

6.13 Willow Flycatcher Nesting Habitat Study Plan

6.13.1 Pertinent Issue Questions

The willow flycatcher nesting habitat study addresses Terrestrial Resource Issue Questions:

- 7(b). "What are the relevant and known factors (limiting and beneficial) affecting special status bird populations in the Project area and how/where are these factors influenced by Project operation and maintenance?"
21. "What are the Project impacts on special status birds with particular emphasis on Project facilities, operation, maintenance and Project-influenced recreation?"
24. "To what extent do Project operations and maintenance activities and Project-induced recreation affect willow flycatcher populations?"

6.13.2 Background

The willow flycatcher (WIFL) has the following special status designations: Federal Species of Concern, California Endangered, Forest Service Sensitive, and Forest Service Management Indicator Species. Historically, the WIFL nested throughout California wherever thickets of riparian deciduous shrubs, primarily willow (*Salix* spp.) occurred (Grinnell and Miller 1944). In the Sierra Nevada, the WIFL historically occurred most commonly from the foothills up to about 6,000 feet elevation, but numerous records also exist from above 6,000 feet (USDA 2001). In the last four decades, breeding populations have been extirpated from most of the lower elevation riparian areas in California. It appears that the species no longer breeds at elevations below 3,000 feet in the Sierra Nevada, and populations above 3,000 feet have declined as well. Current estimates of the WIFL on Sierra Nevada national forests range between 300 to 400 individuals. As a result, the species is recognized by the U.S. Department of Agriculture, Forest Service (USFS) as the highest-priority landbird species in the Sierra Nevada bioregion because it is considered to have the highest probability of being extirpated from the bioregion in the near future (USDA 2001). Factors implicated in the early decline of the WIFL in the Sierra Nevada include livestock grazing, mining, water diversions, and logging during the late 1800s, which affected the hydrology and vegetation of meadows and riparian areas. More recent declines are attributed to wintering ground deforestation, increased human development in the Sierra Nevada, pesticides, recreation, effects on aquatic larvae of invertebrate prey due to stream impacts, and perhaps most importantly, nest parasitism by the brown-headed cowbird (USDA 2001). Within the Sierra Nevada, cowbirds associate with pack stations, corrals, supplemental feed, livestock holding facilities, campgrounds, picnic areas, and rural communities. Cowbirds may also be attracted to Project-associated areas (e.g., facilities, campgrounds, dispersed recreation sites) in the vicinity of potential WIFL nesting habitat that are subject to high levels of human activity.

Three WIFL subspecies breed in California, *Empidonax traillii adustus*, *E.t. brewsteri*, and *E.t. extimus*. Of these three subspecies, only the range of *E.t. brewsteri* includes the Project area. It breeds in shrubby vegetation (specifically willows) in meadow and riparian communities. The shrub layer is typically 6.5 to 13 feet in height, with the lower 6.5 feet comprised of dense woody vegetation. The mean shrub cover within the WIFL territories has been documented at 21,529 square feet (0.5 acres), but in some cases as they have used as little as 1,076 square feet (0.02 acres) of shrub cover for nesting. Meadows used for nesting range in size from 1 to 716 acres, with a mean of 80 acres (USDA 2001). Recent surveys indicate that the species occurs at elevations from 1,200 to 9,500 feet, although most of the known nest sites are between 4,000 and 8,000 feet. There is usually some surface water or saturated soil within defended territories during the early part of the nesting season (Valentine 1987).

In the Sierra Nevada, the WIFL breeding season occurs from late May or early June (territory establishment) to the middle of September (fledgling independence). Most young fledge between approximately July 15 and August 31 and fledglings remain in the territory for 2 to three weeks post-fledging. WIFLs feed primarily on insects, many of which have aquatic larval stages.

No active nest territories are known from the vicinity of the Project. However, the Eldorado National Forest (ENF) has delineated several areas offering potential habitat including several sites near Project features. These sites include meadow complexes around Rubicon Reservoir, upper Gerle Creek, upper Rubicon River, upper Silver

Creek, and Bosworth Meadows near the southeast corner of Union Valley Reservoir. Potential WIFL habitat, as defined by the Sierra Nevada Forest Plan Amendment (USDA 2001), includes: 1) occupied habitat; 2) known WIFL sites; and 3) emphasis habitat (i.e., meadows larger than 15 acres that have standing water on June 1 and a deciduous shrub component). Occupied habitats are meadows or riparian sites with documented WIFL occupancy, unless: 1) multiple surveys, completed to protocol, document a lack of occupancy, 2) all documented occurrences are outside the regional survey protocol for determining WIFL occupancy during the breeding season, or 3) habitat type conversion has occurred.

6.13.3 Study Objectives

The objective of this study is to determine if Project-related areas of concentrated human activity (i.e., facilities, campgrounds, high-use dispersed recreation sites) are located near potential WIFL nesting habitat and, if so, determine if these areas are being used by WIFLs and if they are attracting brown-headed cowbirds that may parasitize flycatcher nests. This information will be evaluated to determine if Project activities can and should be modified to limit cowbird occurrence and to direct ENF's habitat management strategies for the WIFL.

6.13.4 Study Area and Sampling Sites

The study area will be all Project-related facilities and recreation sites that occur within 0.5-mile of potential WIFL nesting habitat. This nesting habitat is defined by the Sierra Nevada Forest Plan Amendment (USDA 2001) as follows: 1) occupied habitat; 2) known WIFL sites; 3) emphasis habitat (i.e., meadows larger than 15 acres that have standing water on June 1 and a deciduous shrub component); and 4) other suitable habitat as determined by Licensee in collaboration with agency personnel. Occupied habitats are meadows or riparian sites with documented WIFL occupancy, unless: 1) multiple surveys, completed to protocol, document a lack of occupancy, 2) all documented occurrences are outside the regional survey protocol for determining WIFL occupancy during the breeding season, or 3) habitat type conversion has occurred. As indicated above, no active nest territories are known from the vicinity of the Project. However, the ENF has delineated several meadow complexes offering potential habitat near Project features. These sites include meadow complexes around Rubicon Reservoir, upper Gerle Creek, upper Rubicon River, upper Silver Creek, and Bosworth Meadows near the southeast corner of Union Valley Reservoir. Other areas meeting the definition of "emphasis" habitat may be identified through the initial phase of this study. 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.

6.13.5 Information Needed From Other Studies

Determining the distribution of potential WIFL nesting habitat will require information from the Vegetation Mapping, Riparian Vegetation, and Wetland studies. Determining the location of facilities and high-use recreation areas that may attract brown-headed cowbirds will require information from existing project maps and the various Recreation Studies. Important information will be also be derived from past and current monitoring efforts conducted by ENF staff biologists, from a review of the scientific literature, and from consultations with the Licensee on proposed Project activities.

6.13.6 Study Methods and Schedule

The WIFL nesting habitat study methods are based on the Standards and Guidelines presented in the Sierra Nevada Forest Plan Amendment (USDA 2001) and the protocols specified in *A Willow Flycatcher Survey Protocol for California* (Bombay et al. 2000).

Pre-Field Investigations

The pre-field investigation consists of an information review and mapping exercise to delineate project-related high-use areas and potential WIFL habitat that exist in close proximity (i.e., within 0.5-mile) to each other. These areas will be the location for subsequent field surveys. The pre-field investigation includes the following tasks:

- Delineate all known WIFL habitat, emphasis habitat (i.e., wet meadows greater than 15 acres that have standing water after June 1 and a deciduous shrub component) and other suitable habitat as determined by Licensee in collaboration with agency personnel. Information to be derived from botanical studies and ENF data.
- Determine if and where Project-related high-use areas exist within 0.5-mile of the habitat identified above. High-use areas include all developed Project facilities and associated recreation sites, including campgrounds and dispersed recreation sites that exhibit evidence of frequent use other than transient (i.e., pass-through hiking) use, and sites used by any number of pack animals.

Field Investigations

The standardized protocol for WIFL surveys is a 1-year effort that includes the following steps:

- To document WIFL presence/absence in the survey year, a minimum of two surveys will be conducted at each site delineated during the Pre-Field Investigation. One survey during Period 2 (June 15-25) is mandatory and is supplemented by one survey during either Period 1 (June 1-14) or one survey during Period 3 (June 26-July 15). Even if birds are detected during survey Period 2, a second visit is required to more accurately estimate territory numbers. Successive surveys must be at least 5 days apart. Period 1 surveys are not appropriate if riparian shrubs have not yet leafed out.
- A follow-up visit is required when a flycatcher is detected, and suspected but not confirmed to be a WIFL (no *fitz-bew* call). Follow-ups can occur on the same day as the survey visit if they can be completed by 10:00 am, and must be completed within 5 days of the initial detection.
- Delineate survey points on a map, aerial photo, or using Global Positioning System (GPS) instrumentation. Survey points should be spaced a maximum of 50 m for large open meadows and 30 m for areas with tall, dense vegetation, and/or high levels of stream noise that impair sight or hearing. Where vegetation and topography allow, the observer can pace off the 50/30-m distance. If the point falls in a location where sight or hearing is impaired, another point should be established within a 10-m radius of the original point. The same points must be used for both visits during the year, and between years. Points need not be established in portions of meadows that are further than 50 m from a stand of riparian deciduous shrubs or sapling stage deciduous trees.
- At each survey point, broadcast recorded songs, look and listen for responses, and record detections over a 6-minute period. Do not broadcast calls while walking between survey points. Detection of a *fitz-bew* call is essential for a positive record of WIFL.
- Begin surveys as soon as there is sufficient light for safe walking and conclude by 10:00 am. Do not survey during steady rain or wind greater than 12 mph (indicated by leaves and small twigs in constant motion).
- Pre-broadcast listening - start at a survey point at one end of the site and stand quietly and listen for spontaneous singing by WIFL and look for birds for 10 minutes.
- Tape broadcasting - After initial listening period, begin active survey. At each point, listen initially for 1 minute and then broadcast the *fitz-bew* call 4 times in a 30-second span, then listen and watch for 2 minutes. Repeat for a total of 6 minutes.
- If a WIFL is detected, record the point, number, time, and whether this is the 1st, 2nd, 3rd, etc. detection. Also record the type of detection (visual, *fitz-bew*, call) and approximate distance of the detection.
- If a bird is detected but not confirmed as a WIFL, mark the location and make a follow-up visit.
- LOOK AND LISTEN FOR COWBIRDS in the vicinity of the survey site and record presence/absence, number of individuals, and activity of these bird(s). Record human activity in area and cowbird associations with this activity.
- Implement all other procedures as specified in the protocols.

6.13.7 Analysis

Detection of WIFL and/or brown-headed cowbirds will be evaluated with respect to the proximity, type, and duration of human activity in the vicinity of the site. The evaluation will include a thorough review of the literature and consultation with experts to determine findings of related studies on the response of cowbirds and WIFL to the types of activities in question. The evaluation will consider and present recommendations to reduce cowbird presence in the vicinity of the WIFL habitat.

6.13.8 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.

6.3.9 Preliminary Estimated Study Cost

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

6.13.10 TWG and Plenary Group Endorsement

On April 16, 2002 the following TWG participants gave 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.

6.13.11 Literature Cited

Bombay, H.L., T.M. Ritter, and B.E. Valentine. 2000. A willow flycatcher survey protocol for California. June 6, 2000. 50 pp.

Grinnell, J., and A.H. Miller. 1944. The distribution of the birds of California. Pacific Coast Avifauna No. 27.

USDA (United States Department of Agriculture, Forest Service). 2001. Sierra Nevada Forest Plan Amendment: Final Environmental Impact Statement, Volumes 1-6 and Record of Decision. Pacific Southwest Region, San Francisco, CA. January 2001.

Valentine, B.E. 1987. Implications of recent research on the willow flycatcher to forest management. USDA Forest Service, Pacific Southwest Region, Annual Workshop. Fresno, CA, environmental section staff report. Kings River Conservation District, Research Report 87-002.