 Step 2 – Conduct Field Surveys for Elderberry Plants

In conjunction with SSWD's relicensing Study 4.1, *Special-Status Plants*, and Study 4.1, *ESA-Listed Plants*, SSWD will document all occurrences of elderberry plants within the Study Area, except for areas deemed to be unsafe (e.g., due to steep, unstable terrain) by the field team, with GPS and take photographs of each occurrence.

When an elderberry shrub is documented within the Study Area, the following information will be collected:

- Digital photographs to describe the occurrence, its habitat, and any potential threats (i.e., at least one digital photograph will be collected for each occurrence, with other photographs to document potential threats, or as needed).
- Estimated area (i.e., approximate length and width) covered by the elderberry plant population and estimated number of individual plants in the population. If plant population is estimated to cover an area greater than 0.1 acre (ac), surveyors will delineate the occurrence boundary using a GPS unit, collecting either polygon data, or sufficient point data that a realistic occurrence polygon can be constructed from the point data using GIS. For occurrences less than 0.1 ac in size, the location of the approximate center of the occurrence will be taken as point data using a GPS unit.
- Dominant and subdominant vegetation in the area.
- Estimated distance to nearest Project facility, feature, or Project-related activity.
- Activities observed in the vicinity of the population that have a potential to adversely affect the population (e.g., recreational trails and uses).
- Estimated phenology and descriptions of reproductive state.

In addition, occurrences will be documented by classifying the largest stem at ground level of the elderberry shrub into one of three categories: 1) greater than or equal to 1 inch, but less than or equal to 3 inches; 2) greater than 3 inches but less than 5 inches; and 3) greater than or equal to 5 inches (USFWS 1999). SSWD will classify the habitat surrounding the elderberry shrub as either riparian or non-riparian and indicate whether the shrub was isolated or part of a larger clump.

4.3.3 Step 3 – Conduct Surveys for Evidence of VELB

All elderberry shrubs with one or more stems measuring 1.0 inch or greater in diameter at ground level will be thoroughly searched for beetle exit holes (i.e., external evidence of beetle presence). The exit holes should be characterized as to whether they are recent (i.e., shavings present) or not. If holes are found that are suspected not to be VELB boreholes, they will be documented and an explanation of why they are not suspected to be VELB boreholes will be provided.

4.3.4 Step 4 – Prepare Data and Quality Assure/Quality Control Data

Following field surveys, SSWD will develop GIS maps depicting VELB and elderberry occurrences, Project facilities and features, and other information collected during the Study. Field data will then be subject to QA/QC procedures, including spot-checks of transcription and comparison of GIS maps with field notes on locations of any VELB and elderberry occurrences.

4.3.5 Step 5 – Consult with Project Operations Staff

Once the locations of elderberry plants are defined, SSWD’s O&M staff will be consulted to identify Project O&M and Project-related activities that typically occur in the area of the shrub or VELB that have a potential to adversely affect the elderberry shrub or VELB.

4.3.6 Step 6 – Prepare Report

SSWD will prepare a report that includes the following sections: 1) Study Goals and Objectives; 2) Methods; 3) Results; 4) Discussion; and 5) Description of Variances from the FERC-approved Study plan, if any. The report will include GIS maps that show each elderberry plant and VELB population location in respect to Project facilities and features. Confidential information will not be included in the report, but provided to USFWS.

5.0 Consistency of Methodology with Generally Accepted Scientific Practices

This Study is consistent with the goals, objectives, and methods outlined for most recent FERC hydroelectric relicensing efforts in California, including for the Don Pedro Project (FERC No. 2299), Yuba River Hydroelectric Project (FERC No. 2246) and Merced River Hydroelectric project (FERC No. 2179), and the Study uses standard botanical survey methods as defined by USFWS (USFWS 1999).

6.0 Schedule

SSWD anticipates the schedule to complete the study as follows:

Planning	May 2016
Fieldwork	June 2016 – May 2017
QA/QC Review	June 2017
Study Report Preparation	July 2017 – December 2017

The Study report will be included in SSWD’s DLA and FLA. If SSWD completes the Study report before preparation of the DLA, SSWD will post the report on SSWD’s Relicensing Website and issue an e-mail to Relicensing Participants advising them that the report is available.

7.0 Level of Effort and Cost

For the purpose of estimating the cost for this Study, SSWD assumed that much of the Study fieldwork cost would be covered under SSWD's relicensing Study 4.1, *Special-Status Plants*. The remaining cost to complete this Study is related primarily to reporting, and SSWD estimates the cost in 2015 dollars is between \$14,000 and \$17,100.

8.0 References Cited

Sycamore Environmental Consultants, Inc. 2013. Camp Far West Reservoir Project Biological Assessment. Sacramento, CA.

United States Department of Interior, Fish and Wildlife Service (USFWS). 1997. A system for mapping riparian areas in the western United States. U.S. Department of the Interior, U.S. Fish and Wildlife Service, National Wetlands Inventory, St. Petersburg, FL.

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