



# **TECHNICAL MEMORANDUM 4-1**

## **Special-Status Wildlife – California Wildlife Habitat Relationships**

### **Yuba River Development Project FERC Project No. 2246**

September 2012

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TECHNICAL MEMORANDUM 4-1

## EXECUTIVE SUMMARY

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In 2012, Yuba County Water Agency (YCWA or Licensee) determined the potential presence and distribution of special-status wildlife species<sup>1</sup> within and adjacent to the Federal Energy Regulatory Commission (FERC) boundary for the Yuba River Development Project (Project).

The study areas included all Project facilities (e.g., powerhouses, dams, reservoirs, transmission lines, conduits) and Project recreation sites (e.g., campgrounds) within a 0.25 mile of the FERC Project Boundary.

YCWA used the California Department of Fish and Game's (CDFG) California Wildlife Habitat Relationships (CWHR) program to perform the Study.

YCWA created maps at a scale of 1:24,000 that showed the following: 1) predicted CWHR habitats; 2) known protected wildlife habitats; 3) occurrence data from CDFG's California Natural Diversity Database and the United States Department of Agriculture, Forest Service (Forest Service); Tahoe National Forest (TNF) Geographic Information System database; and 4) all Project facilities within the study area. For each Project facility, YCWA identified the type, frequency, and duration of operation and maintenance (O&M) and recreation activities. YCWA then identified where O&M activities and recreation might affect special-status wildlife.

Based on the CWHR analysis, YCWA identified 42 special-status wildlife species - 1 reptile, 34 birds and 7 mammals – that have habitat or the potential to occur in the study area. Two (California spotted owl [*Strix occidentalis occidentalis*] and Pacific fisher [*Martes pennanti*]) have been observed or reported to occur in the study area. Additionally, habitat for mule deer (*Odocoileus hemionus*) and forest carnivores (Pacific fisher and American marten [*Martes americana*]) were found to overlap with most of the study area.

Twenty-eight of the special-status wildlife species were predicted to occur near 20 or more of the Project facilities, and are likely to overlap with Project O&M and recreation activities. Ten of the special-status species were predicted to occur at between 11 and 19 of the Project facilities and are likely to overlap with Project O&M and recreation activities. Four of the special-status wildlife species were predicted at less than 10 of the Project facilities and are less likely to overlap with Project O&M activities.

Project O&M activities occur at all Project facilities to varying degrees and in some cases, are seasonally-limited. The frequency of O&M activities was found to be facility-dependent and

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<sup>1</sup> For this study, special-status wildlife are considered those wildlife species: 1) found on National Forest System (NFS) land and formally listed by the 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) formally listed by CDFG as a Species of Special Concern; 4) formally listed by the United States Department of Agriculture, Fish and Wildlife Service as a Bird of Conservation Concern; or 5) listed under the California Endangered Species Act (CESA) as endangered or threatened, or fully protected. Species listed as threatened or endangered under the ESA, or California Endangered Species Act (including fully protected species) are addressed in separate relicensing technical memoranda.

range from daily powerhouse visits to annual inspections of dams. O&M activities occur on an annual, monthly, weekly, daily, or as-needed basis. O&M activities are facility-dependent and included, but were not limited to, vegetation management, removal of debris from project impoundments, road maintenance, and repairs.

This study was conducted according to the FERC-approved Special-Status Wildlife – CWHR Study (Study 4.1); no variances occurred in the performance of this study.

The study is complete.

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CWHR Habitat Types of the Project Study Area

Attachment 4.1B

Maps of Known Species Occurrences or Known Protected Habitats  
Within the Project Study Area

TECHNICAL MEMORANDUM 4-1

# SPECIAL-STATUS WILDLIFE – CALIFORNIA WILDLIFE HABITAT RELATIONSHIPS<sup>2</sup>

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Yuba County Water Agency (YCWA or Licensee) continued operation and maintenance (O&M) of the Yuba River Development Project, Federal Energy Regulatory Commission (FERC or Commission) Project Number 2246 (Project) may have an adverse effect on special-status wildlife species.<sup>3</sup>

## 1.0 Goals and Objectives

The goal of this study was to determine the presence and distribution of special-status wildlife in the vicinity of the existing FERC Project Boundary,<sup>4</sup> and the Project O&M and recreation activities that might affect these species. The objective of this study was to query the California Department of Fish and Game's (CDFG) California Wildlife Habitat Relationships (CWHR) (CDFG 2010) system and Project Operations' staff for the information needed to meet the study goal.

## 2.0 Methods

### 2.1 Study Area

The study area consisted of the area within the existing FERC Project Boundary plus an area extending a 0.25 mile (mi) from the boundary. This included all Project facilities (e.g., powerhouses, dams, reservoirs, and conduits) and recreation sites (e.g., marinas and campgrounds).

### 2.2 Study Methods

The study methods consisted of three steps: 1) the creation of maps that included vegetation communities, wildlife habitats and Project facilities; 2) the compilation of Project O&M and recreation activities; and 3) the analysis of potential effects on vegetation communities and

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<sup>2</sup> This technical memorandum presents the results for Study 4.1, Special-Status Wildlife - California Wildlife Habitat Relationships, which was included in YCWA's September 8, 2011 Revised Study Plan for relicensing of the Yuba River Development Project, and approved by FERC in its September 30, 2011 Study Plan Determination. There were no modifications to Study 4.1 subsequent to FERC's September 30, 2011 Study Determination.

<sup>3</sup> For this study, special-status wildlife are considered those wildlife species: 1) found on National Forest System (NFS) land and formally listed by the 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; 5) formally listed by California Department of Fish and Game as a Species of Special Concern; 6) formally listed by the United States Department of Agriculture, Fish and Wildlife Service as a Bird of Conservation Concern; or 7) listed under the California Endangered Species Act (CESA) as endangered or threatened, or fully protected. Species listed as threatened or endangered under the ESA, or California Endangered Species Act (including fully protected species, as well as primarily aquatic species), are addressed in separate relicensing technical memoranda.

<sup>4</sup> The existing FERC Boundary for the Project is shown on existing Exhibit J and K maps.

wildlife habitat from Project O&M and recreation activities. Each of these steps is described below.

### **2.2.1 CWHR Maps for Special-Status Wildlife**

To develop CDFG's CWHR maps for special-status wildlife species, YCWA used existing United States Department of Agriculture, Forest Service (Forest Service) data to identify vegetation alliances in the study area that are based on the CalVeg vegetation classification system. The Forest Service's Region 5 employs the CalVeg system and its standards to classify existing vegetation into alliances. CalVeg is a statewide program regularly updated at the Forest Service's Remote Sensing Laboratory, which maintains strict standards for classification and naming conventions that are consistent across California. For those portions of the study area that were outside National Forest System (NFS) land, YCWA obtained additional CalVeg mapping coverage from the Forest Service Remote Sensing Laboratory (USDA 2009).

Based on vegetation alliances, YCWA used the CWHR program to predict which wildlife species may occur in the study area. CWHR is a predictive database system based on scientific information for reptile, amphibian, bird, and mammal species and their habitat relationships in California. Applications of CWHR include characterization of wildlife vegetation habitats and special habitat elements occurring within a particular area using the CWHR vegetation habitat classification system. The CWHR model predicts wildlife use based on habitat type, age class, size class, canopy closure, and occurrence of specific habitat elements that influence thermal cover, forage, prey availability, nesting, escape cover, and breeding. The CWHR output is typically a list of wildlife species that potentially occur in an area based on wildlife habitats, habitat elements, and geographic location. For the purpose of this study, only habitat types having medium to high suitability rankings for each special-status wildlife species predicted to occur in the study area were used for the CWHR output.

The goal of the CWHR vegetation classification system is to identify and classify vegetation types important to wildlife and to recognize and logically categorize major vegetative complexes at a scale sufficient to predict wildlife-habitat relationships. To properly use the CWHR, CalVeg habitats must be classified using the system described in Mayer and Laudenslayer (1988). YCWA used the Forest Service crosswalk (USDA 2004) to perform this conversion.

YCWA reviewed information from CDFG (2010, 2011a, 2011b, and 2012), the Forest Service (USDA 2007) and the TNF (2007 and 2009), and queried the CWHR output created as part of this study to develop a list of special-status wildlife species that have potential to occur in the study area.

YCWA imported National Geographic Topographical 1:24,000-scale maps, which were available from ESRI (2012), into a Geographic Information System (GIS) database. YCWA then overlaid the imagery with layers depicting the FERC Project Boundary with a 0.25 mi buffer, Project facilities, and CWHR habitat types. The resulting 1:24,000-scale GIS maps include the FERC Project Boundary, study area boundary, CWHR habitat types, known special-status wildlife species and habitat occurrences.



**2.2.2 Compile Project O&M Activities**

A list of Project facilities and features was developed, and Project Operations staff described the nature and frequency of O&M activities and recreation, as appropriate, at each.

**2.2.3 Analysis of Habitat and Project O&M**

YCWA used the maps described in Section 2.2.1 and the O&M lists developed under Section 2.2.2 to identify areas within the study area where special-status wildlife habitat and species occurrences overlap with Project O&M and recreation activities.

**3.0 Results**

**3.1 CWHR Maps and Special-Status Wildlife**

**3.1.1 Vegetation Alliances and CWHR Habitats**

Licensee identified eight CalVeg Alliances in the study area, which converted to 15 CWHR habitat types (Table 3.0-1). Maps of the 15 CWHR habitat types within the study area are included in Attachment 4-1A.

**Table 3.0-1. CWHR wildlife habitat types identified in the study area.**

Annual Grassland	Montane Chaparral
Barren	Montane Hardwood-Conifer
Blue Oak-Foothill Pine	Montane Hardwood
Blue Oak Woodland	Ponderosa Pine
Douglas-Fir	Riverine
Lacustrine	Sierran Mixed Conifer
Mixed Chaparral	Urban
Wet Meadow	

**3.1.2 Potentially Occurring Special-Status Wildlife Species**

Based on the CWHR analysis, 42 special-status wildlife species have the potential to occur in the study area. These include 1 reptile, 34 birds and 7 mammals.<sup>5</sup> The species, including their preferred habitat types, status, and recovery plans if appropriate, are listed in Table 3.1-2.

<sup>5</sup> The CWHR output included 5 special-status bat species that are discussed in a separate Technical Memorandum (4-2, Wildlife – Bats) and thus, are not part of this report.

**Table 3.1-1. Special-status wildlife species known to occur or have the potential to occur within the study area.**

Species	Special-Status <sup>1</sup>	Suitable Habitat Type	Suitable CWHR Habitat <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 2010
<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 2010
Redhead <i>Aythya americana</i>	SSC	Open water on lakes, ponds, and reservoirs.	Winter- WAT	NatureServe 2009 CDFG 2010
Northern goshawk <i>Accipiter gentilis</i>	FSS & SSC	Lodgepole pine ( <i>Pinus contorta</i> ), red fir ( <i>Abies magnifica</i> ), mountain hemlock ( <i>Tsuga mertensiana</i> ), white pine ( <i>Pinus monticola</i> ) and mixed conifer dominated forest.	Yearlong- DFR, MCP, MHC, MHW, PPN, SMC Winter- BOP, BOW	TNF 1978 TNF 2006 TNF 2007 CDFG 2010
Blue grouse <i>Dendragapus obscurus</i>	MIS	Mixed forests dominated by black oak ( <i>Quercus kelloggii</i> ), lodgepole pine, red fir, mountain hemlock and white pine dominated forest from 1200 feet (ft) to 7500 ft elevation.	Yearlong – MHC, SMC, PPN, WFR, SCN	TNF 1978 TNF 2006 CDFG 2010
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 2010
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 2010
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 2010
Olive-sided flycatcher <i>Contopus cooperi</i>	SSC & BCC	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 2010 USFWS 2008
Yellow-headed blackbird <i>Xanthocephalus xanthocephalus</i>	SSC	Fresh-water marshes of cattail ( <i>Typha</i> sp.), tule ( <i>Schoenoplectus</i> sp.), or bulrushes ( <i>Scirpus</i> sp.). Nests in wet grasses, reeds, cattails. Also in open cultivated lands, pastures and fields.	Yearlong- WAT Summer- AGS	NatureServe 2009 CDFG 2010
Tricolored blackbird <i>Agelaius tricolor</i>	SSC	Fresh-water marshes of cattails, tule, bulrushes, and sedges ( <i>Carex</i> spp.). 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 2010
Cassin's finch <i>Carpodacus cassinii</i>	BCC	Common montane resident, breeds in higher mountain ranges. Prefers open coniferous forests in breeding season, most numerous near wet meadows and grassy openings. Irregular in California foothills and lowlands.	Yearlong– DFR, MRI, PPN, SMC, WTM	CDFG 2011b CDFG 2010 USFWS 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 ( <i>Salix</i> spp.), in the West.	Summer- BOP, BOW, MCP, MHC, MHW, PPN, SMC. Migrant- DFR	NatureServe 2009 CDFG 2010 TNF 1978

**Table 3.1-1. (continued)**

Species	Special Status <sup>1</sup>	Suitable Habitat Type	Suitable CWHR Habitat <sup>2</sup>	References
<b>BIRDS (continued)</b>				
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 2010
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 2010
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 2010
Lewis woodpecker <i>Melanerpes lewis</i>	BCC	Uncommon, local winter resident occurring in open oak savannahs, broken deciduous and coniferous forests.	Yearlong- AGS, BOP, BOW, DFR, MCH, MHC, MHW, MRI, PPN, SMC, VOW, VRI, WTM Winter- MCP	USFWS 2008 CDFG 2010
Williamson’s sapsucker <i>Sphyrapicus thyroideus</i>	BCC	Summer resident in coniferous forests, nesting habitat includes lodgepole pine, but will nest in aspens ( <i>Populus</i> sp.) adjacent to stands of red fir, Jeffrey pine and eastside pine (species) habitats.	Yearlong- MRI, SMC Winter- PPN	USFWS 2008 CDFG 2010
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 1,200 ft to 7,500 ft elevation and mountain chaparral.	Yearlong – RFR, MHW, SMC, PPN, WFR, SCN	TNF 1978 TNF 2006 CDFG 2010
California spotted owl <i>Strix occidentalis occidentalis</i>	FSS, MIS, SSC & BCC	Mixed forests dominated by black oak, lodgepole pine, red fir white fir ( <i>Abies concolor</i> ), ponderosa pine ( <i>Pinus ponderosa</i> ), sugar pine ( <i>Pinus lambertiana</i> ), incense cedar ( <i>Calocedrus decurrens</i> ), and/or Douglas fir ( <i>Pseudotsuga menziesii</i> ).	Yearlong- BOP, MHW Summer- MRI	TNF 1978 TNF 2006 TNF 2007 USFWS 2008 CDFG 2010
Common loon <i>Gavia immer</i>	SSC	Lakes containing both shallow and deep water areas.	Yearlong - WAT	NatureServe 2009 CDFG 2008 TNF 1978 CDFG 2010
Flammulated owl <i>Otus flammeolus</i>	BCC	A common summer resident locally in a variety of coniferous habitats, including ponderosa pine to red fir forests between 6,000 ft and 10,000 ft.	Summer- DFR, MCP, MHC, MHW, MRI, PPN, SMC	USFWS 2008 CDFG 2010
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 2010
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, MHC, PPN, SMC	NatureServe 2009 CDFG 2010
Calliope hummingbird <i>Stellula calliope</i>	BCC	Breeds in wooded habitats from ponderosa pine and montane hardwood-conifer up to lodgepole pine, but favors montane riparian, aspen and other open forests near streams. Forages in open meadows and stands of shrubs.	Migrant– BOP, BOW, MCH, MHW, URB, VOW, VRI Summer– DFR, MCH, MCP, MHC, MRI, PPN, SMC, WTM Yearlong- MCH	USFWS 2008 CDFG 2010

**Table 3.1-1. (continued)**

Species	Special Status <sup>1</sup>	Suitable Habitat Type	Suitable CWHR Habitat <sup>2</sup>	References
<b>BIRDS (continued)</b>				
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 2010 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 2010
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 2010
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 2010 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 2010
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 2010
Black swift <i>Cypseloides niger</i>	SSC & BCC	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 2010 TNF 1978 USFWS 2008
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 2010
Black tern <i>Chlidonias niger</i>	SSC	Marshes, along sloughs, rivers, lakeshores, and impoundments, or in wet meadows.	Summer- WAT	NatureServe 2009 CDFG 2010 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 2010
<b>MAMMALS</b>				
American marten <i>Martes americana</i>	FSS & MIS	Late succession forest near streams and meadows.	Yearlong- BAR, DFR, MHC, PPN, SMC	SFWPA 2006 TNF 2006 CDFG 2010
Pacific fisher <i>Martes pennanti</i>	FSS, SSC	Late succession forest near streams and meadows.	Yearlong- DFR, MHC, PPN, SMC	SFWPA 2006 TNF 2006 CDFG 2010
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 2010
Mule deer <i>Odocoileus hemionus</i>	MIS	Early to intermediate succession 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 2010
Sierra Nevada snowshoe hare <i>Lepus americanus tahoensis</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 2010

**Table 3.1-1. (continued)**

Species	Special Status <sup>1</sup>	Suitable Habitat Type	Suitable CWHR Habitat <sup>2</sup>	References
<b>MAMMALS (continued)</b>				
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 2010
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 2010

<sup>1</sup> Status:

- SSC = CDFG - Species of Special Concern (CDFG 2009b)
- FSS = Forest Service Sensitive Species (USFS 2001)
- MIS = Forest Service Management Indicator Species (TNF 2006)
- BCC = Birds of Conservation Concern (USFWS 2008)

<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
- MRI = Montane Riparian
- PPN = Ponderosa Pine
- RFR = Red Fir
- SCN = Subalpine Conifer
- SMC = Sierran mixed Conifer
- URB = Urban
- VRI = Valley Foothill Riparian
- VOW = Valley Oak Woodland
- WTM = Wet Meadow
- WAT = Lacustrine and Riverine (Water)
- WFR = White Fir

## 3.2 Analysis of Habitat and Project O&M

Project Operations staff stated that Project O&M activities include, but are not limited to, dam inspections, road maintenance, hazard tree removal, tunnel maintenance, servicing and repair of recreation facilities, vegetation management, and recreation. These activities occur on an annual, monthly, weekly, daily, or as-needed basis.

YCWA’s review of the California Natural Diversity Database (CNDDDB) (CDFG 2012) and TNF’s incidental observations GIS data base (TNF 2009) revealed two species with documented occurrences in the study area, and protected habitat for four species in the study area. The two species with documented occurrences in the study area were California spotted owl (*Strix occidentalis occidentalis*), and Pacific fisher (*Martes pennant*). The four species with protected habitat in the study area were California spotted owl, Pacific fisher, American marten (*Martes americana*), and mule deer (*Odocoileus hemionus*). The protected habitats included: 1) Protected Activity Centers (PAC), Home Range Core Areas (HRCA), and nesting territories for California spotted owl; 2) forest carnivore habitat for Pacific fisher and American marten; and 3) winter and critical winter habitat for mule deer.

Table 3.2-1 lists all development components for the Project, along with the O&M activities typically performed at each. The table also provides a list of habitat types and potentially occurring special-status wildlife species (predicted at each location by CWHR), as well as any known protected habitat types or species occurrences within 0.25 mi of each development component. Attachment 4-1B contains maps of known protected habitats or species occurrences within the study area.

**Table 3.2-1. Summary of special-status wildlife species habitat potentially occurring in the study area relative to development components, O&M, and recreation areas.**

Development Components	Operation, Maintenance, and Recreation Activities <sup>1</sup>	CWHR Habitats <sup>2</sup>	Potentially Occurring Special-Status Species			Other Protected Habitats/Known Occurrences within ¼ mi of Development Component <sup>3</sup>	
<b>NEW COLGATE DEVELOPMENT</b>							
<b>ProjectFacilities</b>							
<b>Our House Diversion Dam Impoundment</b>	Maintenance - Monthly, 1 day	BAR, DFR, LAC, MHC, MHW, PPN, SMC	<b>Reptiles</b>  Coast Horned Lizard ( <i>Phrynosoma coronatum</i> )	<b>Birds</b> American White Pelican ( <i>Pelecanus erythrorhynchos</i> ) Redhead ( <i>Aythya Americana</i> ) Northern Goshawk ( <i>Accipiter gentilis</i> ) Blue Grouse ( <i>Dendragopus obscurus</i> ) Fox Sparrow ( <i>Passerella iliaca</i> ) Olive-sided Flycatcher ( <i>Contopus cooperi</i> ) Yellow-headed Blackbird ( <i>Xanthocephalus xanthocephalus</i> ) Cassin's Finch ( <i>Carpodacus cassinii</i> ) Yellow warbler ( <i>Dendroica petechia</i> ) Hairy woodpecker ( <i>Picoides villosus</i> )	<b>Birds</b> Common yellowthroat ( <i>Geothlypis trichas</i> ) Black-backed woodpecker ( <i>Picoides arcticus</i> ) Lewis woodpecker ( <i>Melanerpes lewis</i> ) Williamson's sapsucker ( <i>Sphyrapicus thyroideus</i> ) Mountain quail ( <i>Oreortyx pictus</i> ) California spotted owl ( <i>Strix occidentalis occidentalis</i> ) Common loon ( <i>Gavia immer</i> ) Flammulated owl ( <i>Otus flammeolus</i> ) Long-eared owl ( <i>Asio otus</i> ) Short-eared owl ( <i>Asio flammeus</i> )	<b>Mammals</b> Calliope hummingbird ( <i>Stellula calliope</i> ) Purple martin ( <i>Progne subis</i> ) Loggerhead shrike ( <i>Lanius ludovicianus</i> ) Yellow-breasted chat ( <i>Icteria virens</i> ) Barrow's goldeneye ( <i>Bucephala islandica</i> ) Harlequin duck ( <i>Histrionicus histrionicus</i> ) Northern harrier ( <i>Circus cyaneus</i> ) Black swift ( <i>Cypseloides niger</i> ) Vaux's swift ( <i>Chaetura vauxi</i> ) Black tern ( <i>Chlidonias niger</i> ) Burrowing owl ( <i>Athene cunicularia</i> )	California Spotted Owl (CSOW) – 5 Occurrences (TNF 2009) CSOW Protected Activity Center (PAC) NV060 (TNF 2009) CSOW Territory NV060 (TNF 2009) CSOW Home Range Core Area (HRCA) NV060 (TNF 2009) Forest Carnivore Habitat (TNF 2009) Downieville Deer Herd – Critical Winter Range (Wagner and Finn 1985) Nevada City Deer Herd – Critical Winter Range (Wagner and Finn 1985)
	Operator visit - Daily, 0.5 hour						
	Safety Inspection - Once per year, 2 hours						
<b>Our House Diversion Dam</b>	Maintenance - Monthly, 1 day	BAR, DFR, LAC, MCH, MHW, SMC	<b>Reptiles</b>  Coast Horned Lizard	<b>Birds</b> American White Pelican Redhead Northern Goshawk Blue Grouse Fox Sparrow Olive-sided Flycatcher Yellow-headed Blackbird Cassin's Finch Yellow warbler Hairy woodpecker	<b>Birds</b> Common yellowthroat Lewis woodpecker Williamson's sapsucker Mountain quail California spotted owl Common loon Flammulated owl Long-eared owl Short-eared owl Calliope hummingbird	<b>Mammals</b> Purple martin Loggerhead shrike Yellow-breasted chat Barrow's goldeneye Harlequin duck Northern harrier Black swift Vaux's swift Black tern Burrowing owl	CSOW – 1 Occurrence (TNF 2009) CSOW PAC NV060 (TNF 2009) CSOW Territory NV060 (TNF 2009) CSOW HRCA NV060 (TNF 2009) Forest Carnivore Habitat (TNF 2009) Downieville Deer Herd – Critical Winter Range (Wagner and Finn 1985) Nevada City Deer Herd – Critical Winter Range (Wagner and Finn 1985)
	Operator visit - Daily, 0.5 hour						
	Safety Inspection - Once per year, 2 hours						
<b>Our House Diversion Dam Access Road</b>	Surface maintenance - Once per year (fall), 1 day	AGS, BAR, DFR, LAC, MCH, MHW, PPN, SMC	<b>Reptiles</b>  Coast Horned Lizard	<b>Birds</b> American white pelican Redhead Northern goshawk Blue grouse Oregon vesper sparrow ( <i>Pooecetes gramineus affinis</i> ) Grasshopper sparrow ( <i>Ammodramus savannarum</i> ) Fox sparrow Olive-sided flycatcher Yellow-headed blackbird Tricolored blackbird ( <i>Agelaius tricolor</i> ) Cassin's finch Yellow warbler	<b>Birds</b> Hairy woodpecker Common yellowthroat Black-backed woodpecker Lewis woodpecker Williamson's sapsucker Mountain quail California spotted owl Common loon Flammulated owl Long-eared owl Short-eared owl Calliope hummingbird	<b>Mammals</b> Purple martin Loggerhead shrike Yellow-breasted chat Barrow's goldeneye Harlequin duck Northern harrier Black swift Vaux's swift Black tern Burrowing owl	Downieville Deer Herd – Critical Winter Range (Wagner and Finn 1985) Nevada City Deer Herd – Critical Winter Range (Wagner and Finn 1985)
	Vegetation management - Once per year (late spring), 0.5 day						

**Table 3.2-1. (continued)**

Development Components	Operation, Maintenance, and Recreation Activities <sup>1</sup>	CWHR Habitats <sup>2</sup>	Potentially Occurring Special-Status Species				Other Protected Habitats/Known Occurrences within ¼ mi of Development Component <sup>3</sup>	
NEW COLGATE DEVELOPMENT (continued)								
Project/Facilities (continued)								
<b>Lohman Ridge Diversion Tunnel</b>	Gage maintenance - Twice per year, 4 hours	AGS, BAR, DFR, LAC, MCH, MCP, MHC, MHW, PPN, SMC	<b>Reptiles</b> Coast Horned Lizard	<b>Birds</b> American White Pelican Redhead Northern Goshawk Blue Grouse Oregon Vesper Sparrow Grasshopper Sparrow Fox Sparrow Olive-sided Flycatcher Yellow-headed Blackbird Tricolored Blackbird Cassin's Finch Yellow warbler	<b>Birds</b> Hairy woodpecker Common yellowthroat Black-backed woodpecker Lewis woodpecker Williamson's sapsucker Mountain quail California spotted owl Common loon Flammulated owl Long-eared owl Short-eared owl Calliope hummingbird	<b>Birds</b> Purple martin Loggerhead shrike Yellow-breasted chat Barrow's goldeneye Harlequin duck Northern harrier Black swift Vaux's swift Black tern Burrowing owl	<b>Mammals</b> American martin Pacific fisher Northern flying squirrel Mule deer Sierra Nevada snowshoe hare American badger Sierra Nevada mountain beaver	CSOW – 1 Occurrence (TNF 2009) CSOW PAC NV060 (TNF 2009) CSOW Territory NV060 (TNF 2009) Forest Carnivore Habitat (TNF 2009) Downieville Deer Herd – Winter Range (Wagner and Finn 1985) Downieville Deer Herd – Critical Winter Range (Wagner and Finn 1985) Nevada City Deer Herd – Critical Winter Range (Wagner and Finn 1985)
<b>Log Cabin Diversion Dam Impoundment</b>	Maintenance - Monthly, 1 day Operator visit - Daily, 0.5 hour Safety Inspection - Once per year, 2 hours	DFR, MHC, MHW, PPN	<b>Reptiles</b> Coast Horned Lizard	<b>Birds</b> Northern Goshawk Blue Grouse Fox Sparrow Olive-sided Flycatcher Cassin's Finch Yellow warbler Hairy woodpecker Common yellowthroat	<b>Birds</b> Black-backed woodpecker Lewis woodpecker Williamson's sapsucker Mountain quail California spotted owl Flammulated owl Long-eared owl Short-eared owl	<b>Birds</b> Calliope hummingbird Purple martin Loggerhead shrike Northern harrier Black swift Vaux's swift Burrowing owl	<b>Mammals</b> American martin Pacific fisher Northern flying squirrel Mule deer Sierra Nevada snowshoe hare American badger Sierra Nevada mountain beaver	CSOW – 1 Occurrence (TNF 2009) CSOW Territory YU005 (TNF 2009) CSOW HRCA YU005 (TNF 2009) Forest Carnivore Habitat (TNF 2009) Downieville Deer Herd – Winter Range (Wagner and Finn 1985) Downieville Deer Herd – Critical Winter Range (Wagner and Finn 1985)
<b>Log Cabin Diversion Dam</b>	Maintenance - Monthly, 1 day Operator visit - Daily, 0.5 hour Safety Inspection - Once per year, 2 hours	DFR, MHC, MHW, PPN	<b>Reptiles</b> Coast Horned Lizard	<b>Birds</b> Northern Goshawk Blue Grouse Fox Sparrow Olive-sided Flycatcher Cassin's Finch Yellow warbler Hairy woodpecker Common yellowthroat	<b>Birds</b> Black-backed woodpecker Lewis woodpecker Williamson's sapsucker Mountain quail California spotted owl Flammulated owl Long-eared owl Short-eared owl	<b>Birds</b> Calliope hummingbird Purple martin Loggerhead shrike Northern harrier Black swift Vaux's swift Burrowing owl	<b>Mammals</b> American martin Pacific fisher Northern flying squirrel Mule deer Sierra Nevada snowshoe hare American badger Sierra Nevada mountain beaver	CSOW Territory YU005 (TNF 2009) CSOW HRCA YU005 (TNF 2009) Forest Carnivore Habitat (TNF 2009) Downieville Deer Herd – Winter Range (Wagner and Finn 1985) Downieville Deer Herd – Critical Winter Range (Wagner and Finn 1985)
<b>Log Cabin Diversion Dam Access Road</b>	Surface maintenance - Once per year (fall), 1 day Vegetation management - Once per year (late spring), 0.5 day	AGS, DFR, MHC, MHW, PPN, URB	<b>Reptiles</b> Coast Horned Lizard	<b>Birds</b> Northern goshawk Blue grouse Oregon vesper sparrow Grasshopper sparrow Fox sparrow Olive-sided flycatcher Yellow-headed blackbird Tricolored blackbird Cassin's finch	<b>Birds</b> Yellow warbler Hairy woodpecker Common yellowthroat Black-backed woodpecker Lewis woodpecker Williamson's sapsucker Mountain quail California spotted owl Flammulated owl	<b>Birds</b> Long-eared owl Short-eared owl Calliope hummingbird Purple martin Loggerhead shrike Northern harrier Black swift Vaux's swift Burrowing owl	<b>Mammals</b> American martin Pacific fisher Northern flying squirrel Mule deer Sierra Nevada snowshoe hare American badger Sierra Nevada mountain beaver	Downieville Deer Herd – Winter Range (Wagner and Finn 1985) Downieville Deer Herd – Critical Winter Range (Wagner and Finn 1985)



Table 3.2-1. (continued)

Development Components	Operation, Maintenance, and Recreation Activities <sup>1</sup>	CWHR Habitats <sup>2</sup>	Potentially Occurring Special-Status Species			Other Protected Habitats/Known Occurrences within ¼ mi of Development Component <sup>3</sup>		
<b>NEW COLGATE DEVELOPMENT (continued)</b>								
<b>Project Facilities (continued)</b>								
<b>Camptonville Diversion Tunnel</b>	Gage maintenance - Twice per year, 4 hours	DFR, LAC, MHC, MHW, PPN, SMC	<b>Reptiles</b> Coast Horned Lizard	<b>Birds</b> American White Pelican Redhead Northern Goshawk Blue Grouse Fox Sparrow Olive-sided Flycatcher Yellow-headed Blackbird Cassin's Finch Yellow warbler Hairy woodpecker Common yellowthroat	Black-backed woodpecker Lewis woodpecker Williamson's sapsucker Mountain quail California spotted owl Common loon Flammulated owl Long-eared owl Short-eared owl Calliope hummingbird Purple martin	Loggerhead shrike Yellow-breasted chat Barrow's goldeneye Harlequin duck Northern harrier Black swift Vaux's swift Black tern Burrowing owl	<b>Mammals</b> American martin Pacific fisher Northern flying squirrel Mule deer Sierra Nevada snowshoe hare American badger Sierra Nevada mountain beaver	CSOW – 3 Occurrences (TNF 2009) CSOW PAC YU005 (TNF 2009) CSOW Territory YU005 (TNF 2009) CSOW HRCA YU005 (TNF 2009) Forest Carnivore Habitat (TNF 2009) Downieville Deer Herd – Winter Range (Wagner and Finn 1985) Downieville Deer Herd – Critical Winter Range (Wagner and Finn 1985)
<b>New Bullards Bar Reservoir</b>	Maintenance (FSC's log boom, boats) - One day per week, One day Debris collection - Seasonal (May/June), 4-8 weeks	AGS, BAR, DFR, LAC, MCH, MCP, MHC, MHW, PPN, RIV, SMC, URB, WTM	<b>Reptiles</b> Coast Horned Lizard	<b>Birds</b> American White Pelican Redhead Northern Goshawk Blue Grouse Oregon Vesper Sparrow Grasshopper Sparrow Fox Sparrow Olive-sided Flycatcher Yellow-headed Blackbird Tricolored Blackbird Cassin's Finch Yellow warbler	Hairy woodpecker Common yellowthroat Black-backed woodpecker Lewis woodpecker Williamson's sapsucker Mountain quail California spotted owl Common loon Flammulated owl Long-eared owl Short-eared owl Calliope hummingbird	Purple martin Loggerhead shrike Yellow-breasted chat Barrow's goldeneye Harlequin duck Northern harrier Black swift Vaux's swift Black tern Burrowing owl	<b>Mammals</b> American martin Pacific fisher Northern flying squirrel Mule deer Sierra Nevada snowshoe hare American badger Sierra Nevada mountain beaver	CSOW – 8 Occurrences (TNF 2009) CSOW PAC YU005 (TNF 2009) CSOW Territory YU005 (TNF 2009) CSOW HRCA YU005 (TNF 2009) CSOW PAC YU007 (TNF 2009) CSOW Territory YU007 (TNF 2009) CSOW HRCA YU007 (TNF 2009) Pacific fisher (CDFG 2012) Forest Carnivore Habitat (TNF 2009) Downieville Deer Herd – Winter Range (Wagner and Finn 1985) Mooretown Deer Herd – Winter Range (Snowden 1983) Mooretown Deer Herd – Critical Winter Range (Snowden 1983)
<b>New Bullards Bar Dam and Spillway</b>	Maintenance - Once per year, 3-4 days Operations - Once per year/as needed, Hourly/ as needed	BAR, DFR, LAC, MCH, MHC, MHW, SMC, URB	<b>Reptiles</b> Coast Horned Lizard	<b>Birds</b> American White Pelican Redhead Northern Goshawk Blue Grouse Fox Sparrow Olive-sided Flycatcher Yellow-headed Blackbird Cassin's Finch Yellow warbler Hairy woodpecker Common yellowthroat	Black-backed woodpecker Lewis woodpecker Williamson's sapsucker Mountain quail California spotted owl Common loon Flammulated owl Long-eared owl Short-eared owl Calliope hummingbird Purple martin	Loggerhead shrike Yellow-breasted chat Barrow's goldeneye Harlequin duck Northern harrier Black swift Vaux's swift Black tern Burrowing owl	<b>Mammals</b> American martin Pacific fisher Northern flying squirrel Mule deer Sierra Nevada snowshoe hare American badger Sierra Nevada mountain beaver	Pacific fisher (CDFG 2012) Downieville Deer Herd – Winter Range (Wagner and Finn 1985) Mooretown Deer Herd – Critical Winter Range (Snowden 1983)

**Table 3.2-1. (continued)**

Development Components	Operation, Maintenance, and Recreation Activities <sup>1</sup>	CWHR Habitats <sup>2</sup>	Potentially Occurring Special-Status Species				Other Protected Habitats/Known Occurrences within ¼ mi of Development Component <sup>3</sup>	
<b>NEW COLGATE DEVELOPMENT (continued)</b>								
<b>Project Facilities (continued)</b>								
<b>New Bullards Bar Dam Access Road</b>	Surface maintenance - Once per year (fall), 1 day  Vegetation management - Once per year (late spring), 0.5 day	BAR, DFR, LAC, MCH, MHW, PPN, SMC, URB	<b>Reptiles</b>  Coast Horned Lizard	<b>Birds</b>  American White Pelican Redhead Northern Goshawk Blue Grouse Fox Sparrow Olive-sided Flycatcher Yellow-headed Blackbird Cassin's Finch Yellow warbler Hairy woodpecker Common yellowthroat	<b>Birds</b>  Black-backed woodpecker Lewis woodpecker Williamson's sapsucker Mountain quail California spotted owl Common loon Flammulated owl Long-eared owl Short-eared owl Calliope hummingbird Purple martin	<b>Mammals</b>  Loggerhead shrike Yellow-breasted chat Barrow's goldeneye Harlequin duck Northern harrier Black swift Vaux's swift Black tern Burrowing owl	<b>Mammals</b>  American martin Pacific fisher Northern flying squirrel Mule deer Sierra Nevada snowshoe hare American badger Sierra Nevada mountain beaver	Downieville Deer Herd – Winter Range (Wagner and Finn 1985) Mooretown Deer Herd – Critical Winter Range (Snowden 1983)
<b>New Colgate Power Tunnel and Penstock</b>	Vegetation management - Once per year (late spring), 1 day  Maintenance safety inspection - Monthly, 0.5 day	AGS, BAR, BOP, DFR, LAC, MCH, MHC, MHW, PPN, SMC, URB	<b>Reptiles</b>  Coast Horned Lizard	<b>Birds</b>  American White Pelican Redhead Northern Goshawk Blue Grouse Oregon Vesper Sparrow Grasshopper Sparrow Fox Sparrow Olive-sided Flycatcher Yellow-headed Blackbird Tricolored Blackbird Cassin's Finch Yellow warbler	<b>Birds</b>  Hairy woodpecker Common yellowthroat Black-backed woodpecker Lewis woodpecker Williamson's sapsucker Mountain quail California spotted owl Common loon Flammulated owl Long-eared owl Short-eared owl Calliope hummingbird	<b>Mammals</b>  Purple martin Loggerhead shrike Yellow-breasted chat Barrow's goldeneye Harlequin duck Northern harrier Black swift Vaux's swift Black tern Burrowing owl	<b>Mammals</b>  American martin Pacific fisher Northern flying squirrel Mule deer Sierra Nevada snowshoe hare American badger Sierra Nevada mountain beaver	Pacific fisher (CDFG 2012) Downieville Deer Herd – Winter Range (Wagner and Finn 1985) Mooretown Deer Herd – Critical Winter Range (Snowden 1983)
<b>New Colgate Powerhouse and Switchyard</b>	Maintenance - Daily, 9 hours  Operations - Daily, 9 hours	AGS, BAR, BOP, LAC, MCH, MHC, MHW, PPN, URB	<b>Reptiles</b>  Coast Horned Lizard	<b>Birds</b>  American White Pelican Redhead Northern Goshawk Blue Grouse Oregon Vesper Sparrow Grasshopper Sparrow Fox Sparrow Olive-sided Flycatcher Yellow-headed Blackbird Tricolored Blackbird Cassin's Finch Yellow warbler	<b>Birds</b>  Hairy woodpecker Common yellowthroat Black-backed woodpecker Lewis woodpecker Williamson's sapsucker Mountain quail California spotted owl Common loon Flammulated owl Long-eared owl Short-eared owl Calliope hummingbird	<b>Mammals</b>  Purple martin Loggerhead shrike Yellow-breasted chat Barrow's goldeneye Harlequin duck Northern harrier Black swift Vaux's swift Black tern Burrowing owl	<b>Mammals</b>  American martin Pacific fisher Northern flying squirrel Mule deer American badger Sierra Nevada mountain beaver	CSOW PAC NV006 (TNF 2009) CSOW Territory NV060 (TNF 2009) CSOW Territory YU005 (TNF 2009) Pacific fisher (CDFG 2012) Forest Carnivore Habitat (TNF 2009) Mooretown Deer Herd – Critical Winter Range (Snowden 1983)

Table 3.2-1. (continued)

Development Components	Operation, Maintenance, and Recreation Activities <sup>1</sup>	CWHR Habitats <sup>2</sup>	Potentially Occurring Special-Status Species				Other Protected Habitats/Known Occurrences within ¼ mi of Development Component <sup>3</sup>	
<b>NEW COLGATE DEVELOPMENT (continued)</b>								
<b>Recreation Facilities</b>								
<b>Cottage Creek Boat Ramp and Marina</b>	Check marina equipment, Docks, New Bullards Bar Safety boom - Daily, 0.5 hour	BAR, DFR, LAC, MHC, MHW, SMC, URB	<b>Reptiles</b> Coast horned lizard	<b>Birds</b> American white pelican Redhead Northern goshawk Blue grouse Fox sparrow Olive-sided flycatcher Yellow-headed blackbird Cassin's finch Yellow warbler Hairy woodpecker Common yellowthroat	<b>Birds</b> Black-backed woodpecker Lewis woodpecker Williamson's sapsucker Mountain quail California spotted owl Common loon Flammulated owl Long-eared owl Short-eared owl Calliope hummingbird Purple martin	<b>Mammals</b> Loggerhead shrike Yellow-breasted chat Barrow's goldeneye Harlequin duck Northern harrier Black swift Vaux's swift Black tern Burrowing owl	<b>Mammals</b> American marten Pacific fisher Northern flying squirrel Mule deer Sierra Nevada snowshoe hare American badger Sierra Nevada mountain beaver	Pacific fisher (CDFG 2012) Downieville Deer Herd – Winter Range (Wagner and Finn 1985) Mooretown Deer Herd – Critical Winter Range (Snowden 1983)
<b>Cottage Creek Campground (Decommissioned)</b>	None	DFR, LAC, MHC, URB	<b>Reptiles</b> Coast horned lizard	<b>Birds</b> American white pelican Redhead Northern goshawk Blue grouse Fox sparrow Olive-sided flycatcher Yellow-headed blackbird Cassin finch Yellow warbler	<b>Birds</b> Hairy woodpecker Common yellowthroat Black-backed woodpecker Lewis woodpecker Common loon Flammulated owl Long-eared owl Short-eared owl Calliope hummingbird	<b>Mammals</b> Purple martin Loggerhead shrike Yellow-breasted chat Barrow's goldeneye Harlequin duck Northern harrier Black swift Vaux's swift Black tern	<b>Mammals</b> American marten Pacific fisher Northern flying squirrel Mule deer Sierra Nevada snowshoe hare American badger Sierra Nevada mountain beaver	Pacific fisher (CDFG 2012) Forest Carnivore Habitat (TNF 2009) Mooretown Deer Herd – Critical Winter Range (Snowden 1983)
<b>Cottage Creek Day Use Area</b>	Maintenance – Daily, 0.5 hour Operations – Daily, 0.5 hour Pumping restrooms – Three times per year, 2 hours Cleaning restrooms – Three times per week, 1 hour	BAR, DFR, LAC, MHC, MHW, SMC, URB	<b>Reptiles</b> Coast horned lizard	<b>Birds</b> American white pelican Redhead Northern goshawk Blue grouse Fox sparrow Olive-sided flycatcher Yellow-headed blackbird Cassin finch Yellow warbler Hairy woodpecker Common yellowthroat	<b>Birds</b> Black-backed woodpecker Lewis woodpecker Williamson's sapsucker Mountain quail California spotted owl Common loon Flammulated owl Long-eared owl Short-eared owl Calliope hummingbird Purple martin	<b>Mammals</b> Loggerhead shrike Yellow-breasted chat Barrow's goldeneye Harlequin duck Northern harrier Black swift Vaux's swift Black tern Burrowing owl	<b>Mammals</b> American marten Pacific fisher Northern flying squirrel Mule deer Sierra Nevada snowshoe hare American badger Sierra Nevada mountain beaver	Pacific fisher (CDFG 2012) Downieville Deer Herd – Winter Range (Wagner and Finn 1985) Mooretown Deer Herd – Critical Winter Range (Snowden 1983)
<b>Schoolhouse Family Campground</b>	Annual Maintenance – Once per year, 3 days Pumping restrooms – three times per year, 2 hours Cleaning restrooms – three times per week (during recreation season), 1 hour	DFR, SMC	<b>Reptiles</b> --	<b>Birds</b> Northern goshawk Blue grouse Olive-sided flycatcher Cassin's finch Yellow warbler Common yellowthroat Black-backed woodpecker	<b>Birds</b> Lewis woodpecker Williamson's sapsucker Mountain quail Flammulated owl Long-eared owl Short-eared owl Calliope hummingbird	<b>Mammals</b> Purple martin Northern harrier Black swift Vaux's swift	<b>Mammals</b> American marten Pacific fisher Northern flying squirrel Mule deer Sierra Nevada snowshoe hare American badger Sierra Nevada mountain beaver	CSOW – 1 Occurrence (TNF 2009) CSOW Territory YU007 (TNF 2009) CSOW HRCA YU007 (TNF 2009) Forest Carnivore Habitat (TNF 2009) Downieville Deer Herd – Winter Range (Wagner and Finn 1985)

**Table 3.2-1. (continued)**

Development Components	Operation, Maintenance, and Recreation Activities <sup>1</sup>	CWHR Habitats <sup>2</sup>	Potentially Occurring Special-Status Species				Other Protected Habitats/Known Occurrences within ¼ mi of Development Component <sup>3</sup>	
<b>NEW COLGATE DEVELOPMENT (continued)</b>								
<b>Recreation Facilities (continued)</b>								
<b>Hornswoggle Group Campground</b>	Annual Maintenance – Once per year, 3 days  Pumping restrooms – three times per year, 2 hours  Cleaning restrooms – three times per week (during recreation season), 1 hour	DFR, SMC,	<b>Reptiles</b>  --	<b>Birds</b>  Northern goshawk Blue grouse Olive-sided flycatcher Cassin’s finch Yellow warbler Common yellowthroat Black-backed woodpecker	<b>Birds</b>  Lewis woodpecker Williamson’s sapsucker Mountain quail Flammulated owl Long-eared owl Short-eared owl Calliope hummingbird	<b>Birds</b>  Purple martin Northern harrier Black swift Vaux’s swift	<b>Mammals</b>  American marten Pacific fisher Northern flying squirrel Mule deer Sierra Nevada snowshoe hare American badger Sierra Nevada mountain beaver	CSOW – 1 Occurrence (TNF 2009) CSOW PAC YU007 (TNF 2009) CSOW Territory YU007 (TNF 2009) CSOW HRCA YU007 (TNF 2009) Forest Carnivore Habitat (TNF 2009) Downieville Deer Herd – Winter Range (Wagner and Finn 1985)
<b>Dark Day Boat Ramp</b>	Annual Maintenance – Once per year, 1 day  Pumping restrooms – three times per year, 2 hours  Cleaning restrooms – three times per week (during recreation season), 1 hour	DFR, LAC	<b>Reptiles</b>  --	<b>Birds</b>  American White Pelican Redhead Northern goshawk Olive-sided flycatcher Yellow-headed blackbird Cassin’s finch Yellow warbler Common yellowthroat	<b>Birds</b>  Lewis woodpecker Flammulated owl Short-eared owl Calliope hummingbird Purple martin Yellow-breasted chat Barrow’s goldeneye Harlequin duck	<b>Birds</b>  Northern harrier Black swift Vaux’s swift Black tern	<b>Mammals</b>  American marten Pacific fisher Northern flying squirrel Mule deer Sierra Nevada snowshoe hare American badger	CSOW – 1 Occurrence (TNF 2009) CSOW Territory YU007 (TNF 2009) CSOW HRCA YU007 (TNF 2009) Forest Carnivore Habitat (TNF 2009) Downieville Deer Herd – Winter Range (Wagner and Finn 1985)
<b>Dark Day Campground</b>	Annual Maintenance – Once per year, 3 days  Pumping restrooms – three times per year, 2 hours  Cleaning restrooms – three times per week (during recreation season), 1 hour	DFR, LAC	<b>Reptiles</b>  --	<b>Birds</b>  American White Pelican Redhead Northern goshawk Olive-sided flycatcher Yellow-headed blackbird Cassin’s finch Yellow warbler Common yellowthroat	<b>Birds</b>  Lewis woodpecker Flammulated owl Short-eared owl Calliope hummingbird Purple martin Yellow-breasted chat Barrow’s goldeneye Harlequin duck	<b>Birds</b>  Northern harrier Black swift Vaux’s swift Black tern	<b>Mammals</b>  American marten Pacific fisher Northern flying squirrel Mule deer Sierra Nevada snowshoe hare American badger	CSOW – 1 Occurrence (TNF 2009) CSOW Territory YU007 (TNF 2009) CSOW HRCA YU007 (TNF 2009) Forest Carnivore Habitat (TNF 2009) Downieville Deer Herd – Winter Range (Wagner and Finn 1985)
<b>Dark Day Day-Use Area</b>	Annual Maintenance – Once per year, 3 days  Pumping restrooms – three times per year, 2 hours  Cleaning restrooms – three times per week (during recreation season), 1 hour	DFR, LAC	<b>Reptiles</b>  --	<b>Birds</b>  American White Pelican Redhead Northern goshawk Olive-sided flycatcher Yellow-headed blackbird Cassin’s finch Yellow warbler Common yellowthroat	<b>Birds</b>  Lewis woodpecker Flammulated owl Short-eared owl Calliope hummingbird Purple martin Yellow-breasted chat Barrow’s goldeneye Harlequin duck	<b>Birds</b>  Northern harrier Black swift Vaux’s swift Black tern	<b>Mammals</b>  American marten Pacific fisher Northern flying squirrel Mule deer Sierra Nevada snowshoe hare American badger	CSOW – 1 Occurrence (TNF 2009) CSOW Territory YU007 (TNF 2009) CSOW HRCA YU007 (TNF 2009) Forest Carnivore Habitat (TNF 2009) Downieville Deer Herd – Winter Range (Wagner and Finn 1985)

Table 3.2-1. (continued)

Development Components	Operation, Maintenance, and Recreation Activities <sup>1</sup>	CWHR Habitats <sup>2</sup>	Potentially Occurring Special-Status Species				Other Protected Habitats/Known Occurrences within ¼ mi of Development Component <sup>3</sup>	
<b>NEW COLGATE DEVELOPMENT (continued)</b>								
<b>Recreation Facilities (continued)</b>								
<b>Madrone Cove Boat-In Campground</b>	Annual Maintenance – Once per year, 3 days	DFR, LAC, MHC, MHW	<b>Reptiles</b> Coast horned lizard	<b>Birds</b> American white pelican Redhead Northern goshawk Blue grouse Fox sparrow Olive-sided flycatcher Yellow-headed blackbird Cassin finch Yellow warbler Hairy woodpecker	<b>Birds</b> Common yellowthroat Black-backed woodpecker Lewis woodpecker Mountain quail California spotted owl Common loon Flammulated owl Long-eared owl Short-eared owl Calliope hummingbird	<b>Birds</b> Purple martin Loggerhead shrike Yellow-breasted chat Barrow's goldeneye Harlequin duck Northern harrier Black swift Vaux's swift Black tern	<b>Mammals</b> American marten Pacific fisher Northern flying squirrel Mule deer Sierra Nevada snowshoe hare American badger Sierra Nevada mountain beaver	Forest Carnivore Habitat (TNF 2009) Downieville Deer Herd – Winter Range (Wagner and Finn 1985) Mooretown Deer Herd – Critical Winter Range (Snowden 1983)
	Pumping restrooms – three times per year, 4 hours							
<b>Garden Point Boat-In Campground</b>	Annual Maintenance – Once per year, 3 days	BAR, LAC, MHC	<b>Reptiles</b> Coast horned lizard	<b>Birds</b> American white pelican Redhead Northern goshawk Fox sparrow Olive-sided flycatcher Yellow-headed blackbird Yellow warbler Common yellowthroat Black-backed woodpecker	<b>Birds</b> Lewis woodpecker Common loon Flammulated owl Long-eared owl Short-eared owl Calliope hummingbird Purple martin Loggerhead shrike Yellow-breasted chat	<b>Birds</b> Barrow's goldeneye Harlequin duck Northern harrier Black swift Vaux's swift Black tern Burrowing owl	<b>Mammals</b> American marten Pacific fisher Northern flying squirrel Mule deer America badger Sierra Nevada mountain beaver	Forest Carnivore Habitat (TNF 2009) Downieville Deer Herd – Winter Range (Wagner and Finn 1985)
	Pumping restrooms – three times per year, 4 hours							
<b>Moran Road Day-Use Area and Boat Ramp</b>	Pumping restrooms – One time per year, 2 hours	BAR, DFR, LAC, MCP, MHC, MHW	<b>Reptiles</b> Coast horned lizard	<b>Birds</b> American white pelican Redhead Northern goshawk Blue grouse Oregon vesper sparrow Fox sparrow Yellow-headed blackbird Cassin's finch Yellow warbler Hairy woodpecker	<b>Birds</b> Common yellowthroat Black-backed woodpecker Lewis woodpecker Mountain quail California spotted owl Common loon Flammulated owl Long-eared owl Short-eared owl Calliope hummingbird	<b>Birds</b> Purple martin Loggerhead shrike Yellow-breasted chat Barrow's goldeneye Harlequin duck Northern harrier Black swift Vaux's swift Black tern Burrowing owl	<b>Mammals</b> American marten Pacific fisher Northern flying squirrel Mule deer Sierra Nevada snowshoe hare American badger Sierra Nevada mountain beaver	Mooretown Deer Herd – Critical Winter Range (Snowden 1983)
	Cleaning restrooms – Three times per week, 2 hours							
<b>Dam Overlook</b>	None	BAR, DFR, LAC, MHW, URB	<b>Reptiles</b> --	<b>Birds</b> American white pelican Redhead Northern goshawk Olive-sided flycatcher Yellow-headed blackbird Cassin's finch Yellow warbler Hairy woodpecker Common yellowthroat	<b>Birds</b> Lewis woodpecker Mountain quail California spotted owl Common loon Flammulated owl Long-eared owl Short-eared owl Calliope hummingbird Purple martin	<b>Birds</b> Loggerhead shrike Yellow-breasted chat Barrow's goldeneye Harlequin duck Northern harrier Black swift Vaux's swift Black tern Burrowing owl	<b>Mammals</b> American marten Pacific fisher Northern flying squirrel Mule deer Sierra Nevada snowshoe hare American badger	Pacific fisher (CDFG 2012) Downieville Deer Herd – Winter Range (Wagner and Finn 1985) Mooretown Deer Herd – Critical Winter Range (Snowden 1983)

**Table 3.2-1. (continued)**

Development Components	Operation, Maintenance, and Recreation Activities <sup>1</sup>	CWHR Habitats <sup>2</sup>	Potentially Occurring Special-Status Species			Other Protected Habitats/Known Occurrences within ¼ mi of Development Component <sup>3</sup>		
<b>NEW COLGATE DEVELOPMENT (continued)</b>								
<b>Recreation Facilities (continued)</b>								
New Bullards Bar Trail	Safety and Maintenance Inspection – One time per year, 1 hour	DFR, LAC, MHC	<b>Reptiles</b> Coast horned lizard	<b>Birds</b> American white pelican Redhead Northern goshawk Blue grouse Fox sparrow Olive-sided flycatcher Yellow-headed blackbird Cassin’s finch Yellow warbler	<b>Birds</b> Hairy woodpecker Common yellowthroat Black-backed woodpecker Lewis woodpecker Common loon Flammulated owl Long-eared owl Short-eared owl Calliope hummingbird	<b>Birds</b> Purple martin Loggerhead shrike Yellow-breasted chat Barrow’s golden eye Harlequin duck Northern harrier Black swift Vaux’s swift Black tern	<b>Mammals</b> American marten Pacific fisher Northern flying squirrel Mule deer Sierra Nevada snowshoe hare American badger Sierra Nevada mountain beaver	Pacific fisher (CDFG 2012) Forest Carnivore Habitat (TNF 2009) Downieville Deer Herd – Winter Range (Wagner and Finn 1985)
School House Trail	Safety and Maintenance Inspection – One time per year, 1 hour	DFR, LAC, SMC	<b>Reptiles</b> --	<b>Birds</b> American White Pelican Redhead Northern goshawk Blue grouse Olive-sided flycatcher Yellow-headed blackbird Cassin’s finch Yellow warbler Common yellowthroat	<b>Birds</b> Black-backed woodpecker Lewis woodpecker Williamson’s sapsucker Mountain quail Flammulated owl Long-eared owl Short-eared owl Calliope hummingbird Purple martin	<b>Birds</b> Yellow-breasted chat Barrow’s goldeneye Harlequin duck Northern harrier Black swift Vaux’s swift Black tern	<b>Mammals</b> American marten Pacific fisher Northern flying squirrel Mule deer Sierra Nevada snowshoe hare American badger Sierra Nevada mountain beaver	CSOW – 1 Occurrence (TNF 2009) CSOW Territory YU007 (TNF 2009) CSOW HRCA YU007 (TNF 2009) Forest Carnivore Habitat (TNF 2009) Downieville Deer Herd – Winter Range (Wagner and Finn 1985)
7 Ball Trail	Safety and Maintenance Inspection – One time per year, 1 hour	DFR, MHW, SMC	<b>Reptiles</b> --	<b>Birds</b> Northern goshawk Blue grouse Olive-sided flycatcher Cassin’s finch Yellow warbler Hairy woodpecker Common yellowthroat	<b>Birds</b> Black-backed woodpecker Lewis woodpecker Williamson’s sapsucker Mountain quail California spotted owl Flammulated owl Long-eared owl	<b>Birds</b> Short-eared owl Calliope hummingbird Purple martin Loggerhead shrike Northern harrier Black swift Vaux’s swift	<b>Mammals</b> American marten Pacific fisher Northern flying squirrel Mule deer Sierra Nevada snowshoe hare American badger Sierra Nevada mountain beaver	Forest Carnivore Habitat (TNF 2009) Downieville Deer Herd – Winter Range (Wagner and Finn 1985)
Burnt Bridge Campground (Decommissioned)	None	BAR, DFR, MCH, MHW, SMC	<b>Reptiles</b> --	<b>Birds</b> American white pelican Northern goshawk Blue grouse Fox sparrow Olive-sided flycatcher Cassin’s finch Yellow warbler Hairy woodpecker	<b>Birds</b> Common yellowthroat Black-backed woodpecker Lewis woodpecker Williamson’s sapsucker Mountain quail California spotted owl Flammulated owl Long-eared owl	<b>Birds</b> Short-eared owl Calliope hummingbird Purple martin Loggerhead shrike Northern harrier Black swift Vaux’s swift	<b>Mammals</b> American marten Pacific fisher Northern flying squirrel Mule deer Sierra Nevada snowshoe hare American badger Sierra Nevada mountain beaver	Mooretown Deer Herd – Critical Winter Range (Snowden 1983)

Table 3.2-1. (continued)

Development Components	Operation, Maintenance, and Recreation Activities <sup>1</sup>	CWHR Habitats <sup>2</sup>	Potentially Occurring Special-Status Species			Other Protected Habitats/Known Occurrences within ¼ mi of Development Component <sup>3</sup>	
<b>NEW COLGATE DEVELOPMENT (continued)</b>							
<b>Recreation Facilities (continued)</b>							
<b>Frenchy Point Campground</b>	Annual Maintenance – Once per year, 3 days	BAR, DFR, LAC, MHW	<b>Reptiles</b>	<b>Birds</b>			<b>Mammals</b>
			--	American white pelican Redhead Northern goshawk Olive-sided flycatcher Cassin's finch Yellow warbler Hairy woodpecker Common yellowthroat Lewis woodpecker	Mountain quail California spotted owl Common loon Flammulated owl Long-eared owl Short-eared owl Calliope hummingbird Purple martin Loggerhead shrike	Yellow-breasted chat Barrow's goldeneye Harlequin duck Northern harrier Black swift Vaux's swift Black tern Burrowing owl	American marten Pacific fisher Northern flying squirrel Mule deer Sierra Nevada snowshoe hare American badger
<b>NEW BULLARDS BAR MINIMUM FLOW DEVELOPMENT</b>							
<b>New Bullards Bar Minimum Flow Powerhouse, Penstock, and Transformer</b>	Operations – Three times per week, 0.5 hours Maintenance – Two times per year, 1 day	BAR, DFR, LAC, MCH, MHC, MHW, SMC, URB	<b>Reptiles</b>	<b>Birds</b>			<b>Mammals</b>
			Coast Horned Lizard	American White Pelican Redhead Northern Goshawk Blue Grouse Fox Sparrow Olive-sided Flycatcher Yellow-headed Blackbird Cassin's Finch Yellow warbler Hairy woodpecker Common yellowthroat	Black-backed woodpecker Lewis woodpecker Williamson's sapsucker Mountain quail California spotted owl Common loon Flammulated owl Long-eared owl Short-eared owl Calliope hummingbird Purple martin	Loggerhead shrike Yellow-breasted chat Barrow's goldeneye Harlequin duck Northern harrier Black swift Vaux's swift Black tern Burrowing owl	American martin Pacific fisher Northern flying squirrel Mule deer Sierra Nevada snowshoe hare American badger Sierra Nevada mountain beaver
<b>NARROWS 2 DEVELOPMENT</b>							
<b>Narrows 2 Penstock</b>	N/A	AGS, BOP, BOW, LAC, MHW	<b>Reptiles</b>	<b>Birds</b>			<b>Mammals</b>
			Coast Horned Lizard	American White Pelican Redhead Northern Goshawk Oregon Vesper Sparrow Grasshopper Sparrow Olive-sided Flycatcher Yellow-headed Blackbird Tricolored Blackbird Yellow warbler Hairy woodpecker	Common yellowthroat Lewis woodpecker Mountain quail California spotted owl Common loon Flammulated owl Long-eared owl Short-eared owl Calliope hummingbird Purple martin	Loggerhead shrike Yellow-breasted chat Barrow's goldeneye Harlequin duck Northern harrier Black swift Vaux's swift Black tern Burrowing owl	Northern flying squirrel Mule deer American badger
<b>Narrows 2 Powerhouse and Switchyard</b>	Maintenance – Three times per week, 1 day Operations – Seven times per week, 0.5 hours	AGS, BOP, BOW, LAC, MHW	<b>Reptiles</b>	<b>Birds</b>			<b>Mammals</b>
			Coast Horned Lizard	American White Pelican Redhead Northern Goshawk Oregon Vesper Sparrow Grasshopper Sparrow Olive-sided Flycatcher Yellow-headed Blackbird Tricolored Blackbird Yellow warbler Hairy woodpecker	Common yellowthroat Lewis woodpecker Mountain quail California spotted owl Common loon Flammulated owl Long-eared owl Short-eared owl Calliope hummingbird Purple martin	Loggerhead shrike Yellow-breasted chat Barrow's goldeneye Harlequin duck Northern harrier Black swift Vaux's swift Black tern Burrowing owl	Northern flying squirrel Mule deer American badger

**Table 3.2-1. (continued)**

Development Components	Operation, Maintenance, and Recreation Activities <sup>1</sup>	CWHR Habitats <sup>2</sup>	Potentially Occurring Special-Status Species			Other Protected Habitats/Known Occurrences within ¼ mi of Development Component <sup>3</sup>		
<b>NARROWS 2 DEVELOPMENT (continued)</b>								
<b>Narrows 2 Access Road</b>	Surface maintenance – Once per year (fall), 1 day	AGS, BOP, BOW, LAC, MHW	<b>Reptiles</b> Coast Horned Lizard	<b>Birds</b>			<b>Mammals</b>	---
	Vegetation management – Once per year (late spring), 0.5 day		American White Pelican Redhead Northern Goshawk Oregon Vesper Sparrow Grasshopper Sparrow Olive-sided Flycatcher Yellow-headed Blackbird Tricolored Blackbird Yellow warbler Hairy woodpecker	Common yellowthroat Lewis woodpecker Mountain quail California spotted owl Common loon Flammulated owl Long-eared owl Short-eared owl Calliope hummingbird Purple martin	Loggerhead shrike Yellow-breasted chat Barrow's goldeneye Harlequin duck Northern harrier Black swift Vaux's swift Black tern Burrowing owl	Northern flying squirrel Mule deer American badger		

<sup>1</sup> Under this column the activity is listed first, frequency of activity is listed second and the duration of activity is listed third.

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

- AGS = Annual Grassland
- BAR = Barren
- BOP = Blue Oak Foothill Pine
- BOW = Blue Oak Woodland
- DFR = Douglas Fir
- LAC = Lacustrine
- MCH = Mixed Chaparral
- MCP = Montane Chaparral
- MHC = Montane Hardwood Conifer
- MHW = Montane Hardwood
- PPN = Ponderosa Pine
- RIV = Riverine
- SMC = Sierran Mixed Conifer
- URB = Urban
- WTM = Wet Meadow

<sup>3</sup> Forest Carnivore Habitat – Areas identified by the Tahoe National Forest as Pacific fisher and American martin habitat.



## 4.0 Discussion

YCWA located areas where Project-related O&M and recreation activities overlap with known or potentially occurring special-status wildlife species. This overlap allowed YCWA to identify potential disturbances to predicted special-status wildlife species and their associated CWHR habitat types and known protected habitats. Disturbances from Project-related activities may result in modification of suitable habitat via: 1) ground-disturbing activities (e.g., mechanical or chemical clearing of vegetation, tree removal, or construction activities) or 2) non-ground-disturbing activities (e.g., excessive noise, road repairs, and recreation activities). Temporal and spatial aspects of disturbances play a role, as well. For instance, activities that occur outside of the California spotted owl breeding season, even if within suitable nesting habitat, are unlikely to disturb nest building, egg-laying, and fledging of young. If an activity occurs during the California spotted owl breeding season, but is of sufficient distance away from nesting activities, then the activity is also unlikely to disturb nesting adults.

Below is a discussion, by group (e.g., reptiles and birds), of potential O&M and recreation activities that could affect predicted special-status wildlife species, with a focus on those species known to occur, as well as protected habitats found in the study area.

### 4.1 Reptiles

One special-status reptile was predicted to potentially occur in the study area: coast horned lizard (*Phrynosoma coronatum*).<sup>6</sup> The coast horned lizard is designated by CDFG as a Species of Special Concern (SSC), and by the Forest Service as a Sensitive Species (FSS). The coast horned lizard may be found along the Sierra Nevada foothills up to an elevation of 4,000 feet (ft) from Butte County south to Kern County. Habitat types occupied by the coast horned lizard include valley foothill hardwood, conifer, riparian and annual grasslands. This species will often burrow into loose sandy soil to escape from predators and extreme heat, or utilize logs, rocks, mammal burrows or crevices during periods of inactivity and winter hibernation (Zeiner et al. 1988 – 1990).

While no occurrences of coast horned lizard have been reported in the study area, they have the potential to occur Project-wide based on the habitat and range descriptions by Zeiner et al. (1988 – 1990). This species is not associated with water, so ground-disturbing O&M activities, such as road grading or vegetation management (e.g., mechanical removal of vegetation) may overlap with suitable habitat for coast horned lizard.

### 4.2 Birds

Thirty-four special-status birds were predicted as having the potential to occur in the study area. Of these, 19 are designated as SSC; five are designated by the Forest Service as MIS; five are designated as Birds of Conservation Concern by the United States Department of Interior, Fish

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<sup>6</sup> Western pond turtle (*Clemmys marmorata marmorata*) have the potential to occur in the study area but are discussed separately in Technical Memorandum 3-6.

and Wildlife Service (USFWS); and five have multiple designations. With respect to occurrences of these 34 species, only California spotted owl has been reported within the study area. Because California spotted owl is known to occur in the study area a more focused discussion on potential Project affects is included below. While the remaining 33 species have not been reported as occurring in the study area, some are likely to be present at various times of the year. These species may be found in a variety of habitats, including riparian, emergent wetlands, lacustrine (reservoirs), riverine, montane conifer, and Sierran mixed conifer.

The type (e.g., vegetation management, road repair and cleaning restrooms), timing (e.g., summer, fall, winter and spring), frequency (e.g., daily, weekly, monthly or annually), and duration (e.g., 0.5 hours, 4 hours and 1 day) of O&M activities are directly related to an activity's potential to affect a species' breeding habitat and/or behavior. Species that pass through the study area during migration (e.g., American white pelican [*Pelecanus erythrorhynchos*]) will have limited potential to be affected by O&M activities because their presence is generally short. However, birds that nest in the study area may be affected by O&M activities that occur in late winter, spring and early summer. Examples of such activities include vegetation management along Project roads, debris collection and removal from Project reservoirs, hazard tree removal, and recreation facility maintenance. Recreation activities such as hiking, camping, and boating (including use of personal watercraft) may also affect nesting species due to increased noise and human presence. Nesting birds most likely to be affected by O&M activities and or recreation may include northern goshawk (*Accipiter gentilis*), blue grouse (*Dendragapus obscures*), olive sided flycatcher (*Contopus cooperi*), Lewis woodpecker (*Melanerpes lewis*), black-backed woodpecker (*Picoides arcticus*), flammulated owl (*Otus flammeolus*), long-eared owl (*Asio otus*), short-eared owl (*Asio flammeus*), yellow-breasted chat (*Icteria virens*), and yellow warbler (*Dendroica petechia*). O&M activities that change flow in a Project-affected stream reach may affect species nesting in associated riparian habitats. For species that nest in riparian habitat along the shoreline of a reservoir, changes in water surface elevations may affect suitable nesting habitat. These affected species may include Barrow's goldeneye (*Bucephala islandica*), yellow-headed blackbird (*Xanthocephalus xanthocephalus*), yellow-breasted chat, and yellow warbler.

### **California Spotted Owl**

California spotted owl is a permanent resident of dense, old growth, multi-layered mixed conifer, redwood, and Douglas-fir habitats ranging from sea level to nearly 8,000 ft in elevation (Zeiner et al. 1988 – 1990). This species breeds from early March through June, with a peak in April and May, and the same pair will use the same breeding site for 5 to 10 years, but may not breed every year (Zeiner et al. 1988 – 1990).

The TNF reports 25 occurrences of California spotted owl within the study area between 1981 and 2002, 18 of which were associated with Our House Diversion Dam (9 occurrences) and New Bullards Bar Reservoir (9 occurrences). Furthermore, three California spotted owl PACs and their associated territories and HRCAs overlap with the study area (TNF 2009). These PACs, territories, and HRCAs are located along the eastern edge of New Bullards Bar Reservoir in the vicinity of the Camptonville Diversion Tunnel inflow and along the southern edge of Our House Diversion Dam and impoundment.

Project O&M activities that may overlap with California spotted owl nesting habitat between March and June may include vegetation management and YCWA staff O&M activities (e.g., powerhouse operation and facilities maintenance). Recreation-related activities that may affect nesting California spotted owls include camping, hiking, boating, and fishing on and around New Bullards Bar Reservoir and Our House Diversion Dam and Impoundment.

### 4.3 Mammals

Seven special-status mammals were predicted to occur in the study area. Of these species, three are listed as SSC, one is listed as MIS, and three have multiple designations. Documented occurrences of special-status mammals in the study area are limited to Pacific fisher (*Martes pennant*). In addition, habitat important to forest carnivores (Pacific fisher and American marten [*Martes americana*]) and mule deer (*Odocoileus hemionus*) was identified by YCWA as overlapping with the study area.

While the remaining four mammal species have not been reported as occurring in the Project study area, some are likely to be present at various times of the year. These species may be found in a variety of habitats that include, but are not limited to, riparian, emergent wetlands, riverine, montane conifer, and Sierran mixed conifer. Project O&M activities that may affect these four species include road maintenance, vegetation management, and grading. Also, recreation activities such as camping, hiking, and boating may occur in areas where suitable habitat for these species exists.

#### Forest Carnivores

Pacific fisher is found in the Sierra Nevada and North Coast Ranges of California. It prefers mature coniferous and deciduous-riparian habitats that contains trees of intermediate to large size with a high percent (>50%) of canopy closure (Zeiner et al. 1988 – 1990). Snags, hollow logs, protected cavities, brush piles, and upturned trees are also important habitat elements since they provide suitable den sites.

According to the CNDDDB, one occurrence of Pacific fisher has been reported in the study area (CDFG 2012). This single occurrence overlaps with 10 Project facilities, five of which are associated with power generation (i.e., New Bullards Bar Reservoir, New Colgate Power Tunnel and Penstock, New Bullards Bar Dam and Spillway, New Bullards Bar Dam and Spillway access road, and New Bullards Bar Minimum Flow Powerhouse, Penstock and Transformer) and five are associated with recreation facilities (i.e., Cottage Creek Marina and Boat Ramp, Cottage Creek Day Use Area, Cottage Creek Campground, New Bullards Bar Trail, Dam Overlook).<sup>7</sup>

According to the District Biologist for the Yuba River Ranger District of the TNF, the Forest Carnivore Network (FCN) was developed by identifying the largest blocks of habitat, and connectors between those blocks within the TNF. The type of habitat associated with forest

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<sup>7</sup> In order to protect Pacific fisher the CDFG displays the location of this occurrence using a non-point specific 0.8-mile polygon that encompasses the exact location of this occurrence. It is for this reason that this single occurrence of Pacific fisher overlaps with multiple Project facilities.

carnivores is late-successional forest. This effort was a commitment to address mid-sized carnivores, primarily American marten and Pacific fisher, as well as other species associated with late-successional forests (M. Tierney pers. comm., 2012). Late-successional forests are described as conifer forest types growing at mid-elevations. These forest types include foothill pine (*Pinus* sp.) and oak (*Quercus* sp.), west-side mixed conifer, white fir (*Abies concolor*), red fir (*Abies magnifica*), Jeffery pine (*Pinus jeffreyi*), subalpine, east-side mixed conifer and white fir, east-side Pinon pine (*Pinus* sp.) and juniper (*Juniperus* sp.), and riparian hardwood. These forest types contain high structural complexity which is comprised of many large trees, dense and multi-level canopy, large snags, and down logs (University of California, Davis 1996). Forest carnivore habitat mapped as part of the FCN was found to overlap large portions of the around New Bullards Bar Reservoir, Log Cabin Diversion Dam and Impoundment, as well as the northern facing slopes to the south and east of Our House Diversion Dam and Impoundment.

Project O&M activities that may affect forest carnivores and their habitat includes vegetation management that modifies components of late-successional forests, as well as powerhouse operation and facilities maintenance. Recreation-related activities that may affect forest carnivores and their habitat include camping, hiking, boating, and fishing on and around New Bullards Bar Reservoir.

### **Mule Deer**

Mule deer are wide-ranging and found throughout California, including the Project. Along the west side of the Sierra Nevada, mule deer are generally migratory and spend the summer months at higher elevations and winter months in the snow-free region of the Sierra Nevada foothills. Migration is quick from summer habitat to winter habitat and is triggered by cold fall storms. Migration from winter habitat to summer habitat is slow and is dependent upon snowmelt.

The study area is within the winter range for the Mooretown and Downieville deer herds. Operation and maintenance activities that may affect mule deer while on their winter range include vegetation management that modifies winter habitat, powerhouse operations, and emergency maintenance activities. Recreation-related activities such as camping, hiking, boating, and fishing are unlikely to affect mule deer and their winter habitat, since the onset of winter reduces recreation opportunities in the study area.

## **5.0 Study-Specific Consultation**

The FERC-approved Study did not require any study-specific consultation.

## **6.0 Variations from FERC-Approved Study**

This study was conducted according to the FERC-approved Special-Status Wildlife – CWHR Study (Study 4.1); no variations occurred.

## 7.0 Attachments to This Technical Memorandum

This technical memorandum includes two attachments:

- Attachment 4-1A CWHR Habitat Types of the Project Study Area (1 Adobe PDF file: 7.1 MB; 12 pages formatted to print double-sided on 4-8.5x11 inch black and white pages and 8-11x17 inch full-color pages).
- Attachment 4-1B Maps of Known Species Occurrences or Known Protected Habitats Within the Project Study Area (1 Adobe PDF file: 7.1 MB; 12 pages formatted to print double-sided on 4-8.5x11 inch black and white pages and 8-11x17 inch full-color pages).

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