

Study 7.1
**ENDANGERED SPECIES ACT-LISTED
PLANTS**
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) may have an adverse effect on plants listed under the federal Endangered Species Act (ESA) as endangered (FE) or threatened (FT).

Special-status plants¹ and plants listed under the State of California Endangered Species Act (CESA) are addressed in separate study proposals: the Special-Status Plants Study Proposal and CESA-Listed Plants Study Proposal, respectively.

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 to determine whether continued Project O&M or recreational use of Project facilities may have a measurable, adverse effect on ESA-listed plant species.

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

¹ For the purposes of this Relicensing, special-status plants are considered those plants that are: 1) found on National Forest Service (NFS) land managed by the USFS and formally listed on the Forest Service's List of Sensitive Plant Species for the Plumas National Forest (FSS-P) or the Tahoe National Forest (FSS-T); 2) found on the CDFG's list of California Rare (SR) species, listed under the Native Species Protection Act of 1977; 3) listed under the federal ESA as Proposed or a Candidate for listing as endangered or threatened; 4) listed under the CESA as proposed for listing; or 5) found on the California Native Plant Society (CNPS) Inventory of Rare Plants and formally listed as a CNPS 1, 2 3 or 4 plant (CNPS 1, CNPS 2, CNPS 3, CNPS 4).

4.0 Existing Information and Need for Additional Information

As discussed in Section 7.7 of Licensee’s Pre-Application Document (PAD), existing and relevant information regarding known and potentially occurring ESA-listed plants in the Project Vicinity² is available from the California Natural Diversity Database (CNDDDB) (CDFG 2009), United States Department of Interior’s (USDO I), Fish and Wildlife Service (USFWS) official list of ESA-listed species for 7.5 minute USDO I, United States Geological Survey (USGS) topographic quadrangles (quads) (USFWS 2009) and California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants database (CNPS 2009). Based on this information, Licensee identified four plants species that are ESA-listed and have a reasonable potential to occur on the Project. Table 4.0-1 provides for each of the ESA-listed plant species: 1) status; 2) flowering period; 3) elevation range; 4) habitat requirements; and 5) documented occurrence in the Project Vicinity.

Table 4.0-1. ESA-listed plant species potentially occurring on the Yuba County Water Agency’s Yuba River Development Project.

Common Name/ Scientific Name	Status ¹	Flowering Period	Elevation Range (ft)	Habitat Requirements	Occurrence in Project Vicinity ²
Stebbins’ morning- glory <i>Calystegia stebbinsii</i>	FE SE CNPS 1B	Apr-Jul	607-2,395	Chaparral, cismontane woodland	Unknown in Project Vicinity; present in Pilot Hill, Grass Valley, Lake Combie
Pine Hill flannelbush <i>Fremontodendron decumbens</i>	FE SR CNPS 1B	Apr-Jul	1,394-2,493	Chaparral, cismontane woodland/gabbroic or serpentinite, rocky	Unknown in Project Vicinity; present in Grass Valley
Layne’s ragwort <i>Packera layneae</i>	FT SR CNPS 1B	Apr-Aug	656-3,281	Chaparral, cismontane woodland/serpentinite or gabbroic, rocky	In vicinity-Challenge, Clipper Mills; present in Pilot Hill, Rackerby
Hartweg’s golden sunburst <i>Pseudobahia bahifolia</i>	FE SE	Mar-Apr	50-500	Valley and foothill grassland, cismontane woodland	Unknown in Project Vicinity

¹ Special-status:

CNPS: California Native Plant Society listed species

1B: Species considered rare or endangered in California and elsewhere

FE: Federal Endangered Species

FT: Federal Threatened Species

SE: California Endangered Species

SR: California Rare Species

² Occurrence in Project Vicinity: Some of the USGS topographic quadrangles are found entirely within the Project Vicinity and some are partially within the Project Vicinity. Results based on CNPS nine-quadrangle search.

None of the available reports are from surveys within the existing FERC Project Boundary.³

Additional information needed to address the study goal is the specific location of ESA-listed plants in relation to Project facilities, normal Project O&M activities, Project recreation, and any other Project-related activities that might affect ESA-listed plants.

² For the purposes of the Relicensing, the Project Vicinity is defined as the area surrounding the Project in the order of a county or USDO I, United States Geological Survey (USGS) 1:24,000 topographic quadrangle

³ The FERC Project Boundary is the area Licensee uses for normal Project operations and maintenance and is shown on Exhibits J, K and G of the current license.

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 reservoir 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.
- 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

Study methods will consist of the following five steps: 1) gather data and prepare for field effort; 2) conduct field surveys; 3) prepare data and quality assure/quality control (QA/QC) data; 4) consult with Licensee’s project operations staff; and 5) prepare report. Each step is described below.

5.3.1 Step 1 – Gather Data and Prepare for Field Efforts

Licensee will identify and map known occurrences of ESA-listed plants within the study area, and prepare field maps for use by survey teams. The maps will include aerial imagery, Project features, and known ESA-listed plant occurrences. Survey timing will be planned based on herbarium collection dates.

5.3.2 Step 2 – Conduct Field Surveys

Licensee’s surveyors will conduct ESA-listed plant surveys as outlined in the “Botanical Survey” section of the California Department of Fish and Game’s (CDFG) *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (CDFG 2009).⁴

Surveys will be comprehensive over the entire study area using systematic field techniques to ensure thorough coverage, with additional efforts focused in habitats with a higher probability of supporting special-status plants (e.g., serpentine outcrops). Surveys will be floristic in nature, documenting all species observed; taxonomy and nomenclature will be based on *The Jepson Manual* (Hickman 1993).

In the event ESA-listed plants are found within the study area, surveyors will collect the following data, to the edge of the occurrence, or to 0.25 mile outside the FERC Project Boundary, whichever is less:

⁴ Replaces the CDFG’s *Guidelines for Assessing the Effects of Proposed Project on Rare, Threatened, and Endangered Plants and Natural Communities* (CDFG 2000).

- Digital photographs, if needed, to describe the occurrence, its habitat, and any potential threats (at least one digital photograph will be collected for each occurrence, with other photographs to document potential threats, or as needed).
- Estimated area (approximate length and width) covered by the ESA-listed plant population and estimated number of individual plants in the population. If plant population is estimated to cover an area greater than 0.1 acres, surveyors will delineate the occurrence boundary using a handheld GPS, collecting either polygon data, or sufficient point data that a realistic occurrence polygon can be constructed from the point data using GIS. For occurrences less than 0.1 acre in size, location of the approximate center of the occurrence taken as point data using a handheld GPS unit.
- Dominant and subdominant vegetation in the area.
- Estimated distance to nearest Project facility, feature, or Project-related activity.
- Activities observed in the vicinity of the population that have a potential to adversely affect the population (*e.g.*, recreational trails and uses).
- Estimated phenology and descriptions of reproductive state.

5.3.3 Step 3 – Prepare Data and Quality Assure/Quality Control Data

Following field surveys, Licensee will develop GIS maps depicting ESA-listed plant occurrences, Project facilities, features, and specific Project-related impacts (*e.g.*, dispersed use camping) and other related 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 to verify locations of ESA-listed plant occurrences.

5.3.4 Step 4 – Consult with Licensee’s Project Operations Staff

Once the locations of ESA-listed plants in the study area are defined, Project operations staff will be consulted to identify Project O&M and Project-related activities that typically occur in the area of the ESA-listed plant populations that have a potential to adversely affect the population.

5.3.5 Step 5 – Prepare Report

Licensee will prepare a report that includes the following sections: 1) Study Goals and Objectives; 2) Methods; 3) Results; 4) Discussion; and 5) Description of Variances from the FERC-approved study proposal, if any. The report will include GIS maps that show by ESA-listed plant the location in respect to Project facilities and features. The GIS layer of ESA-listed plants will be made available to the Forest Service if the plant is on National Forest System land. In addition, Licensee will develop a GIS layer for noxious weeds and make this available to the Forest Service.

If Licensee observes any ESA-listed plants, Licensee will notify the USFWS within 3 working days after the observation. If the plant is on National Forest System land, Licensee will also notify the Forest Service.

For all ESA-listed plant species observations, Licensee will complete the appropriate CNDDDB form and transmit the form to the CNDDDB. If the plant is on National Forest System land, Licensee will provide a copy of the ESA-listed Plant CNDDDB form to the Forest Service at the same time it is submitted to CNDDDB.

6.0 Study-Specific Consultation

The study proposal does not require study-specific consultation.

However, since Licensee plans to request FERC to designate Licensee as its non-federal representative for Section 7 consultation under the ESA, Licensee plans to consult with USFWS prior to, during, and after study implementation.

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 most recent FERC hydroelectric relicensing efforts in California, and uses standard botanical survey methods as defined by the CDFG.

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). 2000. Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered Plants and Natural Communities. URL: <<http://www.dfg.ca.gov/biogeodata/cnddb/plants.asp>>.

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