

6.2 Bat Study Plan

6.2.1 Pertinent Issue Questions

The bat study addresses Terrestrial Resource Issue Questions:

- 7(c). "What are the relevant and known factors (limiting and beneficial) affecting special status bat populations in the Project area and how/where are these factors influenced by Project operation and maintenance?"
- 11. "Where and to what extent has the Project created or affected bat roosts and foraging habitat?"

6.2.2 Background

Bats are closely associated with hydroelectric projects where many species are known to roost in dams, powerhouses, adits, and other project structures. Many bats also forage preferentially over project reservoirs and streams or on insects attracted to project lights. Bats are highly sensitive to disturbance, especially at roost sites. Operation, maintenance, and management of Project facilities may have both beneficial and adverse effects on bats in the vicinity of the UARP. The Initial Information Package for the UARP (SMUD 2001) identifies the following 17 species of bats with the potential to occur in the vicinity of the Project.

Common Name	Foraging Habitat	Roosting Habitat
Fringed myotis	Open areas and over water	Generalist: buildings, mines, caves, crevices
Little brown myotis	Open areas and over water	Caves, mines, snags
Yuma myotis	Open forest and over water	Generalist: buildings, mines, caves, crevices
California myotis	Open areas and over water	Snags, trees, rocks
Long-eared myotis	Gleans off of foliage, trees, ground	Tree bark, cavities, snags, caves, mines, rocks
Long-legged myotis	Open forest and over water	Tree bark, cavities, buildings, crevices, mines
Western small-footed myotis	Open forest and over water	Caves, mines, talus, buildings, bark
Hoary bat	Forest and over water	Dense tree foliage
Western red bat	Open areas	Tree foliage, especially in riparian forests
Spotted bat	Over water, meadows, open forests	Cliffs, crevices, caves, buildings
Silver-haired bat	Over water and forest openings	Snags, buildings, crevices, caves, mines, bark
Townsend's big-eared bat	Open areas	Caves, mines
Pallid bat	Woodlands	Caves, mines, crevices, buildings, snags
Big brown bat	Open areas and over water	Snags, trees, caves, mines, crevices
Western pipistrelle	Open areas and over water	Crevices
Western mastiff bat	Open forests, meadows, agriculture	Cliffs, crevices, some buildings and trees.
Brazilian free-tailed bat	Open woodlands, shrublands	Caves, mines, crevices, buildings

6.2.3 Study Objectives

The objectives of the bat study are to: 1) determine which species of bats occur in the study area; 2) locate active bat roosts that could be affected by Project-related activities; and 3) identify measures for the protection of bat roosts and foraging habitat that may be adversely affected by the Project.

6.2.4 Study Area and Sampling Sites

The study area includes all suitable roosting and foraging habitat within 0.25-mile of Project dams, powerhouses, adits, switchyards, penstocks, reservoirs, rights-of-way, and developed recreation sites associated with the project. Sampling sites will be determined during field reconnaissance. The project area may be modified based on activities (e.g., operational, recreational) that are determined by the Terrestrial TWG to have a potential effect on roost sites. Field studies will be restricted to those lands where the Licensee has legal access (e.g., ownership/easement rights, public lands) and will not occur on private lands without prior permission from the landowner.

6.2.5 Information Needed From Other Studies

Important information will be derived (at a minimum) from the Vegetation Mapping, Riparian, Wetland, Lands Management, Recreation, and Hydrologic Model studies.

6.2.6 Study Methods and Schedule

A reconnaissance of the entire study area will be performed during early spring 2002 to determine the location of trapping sites in late spring/early summer 2002. A recommendation on the number and location of trap sites will be presented to Eldorado National Forest (ENF) biologists for review and approval prior to initiation of the trapping effort. Mist nets and/or harp nets will be used to capture bats and determine species occurrence. In most cases, trapping sites are selected near identified roost sites and/or within narrow flight corridors between roost sites and foraging habitat (e.g., within stream channels and ravines adjacent to a reservoir). All bat captures will be documented by species, sex, age, reproductive status, location, habitat descriptors, and other parameters deemed appropriate. Voucher calls will be recorded for captured bats as they are released. Trapping will be supplemented by acoustic sampling using an Anabat II detection system or other suitable acoustic detection equipment. Potential day and night roosts in Project facilities/features will be inspected visually for evidence of bat use (e.g., bats, guano, staining). Prior to initiating bat trapping efforts, the necessary collecting permit and Memorandum of Understanding will be obtained from the California Department of Fish and Game (CDFG).

6.2.7 Analysis

Study results will be evaluated with respect to both positive and adverse effects related to the Project. Trapping, roost site inspections, and acoustic detections will provide evidence of species distribution and habitat utilization (e.g., foraging/roosting) within the study area. An assessment will be made of the degree of risk to foraging and roosting bats due to Project-related operations, maintenance, and management, as well as management of recreational facilities. The analysis will include recommendations for protections and enhancement of roosting and foraging habitat for special status bats that are affected by the Project.

6.2.8 Study Output

Study results will be presented to the Terrestrial Resources Technical Working Group (TWG) and Plenary Group toward the end of 2002. However, the ultimate study output will be a written report that includes the issues addressed, objectives, study area, methods, analysis, results, discussion, and conclusions. The reports will be prepared in a format that allows the information to be inserted directly into the Licensee-prepared Draft Environmental Assessment that will be submitted to FERC with the Licensee's application for a new license.

6.2.9 Preliminary Estimated Study Cost

A preliminary estimated study cost will be prepared after the Plenary Group approves the plan.

6.2.10 TWG and Plenary Group Endorsement

On April 16, 2002 the following participants gave TWG approval to the plan: USFS, BLM and SMUD.

On May 1, 2002 the following participants gave Plenary Group approval to the plan: USFS, BLM, USFWS, Taxpayers of El Dorado County, Friends of El Dorado County, Camp Lotus, El Dorado County Water Agency, El Dorado County, Placer County Water Agency, California Department of Fish and Game, California State Water Resources Control Board, Pacific Gas and Electric and Friends of the River. None of the participants at the meeting said they could not "live with" this study plan.

6.2.11 Literature Cited

SMUD (Sacramento Municipal Utility District). 2001. Initial Information Package for Relicensing of the Upper American River Project (FERC Project No. 2101). Sacramento. July 2001.