

Study 7.4

ESA-LISTED WILDLIFE - VALLEY ELDERBERRY LONGHORN BEETLE

November 2010

1.0 Project Nexus

Yuba County Water Agency's (YCWA or Licensee) continued operation and maintenance (O&M) of the Yuba River Development Project (Project) has a potential to effect valley elderberry longhorn beetle, or VELB (*Desmocerus californicus dimorphus*), a species listed as threatened under the federal Endangered Species Act (ESA).

2.0 Resource Management Goals of Agencies with Jurisdiction Over the Resource to be Studied

[Relicensing Participants - This section is a placeholder in the Pre-Application Document (PAD). Section 5.11(d)(2) of 18 CFR states that an applicant for a new license must in its proposed study "Address any known resource management goals of the agencies or Indian tribes with jurisdiction over the resource to be studied." During 2010 study proposal development meetings, agencies advised Licensee that they would provide a brief written description of their jurisdiction over the resource to be addressed in this study. If provided before Licensee files its Proposed Study Plan and Licensee agrees with the description, Licensee will insert the brief description here stating the description was provided by that agency. If not, prior to issuing the Proposed Study Plan, Licensee will describe to the best of its knowledge and understanding the management goals of agencies that have jurisdiction over the resource addressed in this study. Licensee]

3.0 Study Goals and Objectives

The goal of this study is to provide information concerning VELB presence and distribution within the existing Federal Energy Regulatory Commission (FERC) Project Boundary.¹

The specific objective of this study is to gather information, including: 1) identify and map the location of appropriate elderberry shrubs; 2) classify habitat where shrubs are found into riparian or non-riparian, and whether shrubs are isolated or clumped;² and 3) classify elderberry (*Sambucus* sp.) stem size; and 4) document the presence or absence of VELB or evidence of VELB when surveys are performed.

¹ The existing FERC Project Boundary is the area that Licensee uses for normal Project operations and maintenance, and is shown on Exhibits J, K, and G of the current license.

² As defined in Licensee's PIP, 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)

4.0 Existing Information and Need for Additional Information

As discussed in section 7.7 of Licensee's Pre-Application Document (PAD), VELB historically ranged throughout the Central Valley, extending upstream in river canyons in the Sierra Nevada foothills to a maximum elevation of about 3,000 feet. VELB is completely dependent upon its host plant, elderberry, which is a common component of the remaining riparian forests and adjacent uplands. The beetles' use of elderberries is not readily apparent; often the only exterior evidence is an exit hole created by the larva just prior to pupation. The life cycle takes 1 or 2 years to complete with most of that time spent as larva living within the stems of the plant. Adults generally emerge from late March through June, and adults are short-lived.

Existing and relevant information regarding known VELB occurrences in the Project Vicinity³ is available from the California Natural Diversity Database (CNDDDB) (CDFG 2010). No records of VELB occurrences within the Project Vicinity were located on the CNDDDB.

Existing information is not adequate to meet the goal of the study. Information necessary to address the study goal includes a current assessment of elderberry plants and VELB in the study area.

5.0 Study Methods and Analysis

5.1 Study Area

The study area consists of the area within the existing FERC Project Boundary. This includes all Project facilities and features (e.g., dams, powerhouses and reservoirs powerhouses) as well as Project recreation areas. The study area will also include a buffer of 100 feet extending upslope from the high-water mark of the Project reservoirs and from the FERC Project Boundary around Project recreation facilities.

If YCWA proposes an addition to the Project, the study area will be expanded if necessary to include areas potentially affected by the addition.

5.2 General Concepts and Procedures

The following general concepts and practices apply to the study:

- Personal safety is the most important consideration of each fieldwork team.
- Licensee will make a good faith effort to obtain permission to access private property where needed well in advance of entering the property.

³ For the purposes of the Relicensing, the Project Vicinity is defined as the area surrounding the Project in the order of a county or USDOI, United States Geological Survey (USGS) 1:24,000 topographic quadrangle.

- Field crews may make minor variances to the FERC-approved study in the field to accommodate actual field conditions and unforeseen problems. When minor variances are made, Licensee's field crew will follow the protocols in the FERC-approved study.
- When Licensee becomes aware of major variances to the FERC-approved study, Licensee will issue an e-mail to the Relicensing Contact List describing the variance and reason for the variance. Licensee will contact by phone the Forest Service (if the variance is on National Forest System land), USFWS, SWRCB and CDFG to provide an opportunity for input regarding how to address the variance. Licensee will issue an e-mail to the Relicensing Contact List advising them of the resolution of the variance. Licensee will summarize in the final study report all variances and resolutions.
- Licensee's performance of the study does not presume that Licensee is responsible in whole or in part for measures that may arise from the study.
- Global Positioning System (GPS) data will be collected using either a Map Grade Trimble GPS (sub-meter data collection accuracy under ideal conditions), a Recreation Grade Garmin GPS unit (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 Licensee's relicensing GIS analyst. Metadata will be developed for deliverable GIS data sets.
- Licensee's field crews will record incidental observations of aquatic and wildlife species observed during the performance of this study. All incidental observations will be reported in the appropriate Licensee report (e.g., incidental observations of special-status fish recorded during fieldwork for the Special-Status Turtles – Western Pond Turtle Study will be reported in Licensee's Stream Fish Populations Study report). The purpose of this effort is not to conduct a focus study (i.e., no effort in addition the specific field tasks identified for the specific study) or to make all field crews experts in identifying all species, but only to opportunistically gather data during the performance of the study.
- Field crews will be trained on and provided with materials (e.g. Quat) for decontaminating their boots, waders, and other equipment between study sites. Major concerns are amphibian chytrid fungus, and invasive invertebrates (e.g. zebra mussel, *Dreissena polymorpha*). This is of primary importance when moving: 1) between tributaries and mainstem reaches; 2) moving between basins (e.g. Middle Yuba River, Yuba River, and North Yuba River); and 3) moving between isolated wetlands or ponds and river or stream environments.

5.3 Methods

The study will be completed in seven steps: 1) map known occurrences; 2) conduct field surveys for elderberry plants; 3) conduct surveys for evidence of VELB; 4) prepare data and quality assure/quality control (QA/QC) data; 5) consult with Licensee's project operations staff; 6) consult with United States Department of Interior, Fish and Wildlife Service (USFWS); and 7) prepare report. Each step is described below.

5.3.1 Step 1 – Map Known Occurrences

Licensee will identify and map known occurrences of elderberry plants and VELB within the study area for use on field maps.

5.3.2 Step 2 – Conduct Field Surveys for Elderberry Plants

In conjunction with the Special-Status Plants Study (Study 5.1), Licensee will document all occurrences of elderberry plants within the study area with GPS and take photographs of each occurrence. Occurrences will be documented by classifying the largest stem at ground level of the 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). Licensee will classify the habitat surrounding the shrub as either riparian or non-riparian and indicate whether the shrub was isolated or part of a larger clump.

Licensee will notify USFWS within three working days if VELB are detected at any location. If the detection is on National Forest System land, Licensee will also notify the Forest Service.

5.3.3 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 that occur within the study area must be thoroughly searched for beetle exit holes (external evidence of beetle presence). The exit holes should be characterized as to whether they are recent (*i.e.*, shavings may be present) or not.

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

Following field surveys, Licensee 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/or elderberry occurrences.

5.3.5 Step 5 – Consult with Licensee’s Project Operations Staff

Once the locations of VELB and elderberry in the study area are defined, Project Operations staff will be consulted to identify project O&M activities in those areas that have the potential to adversely affect the occurrences. The results of the consultation will be described in the final report.

5.3.6 Step 6 – Consult with USFWS

In instances when an elderberry plant is identified in the study area, Licensee will consult with USFWS concerning potential impacts by the Project and discuss recommendations and further actions, if agreed necessary.

5.3.7 Step 7 – Prepare Report

Licensee will prepare a report for the entire study that includes the following sections: 1) Study Goals and Objectives; 2) Methods; 3) Results; 4) Conclusions; and 5) Description of Variances from the FERC-approved study proposal, if any. Confidential information will not be included in the report, but provided to appropriate agencies.

For all VELB observations, Licensee will complete the appropriate CNDDDB form and transmit the form to the CNDDDB. Licensee will provide a copy of form to the Forest Service at the same time if the occurrence is on National Forest System land.

6.0 Study-Specific Consultation

The study includes the following specific consultation:

- Licensee will consult with USFWS concerning potential impacts by the Project and discuss recommendations and further actions, if agreed necessary, when the study is near completion.

7.0 Schedule

Licensee anticipates the schedule to complete the study as follows assuming the Pre-Application Document (PAD) is filed on November 1, 2010, and FERC issues its Study Determination by October 4, 2011:

Planning (Step 1).....	November 2011- February 2011
Collect Data (Step 2).....	March 2011- July 2011
QA/QC Review (Step 3)	August 2011
Operations Staff Consultation (Step 4)	August 2011
Study Report Preparation (Step 5)	September 2011- October 2012

8.0 Consistency of Methodology with Generally Accepted Scientific Practices

This study is consistent with the goals, objectives, and methods outlined for recent FERC hydroelectric relicensing efforts in California, and uses well established data from the USFWS, NFS and other reputable sources for the analysis.

9.0 Level of Effort and Cost

[Relicensing Participants – Licensee will include a cost range estimate for this study in its Proposed Study Plan. Licensee]

10.0 References Cited

California Department of Fish and Game (CDFG). 2009. Biogeographic Data Branch. California Natural Diversity Database (CNDDDB). Data updated November 2009.

United States 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.

_____. 1999. Conservation Guidelines for the Valley Elderberry Longhorn Beetle. U.S. Fish and Wildlife Service, Sacramento, California.