

Study 4.1

# **SPECIAL-STATUS WILDLIFE - CALIFORNIA WILDLIFE HABITAT RELATIONSHIPS**

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) and recreation has the potential to affect special-status wildlife.<sup>1</sup>

## **2.0 Resource Management Goals of Agencies with Jurisdiction Over the Resources 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 determine presence and distribution of special-status wildlife in the vicinity of the existing FERC Project Boundary,<sup>2</sup> and Project O&M activities that might affect these species. The objective of the study is to query California Department of Fish and Game's (CDFG) California Wildlife Habitat Relationships (CWHR) system and Project Operations' Staff to meet the study goals.

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<sup>1</sup> Special-status wildlife are considered those wildlife species: 1) found on National Forest System land and formally listed by the United States Department of Agriculture Forest Service as a Sensitive Species or a Management Indicator Species; 2) listed under the federal Endangered Species Act (ESA) as Proposed or a Candidate for listing as endangered or threatened or proposed for delisting; 3) listed under the California Endangered Species Act (CESA) as Proposed for listing as endangered or threatened or proposed for delisting; or 5) formally listed by California Department of Fish and Game as a Species of Special Concern. For the purpose of this study proposal, species listed as threatened or endangered under the ESA or CESA are addressed separately.

<sup>2</sup> 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 facilities and downstream to the next major water controlling feature or structure.

## 4.0 Existing Information and Need for Additional Information

Existing and relevant information regarding known and potentially occurring special-status wildlife in the Project Vicinity<sup>3</sup> is available from the California Natural Diversity Database (CNDDB), CDFG’s CWHR program and the United States Department of Agriculture Forest Service (Forest Service) Geographic Information System (GIS) database. Forest Service data also include various biological evaluations addressing special-status wildlife. This information is useful in developing a target list of special-status wildlife species for the study and identifying their potential habitat in the Project Area.

Based on the general vegetation patterns described in the Botanical Resources section of the PAD (Section 7.5), Licensee classified wildlife habitats in the Project Vicinity using the CWHR program (de Becker and Sweet 1988; CDFG 2005, 2009a). The CWHR model predicts wildlife use based on habitat type, age class, size class, canopy closure or cover, and occurrence of specific habitat elements that influence thermal cover, forage, prey availability, nesting, escape cover, and breeding. Licensee assessed upland vegetation with information from the Forest Service’s CalVegetation (CalVeg) mapping system, which are publicly available data (USDA 2004a), and the Forest Service’s Crosswalk (USFS 2004b) to identify habitats in the Project Vicinity. The Crosswalk converts CalVeg Alliances into the appropriate CWHR habitat type. Using the identified habitat types and CWHR, Licensee identified terrestrial vertebrate wildlife species potentially occurring within the Project Vicinity.

The results of the CWHR analysis and current lists of special-status wildlife indicate that there are 41 species with potential to occur in the Project Area including 1 reptile, 28 birds and 12 mammals. Table 4.0-1 provides the target list of special-status wildlife for this study including for each species: 1) status; 2) general habitat preference; and 3) CWHR habitats.

**Table 4.0-1. Special-status wildlife species known to occur or with the potential to occur within the Project Area for the Yuba River Development Project.**

Species	Special Status <sup>1</sup>	Suitable Habitat Type	Temporal and Spatial Distribution <sup>2</sup>	References
<b>REPTILES</b>				
Coast horned lizard <i>Phrynosoma coronatum</i>	FSS, SSC	Variety of habitats including scrubland, grassland, coniferous woods, and broadleaf woodlands.	Yearlong-AGS, BOP, BOW, MHC, PPN	NatureServe 2009 Vindum and Koo 1999 CDFG 2008
<b>BIRDS</b>				
American white pelican <i>Pelecanus erythrorhynchos</i>	SSC	Rivers, lakes, reservoirs, estuaries, bays, marshes; sometimes inshore marine habitats.	Summer-BAR, Yearlong & Winter-WAT	NatureServe 2009 CDFG 2008
Redhead <i>Aythya americana</i>	SSC	Open water on lakes, ponds, and reservoirs.	Winter-WAT	NatureServe 2009 CDFG 2008
Northern goshawk <i>Accipiter gentilis</i>	FSS, SSC	Lodgepole Pine, Red Fir, Mountain Hemlock, White Pine and Mixed Conifer dominated forest	Yearlong- DFR, MCP, MHC, MHW, PPN, SMC. Winter-BOP, BOW	TNF 1978 TNF 2006 TNF 2007 CDFG 2008

<sup>3</sup> For the purposes of this document, the Project Vicinity is defined as the area surrounding the Project on the order of a United States Geological Survey (USGS) 1:24,000 topographic quadrangle.

**Table 4.0-1. (continued)**

Species	Special Status <sup>1</sup>	Suitable Habitat Type	Temporal and Spatial Distribution <sup>2</sup>	References
<b>BIRDS (continued)</b>				
Blue grouse <i>Dendragapus obscurus</i>	MIS	Mixed forests dominated by Black Oak, Lodgepole Pine, Red Fir, Mountain Hemlock and White Pine dominated forest from 1200 ft to 7500 ft elevation	Yearlong – MHC, SMC, PPN, WFR, SCN	TNF 1978 TNF 2006 CDFG 2008
Oregon vesper sparrow <i>Poocetes gramineus affinis</i>	SSC	Plains, prairie, dry shrublands, savanna, weedy pastures, fields, sagebrush, arid scrub, and woodland clearings.	Winter-AGS, BOP, BOW. Summer-MCP	NatureServe 2009 CDFG 2008
Grasshopper sparrow <i>Ammodramus savannarum</i>	SSC	Prefer grasslands of intermediate height and are often associated with clumped vegetation interspersed with patches of bare ground. Other habitat requirements include moderately deep litter and sparse coverage of woody vegetation.	Summer-AGS	NatureServe 2009 CDFG 2008
Fox sparrow <i>Passerella iliaca</i>	MIS	Dense thickets in coniferous or mixed woodlands, chaparral, along rivers and creeks. Requires dense brushy cover during the nesting season.	Yearlong-MHC, MCH	CDFG 2008
Olive-sided flycatcher <i>Contopus cooperi</i>	SSC	Forest and woodland, in burned-over areas with standing dead trees, in taiga, subalpine coniferous forest and mixed coniferous-deciduous forest. Also swampy edges of lakes, marshy streams, backwaters of rivers.	Summer-DFR, MHC, MHW, PPN, SMC. Migrant-BOP	NatureServe 2009 CDFG 2008
Yellow-headed blackbird <i>Xanthocephalus xanthocephalus</i>	SSC	Fresh-water marshes of cattail, tule, or bulrushes. Nests in wet grasses, reeds, cattails. Also in open cultivated lands, pastures and fields.	Yearlong-WAT. Summer-AGS	NatureServe 2009 CDFG 2008
Tricolored blackbird <i>Agelaius tricolor</i>	SSC	Fresh-water marshes of cattails, tule, bulrushes, and sedges. Nests in vegetation of marshes or thickets, sometimes nests on the ground. Historically strongly tied to emergent marshes; in recent decades much nesting has shifted to non-native vegetation.	Yearlong-AGS	NatureServe 2009 CDFG 2008
Yellow warbler <i>Dendroica petechia</i>	MIS, SSC	Open scrub, second-growth woodland, thickets, farmlands and gardens, especially near water; riparian woodlands, especially of willows, in the West.	Summer-BOP, BOW, MCP, MHC, MHW, PPN, SMC. Migrant-DFR	NatureServe 2009 CDFG 2008 TNF 1978
Hairy woodpecker <i>Picoides villosus</i>	MIS	Mature woods with large old trees suitable for cavity nesting; also common in medium-aged forests; prefers woods with a dense canopy	Yearlong – MHC, MHW	NatureServe 2009 CDFG 2008
Common yellowthroat <i>Geothlypis trichas</i>	SSC	Marshes (especially cattail), thickets near water, bogs, brushy pastures, and old fields. In migration and winter also in brushy and shrubby areas in both moist and arid regions.	Yearlong-AGS, BOP, BOW, DFR, MCP, MHC, MHW, PPN, SMC. Summer-MRI	CDFG 2008
Black-backed woodpecker <i>Picoides arcticus</i>	MIS	Associated with boreal and montane coniferous forests, especially in areas with standing dead trees such as burns, bogs, and windfalls; less frequently in mixed forest	Yearlong – SMC, MHC	NatureServe 2009 CDFG 2008
Mountain quail <i>Oreortyx pictus</i>	MIS	Mixed forests dominated by Black Oak, Lodgepole Pine, Red Fir, Mountain Hemlock and White Pine dominated forest from 1200 ft to 7500 ft elevation and mountain chaparral	Yearlong – RFR, MHW, SMC, PPN, WFR, SCN	TNF 1978 TNF 2006
California spotted owl <i>Strix occidentalis occidentalis</i>	FSS, MIS, SSC	Mixed forests dominated by Black Oak, Lodgepole Pine, Red Fir White Fir, Ponderosa Pine, Sugar Pine, Incense Cedar, Douglas Fir	Yearlong-BOP, MHW. Summer-MRI	TNF 1978 TNF 2006 TNF 2007

**Table 4.0-1. (continued)**

Species	Special Status <sup>1</sup>	Suitable Habitat Type	Temporal and Spatial Distribution <sup>2</sup>	References
<b>BIRDS (continued)</b>				
Common loon <i>Gavia immer</i>	SSC	Lakes containing both shallow and deep water areas	Yearlong - WAT	NatureServe 2009 CDFG 2008 TNF 1978
Long-eared owl <i>Asio otus</i>	SSC	Deciduous and evergreen forests, orchards, wooded parks, farm woodlots, river woods, desert oases. Wooded areas with dense vegetation needed for roosting and nesting, open areas for hunting.	Yearlong-AGS, BOP, BOW, MCP, MHC, MHW, PPN, SMC	NatureServe 2009 CDFG 2008
Short-eared owl <i>Asio flammeus</i>	SSC	Broad expanses of open land with low vegetation for nesting and foraging are required.	Yearlong-AGS Winter-BOP, BOW, DFR, NHC, PPN, SMC	NatureServe 2009 CDFG 2008
Purple martin <i>Progne subis</i>	SSC	A wide variety of open and partly open situations, frequently near water or around towns	Summer-AGS, BOP, BOW, DFR, MHC, MHW, PPN, SMC, WAT	NatureServe 2009 CDFG 2008 TNF 1978
Loggerhead shrike <i>Lanius ludovicianus</i>	SSC	Open country with scattered trees and shrubs, savanna, desert scrub, and, occasionally, open woodland; often perches on poles, wires or fence posts.	Yearlong-AGS, BAR, BOP, BOW, MCH, MHC, MHW, PPN	NatureServe 2009 CDFG 2008
Yellow-breasted chat <i>Icteria virens</i>	SSC	Second growth, shrubby old pastures, thickets, bushy areas, scrub, woodland undergrowth, and fence rows, including low wet places near streams, pond edges, or swamps; thickets with few tall trees	Yearlong - WAT	NatureServe 2009 CDFG 2008
Barrow's goldeneye <i>Bucephala islandica</i>	SSC	Winters on lakes, rivers, estuaries, and bays. Usually nests near lake or pond surrounded by dense vegetation.	Yearlong - WAT	NatureServe 2009 CDFG 2008 TNF 1978
Harlequin duck <i>Histrionicus histrionicus</i>	SSC	Historic breeding grounds include west slope of the Sierra Nevada along shores of swift, shallow rivers.	Yearlong - WAT	NatureServe 2009 CDFG 2008
Northern harrier <i>Circus cyaneus</i>	SSC	Marshes, meadows, grasslands, and cultivated fields.	Yearlong-AGS, BAR, BOP, BOW, WAT. Summer-DFR, MCP, MHC, MHW, PPN, SMC	NatureServe 2009 CDFG 2008
Black swift <i>Cypseloides niger</i>	SSC	Nests in moist crevices or caves, or on cliffs near waterfalls in deep canyons. Forages widely over many habitats	Summer-AGS, BAR, BOP, BOW, DFR, MCP, MHC, MHW, PPN, SMC, WAT	NatureServe 2009 CDFG 2008 TNF 1978
Vaux's swift <i>Chaetura vauxi</i>	SSC	Found in mature forests but also forages and migrates over open country.	Summer-BOP, DFR, MCP, MHC, MHW, PPN, SMC, WAT	NatureServe 2009 CDFG 2008
Black tern <i>Chlidonias niger</i>	SSC	Marshes, along sloughs, rivers, lakeshores, and impoundments, or in wet meadows	Summer-WAT	NatureServe 2009 CDFG 2008 TNF 1978
Burrowing owl <i>Athene cucularia</i>	SSC	Open grasslands, especially prairie, plains, and savanna, sometimes in open areas such as vacant lots near human habitation or airports.	Yearlong-AGS, BAR, BOP, BOW, MCP, PPN	NatureServe 2009 CDFG 2008
<b>MAMMALS</b>				
Western red bat <i>Lasiurus blossevillii</i>	FSS, SSC	Roosts in foliage, forages in open areas (sea level up through mixed conifer forests)	Yearlong-AGS, BOP, BOW, MCP, MHC. Summer-DFR, MHW, PPN, SMC, WAT	SFWPA 2006 TNF 2005 CDFG 2008
Spotted bat <i>Euderma maculatum</i>	SSC	Arid deserts, grasslands, and mixed conifer forests (0-9,800 ft)	Yearlong-AGS, BOP, BOW, MCP, MHC, PPN, SMC, WAT	SFWPA 2006 CDFG 2008

**Table 4.0-1. (continued)**

Species	Special Status <sup>1</sup>	Suitable Habitat Type	Temporal and Spatial Distribution <sup>2</sup>	References
<b>MAMMALS (continued)</b>				
Townsend's big-eared bat <i>Corynorhinus townsendii</i>	FSS,SSC	Roosts in buildings, mines, tunnels, and caves; feeds along habitat edges (0-10,365 ft)	Yearlong-BAR, BOP, BOW, DFR, MCP, MHC, MHW, PPN, SMC. Summer-AGS, WAT	SFWPA 2006 TNF 2006 CDFG 2008
Pallid bat <i>Antrozous pallidus</i>	FSS, SSC	Roosts in caves, crevices, and buildings; feeds in a variety of open habitats (8,000 ft)	Yearlong-AGS, BAR, BOP, BOW, DFR, MCP, MHC, MHW, PPN, SMC. Sumer-WAT	SFWPA 2006 TNF 2006 CDFG 2008
Western mastiff bat <i>Eumops perotis</i>	SSC	Open areas with abundant roost locations provided by crevices in rock outcrops and buildings at lower elevations, but as high as 8,700 ft	Yearlong-AGS, BAR, BOP, BOW, MCP, MHC, MHW, PPN	SFWPA 2006 CDFG 2008
American marten <i>Martes americana</i>	FSS, MIS	Late successional forest near streams and meadows	Yearlong-BAR, DFR, MHC, PPN, SMC	SFWPA 2006 TNF 2006 CDFG 2008
Pacific fisher <i>Martes pennanti</i>	FSS, SSC	Late successional forest near streams and meadows	Yearlong-DFR, MHC, PPN, SMC	SFWPA 2006 TNF 2006 CDFG 2008
Northern flying squirrel <i>Glaucomys sabrinus</i>	MIS, , FSS	Coniferous and mixed forest, but will utilize deciduous woods and riparian woods	Yearlong-BOP, BOW, DFR, MHC, MHW, PPN, SMC	NatureServe 2009 CDFG 2008
Mule deer <i>Odocoileus hemionus</i>	MIS	Early to intermediate successional stages of most forest, woodland, and brush habitats interspersed with herbaceous openings, dense brush or tree thickets, riparian areas, and abundant edge	Yearlong-AGS, BOP, BOW, DFR, MCP, MHC, MHW. Summer-PPN, SMC	SFWPA 2006 TNF 2006 CDFG 2008
Sierra Nevada snowshoe hare <i>Lepus americanus tahoenis</i>	SSC	Riparian communities with thickets of deciduous trees and shrubs such as Willows and Alders. They also frequent dense thickets of young conifers and chaparral	Yearlong-DFR, SMC	NatureServe 2009 CDFG 2008
American badger <i>Taxidea taxus</i>	SSC	Prefers open areas and may also frequent brushlands with little groundcover. When inactive, occupies underground burrow.	Yearlong-AGS, BAR, BOP, BOW, DFR, MCP, MHC, MHW, PPN, SMC	NatureServe 2009 CDFG 2008
Sierra Nevada mountain beaver <i>Aplodontia rufa californica</i>	SSC	Dense riparian-deciduous and open, brushy stages of most forest types	Yearlong – MCH, MHC, SMC	NatureServe 2009 CDFG 2008

<sup>1</sup>Status:

- SSC = California Species of Special Concern (CDFG 2009b)
- FSS = United States Forest Service Sensitive Species (USFS 2001)
- MIS = Management Indicator Species (TNF 2006)

<sup>2</sup> Vegetation communities and habitats as defined in the California Wildlife Habitat Relationships system.

- AGS = Annual Grass
- BAR = Barren
- BOP = Blue Oak Foothill Pine
- BOW = Blue Oak Woodland
- DFR = Douglas Fir
- MCH = Mixed Chaparral
- MCP = Montane Chaparral
- MHC = Montane Hardwood Conifer
- MHW = Montane Hardwood
- PPN = Ponderosa Pine
- SMC = Sierran mixed Conifer
- URB = Urban
- WAT = Lacustrine and Riverine (Water)

In order to meet the goals of the study, Licensee has identified the following additional information needs: 1) development of maps identifying CWHR habitat types for each species identified in table 4.0-1; 2) known protected wildlife habitats (e.g., California Spotted Owl Protected Activity Centers [PACs] and Home Range Core Areas, Northern goshawk PAC), and CNDDDB and USFS species occurrence data for target species; and 3) a list of Project O&M activities that includes location and duration of the activity.

## **5.0 Study Methods and Analysis**

### **5.1 Study Area**

The study area consists of the area within the existing FERC Project Boundary<sup>4</sup> and an area extending 0.25 mile from the boundary. This includes all Project facilities (e.g., powerhouses, dams, and conduits) as well as Project recreation sites (e.g., reservoirs and campgrounds).

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

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<sup>4</sup> The existing FERC Project Boundary is the area that Licensee uses for normal Project operations and maintenance, and is shown on Exhibits G, J, and K of the current license.

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 Study Methods**

The study methods consist of the four steps described below.

#### **5.3.1 Step 1 – Create Maps that Include Vegetation Communities, Wildlife Habitats and Project Facilities**

Licensee will produce maps at a scale of 1:24,000 that include CWHR habitat types, known protected wildlife habitats (e.g., California spotted owl Protected Activity Centers [PACs] and Home Range Core Areas, northern goshawk PAC) and project facilities. In addition, CNDDDB and USFS species occurrence data for target species will be included.

#### **5.3.2 Step 2 – Compile Project O&M Activities**

Licensee will compile a list of Project operations and maintenance activities by facility. In each instance, Project Operations Staff will be consulted to describe the nature and frequency of Project O&M.

#### **5.3.3 Step 3 – Analysis of Habitat and Project O&M**

Licensee will use the maps identified in Step 1 to identify areas within the study area in which special-status wildlife habitat and Project O&M overlap.

### **5.3.4 Step 4 – Prepare Report**

Licensee will prepare a report that includes the following sections: 1) Study Goals and Objectives; 2) Methods and Analysis; 3) Discussion; 4) Conclusions; and 5) Description of Variances from the FERC-approved study proposal, if any.

## **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 PAD is filed on November 1, 2010, and FERC issues its Study Determination by October 4, 2011:

Planning (Step 1)..... November – December 2011  
Analysis (Step 2)..... January - July 2012  
Report Preparation (Step 3) ..... August - October 2012

## **8.0 Consistency of Methodology with Generally Accepted Scientific Practices**

The study methods discussed above are consistent with the study methods followed in several other relicensings. The methods presented in this study plan also are consistent with those used in recent relicensings in California.

## **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**

Bureau of Land Management. 2006. California-BLM Animal Sensitive Species List, Updated September 2006. Available [http://www.blm.gov/ca/pdfs/pa\\_pdfs/biology\\_pdfs/SensitiveAnimals.pdf](http://www.blm.gov/ca/pdfs/pa_pdfs/biology_pdfs/SensitiveAnimals.pdf). (Accessed: Apr 25, 2007).

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