

Study 4.3  
**SPECIAL-STATUS WILDLIFE -  
BATS**  
January 2017

## **1.0 Project Nexus**

South Sutter Water District's (SSWD) continued operation and maintenance (O&M) of the existing Camp Far West Hydroelectric Project (Project) has a potential to affect special-status bats.

For the purpose of this *Special-status Wildlife – Bats Study* (Study), a special-status wildlife species is a species that has a reasonable possibility of being affected by Project O&M or associated recreation and meets one or more of the following criteria: 1) listed by the Sacramento, CA, United States Fish and Wildlife Service (USFWS) as a USFWS-S; 2) designated by California Department of Fish and Wildlife (Cal Fish and Wildlife) as a Species of Special Concern (SSC); 3) listed as threatened or endangered, or a candidate or proposed for listing under CESA; or 4) Fully Protected under California law.

## **2.0 Study Goals and Objectives**

The goal of the Study is to collect information regarding Special-status Bats.

The objective of the Study is to gather the information necessary to perform this analysis.

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

## **3.0 Existing Information and Need for Additional Information**

Existing and relevant information regarding known and potentially occurring special-status bats in the Project Vicinity<sup>1</sup> is provided in Sections 3.2.4.3 and 3.2.4.4 of SSWD's Pre-Application Document (PAD). SSWD identified five special-status bats that are known or have the potential to occur within the existing Federal Energy Regulatory Commission (FERC) Project Boundary. Table 3.0-1 provides for each of these species: 1) special status; 2) general habitat type; and 3) recorded occurrence in the Project Vicinity.

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<sup>1</sup> 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.

**Table 3.0-1. Special-status bat species known to occur or likely to occur in the Project Vicinity.**

Bat Species	Special Status <sup>1</sup>	Suitable Habitat Type	Occurrence in Project Vicinity
western red bat ( <i>Lasiurus blossevillii</i> )	SSC	Roosts in foliage, forages in open areas (from sea level up through mixed conifer forests).	Project Vicinity: Potential to occur within suitable habitat.  Neither species nor suitable habitat was observed during Biological Assessment surveys.
spotted bat ( <i>Euderma maculatum</i> )	SSC	Arid deserts, grasslands, and mixed conifer forests (0-9,800 feet).	Project Vicinity: Potential to occur within suitable habitat.
Townsend's big-eared bat ( <i>Corynorhinus townsendii</i> )	SSC	Roosts in buildings, mines, tunnels, and caves; feeds along habitat edges (0-10,365 feet).	Project Vicinity: Potentially occur within suitable habitat.  Neither species nor suitable habitat was observed during Biological Assessment surveys.
pallid bat ( <i>Antrozous pallidus</i> )	SSC	Roosts in caves, crevices, and buildings; feeds in a variety of open habitats (8,000 feet).	Project Vicinity: Potential to occur within suitable habitat.
western mastiff bat ( <i>Eumops perotis</i> )	SSC	Open areas with abundant roost locations provided by crevices in rock outcrops and buildings at lower elevations, but as high as 8,700 feet.	Project Vicinity: Potential to occur within suitable habitat.

Source: CDFW 2015a, Sycamore Associates 2013

<sup>1</sup> Status: SSC = Cal Fish and Wildlife Species of Special Concern (CDFW 2015a)

Additionally, as described in Section 3.2.4.4.2 of the PAD, in 2015 SSWD evaluated all Project recreation facilities for evidence of bat activity. At each location, SSWD surveyed the exterior and interior of buildings for active bat roosts and signs of historic use via the presence of guano and staining resulting from urine and body oils. Any observed bat use (not just special-status bats, but all bat species) was documented on a standard data sheet, photographed and the location was recorded with a Global Positioning System.

Additional information, which will be provided by this Study, is needed to address the Study goal. The Study will identify the location of bats, including special-status bats, in relation to two facilities not surveyed during the reconnaissance where bats may occur.

## **4.0 Study Methods and Analysis**

### **4.1 Study Area**

The Study area consists of two sites within the existing FERC Project Boundary –the Camp Far West Powerhouse and the non-Project Camp Far West Road Bridge over the Camp Far West spillway. 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 Special-status Wildlife Bats**

## 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 permits 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 the study plan.
- 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 GPS data are required by a study plan, they 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 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 and wildlife species observed during the performance of a study. All incidental observations will be reported in Application for New License. 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) 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*); blue elderberry (*Sambucus nigra ssp. caerulea*); 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. The field crew will 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 Study Methods

The study methods will consist of the following two steps: 1) nighttime emergence surveys including acoustic monitoring during these surveys and 2) quality assurance/quality control (QA/QC) review. Each step is described below.

### 4.3.1 Step 1 – Nighttime Emergence Surveys

Nighttime emergence surveys will be conducted at the Camp Far West Powerhouse and the non-Project Camp Far West Road Bridge. The surveys will be conducted for two consecutive evenings (one at each site) in late April/early May and late July/early August. Each survey will last one to two hours, beginning 30 minutes prior to sundown. Acoustic monitoring will also occur during these nighttime emergence surveys.

Before conducting emergence surveys, observation points will be identified where surveyors can view the majority of the facility and the most likely points of egress. Observation points should

be in locations that do not obstruct or hinder emerging bats, but where emerging bats can be easily observed. The surveyors should be positioned so that emerging bats will be silhouetted against the sky as they exit the roost. Thirty minutes prior to sundown, surveyors will get to the observation points to begin the nighttime emergence survey.

During the nighttime emergence survey, surveyors will: 1) record start/stop time; 2) use an Anabat SD1 bat detector system to identify the exact timing of bats emerging and will be used to help differentiate between low- and high-frequency bat species; 3) identify obvious features of bats seen (e.g., fur color, ear size); 4) record numbers of bats and location where bats emerge. Tallies of emerging bats should be recorded every few minutes or as natural breaks in bat activity allow. If no bats are seen, observations will continue until it is too dark to see emerging bats, approximately 1-2 hours. A data sheet developed by the USFWS will be used to collect data.

Analook computer software (most recent version available) will be employed to analyze the acoustic data collected by the Anabat SD1 system to identify bat species.

Bat activity is affected by weather, therefore nighttime emergence surveys will be conducted on clear, calm and dry evenings when bats are active and there is good visibility. Overcast conditions are acceptable; as long as there is good visibility. Windy conditions should be avoided.

#### **4.3.2 Step 2 – Quality Assurance/Quality Control Review**

SSWD will perform a QA/QC review of all data, including maps, recordings, identifications, and sightings.

### **5.0 Consistency of Methodology with Generally Accepted Scientific Practices**

This Study is consistent with the goals, objectives, and methods outlined for the most recent FERC hydroelectric relicensing efforts in California, including the Yuba River Hydroelectric Project (FERC No. 2246), Drum-Spaulding Project (FERC No. 2310) and Merced River Hydroelectric Project (FERC No. 2179) relicensings.

### **6.0 Schedule**

SSWD anticipates the schedule to complete the study as follows:

Planning .....	March 2017
Fieldwork .....	April 2017 – August 2017
QA/QC Review .....	October 2017

The bat study data will be included in SSWD’s DLA and FLA. If SSWD completes the Study report before preparation of the DLA, SSWD will post the information 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**

SSWD estimates the cost to complete this Study in 2016 dollars is between \$8,000 and \$12,000.

## **8.0 References Cited**

California Department of Fish and Wildlife (CDFW). 2015a. California Natural Diversity Database. RareFind 5. Available online: <http://www.dfg.ca.gov/biogeodata/cnddb/mapsanddata.asp>. Accessed July 1, 2015. California Department of Fish and Wildlife, Sacramento, CA.

Sycamore Environmental Consultants, Inc. 2013. Biological Assessment: Camp Far West Reservoir Project. FERC No. P-2997. Sacramento, CA.

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