

6.3 Bird/Powerline Associations Study Plan

6.3.1 Pertinent Issue Questions

The bird/powerline associations 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?"
8. "To what extent do Project-associated power lines comply with established design standards for protection of raptors and other birds from electrocution? To what extent do Project-associated power lines contribute to avian collision mortality?"
21. "What are the Project impacts on special status birds with particular emphasis on Project facilities, operation, maintenance and Project-influenced recreation?"

6.3.2 Background

The UARP transmission and distribution system consists of many miles of electric power lines, utility poles/towers, transformers, and energized hardware that may pose a risk to birds of electrocution or collision mortality.¹ Most native birds in the United States are protected from such "take" by a variety of state and federal laws, including the Migratory Bird Treaty Act, Eagle Protection Act, and state and federal Endangered Species Acts, among others.

A tremendous amount of research has been conducted and the results published on the positive and adverse effects of powerlines on birds. The adverse effects of powerlines and powerline rights-of-way fall into three primary categories: 1) electrocution mortality; 2) collision mortality; and 3) habitat loss, fragmentation, and/or conversion. The positive effects are related primarily to provision of perching and nesting sites, which can extend the breeding range of certain species, increase local densities of populations, and open up new foraging habitat to species that hunt from perches. Right-of-way clearing can also affect raptors, beneficially or adversely depending on the species, by altering the distribution and availability of prey populations. This study focuses on an assessment of the electrocution and collision risks to birds for the Project transmission and distribution system. Rights-of-way effects on vegetation, invasive species, and other resources are discussed primarily in the Rights-of-Way Management Study.

The factors contributing to electrocution and collision mortality are complex and diverse. In general, the following relationships have been established through research: 1) low voltage distribution lines create a greater risk of electrocution than high voltage transmission lines due to greater spacing of conductors and energized hardware; 2) larger birds, especially raptors, are more susceptible to electrocution than smaller birds; 3) flocking birds are more susceptible to collision than solitary birds; and 4) wind, fog, and other inclement weather conditions can increase the risk of collision.

The Edison Electric Institute in collaboration with the Raptor Research Foundation and the Avian Power Line Interaction Committee have developed suggested practices for the protection of raptors (and other birds) on power lines (EEI 1996). These suggested practices provide a basis for determining the level of risk posed by a given powerline along with standards and guidelines for modifying lines to reduce this risk to acceptable limits.

6.3.3 Study Objectives

The objective of the bird/powerline associations study is to determine if and where the UARP electric transmission/distribution system poses a substantial risk of electrocution and/or collision mortality for birds, especially raptors.

¹ Electrical transmission of electricity generated within the UARP includes 69 kV lines (Robbs Peak and Loon Lake powerhouses) and 230 kV lines (all other powerhouses). Some powerhouses (Slab Creek) have station power supplied by outside sources. All electrical transmission and distribution facilities will be assessed.

6.3.4 Study Area and Sampling Sites

The study area consists of all electric transmission and distribution facilities (switchyards, transformers, poles/towers, conductors) associated with the UARP. 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.

6.3.5 Information Needed From Other Studies

Supporting information will be derived from the Rights-of-Way Management Study and Fuels Management Study. Important information will also be derived from the Licensee's records on bird-caused outages tied to facilities in the study area and published findings of research on bird/powerline associations.

6.3.6 Study Methods and Schedule

The study consists of two components: 1) Review of Licensee's outage records for the UARP electrical system to determine if there is a history of bird-caused outages and, if so, where these outages occurred; and 2) Visual inspection of all electrical facilities within the study area to determine the relative potential for bird electrocution and collision mortality by comparing the existing design against known problem designs and established standards and guidelines for protection of raptors (and other birds). If any problem poles or other facilities are discovered based on these two steps, the configuration will be photographed and the location established by recorded pole/tower numbers. All perched birds or nests on facilities will be recorded.

6.3.7 Analysis

The information obtained from the Licensee's outage records and visual inspection of electric facilities will be evaluated against the standards and guidelines for raptor protection on power lines and the existing body of research available on this subject. The objective of this analysis will be to determine if there is a substantial (i.e., re-occurring mortality at a given location) risk to birds and the need for measures to reduce this risk. Factors to be considered will be levels and locations of past mortality, configuration (e.g., inadequate spacing or insulation) of energized equipment, spatial relationship of facilities to major flight paths, existence of preferred perch/nest sites in "at-risk" locations near energized equipment, etc.

6.3.8 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.

6.3.10 TWG and Plenary Group Endorsement

On April 16, 2002 the following entities 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.

6.3.11 Literature Cited

EEI (Edison Electric Institute). 1996. Suggested practices for raptor protection on power lines: the state of the art in 1996.