

Rush Creek Project, FERC Project No. 1389

TERR 2 – Wildlife Resources
Draft Technical Study Report

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Southern California Edison Company
Regulatory Support Services
2244 Walnut Grove Ave. Rosemead, CA 91770

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List of Acronyms

APLIC	Avian Power Line Interaction Committee
BCC	Birds of Conservation Concern
CALVEG	Classification and Assessment with Landsat of Visible Ecological Groupings
CDFW	California Department of Fish and Wildlife
CESA	California Endangered Species Act
CFP	California Fully Protected
CNDDDB	California Natural Diversity Database
CWHR	California Wildlife Habitat Relationships
dbh	diameter at breast height
DNA	deoxyribonucleic acid
DPS	Distinct Population Segment
ESA	Endangered Species Act
FC	Federal Candidate for Listing
FD	Federal Delisted
FE	Federal Endangered
FERC	Federal Energy Regulatory Commission
FPD	Federal Proposed Delisted
FPE	Federal Proposed Endangered
FPT	Federal Proposed Threatened
FSCC	Forest Service Species of Conservation Concern
FT	Federal Threatened
GIS	Geographic Information System
GPS	Global Positioning System
INF	Inyo National Forest
PAD	Pre-Application Document
Project	Rush Creek Project
SCE	Southern California Edison Company
SE	State Endangered
SSC	Species of Special Concern
ST	State Threatened

T/D	Transmission/Distribution Lines
TSP	Technical Study Plan
TSR	Technical Study Report
TWG	Technical Working Group
USFWS	U.S. Fish and Wildlife Service
WL	Watch List

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1 INTRODUCTION

This Technical Study Report (TSR) describes the methods and results associated with implementation of the TERR 2 – Wildlife Resources Technical Study Plan (Wildlife TSP) for the Rush Creek Hydroelectric Project (Project). Refer to the AQ 7 – Special-status Amphibians Technical Study Report (Amphibian TSR) for the special-status amphibian study methods and results. The Wildlife TSP was approved (with modifications) by the Federal Energy Regulatory Commission (FERC) on October 26, 2022, as part of its Study Plan Determination for the Project. This report provides a detailed description of the methods and results of wildlife resource studies completed in 2023. Due to the heavy winter snow conditions in 2022–2023, some studies were delayed to 2024 (Section 3.3).

This document defines a special-status wildlife species as any animal species that is granted status by a federal or state agency. Federally listed species granted status by U.S. Fish and Wildlife Service (USFWS) under the Endangered Species Act (ESA) include Federal Threatened (FT), Federal Endangered (FE), Federal Proposed Threatened or Endangered (FPT or FPE), candidates for listing (FC), Federal Delisted (FD), or proposed for delisting (FPD). Also included are bald and golden eagles protected under the Bald and Golden Eagle Protection Act (Eagle Act). Those species listed by USFWS as Birds of Conservation Concern (BCC) which include “species, subspecies, and populations of all migratory nongame birds that, without additional conservation action, are likely to become candidates for listing under the ESA of 1973” (USFWS 2021a) are also included. The Project falls in Bird Conservation Region 15 (USFWS 2021a).

The Inyo National Forest (INF) also maintains lists of Forest Species of Conservation Concern (FSCC) that are not federally listed but that are designated by the Regional Forester for special management consideration.

State of California listed terrestrial wildlife species, which are granted status by the California Department of Fish and Wildlife (CDFW) under the California Endangered Species Act (CESA), include threatened (ST), endangered (SE), Fully Protected species (CFP), and California Species of Special Concern (SSC).

2 STUDY OBJECTIVES

The objectives of the wildlife resource studies conducted in 2023 as described in the Wildlife TSP are:

- Update California Wildlife Habitat Relationships (CWHR) habitats within 1 mile of the FERC Project boundary and within 300 feet of proposed helicopter flight paths based on Classification and Assessment with Landsat of Visible Ecological Groupings (CALVEG) vegetation alliances developed as part of the TERR 1 – Botanical Resources TSP.
- Update information on special-status wildlife species potentially occurring in CWHR habitats within 1 mile of the FERC Project boundary.

- Consult with resource agencies to determine Sierra Nevada bighorn sheep (*Ovis canadensis sierrae*) (FE, SE, CFP) distribution and use of lands within the FERC Project boundary and adjacent Critical Habitat.
- Conduct wildlife reconnaissance survey to characterize wildlife use within the FERC Project boundary¹ and within the potential enhancement area.
- Consult with resource agencies and other local raptor experts to determine historic and recent raptor nest records present in the FERC Project boundary and along proposed helicopter flight paths and to determine regional nesting chronology.
- Document potential nesting habitat and raptor nests along the proposed helicopter flight paths.
- Determine whether Project transmission line and power line tower/pole configurations are consistent with guidelines for the avoidance of avian mortalities.
- Identify Project facilities potentially supporting bat roosts.

3 STUDY IMPLEMENTATION

Study elements described in the Wildlife TSP were initiated in 2023. A summary of the study elements that have been completed, outstanding study elements, and any deviations or proposed modifications to the Wildlife TSP are discussed in the following subsections.

3.1 STUDY ELEMENTS COMPLETED

3.1.1 Documented Special-Status Wildlife Occurrences and Habitats

- Developed an updated CALVEG–CWHR crosswalk table.
- Developed an updated Geographic Information System (GIS) map of wildlife habitats and overlay information on Project facilities, construction areas, proposed helicopter flight paths, restoration areas, and the potential enhancement area.
- Consulted with resource agencies to obtain information on Sierra Nevada bighorn sheep distribution and use of lands within the FERC Project boundary and adjacent Critical Habitat.
- Consulted with resource agencies and other local raptor experts to determine historic and recent raptor nest records within the FERC Project boundary and proposed helicopter flight paths and to determine regional nesting chronology.
- Identified/mapped potential raptor nesting habitat and observation points to support raptor surveys.

¹ Wildlife reconnaissance surveys along the Project-affected streams will only be conducted within stream segments defined in Table TERR 1-1 of the TERR 1, Botanical TSP.

- Conducted wildlife reconnaissance survey within the study area.
- Conducted an evaluation of the potential for ESA-listed species to occur in study area.

3.1.2 Determined the Consistency of Project Transmission Lines and Power Lines with APLIC Guidelines

- Documented the configuration of transmission line and power line towers/poles and evaluate their consistency with Avian Power Line Interaction Committee (APLIC) guidelines for any Project towers/poles not previously evaluated as part of SCE's corporate-wide Avian Protection Program.
- Documented past avian electrocutions and mortalities on Project transmission lines and power lines based on SCE and resource agency consultation.

3.1.3 Documented Potential Roosting Habitat for Bats

- Conducted an initial desktop assessment of Project facilities to determine each facility's potential to support bat roosts.
- Conducted a preliminary visual assessment of Project facilities during wildlife reconnaissance surveys to determine the potential to support bat roosts.
- Developed a preliminary visual assessment summary of Project facilities potentially supporting bat roosts.

3.2 VARIANCES FROM THE WILDLIFE TSP

All studies were conducted in accordance with the Wildlife TSP.

3.3 OUTSTANDING STUDY ELEMENTS

Considering winter conditions in 2022–2023, timing was modified for some TERR 2 study elements to ensure that data obtained are representative for the study area. SCE consulted with resource agencies and stakeholders to obtain approval for study delays at the TERR 2 Technical Working Group (TWG) meeting held on May 11, 2023; a follow-up meeting with USFWS was also conducted on June 9, 2023. Refer to Appendix A for documentation of agency consultation associated with delaying study implementation to ensure representative data collection. The following study elements from the Wildlife TSP were rescheduled from 2023 to 2024:

- Conduct raptor nest surveys (including observation points and broadcast call stations for northern goshawk) during the regional nesting period, as determined through consultation with agencies and local raptor experts, and develop a map showing the location of potential raptor nesting habitat and nests identified within the study area.
- Conduct bat roost surveys (including visual roost surveys, evening exit counts, nighttime inspections, guano DNA sampling, and acoustic sampling) and seasonal use surveys, and develop a map of special-status bat roosts and overlay information on Project facilities.

Data collected in 2024 will be analyzed and reported in a supplement to this TSR following the end of the 2024 field season.

4 EXTENT OF STUDY AREA

The study area for documentation of special-status wildlife occurrences and habitats; determination of the consistency of Project transmission line and power line tower or pole configurations with APLIC guidelines; and documentation of potential roosting habitat for special-status bats is defined below.

- Document Special-status Wildlife Occurrences and Habitats
- For updating CWHR habitat, special-status wildlife species occurrences, and assessing potential for ESA-listed species to occur, the study area includes lands within 1 mile of the FERC Project boundary.
- For obtaining information on Sierra Nevada bighorn sheep distribution and use of lands, the study area includes lands within the FERC Project boundary and adjacent Critical Habitat.
- For wildlife reconnaissance surveys, the study area includes lands within the FERC Project boundary² and within the potential enhancement area.
- For identification and mapping of potential raptor nesting habitat, the study area extends 300 feet on either side of the proposed helicopter flight paths.
- Determine the Consistency of Transmission Line and Power Line Configurations with APLIC Guidelines
- For the evaluation of potential avian mortalities, the study area is Project transmission lines and power lines. Refer to Table TERR 2-1 for a list of Project transmission and power lines.
- Document Potential Roosting Habitat for Special-Status Bats
- For the visual assessment of Project facilities, the study area includes Project facilities listed in Table TERR 2-1.

5 STUDY APPROACH

This section provides details on the study approach for documentation of special-status wildlife occurrences and associated habitats; evaluation of transmission line and power line tower/pole configurations; and documentation of potential roosting habitat for special-status bats.

² Wildlife reconnaissance surveys along the Project-affected streams will only be documented within stream segments as defined in Table TERR 1-1 of the TERR 1 TSP.

5.1 DOCUMENT SPECIAL-STATUS WILDLIFE OCCURRENCES AND HABITATS

The study approach for identifying special-status wildlife occurrences and habitats in the study area included development of an updated CALVEG–CWHR crosswalk and wildlife habitat map; obtaining updated information on Sierra Nevada bighorn sheep; documenting raptor habitat along the proposed helicopter flight path; conducting a wildlife reconnaissance survey; and developing final tables and maps of special-status species. The approach for each of these study elements is described below.

5.1.1 Develop Updated CALVEG–CWHR Crosswalk Table and CWHR Map

CWHR habitat maps for the study area were developed based on vegetation alliance maps and included in the TERR 1 – TSR. Each CALVEG alliance present in the study area was referenced to a CWHR wildlife habitat using the CALVEG CWHR Crosswalk for California (USDA-FS 2009). This information was then used to develop a Project-specific CALVEG-CWHR crosswalk table and updated maps showing the location of CWHR habitats in the study area.

A table was also developed showing CWHR habitat that may potentially support special-status species known or potentially occurring in the Rush Creek Study Area (refer to Section 5.1.6 below).

5.1.2 Obtain Information on Sierra Nevada Bighorn Sheep Distribution

SCE consulted with resource agencies and stakeholders at the TERR 2 TWG meeting held on May 11, 2023, and followed up with CDFW by e-mail on May 22, 2023 and July 6, 2023 to obtain recently available information on Sierra Nevada bighorn sheep. These materials were reviewed to determine the distribution of this species and use of lands within the FERC Project boundary and adjacent Critical Habitat.

5.1.3 Obtain Information on Mesocarnivore Distribution

SCE contacted the CDFW Alpine Mesocarnivore working group by e-mail on December 13, 2023 to obtain recently available information on the range of the Sierra Nevada Distinct Population Segment (DPS) of the Sierra Nevada red fox (*Vulpes vulpes necator*) (FE, ST) and the Contiguous United States (U.S.) DPS of North American wolverine (*Gulo gulo luscus*) (FT, ST, CFP) in relation to the study area. Since 2015, the Alpine Mesocarnivore working group has deployed remote cameras and collected fecal samples at high elevations of the Sierra Nevada for the purpose of detecting mesocarnivores, with a particular focus on Sierra Nevada red fox and wolverine. The closest survey grid lies just to the southwest of Waugh Lake in the study area.

Materials obtain from CDFW staff were reviewed to provide information on the distribution of these species and use of lands within the FERC Project boundary.

5.1.4 Document Raptor Habitat Along Proposed Helicopter Flight Path

This section describes methods used to document potential raptor nesting habitat along the proposed helicopter flight paths. As described in Section 3.3, raptor nest surveys were delayed until 2024 (through consultation with resource agencies) because of extreme winter conditions in 2023.

5.1.4.1 Obtain Information on Historic and Recent Raptor Nest Records and Regional Nesting Chronology

SCE consulted with resource agencies and stakeholders at the TERR 2 TWG meeting held on May 11, 2023; and held an additional, focused meeting with USFWS on June 9, 2023 to obtain updated information on historic and recent reported nest records within the FERC Project boundary and proposed helicopter flight paths; and to determine regional nesting chronology.

5.1.4.2 Conduct Desktop Review of Potential Raptor Habitat

A preliminary map showing the proposed helicopter flight paths, observation points, and approximate viewsheds is provided in Map TERR 2-2. This map includes updated aerial photographs and information provided during consultation with resource agencies and raptor experts and was used to determine areas potentially supporting raptor nesting habitat for cliff-nesting and tree-nesting species.

Habitat for cliff-nesting species (i.e., golden eagle (*Aquila chrysaetos*) (Eagle Act, CFP), American peregrine falcon (*Falco peregrinus anatum*) (FD, CFP) and prairie falcon (*Falco mexicanus*)) is defined as cliffs with prominent escarpments that provide a view of surrounding environment and updrafts (Kochert et al. 2002), with the cliff face usually at least 70 feet in height (Pagel et al. 1991; White et al. 2002). Nests are usually, but not always within the upper half of the cliff face (Kochert et al. 2002; Steenhof 2013).

Habitat for tree-nesting species (i.e., northern goshawk (*Accipiter gentilis*) (SSC), osprey (*Pandion haliaetus*), and bald eagle (*Haliaeetus leucocephalus*) (Eagle Act, FSCC, SE, CFP) is defined to include areas supporting trees greater than 24 inches diameter at breast height (dbh) (Jackman and Jenkins 2004, Woodbridge and Hargis 2006, Bierregaard et al. 2016). Northern goshawks prefer stands of trees with dense canopy cover (Woodbridge and Hargis 2006), while osprey and bald eagle will nest in more open stands (Jackman and Jenkins 2004, Bierregaard et al. 2016).

5.1.4.3 Conduct Raptor Habitat Surveys

Raptor habitat surveys were conducted in July 2023 to assess potential raptor habitat located within 300 feet of the proposed helicopter flight path. Surveys were conducted on foot utilizing existing hiking trails (i.e., the Rush Creek Trail, Fern Lake Trail, and Spooky Meadow Trail) to access five of the six proposed observation points and associated viewsheds. The final observation point, which is located at the chalet at the June Mountain Ski Resort, was accessed by car and on foot. Surveyors assessed habitat along the trails and at the designated observation points using binoculars, focusing on areas determined during the desktop review as potentially supporting raptor nesting habitat. Habitat for cliff-

and tree-nesting birds was mapped and photographed. Surveyors evaluated the suitability of the selected observation points and made notes on the location of potential alternate observation points. Incidental sightings of eagles and other raptors were also noted.

Survey results were memorialized in an updated map of raptor habitat within 300 feet of the proposed helicopter flight path.

5.1.5 Conduct Wildlife Reconnaissance Survey

SCE conducted wildlife reconnaissance surveys on foot between approximately 0700 and 1800 hours in July 2023. The purpose of the reconnaissance surveys was to record the presence of wildlife and their sign, and to obtain information on the location and extent of habitat features for ESA-listed species potentially present in the study area.

Inaccessible areas were surveyed with binoculars, to the degree possible. Species were recorded as present if they were observed, species-specific vocalizations were heard, or if diagnostic field signs were found (e.g., scat, tracks, pellets). Depending on the survey area and terrain, survey methods included zigzag and linear transects. Zigzag transects were utilized in larger habitat areas (e.g., mixed conifer forest) while linear transects were utilized in narrow habitats (e.g., riparian).

Wildlife sign recorded included direct species observations, scat, pellets, whitewash, tracks, nests, fur or feathers, burrows, dens, prey remains, vegetation browse, food caches, and markings on the ground or on tree bark.

During the wildlife reconnaissance survey, special attention was paid to potential reproductive habitat features preferred by ESA-listed species, particularly for the Sierra Nevada red fox and North American wolverine.

Sierra Nevada red fox are found in subalpine conifer habitats between 8,100 and 11,608 feet in elevation and prefer mosaics of high-elevation meadows, rocky areas, scrub vegetation, and patchy tree cover (USFWS 2021b). Sierra Nevada red fox den in natural openings in rock piles, crevices in exposed bedrock, and earthen dens. Potential denning habitat for Sierra Nevada red fox was assessed during the wildlife reconnaissance survey, and the location of this habitat was recorded in field notebooks.

North American wolverines are found in high-elevation areas in relatively inaccessible landscapes from 5,906 to 11,843 feet in elevation (USFWS 2023b). North American wolverines prefer talus slopes and similar rugged areas, in habitats characterized by the presence of persistent spring snow. Potential habitat for North American wolverine was assessed during the wildlife reconnaissance survey, and the location of this habitat was recorded in field notebooks.

The following data were recorded on datasheets for special-status species found during these studies:

- Date
- Time
- General location
- CWHR wildlife habitat
- Wildlife sign observed
- Specific location or GPS coordinates

Following completion of surveys, survey results were incorporated into an electronic database (i.e., Excel spreadsheet).

For each special-status species observed, a California Natural Diversity Database (CNDDDB) field survey form was completed and submitted to CDFW. According to CNDDDB guidelines for submitting data, ringtails are not tracked in the CNDDDB and bird observations should not be submitted unless specific reproductive behaviors are observed (CNDDDB 2023). Therefore, CNDDDB forms were only submitted for applicable animal species and for special-status birds that displayed reproductive behavior.

5.1.5.1 Compile Incidental Wildlife Observation Data

Incidental observations of special-status species documented during all technical studies completed for the Rush Creek Project were compiled and reviewed (inclusive of all resource areas). The following data were obtained for each observation: date, location of observation, species observed, and Global Positioning System (GPS) coordinates (when available). These data were entered into the electronic database of special-status wildlife species and were reviewed for accuracy and reliability. Follow-up contact with the observer was made to obtain additional information or clarification, as necessary. Incidental observations of special-status amphibians are reported in the AQ 7 – TSR.

5.1.6 Develop Final Tables and Maps of Special-Status Wildlife Species

Tables and maps showing special-status wildlife species known to occur or potentially occurring in the study area were revised and finalized based on study elements completed for this report including CWHR habitat analysis, agency consultation, field surveys, and incidental wildlife observations, as described above. Resource agencies were contacted, and resource agency websites and databases (e.g., CNDDDB and CWHR) were reviewed to obtain any new data on special-status wildlife known to occur or potentially occurring in the study area that had become available since the development of the preliminary wildlife occurrence maps for the Rush Creek Project Preliminary Application Document (PAD) (SCE 2021). A new USFWS Information for Planning and Consultation (IPaC) list was generated for the study area. The IPaC's polygon tool was used to draw a 1-mile buffer around the FERC Project boundary. The USFWS, Forest Service, and CDFW species lists were reviewed for any changes in the status of listed animals. Any new location data, including data obtained from implementation of other

technical studies or from the compilation of incidental wildlife observation data, was recorded, digitized, and incorporated into GIS layers.

5.1.6.1 Evaluate Potential for ESA-listed Species to Occur in the Project Area

ESA-listed species identified on the USFWS IPaC List were further evaluated for their potential to occur in the Project area based on the results of consultation with resource agencies and review of available information; the CWHR habitat assessment; wildlife reconnaissance survey; and incidental observations. The ESA listing documents, the CNDDDB, and all recent status assessments and reports were reviewed for each ESA-listed species.

5.2 DETERMINE CONSISTENCY OF PROJECT TRANSMISSION LINE AND POWER LINE TOWER/POLE CONFIGURATIONS WITH APLIC GUIDELINES

This section describes the study approach for the evaluation of Project transmission line and power line towers or poles to determine their consistency with guidelines outlined in SCE's Avian Protection Plan (Appendix B) and APLIC (2006/2012). The Avian Protection Plan describes SCE's procedures and protocols for managing avian species protection within SCE Transmission and Distribution (T/D) lines. Project transmission lines and power lines are included under the Avian Protection Plan. APLIC Guidelines were developed by USFWS and APLIC to provide recommendations for power line structure designs (e.g., pole/tower) and modifications for protecting raptors or other avian species from electrocution. APLIC is a committee that includes representatives from the utility industry, wildlife resource agencies, conservation groups, and manufacturers of avian protection products. Specific methods completed in the evaluation of Project transmission line and power line tower or pole configurations are summarized below.

5.2.1 Document Configuration of Transmission Lines and Power Lines

Field inspections were conducted to document pole configurations and determine the extent of avian use of Project transmission lines, power lines and associated towers or poles. Accessible portions of Project transmission lines and power lines were visited on foot, and photographs were taken of each type of pole configuration. For power lines that were not accessible, a photograph was taken from a safe location. During the field inspection, any sign of raptor use of the power lines/towers/poles (e.g., nests, perched birds, raptors in the vicinity, whitewashing) was documented through visual identification of individuals or their sign.

In July 2023, each Project transmission line/power line tower/pole configuration was evaluated against APLIC raptor-safe configuration guidelines. In general, electrocution can occur when birds perch on, nest on, or collide with structures having: 1) uncovered phase conductors that are less than wrist-to-wrist or head-to-foot measurement of a bird; or 2) distances between grounded hardware (e.g., grounded wires, equipment, or guy wires) and any energized phase conductors (or other energized equipment) less than the wrist-to-wrist or head-to-foot measurement of a bird. APLIC recommends a conductor-to-conductor or conductor-to-grounded hardware distance of about 60 inches to

accommodate the body dimensions of large birds such as bald and golden eagles (APLIC 2012). Therefore, Project power lines were evaluated according to the following criteria:

- Whether the distance between uncovered phase conductors is less than 60 inches with no perch guard;
- Whether the distance between uncovered energized parts and grounded equipment of equipment towers/poles is less than 60 inches; and
- Whether the tower/pole contains uninsulated or partially insulated metal guy wires, jumper, or transformer cables.

5.2.2 Document Past Avian Electrocutions and Mortalities

SCE monitors avian mortalities on Project lines and provides reports as part of the required annual environmental training within SCE's Avian Protection Plan. In addition, avian incidents are reported to USFWS annually as required by SCE's Special Purpose Utility Permit (MB728480). All reports were reviewed and compiled into an electronic database (Excel spreadsheet) recording the year, date, avian species, mortality location, and any additional notes about the mortality.

5.3 DOCUMENT POTENTIAL ROOSTING HABITAT FOR BATS

This section describes the study approach used to document facilities potentially supporting special-status bat roosts in the study area. As described in Section 3.3, bat roost surveys and seasonal use surveys were delayed (through consultation with resource agencies) because of extreme winter conditions in 2023 and will be implemented in 2024.

5.3.1 Identify Facilities Potentially Supporting Bat Roosts

A pre-field assessment of potential bat roosting habitat at Project facilities was conducted through a desktop review of aerial imagery of the Project area (Google 2022) and descriptions of Project facilities from Section 2.0 of the PAD for the Rush Creek Project (SCE 2021). Refer to Table TERR 2-1 for a list of Project facilities reviewed. Potential bat roosting habitat criteria used for the initial assessment included the presence of vertical and roofed components, overhangs, crevices, and cave-like openings or features.

In-field inspections were conducted in July 2023 at Project facilities identified as potentially supporting bat roosting habitat based on the desktop review. The exterior of facility structures was visually inspected to assess the suitability of a structure for bat use. The interior of facilities was also inspected, where possible. Criteria used to assess suitability include the presence of appropriate crevice or cave-like features and appropriate thermal conditions. Bats prefer different thermal conditions for maternity roosting versus hibernacula³. Maternity roosts are usually found in microclimates with warmer thermal conditions and high solar exposure (Lausen and Barclay 2003), whereas

³ Hibernacula are defined as shelters used during the winter by hibernating or otherwise dormant animals.

hibernacula are usually found in areas with colder thermal conditions (Webb et al. 1995). Both maternity roosts and hibernacula tend to be located in cracks, crevices, caves, or building interiors that offer more sheltered and protected conditions. Day and night roosts may be placed in more open areas under overhangs (such as the eaves of rooftops). In addition, the facilities were examined to determine the accessibility of the structure to bats (e.g., presence of small cracks or openings for bats to enter the interior of the structure). Only those facilities having structures with vertical and roofed elements, abundant cracks and crevices, and/or appropriate thermal conditions were considered potential bat roosting habitat.

The following data were obtained for each facility evaluated:

- Name and location of facility;
- Notation of features or structures that represent suitable habitat or reasons why facility is not considered suitable for roosting bats;
- Photographs; and
- Description of surrounding environmental conditions.

6 STUDY RESULTS

This section summarizes the results of the documentation of special-status wildlife (including ESA-listed species) occurrences and habitats; determination of consistency of Project transmission line and power line towers/poles with APLIC guidelines; and identification of Project facilities potentially supporting special-status bat roosts.

6.1 DOCUMENT SPECIAL-STATUS WILDLIFE OCCURRENCES AND HABITATS

Seventeen CHWR wildlife habitats were identified in the study area, representing suitable habitat for 31 special-status wildlife species known to occur or potentially occurring in the study area. Three special-status wildlife species—bald eagle, yellow warbler (*Setophaga petechia*) (SSC), and Cassin's finch (*Haemorhous cassinii*) (BCC)—were detected during reconnaissance surveys. Three additional special-status wildlife species— monarch butterfly (*Danaus plexippus*) (FC), golden eagle, and calliope hummingbird (*Selasphorus calliope*) (BCC)—were identified during agency consultation and/or as incidental sightings during other technical studies. Special-status amphibian observations are discussed in the AQ 7 – TSR. Provided below are the detailed results of the documentation of wildlife habitats and special-status wildlife species in the study area. No ESA-listed wildlife species were observed.

6.1.1 Develop Updated CALVEG–CWHR Crosswalk Table and CWHR Map

Based on the updated CALVEG–CWHR crosswalk developed for the study area (refer to Table TERR 1-1 in the TERR 1 – TSR [SCE 2023]), the following CWHR habitats were identified in the study area:

- Alpine Dwarf-Shrub (ADS)
- Annual Grassland (AGS)
- Aspen (ASP)
- Barren (BAR)
- Eastside Pine (EPN)
- Jeffrey Pine (JPN)
- Juniper (JUN)
- Lacustrine (LAC)
- Lodgepole Pine (LPN)
- Low Sage (LSG)
- Montane Chaparral (MCP)
- Montane Riparian (MRI)
- Riverine (RIV)
- Sagebrush (SGB)
- Subalpine Conifer (SCN)
- Wet Meadow (WTM)
- White Fir (WFR)

Refer to Map TERR 2-1 for the location and distribution of these habitats within the study area.

Refer to Table TERR 2-2 for CWHR habitats used by special-status species known or potentially occurring in the study area (refer to Section 6.1.6 below for the final table and maps of special-status species).

6.1.2 Obtain Information on Sierra Nevada Bighorn Sheep Distribution Near Project Boundary

SCE contacted CDFW staff by e-mail on May 22, 2023, and July 6, 2023, to obtain updated information on Sierra Nevada bighorn sheep in the study area and adjacent Critical Habitat. No response was received by e-mail. During other technical studies conducted in 2023, biologist Robyn Smith spoke with Sierra Nevada bighorn sheep biologist Lacey Greene who indicated that bighorn sheep have never been recorded within the FERC boundary and are mostly utilizing habitats to the north of the Project area

(Lacey Greene, pers. comm.). Refer to Appendix A for documentation of agency communications.

A review of the CDFW webpage for the Sierra Nevada Bighorn Sheep Recovery Program states that the severe winter of 2022–2023 resulted in declines in the population of Sierra bighorn sheep because of avalanches or starvation of sheep that remained at high elevations and/or increased predation of those sheep that retreated to lower elevations to avoid the snow (CDFW 2023b). CDFW conducted additional surveys in the summer of 2023 to assess the full magnitude of the decline. The results of these surveys were not available at the time of distribution of this report but will be reported in the 2024 TERR 2 TSR, if available.

6.1.3 Obtain Information on Mesocarnivore Distribution Near Project Boundary

SCE contacted CDFW Alpine Mesocarnivore Study staff by e-mail on December 13, 2023 to obtain any additional updated information on Sierra Nevada red fox and North American wolverine. A response was received from Julia Lawson, who provided recent observation records for both species in the Project vicinity. Based on a review of this data, in addition to recent reports and news releases for CDFW’s Alpine Mesocarnivore Study (Hatfield et al. 2021, Hatfield et al. 2023, CDFW 2023c), North American wolverine and Sierra Nevada red fox were determined to have the potential to occur in the study area, though there are no records within 1 mile of the FERC Project boundary for either species. Refer to Appendix A for documentation of agency communications.

6.1.4 Document Raptor Habitat along Proposed Helicopter Flight Paths

Provided below are the results of the documentation of raptor habitat along the proposed helicopter flight paths. As described in Section 3.3, raptor nest surveys were delayed until 2024 due to heavy snow conditions in 2022–2023.

The following raptors and/or raptor nests were reported to occur in the vicinity of the proposed helicopter flight paths based on GIS data provided by USFWS and input from the TERR 2 Technical Working Group (TWG) participants:

- Bald eagles were observed flying over Silver Lake (Linda Coffin, pers. comm.).
- Golden eagle nests were located northeast of the Project area in the Mono Craters and east of the Project area in Bald Mountain (USFWS 2023a). All locations of golden eagle nests are over 4 miles from the Project area; and
- Golden eagles were observed flying over Silver Lake in 2023 (Linda Coffin, pers. comm; USFWS 2023a).

Refer to Appendix A for documentation of communications regarding the location of raptors and raptor nests.

Refer to Map TERR 2-2 for the location of habitat for cliff- and tree-nesting raptors along the proposed helicopter flight paths as identified during habitats surveys conducted in July 2023. Refer to Appendix C for representative photographs of habitat for cliff-nesting

and tree-nesting raptors in the study area. During the habitat surveys, it was determined that the previously selected observation points provide adequate views of the study area for the future nesting raptor survey.

Common raptor species observed during wildlife reconnaissance surveys included turkey vulture (*Cathartes aura*), red-tailed hawk (*Buteo jamaicensis*), and osprey. Bald eagles were also observed (refer to Section 6.1.4 and 6.1.5, below for more information). One active osprey nest was observed approximately 500 feet south of the June Mountain parking lot.

6.1.5 Conduct Wildlife Reconnaissance Survey

Three special-status wildlife species were observed during wildlife reconnaissance surveys, conducted in July 2023:

- Bald eagle. One adult was observed perched in a large Jeffrey pine (*Pinus jeffreyi*) on the southern end of Silver Lake; one sub-adult was observed perching on a large pine (*Pinus* spp.) south of Rush Creek, near Gem Lake; and one adult was observed gliding along the northern ridgeline above Gem Dam.
- Cassin's finch. A male and a female were observed foraging along the edge of a grassland in the Rush Creek Powerhouse area and an adult male was observed in the lodgepole pine (*Pinus contorta*) forest near the Frontier Pack Station seasonal camp (east of Rush Meadows Dam).
- Yellow warbler. An adult male was heard singing in willows (*Salix* spp.) south of Silver Lake and later detected by sight; and four individuals were observed in the vicinity of Silver Lake.

Habitat elements for Sierra Nevada red fox were observed in the vicinity of Waugh Lake during the wildlife reconnaissance survey. Particularly, mosaic habitat including open stands of subalpine conifer intermixed with alpine dwarf scrub and barren rocky areas was observed on the north shore of Waugh Lake (refer to Map TERR 2-1a). Rocky areas with bedrock crevices and rock piles were observed during the survey. However, areas in the immediate vicinity of Project facilities (such as dams, gages, and buildings) did not support suitable denning habitat for this species.

Habitat elements for North American wolverine were observed in the vicinity of Waugh Lake and Gem Lake during the wildlife reconnaissance survey. Areas of persistent snowpack were observed on the south side of the reservoirs, as well as rocky talus slopes and barren areas (refer to Maps TERR 2-1a and TERR 2-1b). However, areas in the immediate vicinity of Project facilities (such as dams, gages, and buildings) did not support suitable denning habitat for this species.

Common species or their sign observed included terrestrial reptiles such as the sagebrush lizard (*Sceloporus graciosus*), Sierra alligator lizard (*Elgaria coerulea palmeri*) and mountain garter snake (*Thamnophis elegans elegans*); raptors such as the red-tailed hawk and osprey; songbirds such as Clark's nutcracker (*Nucifraga columbiana*), MacGillivray's warbler (*Oporornis tolmiei*), and mountain chickadee (*Poecile gambeli*);

and mammals such as American pika (*Ochotona princeps*), black bear (*Ursus americanus*), and mule deer (*Odocoileus hemionus*). Refer to Table TERR 2-3 for a list of special-status and common wildlife species observed in the study area during wildlife reconnaissance surveys and other technical studies.

6.1.6 Compile Incidental Wildlife Observations

Six special-status wildlife species were incidentally observed during the course of other technical studies conducted in 2023, including monarch butterfly, bald eagle, calliope hummingbird, Cassin's finch, and yellow warbler. Each observation is described further below.

- Biologists conducting surveys for TERR 1 studies observed one monarch butterfly (FC) flying along the shoreline of Waugh Lake on September 18, 2023 and along the shoreline of Gem Lake on September 21, 2023.
- Biologists conducting surveys for AQ 7 and TERR 1 studies observed bald eagles on multiple survey dates:
 - An adult bald eagle was observed perched in a pine along the southern shoreline of Gem Lake on August 24, 2023.
 - A sub-adult bald eagle was observed flying over the middle of Waugh Lake on August 26, 2023.
 - An adult bald eagle was observed flying over the northern shoreline of Gem Lake and chasing an osprey on September 21, 2023.
 - An adult bald eagle was also seen regularly at the perch site at the southern end of Silver Lake during studies conducted in August and September.
- Biologists conducting surveys for TERR 1 studies observed a calliope hummingbird along Rush Creek above Silver Lake on September 9, 2021.
- Biologists conducting surveys for AQ 7 and TERR 1 studies observed Cassin's finches on multiple survey dates:
 - A flock of six Cassin's finches was observed at the west end of Waugh Lake on July 18, 2023.
 - A male Cassin's finch was observed along Rush Creek below Agnew Dam on September 10, 2023.
- Biologists conducting surveys for AQ 7 observed yellow warblers on multiple survey dates:
 - Two adult males were heard singing in willows along Rush Creek below Silver Lake on July 21, 2023.
 - Two adult males were heard singing in willows in the wet meadow adjacent to Rush Creek above Silver Lake on July 22, 2023.

Incidental observations of special-status amphibians are reported in the AQ-7 TSR.

Refer to Table TERR 2-3 for a list of special-status and common wildlife species observed in the study area during wildlife reconnaissance surveys and other technical studies.

6.1.7 Develop Final Tables and Maps of Special-Status Species

The final list of special-status wildlife known to occur or potentially occurring in the study area based on information obtained during the TERR-2 studies and from other incidental observations is provided in Table TERR 2-4. Final maps of special-status wildlife occurrences in the study area, including the Sierra Nevada red fox and North American wolverine records provided by Julia Lawson, are provided in Map TERR 2-3 of this report. Refer to Appendix D for CNDDDB forms submitted to CDFW.

6.1.7.1 Evaluate Potential for ESA-listed Species to Occur in Study Area

The most current USFWS IPaC list (USFWS 2023c) identified nine candidate, listed, and proposed wildlife species that may potentially occur in the study area, as well as two critical habitats. These include:

- Monarch butterfly;
- Sierra Nevada yellow-legged frog (*Rana sierrae*) (FE, ST) and associated Critical Habitat;
- Yosemite toad (*Anaxyrus canorus*) (FT, SSC) and associated Critical Habitat;
- Northwestern pond turtle (*Actinemys marmorata*) (FPT, SSC);
- Yellow-billed cuckoo – Western DPS (*Coccyzus americanus*) (FT, SE);
- Fisher – Southern Sierra Nevada DPS (*Pekania pennanti*) (FE, FSCC, ST);
- North American wolverine – Contiguous U.S. DPS;
- Sierra Nevada red fox – Sierra Nevada DPS; and
- Sierra Nevada bighorn sheep and associated Critical Habitat.

The study areas is outside the geographic range and does not contain suitable habitat for three of the ESA-listed Species identified on the IPaC List —northwestern pond turtle, yellow-billed cuckoo, and fisher. Refer to Table TERR 2-4 for a comprehensive list of special-status species, including ESA-listed species, evaluated for their potential for occurrence.

Provided below is a discussion of the remaining six species that were determined to have potential to occur in the Study Area, based on the results of CWHR habitats, agency consultation, wildlife reconnaissance surveys, and a review of the existing literature on the species.

- **Monarch Butterfly:** Based on results of wildlife reconnaissance surveys, incidental observations, CWHR habitat analyses, monarch butterfly was determined to have the potential to occur in the study area (refer to Section 6.1.5, above). While adults can feed

on a variety of nectar sources, monarch butterfly require habitats with milkweed (*Asclepias* spp.) to support breeding, as their larvae are dependent on this host plant (USFWS 2020a). Monarch butterfly overwinter on the coast of California in coastal groves (USFWS 2020a). No milkweed populations were observed in the study area (refer to the TERR 1 – TSR), but suitable floral foraging habitat is present. Therefore, the study area represents potential foraging and migration habitat, but not overwintering or breeding habitat.

- **Sierra Nevada Yellow-legged Frog and Yosemite Toad** were determined to have potential to occur in the study area as part of the development of the PAD (SCE 2021). A separate study plan (AQ 7, Special-status Amphibian – TSP) was developed specifically for these species. The results are addressed in detail in the AQ 7 – TSR.
- **North American Wolverine:** The contiguous U.S. DPS of North American wolverine was recently listed as FT as of November 30, 2023 (USFWS 2023b). North American wolverine are found in relatively inaccessible landscapes at high elevation that contain talus slopes and are characterized by the presence of persistent spring snowpack (USFWS 2023b). There are no known breeding populations of wolverine in California (USFWS 2023cb). An individual (or individuals) were observed at high elevations in the vicinity of Yosemite National Park and the Inyo National Forest on game cameras set by CDFW's Alpine Carnivore survey (CDFW 2023c). The closest known observation to the study area is from May 2023 on the north shore of Thousand Island Lakes, approximately 1.5 miles south of Waugh Lake. Due to the large individual home ranges for this species (USFWS 2023b), this individual could easily move through the study area. The high-elevation habitat surrounding Gem and Waugh Lakes in the study area contains talus slopes and barren areas with persistent spring snowpack that would be considered suitable wolverine habitat. No North American wolverine or their sign were observed during the wildlife reconnaissance survey. However, studies were conducted during the recreation season and wolverines are known to avoid areas of high human recreation use (USFWS 2023b). Therefore, North American wolverine has the potential to occur in the study area, particularly in the winter when recreation use is lower.
- **Sierra Nevada Red Fox:** The Sierra Nevada DPS of the Sierra Nevada red fox was listed as FE on August 3, 2021 (USFWS 2021b). Sierra Nevada red fox ranges in the Sierra Nevada from the Sierra Crest just south of California State Highway 88 to a few miles north of Kings Canyon National Park (USFWS 2021b). Sierra Nevada red fox occupies subalpine and high elevation conifer forests ranging from 8,120 to 11,608 feet (USFWS 2021b). Preferred subalpine habitats are characterized by a mosaic of high-elevation rocky areas, subalpine scrub, and woodlands dominated by mountain hemlock (*Tsuga mertensiana*), whitebark pine (*Pinus albicaulis*), and lodgepole pine (*Pinus contorta* spp. *murreyana*) (USFWS 2021b). Sierra Nevada red fox typically use natural openings in rock piles or crevices in exposed bedrock as denning sites and pups are typically born in April and early May (USFWS 2018). Foxes may also dig earthen dens (USFWS 2018). The study area contains suitable mosaic subalpine habitat for Sierra Nevada red fox in the vicinity of Waugh Lake in the Ansel Adams Wilderness. At least two Sierra Nevada red fox individuals were detected on two of CDFW's Alpine Carnivore survey cells 1.5 miles southwest of Waugh Lake in May and June of 2019 near Rodgers Lake and Marie Pass (Hatfield et al. 2021, Hatfield et al. 2023). The nearest known reproductive population is in the Mono Creek Watershed southeast of Mammoth Lakes (Hatfield et al. 2023). Sierra

Nevada red fox are known to range widely and the study area is within the dispersal distance of these records (USFWS 2018, Hatfield et al. 2021). No Sierra Nevada red fox or their sign were observed during wildlife reconnaissance surveys. However, based on the habitats present in the study area and the results of existing alpine mesocarnivore surveys (Hatfield et al. 2020, 2023), Sierra Nevada red fox has potential to occur in the study area, particularly within the subalpine conifer forest and alpine dwarf scrub habitat on the north shore of Waugh Lake within and surrounding the FERC Project boundary. Suitable denning habitat is not present near Project facilities such as dams, gages, buildings, etc.

- **Sierra Nevada Bighorn Sheep:** Information on the potential for Sierra Nevada bighorn sheep to occur in the study area is presented in Section 6.1.2.

6.2 DETERMINE CONSISTENCY OF PROJECT TRANSMISSION LINE AND POWER LINE TOWER/POLE CONFIGURATIONS WITH APLIC GUIDELINES

There are five Project transmission lines and power lines listed on Table TERR 2-1, Rush Creek Project facilities. Of these, only one power line includes tower/pole configurations that pose a potential risk for avian electrocution. There are no recorded avian mortalities associated with Project transmission lines or power lines. Following are detailed results of the evaluation of Project transmission line and power line tower/pole configurations.

6.2.1 Document Configuration of Transmission Lines and Power Lines

There are five Project transmission lines and power lines listed on Table TERR 2-1. Of these, two (the 4kV Upper Agnew Boat Dock Power Line and the 4kV Agnew Dam to Gem Dam Powerline) are de-energized and are not currently operational, and the 2.4-kV Switchyard to Powerhouse Transmission Line is a line only (does not include any towers/poles). Of the remaining two power lines, only one, the 4kV Rush Creek Powerhouse to Agnew Dam Power Line, includes tower/pole configurations that pose a potential risk for avian electrocution. The 4 kV Agnew Lake Dam Power Line consists of two poles that do not pose risk to raptors. Power line configuration types that were determined to be inconsistent with APLIC guidelines pose a potential risk to avian species. These configurations included one or more of the following:

- Distance between uncovered phase conductors is less than 60 inches with no perch guard;
- Distance between energized parts and grounded equipment of equipment towers/poles is less than 60 inches; and
- Tower/pole contains uninsulated or partially insulated metal guy wires, jumper, or transformer cables.

Refer to Table TERR 2-5 for details on the consistency of pole configurations with APLIC guidelines and to Appendix E for a photograph of each tower/pole.

6.2.2 Document Past Avian Electrocutions and Mortalities

Based on a review of SCE's avian mortality reports and consultation with SCE staff, there are no reported avian electrocutions or mortalities resulting from birds perching on, nesting on, or colliding with Project transmission lines and power lines.

A low level of avian use of Project power lines was observed during the field inspections. Surveyors identified whitewash and a mallard carcass (*Anas platyrhynchos*), which could be a potential prey item (not an electrocution), near pole number 20987-CIT at the Rush Creek Powerhouse. Raptors observed in the vicinity of Project power lines included a red-tailed hawk and an unknown sparrowhawk species (*Accipiter* spp). Passerine species, including violet-green swallow (*Tachycineta thalassina*) and hummingbirds spp., were also observed in the vicinity. No raptors or passerine bird species were observed perching on Project power towers or poles.

6.3 DOCUMENT POTENTIAL ROOSTING HABITAT FOR BATS

Provided below are the results of the initial desktop assessment and the visual assessment of Project facilities supporting potential bat roosting habitat. As described in Section 3.3, bat roost surveys and seasonal use surveys were delayed, in consultation with resource agencies, until 2024 due to heavy snow conditions in 2022–2023.

During the pre-field assessment of potential bat roosting habitat, it was determined that dams, ancillary and support facilities (e.g., buildings), hoist and valve houses, the Rush Creek Powerhouse, reservoir gages, solar facilities, and motor barges could potentially support roosting bats. Project facilities that were determined to lack structures that could be utilized by roosting bats included reservoirs, trails, roads, communication lines, powerlines, and penstocks. Refer to Table TERR 2-1 for facilities that were assessed during the initial desktop assessment as potentially supporting suitable habitat for roosting bats.

Following completion of the in-field visual assessment, Project facilities that may potentially support bat roosts include dams, ancillary and support facilities, hoist and valve houses, some reservoir and stream gages, and the Rush Creek Powerhouse. Refer to Table TERR 2-6 for a summary of the results of the in-field visual assessment of Project facilities identified during the desktop assessment as potentially supporting bat roosts. Appendix F provides photographs of the facilities obtained during the in-field visual assessments.

No common bat species or special-status bats, roosts, or bat sign were detected at any of the Project facilities inspected in 2023. All facilities potentially supporting bat roosts will be examined during surveys planned for 2024.

7 NEXT STEPS

As described in Section 3.3, above, SCE will conduct raptor nest surveys and bat roost/seasonal use surveys in 2024. Data collected will be analyzed and reported in a supplement to this TSR following the end of the 2024 field season.

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TABLES

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Table TERR 2-1. Rush Creek Project Facilities

Rush Meadows Dam Area	
<i>Dams</i>	
	Rush Meadows Dam
<i>Reservoirs</i>	
	Waugh Lake
Valve House	
	Rush Meadows Dam Valve House
Stream Gages	
	Rush Creek below Rush Meadows (Waugh Lake) (USGS No. 10287262; SCE No. 359r)
Reservoir Gages	
	Waugh Lake (USGS No. 10287260; SCE No. 359)
Trails	
	Rush Meadows Dam Access Trail
Rush Meadows Dam/Waugh Lake Ancillary and Support Facilities	
	Rush Meadows Dam Equipment Shed
	Rush Meadows Dam Gage House
	Rush Meadows Dam Solar Facility
Gem Dam Area	
<i>Dams</i>	
	Gem Dam
<i>Reservoirs</i>	
	Gem Lake
Flowline	
	Gem Dam to Agnew Junction Flowline
Valve House	
	Gem Valve House and Cabin
	Gem Dam Arch 8 Valve House
Stream Gages	
	Rush Creek below Gem Lake (USGS No. 10287281; SCE No. 352r)
Reservoir Gages	
	Gem Lake (USGS No. 10287280; SCE No. 352)
Power Lines	
	4 kV Agnew Dam to Gem Dam Power Line (0.81 mile)

Communication Lines
Communication Line from Rush Creek Powerhouse to Gem Lake Dam
Communication Line from Gem Valve House to Arch 8 Valve House
Communication Line from Gem Tram Hoist House to Gem Valve House
Trams and Hoist Houses
Gem Tram
Gem Tram Hoist House
Gem Tram Lower/Upper Landing
Trails
Lower Gem Dam Access Trail
Gem Dam Arch 8 Access Trail
Upper Gem Dam Access Trail
Gem Dam/Lake Ancillary and Support Facilities
Gem Lake Dock
Gem Lake Motor Barge
Gem Bunkhouse
Gem Outhouse
Gem Cookhouse
Gem Dam Compressor Shed
Gem Dam Storage Shed
Gem Dam Overhead Hoist House for Dam Length
Gem Dam Overhead Hoist House
Gem Fish Release Footbridge
Gem Tram Landing Footbridge
Gem Tram Bridge
Gem Weather Station
Gem Satellite Dish
Gem Solar Facility
Gem Valve House Tunnel

Agnew Dam Area
Dams
Agnew Dam
Reservoirs
Agnew Lake
Flowline
Agnew Dam to Agnew Junction Flowline
Valve House
Agnew Junction (Valve House and Stand Pipe)
Agnew Dam Valve House
Stream Gages
Rush Creek below Agnew Lake (USGS No. 10287289; SCE No. 357)
Reservoir Gages
Agnew Lake (USGS No. 10287285; SCE No. 351)
Power Lines
4 kV Rush Creek Powerhouse to Agnew Dam Power Line (0.78 mile)
4 kV Agnew Lake Dam Power Line
4 kV Upper Agnew Boat Dock Power Line (non-operational)
Communication Lines
Communication Line from Agnew Hoist House to Agnew Boathouse
Trams and Hoist Houses
Agnew Tram
Agnew Tram Hoist House
Agnew Tram Landing
Trails
Agnew Stream Gage Access Trail
Agnew Dam/Lake Ancillary and Support Facilities
Lower Agnew Lake Boathouse / Dock
Upper Agnew Lake Boathouse / Dock
Agnew Lake Motor Barge
Agnew Cabin
Agnew Weather Station
Agnew Flume (downstream of Agnew Dam)

Rush Creek Powerhouse Area
Penstocks
Agnew Junction to Rush Creek Powerhouse Penstock (No. 1)
Agnew Junction to Rush Creek Powerhouse Penstock (No. 2)
Powerhouse
Rush Creek Powerhouse
Gages
Rush Creek Powerhouse (USGS No. 10287300; SCE No. 367)
Transmission Lines
2.4 kV Switchyard to Powerhouse Transmission Line
Powerhouse Ancillary and Support Facilities
Rush Creek Powerhouse Complex Access Road
Cottages (2)
Garages (4)
Warehouse and Dock
Machine Shop
Pump House
Woodshed (2)
Helicopter Landing Site
Tank (butane)
Bridge over Powerhouse Tailrace
Bridge over Rush Creek

Table TERR 2-2. Special-Status Wildlife Species and CWHR Wildlife Habitats.

Special-Status Wildlife					CWHR Wildlife Habitats															
Common Name	Scientific Name	Federal Status	Forest Service Status	State Status	Herb-Dominated Habitats			Shrub-Dominated Habitats				Tree-dominated Habitats						Non-Vegetated Areas		
					Alpine Dwarf-Shrub	Annual Grassland	Wet Meadow	Low Sage	Montane Chaparral	Montane Riparian	Sagebrush	Aspen	Eastside Pine	Jeffrey Pine	Juniper	Lodgepole Pine	Subalpine Conifer	White Fir	Lacustrine	Riverine
Invertebrates¹																				
monarch butterfly	<i>Danaus plexippus</i>	FC	—	—	X	X	X	X	X	X	X									
Sierra sulphur butterfly	<i>Colias behrii</i>	—	FSCC	—	X		X			X							X			
Mono Lake checkerspot butterfly	<i>Euphydryas editha monoensis</i>	—	FSCC	—	X	X	X						X	X	X	X		X		
apache fritillary butterfly	<i>Speyeria nokomis apacheana</i>	—	FSCC	—			X			X									X	
Birds																				
northern goshawk	<i>Accipiter gentilis</i>	—	—	SSC	X			X	X	X	X	X	X	X	X	X	X	X		
golden eagle	<i>Aquila chrysaetos</i>	Eagle Act	—	CFP	X	X	X	X	X	X	X		X	X	X	X	X	X		X
bald eagle	<i>Haliaeetus leucocephalus</i>	Eagle Act	—	SE, CFP		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
American peregrine falcon	<i>Falco peregrinus anatum</i>	FD	—	CFP	X	X	X	X	X	X	X		X	X	X	X		X	X	X
short-eared owl	<i>Asio flammeus</i>	—	—	SSC		X	X	X		X	X		X	X	X			X		
long-eared owl	<i>Asio otus</i>	BCC	—	SSC		X	X	X	X	X	X	X	X		X			X		
flamulated owl	<i>Psiloscops flammeolus</i>	BCC	—	—					X	X		X	X	X		X	X	X		
black swift	<i>Cypseloides niger</i>	BCC	—	SSC		X	X		X	X		X		X		X	X	X	X	X
Calliope hummingbird	<i>Selasphorus calliope</i>	BCC	—	—	X		X		X	X		X	X	X		X	X	X		
Lewis's woodpecker	<i>Melanerpes lewis</i>	BCC	—	—		X	X	X	X	X	X	X	X	X	X			X		
olive-sided flycatcher	<i>Contopus cooperi</i>	BCC	—	SSC						X		X	X	X		X	X	X		
little willow flycatcher	<i>Empidonax trailii brewsteri</i>	—	FSCC	SE			X			X										
yellow warbler	<i>Setophaga petechia</i>	—	—	SSC					X	X		X	X	X		X		X		
Cassin's finch	<i>Haemorhous cassinii</i>	BCC	—	—			X			X	X	X	X	X	X	X	X			
Mammals																				
Mt. Lyell shrew	<i>Sorex lyellii</i>	—	—	SSC			X			X		X					X			
pallid bat	<i>Antrozous pallidus</i>	—	—	SSC		X	X	X	X	X	X		X	X	X	X		X		X
Townsend's big-eared bat	<i>Corynorhinus townsendii</i>	—	—	SSC		X	X	X	X	X	X	X	X	X	X		X		X	X
spotted bat	<i>Euderma maculatum</i>	—	—	SSC		X	X	X	X	X	X		X	X	X		X		X	
Sierra Nevada snowshoe hare	<i>Lepus americanus tahoensis</i>	—	—	SSC						X		X		X		X	X	X		

Special-Status Wildlife					CWHR Wildlife Habitats																
Common Name	Scientific Name	Federal Status	Forest Service Status	State Status	Herb-Dominated Habitats			Shrub-Dominated Habitats				Tree-dominated Habitats						Non-Vegetated Areas			
					Alpine Dwarf-Shrub	Annual Grassland	Wet Meadow	Low Sage	Montane Chaparral	Montane Riparian	Sagebrush	Aspen	Eastside Pine	Jeffrey Pine	Juniper	Lodgepole Pine	Subalpine Conifer	White Fir	Lacustrine	Riverine	Barren
western white-tailed jackrabbit	<i>Lepus townsendii townsendii</i>	—	—	SSC	X		X	X			X		X	X	X	X	X				
Sierra Nevada mountain beaver	<i>Aplodontia rufa californica</i>	—	—	SSC			X			X		X	X	X		X	X	X			
Sierra Nevada red fox – Sierra Nevada DPS	<i>Vulpes vulpes necator</i>	FE	—	ST	X	X	X		X	X		X	X	X		X	X	X			X
North American wolverine – Contiguous U.S. DPS	<i>Gulo gulo luscus</i>	FT	—	ST, CFP	X		X		X	X		X		X		X	X	X			X
Sierra marten	<i>Martes caurina sierrae</i>	—	FSCC	—			X			X		X	X	X		X	X	X			X
American badger	<i>Taxidea taxus</i>	—	—	SSC	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X
ringtail	<i>Bassariscus astutus</i>	—	—	CFP		X	X	X	X	X	X	X	X	X	X			X			X
Sierra Nevada bighorn sheep ²	<i>Ovis canadensis sierrae</i>	FE	—	SE, CFP	X	X			X	X							X				X

¹ Invertebrate preference for CWHR Wildlife Habitats was determined by reviewing existing literature on habitat preferences for each species and matching to CWHR descriptions. The CWHR system currently has no habitat associations for invertebrates.

² Sierra Nevada bighorn sheep are not listed in CWHR Wildlife Habitats system. Sierra Nevada bighorn sheep preference for CWHR Wildlife Habitats was determined by reviewing existing literature on habitat preferences for the species.

Federal Status

- BCC = Bird of Conservation Concern
- Eagle Act = Bald and Golden Eagle Protection Act
- FC = Candidate Species
- FD = Federal Delisted
- FE = Federal Endangered
- FPT = Federal Proposed Threatened
- FT = Federal Threatened

Forest Service Status

- FSCC = Inyo National Forest Service Species of Conservation Concern

State Status

- CFP = California Fully Protected
- SE = California Endangered
- SSC = California Species of Conservation Concern
- ST = California Threatened

Table TERR 2-3. Special-Status and Common Wildlife Species Observed in the Study Area During 2023 Technical Studies

Common Name ¹	Scientific Name ¹	Status			Type of Detection			
		Federal	State	Forest Service	Visual/Auditory	Scat	Den/Bedding Area	Tracks/Feathers
Invertebrates – Butterflies								
Desert orange-tip	<i>Anthocharis cethura</i>	—	—	—	X			
Common ringlet	<i>Ceononympha tullia</i>	—	—	—	X			
Orange sulphur	<i>Colias eurytheme</i>	—	—	—	X			
Monarch butterfly	<i>Danaus plexippus</i>	FC	—	—	X			
Lorquin's admiral	<i>Limenitis lorquini</i>	—	—	—	X			
Mourning cloak	<i>Nymphalis antiopa</i>	—	—	—	X			
Black swallowtail	<i>Papilio polyxenes</i>	—	—	—	X			
Western tiger swallowtail	<i>Papilio rutulus</i>	—	—	—	X			
Satyr comma	<i>Polygonia satyrus</i>	—	—	—	X			
Western white	<i>Pontia occidentalis</i>	—	—	—	X			
Painted lady	<i>Vanessa cardui</i>	—	—	—	X			
White-lined sphinx moth	<i>Hyles lineata</i>	—	—	—	X			
Amphibians								
Sierra tree frog	<i>Pseudacris sierrae</i>	—	—	—	X			
Reptiles								
Sagebrush lizard	<i>Sceloporus graciosus</i>	—	—	—	X			
Sierra alligator lizard	<i>Elgaria coerulea palmeri</i>	—	—	—	X			
Mountain garter snake	<i>Thamnophis elegans elegans</i>	—	—	—	X			
Birds								
Wood duck	<i>Aix sponsa</i>	—	—	—	X			
Green-winged teal	<i>Anas crecca</i>	—	—	—	X			
Mallard	<i>Anas platyrhynchos</i>	—	—	—	X			X
Common merganser	<i>Mergus merganser</i>	—	—	—	X			
Black-crowned night-heron	<i>Nycticorax nycticorax</i>	—	—	—	X			
Turkey vulture	<i>Cathartes aura</i>	—	—	—	X			
Red-tailed hawk	<i>Buteo jamaicensis</i>	—	—	—	X			
Golden eagle	<i>Aquila chrysaetos</i>	Eagle Act	CFP	—	X			
Bald eagle	<i>Haliaeetus leucocephalus</i>	Eagle Act	SE, CFP	FSCC	X			
Osprey	<i>Pandion haliaetus</i>	—	—	—	X			
Sooty grouse	<i>Dendragapus fuliginosus</i>	—	—	—	X			
American coot	<i>Fulica americana</i>	—	—	—	X			

Common Name ¹	Scientific Name ¹	Status			Type of Detection				
		Federal	State	Forest Service	Visual/Auditory	Scat	Den/Bedding Area	Tracks/Feathers	Remains
Sora	<i>Porzana carolina</i>	—	—	—	X				
Spotted sandpiper	<i>Actitis macularius</i>	—	—	—	X				
California gull	<i>Larus californicus</i>	—	—	—	X				
Anna's hummingbird	<i>Calypte anna</i>	—	—	—	X				
Calliope hummingbird	<i>Selasphorus calliope</i>	BCC	—	—	X				
Downy woodpecker	<i>Picoides pubescens</i>	—	—	—	X				
Hairy woodpecker	<i>Picoides villosus</i>	—	—	—	X				
Northern flicker	<i>Colaptes auratus</i>	—	—	—	X				
Red-breasted sapsucker	<i>Sphyrapicus ruber</i>	—	—	—	X				
Williamson's sapsucker	<i>Sphyrapicus thyroideus</i>	—	—	—	X				
Western wood-pewee	<i>Contopus sordidulus</i>	—	—	—	X				
Cassin's vireo	<i>Vireo cassinii</i>	—	—	—	X				
Warbling vireo	<i>Vireo gilvus</i>	—	—	—	X				
Steller's jay	<i>Cyanocitta stelleri</i>	—	—	—	X				
Clark's nutcracker	<i>Nucifraga columbiana</i>	—	—	—	X				
Common raven	<i>Corvus corax</i>	—	—	—	X				
Tree swallow	<i>Tachycineta bicolor</i>	—	—	—	X				
Violet-green swallow	<i>Tachycineta thalassina</i>	—	—	—	X				
Mountain chickadee	<i>Poecile gambeli</i>	—	—	—	X				
Red-breasted nuthatch	<i>Sitta canadensis</i>	—	—	—	X				
Brown creeper	<i>Certhia americana</i>	—	—	—	X				
House wren	<i>Troglodytes aedon</i>	—	—	—	X				
Rock wren	<i>Salpinctes obsoletus</i>	—	—	—	X				
Ruby-crowned kinglet	<i>Regulus calendula</i>	—	—	—	X				
American robin	<i>Turdus migratorius</i>	—	—	—	X				
Hermit thrush	<i>Catharus guttatus</i>	—	—	—	X				
Townsend's solitaire	<i>Myadestes townsendi</i>	—	—	—	X				
Sage thrasher	<i>Oreoscoptes montanus</i>	—	—	—	X				
Orange-crowned warbler	<i>Vermivora celata</i>	—	—	—	X				
Nashville warbler	<i>Vermivora ruficapilla</i>	—	—	—	X				
Yellow-rumped warbler	<i>Dendroica coronata</i>	—	—	—	X				
Yellow warbler	<i>Setophaga petechia</i>	—	SSC	—	X				
MacGillivray's warbler	<i>Oporornis tolmiei</i>	—	—	—	X				

Common Name ¹	Scientific Name ¹	Status			Type of Detection				
		Federal	State	Forest Service	Visual/Auditory	Scat	Den/Bedding Area	Tracks/Feathers	Remains
Wilson's warbler	<i>Wilsonia pusilla</i>	—	—	—	X				
Black-headed grosbeak	<i>Pheucticus melanocephalus</i>	—	—	—	X				
Western tanager	<i>Piranga ludoviciana</i>	—	—	—	X				
Green-tailed towhee	<i>Pipilo chlorurus</i>	—	—	—	X				
Lark sparrow	<i>Chondestes grammacus</i>	—	—	—	X				
Song sparrow	<i>Melospiza melodia</i>	—	—	—	X				
Savannah sparrow	<i>Passerculus sandwichensis</i>	—	—	—	X				
Dark-eyed junco	<i>Junco hyemalis</i>	—	—	—	X				
White-crowned sparrow	<i>Zonotrichia leucophrys</i>	—	—	—	X				
Red-winged blackbird	<i>Agelaius phoeniceus</i>	—	—	—	X				
Brewer's blackbird	<i>Euphagus cyanocephalus</i>	—	—	—	X				
Brown-headed cowbird	<i>Molothrus ater</i>	—	—	—	X				
Red crossbill	<i>Loxia curvirostra</i>	—	—	—	X				
Pine siskin	<i>Spinus pinus</i>	—	—	—	X				
Mountain bluebird	<i>Sialia currucoides</i>	—	—	—	X				
Cassin's finch	<i>Haemorhous cassinii</i>	BCC	—	—	X				
Mammals									
Montane vole	<i>Microtus montanus</i>	—	—	—	X				
Golden-mantled ground squirrel	<i>Spermophilus lateralis</i>	—	—	—	X				
Yellow-bellied marmot	<i>Marmota flaviventris</i>	—	—	—	X				
Chipmunk	<i>Neotamias spp.</i>	—	—	—	X				
Douglas squirrel	<i>Tamiasciurus douglasii</i>	—	—	—	X				
Belding's ground squirrel	<i>Urocitellus beldingi</i>	—	—	—	X				
American pika	<i>Ochotona princeps</i>	—	—	—	X				
Raccoon	<i>Procyon lotor</i>	—	—	—	X				
Black bear	<i>Ursus americanus</i>	—	—	—		X			
Coyote	<i>Canis latrans</i>	—	—	—	X				
Mule deer	<i>Odocoileus hemionus</i>	—	—	—	X				

¹ Special-status wildlife species are indicated in bold text.

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Table TERR 2-4. Special-Status Terrestrial Wildlife Species Known or Potentially Occurring Within 1 Mile of the FERC Project Boundary.

Scientific/Common Name	Federal Status	Forest Service Status	State Status	Habitat	Likelihood for Occurrence
Known to Occur or Critical Habitat is Present in the FERC Project Boundary or Within 1 Mile of the Boundary					
<i>Danaus plexippus</i> Monarch butterfly	FC	—	—	Overwintering populations occur in coastal California. In late-February or March, monarchs will disperse from wintering areas to interior California. Breeding occurs on milkweed (<i>Asclepias</i> spp.) which occur in short and tall grass prairies, livestock pastures, agricultural margins, roadsides, wetland and riparian areas, sandy areas, gardens, open forests, and woodlands.	Known to occur within 1 mile of the FERC Project boundary. Observed migrating near Waugh Lake and Gem Lake during technical studies implemented in 2023. No milkweeds were observed in the Project area during TERR 1 technical studies, so the Project area does not contain suitable breeding habitat for this species. Flowering plants in the Project area provide suitable foraging habitat for the species during their migration to wintering habitat on the coast.
<i>Aquila chrysaetos</i> golden eagle	Eagle Act	—	CFP (nesting and wintering)	Grasslands and early successional stages of forest and shrub habitats for foraging at elevations up to 11,500 feet. Secluded cliffs with overhanging ledges or large trees in open areas with unobstructed view for nesting.	Known to Occur within 1 Mile of the FERC Project Boundary. Observations of golden eagles in the vicinity of Silver Lake were reported by agencies and members of the TERR 2 Technical Working Group (Linda Coffin, pers. comm). In addition, USFWS reported nests in the vicinity of Mono Craters and Bald Mountain (USFWS 2023). All nest occurrences are more than 4 miles from the study area.
<i>Haliaeetus leucocephalus</i> bald eagle	Eagle Act	FSCC	SE, CFP	Year-round resident in ice-free regions of California. Foraging areas include regulated and unregulated rivers, reservoirs, lakes, estuaries, and coastal marine ecosystems. Majority of bald eagles in California breed near reservoirs and nests are usually located within 1 mile of foraging habitat. Nests are typically placed in the branches of large conifer trees within dense stands of trees (Jackman and Jenkins 2004).	Known to occur in the FERC Project boundary. <ul style="list-style-type: none"> Observed flying over the Agnew Lake dam during monitoring conducted in the Project vicinity (Phase I) (SCE 2017). A subadult was observed flying over Waugh Lake during pre-construction surveys conducted at Rush Meadows Dam (Phase II) (SCE 2018). During technical studies conducted in 2023: <ul style="list-style-type: none"> One adult was observed perched in a large Jeffrey pine (<i>Pinus jeffreyi</i>) on the southern end of Silver Lake on multiple dates; One sub-adult was observed on a large pine (<i>Pinus</i> spp.) south of Rush Creek, near Gem Lake; One adult was observed gliding along the northern ridge of Gem Dam. One adult was observed perched in a pine along the southern shoreline of Gem Lake. One sub-adult was observed flying over Waugh Lake. One adult bald eagle was observed chasing an osprey on the north shoreline of Gem Lake.
<i>Selasphorus calliope</i> Calliope hummingbird	BCC	—	—	Prefers coniferous forests and mountain meadow habitats for breeding. In the Sierra Nevada, it typically nests above 4,000 feet elevation. Nests almost always in a lodgepole pine or aspen, immediately beneath live branches, and typically in riparian areas. Migrates and spend winter in central and southern Mexico.	Known to Occur within 1 Mile of the FERC Project Boundary. One individual was observed in willow habitats along Rush Creek above Silver Lake during technical studies implemented in 2023.

Scientific/Common Name	Federal Status	Forest Service Status	State Status	Habitat	Likelihood for Occurrence
<i>Setophaga petechia</i> yellow warbler	—	—	SSC (nesting)	Usually arrives in California in April, and migrates by October. Breeds in riparian woodlands from coastal and desert lowlands at elevations up to 8,000 feet in the Sierra Nevada. Also breeds in montane chaparral, open ponderosa pine, and mixed conifer habitats with substantial amounts of brush.	Known to occur within 1 Mile of the FERC Project boundary. During technical studies completed in 2023: <ul style="list-style-type: none"> An adult male was heard singing in willows (<i>Salix</i> spp.) south of Silver Lake and later detected by sight. Four individuals were observed in the vicinity of Silver Lake. Two individuals were observed along Rush Creek downstream of Silver Lake.
<i>Haemorhous cassinii</i> Cassin's finch	BCC	—	—	A common montane resident from 4,200 to 8,000 feet in elevation. Prefers tall, open coniferous forests, in lodgepole pine, red fir, and subalpine conifer habitats, especially for breeding. Most numerous near wet meadows and grassy openings; also frequents semiarid forests.	Known to occur in the FERC Project boundary. During technical studies completed in 2023 : <ul style="list-style-type: none"> A male and a female were observed foraging along the edge of a grassland in the Rush Creek Powerhouse area; An adult male was observed in a lodgepole pine (<i>Pinus contorta</i>) forest near the Frontier Pack Station (east of Rush Meadows Dam). Six individuals were observed near Rush Creek west of Waugh Lake. An adult male was observed along Rush Creek below Agnew Dam.
May Potentially Occur in the FERC Project Boundary or Within 1 Mile of the Boundary					
<i>Colias behrii</i> Sierra sulphur butterfly	—	FSCC	—	Endemic to the Sierra Nevada from Tuolumne County south to Tulare County. Found in alpine and subalpine meadows above 9,000 feet. Found in association with <i>Vaccinium</i> sp. and <i>Gentiana newberryi</i> host plants (Forest Service 2018b).	May potentially occur in appropriate habitat.
<i>Euphydryas editha monoensis</i> Mono Lake checkerspot butterfly	—	FSCC	—	The Mono checkerspot occurs on the east side of the Sierra Nevada in meadows and conifer forests, and Mono County is the center of its distribution (Forest Service 2018b).	May potentially occur in appropriate habitat.
<i>Speyeria nokomis apacheana</i> apache fritillary butterfly	—	FSCC	—	Moist meadows, seeps, marshes, and streams in the eastern Sierra Nevada. Specific to the host plant <i>Viola nephrophylla</i> , and is threatened by encroachment of non-native species such as <i>Cirsium vulgare</i> into meadow habitats (Forest Service 2018b).	May potentially occur in appropriate habitat.
<i>Accipiter gentilis</i> northern goshawk	—	—	SSC (nesting)	Middle to high elevation, mature, dense conifer forests for foraging and nesting. Casual in foothills during winter, northern deserts in pinyon-juniper woodland, and low elevation riparian habitats.	May potentially occur in appropriate habitat.
<i>Falco peregrinus anatum</i> American peregrine falcon	FD	—	CFP	Very uncommon breeding resident and uncommon as a migrant. Breeds in woodlands, forests, coastal habitats, and riparian areas near wetlands, lakes, rivers, or other water on high cliffs, banks, dunes, or mounds. Active nesting sites are known along the coast, in the Sierra Nevada, and in the mountains of northern California. Migrants occur along the coast and the western Sierra Nevada in spring and fall.	May potentially occur in appropriate habitat.
<i>Asio flammeus</i> short-eared owl	—	—	SSC (nesting)	Open areas with few trees, such as annual and perennial grasslands, prairies, dunes, meadows, irrigated lands, saline and fresh emergent wetlands. Needs elevated sites for perching and dense vegetation for roosting.	May potentially occur in appropriate habitat.
<i>Asio otus</i> long-eared owl	BCC	—	SSC (nesting)	Found in dense riparian habitat or other thickets in foothills and mountains with small, densely canopied trees for roosting and nesting. More common in Great Basin regions of California.	May potentially occur in appropriate habitat.

Scientific/Common Name	Federal Status	Forest Service Status	State Status	Habitat	Likelihood for Occurrence
<i>Psiloscops flammeolus</i> flammulated owl	BCC	—	—	Summer resident in coniferous habitats from ponderosa pine to red fir forests from 6,000 to 10,000 feet in elevation; prefers low to intermediate canopy closure. Breeds in the North Coast and Klamath Ranges, Sierra Nevada, and in suitable habitats in mountains in southern California.	May potentially occur in appropriate habitat.
<i>Cypseloides niger</i> black swift	BCC	—	SSC (nesting)	Nests in moist crevices or caves, or on cliffs near waterfalls in deep canyons at elevations ranging from 6,000 to 11,000 feet. Forages widely over many habitats; seems to avoid arid regions. Known from the high elevations of the Sierra National Forest.	May potentially occur in appropriate habitat.
<i>Melanerpes lewis</i> Lewis's woodpecker	BCC	—	—	Breeds east of the Sierra Nevada crest in a cavity excavated in sycamore, cottonwood, oak, or conifer trees. Winter resident in open oak savannas, broken deciduous and coniferous habitats with sufficient supply of acorns and insects.	May potentially occur in appropriate habitat.
<i>Contopus cooperi</i> olive-sided flycatcher	BCC	—	SSC	Uncommon to common, summer resident in a wide variety of forest and woodland habitats. Nesting habitats include mixed conifer, montane hardwood-conifer, Douglas-fir, redwood, red fir, and lodgepole pine forests from 3,000 to 9,000 feet in elevation.	May potentially occur in appropriate habitat.
<i>Empidonax traillii brewsteri</i> little willow flycatcher	—	FSCC	SE	Summer resident in wet meadow and montane riparian habitats at 2,000 to 8,000 feet in the Sierra Nevada. Most often occurs in broad, open river valleys or large mountain meadows with lush growth of shrubby willows. Requires meadows at least 1 acre in size for breeding, prefers meadows larger than 10 acres (Green et al. 2003).	May potentially occur in appropriate habitat. The CNDDDB query yielded one historic record within 1 mile of the boundary: <ul style="list-style-type: none"> One territorial male was observed singing in June 1982 about 0.5 mile east of the Rush Creek Powerhouse. Point counts conducted in this area between 1998 – 2003 did not detect any individuals. The NRIS query yielded two historic records within 1 mile of the boundary. <ul style="list-style-type: none"> One male was observed in June 1982 across Highway 158 in a meadow near the Rush Creek Powerhouse. Another male was observed in June 1982 approximately 1 mile northeast of the Rush Creek Powerhouse. No individuals were observed during technical studies completed in 2023.
<i>Sorex lyelli</i> Mt. Lyell shrew	—	—	SSC	Riparian habitats within high montane and cold steppe communities of the eastern slopes of the Sierra Nevada in the vicinity of Yosemite National Park. Uses logs, stumps, and other surface objects for cover.	May potentially occur in appropriate habitat.
<i>Antrozous pallidus</i> Pallid bat	—	—	SSC	Grasslands, shrublands, woodlands, and forests from sea level to 10,000 feet in elevation. Typically, day-roosts in caves, crevices, or mines. Night roosts are in more open areas. Requires open habitat for foraging. Pallid bat hibernates in winter. Maternal colonies form in April.	May potentially occur in appropriate habitat.
<i>Corynorhinus townsendii</i> Townsend's big-eared bat	—	—	SSC	Found in all but alpine and subalpine habitats; most abundant in mesic habitats up to 6,000 feet in elevation. Requires caves, mines, tunnels, buildings, or other man-made structures for roosting. Hibernates October through April. Locally migratory only. Extremely sensitive to disturbance and may abandon a roost if disturbed. The Inyo National Forest is known to provide hibernacula, but likely does not support maternity roosts because of its high elevation (Forest Service 2018b).	May potentially occur in appropriate habitat.

Scientific/Common Name	Federal Status	Forest Service Status	State Status	Habitat	Likelihood for Occurrence
<i>Euderma maculatum</i> Spotted bat	—	—	SSC	Ranges from arid deserts and grasslands through mixed conifer forests up to elevations of 10,600 feet in southern California. Prefers sites with adequate roosting habitat, such as cliffs. Often limited by the availability of cliff habitat. Feeds over water and along marshes. Capable of torpor and may hibernate. May make seasonal movements from high elevations in summer to lower elevations in autumn.	May potentially occur in appropriate habitat.
<i>Lepus americanus tahoensis</i> Sierra Nevada snowshoe hare	—	—	SSC	Found at upper elevations in the Cascades and Sierra Nevada. Found primarily in montane riparian habitats with thickets of alder and willow, in stands of young conifers interspersed with chaparral, and on edges of meadows.	May potentially occur in appropriate habitat.
<i>Lepus townsendii townsendii</i> Western white-tailed jackrabbit	—	—	SSC	Open areas with scattered shrubs in sagebrush, subalpine conifer, juniper, alpine dwarf-shrub, and perennial grassland habitats in the high eastern Sierra. Also uses low sagebrush, wet meadow, and early successional stages of various conifer habitats. Moves seasonally to lower elevations in the winter.	May potentially occur in appropriate habitat.
<i>Aplodontia rufa californica</i> Sierra Nevada mountain beaver	—	—	SSC	Dense riparian and open brushy stages of most forest types at elevations ranging from 3,900 to 10,100 feet in elevation. Deep, friable soils are required for burrowing along cool, moist microclimates. Line in burrows located in or near deep soils near streams and springs. Typical habitat in the Sierra is montane riparian.	May potentially occur in appropriate habitat.
<i>Vulpes vulpes necator</i> Sierra Nevada red fox (Sierra Nevada Distinct Population Segment [DPS])	FE	—	ST	The current range of the Sierra Nevada DPS of the Sierra Nevada red fox runs southeast along the Sierra crest from just south of Highway 88 to a few miles north of Kings Canyon National Park (USFWS 2021). Inhabits sub-alpine and high-elevation conifer areas including high-elevation meadows, rocky areas, scrub vegetation and open whitebark pine and lodgepole pine forest. Typically found between 8,100 and 11,600 feet in elevation. USFWS has not proposed to designate Critical Habitat for this species.	May potentially occur in appropriate habitat. Sierra Nevada red foxes have been detected on CDFW's Alpine Mesocarnivore survey grids in the vicinity of the Rush Creek Project between 2019 and 2023. The nearest observations are two 2019 camera trap observations southwest of Waugh Lake near Rogers Lake and Marie Pass (Hatfield et al. 2021, 2023; Julia Lawson, pers. comm.)
<i>Gulo gulo luscus</i> North American wolverine – Contiguous U.S. DPS	FT	—	ST, CFP	No breeding populations have been identified in California (USFWS 2023c). Wolverines require large territories in inaccessible landscapes at high elevation, access to seasonally varied food resources, physical/structural features (e.g., talus slopes, rugged terrain) for breeding, and habitats characterized by the presence of persistent spring snow (of greater than or equal to 1 meter on May 1). Occurs in Sierra Nevada at elevations ranging from 4,300 to 10,800 feet. Majority of recorded sightings are found above 8,000 feet in elevation. USFWS has not proposed to designate Critical Habitat for this species.	May potentially occur in appropriate habitat. Multiple sightings of a wolverine on the Inyo National Forest in Mono and Inyo counties were confirmed by CDFW in 2023 (CDFW 2023c). Another sighting was confirmed in Yosemite National Park in Tuolumne County (CDFW 2023c). The nearest known detection of wolverine was from the north shore of Thousand Islands Lakes, just south of the Project area (Julia Lawson, pers. comm.).
<i>Martes caurina sierrae</i> Sierra marten	—	FSCC	—	Martens are known from the high elevation forested plant communities. Optimal habitats are various mixed evergreen forests with more than 40% crown closure and large trees and snags for den sites. Most commonly found in red fir and lodgepole pine forests between 4,000 and 10,600 feet elevation.	May potentially occur in appropriate habitat. Alpine Mesocarnivore Studies detected 89 marten observations on grid cells in the Ritter Range study area (Hatfield et al. 2023).
<i>Taxidea taxus</i> American badger	—	—	SSC	Occurs throughout most of the state in areas with dry, friable soils. It is most abundant in drier open stages of most shrub, forest, and herbaceous habitats up to 12,000 feet in elevation.	May potentially occur in appropriate habitat.
<i>Bassariscus astutus</i> ringtail	—	—	CFP	Found in most forest and shrub habitats in close association with rock and/or riparian areas, usually not more than 0.6 mile from water. Dens in hollow trees, snags, or other cavities. Found from seal level up to 8,800 feet.	May potentially occur in appropriate habitat.

Scientific/Common Name	Federal Status	Forest Service Status	State Status	Habitat	Likelihood for Occurrence
<i>Ovis canadensis sierrae</i> Sierra Nevada bighorn sheep	FE	—	SE, CFP	Lives on steep, rugged slopes in the eastern Sierra Nevada in shrub, grassland, montane chaparral, subalpine conifer, or riparian habitats.	<p>May potentially occur in appropriate habitat.</p> <p>Critical habitat is present within 1 mile of the FERC Project boundary.</p> <p>Critical Habitat is present in the Project vicinity. Critical Habitat Unit 2 (Mount Gibbs) is present within 1 mile of the FERC Project boundary, but does not overlap the boundary (USFWS 2008b).</p> <p>In addition, the Cathedral Range Herd Unit (CDFW 2015), is located approximately 1.2 mile east of the FERC Project boundary.</p> <p>There are no known occurrences of this species in the FERC Project boundary or within 1 mile of the boundary. Collared individuals of the Mt. Gibbs herd commonly spend most of the year in alpine habitats and make seasonal movements between Mt. Gibbs and Mt. Lewis, approximately 10 miles north of the Project area (CDFW 2021). However, movements have been recorded between the Mount Gibbs herd and the Central recovery unit south of the Project area, and between the Mt. Gibbs Herd unit and the Cathedral Range Herd Unit to the east of the Project area (CDFW 2018). Therefore, there is some potential that individuals may migrate or disperse through the Project (USFWS 2007). Conversation with Lacey Greene, a bighorn sheep biologist, indicated that bighorn sheep are unlikely to move down into the Project area (Lacey Green, pers. comm.).</p>
Unlikely to Occur in the FERC Project Boundary or Within 1 Mile of the Boundary					
<i>Euphilotes batooides mazourka</i> square dotted blue	—	FSCC	—	Only known from badger flat adjacent to Mazourka peak from about 8,000 to 13,000 feet in elevation.	Unlikely to occur. The Project is outside the geographic range of this species.
<i>Plebejus icarioides inyo</i> Boisduval's blue	—	FSCC	—	Restricted to the Inyo Mountains around elevations of 9,000 feet.	Unlikely to occur. The Project is outside the geographic range of this species.
<i>Plebulina emigdionis</i> San Emigdio blue	—	FSCC	—	Found in southern California as far north as Inyo County, in desert shrubland and chaparral habitats and dry river courses and intermittent stream sides as well as adjacent flats.	Unlikely to occur. The Project is within Mono County, which is outside of the geographical range of this species.
<i>Tuberochernes aalbui</i> a cave obligate pseudoscorpion	—	FSCC	—	Only known from one location in Poleta Cave in the Inyo-White Mountains in Inyo County, California (Forest Service 2018b).	Unlikely to occur. The Project is outside the geographic range of this species.
<i>Actinemys marmorata</i> northwestern pond turtle	FPT	—	SSC	Found in perennial wetlands and slow-moving creeks and ponds with overhanging vegetation up to 6,500 feet in elevation in the Sierra Nevada (USFWS 2023d). It prefers suitable basking sites, such as logs and rocks, above the waterline.	Unlikely to occur. The Project is outside the elevation range of this species.
<i>Buteo swainsoni</i> Swainson's hawk	—	—	ST (nesting)	Uncommon breeding resident and migrant in the Central Valley, Klamath Basin, Northeastern Plateau, Lassen County, and Mojave Desert. Riparian woodlands, juniper-sage flats, and oak woodlands for nesting. Grasslands and agricultural areas for foraging.	Unlikely to occur. The Project does not contain suitable habitat for this species.
<i>Circus cyaneus</i> northern harrier	—	—	SSC (nesting)	Occurs in a variety of habitats at elevations up to 10,000 feet. Forages in open areas such as meadows, wetlands, and grasslands. Breeding habitat is up to 5,700 feet in the Sierra Nevada, in areas with shrubby vegetation near foraging habitat.	Unlikely to occur. The Project is outside the breeding (nesting) elevation range of this species.

Scientific/Common Name	Federal Status	Forest Service Status	State Status	Habitat	Likelihood for Occurrence
<i>Centrocercus urophasianus</i> greater sage-grouse – Bi-State DPS	FPT	—	State Candidate Endangered, SSC	Found in sagebrush, perennial grasslands, wet meadows, and desert scrub from 4,000 to over 9,000 feet in the eastern Sierra Nevada. Found in the Bodie Hills and Long Valley area of Mono County (Hall et al. 2008, USFWS 2020b).	Unlikely to occur. No appropriate habitat is present in the Project vicinity. Specifically: <ul style="list-style-type: none"> Primarily associated with sagebrush habitats with greater than 10% canopy cover and with low cover of western juniper and pinyon pine (Hall et al. 2008). Sagebrush scrub habitat in the Project vicinity is sparse and has a canopy cover of less than 10%. Intermixed conifers are abundant in sagebrush habitats in the study area. Species is unlikely to occur west of Highway 395 (Hall et al. 2008). No known occurrences of greater sage-grouse in the Project vicinity. The nearest known occurrence is approximately 24 miles southeast of the Project vicinity.
<i>Dendragapus fuliginosa howardi</i> Mt. Pinos sooty grouse	—	FSCC	SSC	Restricted to the Southern Sierra Nevada and the Piute and Tehachapi mountains, Mt. Pinos/Mt. Able, and Frasier Mountain.	Unlikely to occur. The Project is outside the geographic range of this species.
<i>Strix nebulosa</i> great gray owl	—	FSCC	CE (nesting)	Nests in old growth coniferous forests and forages in montane meadows. Distribution includes high elevations of the western slope Sierra Nevada and Cascade ranges, from 2,100 to 8,100 feet in elevation (Wu et al. 2016).	Unlikely to occur. The Project is outside the typical elevation range of this species and the Project vicinity does not provide suitable habitat.
<i>Coccyzus americanus occidentalis</i> Yellow-billed cuckoo – Western DPS	FT	—	SE	Breeds and forages in riparian areas with low woody vegetation in lowland California, especially willow-cottonwood habitat. Currently known from the Sacramento River Valley and the South Fork of the Kern River (USFWS 2021b). USFWS has designated critical habitat for this species. The Project area is outside critical habitat.	Unlikely to occur. The Project is outside the geographic range of this species.
<i>Strix occidentalis occidentalis</i> California spotted owl	BCC	FSCC	SSC	Dense, old growth, multi-layered mixed conifer, redwood, Douglas-fir, and oak woodland habitats in the western slope of the Sierra Nevada, from sea level to elevations of approximately 7,600 feet.	Unlikely to occur. The Project is outside the geographic range of this species.
<i>Empidonax traillii adastus</i> willow flycatcher	—	FSCC	SE	Found in the Great Basin and central Rocky Mountains south to Utah and Colorado. Found in a variety of shrubby habitats, but particularly montane riparian habitat with extensive growth of willows.	Unlikely to occur. The Project is outside the geographic range of this species.
<i>Xanthocephalus xanthocephalus</i> yellow-headed blackbird	—	—	SSC	Breeds and forages east of the Sierra Nevada in fresh emergent wetland with dense vegetation and deep water, often along borders of lakes or ponds. Winters in the Central Valley.	Unlikely to occur. The Project does not contain suitable habitat for this species.
<i>Eumops perotis californicus</i> western mastiff bat	—	—	SSC	Found in variety of habitats including desert scrub, chaparral, oak woodland, ponderosa pine, meadows and mixed conifer forests up to 4,600 feet in elevation. Distribution is likely limited by availability of significant rock features offering suitable roosting habitat.	Unlikely to occur. The Project is outside the elevational range of this species.
<i>Brachylagus idahoensis</i> pygmy rabbit	—	—	SSC	Associated with tall, dense, large-shrub stages of big sagebrush, greasewood, and rabbitbrush in Modoc, Lassen, and Mono counties.	Unlikely to occur. Big sagebrush scrub within the Project vicinity is sparsely distributed and does not represent suitable habitat for this species.

Scientific/Common Name	Federal Status	Forest Service Status	State Status	Habitat	Likelihood for Occurrence
<i>Pekania</i> [=Martes] <i>pennanti</i> fisher – Southern Sierra Nevada Distinct Population Segment [DPS]	FE	FSCC	ST	Large areas of mature, dense forest red fir, lodgepole pine, ponderosa pine, mixed conifer, and Jeffery pine forests with snags and greater than 50% canopy closure. Known from elevations of 4,000 to 8,000 feet. USFWS has proposed critical habitat for this species. The Project area is outside of proposed critical habitat.	Unlikely to occur. The Project is outside the geographic range of this species. The only population of fishers known on the Inyo National Forest occurs on the Kern Plateau along the boundary of the Sequoia National Forest (Forest Service 2018b).
<i>Ovis canadensis nelsoni</i> Nelson desert bighorn sheep	—	FSCC	CFP	Found in Mojave desert mountains from southeastern Mono County south to Imperial County. Only known from the White Mountains within the Inyo National Forest (Forest Service 2018b).	Unlikely to occur. The Project is outside the geographic range of this species.

Federal Status

BCC = Bird of Conservation Concern
 Eagle Act = Bald and Golden Eagle Protection Act
 FC = Candidate Species
 FD = Federal Delisted
 FE = Federal Endangered
 FPT = Federal Proposed Threatened
 FT = Federal Threatened

Forest Service Status

FSCC = Inyo National Forest Service Species of Conservation Concern

State Status

CFP = California Fully Protected
 SE = California Endangered
 SSC = California Species of Conservation Concern
 ST = California Threatened

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Table TERR 2-5. Consistency of Project Transmission Line and Power Line Tower/Pole Configurations with APLIC Guidelines.

Tower/Pole Number	Conclusion	Risk Factors		
		Uncovered phase conductors <60 inches apart with no perch guard	Distance between energized parts and grounded equipment on towers/poles < 60 inches	Uninsulated or partially uninsulated metal guy wires, jumper wires, or transformer cables
Gem Dam Area				
4kV Agnew Dam to Gem Dam Power Line (0.81 mile)				
Non-operational	No risk for avian electrocution	—	—	—
Agnew Dam Area				
4kV Rush Creek Powerhouse to Agnew Dam Power Line (0.78 mile)				
Tower immediately adjacent to powerhouse	Potential risk for avian electrocution	—	X	—
20987 - CIT	Potential risk for avian electrocution	X	—	—
4840586E	Potential risk for avian electrocution	X	—	X
4423278E	Potential risk for avian electrocution	X	—	—
4423279E	Potential risk for avian electrocution	X	—	X
4423280E	Potential risk for avian electrocution	X	—	—
4423281E	Potential risk for avian electrocution	X	—	X
4423282E	Potential risk for avian electrocution	—	—	X
4423283E	Potential risk for avian electrocution	X	—	—
4423284E	Potential risk for avian electrocution	X	—	X
4423285E	Potential risk for avian electrocution	X	—	X
4423286E	Potential risk for avian electrocution	X	—	X

Tower/Pole Number	Conclusion	Risk Factors		
		Uncovered phase conductors <60 inches apart with no perch guard	Distance between energized parts and grounded equipment on towers/poles < 60 inches	Uninsulated or partially insulated metal guy wires, jumper wires, or transformer cables
4423287E	Potential risk for avian electrocution	X	X	X
4423288E	Potential risk for avian electrocution	X	X	X
4 kV Agnew Lake Dam Power Line				
Two unnumbered poles located at dam	No risk for avian electrocution	—	—	—
4kV Upper Agnew Boat Dock Power Line				
Non-operational	No risk for avian electrocution	—	—	—
Rush Creek Powerhouse Area				
2.4 kV Switchyard to Powerhouse Transmission Line				
No towers/poles associated with this line	No risk for avian electrocution	—	—	—

Table TERR 2-6. Results of Field Assessment of Project Facilities with Potential to Support Bat Roosting Habitat, by Facility Type.

Project Facility	Potential Roost Habitat Element			Suitable Roosting Habitat Present?	Notes	Surrounding Environmental Conditions	Photo ID ¹
	Vertical or Roofed Elements	Cracks/ Crevices	High Solar Exposure				
Dams							
Rush Meadows Dam		X	X	Yes	The dam structure has cracks and crevices that could provide suitable bat roosting habitat, and appropriate thermal conditions (high solar exposure).	Rush Creek; Waugh Lake; subalpine forest	1
Gem Dam	X	X	X	Yes	The dam contains cracks in concrete overhangs and has appropriate thermal conditions (high solar exposure).	Gem Lake; Rush Creek; rock outcrop	2
Agnew Dam	X	X	X	Yes	The dam has concrete overhangs and crevices and appropriate thermal conditions (high solar exposure).	Agnew Lake; rock outcrop	3
Valve Houses							
Rush Meadows Dam Valve House				No	The valve house does not have overhangs or crevices suitable for bat roosting. Valve house is partially inundated with water and does not have appropriate thermal conditions.	Waugh Lake; subalpine conifers	4
Gem Valve House and Cabin	X	X	X	Yes	This wooden building has openings along the tin roof and cracks around windows where bats could enter to access suitable bat roosting habitat. Building receives appropriate solar exposure.	Rush Creek; rock outcrop	5
Gem Dam Arch 8 Valve House				No	This metal building has no cracks, crevices, or entry points for bats. Roofed elements are made of metal, which do not provide a suitable gripping surface for roosting.	Rock outcrops; Rush Creek	6
Gem Flowline Valve House				No	Metal structure does not provide overhangs or cracks and crevices suitable for roosting. Position over the emergency spillway creates cold thermal conditions unsuitable for roosting.	Rock outcrop; streams	7
Agnew Junction (Valve House and Stand Pipe)	X	X	X	Yes	Building contains overhangs with cracks along the cracks in the corrugated metal roof that could provide access to interior.	Sagebrush	8
Agnew Dam Valve House	X	X		Yes	Crack above door provides access; corrugated metal roof provides suitable roofed element. Because of the proximity to dam outlet pipes and shady position, building is likely colder than surrounding conditions. Cold buildings are not preferred for maternity roosting, but could be used for hibernation.	Agnew Lake; Rush Creek	9
Stream Gages							
Rush Creek below Rush Meadows (Waugh Lake) (USGS No. 10287262; SCE No. 359r)				No	The gage is not accessible and submerged by high water flow.	Rush Creek; subalpine conifer forest	N/A
Rush Creek below Gem Lake (USGS No. 10287281; SCE No. 352r)				No	This gage is located inside Gem Arch 8 Valve House, which is inaccessible to bats.	Rock outcrops	N/A
Rush Creek below Agnew Lake (USGS No. 10287289; SCE No. 357)	X	X	X	Yes	The gage building contains suitable cracks and crevices. Underneath the gage is a roofed overhang. Building receives appropriate solar exposure.	Rush Creek; rock outcrops; willows	10

Project Facility	Potential Roost Habitat Element			Suitable Roosting Habitat Present?	Notes	Surrounding Environmental Conditions	Photo ID ¹
	Vertical or Roofed Elements	Cracks/ Crevices	High Solar Exposure				
Reservoir Gages							
Waugh Lake (USGS No. 10287260; SCE 359)				No	This gage is located inside gage house building.	Rock outcrops; Rush Creek	N/A
Gem Lake (USGS No. 10287280; SCE No. 352)	X	X		Yes	This gage building is metal with wooden roofed elements and a crack in the door for bats to access. However, it is located in the dam arch and is cold and shaded. Cold buildings are not preferred for maternity roosting, but could be used for hibernation.	Rock outcrops, Rush Creek	11
Agnew Lake (USGS No. 10287285; SCE No. 351)				No	This gage is a concrete slab with no overhangs, cracks, or crevices and is low to the ground.	Agnew Lake; rock outcrops	12
Ancillary and Support Facilities							
Rush Meadows Equipment Shed	X		X	Yes	This building contains a wooden overhang on the exterior but lacks cracks and crevices around doors or windows.	Rush Creek; rock outcrops	13
Rush Meadows Dam Gage House	X		X	Yes	Building contains wooden overhangs, but lacks cracks and crevices allowing access to the interior. Building has appropriate solar exposure.	Rush Creek; rock outcrops	14
Rush Meadows Dam Solar Facility				No	Metal structure does not contain suitable overhangs or crevices for bat roosting.	Rush Creek; rock outcrops	15
Gem Lake Dock				No	This is a concrete slab close to the ground and water. There is no overhangs or cracks and crevices for roosting.	Gem Lake; rock outcrops	16
Gem Lake Motor Barge				No	Watercraft does not represent appropriate bat roosting habitat.	Gem Lake; rock outcrops	17
Gem Bunkhouse	X	X	X	Yes	This building provides suitable roofed elements, cracks, crevices, and open window entrance points for bats. Building is positioned in an area with solar exposure.	Rock outcrops; montane chaparral; slopes	18
Gem Outhouse	X	X	X	Yes	This wooden building contains suitable roofed elements, cracks and crevices for bat entry, and is in an area that has appropriate thermal conditions (high solar exposure).	Rock outcrops; montane chaparral	19
Gem Cookhouse	X	X	X	Yes	This building contains suitable roofed elements for bat roosting, and has a broken window and gaps in the metal siding for bats to enter. The roof is a corrugated metal sheet with enough spacing for bats to roost under the eaves. Building is located in an area that has appropriate thermal conditions (high solar exposure).	Rock outcrops; montane chaparral	20
Gem Dam Compressor Shed				No	New metal building with no gaps in door or along roofline. There are metal eaves do not provide a suitable gripping surface for bat roosting.	Rock outcrops; Gem Lake	21
Gem Dam Storage Shed		X	X	Yes (marginal)	Metal building does not provide suitable bat roosting habitat, but the pipe opening provides a large enough crevice for some smaller bat species to roost. The building has appropriate thermal conditions (high solar exposure).	Rock outcrops; Gem Lake	22
Gem Dam Overhead Hoist House for Dam Length	X	X	X	Yes	Wooden building with holes that bat could potentially access suitable roosting habitat.	Rock outcrops; Gem Lake	23
Gem Dam Overhead Hoist House	X	X	X	Yes	Corrugated metal building with wooden roofed elements on exterior and contains cracks and crevices suitable for roosting habitat. The building has appropriate thermal conditions (high solar exposure).	Rock outcrops; Gem Lake	24

Project Facility	Potential Roost Habitat Element			Suitable Roosting Habitat Present?	Notes	Surrounding Environmental Conditions	Photo ID ¹
	Vertical or Roofed Elements	Cracks/ Crevices	High Solar Exposure				
Gem Fish Release Footbridge				No	Metal grating bridge that stretches over Rush Creek does not provide roofed elements or cracks and crevices suitable for roosting. Metal material does not provide a suitable gripping surface.	Rush Creek; rock outcrops	25
Gem Tram Landing Footbridge	X		X	Yes	Open slated wood provides roofed elements for roosting, but structure lacks tight cracks and crevices and is very open to the air. Location receives suitable solar exposure for day roosting, but is too open for maternity roosting.	Rock outcrops; montane chaparral	26
Gem Tram Bridge	X			No	The underside of the tram bridge provides roofed elements, but the tram slats are very open and the wood lacks cracks or crevices. Tram bridge is also over Rush Creek, which drains water from the bottom of Gem Lake, which creates a microclimate that may be too cold for day-roosting bats considering the openness of the bridge.	Rush Creek; subalpine conifer forest; rock outcrops	27
Gem Weather Station	X	X	X	Yes	There are cracks in the metal door with an overhanging wooden shelf inside that could provide suitable roosting habitat. Building has appropriate thermal conditions (high solar exposure).	Rock outcrop; Rush Creek	28
Gem Satellite Dish/ Gem Solar Facility				No	The satellite dish and solar facility do not provide roofed elements or cracks and crevices suitable roosting habitat. The building that is connected to the satellite dish/solar facility has no openings for bats to enter.	Rock outcrop; Rush Creek; montane chaparral	29
Gem Valve House Tunnel				No	The tunnel is used as a spillway during high flows. The concrete pad does not contain roofed elements or cracks and crevices suitable for roosting and the conveyance of water makes this structure unsuitable.	Rock outcrop; perennial stream	30
Lower Agnew Lake Boathouse/Dock	X	X	X	Yes	The building contains holes for bats to enter and suitable solar exposure. The cracks in the corrugated metal roof could also provide suitable entrance points for roosting.	Agnew Lake; aspen; curl-leaf mountain mahogany	31
Upper Agnew Lake Boathouse/Dock	X	X	X	Yes	The building contains suitable wooden roofed elements with corrugated metal sheeting that provides cracks and crevices for bats to access the interior. The concrete pad where the building sits also has a wooden edge that also provide roofed elements. The building has appropriate thermal conditions (high solar exposure).	Agnew Lake; Rush Creek	32a, b
Agnew Lake Motor Barge				No	Motor barge is a flat surface located within Agnew that does not provide suitable roofed elements or cracks and crevices for roosting.	Agnew Lake	33
Agnew Cabin	X	X	X	Yes	Building provides vertical and roofed components that could potentially support roosting bats. The building has cracks and crevices where bats could enter. Building is located in an area that has appropriate thermal conditions (high solar exposure).	Aspen; curl leaf mountain mahogany	34
Agnew Flume (downstream of Agnew Dam)				No	The flume is made of relatively new concrete that does not have cracks and crevices for bats to enter and lacks roofed elements. The flume conveys Rush Creek which makes the walls of the structure cold.	Rush Creek; rock outcrop	35
Rush Creek Powerhouse Cottage No. 1 ²	X	X	X	Yes	Bats could potentially roost under roof eaves on the building. There may be a few cracks under the shingles for bats to access the interior. Building receives solar exposure.	Aspen; Jeffrey pine; wet meadow; stream; developed	36

Project Facility	Potential Roost Habitat Element			Suitable Roosting Habitat Present?	Notes	Surrounding Environmental Conditions	Photo ID ¹
	Vertical or Roofed Elements	Cracks/ Crevices	High Solar Exposure				
Rush Creek Powerhouse Garage No. 1 ²	X	X	X	Yes	Structure contains vertical and roofed components and cracks and crevices suitable for bat roosting. Building has appropriate thermal conditions (high solar exposure).	Aspen; Jeffrey pine; wet meadow; stream; developed	37
Rush Creek Powerhouse Cottage No. 2 ²	X		X	Yes	There are eaves located on the building that provide roofed elements. The building is mostly sealed around edges and does not display cracks or crevices. Building has appropriate thermal conditions (high solar exposure).	Lawn; developed; rock outcrops	38
Rush Creek Powerhouse Garage No. 2 ²	X	X	X	Yes	Building provides vertical and roofed components that could potentially support roosting bats. The building has cracks and crevices that bats could enter and the building has appropriate thermal conditions (high solar exposure).	Aspen; streams; Jeffrey pine; developed	39
Rush Creek Powerhouse Garage No. 3 ²	X	X	X	Yes	Building provides vertical and roofed components that could potentially support roosting bats. The building has cracks and crevices that bats could enter and the building has appropriate thermal conditions (high solar exposure).	Developed; aspen; willow	40
Rush Creek Powerhouse Garage No. 4 ²	X	X	X	Yes	Building provides vertical and roofed components that could potentially support roosting bats. The building has cracks and crevices where bats could enter the building has appropriate thermal conditions (high solar exposure).	Wet meadow; grassland; developed	41
Rush Creek Powerhouse Warehouse and Dock	X		X	Yes	Exterior of the building provides vertical and roofed components that could potentially support roosting bats, but the building lacks cracks and crevices for bats to enter interior.	Developed	42
Rush Creek Powerhouse Building 0113 ²	X	X	X	Yes	Building provides vertical and roofed components that could potentially support roosting bats. The building has cracks and crevices that bats could enter, and the building has appropriate thermal conditions (high solar exposure).	Aspen; Jeffrey pine; perennial stream (Rush Creek)	43
Rush Creek Powerhouse Machine Shop	X	X	X	Yes	Building provides vertical and roofed components that could potentially support roosting bats. The building has cracks and crevices that bats could enter. The building also provides warm thermal conditions for potential roosting bats.	Aspen; willow; developed	44
Rush Creek Powerhouse Pump House	X	X	X	Yes	Building provides vertical and roofed components that could potentially support roosting bats. The building has cracks and crevices that bats could enter and has appropriate thermal conditions (high solar exposure).	Willow; grassland; developed	45
Rush Creek Powerhouse Woodshed No. 1 ²	X	X	X	Yes	Building provides vertical and roofed components that could potentially support roosting bats. The building has abundant cracks and crevices that bats could enter, and the building has appropriate thermal conditions (high solar exposure).	Aspen; Jeffrey pine; streams; meadow	46
Rush Creek Powerhouse Woodshed No. 2 ²	X		X	Yes	Building provides vertical and roofed components that could potentially support roosting bats on the exterior. The building does not contain cracks and crevices to enter the interior, but it receives appropriate solar exposure.	Rock outcrops; Jeffrey pine	47
Bridge over Rush Creek Powerhouse Tailrace				No	Tailrace water levels are routinely high (to bottom of bridge), which would prevent bat roosting.	Tailrace channel; aspen	48
Rush Creek Powerhouse Tailrace				No	A tailrace is a cold, fast, flowing channel of water out of the powerhouse which would not provide suitable bat roosting habitat.	Developed parking lot; aspen; lodgepole pine	49

Project Facility	Potential Roost Habitat Element			Suitable Roosting Habitat Present?	Notes	Surrounding Environmental Conditions	Photo ID ¹
	Vertical or Roofed Elements	Cracks/ Crevices	High Solar Exposure				
Bridge over Rush Creek	X			Yes	Bridge provides roofed component that could potentially support roosting bats during low flow conditions.	Rush Creek; aspen; lodgepole pine; developed	50
Unnamed Shed near Rush Creek Powerhouse ²	X	X	X	Yes	Building provides vertical and roofed components that could potentially support roosting bats. Cracks and crevices on the shingle siding may provide openings for small bats. Building has appropriate thermal conditions (high solar exposure).	Developed; aspen	51
Trams and Hoist Houses							
Gem Tram				No	Tram line does not provide vertical or roofed components that provide appropriate bat roosting habitat and lies against the ground.	Rock outcrops; Rush Creek	53
Gem Tram Hoist House	X	X	X	Yes	Building provides vertical and roofed components that could potentially support roosting bats. The building has cracks and crevices that bats could enter and has appropriate thermal conditions (high solar exposure).	Rock outcrops; Gem Lake; Rush Creek	54
Gem Tram Upper Landing	X		X	Yes	Upper landing is cave-like and provides vertical and roofed components that could potentially support roosting bats. Concrete generally lacks cracks and crevices large enough for roosting. This structure has appropriate thermal conditions (high solar exposure).	Gem Lake; rock outcrops	55
Gem Tram Lower Landing				No	Lower landing is a concrete slab on the ground that does not provide vertical or roofed components or cracks/crevices for roosting bats.	Perennial stream; rock outcrops	56
Agnew Tram				No	Tram line does not provide vertical or roofed components that provide appropriate bat roosting habitat. Tram line lies against the ground.	Aspen; rock outcrops	57
Agnew Tram Hoist House	X	X	X	Yes	Building provides vertical and roofed components and has cracks and crevices that could potentially support roosting bats. Building has appropriate thermal conditions (high solar exposure).	Aspen; curl-leaf mountain mahogany; Agnew Lake	58
Agnew Tram Landing (metal storage building not identified on facility list or on the maps)				No	Metal storage container does not provide roofed components or cracks and crevices that could potentially support roosting bats.	Sagebrush; rock outcrops; aspen	59
Powerhouse							
Rush Creek Powerhouse	X	X	X	Yes	Building provides vertical and roofed components that could potentially support roosting bats. The building has cracks and crevices where bats could enter the facility. The building has appropriate thermal conditions (high solar exposure).	Developed; juniper	60
Gages							
Rush Creek Powerhouse (USGS No. 10287300; SCE No. 367)				No	The gage is located inside the powerhouse at the outlet to the tailrace and does not contain roofed components or cracks/crevices suitable for roosting.	Powerhouse interior	NA

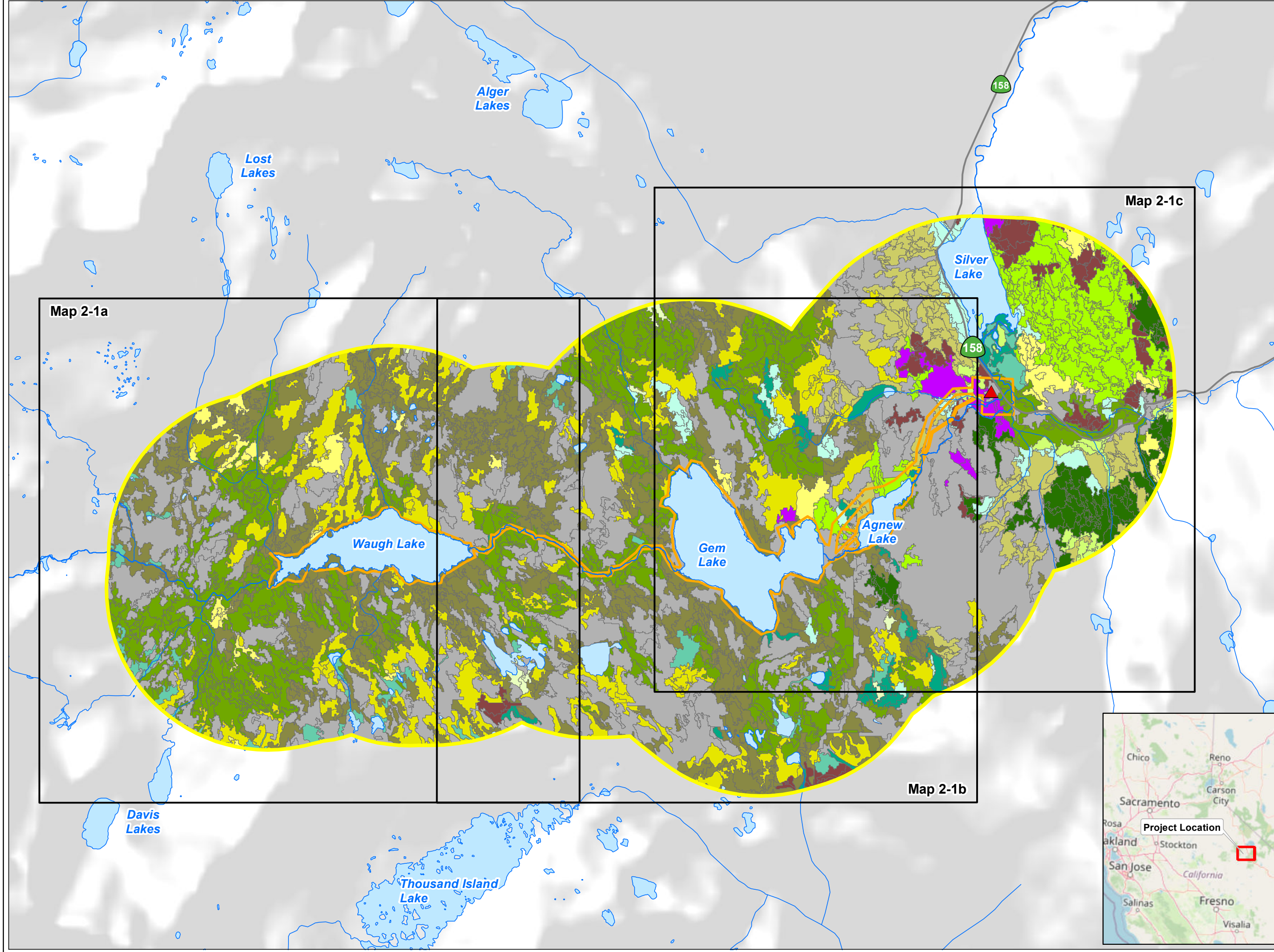
¹Refer to Appendix G. Photographs of Facilities Evaluated for Potential to Support Bat Roosting Habitat.

²This building is part of the Rush Creek Powerhouse complex and is not identified as an individual facility in Table TERR 2-1.

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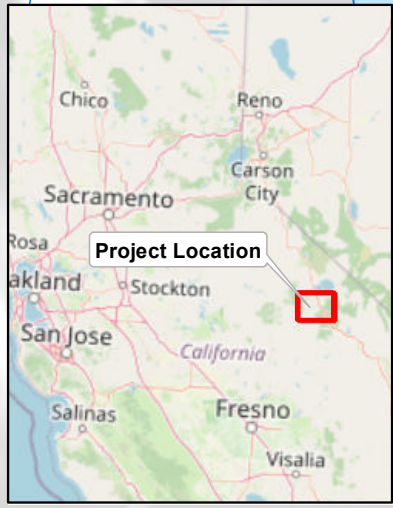
MAPS

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- SCE Facilities**
- ▲ Powerhouse
- Other Features**
- Highway
 - River/Stream (Riverine "RIV")
 - ▭ FERC Boundary
 - ▭ 1-Mile FERC Boundary Buffer
- CWHR Wildlife Habitat ***
- Barren (BAR)
 - Alpine Dwarf-Shrub (ADS)
 - Annual Grassland (AGS)
 - Montane Chaparral (MCP)
 - Sagebrush (SGB)
 - Low Sage (LSG)
 - Juniper (JUN)
 - Eastside Pine (EPN)
 - Subalpine Conifer (SCN)
 - Jeffrey Pine (JPN)
 - Lodgepole Pine (LPN)
 - White Fir (WFR)
 - Wet Meadow (WTM)
 - Aspen (ASP)
 - Montane Riparian (MRI)
 - Lacustrine (LAC)
 - Riverine (RIV)

*Source: USDA-FS CALVEG, 2018
Stantec, 2023



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Rush Creek Project (FERC 1389)

Map TERR 2-1

CWHR Habitats within 1 Mile of the Rush Creek Project

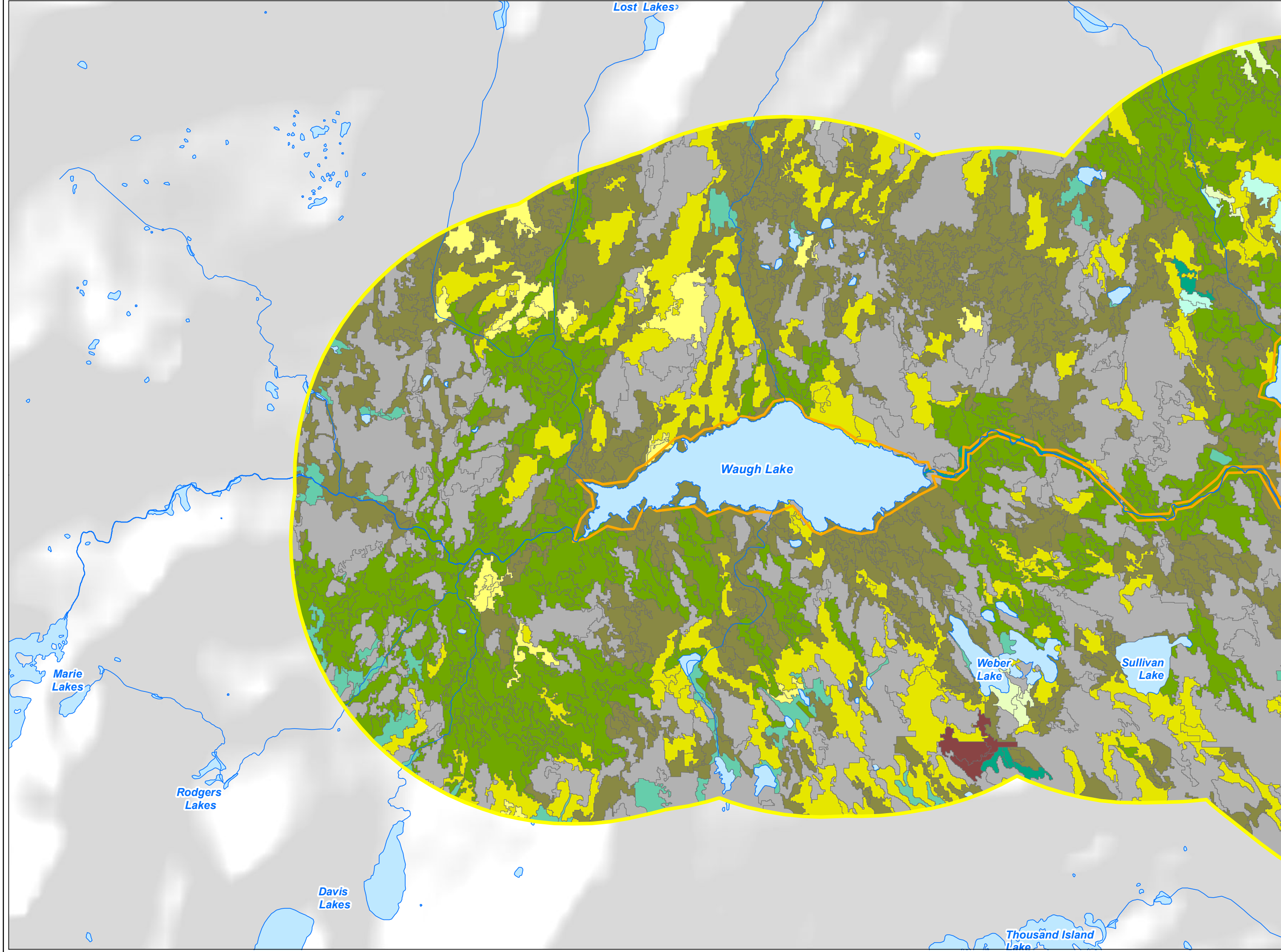
0 0.25 0.5 Miles

Projection: UTM Zone 11
Datum: NAD 83

Date: 11/15/2023

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- SCE Facilities**
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 - Aspen (ASP)
 - Montane Riparian (MRI)
 - Lacustrine (LAC)
 - Riverine (RIV)

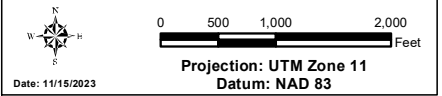
*Source: USDA-FS CALVEG, 2018
Stantec, 2023



Rush Creek Project (FERC 1389)

Map TERR 2-1a

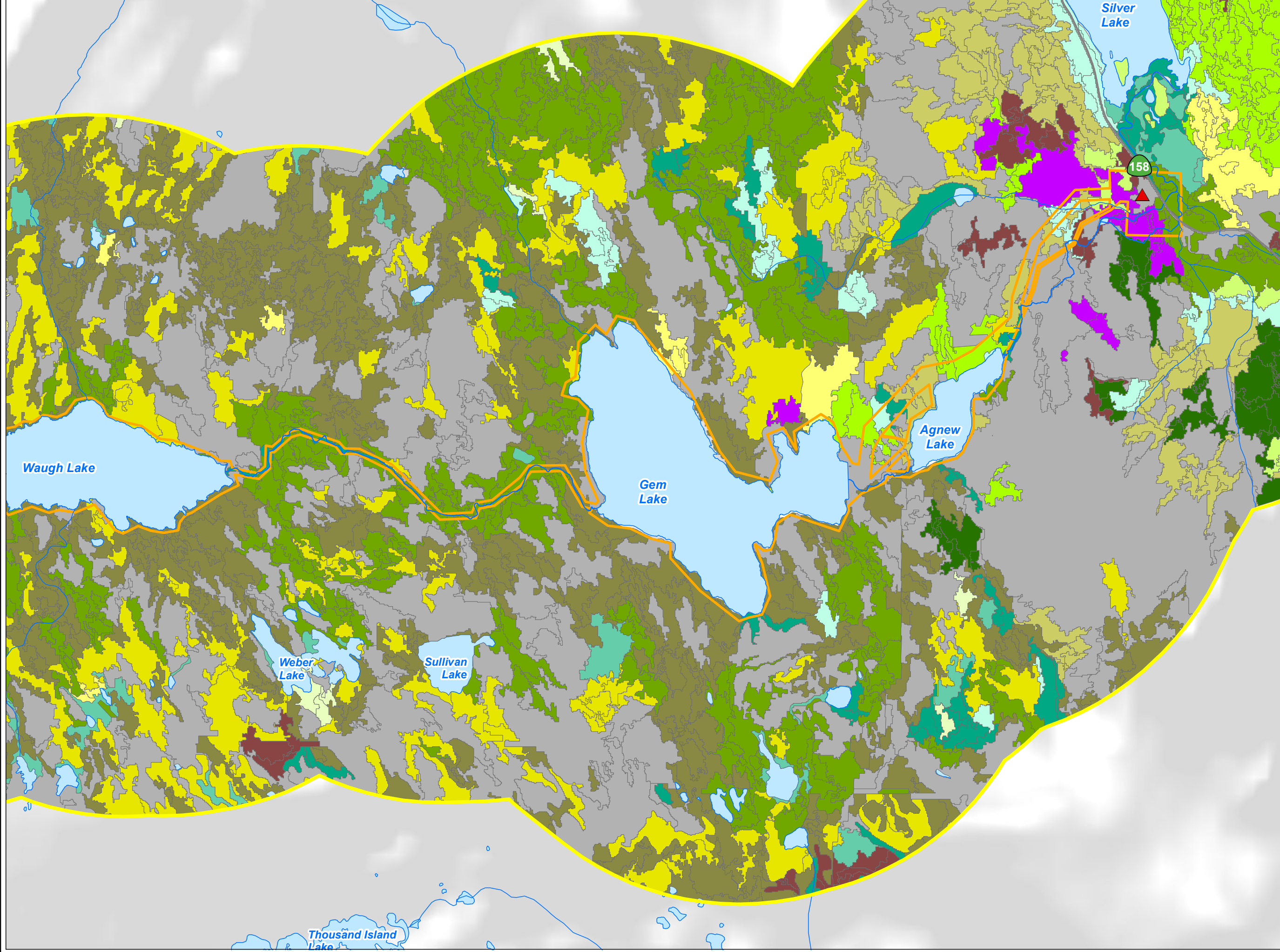
**CWHR Habitats within 1 Mile
of the Rush Creek Project**



Date: 11/15/2023

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- SCE Facilities**
- ▲ Powerhouse
- Other Features**
- Highway
 - River/Stream (Riverine "RIV")
 - ▭ FERC Boundary
 - ▭ 1-Mile FERC Boundary Buffer
- CWHR Wildlife Habitat ***
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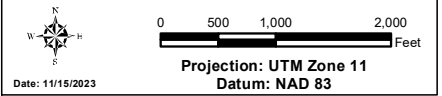
*Source: USDA-FS CALVEG, 2018
Stantec, 2023



Rush Creek Project (FERC 1389)

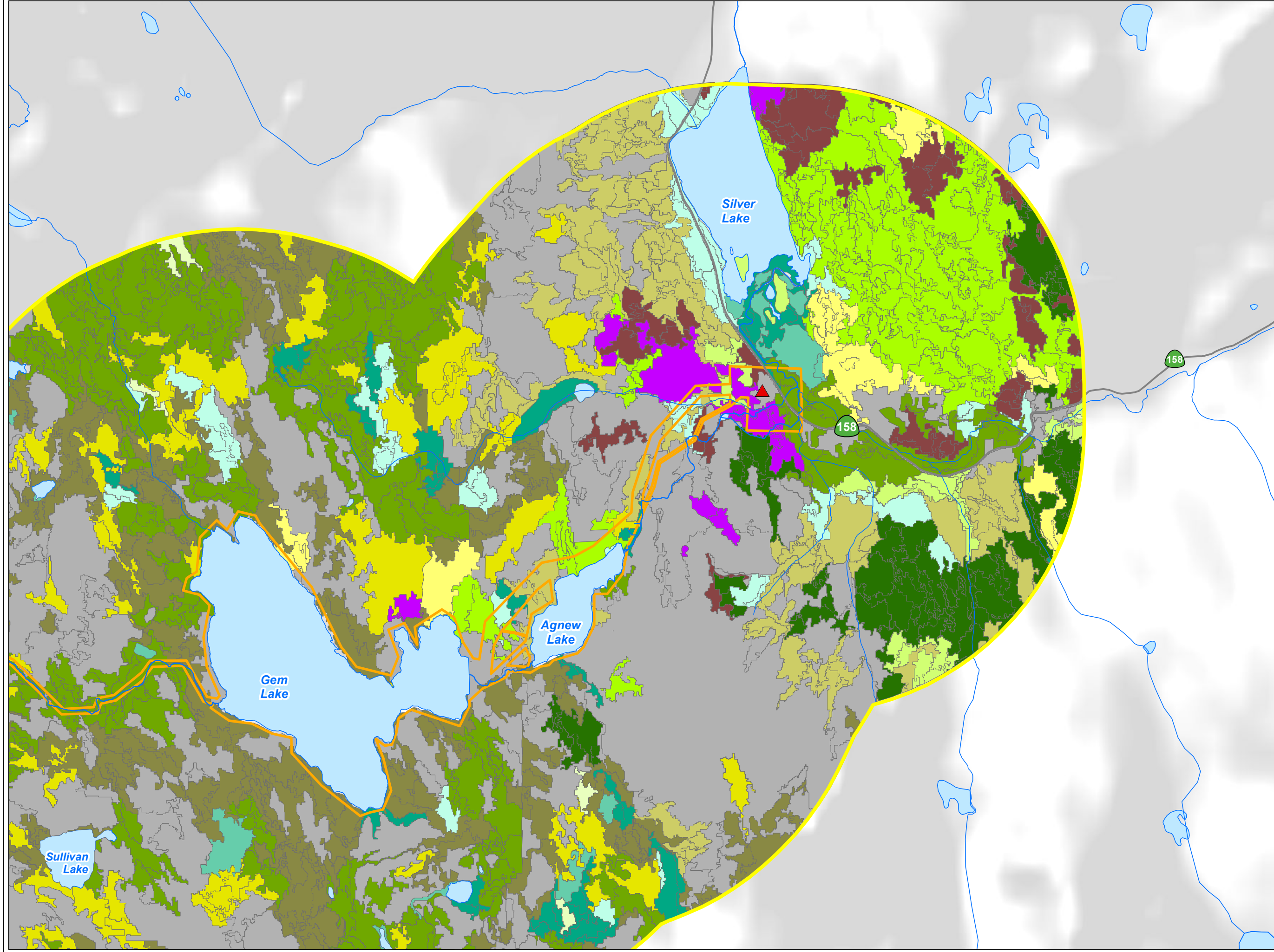
Map TERR 2-1b

CWHR Habitats within 1 Mile of the Rush Creek Project



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- SCE Facilities**
- ▲ Powerhouse
- Other Features**
- Highway
 - River/Stream (Riverine "RIV")
 - ▭ FERC Boundary
 - ▭ 1-Mile FERC Boundary Buffer
- CWHR Wildlife Habitat ***
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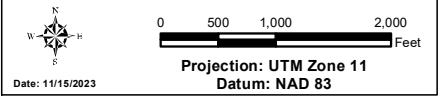
*Source: USDA-FS CALVEG, 2018
Stantec, 2023



Rush Creek Project (FERC 1389)

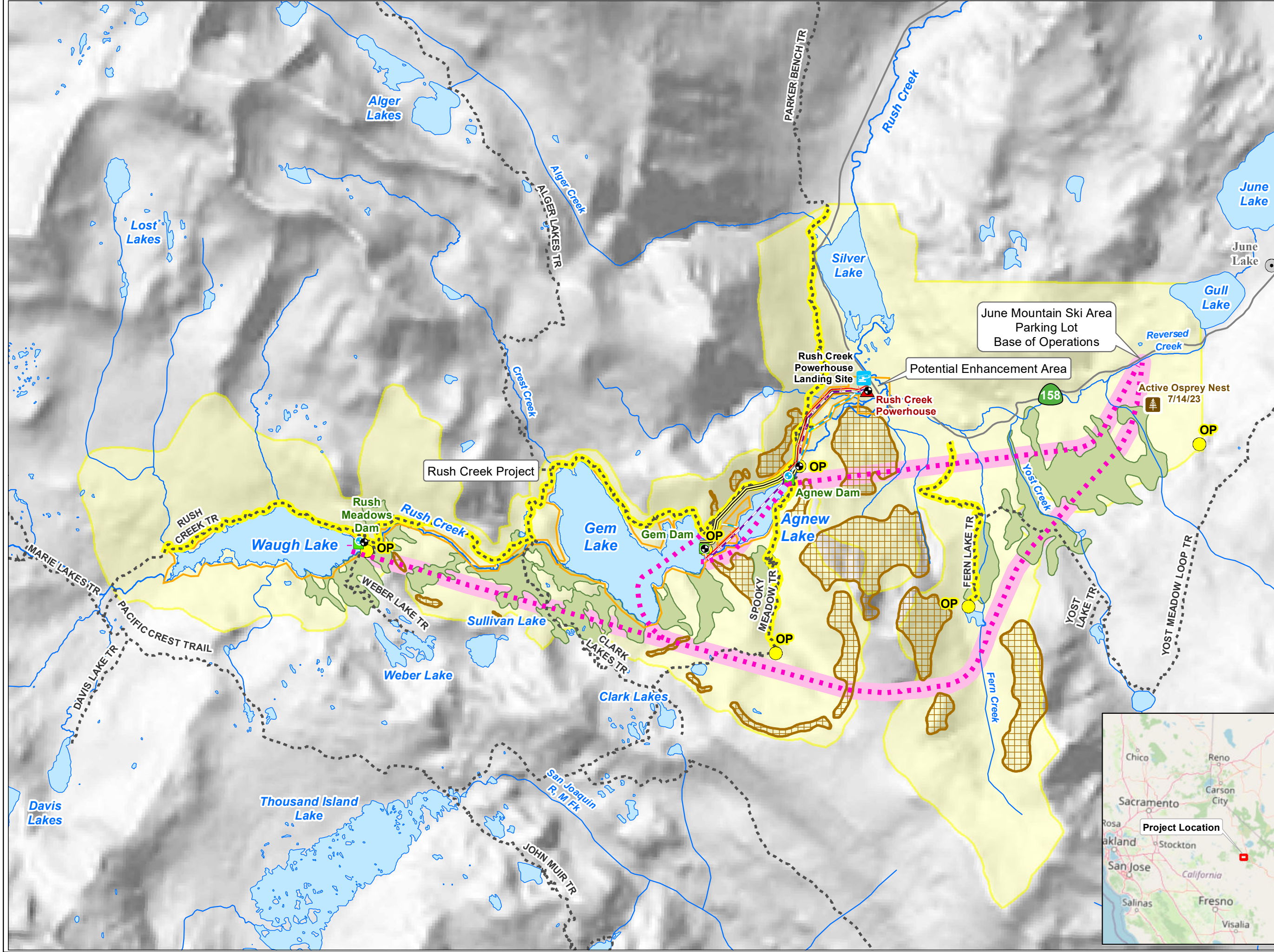
Map TERR 2-1c

**CWHR Habitats within 1 Mile
of the Rush Creek Project**



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- SCE Facilities**
- Dam
 - ▲ Powerhouse
 - ▬▬▬ Flowline / Penstock
 - Stream Gage
 - Reservoir Gage
 - ✈ Helicopter Landing Site
 - Power Line
 - Communication Line
 - + Tramway
 - FERC Boundary

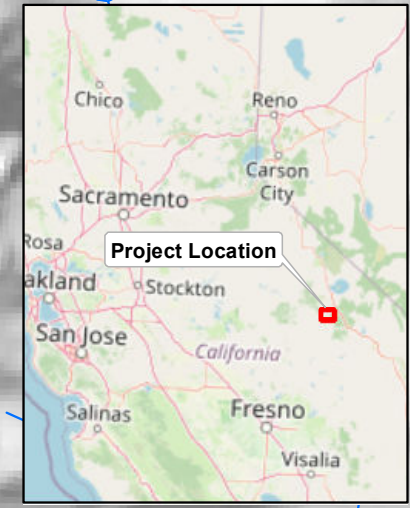
- Other Features**
- Major City/Town
 - Highway
 - River/Stream
 - Lake
 - - - Potential Access Trails


- TERR-2 Raptor Nest Survey**
- Proposed Raptor Observation Points (OPs)
 - Raptor Survey Trails
 - Viewshed from OPs*
 - ✈ Osprey Nest

*Viewshed from OPs or Trails Limited to 2 Miles (Scope Limits)

- Raptor Study Area**
- - - Approximate Helicopter Flight Path
 - 300-foot Buffer

- Potential Raptor Habitat**
- Cliff Nesting Habitat
 - Forest Nesting Habitat






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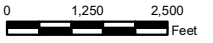
Rush Creek Project (FERC 1389)

Map TERR 2-2

Potential Raptor Nesting Habitat within 300 Feet of Proposed Helicopter Flight Paths



Date: 11/21/2023



0 1,250 2,500 Feet

Projection: UTM Zone 11
Datum: NAD 83

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CONFIDENTIAL INFORMATION

The following map is being withheld from public disclosure in accordance with applicable regulations. It contains details on the locations of special-status biological resources and qualifies as Confidential Information (18 Code of Federal Regulations § 385.1112). Disclosure of such information could be harmful to these resources. To further understand the Federal Energy Regulatory Commission's regulations regarding confidential filings, visit: <https://www.ferc.gov/foia>.

**Map TERR 2-3 Special-Status Wildlife Known to Occur within
1 mile of the Rush Creek Project (Confidential)**

Map TERR 2-3 will not be distributed to the general public. Documents containing Confidential Information may be requested by entities and organizations with jurisdiction over these resources. To request copies, please contact Matthew Woodhall, SCE Relicensing Project Manager at (909) 362-1764 or matthew.woodhall@sce.com.

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APPENDIX A

Documentation of Agency Consultation

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From: [Janelle Nolan](#)
To: colleen@hydroreform.org; tiffanee.hutton@tu.org; Alyssa.Marquez@Wildlife.ca.gov; brandy.wood@wildlife.ca.gov; [Janelle Nolan](#); audry.williams@sce.com; matthew.woodhall@sce.com; ed.bianchi@cardno.com; jora@friendsoftheinyo.org; cmcnally-murphy@americanrivers.org; martin.ostendorf@sce.com; patricia.moyer@wildlife.ca.gov; david.moore@sce.com; nicolas.von@sce.com; jill.north@waterboards.ca.gov; greg@monolake.org; eltrescott@hotmail.com; blake.engelhardt@usda.gov; linda@traveloe.com; raja.hassan@waterboards.ca.gov
Cc: matthew.woodhall@sce.com; ed.bianchi@cardno.com; [John Aedo](#); [Robyn Smith](#)
Subject: Rush Creek Project - Terrestrial Pre-field Consultation/Coordination Meeting
Date: Wednesday, April 12, 2023 10:54:57 AM
Attachments: [image001.jpg](#)

Rush Creek Project – Terrestrial Technical Working Group

Working Group Members – Please let me know your availability to attend a working group meeting (approx. 2 hours) to discuss pre-field consultation requirements identified in the TERR 1 – Botanical Resources and TERR 2 – Wildlife Resources Technical Study Plans (TSPs) and current site conditions. Specifically, we would like to discuss the following:

TERR 1 – Botanical Resources

- Confirm most recent special-status plant and non-native invasive plant lists
- Obtain any new information on the location of special-status plants identified in the study area following distribution of the PAD
- Identify appropriate Forest Service personnel to coordinate special-status plant reference population visits and verify timing of botanical surveys
- Discuss current site conditions and potential effects on surveys (timing)

TERR 2 – Wildlife Resources

- Obtain any new information on Sierra Nevada big horn sheep distribution and use of lands within the study area and adjacent Critical Habitat
- Obtain historic and current raptor nest records in the study area
- Obtain any new information on avian electrocutions and mortalities on Project transmission/power lines
- Discuss current site conditions and potential effects on surveys (raptor nest surveys and bat roost surveys)

Please provide your availability for a meeting in the Doodle Poll link below.

<https://doodle.com/meeting/participate/id/egn77BGd>

Thank you,
Janelle

Janelle Nolan

Environmental Compliance/Permitting
Janelle Nolan & Associates Environmental Consulting
Cell: (530) 277-4582

janelle@jna-consulting.com

JNA_logo_signature.jpg





Energy for What's AheadSM

Rush Creek Project (FERC Project No. 1389) Technical Working Group

Pre-Field Consultation/Coordination Webinar

TERR 1 – Botanical Resources
TERR 2 – Wildlife Resources

Date: May 11, 2023
Time: 8:30–10:30 am

Agenda

Topic	Lead
Welcome and Introductions	Matt
Safety Moment	Robyn
TERR 1 – Botanical Resources TSP <ul style="list-style-type: none"> • Confirm most recent special-status plant and non-native invasive plant (NNIP) lists • Obtain any new information on the location of special-status plants and NNIPs identified in the study area following distribution of the PAD • Identify appropriate Forest Service personnel to coordinate special-status plant reference population visits and verify timing of botanical surveys • Discuss current site conditions and potential effects on surveys (timing) 	Janelle
TERR 2 – Wildlife Resources TSP <ul style="list-style-type: none"> • Obtain any new information on Sierra Nevada big horn sheep distribution and use of lands within the study area and adjacent Critical Habitat • Obtain historic and current raptor nest records in the study area • Obtain any new information on avian electrocutions and mortalities on Project transmission/power lines • Discuss current site conditions and potential effects on surveys (raptor nest surveys and bat roost and seasonal use surveys) 	Janelle
Action Items, Next Steps, Adjourn	Janelle

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From: [Moyer, Patricia \(Trisha\)@Wildlife](mailto:Moyer, Patricia (Trisha)@Wildlife)
To: Janelle Nolan
Cc: Tovar, Michael@Wildlife; Lawson, Beth@Wildlife
Subject: RE: Rush Creek Project - Pre-field Meeting Agency Follow-up - Draft E-mail
Date: Monday, June 5, 2023 8:30:15 AM

I approve the delay of studies as proposed by SCE until 2024.

Trisha

Trisha A. Moyer

CDFW- Inland Deserts Region 6
Habitat Conservation Program Supervisor
787 North Main Street Suite 220
Bishop, CA 93514

(760) 835-4304

“Coming together is beginning, staying together is progress, and working together is success.”

~Henry Ford

From: Janelle Nolan <Janelle@JNA-Consulting.com>
Sent: Monday, June 5, 2023 8:02 AM
To: Moyer, Patricia (Trisha)@Wildlife <Patricia.Moyer@Wildlife.ca.gov>
Cc: Tovar, Michael@Wildlife <Michael.Tovar@Wildlife.ca.gov>; Lawson, Beth@Wildlife <Beth.Lawson@wildlife.ca.gov>
Subject: RE: Rush Creek Project - Pre-field Meeting Agency Follow-up - Draft E-mail

WARNING: This message is from an external source. Verify the sender and exercise caution when clicking links or opening attachments.

Hi Trisha – I wasn't clear from your e-mail if you approved of the delay until 2024.

Janelle Nolan

Environmental Compliance/Permitting
Janelle Nolan & Associates Environmental Consulting
Cell: (530) 277-4582

janelle@jna-consulting.com



From: Moyer, Patricia (Trisha)@Wildlife <Patricia.Moyer@Wildlife.ca.gov>
Sent: Friday, June 2, 2023 12:18 PM
To: Janelle Nolan <Janelle@JNA-Consulting.com>
Cc: Tovar, Michael@Wildlife <Michael.Tovar@Wildlife.ca.gov>; Lawson, Beth@Wildlife <Beth.Lawson@wildlife.ca.gov>
Subject: RE: Rush Creek Project - Pre-field Meeting Agency Follow-up - Draft E-mail

Janelle you already have CDFW concurrence, correct?

Trisha A. Moyer

CDFW- Inland Deserts Region 6
Habitat Conservation Program Supervisor
787 North Main Street Suite 220
Bishop, CA 93514

(760) 835-4304

“Coming together is beginning, staying together is progress, and working together is success.”

~Henry Ford

From: Janelle Nolan <Janelle@JNA-Consulting.com>
Sent: Tuesday, May 30, 2023 11:04 AM
To: Moyer, Patricia (Trisha)@Wildlife <Patricia.Moyer@Wildlife.ca.gov>; 'jill.north@waterboards.ca.gov' <jill.north@waterboards.ca.gov>; Sheila.irons@usda.gov; Hassan, Rajaa@Waterboards <Rajaa.Hassan@Waterboards.ca.gov>; Tovar, Michael@Wildlife

<Michael.Tovar@Wildlife.ca.gov>; Lawson, Beth@Wildlife <Beth.Lawson@wildlife.ca.gov>
Cc: Matthew Woodhall <matthew.woodhall@sce.com>; Sara Reece <Sara@JNA-Consulting.com>;
John Aedo <john.aedo@cardno.com>; Robyn Smith <robyn@JNA-Consulting.com>
Subject: FW: Rush Creek Project - Pre-field Meeting Agency Follow-up - Draft E-mail

WARNING: This message is from an external source. Verify the sender and exercise caution when clicking links or opening attachments.

Hello Terrestrial Working Group – Agency Representatives

This is a reminder that we are hoping to obtain concurrence from you on delaying raptor nest surveys and bat roost and seasonal use surveys until 2024 (because of heavy snow conditions in 2023) to ensure that we obtain reliable and representative data by COB tomorrow (May 31, 2023). See e-mail below for details.

Feel free to call me or e-mail me if you have any questions.

Janelle Nolan

Environmental Compliance/Permitting
Janelle Nolan & Associates Environmental Consulting
Cell: (530) 277-4582
janelle@jna-consulting.com



From: Janelle Nolan
Sent: Tuesday, May 16, 2023 7:37 AM
To: 'Alyssa.Marquez@Wildlife.ca.gov' <Alyssa.Marquez@Wildlife.ca.gov>;
'patricia.moyer@wildlife.ca.gov' <patricia.moyer@wildlife.ca.gov>; 'jill.north@waterboards.ca.gov' <jill.north@waterboards.ca.gov>; 'blake.engelhardt@usda.gov' <blake.engelhardt@usda.gov>;
'Sheila.irons@usda.gov' <Sheila.irons@usda.gov>; 'raja.hassan@waterboards.ca.gov' <raja.hassan@waterboards.ca.gov>
Cc: Matthew Woodhall <matthew.woodhall@sce.com>; John Aedo <john.aedo@cardno.com>;
Robyn Smith <robyn@JNA-Consulting.com>; Sara Reece <Sara@JNA-Consulting.com>
Subject: FW: Rush Creek Project - Pre-field Meeting Agency Follow-up - Draft E-mail

Terrestrial Working Group – Agency Representatives:

We are sorry that some of you were unable to attend the Pre-field consultation/coordination webinar on May 11, 2023. As a follow-up to the meeting, we wanted to reach out to you and obtain

your input on the following:

Based on site conditions this year, JNA/SCE is requesting your concurrence to adjust raptor nest survey and bat roost/seasonal use survey periods under TERR 2 Wildlife Resources Technical Study Plan (TSP) to ensure that we obtain reliable/representative survey data. [Please provide your concurrence or questions/comments by May 31, 2023 to allow sufficient time for survey planning.](#)

Specifically, JNA/SCE is recommending the following adjustments:

Raptor nest surveys

- Delay raptor nest surveys until 2024
 - The heavy snow conditions in 2023 (240% of normal) would likely cause resident pairs to skip nesting and/or move to lower elevations for nesting (outside the Project area).
 - Surveys completed in 2023 may not be representative of typical site conditions.
- Consistent with the TSP, the desktop habitat review will be completed and the observation points for future nesting surveys will be confirmed in 2023.

Bat Surveys

- Delay bat roost and seasonal use surveys until 2024
 - Project facilities potentially support bat roosts will be under snow during the typical maternity roosting season.
 - Surveys completed in 2023 may not be representative of typical site conditions.
- Consistent with the TSP, the desktop assessment and preliminary visual assessment of Project facilities will be completed in 2023.

In addition, consistent with the TERR 2 Wildlife Resources TSP, JNA/SCE is requesting:

- Any new information on Sierra Nevada big horn sheep distribution and use of lands within the study area and adjacent Critical Habitat
- Any new information on historic and current raptor nest record in the study area

Please feel free to contact me if you have questions or would like to discuss proposed survey timing adjustments.

Thank you,
Janelle

Janelle Nolan

Environmental Compliance/Permitting
Janelle Nolan & Associates Environmental Consulting
Cell: (530) 277-4582
janelle@jna-consulting.com





Energy for What's AheadSM

Rush Creek Project (FERC Project No. 1389) Technical Working Group

Pre-Field Consultation/Coordination Webinar

USFWS Meeting

**Date: June 9, 2023
Time: 12:30–1:30 pm**

Agenda

Topic	Lead
Welcome and Introductions	Matt
Safety Moment	Robyn
Project Overview	Janelle
TERR 2 – Wildlife Resources TSP <ul style="list-style-type: none">• Discuss current site conditions and potential effects on surveys (raptor nest surveys and bat roost and seasonal use surveys)• Obtain historic and current raptor nest records in the study area• Obtain any new information on avian electrocutions and mortalities on Project transmission/power lines	Robyn
Action Items, Next Steps, Adjourn	Janelle

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From: [Dietsch, Thomas V](#)
To: [Janelle Nolan](#); [Haworth, Marcy](#)
Cc: [Matthew Woodhall](#); [Robyn Smith](#); [Sussman, Patricia](#); [Mankowski, Anne](#)
Subject: Re: [EXTERNAL] Rush Creek Project - USFWS Pre-field Consultation Coordination
Date: Thursday, June 15, 2023 2:47:14 PM

I forgot to attach the file. Here's the map. Let me know if you have any questions.

Thanks, Tom

Thomas Dietsch, PhD
Migratory Bird Biologist
US Fish and Wildlife Service, Region 8
Carlsbad Fish and Wildlife Office
2177 Salk Ave, Suite 250
Carlsbad, CA 92008
~~(760) 431-9440 Ext. 214~~
Email is preferred: thomas_dietsch@fws.gov

From: Dietsch, Thomas V <thomas_dietsch@fws.gov>
Sent: Thursday, June 15, 2023 2:45 PM
To: Janelle Nolan <Janelle@JNA-Consulting.com>; Haworth, Marcy <marcy_haworth@fws.gov>
Cc: Matthew Woodhall <matthew.woodhall@sce.com>; Robyn Smith <robyn@JNA-Consulting.com>; Sussman, Patricia <patricia.sussman@stantec.com>; Mankowski, Anne <anne_mankowski@fws.gov>
Subject: Re: [EXTERNAL] Rush Creek Project - USFWS Pre-field Consultation Coordination

Hi Janelle,

Here's a map of the eagle records in our database in the vicinity of the project. I had our GIS person add another 2 mile buffer beyond the 2 mile buffer you provided. There are known eagle nests in the area but not in the area of the project. That doesn't mean there are no eagle nests in the area currently. We don't know if the area has ever been surveyed.

Thank you for the synopsis of the project and the update on the current conditions. The US Fish and Wildlife Service supports postponing the raptor surveys until 2024 as you described on the call. I'll let you know if my colleague has any additional information.

Thanks, Tom

Thomas Dietsch, PhD
Migratory Bird Biologist
US Fish and Wildlife Service, Region 8
Carlsbad Fish and Wildlife Office
2177 Salk Ave, Suite 250
Carlsbad, CA 92008
~~(760) 431-9440 Ext. 214~~
Email is preferred: thomas_dietsch@fws.gov

From: Janelle Nolan <Janelle@JNA-Consulting.com>
Sent: Monday, June 12, 2023 11:03 AM
To: Haworth, Marcy <marcy_haworth@fws.gov>; Dietsch, Thomas V <thomas_dietsch@fws.gov>
Cc: Matthew Woodhall <matthew.woodhall@sce.com>; Robyn Smith <robyn@JNA-Consulting.com>; Sussman, Patricia <patricia.sussman@stantec.com>; Mankowski, Anne <anne_mankowski@fws.gov>
Subject: [EXTERNAL] Rush Creek Project - USFWS Pre-field Consultation Coordination

This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.

Thank you for participating in the meeting on Friday. Attached for your records is the PowerPoint and a summary of key decisions/action items. Please let me know if I have missed anything.

Thank you,
Janelle

Janelle Nolan
Environmental Compliance/Permitting
Janelle Nolan & Associates Environmental Consulting
Cell: (530) 277-4582
janelle@jna-consulting.com



From: [Janelle Nolan](#)
To: "Tom.Stephenson@wildlife.ca.gov"; "lacey.greene@wildlife.ca.gov"
Cc: [Sara Reece](#); [Robyn Smith](#); "[Matthew Woodhall](#)"; "[John Aedo](#)"
Subject: RE: Rush Creek Project - Sierra Nevada big horn sheep
Date: Thursday, July 6, 2023 8:56:00 AM
Attachments: [TERR 2-1 Map.pdf](#)

Hi Tom/Lacey – I wanted to follow-up with you again to see if you have any new information on Sierra Nevada big horn sheep in the Rush Creek Project study area and adjacent Critical Habitat (Map attached, additional information in the e-mail thread below). Any information would be greatly appreciated.

Thank you,
Janelle

Janelle Nolan

Environmental Compliance/Permitting
Janelle Nolan & Associates Environmental Consulting
Cell: (530) 277-4582
janelle@jna-consulting.com



From: Janelle Nolan
Sent: Monday, May 22, 2023 10:20 AM
To: Tom.Stephenson@wildlife.ca.gov; lacey.greene@wildlife.ca.gov
Cc: Sara Reece <Sara@JNA-Consulting.com>; Robyn Smith <robyn@JNA-Consulting.com>; Matthew Woodhall <matthew.woodhall@sce.com>; John Aedo <john.aedo@cardno.com>
Subject: FW: Rush Creek Project - Pre-field Meeting Agency Follow-up - Draft E-mail

Good Morning Tom and Lacey – I am working with Southern California Edison (SCE) on the Rush Creek Project relicensing. Trisha Moyer asked that I contact you to obtain any new information on Sierra Nevada big horn sheep in the study area and adjacent Critical Habitat (Map attached).

Information that we currently have includes the listing package, critical habitat final rule, recovery plan, and 2019 annual report. Do you have any additional information (e.g., CDFW annual monitoring data from 2022) that you can provide to support our efforts in reviewing potential Project effects on the species?

Any information is greatly appreciated.

Thank you,
Janelle

Janelle Nolan

Environmental Compliance/Permitting
Janelle Nolan & Associates Environmental Consulting
Cell: (530) 277-4582
janelle@jna-consulting.com



From: Moyer, Patricia (Trisha)@Wildlife <Patricia.Moyer@Wildlife.ca.gov>
Sent: Wednesday, May 17, 2023 2:53 PM
To: Janelle Nolan <Janelle@JNA-Consulting.com>
Cc: Stephenson, Tom@Wildlife <Tom.Stephenson@wildlife.ca.gov>
Subject: RE: Rush Creek Project - Pre-field Meeting Agency Follow-up - Draft E-mail

Hi Janelle,
Danny Gammons let me know a better CDFW contact for bighorn sheep questions is Lacey Greene or Tom Stephenson.

Trisha A. Moyer

CDFW- Inland Deserts Region 6
Habitat Conservation Program Supervisor
787 North Main Street Suite 220
Bishop, CA 93514

(760) 835-4304

“Coming together is beginning, staying together is progress, and working together is success.”

~Henry Ford

From: Janelle Nolan <Janelle@JNA-Consulting.com>

Sent: Wednesday, May 17, 2023 11:20 AM

To: Moyer, Patricia (Trisha)@Wildlife <Patricia.Moyer@Wildlife.ca.gov>;

jill.north@waterboards.ca.gov; blake.engelhardt@usda.gov; Sheila.irons@usda.gov; Hassan, Rajaa@Waterboards <Rajaa.Hassan@Waterboards.ca.gov>

Cc: Matthew Woodhall <matthew.woodhall@sce.com>; John Aedo <john.aedo@cardno.com>;

Robyn Smith <robyn@JNA-Consulting.com>; Sara Reece <Sara@JNA-Consulting.com>; Tovar,

Michael@Wildlife <Michael.Tovar@Wildlife.ca.gov>; Lawson, Beth@Wildlife

<Beth.Lawson@wildlife.ca.gov>; Gammons, Daniel@Wildlife <Daniel.Gammons@Wildlife.ca.gov>

Subject: RE: Rush Creek Project - Pre-field Meeting Agency Follow-up - Draft E-mail

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Trisha – Thank you for responding to our request. Below are responses to your questions/comments.

Question 1: Just to clarify, are you proposing to skip raptor nest and bat surveys for 2023 completely?

We are planning to postpone the raptor nest survey and the bat roost and seasonal use surveys. We will implement the following TSP components in 2023:

- The raptor desktop habitat review and confirmation of the observation points for future raptor nest surveys
- We will also complete the bat desktop assessment and preliminary visual assessment of Project facilities.

Question 2: Does this mean you will only conduct one year or surveys or will you push out surveys to 2024 and then 2025 to conduct 2 full years of surveys?

The schedule in the TERR 2 Wildlife Resources TSP and FERC's Study Plan Determination (October 26, 2022) includes a single year of studies for raptors and bats. FERC staff and SCE expect that conducting a single year of studies, as proposed by SCE, will provide sufficient information regarding the potential effects of the Project on the resources (FERC 2022). However, as recommended by FERC, SCE is committed to consulting with the California Department of Fish and Wildlife (CDFW) on the timing of surveys during the study season to help ensure that any species that are present are detected.

That said, because of the unusual winter, SCE is proposing to implement a portion of the studies in 2023 (see response above) and to conduct the raptor nest survey and bat roost and seasonal use surveys in 2024.

Comment 1: Regarding your request for information on Sierra Nevada bighorn sheep distribution, please contact Danny Gammons in our CDFW Wildlife branch, also ccd.

Thank you, we will contact Danny Gammons for information on Sierra Nevada bighorn sheep.

Comment 2: Also, please remove Alyssa Marquez from your mailing list and add both Michael Tovar and Beth Lawson, both ccd.

We will remove Alyssa and add Michael Tovar and Beth Lawson to future correspondence for the Rush Creek Project.

Feel free to call me if you have any further questions/comments.

Thank you,
Janelle

References:

Southern California Edison. 2022. Letter to Kimberly D. Bose re: Rush Creek Hydroelectric Project, FERC Project No. 1389-059 Response to Comments Filed by California Department of Fish and Wildlife on

Southern California Edison Company's Revised Study Plan (October 19, 2022).
Federal Energy Regulatory Commission (FERC). 2022. Letter to Matthew Woodhall re: Rush Creek Hydroelectric Project, FERC Project No. 1389-059 Study Plan Determination (October 26, 2022).

Janelle Nolan

Environmental Compliance/Permitting
Janelle Nolan & Associates Environmental Consulting
Cell: (530) 277-4582
janelle@jna-consulting.com



From: Moyer, Patricia (Trisha)@Wildlife <Patricia.Moyer@Wildlife.ca.gov>
Sent: Tuesday, May 16, 2023 1:27 PM
To: Janelle Nolan <Janelle@JNA-Consulting.com>; Marquez, Alyssa@Wildlife <Alyssa.Marquez@Wildlife.ca.gov>; jill.north@waterboards.ca.gov; blake.engelhardt@usda.gov; Sheila.ironson@usda.gov; Hassan, Rajaa@Waterboards <Rajaa.Hassan@Waterboards.ca.gov>
Cc: Matthew Woodhall <matthew.woodhall@sce.com>; John Aedo <john.aedo@cardno.com>; Robyn Smith <robyn@JNA-Consulting.com>; Sara Reece <Sara@JNA-Consulting.com>; Tovar,

Michael@Wildlife <Michael.Tovar@Wildlife.ca.gov>; Lawson, Beth@Wildlife <Beth.Lawson@wildlife.ca.gov>; Gammons, Daniel@Wildlife <Daniel.Gammons@Wildlife.ca.gov>
Subject: RE: Rush Creek Project - Pre-field Meeting Agency Follow-up - Draft E-mail

Greetings Janelle,

Just to clarify, are you proposing to skip raptor nest and bat surveys for 2023 completely? Does this mean you will only conduct one year or surveys or will you push out surveys to 2024 and then 2025 to conduct 2 full years of surveys?

Regarding your request for information on Sierra Nevada bighorn sheep distribution, please contact Danny Gammons in our CDFW Wildlife branch, also ccd.

Also please remove Alyssa Marquez from your mailing list and add both Michael Tovar and Beth Lawson, both ccd.

Thank you,
Trisha

Trisha A. Moyer

CDFW- Inland Deserts Region 6
Habitat Conservation Program Supervisor
787 North Main Street Suite 220
Bishop, CA 93514

(760) 835-4304

“Coming together is beginning, staying together is progress, and working together is success.”

~Henry Ford

From: Janelle Nolan <Janelle@JNA-Consulting.com>

Sent: Tuesday, May 16, 2023 7:37 AM

To: Marquez, Alyssa@Wildlife <Alyssa.Marquez@Wildlife.ca.gov>; Moyer, Patricia (Trisha)@Wildlife <Patricia.Moyer@Wildlife.ca.gov>; jill.north@waterboards.ca.gov; blake.engelhardt@usda.gov; Sheila.irons@usda.gov; Hassan, Rajaa@Waterboards <Rajaa.Hassan@Waterboards.ca.gov>

Cc: Matthew Woodhall <matthew.woodhall@sce.com>; John Aedo <john.aedo@cardno.com>; Robyn Smith <robyn@JNA-Consulting.com>; Sara Reece <Sara@JNA-Consulting.com>

Subject: FW: Rush Creek Project - Pre-field Meeting Agency Follow-up - Draft E-mail

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Terrestrial Working Group – Agency Representatives:

We are sorry that some of you were unable to attend the Pre-field consultation/coordination webinar on May 11, 2023. As a follow-up to the meeting, we wanted to reach out to you and obtain your input on the following:

Based on site conditions this year, JNA/SCE is requesting your concurrence to adjust raptor nest survey and bat roost/seasonal use survey periods under TERR 2 Wildlife Resources Technical Study Plan (TSP) to ensure that we obtain reliable/representative survey data. [Please provide your concurrence or questions/comments by May 31, 2023 to allow sufficient time for survey planning.](#)

Specifically, JNA/SCE is recommending the following adjustments:

Raptor nest surveys

- Delay raptor nest surveys until 2024
 - The heavy snow conditions in 2023 (240% of normal) would likely cause resident pairs to skip nesting and/or move to lower elevations for nesting (outside the Project area).
 - Surveys completed in 2023 may not be representative of typical site conditions.
- Consistent with the TSP, the desktop habitat review will be completed and the observation points for future nesting surveys will be confirmed in 2023.

Bat Surveys

- Delay bat roost and seasonal use surveys until 2024
 - Project facilities potentially support bat roosts will be under snow during the typical maternity roosting season.
 - Surveys completed in 2023 may not be representative of typical site conditions.
- Consistent with the TSP, the desktop assessment and preliminary visual assessment of Project facilities will be completed in 2023.

In addition, consistent with the TERR 2 Wildlife Resources TSP, JNA/SCE is requesting:

- Any new information on Sierra Nevada big horn sheep distribution and use of lands within the study area and adjacent Critical Habitat
- Any new information on historic and current raptor nest record in the study area

Please feel free to contact me if you have questions or would like to discuss proposed survey timing adjustments.

Thank you,
Janelle

Janelle Nolan

Environmental Compliance/Permitting
Janelle Nolan & Associates Environmental Consulting

Cell: (530) 277-4582

janelle@jna-consulting.com



From: [Lawson, Julia@Wildlife](mailto:Lawson,Julia@Wildlife)
To: [Robyn Smith](mailto:Robyn.Smith@JNA-Consulting.com); Gammons, Daniel@Wildlife; Hatfield, Brian@Wildlife
Cc: [Janelle Nolan](mailto:Janelle.Nolan@JNA-Consulting.com)
Subject: RE: Sierra Nevada Red Fox and Wolverine Detections near Rush Creek
Date: Wednesday, December 13, 2023 12:25:34 PM

Hi Robyn,

Yes, the wolverine detection was on 5/20/23. Red fox detections were on 5/7/19, 6/13/19, 3/9/20, 10/30/20, 4/30/22, 5/1/22, and 5/4/23.

Thanks,
Julia

--

Julia Runcie Lawson
Environmental Scientist
California Department of Fish and Wildlife
Bishop Field Office
Cell: 760-937-0138
julia.lawson@wildlife.ca.gov

From: Robyn Smith <robyn@JNA-Consulting.com>
Sent: Wednesday, December 13, 2023 12:22 PM
To: Lawson, Julia@Wildlife <Julia.Lawson@Wildlife.ca.gov>; Gammons, Daniel@Wildlife <Daniel.Gammons@Wildlife.ca.gov>; Hatfield, Brian@Wildlife <Brian.Hatfield@wildlife.ca.gov>
Cc: Janelle Nolan <Janelle@JNA-Consulting.com>
Subject: RE: Sierra Nevada Red Fox and Wolverine Detections near Rush Creek

You don't often get email from robyn@jna-consulting.com. [Learn why this is important](#)

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Hi Julia,

Thank you so very much for your quick response! Understood on sharing the camera trap locations, these buffered areas will definitely suffice for our analysis.

Just to confirm dates for our report, was the wolverine observation from this year?

Thanks again,

Robyn Smith
Project Scientist II
Janelle Nolan & Associates Environmental Consulting

robyn@jna-consulting.com

(916) 765-6450



From: Lawson, Julia@Wildlife <Julia.Lawson@Wildlife.ca.gov>
Sent: Wednesday, December 13, 2023 12:15 PM
To: Robyn Smith <robyn@JNA-Consulting.com>; Gammons, Daniel@Wildlife <Daniel.Gammons@Wildlife.ca.gov>; Hatfield, Brian@Wildlife <Brian.Hatfield@wildlife.ca.gov>
Cc: Janelle Nolan <Janelle@JNA-Consulting.com>
Subject: RE: Sierra Nevada Red Fox and Wolverine Detections near Rush Creek

Hi Robyn,

Thanks for reaching out. I've attached a kmz showing the wolverine and Sierra Nevada red fox detections within the vicinity of the project area. I buffered the locations of the Sierra Nevada red fox detections – we would prefer not to share exact coordinates in this case since we still have equipment in those areas.

Please let me know if another format would be preferable, and if there is any other information we can provide.

Take care,
Julia

--

Julia Runcie Lawson
Environmental Scientist
California Department of Fish and Wildlife
Bishop Field Office
Cell: 760-937-0138
julia.lawson@wildlife.ca.gov

From: Robyn Smith <robyn@JNA-Consulting.com>
Sent: Wednesday, December 13, 2023 11:13 AM
To: Gammons, Daniel@Wildlife <Daniel.Gammons@Wildlife.ca.gov>; Hatfield, Brian@Wildlife <Brian.Hatfield@wildlife.ca.gov>; Lawson, Julia@Wildlife <Julia.Lawson@Wildlife.ca.gov>
Cc: Janelle Nolan <Janelle@JNA-Consulting.com>
Subject: Sierra Nevada Red Fox and Wolverine Detections near Rush Creek

Some people who received this message don't often get email from robyn@jna-consulting.com. [Learn why this is important](#)

WARNING: This message is from an external source. Verify the sender and exercise caution when clicking links or opening attachments.

Dear Alpine Carnivore Team,

Our firm is working with Southern California Edison on relicensing the Rush Creek Hydroelectric Project (Project), which is located near the town of June Lake, and portions lie within the Ansel Adams Wilderness. The elevation of the Project is between 7,200 and 9,500 feet. Please see the attached map of the Project area for your reference.

We are looking for information on Sierra Nevada Red Fox and North American wolverine records in the vicinity of the Project. Specifically, we are required to assess the potential for these species to occur in within a 1 mile buffer from the FERC Project boundary as part of the wildlife resources technical study report.

I have reviewed the reports/information provided on your website, and I see that Sierra Nevada red fox have been detected near our Project area on two of your Ritter Range survey grid cells.

Would you be able to provide more specific locations on these occurrences for Sierra Nevada red fox, as well as for the North American wolverine sightings mentioned in this year's news release?

Thank you so much for your consideration, and please let me know if you have any questions.

Happy holidays,

Robyn Smith

Project Biologist II

Janelle Nolan & Associates Environmental Consulting

robyn@jna-consulting.com

(916) 765-6450



APPENDIX B

SCE's Avian Protection Plan

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The Avian Protection Plan (APP) is the foundation of the Southern California Edison (SCE) Avian Protection Program. The APP details SCE processes for managing avian species and is informed by the Avian Power Line Interaction Committee (APLIC) and U.S. Fish and Wildlife Service (USFWS) Avian Protection Plan Guidelines (2005). SCE personnel are informed of the APP through a variety of methods such as annual training, mobile materials, posters, articles, job aids, formal presentations, and other materials. The information provides pertinent environmental regulations, general bird identification, reporting procedures for the discovery of a dead bird, protocols for how to deal with bird nests, and modifications that can be made to power line structures to lower the risk of avian electrocutions. Within the APP is the Avian Mortality Reporting procedure that SCE personnel must adhere to if a bird fatality is discovered on or near SCE infrastructure or within SCE facilities. This procedure includes completion of an avian incident report and the subsequent follow up timeframe for retrofitting the structure to SCE's avian-safe construction standards. Reporting and retrofit requirements are detailed in the APP and training materials are available on the SCE intranet. Reporting of avian incidents is part of the required annual environmental training. In addition, these incidents are reported to U.S. Fish and Wildlife Service annually as required by SCE's Special Purpose Utility Permit (MB728480).

POWER LINE MAINTENANCE PROGRAM

The Rush Creek Project conforms to the SCE Avian Protection Plan and SCE Transmission and Distribution standards requiring avian-safe construction standards. Those construction standards are informed by the APLIC guidance Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006. The Rush Creek Project falls within the SCE defined "Eagle Zone" requiring spacing or covers to prevent contact by eagles. In the event lines or structures are replaced or built as a part of the Rush Creek Project, those facilities will be built to SCE eagle zone avian-safe standards. In addition, should an avian fatality occur on a structure, a retrofit will be required to bring the structure up to SCE avian-safe construction standards.

CONTINUE TO IMPLEMENT THE SPECIAL STATUS SPECIES PROTECTION STANDARD.

SCE's Environmental Services Department (ESD) is committed to protecting the environment and ensuring that SCE manages its activities in compliance with all applicable state and federal laws and regulations, including the:

- a. Federal Endangered Species Act (ESA)
- b. California Endangered Species Act (CESA)
- c. California Fish and Game Code (FGC)
- d. California Environmental Quality Act (CEQA)
- e. National Environmental Policy Act (NEPA) and
- f. Agency permits, licenses, management plans, agreement documents, and programs

This standard describes the requirements to avoid, minimize, and/or mitigate impacts to Special Status Species (Species) and habitat for those Species (Habitat). Special Status Species includes Endangered or Threatened Species and Species with other regulatory protections. Employees are provided annual environmental awareness training. Proposed activities are screened for environmental impacts and if identified to have potential conflict with a sensitive species, ESD reviews and provides avoidance and minimization measures. If avoidance and minimization is insufficient, ESD obtains or helps coordinate obtaining appropriate permits from regulatory agencies.

APPENDIX C

Representative Photographs of Habitat for Cliff-Nesting and Tree-Nesting Raptors

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Cliff-Nesting Habitat

Photo 1. Representative photo of cliff-nesting habitat. This photo is of Carson Peak, located southeast of Agnew Lake and contains ledges and edges that could provide suitable habitat for cliff-nesting species.



Photo 2. Representative photo of cliff-nesting habitat. This cliff is located south of Gem Lake. This cliff is approximately 400 feet high and contains a steep escarpment with ledges and edges that could provide suitable habitat for cliff-nesting species.



Photo 3. Representative photo of cliff-nesting habitat. This cliff is located southwest of Agnew Lake. This cliff is approximately 300 feet high and contains barren ledges that could provide suitable habitat for cliff-nesting species.



Photo 4. Representative photo of cliff-nesting habitat. This cliff is located south of Fern Lake. This cliff is approximately 2,000 feet high and contains rocky outcrops that could provide suitable habitat for cliff-nesting species.

Tree-Nesting Habitat



Photo 5. Representative photo of tree-nesting habitat. This forest is located south of Gem Lake. This high-cover canopy forest contains lodgepole pine and mountain hemlock that could provide suitable habitat for tree-nesting species.



Photo 6. Representative photo of tree-nesting habitat. This forest is located southwest of June Mountain Ski Area. This high-cover canopy forest contains mixed conifer-fir species that could provide suitable habitat for tree-nesting species.



Photo 7. Representative photo of tree-nesting habitat. This forest is located along Yost Meadow Loop Trail. This dense forest contains *Pinus* spp. and *Abies* spp. that could provide suitable habitat for tree-nesting species.



Photo 8. Representative photo of tree-nesting habitat. This forest is located southeast of Waugh Lake. This dense forest contains lodgepole pine, mountain hemlock, and whitebark pine that could provide suitable habitat for tree-nesting species.

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APPENDIX D

CNDDDB Forms

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CONFIDENTIAL INFORMATION

The following appendix is being withheld from public disclosure in accordance with applicable regulations. It contains details on the locations of special-status biological resources and qualifies as Confidential Information (18 Code of Federal Regulations § 385.1112). Disclosure of such information could be harmful to these resources. To further understand the Federal Energy Regulatory Commission's regulations regarding confidential filings, visit: <https://www.ferc.gov/foia>.

TERR 2, Appendix D CNDDDB Forms (Confidential)

TERR 2, Appendix D will not be distributed to the general public. Documents containing Confidential Information may be requested by entities and organizations with jurisdiction over these resources. To request copies, please contact Matthew Woodhall, SCE Relicensing Project Manager at (909) 362-1764 or matthew.woodhall@sce.com.

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APPENDIX E

Photographs of Project Transmission Line and Power Line Towers/Poles

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Tower immediately adjacent to powerhouse. This photograph shows a large equipment structure at the Rush Creek Powerhouse. This design poses a potential risk for avian electrocution since the distance between energized parts and grounded equipment is less than 60 inches apart.



20987 - CIT. This photograph shows a pole that has uninsulated phase conductors that are less than 60 inches apart. This configuration poses a potential risk for avian electrocution.



4423278E. This photograph shows a pole that has uninsulated phase conductors that are less than 60 inches apart. This configuration poses a potential risk for avian electrocution.



4423279E. This photograph shows a tower that has uninsulated jumper wires and uninsulated phase conductors that are less than 60 inches apart. This tower design poses a potential risk for avian electrocution.



4423280E. This photograph shows a tower with uncovered phase conductors that are less than 60 inches apart. This tower design poses a potential risk for avian electrocution.



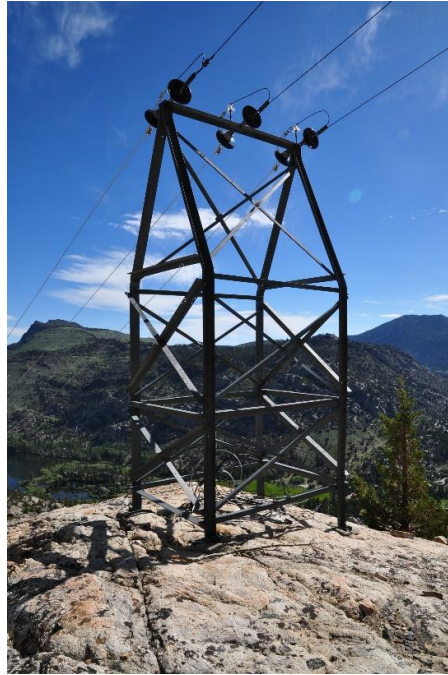
4423281E. This photograph shows a tower that has uninsulated jumper wires and uninsulated phase conductors that are less than 60 inches apart. This design poses a potential risk for avian electrocution.



4423282E. This photograph shows a tower with uninsulated jumper wires. This tower design poses a potential risk for avian electrocution.



4423283E. This photograph shows a tower with jumper wires that are assumed to be uninsulated. This tower poses a potential risk for avian electrocution.



4423284E. This photograph shows a tower that has uninsulated phase conductors that are less than 60 inches apart and uninsulated jumper wires. This configuration poses a potential risk for avian electrocution.



4423285E. This photograph shows a tower with a transformer and uninsulated jumper wires and guy wires. This tower poses a potential risk for avian electrocution.



4423286E. This photograph shows a tower that has uninsulated jumper wires and uninsulated phase conductors that are less than 60 inches apart. This tower design poses a potential risk for avian electrocution.



4423287E. This photograph shows a tower with one transformer. This tower design poses a potential risk for avian electrocution.



4423288E. This photograph shows a tower with one transformer. This tower design poses a potential risk for avian electrocution.



4840586E. This photograph shows a tower that has uninsulated jumper wires and uninsulated phase conductors that are less than 60 inches apart. This tower design poses a potential risk for avian electrocution.



Agnew Lake Dam Powerline. This photograph shows an equipment pole with an insulated guy wire and jumper wires. This configuration does not represent a risk for avian electrocution.

APPENDIX F

Photographs of Facilities Evaluated for Bat Roosting Habitat

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Dams

Photo 1. Rush Meadows Dam. This facility was determined to be suitable bat roosting habitat. The dam structure has cracks and crevices that could provide suitable bat roosting habitat, and appropriate thermal conditions (high solar exposure).



Photo 2. Gem Dam. This facility was determined to be suitable bat roosting habitat. The dam contains cracks in concrete overhangs and has appropriate thermal conditions (high solar exposure).



Photo 3. Agnew Dam. This facility was determined to be suitable bat roosting habitat. The dam has concrete overhangs and crevices and appropriate thermal conditions (high solar exposure).

Valve House



Photo 4. Rush Meadows Dam Valve House. This facility is unsuitable for bat roosting. The valve house does not have overhangs or crevices suitable for bat roosting. Valve house is partially inundated with water and does not have appropriate thermal conditions.



Photo 5. Gem Valve House and Cabin. This facility was determined to be suitable bat roosting habitat. This wooden building has openings along the tin roof and cracks around windows where bats could enter. Building receives appropriate solar exposure.



Photo 6. Gem Dam Arch 8 Valve House. This facility is unsuitable for bat roosting. This metal building has no cracks, crevices, or entry points for bats. Roofed elements are made of metal, which do not provide a suitable gripping surface for roosting.



Photo 7. Gem Flowline Valve House. This facility is unsuitable for bat roosting. Metal structure does not provide overhangs or cracks and crevices suitable for roosting. Position over the emergency spillway creates cold thermal conditions unsuitable for maternity roosting.



Photo 8. Agnew Junction (Valve House and Stand Pipe). This facility was determined to be suitable bat roosting habitat. Building contains overhangs with cracks along the corrugated metal roof that could provide access to interior.



Photo 9. Agnew Dam Valve House. This facility was determined to be suitable bat roosting habitat. Crack above door provides access; corrugated metal roof provides suitable roofed element. Because of the proximity to dam outlet pipes and shady position, building is likely colder than surrounding conditions. Cold buildings are not preferred for maternity roosting, but could be used for hibernation.

Stream Gages



Photo 10. Rush Creek below Agnew Lake (USGS No. 10287289; SCE No. 357). This facility was determined to be suitable bat roosting habitat. The gage building contains suitable cracks and crevices. Underneath the gage is a roofed overhang. Building receives appropriate solar exposure.

Reservoir Gages



Photo 11. Gem Lake (USGS No. 10287280; SCE No. 352). This facility was determined to be suitable bat roosting habitat. This gage building is metal with wooden roofed elements and a crack in the door for bats to access. However, it is located in the dam arch and is cold and shaded. Cold buildings are not preferred for maternity roosting, but could be used for hibernation.



Photo 12. Agnew Lake (USGS no. 10287285; SCE No. 351). This facility is unsuitable for bat roosting. This gage is a concrete slab with no overhangs, cracks, or crevices and is too low to the ground.

Ancillary and Support Facilities

Photo 13. Rush Meadows Equipment Shed. This facility was determined to be suitable bat roosting habitat. This building contains a wooden overhang on the exterior under which bats could roost, but lacks cracks and crevices around doors or windows for access to the interior.



Photo 14. Rush Meadows Dam Gage House. This facility was determined to be suitable bat roosting habitat. Building contains wooden overhangs under which bats could roost, but lacks cracks and crevices allowing access to the interior.



Photo 15. Rush Meadows Dam Solar Facility. This facility is unsuitable for bat roosting. Metal structure does not contain suitable overhangs or crevices for bat roosting.



Photo 16. Gem Lake Dock. This facility is unsuitable for bat roosting. This is a concrete slab close to the ground and water. There is no overhangs or cracks and crevices for roosting.



Photo 17. Gem Lake Motor Barge. This facility is unsuitable for bat roosting. Watercraft does not represent appropriate bat roosting habitat.



Photo 18. Gem Bunkhouse. This facility was determined to be suitable bat roosting habitat. This building provides suitable roofed elements, cracks, crevices, and open window entrance points for bats. Building is positioned in an area with high solar exposure for maternity roosting.



Photo 19. Gem Outhouse. This facility was determined to be suitable bat roosting habitat. This wooden building contains suitable roofed elements, cracks and crevices for bat entry, and is in an area that has appropriate thermal conditions for maternity roosting (high solar exposure).



Photo 20. Gem Cookhouse. This facility was determined to be suitable bat roosting habitat. This building contains suitable roofed elements for bat roosting, and has a broken window and gaps in the metal siding for bats to enter. The roof is a corrugated metal sheet with enough spacing for bats to roost under the eaves. Building is located in an area that has appropriate thermal conditions for maternity roosting (high solar exposure).



Photo 21. Gem Dam Compressor Shed. This facility is unsuitable for bat roosting. New metal building with no gaps in door or along roofline. There are metal eaves do not provide a suitable gripping surface for bat roosting (i.e., lacks cracks and crevices for bats to grip).



Photo 22. Gem Dam Storage Shed. This facility was determined to be suitable bat roosting habitat. Metal building does not provide suitable bat roosting habitat, but the pipe opening provides a large enough crevice for some smaller bat species to roost. The building has appropriate thermal conditions for maternity roosting (high solar exposure).



Photo 23. Gem Dam Overhead Hoist House for Dam Length. This facility was determined to be suitable bat roosting habitat. Wooden building with holes that bat could potentially access suitable roosting habitat.



Photo 24. Gem Dam Overhead Hoist House. This facility was determined to be suitable bat roosting habitat. Corrugated metal building with wooden roofed elements on exterior and contains cracks and crevices suitable for roosting habitat. The building has appropriate thermal conditions for maternity roosting (high solar exposure).



Photo 25. Gem Fish Release Footbridge. This facility is unsuitable for bat roosting. Metal grating bridge that stretches over Rush Creek does not provide roofed elements or cracks and crevices suitable for roosting. Metal material does not provide a suitable gripping surface.



Photo 26. Gem Tram Landing Footbridge. This facility was determined to be suitable bat roosting habitat. Open slatted wood provides roofed elements for roosting, but structure lacks tight cracks and crevices and is very open to the air. Location receives suitable solar exposure for day roosting.



Photo 27. Gem Tram Bridge. This facility was determined to be suitable bat roosting habitat. The underside of the tram bridge provides roofed elements, but the tram slats are very open and the wood lacks cracks or crevices suitable for hibernacula. Tram bridge is also over Rush Creek, which drains water from the bottom of Gem Lake, which creates a microclimate that may be too cold for day roosting bats considering the openness of the bridge.



Photo 28. Gem Weather Station. This facility was determined to be suitable bat roosting habitat. There are cracks in the metal door with an overhanging wooden shelf inside that could provide suitable roosting habitat. Building has appropriate thermal conditions for maternity roosting (high solar exposure).



Photo 29. Gem Satellite Dish/ Gem Solar Facility. This facility is unsuitable for bat roosting. The satellite dish and solar facility do not provide roofed elements or cracks and crevices suitable roosting habitat. The building that is connected to the satellite dish/solar facility has no openings for bats to enter.



Photo 30. Gem Valve House Tunnel. This facility is unsuitable for bat roosting. The tunnel is used as a spillway during high flows. The concrete pad does not contain roofed elements or cracks and crevices suitable for roosting and the conveyance of water makes this structure unsuitable.



Photo 31. Lower Agnew Lake Boathouse/Dock. This facility was determined to be suitable bat roosting habitat. The building contains holes for bats to enter and suitable solar exposure. The cracks in the corrugated metal roof could also provide suitable entrance points for roosting.



Photo 32a. Upper Agnew Lake Boathouse. This facility was determined to be suitable bat roosting habitat. The building contains suitable wooden roofed elements with corrugated metal sheeting that provides cracks and crevices for bats to access the interior. The concrete pad where the building sits also has a wooden edge that also provide roofed elements. The building has appropriate thermal conditions for maternity roosting (high solar exposure).



Photo 32b. Upper Agnew Lake Dock. This facility was determined to be suitable bat roosting habitat. The dock contains suitable wooden roofed elements with corrugated metal sheeting that provides cracks and crevices for bats to access the interior. The concrete pad where the building sits also has a wooden edge that also provide roofed elements.



Photo 33. Agnew Lake Motor Barge. This facility is unsuitable for bat roosting. Motor barge is a flat surface located within Agnew that does not provide suitable roofed elements or cracks and crevices for roosting.



Photo 34. Agnew Cabin. This facility was determined to be suitable bat roosting habitat. Building provides vertical and roofed components that could potentially support roosting bats. The building has cracks and crevices where bats could enter. Building is located in an area that has appropriate thermal conditions for maternity roosting (high solar exposure).



Photo 35. Agnew Flume (downstream of Agnew Dam). This facility is unsuitable for bat roosting. The flume is made of relatively new concrete that does not have cracks and crevices for bats to enter and lacks roofed elements. The flume conveys Rush Creek which makes the walls of the structure too cold for day roosting.



Photo 36. Rush Creek Powerhouse Cottage No. 1. This facility was determined to be suitable bat roosting habitat. Bats could potentially roost under roof eaves on the building. There may be a few cracks under the shingles for bats to access the interior. Building receives solar exposure.



Photo 37. Rush Creek Powerhouse Garage No. 1. This facility was determined to be suitable bat roosting habitat. Structure contains vertical and roofed components and cracks and crevices suitable for bat roosting. Building has appropriate thermal conditions (high solar exposure).



Photo 38. Rush Creek Powerhouse Cottage No. 2. This facility was determined to be suitable bat roosting habitat. There are eaves located on the building that provide roofed elements. The building is mostly sealed around edges and does not display cracks or crevices. Building has appropriate thermal conditions (high solar exposure).



Photo 39. Rush Creek Powerhouse Garage No. 2. This facility was determined to be suitable bat roosting habitat. Building provides vertical and roofed components that could potentially support roosting bats. The building has cracks and crevices that bats could enter and the building has appropriate thermal conditions (high solar exposure).



Photo 40. Rush Creek Powerhouse Garage No. 3. This facility was determined to be suitable bat roosting habitat. Building provides vertical and roofed components that could potentially support roosting bats. The building has cracks and crevices that bats could enter and the building has appropriate thermal conditions (high solar exposure).



Photo 41. Rush Creek Powerhouse Garage No. 4. This facility was determined to be suitable bat roosting habitat. Building provides vertical and roofed components that could potentially support roosting bats. The building has cracks and crevices where bats could enter the building has appropriate thermal conditions (high solar exposure).



Photo 42. Rush Creek Powerhouse Warehouse and Dock. This facility was determined to be suitable bat roosting habitat. Exterior of the building provides vertical and roofed components that could potentially support day-roosting bats, but the building lacks cracks and crevices for bats to enter interior.



Photo 43. Rush Creek Powerhouse Building 0113. This facility was determined to be suitable bat roosting habitat. Building provides vertical and roofed components that could potentially support roosting bats. The building has cracks and crevices that bats could enter, and the building has appropriate thermal conditions (high solar exposure).



Photo 44. Rush Creek Powerhouse Machine Shop. This facility was determined to be suitable bat roosting habitat. Building provides vertical and roofed components that could potentially support roosting bats. The building has cracks and crevices that bats could enter. The building also provides warm thermal conditions for potential roosting bats.



Photo 45. Rush Creek Powerhouse Pump House. This facility was determined to be suitable bat roosting habitat. Building provides vertical and roofed components that could potentially support roosting bats. The building has cracks and crevices that bats could enter and has appropriate thermal conditions (high solar exposure).



Photo 46. Rush Creek Powerhouse Woodshed No. 1. This facility was determined to be suitable bat roosting habitat. Building provides vertical and roofed components that could potentially support roosting bats. The building has abundant cracks and crevices that bats could enter, and the building has appropriate thermal conditions (high solar exposure).



Photo 47. Rush Creek Powerhouse Woodshed No. 2. This facility was determined to be suitable bat roosting habitat. Building provides vertical and roofed components that could potentially support roosting bats on the exterior. The building does not contain cracks and crevices to enter the interior, but it receives appropriate solar exposure.



Photo 48. Bridge over Rush Creek Powerhouse Tailrace. This facility is unsuitable for bat roosting. Tailrace water levels are routinely high (to bottom of bridge), which would prevent bat roosting.



Photo 49. Rush Creek Powerhouse Tailrace. This facility is unsuitable for bat roosting. A tailrace is a cold, fast, flowing channel of water out of the powerhouse which would not provide suitable bat roosting habitat.



Photo 50. Bridge over Rush Creek. This facility is unsuitable for bat roosting. Bridge provides roofed component that could potentially support roosting bats during low flow conditions.



Photo 51. Unnamed Shed near Rush Creek Powerhouse. This facility was determined to be suitable bat roosting habitat. Building provides vertical and roofed components that could potentially support roosting bats. Cracks and crevices on the shingle siding may provide openings for small bats. Building has appropriate thermal conditions for maternity roosting (high solar exposure).

Trams and Hoist Houses



Photo 53. Gem Tram. This facility is unsuitable for bat roosting. Tram line does not provide vertical or roofed components that provide appropriate bat roosting habitat and lies against the ground.



Photo 54. Gem Tram Hoist House. This facility was determined to be suitable bat roosting habitat. Building provides vertical and roofed components that could potentially support roosting bats. The building has cracks and crevices that bats could enter and has appropriate thermal conditions for maternity roosting (high solar exposure).



Photo 55. Gem Tram Upper Landing. This facility was determined to be suitable bat roosting habitat. Upper landing is cave-like and provides vertical and roofed components that could potentially support roosting bats. Concrete generally lacks cracks and crevices large enough for roosting. This structure has appropriate thermal conditions for maternity roosting (high solar exposure).



Photo 56. Gem Tram Lower Landing. This facility is unsuitable for bat roosting. Lower landing is a concrete slab on the ground that does not provide vertical or roofed components or cracks/crevices for roosting bats.



Photo 57. Agnew Tram. This facility is unsuitable for bat roosting. Tram line does not provide vertical or roofed components that provide appropriate bat roosting habitat. Tram line lies against the ground.



Photo 58. Agnew Tram Hoist House. This facility was determined to be suitable bat roosting habitat. Building provides vertical and roofed components and has cracks and crevices that could potentially support roosting bats. Building has appropriate thermal conditions for maternity roosting (high solar exposure).



Photo 59. Agnew Tram Landing (metal storage building not identified on facility list or on the maps). This facility is unsuitable for bat roosting. Metal storage container does not provide roofed components or cracks and crevices that could potentially support roosting bats.

Powerhouse

Photo 60. Rush Creek Powerhouse. This facility was determined to be suitable bat roosting habitat. Building provides vertical and roofed components that could potentially support roosting bats. The building has cracks and crevices where bats could enter the facility. The building has appropriate thermal conditions for maternity roosting (high solar exposure).

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