

Study 6.3
WETLANDS
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 the potential to affect wetlands.

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 goals of this study are: 1) to document the occurrence and distribution of wetlands within the existing Federal Energy Regulatory Commission (FERC) Project Boundary¹; and 2) to assess the condition of wetlands potentially affected by continued Project O&M within the existing FERC Project Boundary.

The objective of this study is to gather the data and information necessary to meet the study goals.

4.0 Existing Information and Need for Additional Information

Licensee's Pre-Application Document (PAD) contains information about the wetland vegetation mapped in the area of the Project, including National Wetland Inventory (NWI) maps on a 1:24,000 scale, shown with United States Geological Survey topographic features and project

¹ The existing FERC Project Boundary is the area that Licensee uses for normal Project operations and maintenance, and is shown on Exhibits J, K, and G of the current license.

facilities. Section 7.6 of the Preliminary Information Package includes a table of NWI palustrine and riverine wetland types and acres within the Project Area.²

Based on NWI maps (1987), there are approximately 63,926 feet along the water and 13 acres of palustrine wetlands within the Project Area, with approximately 8,323 feet along the water and 5 acres within the existing FERC Project Boundary. Remaining NWI classified wetland habitats in the Project Area include approximately 40,417 feet along the water and 125 acres of riverine wetlands and approximately 4,635 acres of reservoir open water.

NWI wetlands have been classified using aerial imagery but no ground-mapping data is known to exist to support this inventory. In addition, no known site-specific assessments of wetland habitats or habitat condition within the YCWA FERC Project Boundary are known to exist. To achieve the study goals, additional information is needed.

5.0 Study Methods and Analysis

5.1 Study Area

The study area includes wetlands within the FERC Project Boundary.

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

² For the purposes of this document, the Project Area is defined as the area within the Federal Energy Regulatory Commission (FERC) existing Project Boundary and the land immediately surrounding the FERC Project Boundary (*i.e.*, within about 0.25 mile of the FERC Project Boundary) and includes Project-affected reaches between project facilities and downstream to the next major water controlling feature or structure.

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) site selection 2) gather data and prepare for field effort; 3) conduct field surveys; 4) prepare data and quality assure/quality control data; and 5) prepare report. Each step is described below.

5.3.1 Step 1 – Site Selection

Non-riparian³ wetlands within the FERC Project Boundary will be identified by wetland hydrology and hydrophytic vegetation indicators (USACE 1987, 2008), and microtopographic depressions. Based on aerial photography, NWI maps (1987), and field reconnaissance, representative wetlands potentially affected by continued Project O&M will be selected for wetland condition assessment.

³ Riparian applies to the wetlands "...contiguous to and affected by surface and subsurface hydrologic features of perennial or intermittent lotic (lakes) and lentic (rivers, streams, or drainage ways) water bodies." (USFWS 1997). Riparian-wetlands are addressed by Licensee's Riparian Habitat Study.

5.3.2 Step 2 – Collect and Review Existing Data and Information

Existing data, including Geographic Information System (GIS) data, historical information, reports, maps, and aerial photography relevant to wetland vegetation will be collected and reviewed where available for the selected sites. These sources are expected to provide documentation on geology, topography, soils, wetland vegetation coverage and type, invasive species, and land-use (*i.e.* mining, timber management, recreation, road development, fires, grazing, and water diversions).

5.3.3 Step 3 – Condition Assessment

Surveyors will conduct a condition assessment using the protocol *Riparian Area Management, A User Guide to Assessing Proper Functioning Condition and the Supporting Science for Lentic Areas* (Prichard *et al.* 2003) at wetland sites. Observations of representative conditions and noteworthy atypical conditions will be documented by geo-referenced photographs. Recorded site information will include: 1) hydrologic attributes and processes including observations for inundation, water source, soil saturation, watermarks, sediment deposits, and drainage patterns 2) dominant and sub-dominant vegetative species; vertical community distribution; horizontal community stratification; evidence of periodic recruitment; and dominant and sub-dominant species rating for known association with moist soil conditions in accordance with United States Army Corps of Engineers USACE) wetland delineation forms (USACE 2008) 3) erosion and/or deposition attributes including observations for geologic structure, sediment supply, and shoreline characteristics 4) observations of special-status species.

The study does not include formal wetland delineation.

5.3.4 Step 4 – Prepare Data and Quality Assure/Quality Control Data

Following field surveys, Licensee will develop GIS maps depicting wetland habitat 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 wetland sites and wetlands found.

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. Maps of wetland habitat will be included as an attachment.

6.0 Study-Specific Consultation

This study does not require any study-specific consultation.

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:

Site Selection (Step 1).....	November 2011- March 2012
Collect and Review Existing Data and Information (Step 2)	April 2012- May 2012
Condition Assessment (Step 3).....	June - July 2012
Prepare and QA/QC Data (Step 4)	August 2012
Study Report Preparation (Step 5)	September 2012- 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. The proposed methodologies use standard assessment methods developed and used by federal land management agency personnel.

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

Prichard, D., J. F. Berg, W. Hagenbuck, R. Krapf, R. Leinard, S. Leonard, M. Manning, C. Noble, J. Staats. 2003. Riparian Area Management: a user guide to assessing proper functioning condition and the supporting science for lentic areas. Technical Reference 1737-16. Bureau of Land Management, BLM/RS/ST-99/001+1737+REV03, National Applied Resource Science Center, CO..

United States Army Corps of Engineers (USACE). 1987. Corps of Engineers Wetlands Delineation Manual. U.S. Army Engineer Waterways Experiment Station. Report No. Y-87-1.

———. 2008. Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (ERDC\EL TR-08-13). U.S. Army Corps of Engineers. U. S. Army Engineer Research and Development Center, Environmental Laboratory, Vicksburg, MS.

United States Fish and Wildlife Service (USFWS). 1987. National Wetland Inventory (NWI) maps. US Department of the Interior, USFWS, Region 1. Portland, OR.

_____. 1997. A system for mapping riparian areas in the western United States. U.S. Department of the Interior, U.S. Fish and Wildlife Service, National Wetlands Inventory, St. Petersburg, FL.