SOUTHERN CALIFORNIA EDISON®
Energy for What's Ahead℠

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Principal Manager
Regulatory Support Services

Filed Electronically

July 3, 2025

Debbie-Anne A. Reese
Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

Subject: Rush Creek Hydroelectric Project, FERC Project No. 1389-059
USFWS Endangered Species Act Consultation

Dear Ms. Reese:

Southern California Edison Company (SCE), as the non-federal designee for Section 7 under the Endangered Species Act (ESA), requested concurrence and initiation of formal consultation with the U.S. Fish and Wildlife Service (USFWS) on our determinations for the Rush Creek Hydroelectric Project (Federal Energy Regulatory Commission [FERC] Project No. 1389) (Project/Proposed Action) (Information for Planning and Consultation [IPaC] Project Code: 2025-0037843).

SCE prepared a Biological Assessment (BA) that identifies the potential effects of the Proposed Action on eleven species and associated Critical Habitat (CH) (where applicable). The BA was prepared to meet the requirements of 50 CFR 402.14(c)(1). Enclosed is SCE's request to USFWS and the associated BA for the Project.

Maps 4a-i, Map 5, Map 8, and Maps 10a-b of the BA contain information regarding the location(s) of special-status biological resources. The disclosure of this information could be harmful to these resources. Pursuant to 18 CFR § 385.1112, SCE requests confidential treatment of this information. The confidential maps were e-filed with FERC under the "privileged tab" and marked as "CUI//PRIV–Contains Confidential Information–DO NOT RELEASE" in accordance with instructions issued by FERC. SCE requests that the confidential maps be maintained in a non-public file and withheld from public disclosure in accordance with applicable regulations.

If you have any questions regarding this filing please contact Matthew Woodhall, SCE Relicensing Project Manager, by phone at (909) 362-1764 or via e-mail at matthew.woodhall@sce.com.

Sincerely,

Signed by:
Martin Ostendorf
86FE2B352F5144F...

Martin Ostendorf
On behalf of:

Wayne P. Allen
Principal Manager

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Enclosures:

- Biological Assessment for the Rush Creek Project, FERC Project No. 1389
- Confidential Maps 4a-i, Map 5, Map 8, and Maps 10a–b (Confidential Information) – DO NOT RELEASE

Rush Creek Project, FERC Project No. 1389

Final Draft Biological Assessment

July 2025

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

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List of Acronyms

BA	Biological Assessment
Bd	Batrachochytrium dendrobatidis
BMP	Best Management Practice
BO	Biological Opinion
CDFW	California Department of Fish and Wildlife
cfs	cubic feet per second
CNDDB	California Natural Diversity Database
DPS	Distinct Population Segment
ESA	Endangered Species Act
FERC	Federal Energy Regulatory Commission
FLA	Final License Application
Forest Service	United States Forest Service
INF	Inyo National Forest
IPaC	Information for Planning and Conservation (USFWS)
MIF	Minimum Instream Flow
NNIP	Non-Native Invasive Plant
NRIS	Natural Resources Information System
OHWM	Ordinary High Water Mark
PCE	Primary Constituent Element
Project	Rush Creek Project
SCE	Southern California Edison Company
SNYLF	Sierra Nevada yellow-legged frog
TSP	Technical Study Plan
TSR	Technical Study Report

USFWS	United States Fish and Wildlife Service
VES	Visual Encounter Survey
YT	Yosemite toad

1 INTRODUCTION

Southern California Edison Company (SCE) owns and operates the Rush Creek Project (Project), Federal Energy Regulatory Commission (FERC) Project No. 1389. The 13.01-megawatt project includes three dams and associated reservoirs – Rush Meadows Dam (Waugh Lake), Gem Dam (Gem Lake), and Agnew Dam (Agnew Lake); a water conveyance system; the Rush Creek Powerhouse; and ancillary facilities. SCE operates the Project under a 30-year license that was issued on February 4, 1997 (effective February 1, 1997) and which expires on January 31, 2027. In accordance with Section 15(c)(1) of the Federal Power Act and FERC's implementing regulations, SCE filed its Final License Application (FLA) for the Project with FERC on January 22, 2025, to continue operation and maintenance of the Project under a new license (Proposed Action).

Section 7 of the Endangered Species Act (ESA) of 1973, as amended, requires federal agencies to ensure that their actions are not likely to jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of Critical Habitat of such species. This Draft Biological Assessment (Draft BA) documents potential impacts of the continued operation and maintenance of the Rush Creek Project to ESA-listed species and provides guidance to determine whether formal consultation or conference is required with the United States Department Fish and Wildlife Service (USFWS).

1.1 PROJECT LOCATION

The Project is located on Rush Creek on the eastern slope of the Sierra Nevada in Mono County, California. The Project is situated approximately 4 miles southwest of the unincorporated community of June Lake and approximately 14 miles upstream from Mono Lake. Most of the Project facilities occupy federal lands within the Inyo National Forest (INF), which is under the jurisdiction of the United States Forest Service (Forest Service). The exception is an area around the Rush Creek Powerhouse, which is located on SCE-owned lands.

Some of the Project's physical infrastructure occupies federal lands within Ansel Adams Wilderness Area, designated by Congress as part of the Wilderness Act of 1964 (Public Law No. 88-577; 16 U.S.C. § 1132 note) and later as part of the California Wilderness Act of 1984 (Public Law No. 98-425; 16 U.S.C. § 1132 note). However, this infrastructure and FERC's licensing of this infrastructure as Project works predate the establishment of the wilderness area. **Map BA-1** depicts the location of Project facilities, land ownership, and administrative responsibilities in the vicinity of the Project.

1.2 DEFINITION OF ACTION AREA

The "Action Area" is defined under the ESA as the area that would be directly or indirectly affected by the Proposed Action. The Action Area for the purposes of this Draft BA includes the following:

1.2.1 Construction and Restoration

The first phase of the Proposed Action includes the removal of Rush Meadows Dam and restoration of Waugh Lake, removal of Agnew Dam and restoration of the historic inundation zone of Agnew Lake, and retrofit of Gem Dam and restoration of the historic inundation zone of Gem Lake (also referred to as "Project Facility Modifications" in the FLA).

The following Construction Restoration Action Area, shown in **Map Series BA-2**, are defined to facilitate analysis of effects resulting from construction and restoration activities:

- **Construction and Restoration Areas:** The location and extent of construction activities (in yellow) and restoration activities (in green) are depicted on **Map Series BA-2.** The Action Area

  a. Construction activities are described in detail in Section 5, Appendix 5-A of the FLA.

  b. Restoration activities are described in Section 5, Appendix 5-D (Conceptual Restoration Plan) within the FLA. Note that restoration activities are currently only defined at a conceptual level. Specific methodologies, equipment required, and frequency of helicopter use for restoration will be determined in consultation with resource agencies as part of development of the Detailed Restoration Plan following issuance of the new FERC license.

- **Noise Action Area (43 dBA Threshold):** The BA also considers the effects of noise from operation of construction equipment and helicopter flights during implementation of construction and restoration activities. The Noise Action Area for this phase includes the spatial extent of estimated and generalized project-related noise disturbance to wildlife. A threshold of 3 decibels (dBA) above background sound level was used to determine the maximum disturbance area for wildlife. This noise threshold is associated with a 50 percent reduced listening area and a 30 percent reduced alerting distance for wildlife (Barber et al. 2009). The distance for this threshold was calculated by estimating the background sound level, noise level generated by construction activities, noise level generated by helicopter flights, and an attenuation factor related to the environmental setting. Each factor is described further below:

  - Background Sound Level: Because some construction and restoration activities will take place within the Ansel Adams Wilderness, we used a conservative background sound level of 40 dBA, estimated from the National Park Service modeling of nationwide background sound levels (National Park Service 2025)

  - Construction and Restoration Noise Levels: Noise levels for construction and restoration were estimated by using published noise levels for the preliminary lists of construction equipment described in FLA, Section 5, Appendix 5-A of the FLA, including Table A-5 (Rush Meadows Dam), Table A-8 (Agnew Dam),

and Table A-12 (Gem Dam). Noise generated from this construction equipment was modeled according to the methods for calculating noise levels described in the LAND 2 – Noise Technical Study Report (SCE 2025a), assuming a worst-case scenario that all construction equipment would be used simultaneously and would be used within the full boundary of the construction and restoration areas shown on **Map Series BA-2**[1]. Assuming that a 3 dBA increase could potentially affect wildlife, a noise level of 43 dBA was used to model the maximum distances sound would carry and potentially affect wildlife species. The Action Area for noise levels generated by construction and restoration is approximately 8,573 acres.

- Helicopter Noise Levels: Noise levels were estimated for use of a Skycrane helicopter (largest helicopter) along the helicopter flight paths. Assuming that a 3 dBA increase could potentially affect wildlife, a noise level of 43 dBA was used to model the maximum distances sound would carry and potentially affect wildlife species. The Action Area for noise levels generated by use of the Skycrane helicopter is approximately 19,343 acres.

- Attenuation: Noise attenuation refers to the reduction of sound intensity or level as it travels through a medium or is affected by barriers. It can be achieved through various methods, including absorption, reflection, interference, and the use of specialized materials or technologies. The noise analysis in this document rely on the noise models used in the LAND 2 – Noise Technical Study Report (SCE 2025a), which use complex algorithms that take into account landform types, topography, and noise reflectivity to determine noise exposure on the landscape. Therefore, a simple linear attenuation factor was not used in this analysis. The construction equipment noise analysis relied on the Roadway Construction Noise Model (RCNM), the Federal Highway Administration's (FHWA) national model for the prediction of construction noise, which takes attenuation into account. The helicopter noise analysis relied on the Department of Defense (DoD) Noisemap suite of computer programs for aircraft noise modeling and analysis including the Advanced Acoustic Model (AAM) (U.S. Department of Transportation 2020), which also takes attenuation into account.

  The RCNM provides a construction noise tool to predict noise levels at user-entered distances from various types of construction equipment or trucks for sound propagation paths over relatively flat ground, providing outputs for Lmax and Leq metrics at specified dBA levels of interest to the analysis.

  The AAM software used for the noise analysis accounts for varying ground terrain through the use of user imported United States Geological Survey (USGS) elevation data in the form of a gridfloat and hydrography files identifying areas with surface water. Explanation of the AAM software

[1] Noise analyses in this document use the same "worst case scenario" modeling for both construction and restoration. However, considering that restoration is expected to consist primarily of low-intensity, passive restoration methods, noise levels associated with restoration activities are expected to be greatly reduced compared to construction activities.

provided in the technical reference manual (U.S. Department of Transportation 2020) includes the following information.

> *The computational methodology for ground reflection and attenuation over areas where topographic features are significant is twofold. First, the effect of terrain and receiver altitude relative to vehicle location (slant range) are computed. Second, the effects of terrain and ground cover on ground reflection and attenuation due to the multiple ray paths are computed with Rasmussen's algorithms.[2] These algorithms account for shielding (modeled as wedges) and structures (modeled as thin screens), multiple reflections in valleys, the effects of ground impedance, turbulent decoherence, and foliage.[3] Diffraction of sound into a shadow zone is calculated by the method of Berry and Daigle.[4]*

More information about both the RCNM and AAM is available in Appendix C of the LAND 2 – Noise Technical Study Report (SCE 2025a), which is found in the FLA, Volume III (Part 3a of 4).

1.2.2 Long-Term Operations and Maintenance

The second phase of the Proposed Action is the long-term operations and maintenance of Gem Dam, Rush Creek Powerhouse, and associated facilities following completion of construction and restoration.

The following Long-Term Operations and Maintenance Action Area, shown in **Map Series BA-3**, is defined to facilitate analysis of effects resulting from long-term operations and maintenance:

- **The Long-Term Operations and Maintenance Area:** Existing operation and maintenance of the project is described in the FLA, Section 4, No-Action Alternative. Changes to existing operation and maintenance activities are described in FLA, Section 5, Proposed Action. The Action Area defined for long-term operations and maintenance encompasses all areas in which future operation and maintenance of the Project would occur, including Gem Dam, Rush Creek Powerhouse, any infrastructure remaining following completion of construction/restoration (as described above) , and helicopter flight paths required for long-term operations and maintenance. These areas would be contained within the FERC Project boundary (revised to remove areas required to maintain Rush Meadows and Agnew dams). There will be no construction activities as part of long-term operations and maintenance.

[2] Rasmussen, K.B. 1984. "The Effect of Terrain Profile on Sound Propagation Outdoors," Danish Acoustical Institute Technical Report 111, Technical University of Denmark, Lyngby, Denmark, January.

[3] Department of Transportation 2020. Volpe Center. Advanced Acoustic Model (AAM), Technical Reference and User's Guide. December.

[4] Bateman, H. 1915. "Some Recent Researches on the Motion of Fluids," Monthly Weather Review, 43 163, April. Berry, A. and G.A. Daigle. 1988. "Controlled Experiments of the Diffraction of Sound by a Curved Surface," J. Acoustic. Soc. Am., 83 (6), pp 2047-2058.

- **Noise Action Area:** To account for potential effects of noise from helicopter use associated with long-term operations and maintenance activities, the Long-Term Operations and Maintenance Action Area also includes the maximum threshold of 43 dBA modeled according to the background sound levels, the long-term operations and maintenance helicopter flight path, and the attenuation factor methodology as described above under Construction and Restoration Action Area. In general, frequency of helicopter use under long-term operations and maintenance will be similar to the existing condition (use of A-Star 350-type helicopters once or twice per month), but will occur in a reduced footprint as compared to the existing condition (flights to Rush Meadows Dam would no longer occur).

1.3 SPECIES CONSIDERED

The USFWS Information for Planning and Conservation (IPaC) website (https://ecos.fws.gov/ipac/) was accessed January 2025 to (1) obtain a current list of threatened or endangered species that may be present in the vicinity of the Proposed Action, and (2) to locate any proposed or designated Critical Habitat that may be present in the vicinity of the Proposed Action. The full IPaC report can be found in **Appendix A** of this Draft BA. The scope of this Draft BA encompasses all federally listed species identified in the IPaC report or those known to occur within 1 mile of the FERC Project boundary. Refer to the **Table BA-1** for the determination of which species or Critical Habitat need to be considered for analysis. The potential for direct, indirect, and cumulative effects to individuals and Critical Habitat were considered. Species that could potentially be affected are indicated with a "Yes" and are analyzed in detail in this Draft BA.

Table BA-1. Federal Listed Species Considered in this Analysis

Species	Status	Project Potential for Effects	Species Potentially Affected by Project	
			No	Yes
Whitebark pine (*Pinus albicaulis*)	FT	No Critical Habitat has been designated for this species. A total of 38 whitebark pine populations were identified in the Action Area during surveys in 2023. An additional 11 populations lacked mature bark and cones and therefore were identified as unknown five-needle pines.		x
Monarch butterfly (*Danaus Plexippus*)	FPT	Critical Habitat is proposed for this species, but the Action Area does not overlap with Critical Habitat. Observed migrating near Waugh Lake and Gem Lake during technical studies implemented in 2023. No milkweeds were observed in the Action Area during botanical technical studies, so the Action Area does not contain suitable breeding habitat for this species. Flowering plants in the Action Area provide suitable foraging habitat for the species during their migration to wintering habitat on the coast.		x

Species	Status	Project Potential for Effects	Species Potentially Affected by Project	
			No	Yes
Sierra Nevada yellow- legged frog (SNYLF) (*Rana sierrae*)	FE, CH	The Action Area overlaps Critical Habitat for this species (USFWS 2013b). Critical Habitat Unit 3/Subunit 3E (Evolution/Leconte) (USFWS 2016) encompasses Waugh Lake and Gem Lake (and Rush Creek between the two lakes). The California Natural Diversity Database (CNDDB) query yielded four records within 1 mile of the Federal Energy Regulatory Commission (FERC) Project boundary (CNDDB 2024), and the Forest Service Natural Resources Inventory System (NRIS) database query yielded 98 records within 1 mile of the FERC Project boundary between 2000 and 2010 (Forest Service 2017). SNYLF were incidentally observed during recreation studies conducted in support of the Proposed Action on August 31, 2023, and again on August 27, 2024. Both sightings were in the vicinity of a meadow complex located just over 1 mile west of Waugh Lake (in the same general location as the 2010 record). Photographs of the species were verified by a qualified aquatic biologist.		x
Yosemite toad (YT) (*Anaxyrus canorus*)	FT, CH	The Action Area overlaps Critical Habitat for this species (USFWS 2013b). Critical Habitat Unit 5 (Tuolumne Meadows/Cathedral) (USFWS 2016) encompasses Waugh Lake and Rush Creek downstream of Rush Meadows Dam. The NRIS query yielded three records within 1 mile of the FERC Project boundary. Two toad tadpoles (*Anaxyrus* spp.) were discovered in a small pool within the drawn down Waugh Lake during late season visual encounter surveys (VES) in 2024. These tadpoles are within the upland dispersal distance of known populations of breeding YT (CNDDB 2024). However, because handling was not permitted as part of study implementation, and because YT tadpoles cannot be distinguished from closely related western toad (*A. boreas*), the identification was kept to the genus level to be conservative.		x
Northwestern pond turtle (*Actinemys marmorata*)	FPT	No Critical Habitat has been designated for this species. The Action Area is outside of the geographic range of this species.	x	
Yellow-billed cuckoo (*Coccyzus americanus*)	FT	There is Critical Habitat for this species; but the Action Area does not overlap the Critical Habitat. The Action Area is outside of the geographic range of this species.	x	

Species	Status	Project Potential for Effects	Species Potentially Affected by Project	
			No	Yes
Sierra Nevada red fox – Sierra Nevada Distinct Population Segment (DPS) (*Vulpes vulpes necator*)	FE	No Critical Habitat has been designated for this species. May potentially occur in appropriate habitat. Sierra Nevada red foxes were detected on California Department of Fish and Wildlife's (CDFW) Alpine Mesocarnivore survey grids in the vicinity of the Action Area 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; Lawson, pers. comm.)		x
Gray wolf (*Canis lupus*)	FE	Critical Habitat has been designated for this species, but the Action Area does not overlap the Critical Habitat. The Action Area is outside of the range of established wolf packs in California. The nearest established packs are located on the Tahoe National Forest to the north, and in the Sequoia National Forest to the south (CDFW 2024).	x	
Fisher – Southern Sierra Nevada Distinct Population Segment DPS *(Pekania pennanti)*	FE, CH	There is proposed Critical Habitat for this species; but the Action Area does not overlap the proposed Critical Habitat. The Action Area is outside the geographic range of this species. The only population of fishers known on the Inyo National Forest (INF) occurs on the Kern Plateau along the boundary of the Sequoia National Forest (Forest Service 2018).	x	
North American wolverine – Contiguous United States DPS (*Gulo gulo luscus*)	FT	No Critical Habitat has been designated for this species. May potentially occur in appropriate habitat. Multiple wolverine sightings on the INF in Mono and Inyo counties were confirmed by CDFW in 2023 (CDFW 2023). Another sighting was confirmed in Yosemite National Park in Tuolumne County (CDFW 2023). The nearest known detection of wolverine was from the north shore of Thousand Islands Lakes, just south of the Action Area (Lawson, pers. comm.).		x

Species	Status	Project Potential for Effects	Species Potentially Affected by Project	
			No	Yes
Sierra Nevada bighorn sheep (*Ovis canadensis sierrae*)	FE, CH	There is Critical Habitat for this species (USFWS 2008); but the Action Area does not overlap the Critical Habitat. 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 Action Area (CDFW 2021). However, movements have been recorded between the Mount Gibbs herd and the Central recovery unit south of the Action Area, and between the Mt. Gibbs herd unit and the Cathedral Range Herd Unit to the east of the Action Area (CDFW 2018). Therefore, there is some potential that individuals may migrate or disperse through the Action Area (USFWS 2007).		x

Key: CH = Critical Habitat
FC = Candidate for listing under the Endangered Species Act
FE = Federal Endangered
FPT = Federal Proposed Threatened
FT = Federal Threatened

1.4 CONSULTATION TO DATE

Pursuant to Section 7 of the federal ESA, consultation with the USFWS is required when implementation of a project may affect the continued existence of a federally listed species. Species are defined as threatened or endangered by USFWS if they are listed in Title 50 of the Code of Federal Regulations §§ 17.11 or 17.12. SCE's Section 7 consultation efforts completed for the relicensing of the Rush Creek Project are summarized below.

- SCE requested to be designated as the non-federal representative for the purpose of conducting informal Section 7 consultation with the USFWS on December 16, 2021. FERC granted SCE's request on February 14, 2022.

- On March 29, April 11, 2022, April 19, 2022 SCE consulted with resource agencies, including USFWS, to obtain input on the methodology included in the TERR 2 – Wildlife Resources Technical Study Plan (TSP).

- SCE provided the Draft TERR 1 – Botanical Resources, TERR 2 – Wildlife Resources, and AQ 7 – Special-Status Amphibians TSPs to USFWS for review and comment on September 23, 2022.

- On June 19, 2023, SCE e-mailed resource agencies, including USFWS, to identify special-status plant reference populations (to verify the timing of early season special-status plant surveys) and schedule the early-season reference population site visit. On July 4, 2023, SCE e-mailed resource agencies to notify them of the timing of the early season reference population visit.

- On July 14, 2023, SCE e-mailed the results of the early season reference population visit and identified the timing of the early season botanical surveys based on the results.

- On August 15, 2023, SCE e-mailed resource agencies, including USFWS, to identify special-status plant reference populations and schedule the late season reference population site visit. On August 23, 2023, SCE e-mailed resource agencies to notify them of the timing of the late season reference population visit.

- On September 5, 2023, SCE e-mailed the results of the late season reference population visit and identified the timing of the late season botanical surveys based on the results.

- SCE provided Technical Study Reports (TSRs) to USFWS for review and comment on March 4, 2024, and March 29, 2024.

- On May 29, 2024, SCE scheduled and attended a meeting with Anne Mankowski, Marcy Haworth, and Heather Beeler of the USFWS to discuss ESA listed species and Critical Habitat known or potentially occurring in the Action Area (study results). SCE provided an overview of proposed construction Best Management Practices (BMP) and long-term operation and maintenance avoidance/protection measures.

- On October 14, 2024, SCE met with Yosemite toad (YT) expert Jim Erdmann from the California Department of Fish and Wildlife (CDFW) to discuss observations of *Anaxyrus* toads observed in Waugh Lake and to discuss appropriate avoidance and protection measures.

- On March 12, 2025, SCE met with Anne Mankowski, Samantha Luginbuhl, and Sarah Webster of USFWS to discuss comments on Proposed Action and draft BA.

- On April 17, 2025 SCE met with Anne Mankowski, Chad Mellison, and Sarah Fletcher of USFWS to discuss approach to noise analysis and clarification of the Action Area.

2 DESCRIPTION OF THE PROPOSED ACTION

This section provides a summary of the Proposed Action analyzed under SCE's Application for New License for the Rush Creek Project. The Proposed Action represents SCE's recommendations for continued operation and maintenance of the Project, including disposition of Rush Meadows and Agnew dams and associated facilities; retrofitting of Gem Dam and continued operations; restoration activities; proposed measures to minimize construction effects; and environmental measures, management, and monitoring plans associated with continued operation and maintenance of the Project.

The following actions would occur under the Proposed Action:

- Project facility modifications;
- Changes to the existing FERC Project boundary;
- Changes in Project operations;
- Changes in Project maintenance;
- New measures:
  - Construction measures, and
  - Environmental measures, management, and monitoring plans associated with continued operation and maintenance of the Project.

Refer to Section 5 of the FLA for a detailed description of the Proposed Action. Construction measures to be implemented to minimize the potential for effects to sensitive resources as a result of Project facility modifications are provided in **Appendix B** of this Draft BA. Environmental measures, management, and monitoring plans associated with continued operation and maintenance of the Project are provided in **Appendix C** of this Draft BA.

3 EXISTING ENVIRONMENT

This section provides a brief species account; a description of habitat (including Critical Habitat); and a summary of surveys and known occurrences of whitebark pine, monarch butterfly, SNYLF, YT, Sierra Nevada red fox, North American wolverine, and Sierra Nevada bighorn sheep in the Action Area.

Information on federally listed species in the Action Areas is based on data from resource agency files and reports; SCE's Pre-Application Document (SCE 2021); and botanical and wildlife resource technical studies completed in 2023 and 2024 for the Project relicensing. Detailed descriptions of the study methods and results are provided in the following TSRs:

- TERR 1 – Botanical Resources Technical Study Report (TERR 1 – TSR) (SCE 2025b);

- TERR 2 – Wildlife Resources Technical Study Report (TERR 2 – TSR) (SCE 2025c); and
- AQ 7 – Special-Status Amphibians Technical Study Report (AQ 7 – TSR) (SCE 2025d).

Extensive field surveys were conducted as part of the TERR 1, TERR 2 and AQ 7 technical studies to document the full extent of botanical and wildlife resources in the vicinity of the Project. Field surveys included:

- Vegetation alliance and wildlife habitat mapping;
- Protocol-level botanical surveys;
- General wildlife reconnaissance surveys;
- SNYLF habitat surveys and visual encounter surveys (VES); and
- YT habitat surveys and VES.

3.1 WHITEBARK PINE

3.1.1 Species Account

A complete species account for whitebark pine is provided in the *Species Status Assessment Report for the Whitebark Pine, Pinus albicaulis* (USFWS 2021b), available at https://ecos.fws.gov/ecp/species/1748. This information is incorporated by reference into this Draft BA. Excerpts from the Species Status Assessment for whitebark pine relevant to this analysis are provided below.

Whitebark pine typically occurs on cold and windy high-elevation or high-latitude sites in western North America, although it also occurs in scattered areas of the warm and dry Great Basin. The elevational limit of the species ranges from approximately 2,950 feet in elevation at its northern limit in British Columbia up to 12,000 feet in elevation in the Sierra Nevada. Whitebark pine is typically found growing at subalpine tree line or with other high-mountain conifers just below the tree line and subalpine zone. Common associated tree species are similar in the Sierra Nevada and Blue and Cascade Mountains, except lodgepole pine is present as *P. contorta* var. *murrayana* (Sierra-Cascade lodgepole pine), mountain hemlock is absent from the Blue Mountains, and Engelmann spruce and subalpine fir are absent in the Sierra Nevada.

There are four stages in the life cycle of the whitebark pine: seed, seedling, sapling, and mature trees (i.e., reproductive adults). Seeds are produced in female cones and once on the ground may take two years or more (up to 11 years) to germinate. Mature reproductive whitebark pines contain both female and male cones (i.e., monoecious reproduction), and can survive on the landscape for hundreds of years.

Whitebark pine is the only stone pine (so-called for their stone-like seeds) in North America of the five species worldwide. Characteristics of stone pines include five needles per cluster, indehiscent seed cones (scales remain essentially closed at maturity) that stay on the tree, and wingless seeds that are held in place by the cone's scales and not dislodged by the wind. Because whitebark pine seeds are not wind-disseminated, primary seed dispersal occurs almost exclusively by Clark's nutcrackers (*Nucifraga columbiana*) in the avian family Corvidae (whose members include ravens, crows, and jays).

Consequently, Clark's nutcrackers facilitate whitebark pine regeneration and influence its distribution and population structure through their seed caching activities.

Whitebark pine may occur as a climax species, or an early to seral mid-successional stage codominant associated with other tree species. Although it occasionally occurs in pure or nearly pure stands at high elevations, it more typically occurs in stands of mixed species in a variety of forest community types.

Whitebark pine is considered a keystone and foundation species in western North America where it increases biodiversity and contributes to critical ecosystem functions. As a pioneer or early successional species, it may be the first conifer to become established after disturbance, subsequently stabilizing soils and regulating runoff. At higher elevations, snow drifts around whitebark pine trees, thereby increasing soil moisture, modifying soil temperatures, and holding soil moisture later into the season. These higher elevation trees also shade, protect, and slow the progression of snowmelt, essentially reducing spring flooding at lower elevations. Whitebark pine also provides nutritious seeds for several birds and mammals.

3.1.2 Existing Habitat

Whitebark pine is typically found growing at the subalpine tree line, or in association with other high-mountain conifers just below the tree line and subalpine zone (USFWS 2021b). Based on studies conducted by SCE in support of the TERR 1 – TSR (SCE 2025b), the following describes specific habitat characteristics for whitebark pines in the Action Areas:

- Whitebark pines were typically found within Lodgepole Pine and Subalpine Conifer vegetation alliances within the FERC Project boundary.
- The Subalpine Conifer Alliance contained a higher density of mature whitebark pines at approximately 54 per acre, and unknown five-needle pines[5] at approximately 69 per acre.
- The Lodgepole Pine Alliance generally supported lower densities (13 whitebark pines per acre and 54 unknown five-needle pines per acre).

[5] Trees were identified using a guide to five-needle pines provided by the INF botanist (B. Engelhardt, pers. comm.). Trees lacking qualifying features necessary for identification (e.g., young trees) were classified as unknown five-needle pines and recorded separately from confirmed whitebark pines.

- In general, north facing slopes had a much higher density of whitebark pines and unknown five-needle pines than other aspects.

- No whitebark pines or unknown five-needle pines were observed below an elevation of 8,500 feet.

Refer to **Appendix D** of this Draft BA for representative photographs of whitebark pines and associated habitat.

3.1.3 Existing Surveys and Sightings

SCE conducted protocol-level botanical surveys in support of the TERR 1 – TSR in 2023 and determined that whitebark pine is locally common in in appropriate habitat. Refer to the TERR 1 – TSR (SCE 2025b) for detailed methods and results of surveys for special-status plants (including whitebark pines). A total of 38 populations of whitebark pines and 11 populations of unknown five-needle pines totaling approximately 2,992 individuals were identified in the FERC Project boundary. Refer to **Appendix E** of this Draft BA for a list and detailed information on all populations recorded during the TERR 1 studies.

3.1.3.1 Construction and Restoration

Table BA-2 provides a summary of whitebark pine and unknown five-needle pine populations that intersect with the Construction and Restoration Action Areas. Note that these populations only partially overlap the construction areas. There are no whitebark pine populations within the restoration areas. Refer to **Map Series BA-4** for the location of whitebark pine and unknown five-needle pine populations in relation to proposed construction and restoration activities.

Table BA-2. Whitebark Pine and Unknown Five-Needle Pine Populations that Intersect Construction and Restoration Action Area

Population ID	Acres in Population	Total Number of Individuals
Rush Meadows Dam Construction Area (Map 4d)		
PIAL 7	**0.05**	**1**
PIAL 8	**0.10**	**9**
PIAL 9	**0.17**	**3**
U5NP 3	**0.05**	**4**
Total	**0.37**	**17**
Waugh Lake Restoration Area		
—	—	—
Gem Dam Construction Area (Map 4h)		
PIAL 37	1.04	27
U5NP 9	0.54	11
Total	1.58	38

Population ID	Acres in Population	Total Number of Individuals
Gem Lake Restoration Area		
N/A	0.00	0
Agnew Dam Construction Area (Map 4i)		
N/A	0.00	0
Agnew Lake Restoration Area		
N/A	0.00	0

3.1.3.2 Long-Term Operations and Maintenance:

Table BA-3 provides a summary of whitebark pine and unknown five-needle pine populations that intersect with the Long-Term Operations and Maintenance Action Area (i.e., the post-construction FERC Project boundary).

Table BA-3. Whitebark Pine and Unknown Five-Needle Pine Populations that Intersect the Long-Term Operations and Maintenance Action Area

Population ID	Acres in Population	Total Number of Individuals
Gem Dam and Associated Facilities (Map 4h)		
PIAL 37	1.04	27
U5NP 9	0.54	11
U5NP 10	0.22	2
Total	1.80	40

3.2 MONARCH BUTTERFLY

3.2.1 Species Account

USFWS proposed the monarch butterfly (*Danaus plexippus*) for listing as a threatened species on December 12, 2024. A complete species account for monarch butterfly is publicly available at https://www.fws.gov/sites/default/files/documents/Monarch-Butterfly-SSA-Report-September-2020.pdf. This information is incorporated by reference into this Draft BA. A summary of biological and habitat characteristics relevant to this analysis are provided below.

The monarch butterfly has a western and eastern population in the United States and is a long-distance migrator in its North American range. The western population of monarch butterflies leave their wintering grounds between January and March occupy breeding habitats between March and October. In the Sierra Nevada, the western migration back to overwintering sites begins as early as late July or August, but some breeding can occur into October (UC Davis 2022). At the end of the breeding season, monarchs migrate to overwintering sites located in coastal California and Mexico, where they remain until returning to their breeding habitats the following spring.

Monarch butterflies lay their eggs on obligate milkweed (*Asclepias* spp.) host plants, and larvae emerge after two to five days. Larvae develop over a period of nine to 18 days, feeding on the milkweed and sequestering toxic cardenolides, which they use as a defense against predators. After reaching an appropriate size, the larvae pupate into a chrysalis before emerging six to 14 days later as an adult butterfly. Multiple generations of monarchs are produced during the breeding season and adults live approximately two to five weeks.

In the arid western North America, milkweeds are often associated with riparian corridors that have higher abundances of floral resources. Adults forage on a variety of blooming nectar resources in addition to milkweed.

3.2.2 Existing Habitat

The Construction and Restoration Action Area and the Long-Term Operations and Maintenance Action Area are located outside of overwintering sites for monarch butterfly, which are restricted to coastal California and Mexico.

Breeding habitat is defined to include any areas supporting the host plant, Asclepius species. Asclepius species were not observed during botanical studies conducted in the FERC Project boundary in 2023 (SCE 2025b). Therefore, the FERC Project boundary does not support breeding habitat for monarch butterflies.

Flowering plants in the Construction and Restoration Action Area and the Long-Term Operations and Maintenance Action Area provide suitable foraging habitat for the species during their migration to wintering habitat on the coast.

3.2.3 Existing Surveys and Sightings

No formal monarch butterfly surveys have been conducted in the Construction and Restoration Action Area and the Long-Term Operations and Maintenance Action Area. However, monarch butterflies were observed foraging in the vicinity of Waugh Lake and Gem Lake during wildlife technical studies conducted in 2023 (SCE 2025d). Refer to Map BA-5 for the location of these observations.

3.3 SIERRA NEVADA YELLOW-LEGGED FROG

3.3.1 Species Account

On April 29, 2014, the USFWS published a final rule in the Federal Register to list the SNYLF and Northern distinct population segment (DPS) mountain yellow-legged frogs as endangered (USFWS 2014a). The rule went into effect on June 30, 2014. A Critical Habitat designation was proposed by the USFWS (2013) and was finalized as of August 26, 2016. A complete species account for SNYLF is publicly available in the Federal Register (2014a) and can be obtained at https://www.govinfo.gov/content/pkg/FR-2013-04-25/pdf/2013-09598.pdf. This information is incorporated by reference into this Draft BA. A summary of biological and habitat characteristics relevant to this analysis is provided below.

3.3.1.1 Suitable Habitat

On December 19, 2014, USFWS issued a Programmatic Biological Opinion (BO) addressing the effects on the three newly listed amphibians (including SNYLF) of Forest Service Region 5 Forest Programs, including the INF (USFWS 2014b). The USFWS Programmatic BO uses the following definition of suitable habitat for SNYLF (USFWS 2014b):

- Typically occurs above 4,500 feet in elevation but in some areas (including west side of Plumas National Forest) it may occur as low as 3,500 feet in elevation.
- Includes permanent water bodies or those hydrologically connected with permanent water such as wet meadows, lakes, streams, rivers, tarns, perennial creeks, permanent plunge pools within intermittent creeks, and pools, such as a body of impounded water contained above a natural dam.
- Includes adjacent areas up to a distance of 82 feet.
- When water bodies occur within 984 feet of one another (as is typical of some high mountain lake habitat) suitable habitat for dispersal and movement includes the overland areas between lake shorelines.
- In mesic areas such as lake/meadow systems, the entire contiguous or proximate areas are suitable habitat for dispersal and foraging.

3.3.1.2 Breeding

Breeding occurs soon after spring thaw, ranging from April at lower elevations to June or July in high elevations (Vredenburg et al. 2005). Recent studies indicate that males call underwater and nocturnally to attract females, and calling peaks between early to mid-June in nearby Yosemite National Park (Lapp et al. 2024). The length of the larval stage depends on elevation; larvae require at least one year before metamorphosis to the adult stage, but most Sierra Nevada populations are composed of larvae in three size classes which may correspond to year classes (Vredenburg et al. 2005). Metamorphosis occurs in July or August (Vredenburg et al. 2005). The time required to reach reproductive maturity is believed to vary between 3 and 4 years after metamorphosis (Vredenburg et al. 2005).

3.3.1.3 Seasonal Movements and Dispersal

Site fidelity is high for breeding, foraging and overwintering for this species (Matthews and Preisler 2010). Individuals are rarely far from water, usually less than 1 meter and almost always on a wet substrate while basking (Bradford 1984). SNYLF individuals typically travel in or along aquatic corridors, and researchers have documented maximum upstream/downstream movements up to approximately 2 miles (Matthews and Pope 1999; Wengert 2008). In addition, researchers have observed seasonal movement patterns from overwintering habitat to breeding and feeding habitat and back again to

overwintering habitat (Matthews and Pope 1999, Pope and Matthews 2001). All age classes (subadult and adult frogs, and larvae) overwinter underwater; in high elevations they are restricted to relatively deep lakes (over 5 feet deep) that do not freeze solid in winter (Knapp and Matthews 2000).

3.3.1.4 Critical Habitat

USFWS has outlined Primary Constituent Elements (PCE) for SNYLF habitat, defined as the physical and biological features that are essential to the conservation of the species. This includes:

- Aquatic habitat for breeding and rearing.
- Habitat that consists of permanent water bodies, or those that are either hydrologically connected with, or close to, permanent water bodies, including, but not limited to, lakes, streams, rivers, tarns, perennial creeks (or permanent plunge pools within intermittent creeks), pools (such as a body of impounded water contained above a natural dam), and other forms of aquatic habitat. This habitat must:
  - Be of sufficient depth not to freeze solid during the winter,
  - Maintain a natural flow pattern, including periodic flooding,
  - Be free of fish and other predators,
  - Maintain water during the entire tadpole growth phase (minimum of 2 years),
  - Contain bank and pool substrates consisting of varying percentages of soil or silt, sand, gravel, cobble, rock, and boulders,
  - Contain shallower lake microhabitat with solar exposure,
  - Contain open gravel banks and rocks projecting above or just beneath the surface of the water, and
  - Sufficient food resources to provide for tadpole growth and development.
- Aquatic non-breeding habitat (including overwintering habitat).
  - This habitat may contain the same characteristics as aquatic breeding and rearing habitat (often at the same locale), and may include lakes, ponds, tarns, streams, rivers, creeks, plunge pools within intermittent creeks, seeps, and springs that may not hold water long enough for the species to complete its aquatic life cycle. This habitat provides for shelter, foraging, predator avoidance, and aquatic dispersal of juvenile and adult SNYLF.

- Upland areas.
    - Upland areas adjacent to or surrounding breeding and non-breeding aquatic habitat that provide area for feeding and movement by SNYLF.
    - Upland areas (catchments) adjacent to and surrounding both breeding and non-breeding aquatic habitat that provide for the natural hydrologic regime (water quantity) of aquatic habitats. These upland areas should also allow for the maintenance of sufficient water quality to provide for the various life stages of the frog and its prey base. These include permanent water bodies for breeding and rearing including lakes, streams, rivers, tarns, perennial creeks (or permanent plunge pools within intermittent creeks), pools (such as a body of impounded water contained above a natural dam), and other forms of aquatic habitat as defined by USFWS (USFWS 2013a).

3.3.2 Existing Habitat

Provided below is a description of Critical Habitat and Suitable Habitat in the Action Areas.

3.3.2.1 Critical Habitat

The Rush Creek Project overlaps USFWS designated Critical Habitat for SNYLF (Subunit 3E, Evolution/LeConte). Refer to **Map 6** for a depiction of Critical Habitat in relation to the Construction/Restoration Action Area. Refer to **Appendix F** of this Draft BA for information on the presence of PCEs in relation to the Action Areas (including areas that overlap Critical Habitat), and to **Appendix G** of this Draft BA for representative photographs of SNYLF habitat and Critical Habitat.

3.3.2.1.1 Construction and Restoration

Refer to **Table BA-4** for acres of Critical Habitat within each Construction and Restoration Action Areas.

Table BA-4. SNYLF Critical Habitat in the Construction and Restoration Action Areas

Area	Acres that Overlap Critical Habitat	Percent of Critical Habitat Subunit 3E Affected
Construction Areas	2.85	<0.01
Restoration Areas	178.39	0.08
Noise Action Area for Construction/Restoration	4,993.23	2.32
Noise Action Area for SkyCrane Helicopter Flights	19,814.47	9.2

3.3.2.1.2 Long-Term Operations and Maintenance

There is no Critical Habitat for SNYLF within areas where long-term operations and maintenance activities would occur. There are approximately 3,093 acres of Critical Habitat in that fall within the Noise Action Area (ASTAR/Blackhawk helicopters to be used monthly or twice-monthly during long-term operations and maintenance). This area is approximately 1.4 percent of Critical Habitat Subunit 3E.

3.3.2.2 Suitable Habitat

As reported in the AQ 7 – TSR, SCE mapped potentially suitable aquatic habitats for SNYLF, defined to include areas within, and/or immediately adjacent to the FERC Project boundary, Project-affected stream segments and Project reservoirs. Other suitable aquatic habitat that falls within the noise-related Action Areas was not mapped as part of the AQ 7 – TSR.

SCE then assessed potentially suitable aquatic habitats for the presence of PCEs. For the purposes of the AQ 7 study, a habitat was considered suitable aquatic breeding habitat if the following PCEs were present:

- The aquatic habitat was of sufficient depth (i.e., greater than 5.6 feet deep) to not freeze solid during the winter;
- The aquatic habitat maintains water during the entire tadpole growth phase (i.e., for a minimum of 2 years); and
- The aquatic habitat is free of introduced predators. The determination of whether introduced predators are present was based on observations of fish during the habitat evaluation and/or VES, as well as a review of the results of the AQ 6 – Fish Populations TSR for Project-affected steam segments and lakes.

Only one isolated pond, identified as Pond 1, at the southwest corner of Waugh Lake contains potential aquatic breeding habitat for SNYLF (**Map Series BA-7**). This is the only habitat feature in the FERC Project boundary that contains all three of the critical aquatic breeding features and therefore meets the designated criteria for aquatic breeding habitat. Other areas in the FERC Project Boundary surveyed met the criteria for aquatic non-breeding PCEs, upland habitat, or possible dispersal habitat.

Refer to **Appendix F** of this Draft BA for information on the presence of PCEs in relation to the Action Areas, and to **Appendix G** of this Draft BA for representative photographs of SNYLF suitable habitat.

3.3.2.2.1 Construction and Restoration

Refer to **Table BA-5** for the amount of suitable habitat mapped within the Construction/Restoration Action Area.

Table BA-5. Suitable SNYLF Habitat in the Construction and Restoration Action Area

Construction and Restoration Action Area Component	Suitable SNYLF Habitat (acres)		
	Breeding Habitat	Non-breeding habitat	Upland Habitat
Construction Areas			
Rush Meadows Dam	0	1.19	1.34
Gem Dam	0	1.37	0.80
Agnew Dam	0	0.32	0.89
Total	*0*	*2.88*	*3.03*
Restoration Areas			
Waugh Lake	0	131.05	36.98
Gem Dam	0	0.32	26.43
Agnew Dam	0	0.44	10.73
Total	*0*	*131.81*	*74.14*
Noise Action Area[1]			
Noise Action Area for Construction/Restoration	1.31 acre of (Pond 1)	296.96	263.95
Noise Action Area for Helicopter Flights	1.31 acre of (Pond 1)	309.62	288.94

[1] Suitable habitat was mapped and quantified within the FERC Project boundary during the AQ 7 – Special-status Amphibians Technical Study Report. The Noise Action Area contains additional areas of suitable habitat outside of the FERC Project boundary that have not been quantified.

3.3.2.2.2 Long-Term Operations and Maintenance

There is no suitable aquatic breeding habitat within the Long-Term Operations and Maintenance Action Area, only suitable non-breeding and upland habitats.

3.3.3 Existing Surveys and Sightings

SCE conducted VES within suitable habitats within the FERC Project boundary in 2023 and 2024 (SCE 2025d). No SNYLF of any life stage were identified during these surveys. According to the survey standards in the Programmatic BO (USFWS 2014b), habitats within the FERC boundary are therefore considered unoccupied.

SNYLF were incidentally observed on August 31, 2023 and August 27, 2024, during relicensing surveys in the vicinity of a meadow complex approximately 1 mile west of Waugh Lake near the Pacific Crest Trail (refer to **Map 8**). SNYLF of all life stages were observed, which overlaps with a previously known occurrence of SNYLF. This is the closest known occupied habitat to the FERC Project boundary.

Additional information on the methods and results of the SNYLF VES is provided in the AQ 7 – TSR (SCE 2025d).

A discussion of known populations within the Construction and Restoration Action Areas and the Long-term Operations and Maintenance Action Area is provided below.

3.3.3.1 Construction and Restoration

The construction and restoration areas are within the FERC Project boundary and, as described above, SNYLF do not occur in these areas.

The 43 dBA noise threshold for construction equipment overlaps with one known breeding population of SNYLF located south of Waugh Lake and two other observed records (refer to **Map BA-8**).

The 43 dBA noise threshold for helicopter flights overlaps with five known breeding populations of SNYLF and eight other observed records (CDFW 2016, Forest Service 2017, CNDDB 2024) (refer to **Map BA-8**).

3.3.3.2 Long-Term Operations and Maintenance

The long-term operations and maintenance areas are within the FERC Project boundary and, as described above, SNYLF do not occur in these areas. Gem Dam is more than 2 miles from known populations of SNYLF further upstream in the watershed.

The 43 dBA noise threshold for helicopter flights overlaps with one known breeding population and three existing records for SNYLF (CDFW 2016, CNDDB 2024).

3.4 YOSEMITE TOAD

3.4.1 Species Account

On April 29, 2014, the USFWS published a final rule in the Federal Register to list the YT as threatened (USFWS 2014a). The rule went into effect on June 30, 2014. A Critical Habitat designation was proposed by the USFWS (2013) and was finalized as of August 26, 2016. A complete species account for YT is publicly available in the Federal Register and can be obtained at https://www.govinfo.gov/content/pkg/FR-2013-04-25/pdf/2013-09598.pdf. This information is incorporated by reference into this Draft BA. A summary of biological and habitat characteristics relevant to this analysis are provided below.

3.4.1.1 Suitable Habitat

On December 19, 2014, USFWS issued a Programmatic BO addressing the effects on the three newly listed amphibians of Forest Service Region 5 Forest Programs, including the INF (USFWS 2014b). The USFWS Programmatic BO identifies suitable breeding and rearing habitat to include wet portions of meadows, slow-moving streams, shallow ponds, spring systems, and lakes with shallow areas that are inundated at snowmelt and hold water for a minimum of 5 weeks in most years. Some sites containing suitable habitat may not retain water long enough for the completion of metamorphosis in drought or

below average precipitation years. Suitable habitat that is not used for breeding or development of early life history stages includes all portions of meadows or other occupied breeding habitats and surrounding areas up to a distance of 0.78 mile (1,250 meters), depending on surrounding landscapes and dispersal barriers. In some cases, additional areas may be important for dispersal.

3.4.1.2 Breeding

Breeding for the YT can take place from May to July in shallow pools and small, slow moving, shallow streams usually in meadows (Kagarise Sherman 1980; Martin 1992). Males emerge from hibernation for breeding as soon as snow melts from meadows (USFWS 2015), arriving at breeding pools several days before females (Kagarise Sherman 1980; Kagarise Sherman and Morton 1984). Adults are typically present in the breeding habitat for only a short period (approximately 2 weeks) before dispersing back into upland habitats (Forest Service 2015). The timing of breeding depends on the water year and the timing of snowmelt, and ranges from late April to late June (Forest Service 2015). In dry years, YT may skip breeding altogether.

Eggs are laid in pools or streams typically not more than 3 inches deep with a loose silt substrate (USFWS 2002). Eggs hatch in 10 to 12 days, and tadpoles metamorphose 7 to 9 weeks after the eggs are laid (USFWS 2015). Karlstrom (1962) estimates critical thermal maximum of 36 to 38 degrees Celsius (°C) for larvae and 31°C as the upper limiting temperature for egg development. Desiccation of pools before metamorphosis is a major cause of mortality in tadpoles (USFWS 2015). Mortality of eggs and tadpoles from freezing or desiccation may be high in some years leading to low or no recruitment (Kagarise Sherman 1980; Sadinski 2004; Brown et al. 2012).

3.4.1.3 Seasonal Movements and Dispersal

Individual YTs show fidelity to breeding meadows and adult habitat (Kagarise Sherman and Morton 1984; Liang 2010; Brown et al. 2012). In Tioga Pass Meadows, most of the males and females returned to the same breeding sites (Kagarise Sherman and Morton 1984). During 4 years of a mark-recapture study, only 3 of 37 males moved to different meadows to breed, though males did move among breeding areas within meadows (Brown et al. 2012). Brown et al. (2012) also notes that toads do appear to select specific breeding areas, though some are not used every year, a pattern similar to that observed at the site (e.g., meadow) scale as discussed previously. In her radio tracking study, Liang (2010) found that some toads were found in the same upland areas and sometimes the same exact site for multiple years, suggesting that toads also show fidelity in their use of terrestrial sites.

Movement to and from breeding sites could be extensive (1,250 meters and greater), including travel over extensive snowfields from over-winter hibernation sites in forested areas (USFWS 2015, USFWS 2002).

After breeding is completed, both sexes were thought to remain in meadow areas to feed on various insects and small arachnids (Mullally 1953) for 2 to 3 months before hibernating (Kagarise Sherman and Morton 1984). Recent studies indicate adults may move several hundred meters from meadows to upland foraging sites (Martin 2008; Liang et al. 2010; Morton and Pereyra 2010), where they spend most of their time outside the breeding and meadow habitat.

YTs seek cover during non-breeding seasons (approximately August to March) in abandoned rodent burrows (Jennings and Hayes 1994) or by moving into adjacent forested areas (USFWS 2015) or rocky hillsides hundreds of meters from breeding pools (Morton and Pereyra 2010). In the late fall, the toads are only active on warm days. YTs enter hibernation in late September or early October and emerge in the spring. The toads utilize rodent burrows, crevices under rocks, or the base of willows for hibernation (Martin 1992, 2008).

3.4.1.4 Critical Habitat

USFWS has outlined PCEs for YT habitat, defined as the physical and biological features that are essential to the conservation of the species. This includes:

- Aquatic breeding habitat.
    - This habitat consists of bodies of fresh water, including wet meadows, slow-moving streams, shallow ponds, spring systems, and shallow areas of lakes, that:
        - Are typically (or become) inundated during snowmelt;
        - Hold water for a minimum of 5 weeks, but more typically 7 to 8 weeks; and
        - Contain sufficient food for tadpole development.
    - During periods of drought or less than average rainfall, these breeding sites may not hold surface water long enough for individual YTs to complete metamorphosis, but they are still considered essential breeding habitat because they provide habitat in wetter years.
- Upland areas.
    - This habitat consists of areas adjacent to or surrounding breeding habitat up to a distance of 0.78 mile (1.25 kilometers) in most cases (that is, depending on surrounding landscape and dispersal barriers), including seeps, springheads, talus and boulders, and areas that provide:
        - Sufficient cover (including rodent burrows, logs, rocks, and other surface objects) to provide summer refugia,
        - Foraging habitat,

- Adequate prey resources,
- Physical structure for predator avoidance,
- Overwintering refugia for juvenile and adult YT,
- Dispersal corridors between aquatic breeding habitats,
- Dispersal corridors between breeding habitats and areas of suitable summer and winter refugia and foraging habitat, and
- The natural hydrologic regime of aquatic habitats (the catchment).

These upland areas should also maintain sufficient water quality to provide for the various life stages of the YT and its prey base.

3.4.2 Existing Habitat

Provided below is a description of Critical Habit and suitable habitat for YT in the Action Areas.

3.4.2.1 Critical Habitat

The Rush Creek Project overlaps USFWS designated Critical Habitat for YT (Unit 5, Tuolumne Meadows/Cathedral) (USFWS 2016). Refer to **Map BA-6** for a depiction of the Construction and Restoration Area (including construction areas, restoration areas, and the Noise Action Areas) in relation to Critical Habitat. Refer to **Appendix H** of this Draft BA for information on the presence of PCEs in relation to the Action Areas (including areas that overlap Critical Habitat), and to **Appendix I** of this Draft BA for representative photographs of YT habitat and Critical Habitat.

3.4.2.1.1 Construction and Restoration

Refer to **Table BA-6** for acres of Critical Habitat within each component of the Construction and Restoration Area.

Table BA-6. Yosemite Toad Critical Habitat in the Construction and Restoration Action Area

Construction and Restoration Action Area Component	Acres within Critical Habitat	Percent of Critical Habitat Unit 5 Affected
Construction Areas	2.85	<0.01
Restoration Areas	178.39	0.12
Construction Noise Area	4,074.14	2.92
Helicopter Flight Noise Area	19,577.42	14.02

3.4.2.1.2 Long-Term Operations and Maintenance Action Area

There is no Critical Habitat for YT within areas where long-term operations and maintenance activities would occur. There are approximately 2,517 acres of Critical Habitat in that fall within the Noise Action Area (ASTAR/Blackhawk helicopters to be used monthly or twice-monthly during long-term operations and maintenance). This area is approximately 1.8 percent of Critical Habitat Unit 5.

3.4.2.2 Suitable Habitat

As part of the AQ 7 technical studies, SCE assessed potentially suitable aquatic habitats for YT (defined to include meadows and meadow-like systems [i.e., ponds, shallow lakes, ephemeral pools, etc.] adjacent to Project-affected stream segments and Project reservoirs) to document the presence of PCEs for YT. For the purposes of the AQ 7 study, a habitat was considered suitable aquatic breeding habitat only if the aquatic habitat held water for a minimum of 5 weeks, but more typically 7 to 8 weeks. A buffer of 0.78 mile from suitable aquatic breeding habitat was to delineate potential upland habitat for YT.

Seven aquatic habitats were determined to support breeding PCEs for YT. Other areas surveyed met the criteria for non-breeding PCEs, upland habitat, or possible dispersal habitat (**Map Series BA-9**). Refer to **Appendix H** of this Draft BA for information on the presence of PCEs in relation to the Action Areas, and to **Appendix I** of this Draft BA for representative photographs of YT suitable habitat.

3.4.2.2.1 Construction and Restoration Action Areas

Refer to **Table BA-7** for the amount of suitable habitat mapped within construction areas, restoration areas, and the helicopter noise 43 dBA threshold.

Table BA-7. Suitable YT Habitat in the Construction and Restoration Action Area

Construction and Restoration Action Area Component	Suitable YT Habitat (acres)	
	Breeding Habitat	Upland Habitat
Construction Areas		
Rush Meadows Dam	1.83	1.02
Gem Dam	0	3.07
Agnew Dam	0	1.42
Total	*1.83*	*5.51*
Restoration Areas		
Waugh Lake	177.62	36.98
Gem Dam	0	18.02
Agnew Dam	0	5.45
Total	*177.62*	*60.45*

Construction and Restoration Action Area Component	Suitable YT Habitat (acres)	
	Breeding Habitat	Upland Habitat
Noise Action Area[1]		
Construction Noise Area	237.71	5,502.45
Helicopter Flight Noise Area	237.31	All areas within 0.78 mile of suitable aquatic breeding habitat

[1] Suitable habitat was mapped and quantified within the FERC Project boundary during the AQ 7 – Special-status Amphibians Technical Study Report. The Noise Action Area contains additional areas of suitable habitat outside the FERC Project boundary that have not been quantified.

Based on the results of surveys conducted in 2024 (AQ 7 – TSR; SCE 2025d), Waugh Lake represents marginal breeding habitat for YT because it contains some, but not all of the YT PCEs. Waugh Lake holds water long enough for tadpole development, but the current lack of aquatic vegetation and woody debris refugia make tadpoles vulnerable to predation. The south shoreline of Waugh Lake is within the known dispersal distance of YT populations. Therefore, there is some potential that the tadpoles are dispersed from a known population of YT.

3.4.2.2.2 Long-Term Operations and Maintenance Action Area

Meadows 3 and 4 provide suitable aquatic breeding habitat within the FERC Project boundary. Maintenance activities do not occur within the meadows (Project facilities are located in upland habitats). These meadows are more than 6 miles from the nearest occupied breeding habitats upstream. The 43 dBA noise threshold for helicopter flight paths also overlaps with suitable aquatic breeding habitat in Meadows 3 and 4.

3.4.3 Existing Surveys and Sightings

SCE conducted VES within suitable habitats within the FERC Project boundary in 2023 and 2024 (SCE 2025d). Two toad tadpoles were observed in ponded water in the dewatered lakebed in the southern portion of Waugh Lake during the late season VES in 2024. The tadpoles were identified as being in the genus *Anaxyrus*. However, based on consultation with CDFW, it is not possible to further identify the tadpoles without handling; therefore, biologists were not able to determine whether the tadpoles were YT (*A. canorus*) or western toad (*A. boreas*). YT and western toad are also known to hybridize in other portions of the YT range (Maier and Mabe 2024). The southern portion of Waugh Lake is within the upland dispersal distance of a breeding population of YT found in a pond approximately 0.7 mile to the south. Therefore, there is some potential that the tadpoles are dispersed from a known population of YT and this area was determined to represent marginal potential breeding habitat. Waugh Lake does not support a number of PCEs that are necessary for breeding under current conditions, however, there remains some potential. Refer to **Map BA-8** for known locations of YT.

YTs were not observed incidentally during other technical studies conducted in 2023 and 2024.

Additional information on the methods and results of the YT VES is provided in the AQ 7 – TSR (SCE 2025d).

A discussion of known populations within the Construction and Restoration Action Area and the Long-term Operations and Maintenance Action Area is provided below.

3.4.3.1 Construction and Restoration

YT were not observed in the construction areas (SCE 2025d). Two *Anaxyrus* tadpoles were observed in the Waugh Lake restoration area in 2024 (SCE 2025d).

The 43 dBA noise threshold for construction equipment overlaps with one known breeding population of YT located south of Waugh Lake (refer to **Map BA-8**).

The 43 dBA noise threshold for helicopter flights overlaps with four known breeding populations of YT and two other observed records (CDFW 2016, Forest Service 2017, CNDDB 2024) (refer to **Map BA-8**).

3.4.3.2 Long-Term Operations and Maintenance

The long-term operations and maintenance areas consist of facilities downstream of Gem Lake and, as described above, YT do not occur in these areas. Gem Dam is more than 2 miles from known populations of YT further upstream in the watershed and is therefore outside the upland dispersal distance.

The 43 dBA noise threshold for helicopter flights overlaps with one known breeding population for YT (CDFW 2016, CNDDB 2024).

3.5 SIERRA NEVADA RED FOX

3.5.1 Species Account

The Sierra Nevada DPS of Sierra Nevada red fox was proposed as endangered under the ESA on January 8, 2020. As of September 2, 2021, the Sierra Nevada DPS of Sierra Nevada red fox was officially added to the Federal List of Threatened and Endangered Wildlife (USFWS 2021a). A complete species account for this species is provided in the *Species Status Assessment Report for the Sierra Nevada Distinct Population Segment of the Sierra Nevada Red Fox* (USFWS 2018a), available at https://ecos.fws.gov/ecp/species/4252. This information is incorporated by reference into this Draft BA. Excerpts from the Species Status Assessment for the Sierra Nevada DPS of the Sierra Nevada red fox relevant to this analysis are provided below.

Red foxes (*Vulpes vulpes*) are small, slender canids with an elongated muzzle, large, pointed ears, and round bushy tail (Aubry 1997, USFWS 2018a). They can be distinguished from other small canids by black markings on the backs of their ears, black shins, and white tips on their tails (USFWS 2018a). They have three color morphs including red, silver or black, and cross, however the cross and black colors are rare but tend to be more prominent in cold, mountainous environments (Aubry 1997, USFWS

2018a). The Sierra Nevada red fox (*Vulpes vulpes necator*) is one of nine subspecies of red fox and belongs to a group known as the "mountain foxes". This is one of California's rarest species with only 18 museum specimens in existence.

The historical range of the Sierra Nevada red fox included high elevations of the Sierra Nevada from Sequoia National Park on the southern edge to north of Lake Tahoe, with the highest population densities in the range being around Yosemite National Park (USFWS 2018a). Some populations have also been recorded within the vicinity of Mt. Shasta and Lassen Volcanic National Park in the California Cascades where populations densities are believed to be the highest in the state (Aubry 1997). Populations declined drastically in the mid 1900's due to fur trappers and sightings became rare in the 1940s (USFWS 2018a). Currently, there are only two known populations, one located near Mt. Lassen and the other at Sonora Pass and Yosemite National Park (USFWS 2018a).

The Sierra Nevada DPS of Sierra Nevada red fox inhabits high elevation ranges in California from elevations between 8,714 and 11,608 feet in elevation (USFWS 2018a). The Sonora Pass population occurs in subalpine habitat that is characterized by a mosaic of high-elevation meadows, rocky areas, scrub vegetation, and woodlands. During the winter, individuals within the Cascades population have been documented migrating into lower elevations into mature closed canopy conifer forests before returning to subalpine habitat in the spring and summer. This behavior is not present within the Sonora Pass population, leading some researchers to believe this elevational shift in the Lassen population is due to prey searching in the winter (USFWS 2018a).

Sierra Nevada red fox are omnivores consuming both plants and animals but are primarily opportunistic predators of small rodents (Aubry 1997, USFWS 2018a). Scat samples from mountain foxes have shown these animals prey on mice, bushy-tailed woodrat (*Neotoma cinerea*), Douglas' squirrel (*Tamiasciurus douglasii*), Belding's ground squirrel (*Spermophilus beldingi*), alpine chipmunk (*Tamias alpinus*), and white-tailed jack rabbit (*Lepus townsendii*). Sierra Nevada red fox have also been observed pursuing golden-mantled ground squirrels (*Spermophilus lateralis*) and meadow mice (*Microtus* sp.) and are baited into traps using the carrion of large mammals (Aubry 1997). During winter and early spring, leporids such as snowshoe hare (*Lepus americanus*) and white-tailed jackrabbit are believed to be important prey items for Sierra Nevada red fox. Whitebark pine seeds are also thought to be an important food source (USFWS 2018a).

Little is known about the reproductive biology of Sierra Nevada red fox, but it is believed to be like that of lowland red foxes. The Sierra Nevada DPS of Sierra Nevada red fox likely mate in mid-February to early March, with births occurring in April and early May (Dunkelberger 2020 and Sacks and Quinn 2020 in USFWS 2021). This is somewhat later than lowland red fox subspecies, possibly and adaptation to the later growth of spring vegetation at higher elevations (Sacks and Quinn 2020 in USFWS 2021). The gestation period lasts around 50 days, with mothers giving birth to litter between one and ten pups (Aubry 1997). Sierra Nevada red fox dens in natural openings in rock piles, and at the base of cliffs and slopes. They may also dig earthen dens (USFWS 2018a). Pups begin exploring their parental territories in June – August and are independent by the fall (USFWS 2018a).

3.5.2 Existing Habitat

The Sierra Nevada red fox may potentially be present in the Construction and Restoration Action Area and the Long-term Operations and Maintenance Action Area within sub-alpine and high-elevation conifer areas, including high-elevation meadows, rocky areas, scrub vegetation and open whitebark pine and lodgepole pine forest. They are typically found between 8,714 and 11,608 feet in elevation (Sacks et al. 2015 and Dunkelburger 2020 in USFWS 2021).

3.5.3 Existing Surveys and Sightings

3.5.3.1 Construction and Restoration

Sierra Nevada red foxes were detected on CDFW's Alpine Mesocarnivore survey grids in the vicinity of the Rush Creek Project between 2019 and 2023 (Hatfield et al. 2021, 2023, Lawson, pers. comm.). The nearest observations are located 2.5 miles from the construction area at Rush Meadows Dam, 4.5 miles from the construction area at Gem Dam, and 5.5 miles from the construction area at Agnew Dam. The 43 dBA threshold for noise from construction equipment does not overlap with these observations, but the 43 dBA threshold for noise from helicopter flights does overlap these observations. Refer to **Map BA-5** for the known locations of the species in relation to the Construction and Restoration Action Area.

3.5.3.2 Long-Term Operations and Maintenance

Several of the CDFW survey grid observations are located 4.5 miles west of the long-term operations and maintenance areas.

Sierra Nevada red fox individuals were not observed in the FERC Project boundary during technical studies conducted in 2023 and 2024 (SCE 2025c).

3.6 NORTH AMERICAN WOLVERINE

3.6.1 Species Account

The Contiguous United States DPS of North American wolverine was listed as a proposed threatened species under the ESA on February 4, 2013. As of January 2, 2024, the North American wolverine was officially added to the Federal List of Threatened and Endangered Wildlife (USFWS 2023). A complete species account for North American wolverine (*Gulo gulo luscus*) is provided in the Species Status Assessment Report for the North American wolverine, *Gulo gulo luscus* (USFWS 2018b), available at https://ecos.fws.gov/ecp/species/5123. This information is incorporated by reference into this Draft BA. Excerpts from the Species Status Assessment for North American wolverine relevant to this analysis are provided below.

The North American wolverine is the largest extant mustelid, with females reaching 8 to 12 kilograms (approximately 17 to 26 pounds) and males weighing 12 to 18 kilograms (approximately 26 to 40 pounds) (USFWS 2018b). These mesocarnivores resemble a

small bear with powerful dentition and large curved claws. These animals have large heads with small eyes and rounded ears. Individuals typically have glossy dark fur with white hair on the digits, feet, and forearms. Individuals may also have a silver face mask, pale stripes running laterally from the animals' shoulders down the length of the body, and a white patch on the neck and chest (Copeland and Kucera 1997).

In United States the wolverine has historically been distributed from Maine to Washington, with parts of its range expanding south into the Rocky Mountains and the Sierra Cascade axis. Today this species range has been reduced drastically with most populations occurring in the northwestern United States, Idaho, and Montana (Copeland and Kurcera 1997, Pasitschniak-Arts and Lariviere 1995). In California this species range historically included much of the northern coastal areas of the state through the southern Cascade Mountains and the Sierra Nevada based from fur trapping records (Copeland and Kurcera 1997). Now the North American wolverine is restricted to the far northwestern corner of the state and scattered pockets throughout the Sierra Nevada. No breeding populations are currently extant in California (USFWS 2023).

The North American wolverine occupies a variety of habitats within North America, including Arctic tundra, subarctic-alpine tundra, boreal forest, mixed forest, redwood forest and coniferous forest. It prefers mountainous regions with cold climates, high amounts of winter precipitation, and coniferous forests (USFWS 2018b, Copeland and Kurcera 1997). They rarely use open areas such as burn patches or wet meadows (Pasitschniak-Arts and Lariviere 1995) and have been reported as refusing to cross open areas in Montana (Hornocker and Hash 1981). Several studies in Canada have reported the wolverines actively avoid anthropogenically disturbed areas such as roads and oil wells (USFWS 2018b). Wolverines have large home ranges with reports suggesting females range from 50 to 423 square kilometers (approximately 12,355 to 104,526 acres) and males range from 230 to 1,582 square kilometers (approximately 56,834 to 390, 921 acres) (USFWS 2018b). However, females reduce the size of their home ranges when lactating (Copeland and Kurcera 1997, Pasitschniak-Arts and Lariviere 1995).

Wolverine mating is assumed to occur within the summer months from May to August with the peak of activity occurring in June (Persson et al. 2017). Gestation occurs from November to April, with the births occurring from late January to early April. Wolverines grow quickly, with their metabolism peaking within the first 2.5 months of life and are 2/3 fully grown by 6 months. Young will disperse from their parents after 10 to 15 months (USFWS 2018b).

Wolverines are described as opportunistic foragers, displaying both predatory and scavenging behaviors, with diets varying depending on food availability. Scat analyzed from Glacier National Park in Montana found that 72 percent of samples contained more than one prey species and 89 percent included plant materials. Wolverines are known to prey upon elk, deer, marmots, ground squirrels, rabbits, ptarmigans, porcupine, mice, beaver, fish, ducks, seals, gulls and gull eggs, and lemmings, as well as antlers, bones, and skulls. It has also been hypothesized that mountain goats and bighorn sheep are an important part of their diet during the reproductive denning period (USFWS 2018b).

3.6.2 Existing Habitat

North American wolverines may potentially be present within sub-alpine and high-elevation conifer areas including high-elevation meadows, rocky areas, scrub vegetation and open whitebark pine and lodgepole pine forest in the Construction and Restoration Action Area and the Long-Term Operations and Maintenance Action Area. The majority of recorded sightings are above 8,000 feet in elevation.

3.6.3 Existing Surveys and Sightings

3.6.3.1 Construction and Restoration

CDFW confirmed multiple sightings of a wolverine on the INF in 2023 (CDFW 2023). Another sighting was confirmed in Yosemite National Park in Tuolumne County (CDFW 2023). The nearest known detection of wolverine was from the north shore of Thousand Islands Lakes (Lawson, pers. comm.). This observation is located 3 miles from the Rush Meadows Dam construction area, 2.5 miles from the Gem Dam construction area, and 3.5 miles from the Agnew Dam construction area. The 43 dBA threshold for noise from construction equipment does not overlap with this observation, but the 23 dBA threshold for noise from helicopter flights does overlap this observation. Refer to **Map 5** for the known locations of the species in relation to the Construction and Restoration Action Area.

3.6.3.2 Long-term Operations and Maintenance

The Thousand Island Lakes observation is located 2.5 miles from the long-term operations and maintenance footprint.

North American wolverine individuals were not observed in the FERC Project boundary during technical studies conducted in 2023 and 2024 (SCE 2025c).

3.7 SIERRA NEVADA BIGHORN SHEEP

3.7.1 Species Account

USFWS listed the Sierra Nevada bighorn sheep as an endangered distinct population segment on January 3, 2000. Final Critical Habitat was designated in 2007 (USFWS 2007). A complete species account for Sierra Nevada bighorn sheep is provided in the Draft Conversation and Management Plan for Bighorn Sheep in California, available at https://wildlife.ca.gov/Conservation/Mammals/Bighorn-Sheep and in the Final Recovery Plan for the Sierra Nevada Bighorn Sheep, available at https://ecos.fws.gov/ecp/species/3646. This information is incorporated by reference into this Draft BA. Information from this plan, as well as other sources, relevant to this analysis is provided below.

This Sierra Nevada subspecies of bighorn sheep is found in Tuolumne, Mono, Fresno, Inyo, and Tulare counties on the eastern slope of the Sierra Nevada in California. Sierra Nevada bighorn sheep are found in open areas where the terrain is rocky, sparsely

vegetated, and characterized by steep slopes and canyons from about 4,000 to 14,500 feet in elevation (USFWS 2007).

Traditionally, bighorn sheep made seasonal movements from high elevation areas in summer (10,000–14,000 feet) to lower elevation areas in winter (down to 4,800 feet). Bighorn sheep use non-forested habitats or forest openings with steep (greater than or equal to 60 percent slope), rocky slopes that provide for foraging, mating, lambing, predator avoidance, and bedding and that allow for seasonal movements between these areas. These areas must provide variety of forage plants and granite outcroppings containing minerals such as sodium, calcium, iron, and phosphorus that could be used as mineral licks in order to meet nutritional needs (USFWS 2008).

The Sierra Nevada bighorn sheep lambing season can begin as early as the second half of April, and end as late as early July, with most births occurring in May and June. The gestation period is approximately 176 days, putting the mating season in late fall and early winter with a peak of activity during November and December (USFWS 2007). Based on radio collar research by CDFW, the Cathedral and Mount Gibbs herd units mate in the fall before December and the lambs are born in the summer (CDFW 2018). Bighorn sheep are ungulates (hooved, typically herbivorous, quadruped mammal) that possess a large rumen and reticulum (compartments of the stomach of a mammal that chews the cud) relative to body weight (Krausman et al. 1993), which permits flexibility in plants consumed and, notably, allows the digestion of graminoids (grasses, sedges, and rushes) in all phenological stages (Hanley 1982).

Bighorn sheep exhibit a variety of behavioral adaptations to avoid predation. One such adaptation is group living (Hamilton 1971, Alexander 1974); groups provide more eyes and ears, allowing members to spend less time surveying for predators and more time feeding. Bighorn sheep are primarily diurnal (active during the daylight hours) (Krausman et al. 1985). Coupled with their strong reliance on keen eyesight to detect predators, diurnal behavior minimizes predation risks. Nights generally are spent on rocky slopes, but bighorn sheep may venture a short distance away from rocky escape terrain to feed during daylight.

3.7.2 Existing Habitat

Higher-elevation portions of the Action Area that support steep, rocky, open terrain may provide suitable habitat for this species. USFWS-designated Critical Habitat for the Sierra Nevada bighorn sheep (Unit 2, Mount Gibbs) is located north of the FERC Project boundary.

3.7.2.1 Construction and Restoration

USFWS-designated Critical Habitat does not directly overlap with areas where construction and restoration activities will be implemented; and these areas do not provide suitable habitat for the species. However, Critical Habitat overlaps with the Noise Action Area modeled for both construction/restoration equipment use and for Skycrane

helicopter flights (refer **to Map Series 10**). Refer to **Table BA-8** for the acres of Critical Habitat that fall within construction and restoration work areas and noise footprints.

Table BA-8. Sierra Nevada Bighorn Sheep Critical Habitat in the Construction and Restoration Action Area

Construction and Restoration Action Area	Acres within Critical Habitat	Percent of Critical Habitat Unit 2 Affected
Construction Areas	0.0	–
Restoration Areas	0.0	–
Construction Noise Action Area	1,167.77	3.93
Helicopter Flight Noise Action Area (Skycrane)	9,873.98	33.24

The 43 dBA noise threshold for helicopter flights overlaps with approximately 9,874 acres (33.24 percent of Unit 2) of Critical Habitat, and approximately 4,014 acres of the Cathedral Range Herd Unit.

3.7.2.2 Long-Term Operations and Maintenance Action Area

There is no Critical Habitat or suitable habitat in the long-term operations and maintenance work areas. As shown in **Table BA-9**, Approximately 3,333 acres of Critical Habitat overlaps with the footprint for the 43 dBA noise threshold.

Table BA-9. Sierra Nevada Bighorn Sheep Critical Habitat in the Long-Term Operations and Maintenance Action Area

Long-Term Operations and Maintenance Action Area Component	Acres within Critical Habitat	Percent of Critical Habitat Unit 2 Affected
Operations and Maintenance Activities (FERC Project boundary)	0.0	–
Helicopter Flight Noise Area (ASTAR/Blackhawk)	3,332.80	11.2

3.7.3 Existing Surveys and Sightings

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 Waugh Lake (CDFW 2021). However, movements have been recorded between the Mt. Gibbs herd and the Central recovery unit south of and between the Mt. Gibbs herd unit and the Cathedral Range Herd Unit to the east of the Project (CDFW 2018).

The Mt. Gibbs herd is typically observed along the ridgelines between Mt. Dana and Mt. Lewis (CDFW 2018). This observation range is approximately 6.9 miles from the Rush Meadows dam construction area, with four large ridgelines in between; approximately 7.6 miles from the Gem Dam construction area, with three large ridgelines in between; and

approximately 7.4 miles from the Agnew Dam construction area, with three large ridgelines in between.

Occasionally, individuals from the Mt. Gibbs herd will use habitat along the Kuna Crest (CDFW 2018). The Kuna Crest is approximately 3 miles from the Rush Meadows Dam construction area, with four large ridgelines in between; approximately 2.3 miles from the Gem Dam construction area, with one large and one small ridgeline in between; and approximately 2 miles from the Agnew Dam construction area, with one large and one small ridgeline in between.

The Cathedral Range herd is typically observed on the southwest ridgeline of Mt. Lyell (CDFW 2018). The southwest ridgeline of Mt. Lyell is approximately 4.8 miles from the Rush Meadows Dam construction area, with the Cathedral Range in between; approximately 6.9 miles from the Gem Dam construction area, with Waugh Lake, Gem Lake, and Cathedral range in between; and approximately 7.5 miles from the Agnew Dam construction area (with Waugh Lake, Gem Lake, Agnew Lake, and the Cathedral range in between).

There were two recorded instances of rams moving between Mt. Gibbs and Cathedral Herd in 2017 – these migrations likely occurred outside of the Rush Creek drainage (L. Greene, pers. comm. 2023). The Cathedral Range herd is very small and CDFW did not observe any ewes within the typical range in 2023, only rams (CDFW 2025). The ewes may have abandoned this range after the record-breaking snowfall winter of 2023 (CDFW 2025). CDFW believes that the Mt. Gibbs herd has absorbed the ewes from the Cathedral Range and the metapopulation is now concentrated within the Mt. Gibbs and Mt. Warren herds 7 to 20 miles north of the Project area (CDFW 2025).

3.7.3.1 Construction and Restoration Action Areas

There are known occurrences of bighorn sheep rams on the Kuna Crest, but not breeding ewes, in the 43 dBA threshold for helicopter flights within the Construction and Restoration Action Areas (refer to **Map BA-10a**). There are no known occurrences within the construction and restoration work areas or the 43 dBA threshold for construction equipment at the construction sites.

Therefore, there is some potential that individuals, particularly rams, may migrate or disperse within suitable habitat in the Construction and Restoration Action Areas.

Sierra Nevada bighorn sheep were not observed in the FERC Project boundary during technical studies conducted in 2023 and 2024 (SCE 2025c).

3.7.3.2 Long-Term Operations and Maintenance Action Area

There are known occurrences of bighorn sheep rams on the Kuna Crest, but not breeding ewes, in the 43 dBA threshold for helicopter flights within the Long-term Operations and Maintenance Action Area. There are no known occurrences within the long-term operations and maintenance areas in the FERC Project boundary.

4 EFFECTS ANALYSIS

The analysis of potential effects for each species addresses the two phases of the Proposed Action, Construction and Restoration and Long-Term Operations and Maintenance. These phases, which were introduced in Section 1.1, are further described below.

- The **Construction and Restoration** sections analyze the potential effects (including noise) of proposed construction and restoration activities (also referred to as "Project facility modifications" in the FLA), including the partial removal of Agnew and Rush Meadows dams, and retrofitting of Gem Dam to facilitate continued operation of the Project for power generation. Under the Proposed Action, hydroelectric operations at Rush Meadows and Agnew dams would be discontinued and these facilities (including associated ancillary support facilities) would be removed from the FERC license once all license conditions and regulatory requirements of FERC and other resource agencies are met. Gem Dam would be retrofitted to facilitate compliance with the seismic restrictions under a probable maximum flood event with a new spillway and reduced dam height. Restoration activities to be implemented following completion of the Project facility modifications are also addressed in this section.

- The **Long-Term Operation and Maintenance** sections analyze the potential effects (including noise) of continued operation and maintenance of the Project including:

  - Implementation of minimum instream flows (MIF) in Rush Creek below Gem Dam and below Agnew Lake (natural lake) at the flume gage (MIFs below Rush Meadows and Agnew dams would be discontinued following removal of the dams);

  - Maintenance of reservoir levels at Gem Lake to meet water storage and recreation objectives;

  - Discontinuation of ramping rates, which would no longer be necessary following removal of Rush Meadows and Agnew dams; and

  - Continuation of routine inspection and maintenance activities at Gem Dam and at the Rush Creek Powerhouse, including powerhouse, penstock, and valve house inspections and maintenance; inspection and maintenance of the Agnew and Gem trams; vegetation management; woody debris removal; pest management, trail maintenance, and power and communication line maintenance.

Refer to Section 5 of the FLA for a detailed description of the Proposed Action. Construction measures to be implemented to minimize the potential for effects to sensitive resources as a result of Project facility modifications are provided in **Appendix B** of this Draft BA. Environmental measures, management, and monitoring plans associated with continued operation and maintenance of the Project are provided in **Appendix C** of this Draft BA.

4.1 WHITEBARK PINE

4.1.1 Construction and Restoration

4.1.1.1 Effects to Individuals

There are four populations of whitebark pine and two populations of unknown five-needle pines that partially overlap with the Rush Meadows Dam and Gem Dam construction areas (refer to **Table BA-2** and **Map BA-4**). These populations total 1.95 acres and support approximately 55 individuals. Approximately 0.2 acre of the mapped populations overlap with the construction areas (0.04 acre at Rush Meadows Dam and 0.16 acre at Gem Dam construction). The specific number of individuals that fall within the construction areas is unknown. Considering the total of 55 individuals and that approximately 37% of whitebark pine seedlings germinate from caches (Pansing and Tomback 2019), approximately 20 additional individuals could potentially establish in the construction area over time. Therefore, construction activities required for modification of Rush Meadows Dam and Gem Dam may potentially affect up to 75 whitebark pine individuals present within the construction areas. For example, use of heavy equipment or placement of demolished concrete as fill on the upstream and downstream sides of the dam abutments could crush or bury whitebark pine or unknown five-needle pine seedlings. SCE will obtain authorization from USFWS prior to directly affecting individuals.

In order to minimize the potential for direct effects to whitebark pine individuals, SCE will implement Special-Status Plant Measures, which include flagging of whitebark or unknown five-needle pines within 100 feet of construction work areas, staging areas, and worker housing sites; trimming or removal of these trees will be avoided, to the degree possible. If removal of whitebark or unknown five-needle pine individuals is necessary and approved by USFWS, whitebark pines will be replanted on site during restoration at a 3:1 ratio. Implementation of Standard Construction Measures that limit the location and extent of ground disturbing work activities and require implementation of a worker environmental awareness training, as well as protocols that will be followed for inadvertent/new discoveries of sensitive species potentially affected by construction, will further minimize the potential for direct effects to whitebark pines. Refer to **Appendix B** for the full language of each of these measures.

With implementation of construction measures, the effects of proposed Project facility modifications and restoration activities would be reduced, but there may be adverse temporary and negligible direct effects on individual whitebark pines, if avoidance during construction is not possible and removal of individuals are required. Assuming a worst-case scenario, if no individuals can be avoided, up to 75 individual whitebark pines may need to be removed to implement construction activities (2.5% of the total population known to occur in the FERC Project boundary).

There are no whitebark pine or five needle pines in the restoration areas (i.e., below the historic inundation zones). Therefore, restoration activities will not affect whitebark pines.

4.1.1.2 Effects to Habitat

Construction activities would require temporary ground disturbance and use of heavy equipment, which could potentially result in destabilization and erosion of soils within the work areas. Soil instability could potentially degrade habitat for native vegetation, including whitebark pines.

Indirect effects to whitebark pine would be short-term and temporary. In addition, the year following completion of construction, SCE will restore those portions of the Waugh, Gem, and Agnew lakebeds that are exposed as a result of removal and retrofitting of the dams. Restoration will include restoration of construction work areas, staging areas, access routes, campsites, and areas where facilities have been removed; stabilization of areas upstream and downstream of the remaining portions of the dams to prevent erosion; revegetation and stabilization of sediment in the former lakebeds; and reestablishment and stabilization of the historic creek channel (Rush Creek) within the lakebeds, as necessary.

Over time, exposed portions of the lakebeds would revegetate, resulting in a potential increase in habitat as compared to the existing condition. Because populations of whitebark pine are present along the shoreline of Waugh, Gem, and Agnew lakes, additional whitebark pine individuals would likely become established within the restored lakebeds over time. In addition, as described above, any whitebark pines removed as part of construction, after approval from USFWS, will be replaced at a 3:1 ratio. Therefore, in the long-term, the Proposed Action is expected to benefit whitebark pine by increasing potential habitat within the restored lakebeds.

4.1.2 Long-Term Operation and Maintenance

4.1.2.1 Effects to Individuals

One population of whitebark pine and two populations of five needle pines were documented adjacent to the following Project facilities where vegetation management activities are implemented (trimming by hand) (refer to **Table BA-3** and **Map BA-4h**):

- Communication and powerlines located above Agnew Dam
- Gem Dam to Agnew Junction Flowline
- Gem Tram
- Upper Gem Dam Access Trail

There are 40 whitebark pine/unknown five-needle pine individuals within these populations. New individuals may also establish over the term of the new FERC license (40 years).

Vegetation management around the Project facilities listed above could result in direct loss of individual whitebark pine and young five-needle pines located in populations (PIAL 37, U5NP 9, or U5NP 10). However, as noted above, these populations could expand

during the term of the license to other areas in the vicinity of Gem Dam where vegetation management (trimming by hand) is implemented.

SCE only uses herbicides on SCE-owned lands at the Rush Creek Powerhouse Complex. There are no whitebark pines or young five-needle pines present where herbicides are used.

To minimize the potential for direct loss of whitebark pine individuals, SCE will implement the Vegetation Management Measure over the term of the new license. This measure includes conducting surveys for whitebark pines every 5 years following license issuance, flagging and avoidance of whitebark pine individuals. Refer to **Appendix C** for a complete description of new environmental measures, management, and monitoring plans to be implemented as part of the Proposed Action, including the Vegetation Management Measure.

However, because there is potential for whitebark pine or unknown-five needle pines to be present in critical infrastructure areas, there is some potential that individuals would need to be trimmed/removed for long-term operations and maintenance. Therefore, long-term operations and maintenance may affect, and is likely to adversely affect, whitebark pine individuals. If individuals cannot be avoided, up to 40 individuals may be removed/trimmed over the term of the new FERC license (1% of the total population known to occur in the FERC project boundary).

4.1.2.2 Effects to Habitat

Under the Proposed Action, long-term operation and maintenance activities would be reduced compared to the existing condition. Following construction activities, Rush Meadows Dam and Agnew Dam would be removed, the former lakebeds (as well as the channel of Rush Creek within the lakebeds) would be restored and would no longer require operation or maintenance actions. Therefore, the footprint within which operations or maintenance is conducted would be significantly reduced.

The reduction in operation and maintenance, and implementation of restoration would, over time, result in an increase in habitat available for ongoing establishment of native vegetation. Because populations of whitebark pine are present along the shoreline of Waugh, Gem, and Agnew lakes; additional whitebark pine individuals would likely become re-established in these areas. Therefore, the reduction in long-term operation and maintenance is expected to indirectly benefit whitebark pine.

Considering that herbicide use over the term of the new license would not affect whitebark pine individuals, and with implementation of the Vegetation Management Measures, effects to whitebark pine and their habitat resulting from implementation of long-term operation and maintenance under the Proposed Action would be negligible. Over the long-term, the reduction in operation and maintenance and associated restoration activities under the Proposed Action would result in an overall benefit to whitebark pine and their habitat.

4.2 MONARCH BUTTERFLY

4.2.1 Construction and Restoration

4.2.1.1 Effects to Individuals

Construction work areas, staging areas, housing/campsites, and access routes are located primarily on rock outcrops or areas within the existing lakebeds that support minimal or no vegetation. However, based on a review of aerial maps showing the location of vegetation in related to proposed construction areas, vegetation may potentially be affected during the following activities:

- Removal of the Agnew Dam to Agnew Junction Flowline. An estimated maximum of 0.07 acre of aspen (*Populus tremuloides*) forest alliance and 0.05 acre of willow shrub alliance may be removed/trimmed during removal of the flowline.

- Placement of temporary bridges and establishment of equipment access routes along the downstream side of dams, as well as placement of cement (from the demolition of the dams) for reinforcement downstream of the remaining dam abutments. These activities could potentially affect an estimated maximum of 0.3 acre of willow shrub alliance at Rush Meadows Dam, 0.03 acre of willow shrub alliance at Agnew Dam, and 0.2 acre of conifer forest habitat below Gem Dam.

The larval host plant for monarch butterfly (milkweeds) was not identified during botanical surveys (SCE 2025b); therefore, vegetation removal/trimming would not result in effects to breeding monarchs.

Foraging habitat for monarch butterflies is more general than breeding habitat and consists of flowering plants of a wide variety of species. Therefore, trimming or removal of vegetation below the dams or along flowline at Agnew could potentially result in disturbance (i.e., flushing or displacement) of monarchs, if foraging in the vicinity. Flushing or displacement of foraging individuals would be short term and would cease upon completion of the activity.

Implementation of construction measures will minimize the potential for direct and indirect effects to monarch butterflies. This includes, but is not limited to, construction measures that limit ground disturbing activities to defined work areas; limit removal of riparian vegetation; and require worker environmental awareness training which includes information on special-status invertebrates and their habitat. Refer to **Appendix B** for the full language of measures to be implemented to minimize effects to special-status invertebrates.

With implementation of construction measures, proposed construction and restoration activities would have temporary and negligible direct effects on monarch butterflies.

4.2.1.2 Effects to Habitat

As described previously, while construction work areas, staging areas, housing/campsites, and access routes do not support abundant floral resources for foraging monarchs, some trimming and/or removal of vegetation would be required for removal of the Agnew Flowline and for placement of temporary bridges. Removal of vegetation would result in a minor and temporary decrease in potential habitat available for foraging butterflies. In addition, importation and use of construction vehicles and equipment, and foot traffic associated with construction activities could degrade native plant habitat through the introduction or spread of non-native invasive plants (NNIP).

The potential for the introduction or spread of NNIPs will be minimized through implementation of NNIP Measures that require cleaning of equipment prior to transport to construction work areas and staging areas; maintenance of stockpiles in a weed-free state; inspections of equipment and clothing followed by removal/disposal of weed seed; and use of certified weed-free erosion control materials. Construction personnel will receive training regarding NNIPs and associated construction measures as part of the required worker environmental awareness training. NNIPs will also be monitored and treated, if necessary, as part of restoration of the lakebeds after completion of the facility modifications (described below). Refer to **Appendix B** for the full language of each of these measures. Implementation of these measures will minimize the potential for the introduction or spread of NNIPs.

Following construction, SCE will restore the construction areas, including the flowline and temporary bridge placement areas. These areas would continue to provide floral foraging habitat following restoration. Additionally, following dam removal, the exposed portions of the lakebeds would revegetate, resulting in a potential increase in floral resources as compared to the existing condition (refer to the discussion in 5.2.2 – Operation and Maintenance). Therefore, in the long term, the Proposed Action is expected to benefit monarch butterflies by increasing the quality and quantity of available foraging and breeding habitat.

4.2.2 Long-Term Operations and Maintenance

4.2.2.1 Effects to Individuals

The larval host plant for monarch butterfly was not identified during botanical surveys (SCE 2025b); therefore, vegetation management (trimming by hand and herbicide use) would not result in effects to breeding for these species.

Based on field surveys and review of aerial maps showing vegetation communities, all areas where vegetation management is implemented are barren or support non-native grasses and low growing shrubs, except for two areas where riparian vegetation is present. This includes a small area under the 4-kilovolt Agnew Distribution Line and adjacent to the Lower Agnew Lake Boathouse/Dock. Vegetation management in these areas is limited to trimming by hand and focused on trimming of tall, woody vegetation that may come in contact with the distribution line or impede access to the

boathouse/dock, it is unlikely that vegetation management activities would result in disturbance effects to foraging monarchs.

Because larval host plants are not present or unlikely to be present within vegetation management areas and foraging habitat is limited in vegetation management areas, direct effects to monarch butterflies would be considered negligible.

4.2.2.2 Effects to Habitat

As described previously, vegetation management in riparian areas is focused on trimming tall, woody vegetation that may come in contact with distribution lines or impede access to facilities. Other routine maintenance areas do not support abundant floral resources for butterflies. Therefore, vegetation management is unlikely to result in removal of foraging habitat for monarch butterflies.

Foot traffic and transport of materials associated with operation and maintenance activities could degrade native plant habitat for special-status invertebrates through the introduction or spread of NNIPs. The potential for the introduction or spread of NNIPs would be minimized through implementation of the Vegetation Management Measure that includes an NNIP training program and measures to prevent the introduction and spread of NNIP. Refer to **Appendix C** for a complete description of the Vegetation Management Measure to be implemented as part of the Proposed Action.

As described above, under the Proposed Action, long-term operation and maintenance activities would be reduced compared to the existing condition. Following construction activities, Rush Meadows and Agnew dams and associated facilities would be removed, would no longer require operation or maintenance actions, and the dam and facility sites would be restored. The reduction of maintenance and restoration of the lakebed at Waugh Lake and the perimeter of the natural lake at Agnew would, over time, result in a potential increase in habitat available for establishment of flowering plants for monarch butterflies. Therefore, in the long-term the Proposed Action is expected to benefit invertebrates, including monarch butterflies, through increased quality and quantity of available breeding and foraging habitat.

Because larval host plants are not present within vegetation management areas, foraging habitat is limited in vegetation management areas, with implementation of the Vegetation Management Measures, and the overall reduction in operation and maintenance activities and restoration, implementation of the Proposed Action would have negligible effects on habitat for monarch butterfly. Over the long-term the Proposed Action would potentially benefit monarch butterflies through the increased habitat available to support flowering plants.

4.3 SIERRA NEVADA YELLOW-LEGGED FROG

4.3.1 Construction and Restoration

Provided below is a discussion of potential effects of construction and restoration activities to SNYLF individuals and to habitat (including Critical Habitat).

4.3.1.1 Effects to Individuals

4.3.1.1.1 Harm or Harassment

SNYLF individuals were not observed during VES conducted in 2023 and 2024 (SCE 2025d). The nearest known occurrences of SNYLF are more than 1 mile from the Rush Meadows Dam/Waugh Lake construction and restoration areas, but fall within the 43 dBA threshold for construction equipment and helicopter flights (refer to **Map BA-8**). Based on the results of the AQ 7 – TSR (SCE 2025d), there is some potential, although low, for the species to disperse into the Rush Meadows Dam/Waugh Lake construction and restoration areas . SNYLF are unlikely to occur downstream in the vicinity of Gem Dam/Gem Lake and Agnew Dam/Agnew Lake construction and restoration areas, which are well outside the generally accepted dispersal distance of known populations, approximately 2 miles for SNYLF (USFWS 2016). Therefore, this discussion of potential direct effects is focused on individuals in the vicinity of Rush Meadows Dam/Waugh Lake.

In the unlikely event that SNYLF individuals disperse into the construction or restoration areas at Rush Meadows Dam/Waugh Lake, individuals could potentially be directly affected by use of ground-disturbing construction equipment; entrapment in excavations or erosion control materials; or contact with water pumping equipment (if applicable).

The potential for effects to individual SNYLF will be minimized through implementation of General Wildlife Measures and Special-Status Amphibian Measures, including pre-construction surveys; stop-work and reporting protocols if SNYLF individuals are observed in construction areas; requirements to cover excavations when not in use and/or provide escape ramps; prohibition of the use of tightly woven netting, plastic monofilament, or similar materials; and use of low-velocity water pumps to prevent mortality of aquatic species. The required worker environmental awareness training will include training on identification of special-status amphibians, applicable construction measures, and procedures to follow in case SNYLF are inadvertently discovered in work areas. Refer to **Appendix B** for the full language of each of these measures. Implementation of construction measures will minimize the potential for direct effects to SNYLF.

SNYLF may also be affected by the noise from the operation of construction equipment at Rush Meadows Dam/Waugh Lake and noise emitting from helicopters along the flight paths depicted on **Map BA-8**. All construction and restoration activities will be implemented between June 1 to October 31, depending on the timing of snowmelt and return of winter snowfall. All construction activities and helicopter flights would take place during the day. Construction at Rush Meadows Dam and Agnew Dam would occur over one construction season. Construction at Gem Dam would occur over three construction

seasons. Construction would not occur simultaneously. The specific timing and duration for restoration activities has not yet been determined.

Potential noise effects resulting from use of construction equipment and helicopter flights during construction and restoration activities are further described below.

- **Construction Equipment:** Construction equipment has the potential to affect one occupied breeding population and one historic population of SNYLF that fall within the 43 dBA noise exposure area. This includes one breeding population located south of Waugh Lake and one historic population south of Gem Lake (refer to **Map BA-8**). Note that the population south of Gem Lake is historical, and no individuals have been observed at this location for 30 years (CNDDB 2024). Potentially disturbing noise levels would extend to the construction noise areas shown on **Map BA-8.**

- **Helicopter Flights:** Helicopter use has the potential to affect five breeding populations of SNYLF and eight other observed records of SNYLF. Populations within the Construction and Restoration Action Area may be accustomed to helicopter noise because helicopters are used by SCE to operate and maintain the Project under existing conditions. Under existing conditions, helicopter trips are infrequent and typically occur about once a month during November – April and two trips per month May through October. Construction will likely require 30 trips per month during Rush Meadows Dam construction, 132 trips per month during the three Gem Dam construction seasons, and 22 trips per month during the Agnew Dam construction season (refer to FLA; Section 5; Appendix 5-A; Tables A-4, A-7, and A-11). Helicopters will not land at Gem Dam or at Rush Meadows Dam because these areas are within the wilderness boundaries. Equipment would be sling-loaded at a height of 200 feet at these locations (refer to **Map Series BA-2**). Helicopter landings would only occur at Agnew Dam and at June Mountain Ski Area. Increased helicopter trips could potentially affect SNYLF. Potentially disturbing noise levels would extend to the helicopter flight noise areas shown on **Map BA-8.**

Construction-related noise at a level of 3 dBA above background and that may cause 50 percent reduced listening area and 30 percent reduced alerting distance disturbance (Barber *et al*. 2009). Most studies of the effects of noise on amphibians indicate that breeding is the most sensitive time for amphibians, and may increase their corticosterone levels and disrupt immune function (Park and Do 2022), decrease their call rates (Cunnington and Fahrig 2010), or reduce female movement towards breeding choruses (Tenneson et al. 2014). These effects are noted once levels reach approximately 76 dBA. Breeding for SNYLF is typically limited to periods immediately following snowmelt (USFWS 2014b, Lapp et al. 2024). In nearby Yosemite National Park, this corresponds to early to mid-June (Lapp et al. 2024).

Breeding SNYLF are unlikely to be significantly affected by noise from the proposed construction and restoration activities because studies of their calling behavior indicate that frogs call nocturnally, and underneath the surface of the water (Lapp et al. 2024). All construction activities and helicopter flights would take place during the day, and research

on the effects of unmanned aerial vehicles on noise levels below the water surface indicate that water buffers sound, even when flights are close to the surface of the water (Christiansen et al. 2016). Helicopters will not land within the construction areas at Rush Meadows Dam and Gem Dam, and equipment would be sling loaded from 200 feet above the ground.

Individuals foraging during the daytime may be affected by the noise from construction and helicopter flights, which could potentially increase stress hormones, which may impair survival, reproduction, growth, and immune function. However, noise levels in the range of effects noted for amphibians (76 dBA) would be concentrated closer to the dams and flight paths, which do not overlap with known occupied populations. Therefore, the potential effects to foraging SNYLF from noise are considered negligible. Construction noise may affect, but is not likely to adversely affect individual SNYLF.

4.3.1.1.2 Introduction or Spread of Chytrid Pathogen

The chytrid pathogen *Batrachochytrium dendrobatidis* (Bd) is an infectious disease and an invasive species that has contributed to the decline of more than 400 amphibian species worldwide (Lips 2016). California experienced some of the earliest declines of amphibian populations attributed to Bd, including declines in mountain yellow-legged frog (*Rana muscosa*) (Lips 2016). Although the pathogen is not vector-borne, it may be spread mechanically by contaminated water or mud, or via footwear, nets and other equipment.

In order to minimize the potential for spread of Bd, SCE will implement Special-Status Amphibian Measures, including a requirement that equipment must be cleaned and free of mud and dirt prior to being transported to the construction and restoration work areas at Waugh Lake, Agnew Lake, and Gem Lake. In addition, Standard Construction Measures will include information on Bd and methods to reduce its spread will be covered in the worker environmental awareness training. Refer to **Appendix B** for the full language of each of these measures. With implementation of these construction measures, effects to SNYLF related to chytrid pathogen would be negligible.

4.3.1.2 Effects to Critical Habitat

Construction and restoration work areas, staging areas, and worker campsites associated Rush Meadows Dam and Waugh Lake lie within SNYLF Critical Habitat Subunit 3E (Evolution/LeConte). Refer to **Table BA-4** for a quantification of acres of suitable habitat in the Construction/Restoration Action Area. Provided below is a description of potential impacts to PCEs within aquatic breeding habitat, aquatic non-breeding habitat, and upland habitat within Critical Habitat.

4.3.1.2.1 Aquatic Breeding Habitat

There is no suitable aquatic breeding habitat for SNYLF in the vicinity of the Construction and Restoration work areas and staging areas that lie within Critical Habitat (i.e., those associated with Rush Meadows Dam/Waugh Lake). The closest suitable breeding habitats is an isolated pond located southwest of Waugh Lake (**Map BA-7)**. No SNYLF individuals were observed in these habitats during VES conducted in support of the

special-status amphibian studies (SCE 2025d). This pond is not hydrologically connected to Rush Creek, and would not be affected by the proposed Project facility modification or restoration activities. Therefore, construction and restoration would have no effect on PCEs for aquatic breeding habitat within Critical Habitat for SNYLF.

4.3.1.2.2 Aquatic Non-Breeding Habitat

Waugh Lake and Rush Creek below Rush Meadows Dam do not represent breeding habitat for SNYLF; but they do support a number of non-breeding PCEs and therefore may provide non-breeding habitat for shelter, foraging, predator avoidance, and aquatic dispersal of juvenile and adult SNYLF. Refer to **Appendix F** for a list of SNYLF PCEs in Waugh Lake and Rush Creek below Rush Meadows Dam.

Implementation of the proposed Project construction and restoration activities at Rush Meadows Dam could result in temporary effects to PCEs within SNYLF non- breeding habitat. Specifically, the proposed activities could result in degradation of water quality within aquatic habitat through increased erosion and sedimentation, or contamination of water from storage and use of fuels or other toxic substances. The potential for degradation of aquatic habitat would be minimized through implementation of measures including Water Quality Measures and Hazardous Materials Measures and will also implement applicable United States Forest Service (Forest Service) Water Quality BMPs. Examples of such measures include implementing an Erosion and Sediment Control Plan, implementing secondary containment measures around refueling equipment, implementing appropriate debris disposal measures, and limiting construction areas to minimum area necessary to complete construction. In addition, SCE will obtain all required permits prior to implementation of activities within the ordinary high water mark (OHWM) or bed and bank of Waters of the U.S. All conditions required under the permits will be implemented as part of the construction and restoration activities. Refer to **Appendix B** for the full language of each of these measures.

Implementation of construction measures would minimize the potential for temporary effects to PCEs within non-breeding aquatic habitat for SNYLF.

4.3.1.2.3 Upland Habitat

Upland areas within 82 feet of Waugh Lake and Rush Creek below Rush Meadows Dam that have vegetative cover may support PCEs for upland habitat for SNYLF. The construction work areas upstream and downstream of Rush Meadows Dam within 82 feet of water are mostly devoid of vegetation, or support smaller patches of vegetation, and therefore represent marginal upland habitat for SNYLF.

Proposed construction and restoration activities could temporarily degrade upland PCEs for SNYLF. For example, placement of cement upstream and downstream of Rush Meadows Dam to support the remaining abutments; or placement of the temporary bridge across Rush Creek downstream of the dam could impact vegetation that may provide cover for SNYLF. Temporary effects to upland PCEs within Critical Habitat will be minimized through implementation of Standard Construction Measures that limit

construction activities to specified areas and require implementation of worker environmental awareness training, including training on special-status amphibians and applicable measures to minimize the potential for effects to individuals and habitat. Riparian Measures that require flagging and avoidance of riparian vegetation outside of specific work and staging areas will also be implemented. Refer to **Appendix B** for the full language of each of these measures.

Implementation of construction measures would minimize the potential for temporary effects to PCEs within upland habitat for SNYLF.

4.3.1.3 Effects to Other Suitable Habitat

Provided below is a discussion of suitable habitat for SNYLF. Note that this discussion is focused on habitat in the vicinity of Gem Dam/Gem Lake or Agnew Dam/Agnew Lake, which lie outside Critical Habitat. A discussion of suitable habitat at Rush Meadows Dam/Waugh Lake is provided under the analysis of effects to Critical Habitat. Refer to **Table BA-5** for a quantification of acres of suitable habitat in the Construction/Restoration Action Area.

4.3.1.3.1 Aquatic Breeding Habitat

No aquatic breeding habitat for SNYLF was identified in the vicinity of Gem Dam/Gem Lake or Agnew Dam/Agnew Lake. Therefore, there would be no effect to potential aquatic breeding habitat for SNYLF from the proposed construction and restoration activities at these locations.

4.3.1.3.2 Aquatic Non-Breeding Habitat

Agnew Lake and Gem Lake, as well as Rush Creek below the lakes, support a number of non-breeding PCEs and therefore may provide aquatic non-breeding habitat for shelter, foraging, predator avoidance, and aquatic dispersal of juvenile and adult SNYLF. Refer to **Appendix F** for a list of SNYLF PCEs in Agnew Lake and Gem Lake, as well as Rush Creek below the lakes.

Implementation of the proposed construction and restoration activities within the Gem and Agnew construction areas could result in temporary effects to aquatic non-breeding habitat for SNYLF. Specifically, as described previously for Critical Habitat, the proposed activities could result in degradation of water quality within aquatic habitat through increased erosion and sedimentation, or contamination of water from storage and use of fuels or other toxic substances. The potential for degradation of aquatic habitat will be minimized through implementation of Water Quality Measures and Hazardous Materials Measures, as well as implementation of applicable Water Quality Forest Service BMPs SCE will also obtain all required permits prior to implementation of activities within the OHWM or bed and bank of Waters of the U.S. All conditions required under the permits will be implemented as part of the construction/restoration activities. Refer to **Appendix B** for the full language of each of these measures. With implementation of construction measures, effects to aquatic non-breeding habitat for SNYLF would be negligible.

4.3.1.3.3 Upland Habitat

The AQ 7 – TSR (SCE 2025d) identified areas within 82 feet of Agnew Lake and Gem Lake and Rush Creek below the lakes as supporting upland habitat for SNYLF. However, the construction and restoration work areas upstream and downstream of Agnew Dam and Gem Dam within 82 feet of water are mostly devoid of vegetation, or support smaller patches of vegetation, and therefore represent marginal upland habitat for SNYLF.

Upland habitats for SNYLF within the Agnew and Gem construction and restoration areas could be temporarily degraded by proposed construction and restoration activities. For example, removal of the Agnew Dam to Agnew Junction Flowline and excavation and ground disturbance could affect rodent burrows or require removal of logs within upland habitat for SNYLF. As described previously under effects to Critical Habitat, SCE will implement General Construction Measures and Riparian Measures that limit work to defined work and staging areas, limit riparian vegetation removal, and require training of workers regarding special-status amphibians and associated construction measures to protect their habitat. Refer to **Appendix B** for the full language of each of these measures. With implementation of construction measures, effects to upland habitat for SNYLF would be negligible.

4.3.1.4 Long-Term Benefits to Critical Habitat and Suitable Habitat

Following completion of the proposed construction activities , SCE will restore the former Waugh lakebed and the historic streambed of Rush Creek. Restoration activities will include, but are not limited to stabilization of areas upstream of the former dam site, as appropriate, to prevent erosion, restoration of work areas, staging areas, and workcamp sites; revegetation and stabilization of the former lakebed, and re-establishment of Rush Creek within the lakebed. Over the long term, dam removal and subsequent restoration activities would increase the quantity and quality of habitat for SNYLF, primarily within Waugh Lake. For example, rather than a deep reservoir that provides marginal non-breeding habitat for SNYLF, the lakebed within Waugh Lake would likely, over time, return to a complex of stream, meadow, and riparian or forest habitats with a wider range of water depths and flow conditions, providing a greater diversity of aquatic and upland habitats. With the removal of Rush Meadows Dam, periodic disturbances from long-term operation and maintenance would no longer be required, and a potential dispersal barrier between the former Waugh Lake lakebed and Rush Creek downstream would be removed. Therefore, in the long-term, the Proposed Action is expected to improve PCEs for aquatic and uplands habitats within Critical Habitat for SNYLF.

All effects to aquatic and upland habitat for SNYLF in areas outside of Critical Habitat would be temporary and limited to the duration of implementation of construction and restoration activities. Following completion of the proposed construction activities SCE will restore former lakebeds and the historic streambed of Rush Creek. Over the long term, dam removal and subsequent restoration activities would increase the quantity and quality of habitat for SNYLF. Restoration of the former inundation zones along the shoreline of Gem Lake and Agnew Lake may improve upland habitat for SNYLF.

Therefore, in the long-term, the Proposed Action is expected to improve PCEs for aquatic and uplands habitats SNYLF in the vicinity of Agnew and Gem lakes.

4.3.2 Long-Term Operation and Maintenance

Provided below is a discussion of potential effects of operation and maintenance of the Project to SNLYF individuals and to habitat (including Critical Habitat).

4.3.2.1 Effects to Individuals

Under the Proposed Action, long-term operation and maintenance activities would be reduced compared to the existing condition. Following completion of construction activities, Rush Meadows Dam and associated facilities would be removed. The dam and facility sites would be restored and would no longer require operation and maintenance actions. Therefore, there long-term operations and maintenance activities will have no effect on SNYLF in the vicinity of the former Rush Meadows Dam/Waugh Lake. Furthermore, because SNYLF individuals are unlikely to occur in the vicinity of Gem Dam and downstream facilities that would be retained, long-term operation and maintenance of the Project would have no effect on SNYLF in these areas.

Under existing conditions, helicopters are used to support the operation and maintenance of the Project, and flights travel to facilities near Rush Meadows, Gem, and Agnew dams. In general, helicopter trips are limited to one trip per month (November through April) or snow surveys and up to two trips per month (May through October) when maintenance and operations activities are typically conducted.

Under the Proposed Action, helicopter use will be limited to infrequent, short flights between the Rush Creek Powerhouse and the Hat Creek landing site (near Gem Dam) to support the operation and maintenance of the Project. Therefore, area affected by helicopter noise would be reduced compared to the existing condition. One occupied breeding population is within the 43 dBA noise threshold from helicopter flights and is approximately 2 miles from Gem Dam, but at this distance, noise would be unlikely to reach thresholds where adverse effects to amphibians have been recorded (76 dBA; refer to noise discussion under 5.3.1, above). Therefore, noise from helicopter flights may affect, but is not likely to adversely affect SNYLF. Effects Critical Habitat

Following construction activities, Rush Meadows Dam will be removed and would no longer require maintenance actions. While SCE would continue to operate Gem Dam, the shoreline around Gem Lake upstream of the Gem Dam would not be subject to long-term maintenance activities. The reduction in the maintenance footprint would benefit PCEs within aquatic and upland habitat for SNYLF by eliminating Project-induced foot traffic, use of equipment, and ground disturbance within natural areas.

Under the Proposed Action, natural, unimpaired flows would be re-established in Rush Creek within the Waugh lakebed and in Rush Creek downstream of Rush Meadows Dam to Gem Lake. Gem Lake reservoir elevations would be maintained as described in the Reservoir Levels Measure (**Appendix C**) and would be roughly similar to the existing condition (although slightly lower in late summer). Restoration of natural flows within Rush

Creek above Gem Lake, and implementation of reservoir elevations in Gem Lake consistent with the Reservoir Levels Measure, would have a neutral to beneficial effect on aquatic PCEs for SNYLF (e.g., maintenance of natural flow patterns, including periodic flooding; and provision of shallow microhabitats with solar exposure). These neutral to beneficial effects would likely be offset by the fact that these water bodies would continue to support populations of predatory trout, which reduce the suitability of habitat for SNYLF populations.

However, following Rush Meadows Dam removal, there is likely to be a short period (approximately 1–2 years) of increased erosion and sediment transport from Waugh Lakebed. Modeling conducted as part of the DEC 1 – Full Decommissioning Study for the Rush Creek Project indicated that, without restoration measures, approximately 10,835 cubic yards of material could mobilize downstream of Rush Meadows Dam (SCE 2025e).

A pulse of fine sediment could be released into Rush Creek, which would result in an unavoidable short-term adverse effect to water quality in Rush Creek from Rush Meadows Dam downstream to Gem Lake. SCE will implement Detailed Restoration Plans (to be developed in consultation with resource agencies) to minimize the amount of sediment that travels downstream. However, some suspended sediments transported below the dam site may eventually enter Gem Lake, which could lead to periods of lower water clarity in the lake (e.g., during spring runoff).

Rush Creek below Rush Meadows Dam is within Critical Habitat, classified in the AQ 7 studies as suitable non-breeding habitat for SNYLF. It is unoccupied by SNYLF. Deposition of fine sediments may result in local changes in the distribution and abundance of PCEs for SNYLF (i.e., microsites such as gravel bars and crevices), but would not affect the overall availability of PCEs.

Fine sediment deposition has the potential to depress macroinvertebrate populations that serve as prey resources for SNYLF, resulting in a minor, temporary reduction in prey resource PCEs. Fine sediment is anticipated to result in a temporary reduction in spawning and recruitment success of predatory trout populations and may lead to a reduction in juvenile fish recruitment. Adult fish are expected to survive the sediment pulse, and fish populations are expected to recover in this reach after a couple of years (refer to Section 9.3.3 of the FLA). Therefore, there would be no change in breeding PCEs because fish populations would persist, albeit in lower numbers during the fine sediment release. Therefore, short-term release of fine sediment in Rush Creek below Rush Meadows Dam may affect non-breeding PCEs of Critical Habitat for SNYLF, but this effect would be temporary and would be considered negligible.

Considering that the proposed construction activities and subsequent restoration activities are expected to improve both aquatic and upland PCEs for SNYLF; and with reduced maintenance activities and restoration of natural hydrology within Rush Creek above and below the former Rush Meadows Dam, the Proposed Action overall would likely have a neutral or beneficial effect on PCEs for Critical Habitat for SNYLF.

4.3.2.2 Effects to Other Suitable Habitat

4.3.2.2.1 Aquatic Breeding Habitat

No aquatic breeding habitat was identified in areas where long-term operation and maintenance activities would be implemented. Therefore, there would be no effect to potential aquatic breeding habitat for SNYLF from long-term operation and maintenance of the Project.

4.3.2.2.2 Aquatic Non-Breeding Habitat

Gem Lake, Agnew Lake, and Rush Creek below the lakes provide non-breeding aquatic habitat for SNYLF (SCE 2025d). Under the Proposed Action, operations downstream of Gem Dam would not change. SCE would maintain the existing MIF of 1 cubic foot per second (cfs) or natural flow in Rush Creek. With the retrofitted dam, there would be a minor increase in high flows as compared to the existing condition. However, the increase would be within the natural variability of flows that occurs under the existing condition.

Following removal of Agnew Dam and consistent with the existing condition, a continuous MIF of 1 cfs is proposed below the remaining Agnew Lake (pre-Project natural lake) to be measured at the existing flume gage below the former dam site. Consequently, the Proposed Action would have no effect on potentially suitable habitat in Agnew Lake or Rush Creek below the lake.

Minor changes in Project operations to be implemented under the Proposed Action related to MIFs and reservoir level requirements would not affect water quality. Overall water quality in the vicinity of the Project is of high quality (e.g., cold temperatures, high dissolved oxygen, no contaminants) and no Project-related water quality issues were identified during studies conducted as part of relicensing (SCE 2025e). Considering that minor changes in operations would have a neutral or slightly beneficial effect to Gem Lake, Agnew Lake, and to Rush Creek, which represent potential aquatic non-breeding habitat for SNYLF; and that any changes in water quality would be minor and temporary, the long-term operation and maintenance activities would have no effect on aquatic non-breeding habitat for SNYLF.

However, following Rush Meadows Dam removal, there is likely to be a short period (approximately 1–2 years) of erosion and sediment transport from Waugh Lakebed. This natural erosion process could cause a pulse of fine sediment to be released into Rush Creek, which would result in an unavoidable short-term adverse effect to water quality in Rush Creek from Rush Meadows Dam downstream to Gem Lake. Turbidity/suspended sediments transported below the dam site will eventually enter Gem Lake, which could lead to periods of lower water clarity in Gem Lake (e.g., during spring runoff). Any increases in turbidity values would be reduced by revegetation and stabilization of the lakebed and creek channel described in the restoration plan; and would be expected to quickly return to normal levels.

Rush Creek below Rush Meadows Dam is classified as suitable non-breeding habitat for SNYLF but is unoccupied. Deposition of fine sediments may result in local changes to physical habitat microsites such as gravel bars and crevices but may also create new habitat microsites such as silty sunning bars. As described in Section 9.3.3 of the FLA, fine sediment deposition may depress macroinvertebrate populations that serve as prey resources for SNYLF, resulting in a minor negative effect to prey resources. However, fine sediment is anticipated to reduce spawning and recruitment success of predatory trout populations and may lead to a reduction in juvenile fish recruitment. Because SNYLF breeding populations are typically found in fish-free aquatic habitats (Knapp and Matthews 2000), a reduction in predatory fish populations could temporarily improve habitat conditions for SNYLF. Fish populations are expected to recover in this reach after a couple of years (refer to Section 9.3.3 of the FLA). Therefore, short-term release of fine sediment in Rush Creek below Rush Meadows Dam would likely have a neutral effect on SNYLF non-breeding habitat.

4.3.2.2.3 Upland Habitat

Areas within 82 feet Gem Lake, Agnew Lake, and Rush Creek below the lake provide potential upland habitat for SNYLF. Under the Proposed Action, long-term operation and maintenance activities would be reduced compared to the existing condition and would be limited to existing developed facilities in the vicinity of Gem Dam and the Rush Creek Powerhouse. These existing developed areas contain little to no vegetation and surface cover objects that are preferred upland habitat elements for SNYLF. Therefore, long-term operation and maintenance activities would have no effect on upland habitat quality for SNYLF.

4.4 YOSEMITE TOAD

4.4.1 Construction and Restoration

Provided below is a discussion of potential effects of Project facility modification and restoration activities to YT individuals and to habitat (including Critical Habitat).

4.4.1.1 Effects to Individuals

4.4.1.1.1 Harm or Harassment

YTs were not observed during VES conducted in 2023 (SCE 2025d). During late season VES in 2024, two toad tadpoles were observed in ponded water in the dewatered lakebed in the southern portion of Waugh Lake. Based on the results of surveys conducted in 2024 (SCE 2025d), Waugh Lake represents marginal breeding habitat for YT and the south shoreline of Waugh Lake is within the known upland dispersal distance of YT populations. The other nearest known occurrences of YT are more than 1 mile from the construction area at Rush Meadows Dam, but fall within the 43 dBA threshold for construction equipment and helicopter flights (refer to **Map BA-8**). Based on the results of surveys (SCE 2025d), there is some potential, although low, for the species to disperse into the Rush Meadows Dam construction area. YT are unlikely to occur in the vicinity of Gem Dam and Agnew Dam, which are well outside the generally accepted dispersal

distance of known populations (dispersal distance is approximately 0.78 mile for YT [USFWS 2016]).

In the unlikely event that YT individuals disperse into the construction or restoration area at Rush Meadows Dam, construction activities could potentially result in harm or harassment of individuals from use of ground-disturbing construction equipment; entrapment in excavations or erosion control materials; or contact with water pumping equipment.

The potential for direct effects to YTs will be minimized through implementation of General Wildlife Measures and Special-Status Amphibian Measures, including pre-construction surveys; stop-work and reporting protocols if YT individuals are observed in construction areas; presence of an agency-approved biological monitor to capture and relocate YT individuals encountered during construction and restoration activities; requirements to cover excavations when not in use and/or provide escape ramps; prohibition of the use of tightly woven netting, plastic monofilament, or similar materials; cleaning equipment prior to arrival on-site to prevent spread of the Chytrid pathogen; and use of low-velocity water pumps to prevent mortality of aquatic species. The required worker environmental awareness training will include training on identification of special-status amphibians, applicable construction measures, and procedures to follow in case YT are inadvertently discovered in work areas. Refer to **Appendix B** for the full language of each of these measures. Implementation of construction measures would minimize the potential for direct effects to YT. However, construction activities could result in adverse, direct effects to individuals if the biological monitor is required to handle toads or move them out of harm's way, as well as any inadvertent mortality of toads from contact with construction equipment.

YT may also be affected by the noise from construction and restoration activities, including operation of construction equipment and helicopter flights. All construction and restoration activities will be implemented between June 1 to October 31, depending on the timing of snowmelt and return of winter snowfall. All construction activities and helicopter flights would take place during the day. Construction at Rush Meadows Dam and Agnew Dam would occur over one construction season. Construction at Gem Dam would occur over three construction seasons. Construction would not occur simultaneously. The specific timing and duration for restoration activities has not yet been determined.

Potential noise effects resulting from use of construction equipment and helicopter flights during construction and restoration activities are further described below.

- **Construction Equipment:** Noise from construction equipment has the potential to affect one breeding population of YT that is known to occur south of Waugh Lake (refer to **Map BA-8**), as well as any toads that may be present in the Waugh Lake restoration area. Potentially disturbing noise levels would extend to the construction noise areas shown on **Map BA-8**.

- **Helicopter Flights:** Helicopter use has the potential to affect four breeding populations of YT and two other observed records of YT (refer to **Map BA-8**), as well as any toads that may be present in the Waugh Lake restoration area. Populations within the Construction and Restoration Action Area may be

accustomed to helicopter noise because helicopters are used by SCE to operate and maintain the Project under existing conditions. Under existing conditions, helicopter trips to the three dams for maintenance are infrequent and typically occur about once a month during November – April and two trips per month May through October. Construction will likely require 30 trips per month during Rush Meadows Dam construction season, 132 trips per month during the three Gem Dam construction seasons, and 22 trips per month during the Agnew Dam construction season (refer to FLA; Section 5; Appendix 5-A; Tables A-4, A-7, and A-11). Helicopters will not land at Gem Dam or at Rush Meadows dam because these areas are within the wilderness boundaries. Equipment would be sling-loaded at a height of 200 feet at these locations (refer to **Map Series BA-2**). Helicopter landings would only occur at Agnew Dam and at June Mountain Ski Area**.** Potentially disturbing noise levels would extend to the helicopter noise areas shown on **Map BA-8**.

Noise from construction equipment and helicopter flights could result in disturbances to breeding populations, if the timing of breeding in the year of construction overlaps with the construction schedule (June 1 – October 31). The timing of breeding for YT depends on snowpack levels and the type of water year. Empirical studies of the specific effects of noise on YT breeding have not been conducted, but observations suggest that vibrations from vehicles cause male YT to stop calling behavior (Forest Service 2015). Male American toads showed no changes in calling behavior when exposed to traffic noise above 76 dBA as compared to low-traffic noise environments (Cunnington and Fahrig 2010). In studies of noise effects to wood frogs, gravid females exposed to 87 dBA or above for 8 minutes or more may experience a 64 percent reduction in phonotaxis (movement toward male breeding chorus) (Tenneson et al. 2014). Female YT may exhibit similar responses.

While there are known breeding populations within the 43 dBA threshold, these populations are far enough away from the Rush Meadows Dam construction area (at least 1 mile) that noise of construction equipment and helicopters at levels close to 76 dBA or 87 dBA would be unlikely to reach these populations. However, if YT are breeding in the historic inundation zone of Waugh Lake (marginal breeding habitat as defined in SCE 2025d) and late snowpack results in YT breeding in June when construction activities initiate, noise from construction and helicopters may affect, and is likely to adversely breeding YT. Noise from construction equipment at Gem and Agnew dams would be unlikely to reach known breeding populations at decibel levels of 76 dBA.

Individuals foraging in upland habitats during the daytime may be affected by the noise from construction and helicopter flights, which could potentially increase stress hormones, which may impair survival, reproduction, growth, and immune function. However, most of the known occupied habitats are closest to Rush Meadows Dam, and individuals are less likely to experience noise from construction at Gem and Agnew dams. Therefore, individuals would likely only experience effects during construction (one construction season) and restoration at Rush Meadows Dam/Waugh Lake.

Furthermore, noise levels in the range of effects noted for other amphibians (56—87 dBA) (Park and Do 2022, Cunnington and Fahrig 2010, Tenneson et al. 2014) would be experienced closer to the dams and helicopter flight paths. Known occupied populations located approximately 1 mile from these areas would likely experience sound at lower dBA levels. Additionally, toads in upland areas spend long periods of time under cover objects and in burrows that would buffer and attenuate noise disturbances, and when temperatures are high during the summer spend most of their foraging time at night (Forest Service 2015). Nocturnal foraging would not be affected by daytime construction activities. Therefore, the potential effects to foraging YT from noise are considered negligible. Construction noise may affect, but is not likely to adversely affect individual foraging YT.

4.4.1.1.2 Introduction or Spread of Chytrid Pathogen

The chytrid pathogen Bd is an infectious disease and an invasive species that has contributed to the decline of more than 400 amphibian species worldwide (Lips 2016). California experienced some of the earliest declines of amphibian populations attributed to Bd, including declines in YT (Lips 2016). Although the pathogen is not vector-borne, it may be spread mechanically by contaminated water or mud, or via footwear, nets and other equipment.

In order to minimize the potential for spread of Bd, SCE will implement Special-Status Amphibian Measures, including a requirement that equipment must be cleaned and free of mud and dirt prior to being transported to the construction and restoration work areas at Waugh Lake, Agnew Lake, and Gem Lake. In addition, Standard Construction Measures will include information on Bd and methods to reduce its spread will be covered in the worker environmental awareness training. Refer to **Appendix B** for the full language of each of these measures. With implementation of these construction measures, effects to YT related to chytrid pathogen would be negligible.

4.4.1.2 Effects to Critical Habitat

Construction and restoration work areas, staging areas, and worker campsites associated Rush Meadows Dam and Waugh Lake lie within YT Critical Habitat Unit 5 (Tuolumne Meadows/Cathedral). Provided below is a description of potential impacts to PCEs within aquatic breeding habitat and upland habitat within Critical Habitat.

4.4.1.2.1 Aquatic Breeding Habitat

There is marginal suitable aquatic breeding habitat for YT in the vicinity of the Rush Meadows Dam/Waugh Lake construction and restoration work areas and staging areas that lie within Critical Habitat. Based on the results of surveys conducted in 2024 (SCE 2025d), Waugh Lake represents marginal breeding habitat for YT because it contains some, but not all, of the YT PCEs. Waugh Lake holds water long enough for tadpole development, but the current lack of aquatic vegetation and woody debris refugia make tadpoles vulnerable to predation. The south shoreline of Waugh Lake is within the

known dispersal distance of YT populations. Therefore, there is some potential that tadpoles observed in 2024 are dispersed from a known population of YT.

Implementation of the proposed construction and restoration activities at Rush Meadows Dam could result in temporary effects to PCEs within marginal YT breeding habitat. Specifically, the proposed activities could result in degradation of water quality within aquatic habitat through increased erosion and sedimentation, or contamination of water from storage and use of fuels or other toxic substances. The potential for degradation of aquatic habitat would be minimized through implementation of measures including Water Quality Measures and Hazardous Materials Measures, as well as applicable Forest Service Water Quality BMPs. Examples of these measures include implementing an Erosion and Sediment Control Plan, implementing secondary containment measures around refueling equipment, implementing appropriate debris disposal measures, and limiting construction areas to minimum area necessary to complete construction. In addition, SCE will obtain all required permits prior to implementation of activities within the OHWM or bed and bank of Waters of the U.S. All conditions required under the permits will be implemented as part of the construction/restoration activities. Refer to **Appendix B** for the full language of each of these measures.

There are also two small ponds, including Pond 1 located approximately 0.8-mile west Rush Meadows Dam and Pond 2 located 0.3-mile east Rush Meadows Dam, that represent suitable aquatic breeding habitat for YT (**Map Series BA-9**). These ponds, which are not hydrologically connected to Rush Creek, would not be affected by the proposed Project facility modification or restoration activities. Therefore, construction and restoration would have no effect on these PCEs for aquatic breeding habitat within Critical Habitat for YT.

Considering that the two small ponds that represent suitable aquatic breeding habitat for YT would not be affected by construction or restoration; and with implementation of measures to minimize the potential for effects to PCEs within marginal aquatic breeding habitat in Waugh Lake, effects to PCEs within aquatic breeding habitat would be negligible.

4.4.1.2.2 Aquatic Non-Breeding Habitat

One meadow, LP_Meadow_01, within Critical Habitat was identified as aquatic non-breeding habitat for YT. This meadow, which is within the OHWM at the westernmost end of Waugh Lake, supports dense regrowth of young lodgepole pines and an ephemeral spring. This meadow is outside of areas that would be affected by construction and restoration activities. Therefore, construction and restoration would have no effect on PCEs for aquatic non-breeding habitat within Critical Habitat for YT.

4.4.1.2.3 Upland Habitat

Upland areas within 0.78 mile of aquatic breeding habitats (i.e., Waugh Lake, Pond 1, and Pond 2) may contain PCEs for upland habitat for YT. Proposed construction and restoration activities could temporarily degrade PCEs for upland habitat. For example, placement of cement upstream and downstream of Rush Meadows Dam to support the

remaining abutments; or placement of the temporary bridge across Rush Creek downstream of the dam could impact upland vegetation that may provide cover for YT; and excavation and ground disturbance within Waugh Lake could affect rodent burrows

or require removal of logs within upland habitat for YT. Temporary effects to upland PCEs within Critical Habitat will be minimized through implementation of Standard Construction Measures that limit construction activities to specified areas and require implementation of worker environmental awareness training, including training on special-status amphibians and applicable measures to minimize the potential for effects to individuals and habitat. Riparian Measures that require flagging and avoidance of riparian vegetation outside of specific work and staging areas will also be implemented. Refer to **Appendix B** for the full language of each of these measures.

With implementation of construction measures, temporary impacts to PCEs within upland habitat for YT would be negligible.

4.4.1.3 Effects to Other Suitable Habitat

4.4.1.3.1 Aquatic Breeding and Non-Breeding Habitat

Three wet meadows located outside of Critical Habitat were identified as representing potential aquatic breeding habitat for YT during special-status amphibian surveys (SCE 2025d). This includes Meadow 1, located near Rush Creek just upstream of Gem Lake, Meadow 3, located along Rush Creek above Silver Lake, and Meadow 4, located along South Rush Creek approximately 0.2 mile southeast of the Rush Creek Powerhouse. In addition, Meadow 2, located 0.1 mile north of the Powerhouse, was identified as aquatic non-breeding habitat. These habitats are not located in or near any proposed construction and restoration work area or staging areas. Therefore, proposed Project facility modification and restoration activities would have no effect on YT aquatic breeding and non-breeding habitat that lies outside of Critical Habitat.

4.4.1.3.2 Upland Habitat

Upland areas within 0.78 mile of aquatic breeding habitats (i.e., Meadow 1, Meadow 3, and Meadow 4) may contain PCEs for upland habitat for YT. There would be no construction activities implemented within 0.78 mile of these meadows. Restoration activities at Gem Lake cover portions of the former inundation zone that fall within 0.78 mile of Meadow_01. Restoration activities in this portion of the shoreline would be limited to passive restoration and monitoring and would not result in effects to PCEs within upland habitat. Therefore, construction and restoration activities would have no effect to upland habitat for YT that lies outside of Critical Habitat.

4.4.1.4 Long Term Benefits to Critical Habitat and Suitable Habitat

Following completion of the proposed construction activities, SCE will restore the former Waugh lakebed and the historic streambed of Rush Creek. Restoration activities will include, but are not limited to stabilization of areas upstream of the former dam site, as appropriate, to prevent erosion, restoration of work areas, staging areas, and work camp

sites; revegetation and stabilization of the former lakebed, and re-establishment of Rush Creek within the lakebed. Over the long term, dam removal and subsequent restoration activities would increase the quantity and quality of habitat for YT, primarily within Waugh Lake. For example, rather than a deep reservoir that represents marginal breeding habitat for YT, the former Waugh lakebed would likely, over time, return to a complex of stream, meadow, and riparian or forest habitats with a wider range of water depths and flow conditions, providing a greater diversity of aquatic and upland habitats. With the removal of Rush Meadows Dam, periodic disturbances from long-term operation and maintenance would no longer be required, and a potential dispersal barrier between the former Waugh Lake lakebed and Rush Creek downstream would be removed. Therefore, in the long-term, the Proposed Action is expected to improve PCEs for aquatic and uplands habitats within Critical Habitat for YT.

4.4.2 Long-Term Operations and Maintenance

Provided below is a discussion of potential effects of operation and maintenance of the Project to YT individuals and to habitat (including Critical Habitat).

4.4.2.1 Effects to Individuals

As described previously, two toad tadpoles were observed within ponded water in the dewatered lakebed of the southern portion of Waugh Lake. While there is some potential for YT individuals to disperse into suitable habitat in the vicinity of Waugh Lake, which is within the generally accepted dispersal distance of known populations (approximately 0.78 mile), YT individuals are unlikely to occur in the vicinity of other Rush Creek Project areas where long-term operations and maintenance will be implemented (e.g., Gem Lake and associated dam, Agnew Lake, or the Rush Creek Powerhouse Complex).

Under the Proposed Action, long-term operation and maintenance activities would be reduced compared to the existing condition. Following construction activities, Rush Meadows Dam and associated facilities would be removed. The dam and facility sites would be restored and would no longer require operation and maintenance actions. Therefore, there would be no effect to YT individuals in the vicinity of the former Rush Meadows Dam under the Proposed Action. Furthermore, because YT individuals are unlikely to occur in the vicinity of Gem Dam and downstream facilities that would be retained, long-term operation and maintenance would have no effect on YT in these areas.

In general, frequency of helicopter use under long-term operations and maintenance will be similar to the existing condition (use of A-Star 350-type helicopters once or twice per month), but will occur in a reduced footprint as compared to the existing condition. Flights to Rush Meadows Dam would no longer occur. One occupied breeding population is within the 43 dBA noise threshold from helicopter flights and is approximately 2 miles from Gem Dam, but at this distance, noise would be unlikely to reach thresholds where adverse effects to amphibians have been recorded (76 dBA; refer to noise discussion under 5.3.1, above). Therefore, noise from helicopter flights may affect, but is not likely to adversely affect YT.

4.4.2.2 Effects to Critical Habitat

Critical Habitat for YT overlaps Waugh Lake and a portion of Rush Creek below Rush Meadows Dam. Under the Proposed Action, long-term operation and maintenance activities would be reduced compared to the existing condition. Following construction activities, Rush Meadows Dam would be removed, and would no longer require operation and maintenance actions. Therefore, long-term operation and maintenance of the Project would have no effect on PCEs for aquatic breeding habitat, non-breeding habitat, or upland habitat within Critical Habitat for YT.

4.4.2.3 Effects to Other Suitable Habitat

4.4.2.3.1 Aquatic Breeding and Non-Breeding Habitat

Three wet meadows located outside of Critical Habitat were identified as representing potential aquatic breeding habitat for YT during special-status amphibian surveys (SCE 2025d). This includes Meadow 1, located near Rush Creek just upstream of Gem Lake, Meadow 3, located along Rush Creek above Silver Lake, and Meadow 4, located along South Rush Creek approximately 0.2 mile southeast of the Rush Creek Powerhouse. In addition, Meadow 2, located 0.1 mile north of the Powerhouse, was identified as aquatic non-breeding habitat. These habitats are hydrologically connected to Rush Creek. Under the Proposed Action, operations downstream of Gem Dam would not change. SCE would maintain the existing MIF of 1 cfs or natural flow in Rush Creek. With the retrofitted dam, there would be a minor increase in high flows as compared to the existing condition. However, the increase would be within the natural variability of flows that occurs under the existing condition. Therefore, Meadows 02, 03, and 04 would not be affected by proposed long-term operations of the Project. In addition, no maintenance activities are required in the vicinity of these features. Therefore, long-term operation and maintenance would have no effect on aquatic breeding habitat or non-breeding habitat for YT that lies outside of Critical Habitat.

4.4.2.3.2 Upland Habitat

Upland areas within 0.78 mile of three aquatic breeding habitats (i.e., Meadow 1, Meadow 3, and Meadow 4) that lie outside of Critical Habitat may contain PCEs for upland habitat for YT. No maintenance activities would be implemented within 0.78 of Meadow 1. The Rush Creek Powerhouse lies within 0.78 mile of Meadow 3 and Meadow 4. The Powerhouse Complex is a fenced and developed facility and does not provide upland PCEs for YT. Long-term maintenance activities within the complex, therefore, would have no effect on upland habitat for YT.

Considering that most upland habitats around the three aquatic breeding habitats located outside Critical Habitat will not be affected by maintenance activities, and that areas within the Rush Creek Powerhouse Complex do not provide upland PCEs for YT, long-term operation and maintenance of the Project would have no effect on upland habitats outside of Critical Habitat.

4.5 SIERRA NEVADA RED FOX

4.5.1 Construction and Restoration

4.5.1.1 Effects to Individuals

There are three known occurrences of Sierra Nevada red foxes in the Construction and Restoration Action Area to the west of Rush Meadows Dam, and suitable habitat for this species is present. Therefore, Sierra Nevada red fox could potentially occur in the vicinity of the proposed work areas, staging areas, and worker camp sites. The nearest observations are two 2019 camera trap observations southwest of Waugh Lake near Rogers Lake and Marie Pass, approximately 1.3 miles from the construction area within Waugh Lake (Hatfield et al. 2021, 2023; Julia Lawson, pers. comm.). Implementation of proposed Project facility modification and restoration activities could result in the following effects to Sierra Nevada red fox, if present:

- Construction and repeated helicopter flights may result in disturbance to breeding or foraging foxes.
- Additional human presence in the work areas may result in temporary disturbance.
- The proposed construction activities require excavation of holes and trenches in which small mammals could become entrapped.
- Trash and debris left unsecured in the construction areas or in the worker camp sites (e.g., the Frontier Pack Station Camp or in the alternative worker housing) may attract scavenging mammals such as Sierra Nevada red fox, North American wolverine, or game mammals such as bears or coyotes.

The construction season for the construction and restoration activities will be June 1 to October 31, depending on the timing of snowmelt and return of winter snowfall. Construction at Rush Meadows dam and Agnew Dam would occur over one construction season. Construction at Gem Dam would occur over three construction seasons. Construction would not occur simultaneously. The number of construction seasons for restoration activities will be developed as part of development of the Detailed Restoration Plan following issuance of the new FERC license. The area potentially affected by noise emanating from construction and restoration areas is described further below:

- **Construction Equipment:** Though there are no known occurrences within the 43 dBA noise threshold area from construction equipment (refer to **Map BA-5**), but noise from construction equipment has the potential to affect Sierra Nevada red fox using subalpine habitats in the area. Construction-related noise at a level of 3 dBA above background and that may cause 50 percent reduced listening area and 30 percent reduced alerting distance disturbance (Barber et al. 2009) to Sierra Nevada red fox and would extend to the construction noise areas shown on **Map BA-5.**

- **Helicopter Flights:** Helicopter use has the potential to affect Sierra Nevada red fox, including known occurrences to the west of Waugh Lake within the 43 dBA threshold for helicopter flights (refer to **Map BA-5**). Populations in the Rush Creek vicinity may be accustomed to noise from a low frequency of helicopter flights because helicopters are used by SCE to operate and maintain the Project under existing conditions. Under existing conditions, helicopter trips to the three dams for maintenance are infrequent and typically occur about once a month during November – April and two trips per month May through October. Construction will likely require 30 trips per month during Rush Meadows Dam construction season, 132 trips per month during the three Gem Dam construction seasons, and 22 trips per month during the Agnew Dam construction season (refer to Section 5; Appendix 5-A; Tables A-4, A-7, and A-11). Helicopters will not land at Gem Dam or at Rush Meadows dam because these areas are within the wilderness boundaries. Equipment would be sling-loaded at a height of 200 feet at these locations (refer to **Map Series BA-2**). Helicopter landings would only occur at Agnew Dam and at June Mountain Ski Area. Construction-related noise at a level of 3 dBA above background and that may cause 50 percent reduced listening area and 30 percent reduced alerting distance disturbance (Barber et al. 2009) to Sierra Nevada red fox and would extend to the helicopter flight noise action areas shown on **Map BA-5.**

There is little documentation in the scientific literature about the effects of noise on red foxes, but noise disturbances may interrupt hunting or increase stress levels (Forest Service 2010). Captive silver foxes exposed to loud noises (90 to 100 dBA) meant to simulate jet flyovers and machinery noises did not show stress-induced temperature fluctuations (Bakken et al. 1999), but wild Sierra Nevada red fox may behave differently. Red foxes may be particularly sensitive to high frequency and ultrasonic noises (Saurine et al. 2024), which can increase their vigilance and escape behavior. Other mammal species show stress responses in dBA ranges between 52 dBA – 90 dBA, and prolonged exposure to noise may reduce foraging or resting behavior, result in loss of appetite or weight loss, change habitat use patterns, or increase energy expenditures for escape behavior (Shannon et al. 2014, Elwasife et al. 2015, Kleist et al. 2020). Therefore, noise from construction equipment and helicopter flights are likely to affect Sierra Nevada red fox breeding or foraging behavior.

Sierra Nevada red foxes mostly likely give birth in early May (prior to the onset of construction activities in June), and pups are dependent on their parents and explore natal territories between June and August. There are no known breeding pairs or dens in the Construction and Restoration Action Area, and only single individuals have been observed on camera traps (Hatfield et al. 2021, 2023, Lawson, pers. comm.). If Sierra Nevada red fox establish a den, noise from construction activities and helicopter flights could potentially disrupt parental care of pups, leading to reduced reproductive success. This effect is more likely if foxes were denning closer to the construction work areas and helicopter flight paths. Considering published information on average home range sizes of 5,740 acres (Perrine 2005), and the amount of suitable subalpine habitats above 8,700 feet in the Construction and Restoration Action Area, only one Sierra red fox den would likely be affected, if a den is established.

Foraging Sierra Nevada red foxes could also be affected by noise, and may change their foraging behavior or foraging locations in response to noise from construction equipment and helicopters. Foxes can travel up to 10 kilometers in a day (Perrine 2005). Under existing conditions, the construction work area experiences routine human presence from operations and maintenance activities as well as summer recreation along the popular Rush Creek Trail, which connects hikers to the Pacific Crest Trail. Foxes would likely avoid the construction work areas under existing conditions. Therefore, construction and helicopter noise may affect, but is unlikely to adversely affect foraging Sierra Nevada red fox individuals.

The potential for temporary disturbance from human presence, entrapment in excavations, and attraction of scavengers will be minimized through implementation of Standard Construction Measures that impose limitations on the timing and location of work; General Wildlife Measures require that excavations be covered at night and/or installation of escape ramps; the Forest Service Special Use Permit requires use of bear-proof lockers to temporarily store food, camping, personal supplies; and containment and regular transportation of garbage off-site (i.e., by pack mules or by helicopter). In addition, SCE will implement worker environmental awareness training regarding special-status or game mammals potentially present and construction measures that will minimize potential for effects. This includes stop-work protocols (General Construction Measures) to be implemented in the case that animals are observed at the site that may potentially be affected by work activities. Refer to **Appendix B** for the full language of each of these measures.

Even considering implementation of construction measures, proposed construction and restoration activities may affect, and could potentially adversely affect Sierra Nevada red fox if a den is established in the Construction and Restoration Action Area.

4.5.1.2 Effects to Habitat

The restoration of the former lakebeds and the historic streambed of Rush Creek would improve potential habitat for Sierra Nevada red fox in the long term by increasing habitat heterogeneity within the former lakebeds. For example, rather than a deep reservoir that provides marginal foraging habitat, the former Waugh lakebed would likely return to stream, meadow, riparian and wetland habitats. An increase in meadow habitat would provide increased potential foraging opportunities for Sierra Nevada red fox. With the removal of Rush Meadows Dam, periodic disturbances from long-term operation and maintenance would no longer occur. Therefore, in the long-term, the Proposed Action is expected to increase the amount of habitat and improve habitat connectivity.

4.5.2 Long-Term Operations and Maintenance

4.5.2.1 Effects to Individuals

The nearest recorded occurrences of Sierra Nevada red fox are 4.5 miles from Gem Dam, outside of the Long-Term Operations and Maintenance Action Area. Long-term operations and maintenance activities will be focused around the Gem Dam area and the Rush Creek Powerhouse (refer to **Map Series BA-3**). These areas do not contain preferred breeding habitat for the Sierra Nevada red fox (subalpine conifer forest and alpine grassland) and are closer to high-use recreation areas. Sierra Nevada red foxes would likely avoid breeding in these areas under existing conditions. Under existing conditions, helicopters are used to support the operation and maintenance of the Project, and flights travel to facilities near Rush Meadows, Gem, and Agnew dams. In general, helicopter trips are limited to one trip per month (November through April) for snow surveys and up to two trips per month (May through October) when maintenance and operations activities are typically conducted.

Helicopters would continue to be used, at the same frequency, to support the operation and maintenance of the Project, but within a reduced area. Helicopters would no longer be needed to operate and maintain Rush Meadows or Agnew dams, only Gem Dam. Use of helicopters for operation and maintenance activities under the Proposed Action could potentially flush individuals present in the Noise Action Area. Disturbance effects would be most likely for individuals present near landing sites or in close proximity to the helicopter flight path (refer to discussion under Section 4.5.1, Construction Effects). However, the disturbance frequency would be reduced compared to the existing condition.

Considering that helicopter flights would be infrequent, would follow a direct route between Rush Creek Powerhouse and the Hat Creek landing sites, long-term operation and maintenance activities may affect, but are not likely to adversely affect Sierra Nevada red fox.

4.5.2.2 Effects to Habitat

As described above, under the Proposed Action, long-term operation and maintenance activities would be reduced compared to the existing condition. Following construction activities Rush Meadows and Agnew dams and associated facilities would be removed, would no longer require operation or maintenance actions (including routine helicopter flights), and the dam and facility sites would be restored. The reduction of maintenance and restoration of the former lakebeds and upland facility sites would result in a potential increase in habitat available for Sierra Nevada red fox overtime.

In addition, the reduction in maintenance and operations is expected to result in an overall decrease in the potential introduction or spread of NNIPs that could potentially degrade foraging habitat for Sierra Nevada red fox. Therefore, in the long-term the Proposed Action is expected to benefit Sierra Nevada red fox through increased quality and quantity of available habitat.

4.6 NORTH AMERICAN WOLVERINE

4.6.1 Construction and Restoration

4.6.1.1 Effects to Individuals

There is one documented occurrence of North American wolverine in the Construction/Restoration Action Area, and this species may potentially occur in the talus slopes and rugged terrain surrounding the construction and restoration areas. The recorded occurrence is along the north shore of Thousand Islands Lakes (Lawson, pers. comm.), within the 43 dBA noise threshold for the helicopter flight paths (**Map BA-5**). Implementation of proposed construction and restoration activities could result in the following effects to wolverines, if present:

- Construction, restoration, and repeated helicopter flights may result in disturbance to foraging wolverines.
- Additional human presence in the work areas may result in temporary disturbance.
- The proposed construction activities require excavation of holes and trenches in which small mammals could become entrapped.
- Trash and debris left unsecured in the construction areas or in the worker camp sites (e.g., the Frontier Pack Station Camp or in the alternative worker housing) may attract scavenging mammals such as North American wolverine.

North American wolverines may be affected by the noise from the operation of equipment and helicopter flights. The construction season for all construction and restoration activities will be June 1 to October 31, depending on the timing of snowmelt and return of winter snowfall. Construction at Rush Meadows dam and Agnew Dam would occur over one construction season. Construction at Gem Dam would occur over three construction seasons. Construction would not occur simultaneously. The specific timing of restoration activities will be determined in consultation with resource agencies as part of development of the Detailed Restoration Plan following issuance of the new FERC license. Construction and restoration noise effects are further described below:

- **Construction Equipment:** While there are no known occurrences within the 43 dBA threshold from construction equipment (refer to **Map BA-5**), noise from construction equipment has the potential to affect wolverine using talus slopes and rugged terrain in the Construction and Restoration Action Area may be accustomed to noise from a low frequency of helicopter flights because helicopters are used by SCE to operate and maintain the Project under existing conditions. Construction will likely require 30 trips per month during Rush Meadows Dam construction season, 132 trips per month during the three Gem Dam construction seasons, and 22 trips per month during the Agnew Dam construction season (refer to Section 5; Appendix 5-A; Tables A-4, A-7, and A-11). Use of helicopters may also potentially be required as part of restoration activities, at reduced frequency. Helicopters will not land at Gem Dam or at Rush Meadows dam because these

areas are within the wilderness boundaries. Equipment would be sling-loaded at a height of 200 feet at these locations (refer to **Map Series BA-2**). Helicopter landings would only occur at Agnew Dam and at June Mountain Ski Area. Construction-related noise at a level of 3 dBA above background and that may cause 50 percent reduced listening area and 30 percent reduced alerting distance disturbance (Barber et al. 2009) to North American wolverine and would extend to the helicopter flight noise areas shown on **Map BA-5.**

There is little documentation in the scientific literature about the effects of noise on wolverine, but noise disturbances may interrupt hunting or increase stress levels. Other mammal species show stress responses in dBA ranges between 52 dBA – 90 dBA, and prolonged exposure to noise may reduce foraging or resting behavior, result in loss of appetite or weight loss, change habitat use patterns, or increase energy expenditures for escape behavior (Shannon et al. 2014, Elwasife et al. 2015, Kleist et al. 2020). Most published studies investigate the effect of logging, motorized and un-motorized winter recreation, and road noise on wolverines. Some research suggests that wolverines can be attracted to some noise disturbances such as logging, and that they may be more sensitive to the presence of humans than to noise itself (Scrafford et al. 2017). Wolverines have been shown to avoid routine disturbances such as motorized and non-motorized winter recreation trails (Heinemeyer et al. 2019), and female wolverines are more sensitive than males. Wolverines have been shown to increase their movement speed in response to traffic volume (i.e., the number of vehicle trips) along roads, but the total amount of noise the road generated does not seem to affect avoidance (Scrafford et al. 2018).

There are no known breeding populations of North American wolverines in California; therefore, the Proposed Action is unlikely to affect breeding wolverines. Foraging wolverines may flush or increase their movements in response to the construction equipment or helicopter flights. Noise in the range of 52 – 90 dBA would be highest in the immediate vicinity of the construction work areas, and wolverines would likely avoid these areas in the summer because of the heavy recreation traffic along the Rush Creek Trail. Also, North American wolverines routinely make movements within 4–9 miles per day (Inman et al. 2012), wolverines could likely move outside the disturbance area without minimal additional energy expenditure. Therefore, noise from construction equipment and helicopter flights may affect, but is not likely to adversely affect the North American wolverine.

The potential for temporary human disturbance, entrapment in excavations, and attraction of scavengers will be minimized through implementation of Standard Construction Measures that impose limitations on the timing and location of work and General Wildlife Measures require that excavations be covered at night and/or installation of escape ramps. The Forest Service Special Use Permit requires use of bear-proof lockers to temporarily store food, camping, personal supplies; and containment and regular transportation of garbage off-site (i.e., by pack mules or by helicopter). In addition, SCE will implement worker environmental awareness training regarding special-status or game mammals potentially present and construction measures that will minimize potential for effects. This includes stop-work protocols (General Construction Measures) to be implemented in the case that animals are observed at the site that may potentially be

affected by work activities. Refer to **Appendix B** for the full language of each of these measures.

With implementation of construction measures, proposed construction and restoration activities may affect, but are not likely to adversely affect North American wolverine.

4.6.1.2 Effects to Habitat

The restoration of the former lakebeds and the historic streambed of Rush Creek would improve potential habitat for wolverine in the long term by increasing habitat heterogeneity within the former lakebeds. For example, rather than a deep reservoir that provides marginal foraging habitat, the former Waugh lakebed would likely return to stream, meadow, riparian and wetland habitats, providing a greater diversity of both aquatic and upland habitats. Because of its relatively shallow elevation, some portions of the former lakebed within Waugh Lake would likely return to a meadow system, which provides high quality foraging habitat for wolverine. With the removal of Rush Meadows Dam, periodic disturbances from long-term operation and maintenance would no longer occur. Restoration of terrestrial habitats surrounding Agnew and Gem lakes would also increase the availability of foraging habitat. Therefore, in the long-term, the Proposed Action is expected to increase the amount of habitat and improve habitat connectivity for North American wolverine.

4.6.2 Long-Term Operations and Maintenance

4.6.2.1 Effects to Individuals

The nearest recorded occurrence of North American wolverine is 2.5 miles from Gem Dam, outside of the areas where long-term operations and maintenance activities would occur. These activities will be focused around the Gem Dam area and the Rush Creek Powerhouse (refer to **Map Series BA-3**), in close proximity to existing high-use recreation areas along the Rush Creek Trail. North American wolverine would likely avoid these areas under existing conditions.

Under existing conditions, helicopters are used to support the operation and maintenance of the Project, and flights travel to facilities near Rush Meadows, Gem, and Agnew dams. In general, helicopter trips are limited to one trip per month (November through April) or snow surveys and up to two trips per month (May through October) when maintenance and operations activities are typically conducted. Helicopters would continue to be used, as needed, to support the operation and maintenance of the Project, but within a reduced area. Helicopters would no longer be needed to operate and maintain Rush Meadows or Agnew dams, only Gem dam. Use of helicopters for operation and maintenance activities under the Proposed Action could potentially flush individual wolverine, particularly if present near landing sites or within the noise disturbance thresholds of 52 – 90 dBA from the helicopter flight path (refer to discussion under Section 4.6.1). However, the disturbance frequency would be reduced compared to the existing condition.

Foraging individuals may be temporarily flushed from helicopter flights up to twice per month, but because flights are infrequent these effects would be considered negligible. As described above, helicopter flights would be infrequent, and would follow a direct route between Rush Creek Powerhouse and the Hat Creek landing sites. Therefore, helicopter use as part of long-term operation and maintenance activities may affect, but are not likely to adversely affect wolverine.

4.6.2.2 Effects to Habitat

As described above, under the Proposed Action, long-term operation and maintenance activities would be reduced compared to the existing condition. Following construction activities Rush Meadows and Agnew dams and associated facilities would be removed, would no longer require operation or maintenance actions (including routine helicopter flights), and the dam and facility sites would be restored. The reduction of maintenance and restoration of the former lakebeds and upland facility sites would result in a potential increase in habitat available for wolverine overtime. In addition, the reduction in maintenance and operations is expected to result in an overall decrease in the potential introduction or spread of NNIPs that could potentially degrade foraging habitat for North American wolverine. Therefore, in the long-term the Proposed Action is expected to benefit wolverine through increased quality and quantity of available habitat.

4.7 SIERRA NEVADA BIGHORN SHEEP

4.7.1 Construction and Restoration

4.7.1.1 Effects to Individuals

Critical Habitat Unit 2 (Mount Gibbs) for Sierra Nevada bighorn sheep is present north of the FERC Project boundary (within 1.2 mile). There is no Critical Habitat within the construction or restoration areas. Refer to Section 4.3.2, **Map Series BA-10** for the location of Critical Habitat for Sierra Nevada bighorn sheep.

Based on discussions with the CDFW, bighorn sheep have never been recorded within the FERC Project boundary and there are no known occurrences or radio-tracking data of bighorn sheep along the proposed helicopter flight paths (Lacey Greene, pers. comm), which are south of the FERC Project boundary. This species primarily utilizes habitats north of the FERC Project boundary.

There are no known occurrences of Sierra Nevada bighorn sheep ewes or records of lambing within the Construction and Restoration Action Area, including the 43 dBA noise thresholds for construction equipment or helicopter flights (refer to **Map BA-10a**). Breeding and lambing are concentrated on the slopes of Mt. Gibbs, approximately 10 miles north of the construction and restoration areas. Therefore, the Proposed Action will have no effect on breeding or lambing for Sierra Nevada bighorn sheep.

Rams have been recorded within the 43 dBA noise action area on the Kuna Crest northeast of the Alger Lakes complex (refer to **Map BA-10b**). Tracking data suggests that rams move to the breeding areas, described above, during the fall rutting season. Sierra

Nevada bighorn sheep rams may be affected by the noise of construction activities, including the operation of construction equipment and helicopter flights. The construction and restoration season for all three dams will be June 1 to October 31, depending on the timing of snowmelt and return of winter snowfall. Construction at Rush Meadows dam and Agnew Dam would occur over one construction season. Construction at Gem Dam would occur over three construction seasons. Construction would not occur simultaneously. The schedule for implementation of restoration activities will be determined in consultation with resource agencies as part of development of the Detailed Restoration Plan following issuance of the new FERC license.

The area potentially affected by noise is described further below.

- **Construction Equipment:** Though there are no recorded occurrences of Sierra Nevada bighorn sheep within the 43 dBA noise threshold from construction equipment (refer to **Map BA-10a**), noise from construction equipment has the potential to affect bighorn sheep rams within approximately 1,168 acres of designated Critical Habitat. Construction-related noise at a level of 3 dBA above background that may cause 50 percent reduced listening area and 30 percent reduced alerting distance disturbance (Barber et al. 2009) would extend to the construction noise areas shown on **Map BA-10a.**

- **Helicopter Flights:** Helicopter use has the potential to affect Sierra Nevada bighorn sheep rams within the 43 dBA threshold. This includes rams known to be present on the Kuna Crest northeast of the Alger Lakes complex (refer to **Map 10b**) Individuals who habitually forage within the Construction and Restoration Action Area may be accustomed to noise because helicopters are used by SCE to operate and maintain the Project under existing conditions. Under existing conditions, helicopter trips to the three dams for maintenance are infrequent and typically occur about once a month during November – April and two trips per month May through October. Construction will likely require 30 trips per month during Rush Meadows Dam construction season, 132 trips per month during the three Gem Dam construction seasons, and 22 trips per month during the Agnew Dam construction season (refer to Section 5; Appendix 5-A; Tables A-4, A-7, and A-11). Helicopters will not land at Gem Dam or at Rush Meadows Dam because these areas are within the wilderness boundaries. Equipment would be sling-loaded at a height of 200 feet at these locations (refer to **Map Series BA-2**). Helicopter landings would only occur at Agnew Dam and at June Mountain Ski Area. Noise from increased helicopter trips could potentially affect Sierra Nevada bighorn sheep. Construction-related noise at a level of 3 dBA above background and that may cause 50 percent reduced listening area and 30 percent reduced alerting distance disturbance (Barber et al. 2009) to bighorn sheep rams and would extend to the helicopter flight noise areas shown on **Map Series BA-10.**

Noise and disturbance from helicopters have been demonstrated to affect bighorn sheep distribution, movement patterns, habitat use, and foraging behavior. Helicopter flight paths are known to alter the movements of bighorn sheep populations (Bleich et al. 1990). During spring, female bighorn sheep were found to change habitat use after helicopter

disturbance, often relocating to steeper terrain to minimize the perceived risk of predation (Bleich et al 1994). A study conducted on Grand Canyon bighorn sheep populations (*Ovis canadensis nelson*) found that sheep foraging in the flight path of helicopters exhibit a significant decrease (43 percent) in foraging efficiency when helicopters are present (Stockwell et. al. 1991). In a study of bighorn sheep in Canada, MacArthur et al. (1982) found that increased heart rates and behavioral responses were detected when helicopters flew within 0.25 mile, but not at further distances. In a study of simulated jet aircraft noise on bighorn sheep, Weisenberger et al. (1996) found that noise levels between 92 – 112 dBA resulted in increased heart rates and disturbance behavior in captive bighorn sheep, but the sheep showed signs of habituation these noises over time. Similar results were found in a study by Krausman et al. (1998) at noise levels between 85 – 100 dBA. However, wild bighorn sheep are not known to become desensitized to continuous helicopter disturbance and as a result the impacts of helicopter flight paths in bighorn sheep habitat can be cumulative (Bleich et al., 1990, Stockwell et. al. 1991).

Sierra Nevada bighorn sheep rams could potentially be affected by use of helicopters when utilizing foraging habitats on the Kuna Crest. Use of helicopters during construction may cause individuals to flush or to shift their foraging behavior outside of the Construction and Restoration Action Area (which overlaps with 33 percent of designated Critical Habitat for the Mt. Gibbs Herd Unit). It is also possible that the rams could become habituated to the noise from the helicopters, since the helicopters will not be within the visual line of sight of typical foraging areas. Several studies indicate that the visual disturbance of a helicopter fly-over may be more disturbing than the noise levels (MacArthur et al. 1982, Stockwell et al. 1991). Noise from helicopters and construction equipment would be highest near the construction work areas, and sounds in the range of 80 – 110 dBA (that have been shown to elicit bighorn sheep stress responses) would be unlikely to travel outside the Rush Creek basin because sound would have to pass over several ridgelines to extend to the Kuna Crest.

Potential flushing effects would be relatively minimal at the Rush Meadows Dam and Agnew Dam work areas, where helicopter flights would be limited to one or two round trip flights per day (on average) for one construction season each. However, work at Gem Dam may require up to six flights per day (on average) over three construction seasons; repeated disturbances are more likely to affect this species.

In order to minimize the potential for disturbance of Sierra Nevada bighorn sheep, flight paths (shown on **Map Series BA-10**) have specifically been routed to avoid Critical Habitat for Sierra Nevada bighorn sheep. These paths were designed in coordination with resource agencies for past construction work required at Rush Meadows Dam (SCE 2017a, 2017b). Implementation of construction measures will further minimize the potential for disturbance effects to Sierra Nevada bighorn sheep. This includes Standard Construction Measures that limit the timing and extent of work activities; implementing worker environmental awareness training regarding special-status species potentially present and applicable measures required to avoid and minimize effects; and General Wildlife Measures that include stop-work protocols that are required if special-status species (including Sierra Nevada bighorn sheep) are observed and may potentially be affected by Project facility modification or restoration activities. Refer to **Appendix B** for the full language of each of these measures.

With implementation of measures, the proposed Project facility modification activities would reduce potential effects, but noise may likely have adverse effects to individual Sierra Nevada bighorn sheep during the construction period, particularly at Gem Dam where multiple daily helicopter flights would be required.

4.7.1.1.1 Effects to Habitat

As described previously, the proposed construction and restoration activities are located outside of federally designated Critical Habitat, and are not located on lands currently utilized by Sierra Nevada bighorn sheep. Therefore, construction/restoration activities would not indirectly affect Sierra Nevada bighorn sheep by affecting their habitats.

4.7.2 Long-Term Operations and Maintenance

4.7.2.1 Effects to Individuals

Sierra Nevada bighorn sheep have never been recorded within the FERC Project boundary where operations and maintenance activities will occur (Lacey Greene, pers. comm). Sierra Nevada bighorn sheep rams are known to occur within the 43 dBA noise threshold from helicopter flights, though they are not utilizing these areas during the breeding season.

Under existing conditions, helicopters are used to support the operation and maintenance of the Project, and flights travel to facilities near Rush Meadows, Gem, and Agnew dams. In general, helicopter trips are limited to one trip per month (November through April) or snow surveys and up to two trips per month (May through October) when maintenance and operations activities are typically conducted.

Under the Proposed Action, helicopter use will be limited to infrequent, short flights between the Rush Creek Powerhouse and the Hat Creek landing site (near Gem Dam) to support the operation and maintenance of the Project. Therefore, area affected by helicopter noise would be greatly reduced compared to the existing condition. Noise and disturbance from helicopters have been demonstrated to affect bighorn sheep distribution, movement patterns, habitat use, and foraging behavior (Anderson 2007; Bleich et al. 1990; Bleich et al. 1994; Stockwell et. al. 1991). Use of helicopters for operation and maintenance activities under the Proposed Action could, therefore, potentially result in direct disturbance effects to Sierra Nevada bighorn sheep and other large special-status and game mammals, if present in the vicinity of the flight paths. Foraging individuals may be temporarily flushed from helicopter flights up to twice per month, but because flights are infrequent these effects would be minor. Flight paths have been selected in consultation with USFWS to avoid Sierra Nevada bighorn sheep Critical Habitat (SCE 2017a, 2017b); and helicopters would fly in a fixed route and would not linger or hover for long periods of time.

Considering that helicopter flights would be infrequent, would follow a direct route between Rush Creek Powerhouse and the Hat Creek landing site near Gem Dam, and are routed to avoid Critical Habitat, long-term operation and maintenance activities may affect, but are not likely to adversely affect Sierra Nevada bighorn sheep.

4.7.2.2 Effects to Habitat

As described previously, the analysis area is located on lands currently that are not utilized by Sierra Nevada bighorn sheep. Therefore, long-term operation and maintenance would have no effect on Sierra Nevada bighorn sheep by affecting their habitats.

5 CUMULATIVE EFFECTS

Under the ESA, cumulative effects are defined as "those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation." The spatial boundary for analyzing the potential cumulative effects to federally listed species from the implementation of the Proposed Action is the same as the Action Area.

Most of the Project facilities occupy federal lands within the INF, which is under the jurisdiction of the Forest Service. The exception is an area around the Rush Creek Powerhouse, which is located on SCE-owned lands. The Powerhouse complex does not provide suitable habitat for sensitive plants or wildlife. The Proposed Action is the implementation of proposed construction activities (i.e., Project facility modifications), restoration activities, and long- term operation and maintenance of the Project under a FERC license. There are no other future State or private activities that are reasonably certain to occur within the Action Area.

FERC did not identify any specific resources in its Scoping Document 2 (FERC 2022) that have the potential to be cumulatively affected by the proposed operation and maintenance of the Rush Creek Project. Consistent with FERC's determination in Scoping Document 2, and through scoping, agency consultation, and an independent analysis, SCE did not identify any resources that would be cumulatively affected by relicensing the Rush Creek Project.

Therefore, the Proposed Action would not result in cumulative effects to whitebark pine, monarch butterfly, Yosemite toad, Yosemite toad Critical Habitat, Sierra Nevada yellow-legged frog, Sierra Nevada yellow-legged frog Critical Habitat, Sierra Nevada red fox, North American wolverine, or Sierra Nevada bighorn sheep.

6 DETERMINATION SUMMARY

6.1 WHITEBARK PINE

Considering direct and indirect effects to whitebark pine, and with incorporation of construction measures, and environmental measures, management and monitoring plans:

- Facility modification and restoration activities **may affect, and are likely to adversely affect** whitebark pines.
- Long-term operation and maintenance of the Project **may affect, and is likely to adversely affect** whitebark pines.

- Over the long-term, the removal of Project facilities and associated restoration would result in an overall **benefit** to whitebark pines.

6.2 MONARCH BUTTERFLY

Considering direct and indirect effects to monarch butterfly, and with incorporation of construction measures, and environmental measures, management and monitoring plans:

- Facility modification and restoration activities **may affect, but are not likely to adversely affect** monarch butterfly.

- Long-term operation and maintenance of the Project would have **no effect** on monarch butterfly.

- Over the long-term, the removal of Project facilities and associated restoration would result in an overall **benefit** to monarch butterfly.

6.3 YOSEMITE TOAD

Considering direct and indirect effects to Yosemite toad, and with incorporation of construction measures, and environmental measures, management and monitoring plans:

- Facility modification and restoration activities **may affect, and are likely to adversely affect** Yosemite toad.

- Long-term operation and maintenance of the Project **may affect, but is not likely to adversely affect** Yosemite toad.

- Over the long-term, the removal of Project facilities and associated restoration would result in an overall **benefit** to Yosemite toad.

6.4 YOSEMITE TOAD CRITICAL HABITAT

Considering direct and indirect effects to Yosemite toad Critical Habitat, and with incorporation of construction measures, and environmental measures, management and monitoring plans:

- Facility modification and restoration activities **may affect, but are not likely to adversely affect** Yosemite toad Critical Habitat.

- Long-term operation and maintenance of the Project would have **no effect** on Yosemite toad Critical Habitat.

- Over the long-term, the removal of Project facilities and associated restoration would result in an overall **benefit** to Yosemite toad Critical Habitat.

6.5 SIERRA NEVADA YELLOW-LEGGED FROG

Considering direct and indirect effects to Sierra Nevada yellow-legged frog, and with incorporation of construction measures, and environmental measures, management and monitoring plans:

- Facility modification and restoration activities **may affect, but are not likely to adversely affect** Sierra Nevada yellow-legged frog.
- Long-term operation and maintenance of the Project **may affect, but is not likely to adversely affect** Sierra Nevada yellow-legged frog.
- Over the long-term, the removal of Project facilities and associated restoration would result in an overall **benefit** to Sierra Nevada yellow-legged frog.

6.6 SIERRA NEVADA YELLOW-LEGGED FROG CRITICAL HABITAT

Considering direct and indirect effects to Sierra Nevada yellow-legged frog Critical Habitat, and with incorporation of construction measures, and environmental measures, management and monitoring plans:

- Facility modification and restoration activities **may affect, but are not likely to adversely affect** Sierra Nevada yellow-legged frog Critical Habitat.
- Long-term operation and maintenance of the Project would have **no effect** on Sierra Nevada yellow-legged frog Critical Habitat.
- Over the long-term, the removal of Project facilities and associated restoration would result in an overall **benefit** to Sierra Nevada yellow-legged frog Critical Habitat.

6.7 SIERRA NEVADA RED FOX

Considering direct and indirect effects to Sierra Nevada red fox, and with incorporation of construction measures, and environmental measures, management and monitoring plans:

- Facility modification and restoration activities **may affect, and are likely to adversely affect** Sierra Nevada red fox.
- Long-term operation and maintenance of the Project **may affect, but is not likely to adversely affect** Sierra Nevada red fox.
- Over the long-term, the removal of Project facilities and associated restoration would result in an overall **benefit** to Sierra Nevada red fox.

6.8 NORTH AMERICAN WOLVERINE

Considering direct and indirect effects to North American wolverine, and with incorporation of construction measures, and environmental measures, management and monitoring plans:

- Facility modification and restoration activities **may affect, but are not likely to adversely affect** North American wolverine.
- Long-term operation and maintenance of the Project **may affect, but is not likely to adversely affect** North American wolverine.
- Over the long-term, the removal of Project facilities and associated restoration would result in an overall **benefit** to North American wolverine.

6.9 SIERRA NEVADA BIGHORN SHEEP

Considering direct and indirect effects to Sierra Nevada bighorn sheep, and with incorporation of construction measures, and environmental measures, management and monitoring plans:

- Facility modification and restoration activities **may affect and are likely to adversely affect** Sierra Nevada bighorn sheep.
- Long-term operation and maintenance of the Project **may affect, but is not likely to adversely affect** Sierra Nevada bighorn sheep.
- Over the long-term, the removal of Project facilities and associated restoration would result in an overall **benefit** to Sierra Nevada bighorn sheep.

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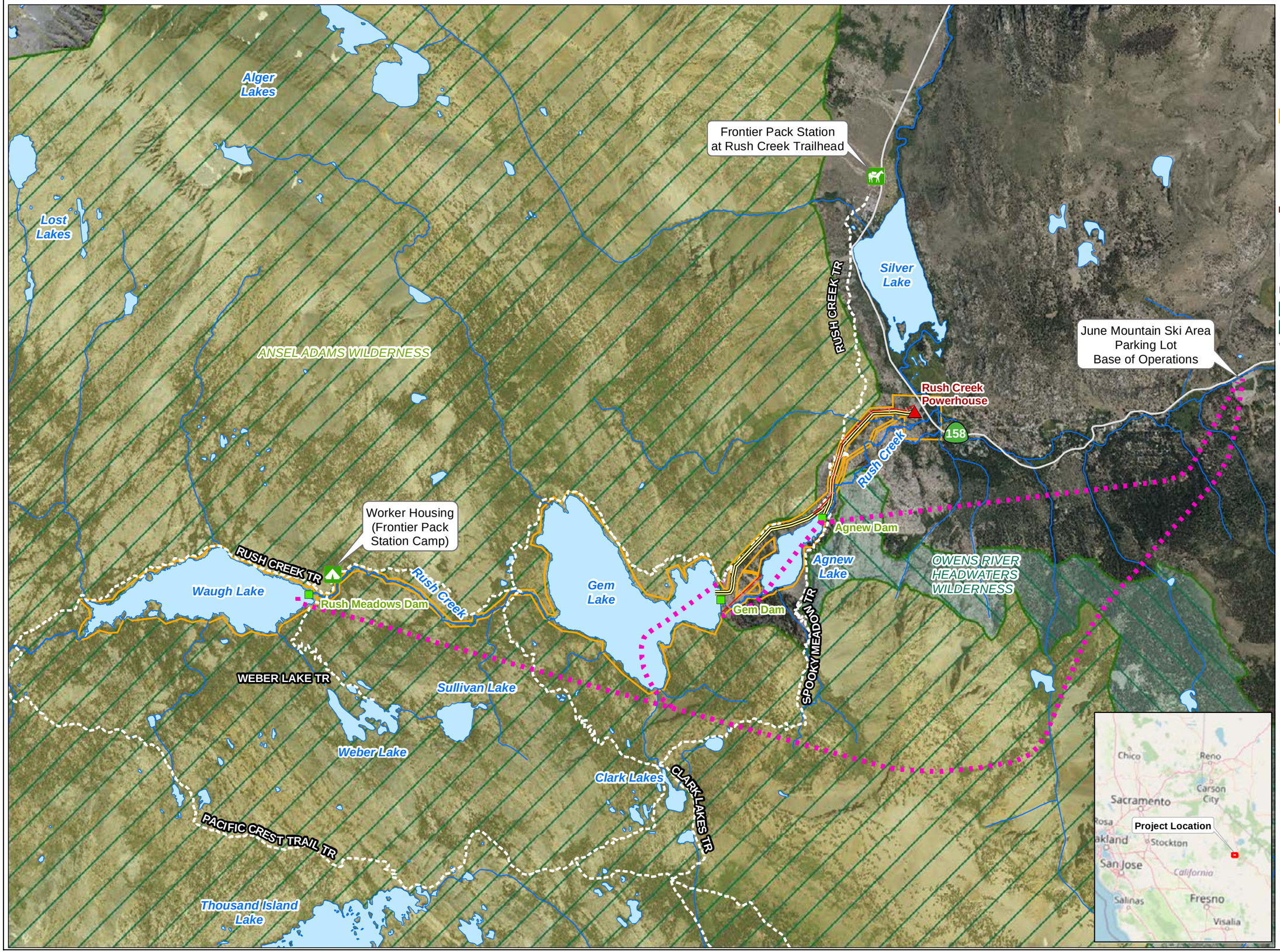
MAPS



SCE Facilities

- Dam
- Powerhouse
- Flowline / Penstock
- Tramway
- FERC Boundary

Other Features

- Approximate Helicopter Flight Path
- Highway
- County Boundary
- Watercourse
- Lake
- Non-Project Trail

Land Management

National Wilderness Area*

- Ansel Adams Wilderness
- Owens River Headwaters Wilderness

*NOTE: Ansel Adams Wilderness and Owens River Headwaters Wildernes are located on USFS Lands

SOUTHERN CALIFORNIA EDISON
Energy for What's Ahead™

Rush Creek Project (FERC 1389)

Map BA-1

Project Location and Land Jurisdiction

0 1,250 2,500 Feet

Projection: UTM Zone 11
Datum: NAD 83

Date: 6/24/2025

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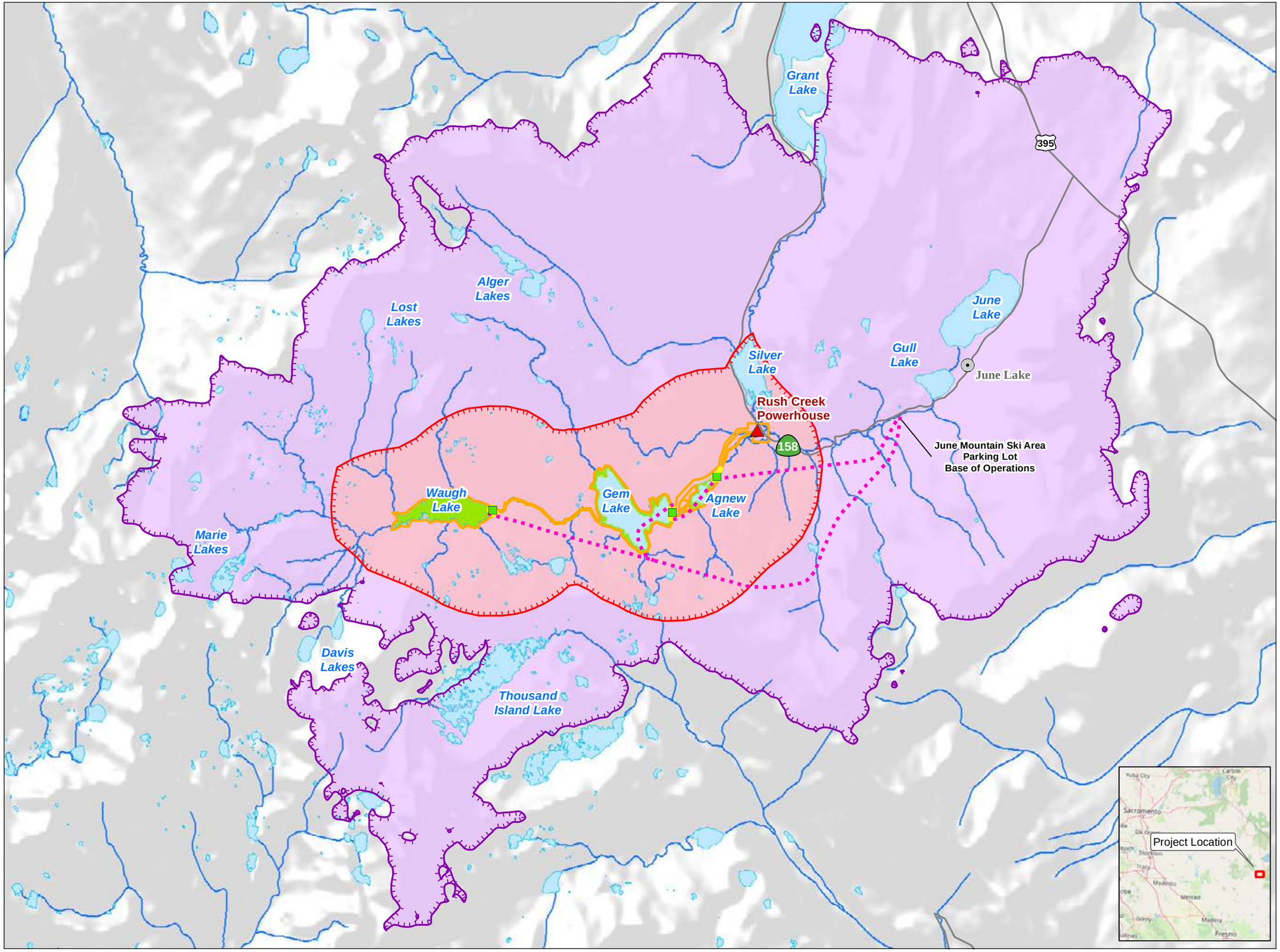

SCE Facilities

- Dam
- Powerhouse
- FERC Boundary

Other Features

- Highway
- River/Stream
- Lake/Reservoir
- Approximate Helicopter Flight Path

Construction / Restoration Areas

- Construction Area
- Conceptual Restoration Area

Noise Action Area

Single-Event 43 dB Lmax Exposure from Helicopter and Construction Sources

- Helicopter Flights (Skycrane)
- Construction Equipment

SOUTHERN CALIFORNIA EDISON
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Rush Creek Project (FERC 1389)

Map BA-2

Overview Map
Construction/Restoration Action Area

0 0.5 1 Miles

Projection: UTM Zone 11
Datum: NAD 83

Date: 6/24/2025

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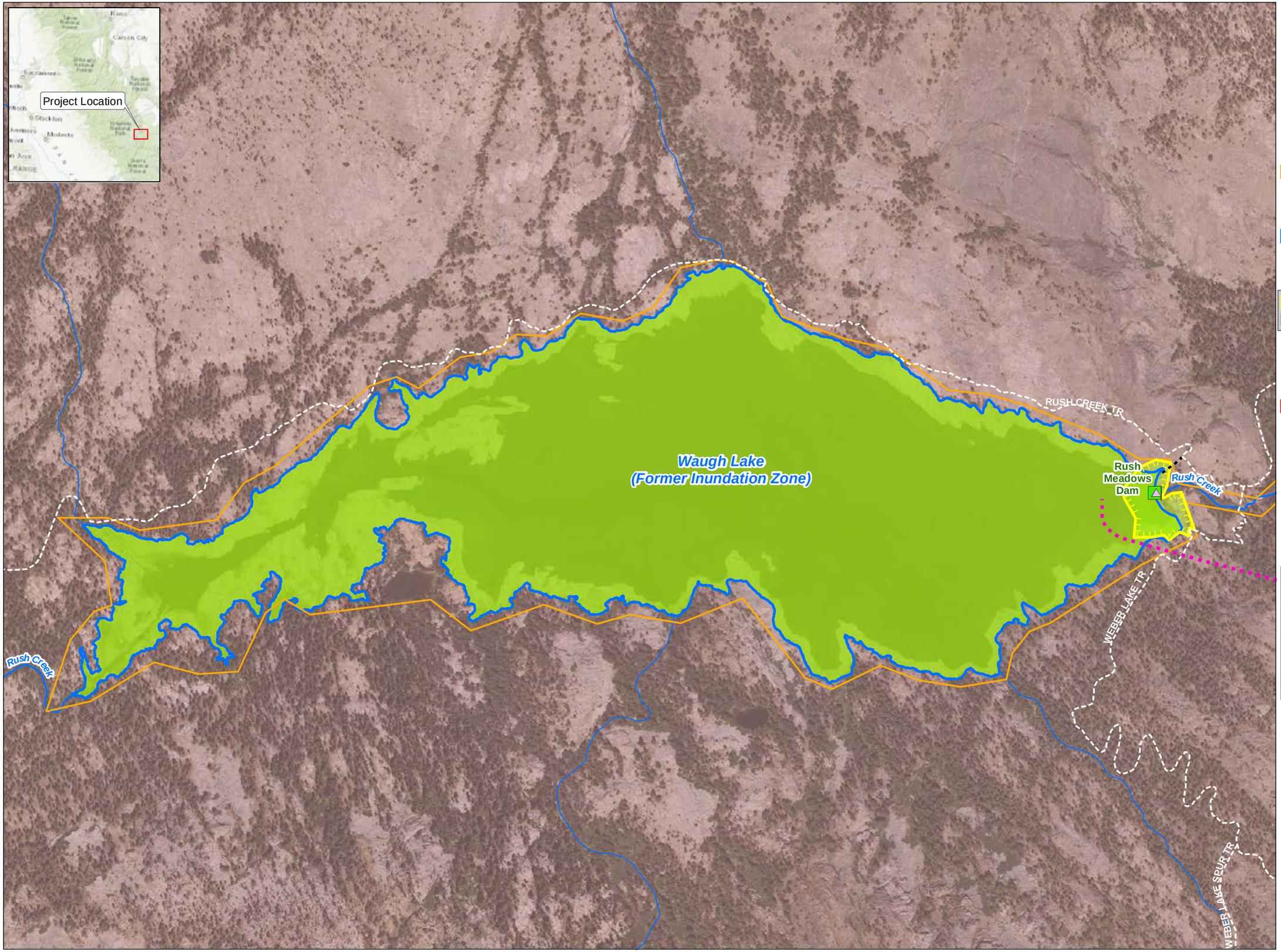

SCE Facilities

- Powerhouse
- Dam
- Water Conveyance Feature
- Flowline / Penstock
- Project Trail
- Tramway
- Helicopter Landing Site
- FERC Boundary

Other Features

- Watercourse
- Historic OHWM of Reservoir
- Approximate Helicopter Flight Path

Construction / Restoration Areas

- Construction Area
- Conceptual Restoration Area

Noise Action Area

Single-Event 43 dB Lmax Exposure from Helicopter and Construction Sources

- Construction Equipment and Helicopter Flights (Skycrane)

SOUTHERN CALIFORNIA EDISON
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Rush Creek Project (FERC 1389)

Map BA-2a

Construction/Restoration Action Area
Waugh Lake Area

0 250 500 Feet

Projection: UTM Zone 11
Datum: NAD 83

Date: 6/24/2025

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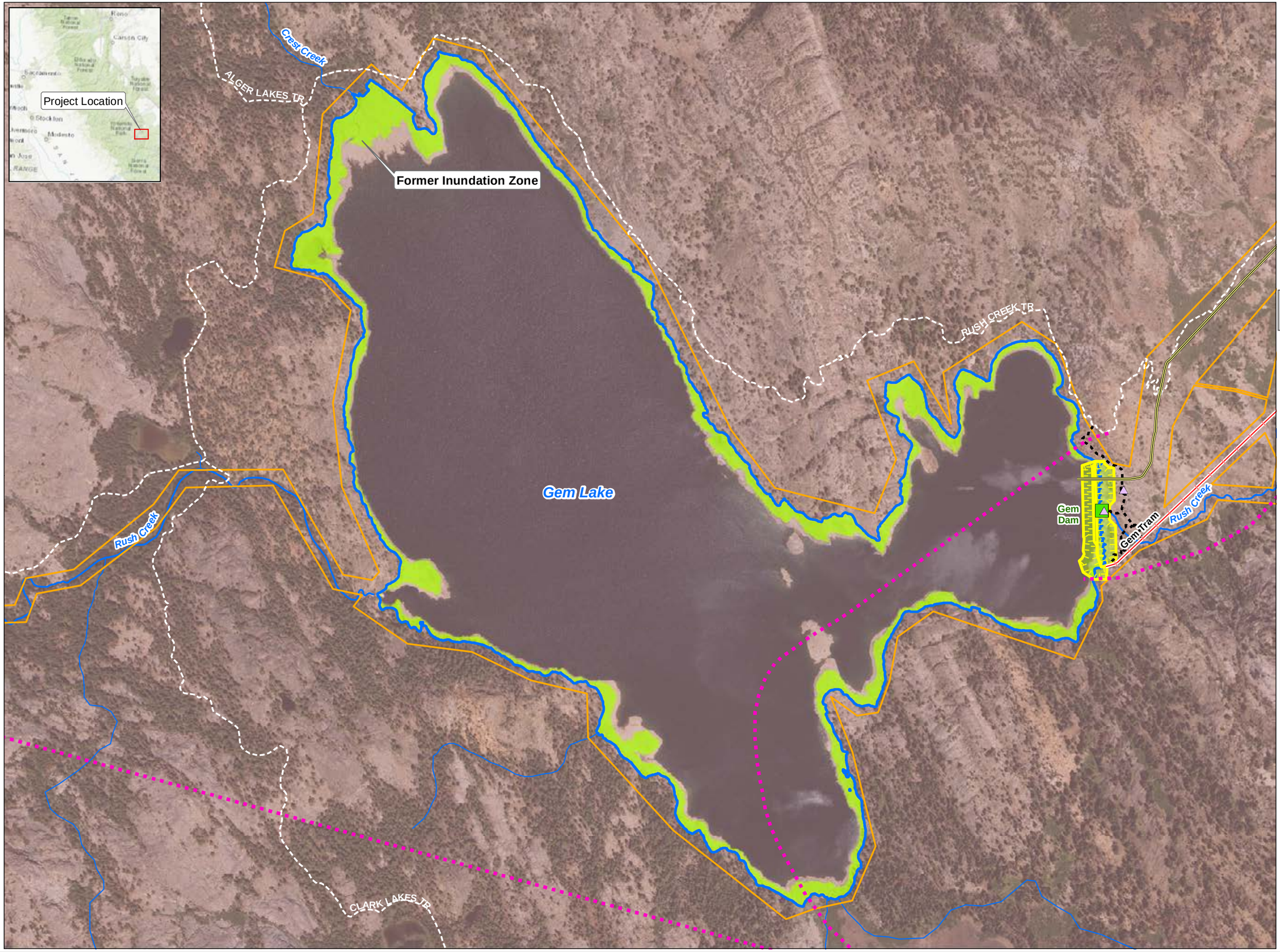


SCE Facilities

- Powerhouse
- Dam
- Water Conveyance Feature
- Flowline / Penstock
- Project Trail
- Tramway
- Helicopter Landing Site
- FERC Boundary

Other Features

- Watercourse
- Historic OHWM of Reservoir
- Approximate Helicopter Flight Path

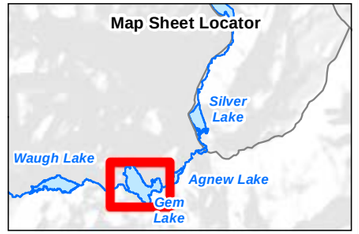
Construction / Restoration Areas

- Construction Area
- Conceptual Restoration Area

Noise Action Area

Single-Event 43 dB Lmax Exposure from Helicopter and Construction Sources

- Construction Equipment and Helicopter Flights (Skycrane)



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Rush Creek Project (FERC 1389)

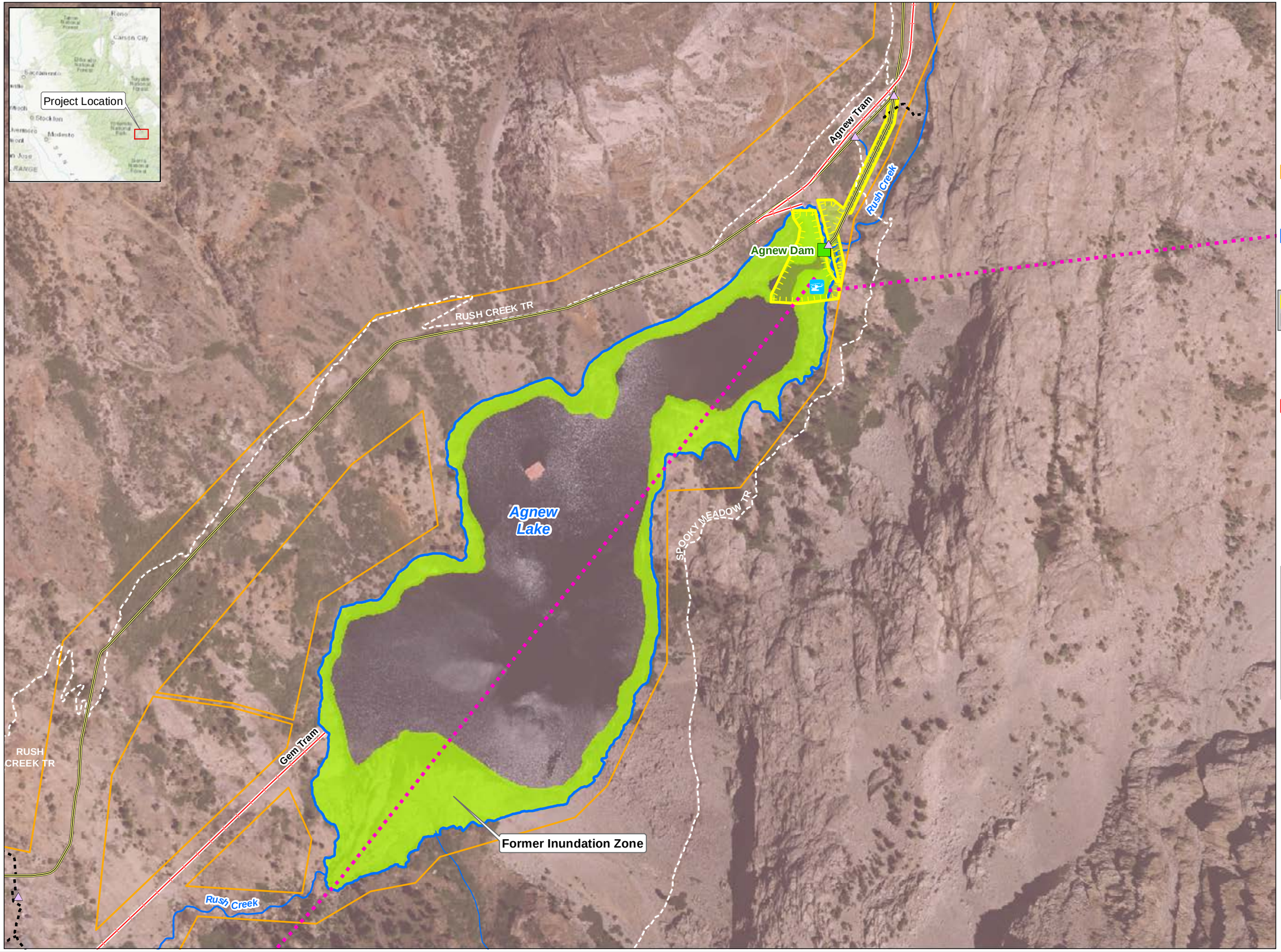
Map BA-2b

Construction/Restoration Action Area
Gem Lake Area

0 250 500 Feet

Projection: UTM Zone 11
Datum: NAD 83

Date: 6/24/2025



SCE Facilities

- Powerhouse
- Dam
- Water Conveyance Feature
- Flowline / Penstock
- Project Trail
- Tramway
- Helicopter Landing Site
- FERC Boundary

Other Features

- Watercourse
- Historic OHWM of Reservoir
- Approximate Helicopter Flight Path

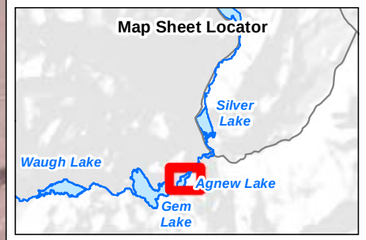
Construction / Restoration Areas

- Construction Area
- Conceptual Restoration Area

Noise Action Area

Single-Event 43 dB Lmax Exposure from Helicopter and Construction Sources

- Construction Equipment and Helicopter Flights (Skycrane)



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Rush Creek Project (FERC 1389)

Map BA-2c

Construction/Restoration Action Area
Gem Lake Area

0 125 250 Feet

Projection: UTM Zone 11
Datum: NAD 83

Date: 6/24/2025

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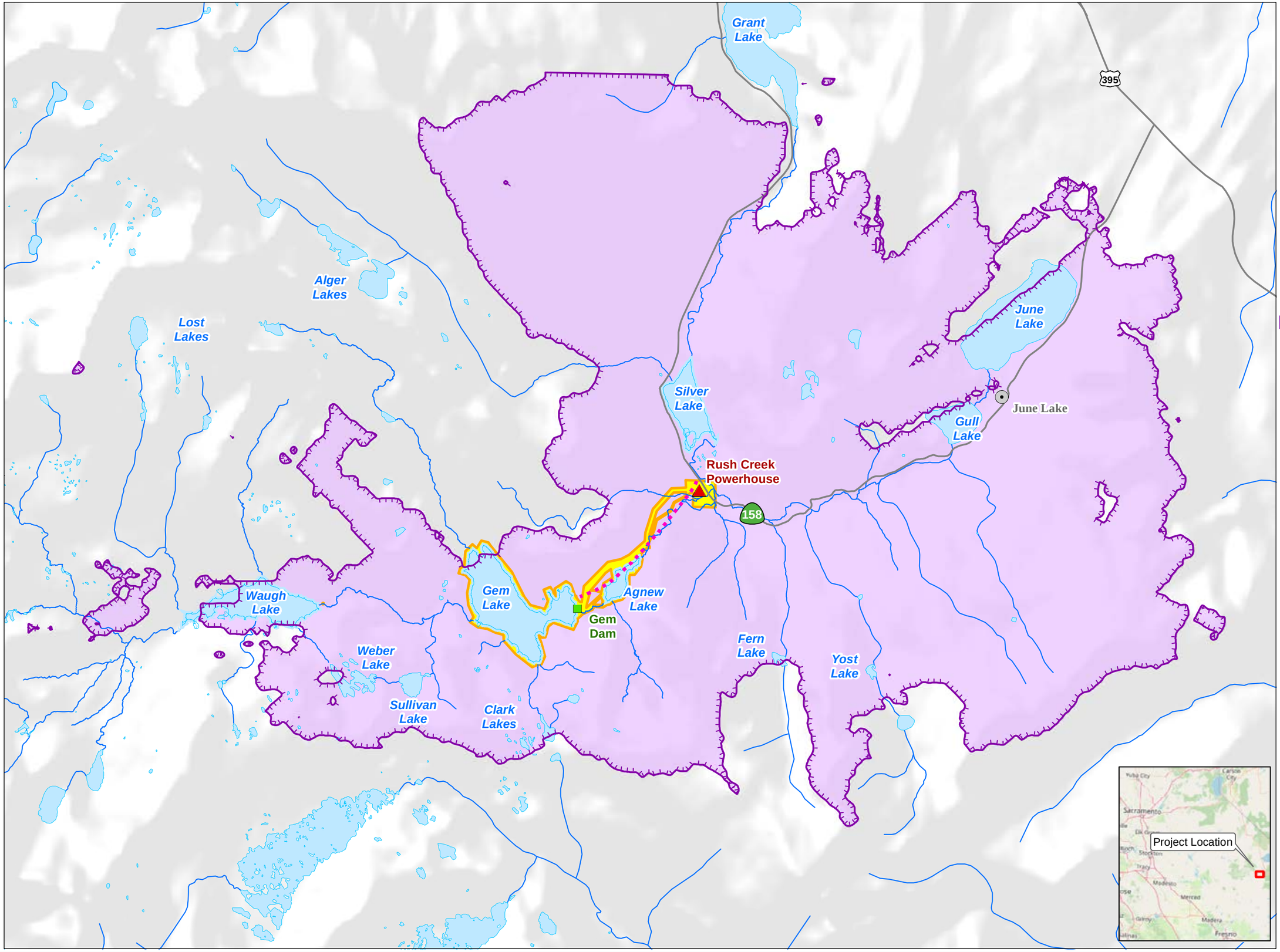

SCE Facilities

- Dam
- Powerhouse
- Proposed FERC Boundary

Other Features

- Highway
- River/Stream
- Lake/Reservoir
- Approximate Helicopter Flight Path

Long Term Operations & Maintenance Area

- Operations and Maintenance Activities

Noise Action Area

Single-Event 43 dB Lmax Exposure from Helicopter Sources

- Helicopter Flights (ASTAR and Blackhawk)

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Rush Creek Project (FERC 1389)

Map BA-3

Overview Map
Long Term Operations & Maintenance Action Area

0 0.25 0.5 Miles

Projection: UTM Zone 11
Datum: NAD 83

Date: 6/24/2025

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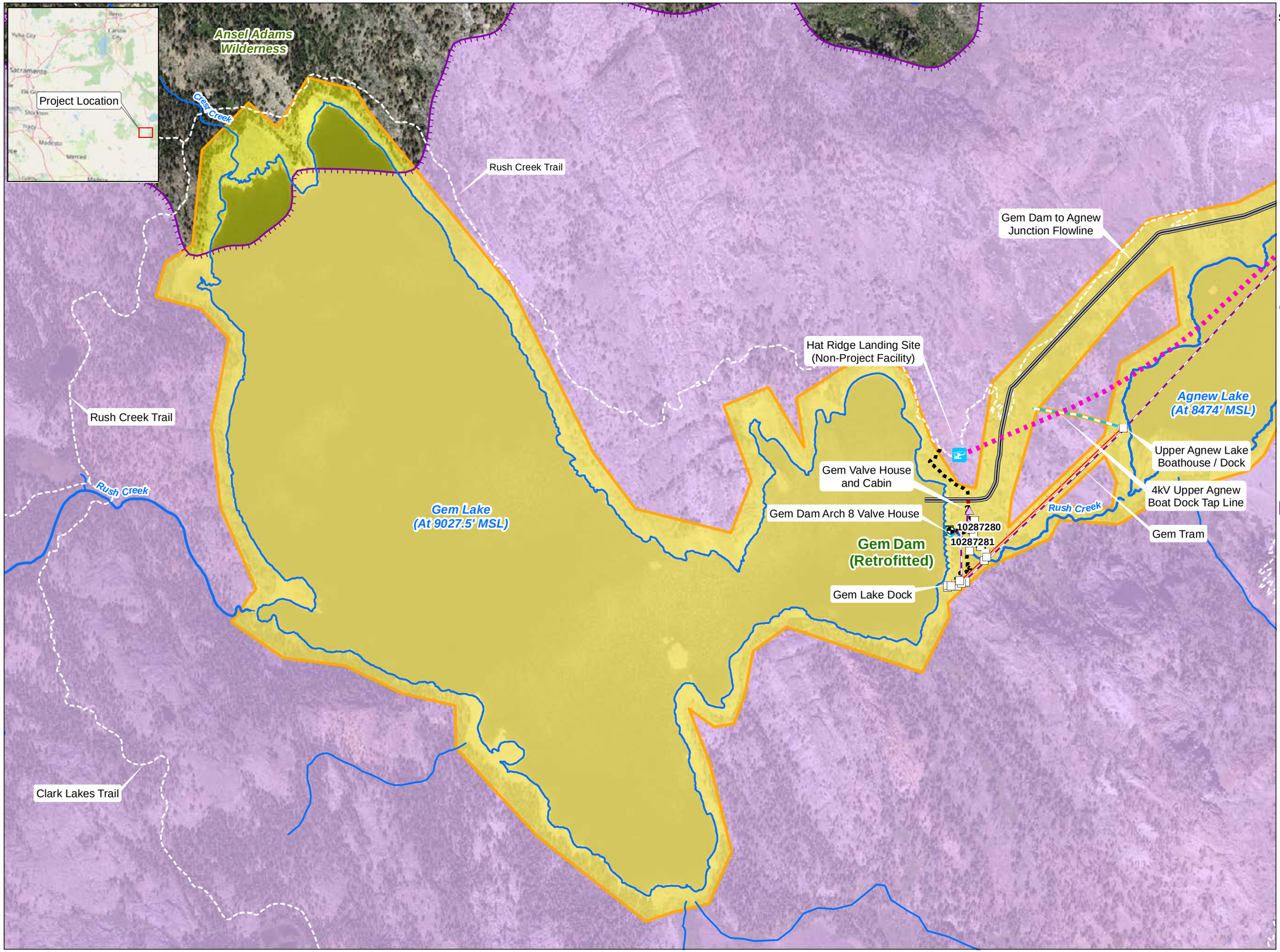


SCE Facilities (Under Proposed Action)

- Powerhouse
- Dam
- Stream Gage
- Reservoir Gage
- Ancillary Facility
- Helicopter Landing Site
- Water Conveyance Feature
- Tailrace
- Tunnel
- Flowline / Penstock
- Power Line
- Communication Line
- Tramway
- Project Road
- Project Trail
- Proposed FERC Project Boundary

Other Features

- Watercourse
- Lake
- Non-Project Trail
- Approximate Helicopter Flight Path

Long Term Operations & Maintenance Area

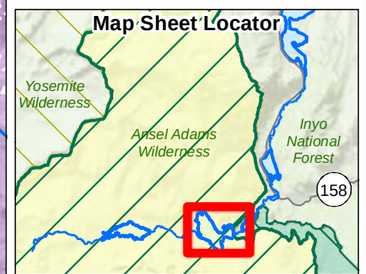
- Operations and Maintenance Activities

Noise Action Area

Single-Event 43 dB Lmax Exposure from Helicopter Sources

- Helicopter Flights (ASTAR and Blackhawk)

Map Sheet Locator



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Rush Creek Project (FERC 1389)

Map BA-3a

Long Term Operations & Maintenance Action Area
Gem Lake Area

0 250 500 Feet

Projection: UTM Zone 11
Datum: NAD 83

Date: 6/24/2025

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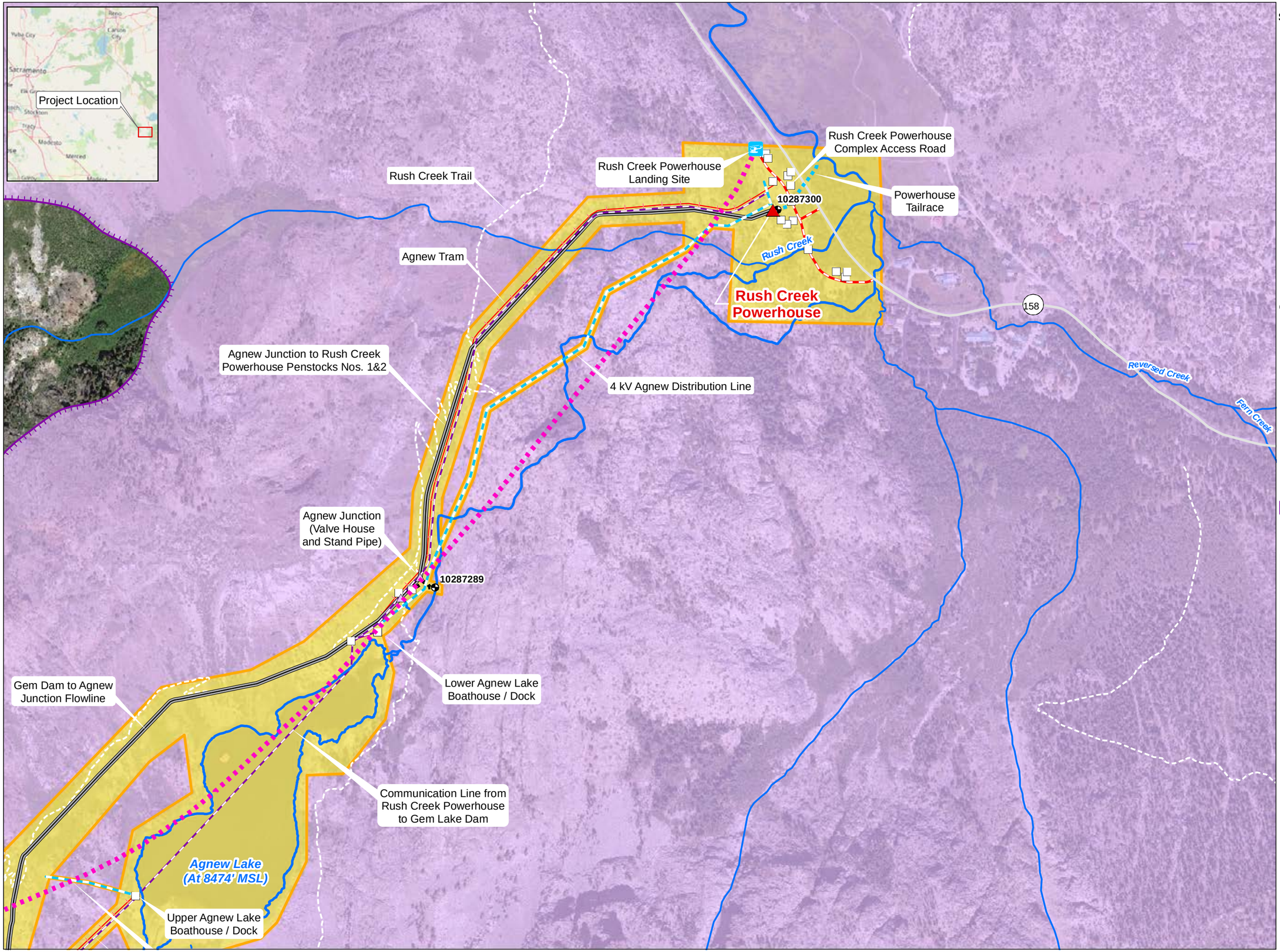


SCE Facilities (Under Proposed Action)

- Powerhouse
- Dam
- Stream Gage
- Reservoir Gage
- Ancillary Facility
- Helicopter Landing Site
- Water Conveyance Feature
- Tailrace
- Tunnel
- Flowline / Penstock
- Power Line
- Communication Line
- Tramway
- Project Road
- Project Trail
- Proposed FERC Project Boundary

Other Features

- Watercourse
- Lake
- Non-Project Trail
- Approximate Helicopter Flight Path

Long Term Operations & Maintenance Area

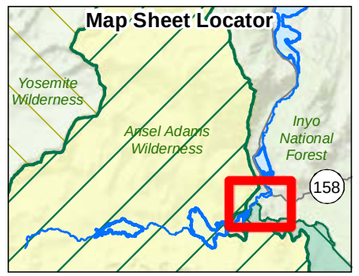
- Operations and Maintenance Activities

Noise Action Area

Single-Event 43 dB Lmax Exposure from Helicopter Sources

- Helicopter Flights (ASTAR and Blackhawk)

Map Sheet Locator



SOUTHERN CALIFORNIA EDISON
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Rush Creek Project (FERC 1389)

Map BA-3b

Long Term Operations & Maintenance Action Area
Agnew Lake / Powerhouse Area

0 250 500 Feet

Projection: UTM Zone 11
Datum: NAD 83

Date: 6/24/2025

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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.

Maps BA-4a–i. CONFIDENTIAL—Whitebark Pine and Unknown Five-Needle Pine Populations Occurring within the FERC Project Boundary and the Construction/Restoration Action Area

Maps BA-4a–i 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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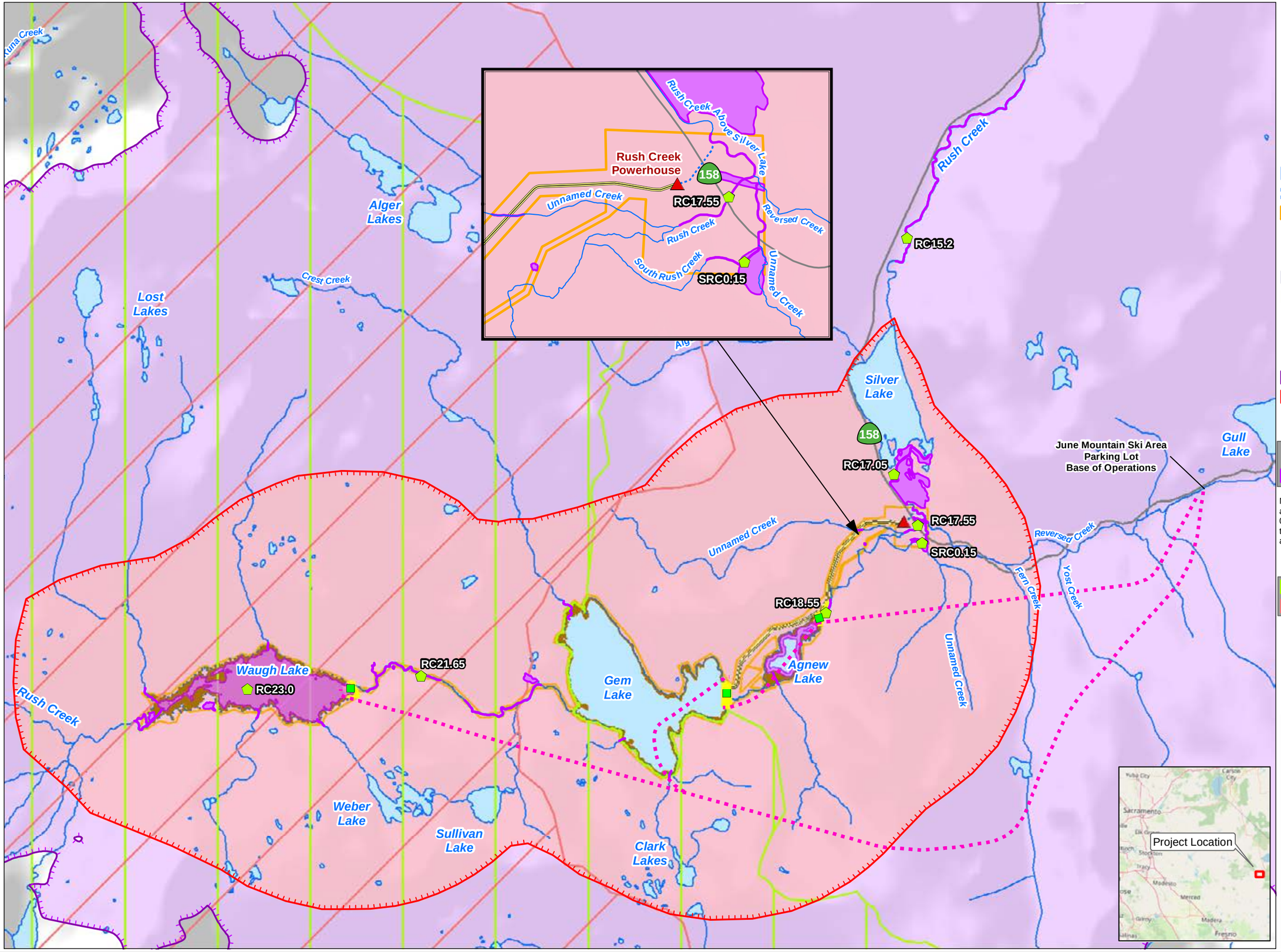
Map BA-5. CONFIDENTIAL—Federally Listed Terrestrial Wildlife Species within the FERC Project Boundary or in the Vicinity of the Construction/Restoration Action Area

Map BA-5 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.



SCE Facilities

- Dam
- Powerhouse
- Flowline / Penstock
- Tailrace

Other Features

- Highway
- River/Stream
- Lake/Reservoir
- Dry Lake/Reservoir
- FERC Boundary
- Approximate Helicopter Flight Path

Construction / Restoration Areas

- Construction Area
- Conceptual Restoration Area

Noise Action Area

Single-Event 43 dB Lmax Exposure from Helicopter and Construction Sources

- Helicopter Flights (Skycrane)
- Construction Equipment

VES Sampling Areas / Locations

- Amphibian Study Site Locations (Table AQ 7-1)
- VES Sampling Areas

NOTE: Features depicted represent surveyed areas. Upland YT habitat is defined within 0.78 mile of suitable breeding habitats. Only the uplands in the immediate vicinity of aquatic habitats were surveyed.

Final Critical Habitat*

- Sierra Nevada Yellow-Legged Frog[1]
- Yosemite Toad

*Source: U.S. Fish and Wildlife Service (2016)

[1]The U.S. Fish and Wildlife Service Critical Habitat data layer for Sierra Nevada Yellow-Legged Frog has been modified to exclude Gem Lake, consistent with the Final Rule (FR, Vol. 81, No. 16, pp. 59072)

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Rush Creek Project (FERC 1389)

Map BA-6

Special-Status Amphibian Critical Habitat and VES Sampling Areas/Locations in the Vicinity of the Construction/Restoration Action Area

0 0.25 0.5 Miles

Projection: UTM Zone 11
Datum: NAD 83

Date: 6/24/2025

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Final Critical Habitat*

Sierra Nevada Yellow-Legged Frog[1]

Yosemite Toad

*Source: U.S. Fish and Wildlife Service (2016)

[1]The U.S. Fish and Wildlife Service Critical Habitat data layer for Sierra Nevada Yellow-Legged Frog has been modified to exclude Gem Lake, consistent with the Final Rule (FR, Vol. 81, No. 16, pp. 59072)

Intermittent_Stream_02

Perennial_Stream_05

RUSH CREEK TR

Perennial_Stream_01

Waugh Lake

23.3

23.2

23

RC23.0

23.1

22.9

22.8

22.7

22.6

22.5

22.4

22.3

22.2

22.1

22

Frontier Pack Station Camp Pack Station

Rush Meadows Dam

Rush Creek

23.4

23.5

23.6

LP_Meadow_01

Pond_01

Perennial_Stream_03

WEBER LAKE TR

24

23.9

23.8

23.7

Rush_Creek_Above_Waugh_Lake

Intermittent_Stream_04

WEBER LAKE SPUR TR

SCE Facilities

- Powerhouse
- Dam
- Stream Gage
- Reservoir Gage
- Ancillary Facility
- Tramway
- Helicopter Landing Site
- Water Conveyance Feature
- Tailrace
- Tunnel
- Flowline / Penstock
- Power Line
- Comm Line
- Project Road
- Project Trail
- FERC Project Boundary

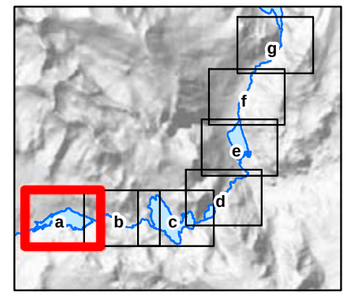
Other Features

- Non-Project Trail
- Water Body
- Watercourse (Not surveyed)
- River Mile / 10th Mile

VES Sampling Areas / Locations

- Amphibian Study Site Locations (Table AQ 7-1)
- VES Sampling Areas

NOTE: Features depicted represent surveyed areas. Upland YT habitat is defined within 0.78 mile of suitable breeding habitats. Only the uplands in the immediate vicinity of aquatic habitats were surveyed.



SOUTHERN CALIFORNIA EDISON
Energy for What's Ahead™

Rush Creek Project (FERC 1389)

Map BA-6a

Special-Status Amphibian Critical Habitat and VES Sampling Areas/Locations in the Vicinity of the Construction/Restoration Action Area

0 125 250 500 Feet

Date: 6/24/2025

Projection: UTM Zone 11
Datum: NAD 83

C:\GIS\237800343\map\Rush Creek\AquaticMaps\SCE_RUSH_CREEK_AQ7_SNYLF_YT_Crit_Hab_VES_SA_Locs_17i11i_02.mxd

Final Critical Habitat*

Sierra Nevada Yellow-Legged Frog[1]

Yosemite Toad

*Source: U.S. Fish and Wildlife Service (2016)

[1]The U.S. Fish and Wildlife Service Critical Habitat data layer for Sierra Nevada Yellow-Legged Frog has been modified to exclude Gem Lake, consistent with the Final Rule (FR, Vol. 81, No. 16, pp. 59072)

Perennial_Stream_05

Rush_Creek_Below_Rush_Meadows_Dam_01

Pond_02

RC21.65

Rush_Creek_Below_Rush_Meadows_Dam_03

Meadow_01

Crest_Creek

Waterfall

RUSH CREEK TR

ALGER LAKES TR

WEBER LAKE TR

WEBER LAKE SPUR TR

CLARK LAKES TR

Frontier Pack Station Camp Pack Station

Rush Meadows Dam

Billy Lake Stock Camp Pack Station

Gem Lake

Waugh Lake

Rush Creek

21.9 21.8 21.7 21.6 21.5 21.4 21.3 21.2 21.1 21 20.9 20.8 20.7 20.6 20.5 20.4 20.3 22 22.1 22.2 22.3 22.4

SCE Facilities

- Powerhouse
- Dam
- Stream Gage
- Reservoir Gage
- Ancillary Facility
- Tramway
- Helicopter Landing Site
- Water Conveyance Feature
- Tailrace
- Tunnel
- Flowline / Penstock
- Power Line
- Comm Line
- Project Road
- Project Trail
- FERC Project Boundary

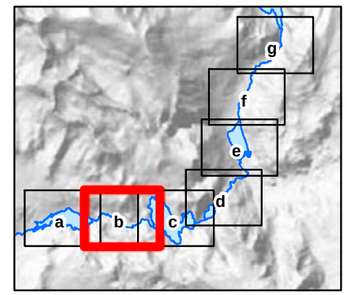
Other Features

- Non-Project Trail
- Water Body
- Watercourse (Not surveyed)
- River Mile / 10th Mile

VES Sampling Areas / Locations

- Amphibian Study Site Locations (Table AQ 7-1)
- VES Sampling Areas

NOTE: Features depicted represent surveyed areas. Upland YT habitat is defined within 0.78 mile of suitable breeding habitats. Only the uplands in the immediate vicinity of aquatic habitats were surveyed.



SOUTHERN CALIFORNIA EDISON
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Rush Creek Project (FERC 1389)

Map BA-6b

Special-Status Amphibian Critical Habitat and VES Sampling Areas/Locations in the Vicinity of the Construction/Restoration Action Area

0 125 250 500 Feet

Projection: UTM Zone 11
Datum: NAD 83

Date: 6/24/2025

C:\GIS\237800343\map\Rush Creek\AquaticMaps\SCE_RUSH_CREEK_AQ7_SNYLF_YT_Crit_Hab_VES_SA_Locs_17i11i_02.mxd

Final Critical Habitat*

- Sierra Nevada Yellow-Legged Frog[1]
- Yosemite Toad

*Source: U.S. Fish and Wildlife Service (2016)

[1] The U.S. Fish and Wildlife Service Critical Habitat data layer for Sierra Nevada Yellow-Legged Frog has been modified to exclude Gem Lake, consistent with the Final Rule (FR, Vol. 81, No. 16, pp. 59072)

SCE Facilities

- Powerhouse
- Dam
- Stream Gage
- Reservoir Gage
- Ancillary Facility
- Tramway
- Helicopter Landing Site
- Water Conveyance Feature
- Tailrace
- Tunnel
- Flowline / Penstock
- Power Line
- Comm Line
- Project Road
- Project Trail
- FERC Project Boundary

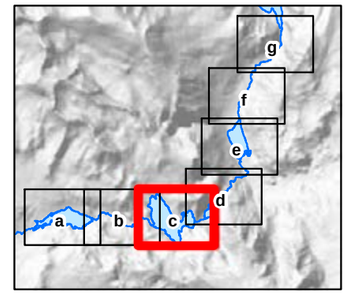
Other Features

- Non-Project Trail
- Water Body
- Watercourse (Not surveyed)
- River Mile / 10th Mile

VES Sampling Areas / Locations

- Amphibian Study Site Locations (Table AQ 7-1)
- VES Sampling Areas

NOTE: Features depicted represent surveyed areas. Upland YT habitat is defined within 0.78 mile of suitable breeding habitats. Only the uplands in the immediate vicinity of aquatic habitats were surveyed.



SOUTHERN CALIFORNIA EDISON
Energy for What's Ahead™

Rush Creek Project (FERC 1389)

Map BA-6c

Special-Status Amphibian Critical Habitat and VES Sampling Areas/Locations in the Vicinity of the Construction/Restoration Action Area

0 125 250 500 Feet

Projection: UTM Zone 11
Datum: NAD 83

Date: 6/24/2025

C:\GIS\237800343\map\Rush Creek\AquaticMaps\SCE_RUSH_CREEK_AQ7_SNYLF_YT_Crit_Hab_VES_SA_Locs_17i11i_02.mxd

Final Critical Habitat*

Sierra Nevada Yellow-Legged Frog[1]

Yosemite Toad

*Source: U.S. Fish and Wildlife Service (2016)

[1]The U.S. Fish and Wildlife Service Critical Habitat data layer for Sierra Nevada Yellow-Legged Frog has been modified to exclude Gem Lake, consistent with the Final Rule (FR, Vol. 81, No. 16, pp. 59072)

Rush_Creek_Above_Silver_Lake_01
Intermittent_Stream_09
Pond_03
Rush_Creek_Below_Agnew_Dam
Perennial_Stream_08
Agnew_Lake
Gem Lake
Rush Creek Powerhouse
RC17.55
Rush Creek
Meadow_02
Rush_Creek_Above_Silver_Lake_
SRC0.15
158
Meadow_04
South_Rush_Creek
RC18.55
Agnew Dam
Gem Dam
RUSH CREEK TR
SPOOKY MEADOW TR
Meadow_03
Rush Creek Above Silver Lake
Unnamed Creek
Reversed Creek
South Rush Creek

SCE Facilities

- Powerhouse
- Dam
- Stream Gage
- Reservoir Gage
- Ancillary Facility
- Tramway
- Helicopter Landing Site
- Water Conveyance Feature
- Tailrace
- Tunnel
- Flowline / Penstock
- Power Line
- Comm Line
- Project Road
- Project Trail
- FERC Project Boundary

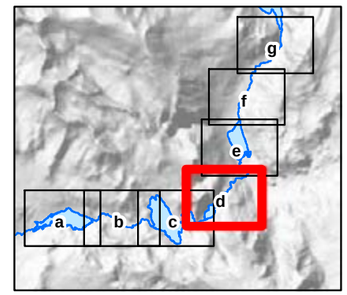
Other Features

- Non-Project Trail
- Water Body
- Watercourse (Not surveyed)
- River Mile / 10th Mile

VES Sampling Areas / Locations

- Amphibian Study Site Locations (Table AQ 7-1)
- VES Sampling Areas

NOTE: Features depicted represent surveyed areas. Upland YT habitat is defined within 0.78 mile of suitable breeding habitats. Only the uplands in the immediate vicinity of aquatic habitats were surveyed.



SOUTHERN CALIFORNIA EDISON
Energy for What's Ahead™

Rush Creek Project (FERC 1389)

Map BA-6d

Special-Status Amphibian Critical Habitat and VES Sampling Areas/Locations in the Vicinity of the Construction/Restoration Action Area

0 125 250 500 Feet

Projection: UTM Zone 11
Datum: NAD 83

Date: 6/24/2025

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Final Critical Habitat*

Sierra Nevada Yellow-Legged Frog[1]

Yosemite Toad

*Source: U.S. Fish and Wildlife Service (2016)

[1]The U.S. Fish and Wildlife Service Critical Habitat data layer for Sierra Nevada Yellow-Legged Frog has been modified to exclude Gem Lake, consistent with the Final Rule (FR, Vol. 81, No. 16, pp. 59072)

Silver Lake Campground
PARKER BEACH TR
Silver Lake Boat Launch
Silver Lake Resort
RUSH CREEK TR
Silver Lake
SILVER LAKE HORSE TR
158
Silver Lake Picnic Area
Rush Creek
Meadow_03
Meadow_02
Rush Creek Powerhouse
Rush_Creek_Above_Silver_Lake_03
Rush_Creek_Above_Silver_Lake_02
Rush_Creek_Above_Silver_Lake_01
Intermittent_Stream_09
RC17.05
RC17.55
15.9
16
16.1
16.2
16.3
16.4
16.5
16.6
16.7
16.8
16.9
17
17.1
17.2
17.3
17.4
17.5

SCE Facilities

- Powerhouse
- Dam
- Stream Gage
- Reservoir Gage
- Ancillary Facility
- Tramway
- Helicopter Landing Site
- Water Conveyance Feature
- Tailrace
- Tunnel
- Flowline / Penstock
- Power Line
- Comm Line
- Project Road
- Project Trail
- FERC Project Boundary

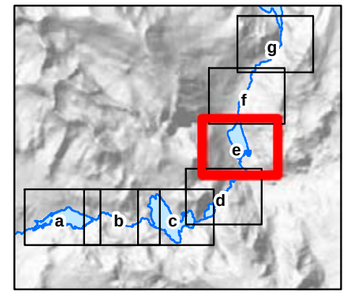
Other Features

- Non-Project Trail
- Water Body
- Watercourse (Not surveyed)
- River Mile / 10th Mile

VES Sampling Areas / Locations

- Amphibian Study Site Locations (Table AQ 7-1)
- VES Sampling Areas

NOTE: Features depicted represent surveyed areas. Upland YT habitat is defined within 0.78 mile of suitable breeding habitats. Only the uplands in the immediate vicinity of aquatic habitats were surveyed.



SOUTHERN CALIFORNIA EDISON
Energy for What's Ahead™

Rush Creek Project (FERC 1389)

Map BA-6e

Special-Status Amphibian Critical Habitat and VES Sampling Areas/Locations in the Vicinity of the Construction/Restoration Action Area

0 125 250 500 Feet

Projection: UTM Zone 11
Datum: NAD 83

Date: 6/24/2025

C:\GIS\2378000343\map\Rush Creek\AquaticMaps\SCE_RUSH_CREEK_AQ7_SNYLF_YT_Crit_Hab_VES_SA_Locs_17i11i_02.mxd

Final Critical Habitat*

Sierra Nevada Yellow-Legged Frog[1]

Yosemite Toad

*Source: U.S. Fish and Wildlife Service (2016)

[1]The U.S. Fish and Wildlife Service Critical Habitat data layer for Sierra Nevada Yellow-Legged Frog has been modified to exclude Gem Lake, consistent with the Final Rule (FR, Vol. 81, No. 16, pp. 59072)

Rush Creek
14.5
14.6
14.7
14.8
14.9
15
15.1
15.2
RC15.2
15.3
15.4
15.5
15.6
15.7
15.8
15.9
158
PARKER BENCH TR
LOWER RUSH CREEK LOOP TR
Rush_Creek_Below_Silver_Lake_01
Frontier Pack Station
Silver Lake Campground
RUSH CREEK TR
SILVER LAKE HORSE TR
Silver Lake

SCE Facilities

- Powerhouse
- Dam
- Stream Gage
- Reservoir Gage
- Ancillary Facility
- Tramway
- Helicopter Landing Site
- Water Conveyance Feature
- Tailrace
- Tunnel
- Flowline / Penstock
- Power Line
- Comm Line
- Project Road
- Project Trail
- FERC Project Boundary

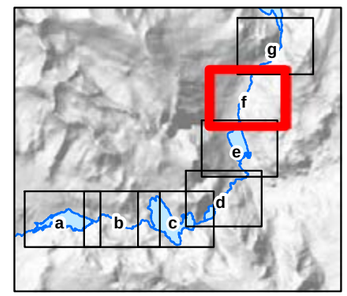
Other Features

- Non-Project Trail
- Water Body
- Watercourse (Not surveyed)
- River Mile / 10th Mile

VES Sampling Areas / Locations

- Amphibian Study Site Locations (Table AQ 7-1)
- VES Sampling Areas

NOTE: Features depicted represent surveyed areas. Upland YT habitat is defined within 0.78 mile of suitable breeding habitats. Only the uplands in the immediate vicinity of aquatic habitats were surveyed.



SOUTHERN CALIFORNIA EDISON
Energy for What's Ahead™

Rush Creek Project (FERC 1389)

Map BA-6f

Special-Status Amphibian Critical Habitat and VES Sampling Areas/Locations in the Vicinity of the Construction/Restoration Action Area

0 125 250 500 Feet

Projection: UTM Zone 11
Datum: NAD 83

Date: 6/24/2025

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Final Critical Habitat*

Sierra Nevada Yellow-Legged Frog[1]

Yosemite Toad

*Source: U.S. Fish and Wildlife Service (2016)

[1]The U.S. Fish and Wildlife Service Critical Habitat data layer for Sierra Nevada Yellow-Legged Frog has been modified to exclude Gem Lake, consistent with the Final Rule (FR, Vol. 81, No. 16, pp. 59072)

12.9
Grant Lake
13
13.1
13.2
13.3
13.4
13.5
13.6
158
13.7
13.8
Aerie Crag Picnic Area
13.9
14
Rush_Creek_Below_Silver_Lake_01
Rush Creek
14.1
14.2
14.3
14.4
14.5

SCE Facilities

- Powerhouse
- Dam
- Stream Gage
- Reservoir Gage
- Ancillary Facility
- Tramway
- Helicopter Landing Site
- Water Conveyance Feature
- Tailrace
- Tunnel
- Flowline / Penstock
- Power Line
- Comm Line
- Project Road
- Project Trail
- FERC Project Boundary

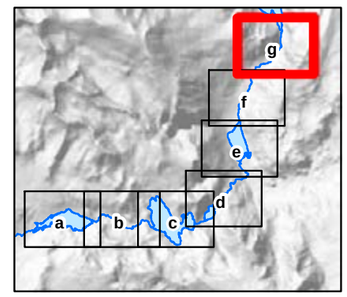
Other Features

- Non-Project Trail
- Water Body
- Watercourse (Not surveyed)
- River Mile / 10th Mile

VES Sampling Areas / Locations

- Amphibian Study Site Locations (Table AQ 7-1)
- VES Sampling Areas

NOTE: Features depicted represent surveyed areas. Upland YT habitat is defined within 0.78 mile of suitable breeding habitats. Only the uplands in the immediate vicinity of aquatic habitats were surveyed.



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Rush Creek Project (FERC 1389)

Map BA-6g

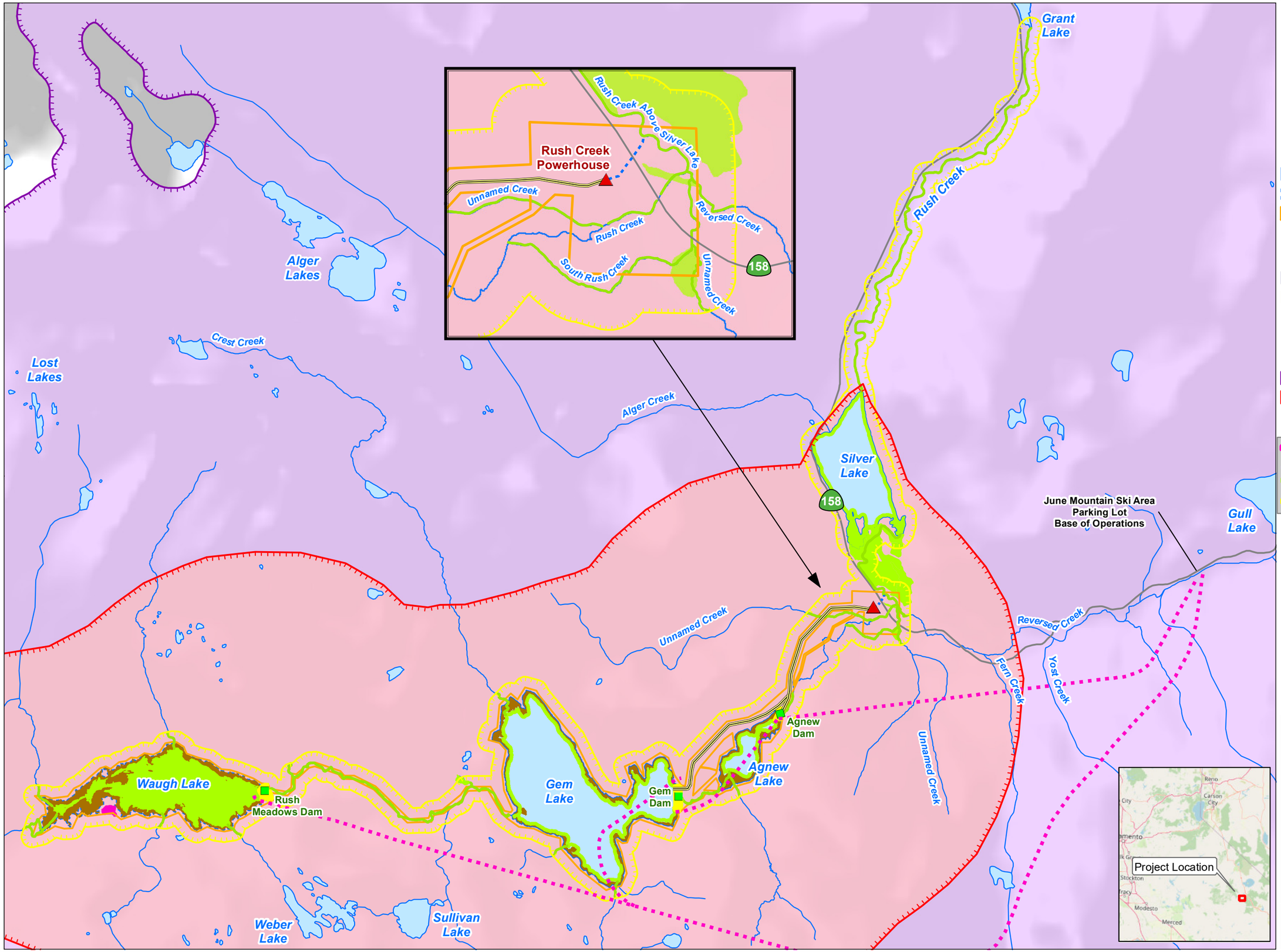
Special-Status Amphibian Critical Habitat and VES Sampling Areas/Locations in the Vicinity of the Construction/Restoration Action Area

0 125 250 500 Feet

Projection: UTM Zone 11
Datum: NAD 83

Date: 6/24/2025

C:\GIS\237800343\map\Rush Creek\AquaticMaps\SCE_RUSH_CREEK_AQ7_SNYLF_YT_Crit_Hab_VES_SA_Locs_17i11i_02.mxd



SCE Facilities

- Dam
- Powerhouse
- Flowline / Penstock
- Tailrace

Other Features

- Highway
- River/Stream
- Lake/Reservoir
- Dry Lake/Reservoir
- FERC Boundary
- Approximate Helicopter Flight Path

Construction / Restoration Areas

- Construction Area
- Conceptual Restoration Area

Noise Action Area

Single-Event 43 dB Lmax Exposure from Helicopter and Construction Sources

- Helicopter Flights (Skycrane)
- Construction Equipment

Field Assessed SNYLF Habitat*

- Potential Breeding Habitat
- Potential Non-breeding Habitat
- Study Area Boundary

* Refer to Table AQ 7-3 for a complete list of PCEs by feature

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Energy for What's Ahead™

Rush Creek Project (FERC 1389)

Map BA-7

Overview Map
Potential SNYLF Habitat in the Vicinity of the Construction/Restoration Action Area

0 0.25 0.5 Miles

Projection: UTM Zone 11
Datum: NAD 83

Date: 6/24/2025

C:\GIS\237800343\map\Rush Creek\AquaticMaps\SCE_RUSH_CREEK_AQ7_PotnHab_SNYLF_ConstAA_Overview_17i11i_02_BA.mxd

Upland habitat for SNYLF includes

1) all areas within 82 feet of permanent water bodies or those hydrologically connected with permanent water such as wet meadows lakes, streams, rivers, tarns, perennial creeks, permanent plunge pools within intermittent creeks, and pools, such as a body of water contained above a natural dam; and

2) the entire upland area between proximate (i.e., within 984 feet) water bodies such as lakes, meadows, ponds etc.

Intermittent_Stream_02 (Assessed as perennial in 2023; classification was changed to intermittent based on results of 2024 surveys)

Waugh_Lake

Perennial_Stream_01

Pond_01

Perennial_Stream_03

Intermittent_Stream_04 (Assessed as perennial in 2023; classification was changed to intermittent based on results of 2024 surveys)

Rush_Creek_Above_Waugh_Lake

RUSH CREEK TR

WEBER LAKE TR

WEBER LAKE SPUR TR

Frontier Pack Station Camp
Pack Station

Rush Meadows Dam

24 23.9 23.8 23.7 23.6 23.5 23.4 23.3 23.2 23.1 23 22.9 22.8 22.7 22.6 22.5 22.4 22.3 22.2 22.1 22

SCE Facilities

- Powerhouse
- Dam
- Stream Gage
- Reservoir Gage
- Ancillary Facility
- Tramway
- Helicopter Landing Site
- Water Conveyance Feature
- Tailrace
- Tunnel
- Flowline / Penstock
- Power Line
- Comm Line
- Project Road
- Project Trail
- FERC Project Boundary

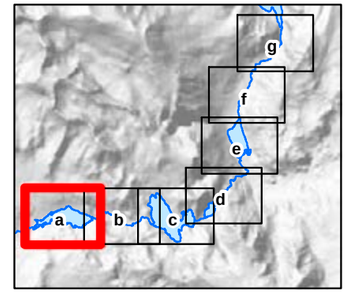
Other Features

- Non-Project Trail
- Watercourse (No Breeding/Non-breeding PCEs Identified)
- River Mile / 10th Mile
- Location Where Predatory Fish Observed

Field Assessed SNYLF Habitat*

- Potential Breeding Habitat
- Potential Non-breeding Habitat
- Study Area Boundary

* Refer to Table AQ 7-2 for a complete list of PCEs by feature



SOUTHERN CALIFORNIA EDISON
Energy for What's Ahead™

Rush Creek Project (FERC 1389)

Map BA-7a

Potential SNYLF Habitat in the Vicinity of the Construction/Restoration Action Area

0 125 250 500 Feet

Projection: UTM Zone 11
Datum: NAD 83

Date: 6/24/2025

Upland habitat for SNYLF includes

1) all areas within 82 feet of permanent water bodies or those hydrologically connected with permanent water such as wet meadows lakes, streams, rivers, tarns, perennial creeks, permanent plunge pools within intermittent creeks, and pools, such as a body of water contained above a natural dam; and

2) the entire upland area between proximate (i.e., within 984 feet) water bodies such as lakes, meadows, ponds etc.

Crest_Creek
ALGER LAKES TR
Perennial_Stream_05
RUSH CREEK TR
Rush_Creek_Below_Rush_Meadows_Dam_01
Frontier Pack Station Camp
Pack Station
21.9
21.8
21.7
21.6
21.5
21.4
21.3
21.2
21
21.1
22
22.1
22.2
22.3
22.4
Rush Meadows Dam
Rush_Creek_Below_Rush_Meadows_Dam_02
Rush_Creek_Below_Rush_Meadows_Dam_03
Meadow_01
Billy Lake Stock Camp
Pack Station
20.7
20.6
20.8
20.9
20.5
20.4
20.3
Waterfall
WEBER LAKE TR
WEBER LAKE SPUR TR
CLARK LAKES TR

SCE Facilities

- Powerhouse
- Dam
- Stream Gage
- Reservoir Gage
- Ancillary Facility
- Tramway
- Helicopter Landing Site
- Water Conveyance Feature
- Tailrace
- Tunnel
- Flowline / Penstock
- Power Line
- Comm Line
- Project Road
- Project Trail
- FERC Project Boundary

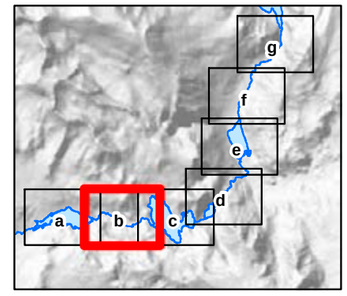
Other Features

- Non-Project Trail
- Watercourse (No Breeding/Non-breeding PCEs Identified)
- River Mile / 10th Mile
- Location Where Predatory Fish Observed

Field Assessed SNYLF Habitat*

- Potential Breeding Habitat
- Potential Non-breeding Habitat
- Study Area Boundary

* Refer to Table AQ 7-2 for a complete list of PCEs by feature



SOUTHERN CALIFORNIA EDISON
Energy for What's Ahead™

Rush Creek Project (FERC 1389)

Map BA-7b

Potential SNYLF Habitat in the Vicinity of the Construction/Restoration Action Area

0 125 250 500 Feet

Projection: UTM Zone 11
Datum: NAD 83

Date: 6/24/2025

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Upland habitat for SNYLF includes

1) all areas within 82 feet of permanent water bodies or those hydrologically connected with permanent water such as wet meadows lakes, streams, rivers, tarns, perennial creeks, permanent plunge pools within intermittent creeks, and pools, such as a body of water contained above a natural dam; and

2) the entire upland area between proximate (i.e., within 984 feet) water bodies such as lakes, meadows, ponds etc.

SCE Facilities

- Powerhouse
- Dam
- Stream Gage
- Reservoir Gage
- Ancillary Facility
- Tramway
- Helicopter Landing Site
- Water Conveyance Feature
- Tailrace
- Tunnel
- Flowline / Penstock
- Power Line
- Comm Line
- Project Road
- Project Trail
- FERC Project Boundary

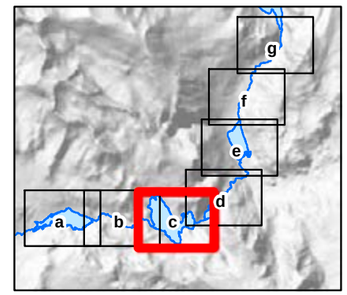
Other Features

- Non-Project Trail
- Watercourse (No Breeding/Non-breeding PCEs Identified)
- River Mile / 10th Mile
- Location Where Predatory Fish Observed

Field Assessed SNYLF Habitat*

- Potential Breeding Habitat
- Potential Non-breeding Habitat
- Study Area Boundary

* Refer to Table AQ 7-2 for a complete list of PCEs by feature



SOUTHERN CALIFORNIA EDISON
Energy for What's Ahead™

Rush Creek Project (FERC 1389)

Map BA-7c

Potential SNYLF Habitat in the Vicinity of the Construction/Restoration Action Area

0 125 250 500 Feet

Projection: UTM Zone 11
Datum: NAD 83

Date: 6/24/2025

C:\GIS\237800343\map\Rush Creek\AquaticMaps\SCE_RUSH_CREEK_AQ7_PotnHab_SNYLF_17i11i_06.mxd

Upland habitat for SNYLF includes

1) all areas within 82 feet of permanent water bodies or those hydrologically connected with permanent water such as wet meadows lakes, streams, rivers, tarns, perennial creeks, permanent plunge pools within intermittent creeks, and pools, such as a body of water contained above a natural dam; and

2) the entire upland area between proximate (i.e., within 984 feet) water bodies such as lakes, meadows, ponds etc.

Rush_Creek_Above_Silver_Lake_01
Meadow_02
Intermittent_Stream_09 (Assessed as perennial in 2023; classification was changed to intermittent based on results of 2024 surveys)
Rush Creek Powerhouse
Reversed Creek
Rush Creek Horsetail Falls
South_Rush_Creek
Meadow_04
Perennial_Stream_10
Rush_Creek_Below_Agnew_Dam
Agnew Dam
RUSH CREEK TR
Agnew_Lake
SPOOKY MEADOW TR
Gem Dam
Perennial_Stream_08
Rush_Creek_Below_Gem_Dam
Rush_Creek_Above_Silver_Lake_02
Meadow_03
Unnamed Creek
Rush Creek
Meadow_04
Perennial_Stream_10

SCE Facilities

- Powerhouse
- Dam
- Stream Gage
- Reservoir Gage
- Ancillary Facility
- Tramway
- Helicopter Landing Site
- Water Conveyance Feature
- Tailrace
- Tunnel
- Flowline / Penstock
- Power Line
- Comm Line
- Project Road
- Project Trail
- FERC Project Boundary

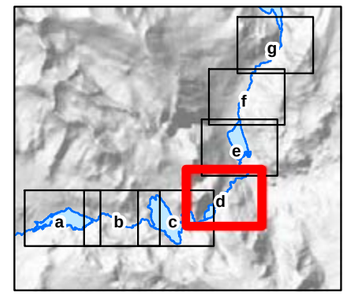
Other Features

- Non-Project Trail
- Watercourse (No Breeding/Non-breeding PCEs Identified)
- River Mile / 10th Mile
- Location Where Predatory Fish Observed

Field Assessed SNYLF Habitat*

- Potential Breeding Habitat
- Potential Non-breeding Habitat
- Study Area Boundary

* Refer to Table AQ 7-2 for a complete list of PCEs by feature



SOUTHERN CALIFORNIA EDISON
Energy for What's Ahead™

Rush Creek Project (FERC 1389)

Map BA-7d

Potential SNYLF Habitat in the Vicinity of the Construction/Restoration Action Area

0 125 250 500 Feet

Projection: UTM Zone 11
Datum: NAD 83

Date: 6/24/2025

C:\GIS\237800343\map\Rush Creek\AquaticMaps\SCE_RUSH_CREEK_AQ7_PotnHab_SNYLF_17i11i_06.mxd

Upland habitat for SNYLF includes

1) all areas within 82 feet of permanent water bodies or those hydrologically connected with permanent water such as wet meadows lakes, streams, rivers, tarns, perennial creeks, permanent plunge pools within intermittent creeks, and pools, such as a body of water contained above a natural dam; and

2) the entire upland area between proximate (i.e., within 984 feet) water bodies such as lakes, meadows, ponds etc.

Silver Lake Campground
15.9
16
Silver Lake Boat Launch
Silver Lake Resort
16.1
16.2
16.3
16.4
16.5
16.6
16.7
16.8
16.9
17
17.1
17.2
17.3
17.4
17.5
Silver_Lake
158
Silver Lake Picnic Area
Meadow_03
Meadow_03
Meadow_03
Meadow_03
Rush_Creek_Above_Silver_Lake_03
Rush_Creek_Above_Silver_Lake_02
Rush_Creek_Above_Silver_Lake_01
Meadow_02
Rush Creek Powerhouse
PARKER BEACH TR
RUSH CREEK TR
SILVER LAKE HORSE TR

SCE Facilities

- Powerhouse
- Dam
- Stream Gage
- Reservoir Gage
- Ancillary Facility
- Tramway
- Helicopter Landing Site
- Water Conveyance Feature
- Tailrace
- Tunnel
- Flowline / Penstock
- Power Line
- Comm Line
- Project Road
- Project Trail
- FERC Project Boundary

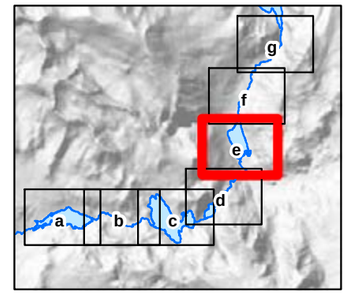
Other Features

- Non-Project Trail
- Watercourse (No Breeding/Non-breeding PCEs Identified)
- River Mile / 10th Mile
- Location Where Predatory Fish Observed

Field Assessed SNYLF Habitat*

- Potential Breeding Habitat
- Potential Non-breeding Habitat
- Study Area Boundary

* Refer to Table AQ 7-2 for a complete list of PCEs by feature



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Rush Creek Project (FERC 1389)

Map BA-7e

Potential SNYLF Habitat in the Vicinity of the Construction/Restoration Action Area

0 125 250 500 Feet

Projection: UTM Zone 11
Datum: NAD 83

Date: 6/24/2025

C:\GIS\2378000343\map\Rush Creek\AquaticMaps\SCE_RUSH_CREEK_AQ7_PotnHab_SNYLF_17i11i_06.mxd

Upland habitat for SNYLF includes

1) all areas within 82 feet of permanent water bodies or those hydrologically connected with permanent water such as wet meadows lakes, streams, rivers, tarns, perennial creeks, permanent plunge pools within intermittent creeks, and pools, such as a body of water contained above a natural dam; and

2) the entire upland area between proximate (i.e., within 984 feet) water bodies such as lakes, meadows, ponds etc.

14.5
14.6
14.7
14.8
14.9
15
15.1
15.2
15.3
15.4
15.5
15.6
15.7
15.8
15.9
158
Rush_Creek_Below_Silver_Lake_01
LOWER RUSH CREEK LOOP TR
PARKER BENCH
Frontier Pack Station
Silver Lake Campground
RUSH CREEK TR
SILVER LAKE HORSE TR

SCE Facilities

- Powerhouse
- Dam
- Stream Gage
- Reservoir Gage
- Ancillary Facility
- Tramway
- Helicopter Landing Site
- Water Conveyance Feature
- Tailrace
- Tunnel
- Flowline / Penstock
- Power Line
- Comm Line
- Project Road
- Project Trail
- FERC Project Boundary

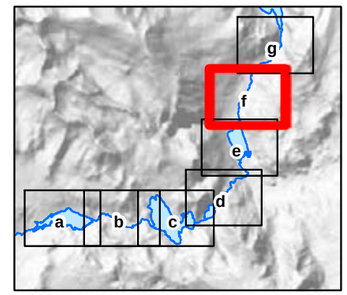
Other Features

- Non-Project Trail
- Watercourse (No Breeding/Non-breeding PCEs Identified)
- River Mile / 10th Mile
- Location Where Predatory Fish Observed

Field Assessed SNYLF Habitat*

- Potential Breeding Habitat
- Potential Non-breeding Habitat
- Study Area Boundary

* Refer to Table AQ 7-2 for a complete list of PCEs by feature



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Rush Creek Project (FERC 1389)

Map BA-7f

Potential SNYLF Habitat in the Vicinity of the Construction/Restoration Action Area

0 125 250 500 Feet

Projection: UTM Zone 11
Datum: NAD 83

Date: 6/24/2025

C:\GIS\237800343\map\Rush Creek\AquaticMaps\SCE_RUSH_CREEK_AQ7_PotnHab_SNYLF_17i11i_06.mxd

Upland habitat for SNYLF includes

1) all areas within 82 feet of permanent water bodies or those hydrologically connected with permanent water such as wet meadows lakes, streams, rivers, tarns, perennial creeks, permanent plunge pools within intermittent creeks, and pools, such as a body of water contained above a natural dam; and

2) the entire upland area between proximate (i.e., within 984 feet) water bodies such as lakes, meadows, ponds etc.

12.9
Grant Lake
13
13.1
13.2
13.3
13.4
13.5
13.6
158
13.7
13.8
Rush_Creek_Below_Silver_Lake_01
Aerie Crag Picnic Area
13.9
14
14.1
14.2
14.3
14.4
14.5

SCE Facilities

- Powerhouse
- Dam
- Stream Gage
- Reservoir Gage
- Ancillary Facility
- Tramway
- Helicopter Landing Site
- Water Conveyance Feature
- Tailrace
- Tunnel
- Flowline / Penstock
- Power Line
- Comm Line
- Project Road
- Project Trail
- FERC Project Boundary

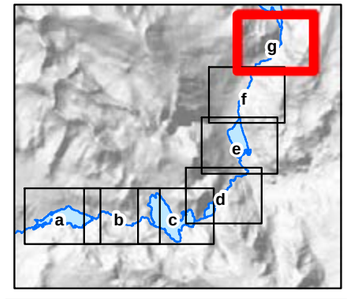
Other Features

- Non-Project Trail
- Watercourse (No Breeding/Non-breeding PCEs Identified)
- River Mile / 10th Mile
- Location Where Predatory Fish Observed

Field Assessed SNYLF Habitat*

- Potential Breeding Habitat
- Potential Non-breeding Habitat
- Study Area Boundary

* Refer to Table AQ 7-2 for a complete list of PCEs by feature



SOUTHERN CALIFORNIA EDISON
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Rush Creek Project (FERC 1389)

Map BA-7g

Potential SNYLF Habitat in the Vicinity of the Construction/Restoration Action Area

0 125 250 500 Feet

Projection: UTM Zone 11
Datum: NAD 83

Date: 6/24/2025

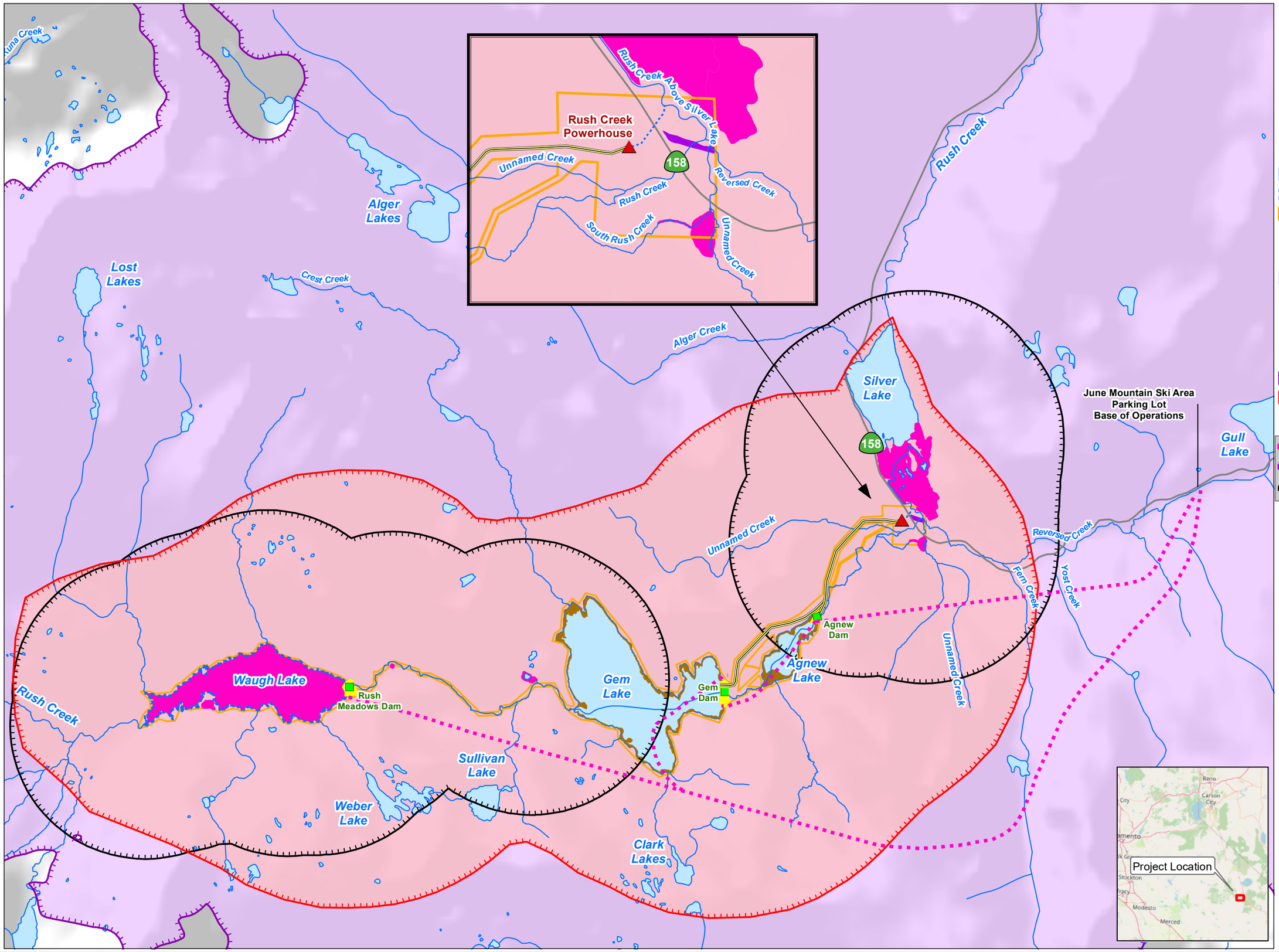
C:\GIS\237800343\map\Rush Creek\AquaticMaps\SCE_RUSH_CREEK_AQ7_PotnHab_SNYLF_17i11i_06.mxd

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 BA-8. CONFIDENTIAL—SNYLF and YT Known Populations in the Vicinity of the Construction/Restoration Action Area

Map BA-8 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.



SCE Facilities

- Dam
- Powerhouse
- Flowline / Penstock
- Tailrace

Other Features

- Highway
- River/Stream
- Lake/Reservoir
- Dry Lake/Reservoir
- FERC Boundary
- Approximate Helicopter Flight Path

Construction / Restoration Areas

- Construction Area
- Conceptual Restoration Area

Noise Action Area

Single-Event 43 dB Lmax Exposure from Helicopter and Construction Sources

- Helicopter Flights (Skycrane)
- Construction Equipment

Field Assessed YT Habitat*

- Potential Aquatic Breeding Habitat
- Potential Non-breeding Meadows
- Potential Upland Habitat

* Refer to Table AQ 7-6 for a complete list of PCEs by feature

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Rush Creek Project (FERC 1389)

Map 9

Overview Map
Potential YT Habitat within the Construction/Restoration Action Area

0 0.25 0.5 Miles

Projection: UTM Zone 11
Datum: NAD 83

Date: 6/24/2025

C:\GIS\237800343\map\Rush Creek\AquaticMaps\SCE_RUSH_CREEK_AQ7_PotnHab_YT_ConstAA_Overview_17i11i_02_BA.mxd

NOTE: Upland habitat for YT is defined within 0.78 mile of suitable breeding habitats

RUSH CREEK TR

WEBER LAKE TR

WEBER LAKE SPUR TR

Frontier Pack Station Camp
Pack Station

Rush Meadows Dam

Rush Creek

LP_Meadow_01

Pond_01

24 23.9 23.8 23.7 23.6 23.5 23.4 23.3 23.2 23.1 23 22.9 22.8 22.7 22.6 22.5 22.4 22.3 22.2 22.1 22

SCE Facilities

- Powerhouse
- Dam
- Stream Gage
- Reservoir Gage
- Ancillary Facility
- Tramway
- Helicopter Landing Site
- Water Conveyance Feature
- Tailrace
- Tunnel
- Flowline / Penstock
- Power Line
- Comm Line
- Project Road
- Project Trail
- FERC Project Boundary

Other Features

- Watercourse*
- Water Body*

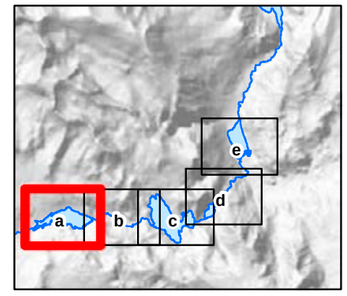
* (Not suitable for YT aquatic habitat)

- Non-Project Trail
- River Mile / 10th Mile

Field Assessed YT Habitat*

- Potential Aquatic Breeding Habitat
- Potential Non-breeding Meadows
- Potential Upland Habitat

* Refer to Table AQ 7-6 for a complete list of PCEs by feature



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Rush Creek Project (FERC 1389)

Map BA-9a

Potential YT Habitat within the Construction/Restoration Action Area

Date: 6/24/2025

0 125 250 500 Feet

Projection: UTM Zone 11
Datum: NAD 83

C:\GIS\2378000343\map\Rush Creek\AquaticMaps\SCE_RUSH_CREEK_AQ7_PotnHab_YT_17i11i_04.mxd

NOTE: Upland habitat for YT is defined within 0.78 mile of suitable breeding habitats

ALGER LAKES TR
Crest Creek
Gem Lake
RUSH CREEK TR
Frontier Pack Station Camp Pack Station
21.9
21.8
21.7
21.6
21.5
21.4
21.3
21.2
21.1
21
20.9
20.8
20.7
20.6
20.5
20.4
20.3
22
22.1
22.2
22.3
22.4
Pond_02
Meadow_01
Rush Meadows Dam
Billy Lake Stock Camp Pack Station
Rush Creek
WEBER LAKE TR
WEBER LAKE SPUR TR
CLARK LAKES TR

SCE Facilities

- Powerhouse
- Dam
- Stream Gage
- Reservoir Gage
- Ancillary Facility
- Tramway
- Helicopter Landing Site
- Water Conveyance Feature
- Tailrace
- Tunnel
- Flowline / Penstock
- Power Line
- Comm Line
- Project Road
- Project Trail
- FERC Project Boundary

Other Features

- Watercourse*
- Water Body*

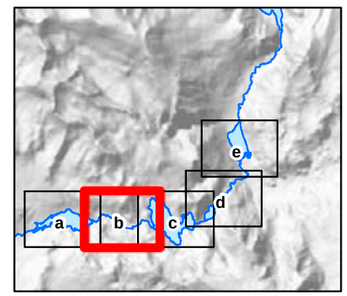
* (Not suitable for YT aquatic habitat)

- Non-Project Trail
- River Mile / 10th Mile

Field Assessed YT Habitat*

- Potential Aquatic Breeding Habitat
- Potential Non-breeding Meadows
- Potential Upland Habitat

* Refer to Table AQ 7-6 for a complete list of PCEs by feature



SOUTHERN CALIFORNIA EDISON
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Rush Creek Project (FERC 1389)

Map BA-9b

Potential YT Habitat within the Construction/Restoration Action Area

0 125 250 500 Feet

Projection: UTM Zone 11
Datum: NAD 83

Date: 6/24/2025

C:\GIS\237800343\map\Rush Creek\AquaticMaps\SCE_RUSH_CREEK_AQ7_PotnHab_YT_17i11i_04.mxd

NOTE: Upland habitat for YT is defined within 0.78 mile of suitable breeding habitats

ALGER LAKES TR
Crest Creek
RUSH CREEK TR
Meadow_01
Rush Creek
Gem Lake
Gem Dam
Agnew Lake
Billy Lake Stock Camp Pack Station
CLARK LAKES TR
SPOOKY MEADOW TR

20.8 20.7 20.6 20.5 20.4 20.3 20.2 20.1 20 19.9 19.8 19.7 19.6 19.5 19.4 19.3 19.2 19.1 19 18.9

SCE Facilities

- Powerhouse
- Dam
- Stream Gage
- Reservoir Gage
- Ancillary Facility
- Tramway
- Helicopter Landing Site
- Water Conveyance Feature
- Tailrace
- Tunnel
- Flowline / Penstock
- Power Line
- Comm Line
- Project Road
- Project Trail
- FERC Project Boundary

Other Features

- Watercourse*
- Water Body*

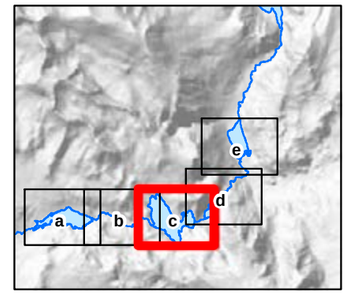
* (Not suitable for YT aquatic habitat)

- Non-Project Trail
- River Mile / 10th Mile

Field Assessed YT Habitat*

- Potential Aquatic Breeding Habitat
- Potential Non-breeding Meadows
- Potential Upland Habitat

* Refer to Table AQ 7-6 for a complete list of PCEs by feature



SOUTHERN CALIFORNIA EDISON
Energy for What's Ahead™

Rush Creek Project (FERC 1389)

Map BA-9c

Potential YT Habitat within the Construction/Restoration Action Area

0 125 250 500 Feet

Projection: UTM Zone 11
Datum: NAD 83

Date: 6/24/2025

C:\GIS\237800343\map\Rush Creek\AquaticMaps\SCE_RUSH_CREEK_AQ7_PotnHab_YT_17i11i_04.mxd

NOTE: Upland habitat for YT is defined within 0.78 mile of suitable breeding habitats

Rush Creek Powerhouse
17.3
17.4
17.5
Meadow_02
0.1
17.6
0.1
0.2
158
Rush Creek
17.7
17.8
0.4
0.2
Reversed Creek
0.3
0.4
17.9
18
0.3
South_Rush_Creek
Meadow_04
Rush Creek/Horsetail Falls
18.1
18.2
18.3
18.4
18.5
18.6
Agnew Dam
18.7
18.8
18.9
Agnew Lake
19
19.1
19.2
19.3
19.4
19.5
19.6
Gem Lake
Gem Dam
RUSH CREEKTR
SPOOKY MEADOW TR
SPOOKY MEADOW TR
SPOOKY MEADOW TR
LOOP
KOSTER MEADOW TR

SCE Facilities

- Powerhouse
- Dam
- Stream Gage
- Reservoir Gage
- Ancillary Facility
- Tramway
- Helicopter Landing Site
- Water Conveyance Feature
- Tailrace
- Tunnel
- Flowline / Penstock
- Power Line
- Comm Line
- Project Road
- Project Trail
- FERC Project Boundary

Other Features

- Watercourse*
- Water Body*

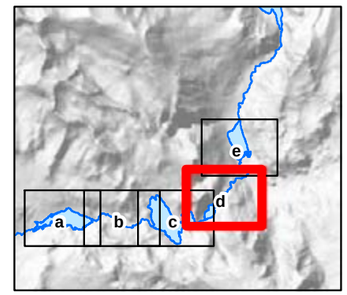
* (Not suitable for YT aquatic habitat)

- Non-Project Trail
- River Mile / 10th Mile

Field Assessed YT Habitat*

- Potential Aquatic Breeding Habitat
- Potential Non-breeding Meadows
- Potential Upland Habitat

* Refer to Table AQ 7-6 for a complete list of PCEs by feature



SOUTHERN CALIFORNIA EDISON
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Rush Creek Project (FERC 1389)

Map BA-9d

Potential YT Habitat within the Construction/Restoration Action Area

0 125 250 500 Feet

Projection: UTM Zone 11
Datum: NAD 83

Date: 6/24/2025

C:\GIS\2378000343\map\Rush Creek\AquaticMaps\SCE_RUSH_CREEK_AQ7_PotnHab_YT_17i11i_04.mxd

NOTE: Upland habitat for YT is defined within 0.78 mile of suitable breeding habitats

Alger Creek
BENCH TR
Silver Lake Campground
15.9
16
Silver Lake Boat Launch
Silver Lake Resort
16.1
RUSH CREEK TR
16.2
16.3
Silver Lake
SILVER LAKE HORSE TR
16.4
16.5
158
Silver Lake Picnic Area
16.6
Silver_Lake
Rush Creek
16.7
16.9
16.8
Silver_Lake
17
Meadow_03
Meadow_03
17.1
17.2
Meadow_03
17.3
17.4
Rush Creek Powerhouse
17.5
Meadow_02

SCE Facilities

- Powerhouse
- Dam
- Stream Gage
- Reservoir Gage
- Ancillary Facility
- Tramway
- Helicopter Landing Site
- Water Conveyance Feature
- Tailrace
- Tunnel
- Flowline / Penstock
- Power Line
- Comm Line
- Project Road
- Project Trail
- FERC Project Boundary

Other Features

- Watercourse*
- Water Body*

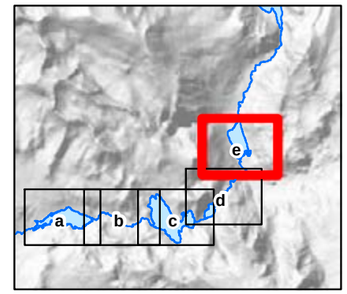
* (Not suitable for YT aquatic habitat)

- Non-Project Trail
- River Mile / 10th Mile

Field Assessed YT Habitat*

- Potential Aquatic Breeding Habitat
- Potential Non-breeding Meadows
- Potential Upland Habitat

* Refer to Table AQ 7-6 for a complete list of PCEs by feature



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Rush Creek Project (FERC 1389)

Map BA-9e

Potential YT Habitat within the Construction/Restoration Action Area

0 125 250 500 Feet

Projection: UTM Zone 11
Datum: NAD 83

Date: 6/24/2025

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Map BA-10a. CONFIDENTIAL—Overview Map Location of Critical Habitat, Sierra Nevada Bighorn Sheep Herd Units, and Tracking Data in Relation to the Construction/ Restoration Action Area

Map BA-10a 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.

CONFIDENTIAL INFORMATION

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Map BA-10b. CONFIDENTIAL—Location of Critical Habitat, Sierra Nevada Bighorn Sheep Herd Units, and Tracking Data in Relation to the Construction/Restoration Action Area

Map BA-10b 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.

APPENDIX A

IPaC Resource List

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Reno Fish And Wildlife Office
1340 Financial Boulevard, Suite 234
Reno, NV 89502-7147
Phone: (775) 861-6300 Fax: (775) 861-6301

In Reply Refer To: 01/03/2025 19:23:43 UTC
Project Code: 2025-0037843
Project Name: Rush Creek Project Relicensing, FERC Project No. 1389

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed, and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through IPaC by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological

evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at: https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see Migratory Bird Permit | What We Do | U.S. Fish & Wildlife Service (fws.gov).

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see https://www.fws.gov/library/collections/threats-birds.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Note: IPaC has provided all available attachments because this project is in multiple field office jurisdictions.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Bald & Golden Eagles
- Migratory Birds
- Wetlands

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Reno Fish And Wildlife Office
1340 Financial Boulevard, Suite 234
Reno, NV 89502-7147
(775) 861-6300

This project's location is within the jurisdiction of multiple offices. However, only one species list document will be provided for all offices. The species and critical habitats in this document reflect the aggregation of those that fall in each of the affiliated office's jurisdiction. Other offices affiliated with the project:

Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
(916) 414-6600

PROJECT SUMMARY

Project Code: 2025-0037843

Project Name: Rush Creek Project Relicensing, FERC Project No. 1389

Project Type: Power Gen - Hydropower - FERC

Project Description: The Proposed Action represents Southern California Edison Company's (SCE) recommendations for continued operation and maintenance of the Rush Creek Project (Project), including disposition of Rush Meadows and Agnew dams and associated facilities; retrofitting of Gem Dam and continued operations; restoration activities; proposed measures to minimize construction effects; and environmental measures, management, and monitoring plans associated with continued operation and maintenance of the Project.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@37.76134065,-119.15361618646497,14z

Counties: Madera and Mono counties, California

ENDANGERED SPECIES ACT SPECIES

There is a total of 13 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 1 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Fisher *Pekania pennanti* Population: SSN DPS There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3651	Endangered
Gray Wolf *Canis lupus* Population: U.S.A.: All of AL, AR, CA, CO, CT, DE, FL, GA, IA, IN, IL, KS, KY, LA, MA, MD, ME, MI, MO, MS, NC, ND, NE, NH, NJ, NV, NY, OH, OK, PA, RI, SC, SD, TN, TX, VA, VT, WI, and WV; and portions of AZ, NM, OR, UT, and WA. Mexico. There is **final** critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/4488	Endangered
North American Wolverine *Gulo gulo luscus* No critical habitat has been designated for this species. This species only needs to be considered under the following conditions: ▪ Species may be present based on transient occurrence as it moves through or too suitable habitat. Effects should be considered to species and projects should consult with the Service, however, depending on the project, consultation may not be necessary. Species profile: https://ecos.fws.gov/ecp/species/5123	Threatened
Sierra Nevada Bighorn Sheep *Ovis canadensis sierrae* Population: Sierra Nevada There is **final** critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3646	Endangered
Sierra Nevada Red Fox *Vulpes vulpes necator* Population: No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4252	Endangered

BIRDS

NAME	STATUS
Greater Sage-grouse *Centrocercus urophasianus* Population: Bi-State There is **proposed** critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8159	Proposed Threatened
Yellow-billed Cuckoo *Coccyzus americanus* Population: Western U.S. DPS There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

REPTILES

NAME	STATUS
Northwestern Pond Turtle *Actinemys marmorata* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1111	Proposed Threatened

AMPHIBIANS

NAME	STATUS
Sierra Nevada Yellow-legged Frog *Rana sierrae* There is **final** critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9529	Endangered
Yosemite Toad *Anaxyrus canorus* There is **final** critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7255	Threatened

FISHES

NAME	STATUS
Owens Tui Chub *Gila bicolor ssp. snyderi* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7289	Endangered

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9743	Proposed Threatened

CONIFERS AND CYCADS

NAME	STATUS
Whitebark Pine *Pinus albicaulis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1748	Threatened

CRITICAL HABITATS

There are 4 critical habitats wholly or partially within your project area under this office's jurisdiction.

NAME	STATUS
Greater Sage-grouse *Centrocercus urophasianus* https://ecos.fws.gov/ecp/species/8159#crithab	Proposed
Sierra Nevada Bighorn Sheep *Ovis canadensis sierrae* https://ecos.fws.gov/ecp/species/3646#crithab	Final

NAME	STATUS
Sierra Nevada Yellow-legged Frog *Rana sierrae* https://ecos.fws.gov/ecp/species/9529#crithab	Final
Yosemite Toad *Anaxyrus canorus* https://ecos.fws.gov/ecp/species/7255#crithab	Final

USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

BALD & GOLDEN EAGLES

Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act[1] and the Migratory Bird Treaty Act[2].

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats[3], should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

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1. The Bald and Golden Eagle Protection Act of 1940.
2. The Migratory Birds Treaty Act of 1918.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

There are likely bald eagles present in your project area. For additional information on bald eagles, refer to Bald Eagle Nesting and Sensitivity to Human Activity

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Jan 1 to Aug 31
Golden Eagle *Aquila chrysaetos* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds Jan 1 to Aug 31

PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

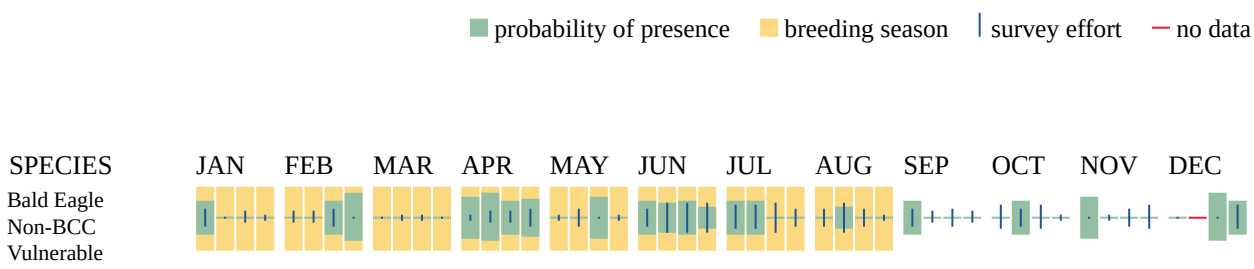
Probability of Presence (■)

Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

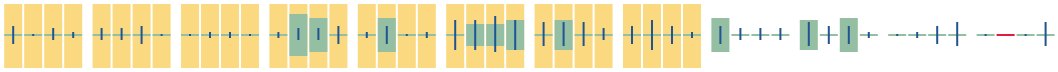
Breeding Season (■)
Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

Survey Effort (|)
Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data (–)
A week is marked as having no data if there were no survey events for that week.



Golden Eagle
Non-BCC
Vulnerable



Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

MIGRATORY BIRDS

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats[3] should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

---

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
American Avocet *Recurvirostra americana* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/11927	Breeds Apr 21 to Aug 10

NAME	BREEDING SEASON
American Dipper *Cinclus mexicanus* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/11928	Breeds Mar 21 to Aug 21
American White Pelican *pelecanus erythrorhynchos* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/6886	Breeds Apr 1 to Aug 31
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Jan 1 to Aug 31
Black-throated Gray Warbler *Setophaga nigrescens* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9584	Breeds May 1 to Jul 20
California Gull *Larus californicus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/10955	Breeds Mar 1 to Jul 31
Calliope Hummingbird *Selasphorus calliope* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9526	Breeds May 1 to Aug 15
Cassin's Finch *Haemorhous cassinii* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9462	Breeds May 15 to Jul 15
Clark's Grebe *Aechmophorus clarkii* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/10575	Breeds Jun 1 to Aug 31
Evening Grosbeak *Coccothraustes vespertinus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9465	Breeds May 15 to Aug 10
Forster's Tern *Sterna forsteri* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/11953	Breeds Mar 1 to Aug 15

NAME	BREEDING SEASON
Golden Eagle *Aquila chrysaetos* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds Jan 1 to Aug 31
Hermit Warbler *Setophaga occidentalis* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/11957	Breeds May 5 to Jul 15
Lewis's Woodpecker *Melanerpes lewis* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9408	Breeds Apr 20 to Sep 30
Northern Harrier *Circus hudsonius* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/8350	Breeds Apr 1 to Sep 15
Olive-sided Flycatcher *Contopus cooperi* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3914	Breeds May 20 to Aug 31
Pinyon Jay *Gymnorhinus cyanocephalus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9420	Breeds Feb 15 to Jul 15
Rufous Hummingbird *Selasphorus rufus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8002	Breeds Apr 15 to Jul 15
Sage Thrasher *Oreoscoptes montanus* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9433	Breeds Apr 15 to Aug 10
Virginia's Warbler *Leiothlypis virginiae* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9441	Breeds May 1 to Jul 31
Western Grebe *aechmophorus occidentalis* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/6743	Breeds Jun 1 to Aug 31

NAME	BREEDING SEASON
Willet *Tringa semipalmata* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/10669	Breeds Apr 20 to Aug 5

PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

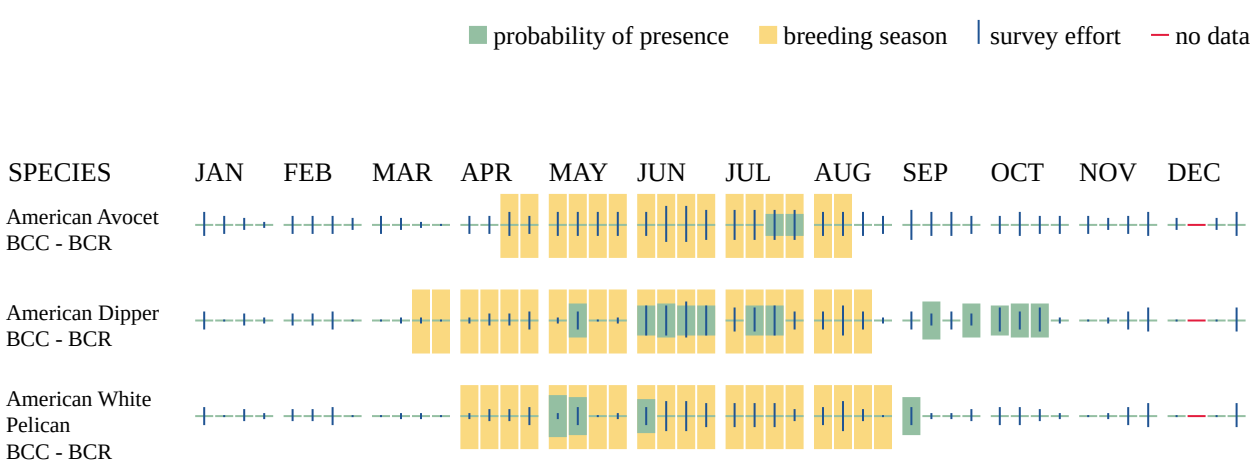
Probability of Presence (■)

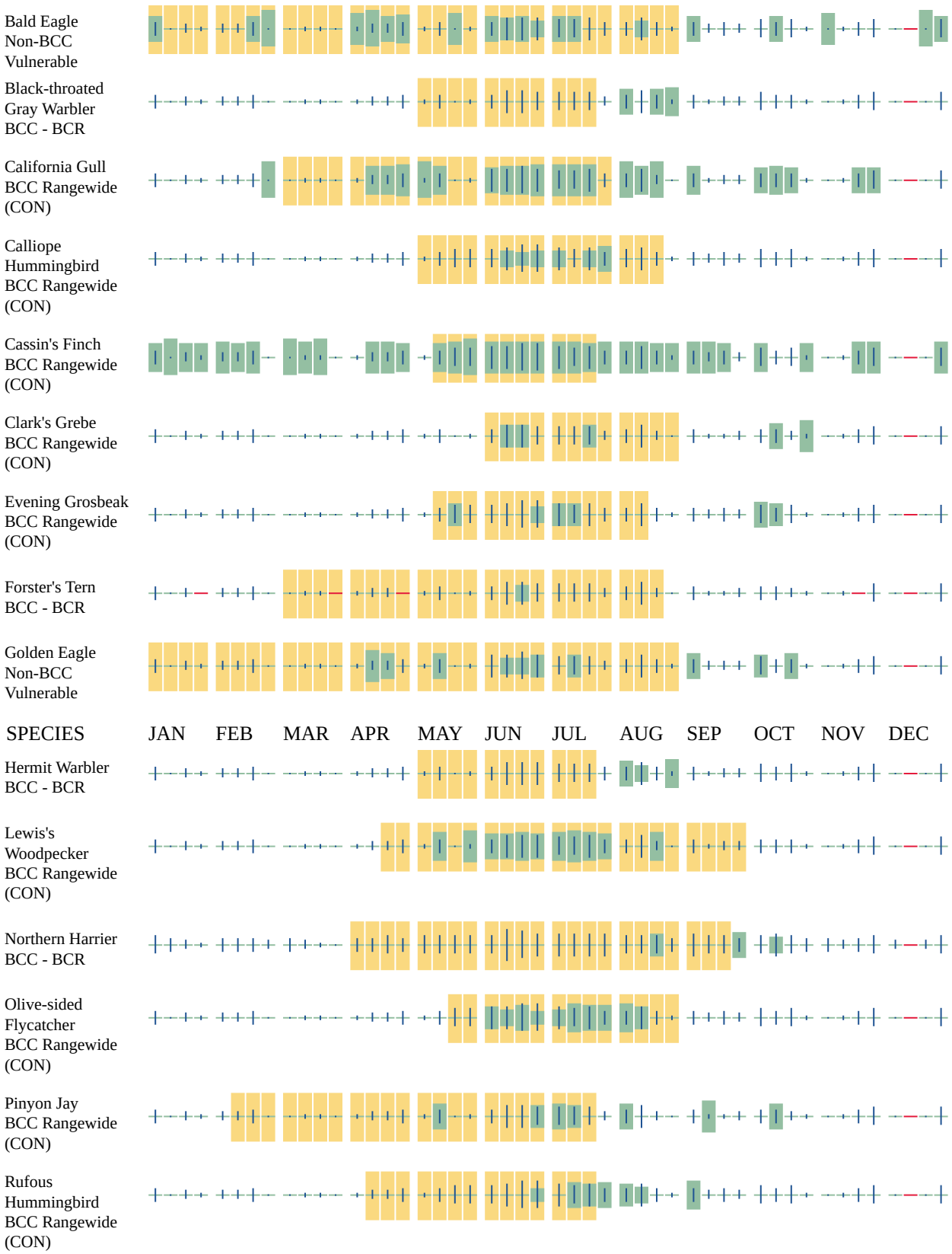
Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

Breeding Season (■)
Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

Survey Effort (|)
Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data (–)
A week is marked as having no data if there were no survey events for that week.




Bald Eagle
Non-BCC
Vulnerable
Black-throated
Gray Warbler
BCC - BCR
California Gull
BCC Rangewide
(CON)
Calliope
Hummingbird
BCC Rangewide
(CON)
Cassin's Finch
BCC Rangewide
(CON)
Clark's Grebe
BCC Rangewide
(CON)
Evening Grosbeak
BCC Rangewide
(CON)
Forster's Tern
BCC - BCR
Golden Eagle
Non-BCC
Vulnerable
SPECIES
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
Hermit Warbler
BCC - BCR
Lewis's
Woodpecker
BCC Rangewide
(CON)
Northern Harrier
BCC - BCR
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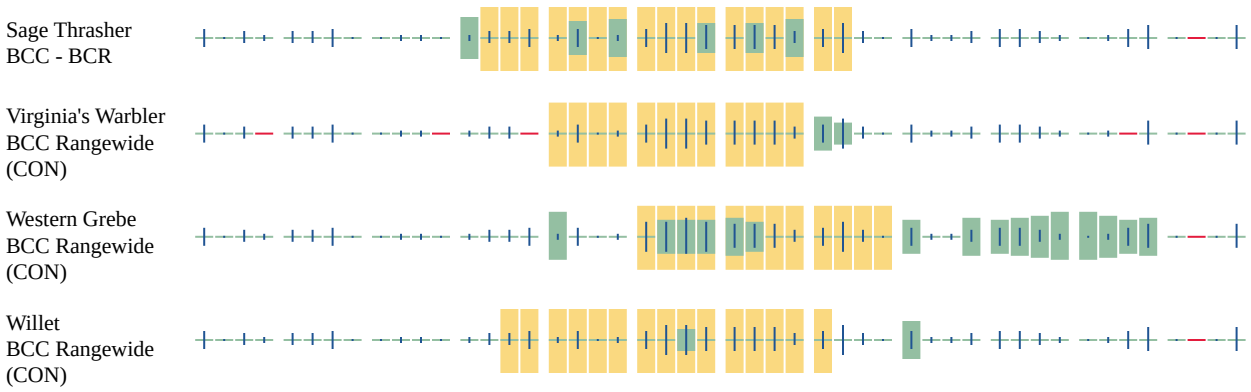
Rufous
Hummingbird
BCC Rangewide
(CON)



Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

WETLANDS

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

WETLAND INFORMATION WAS NOT AVAILABLE WHEN THIS SPECIES LIST WAS GENERATED. PLEASE VISIT HTTPS://WWW.FWS.GOV/WETLANDS/DATA/MAPPER.HTML OR CONTACT THE FIELD OFFICE FOR FURTHER INFORMATION.

IPAC USER CONTACT INFORMATION

Agency: Private Entity
Name: Sara Reece
Address: 881 Cumorah Court
City: Placerville
State: CA
Zip: 95667
Email sara@jna-consulting.com
Phone: 5308023391

APPENDIX B

Proposed Action Construction Measures

CONSTRUCTION MEASURES

Under the Proposed Action, Southern California Edison Company (SCE) will implement resource protection measures during construction of Rush Creek Project (Project) facility modifications, including avoidance and protection measures and best management practices (BMP). This appendix includes a preliminary list of measures to be implemented during construction along with pertinent United States Forest Service (Forest Service) water quality BMPs based on their *National Best Management Practices for Water Quality Management on National Forest System Lands* (Forest Service 2012).

Following completion of site-specific engineering designs for each modification, SCE will review the preliminary measures with resource agencies for adequacy in protecting resources. If additional site-specific construction measures are necessary, or existing measures require modification, they will be developed in consultation with resource agencies and implemented as part of Project modification activities.

REFERENCES

Forest Service (United States Forest Service). 2012. National Best Management Practices for Water Quality Management on National Forest System Lands, Volume 1: National Core BMP Technical Guide. Available at https://www.fs.usda.gov/sites/default/files/FS_National_Core_BMPs_April2012_s b.pdf.

1 AVOIDANCE AND PROTECTION MEASURES AND BEST MANAGEMENT PRACTICES

1.1 GENERAL CONSTRUCTION MEASURES

- All contractors and staff will be made aware of the ecological and cultural resource values of each site and will be given instructions to comply with site-specific avoidance and protection measures and best management practices.

- Construction activities will be limited to a designated work area (including the work corridor, Base of Operations, and staging areas). The work area will be clearly identified on the construction drawings and shall be staked and flagged where necessary prior to initiation of construction activities.

- Construction activities will be implemented 10 hours per day, beginning after sunrise (but no earlier than 7:00 a.m.), and ending before sunset (but no later than 7:00 p.m.) Monday through Saturday. Active construction will not occur on Sunday.

1.1.1 Air Quality Measures

- Contractors will be required to comply with provisions of the Great Basin Air Pollution Control District Rule 401 – Fugitive Dust, including, but not limited to, the following practices:

  - Stabilize unpaved areas subject to vehicle traffic by watering, treating with a non-toxic chemical dust suppressant, or covering.

  - Stabilize storage piles and disturbed areas not subject to vehicular traffic by keeping wet, treating with a non-toxic chemical dust suppressant, or covering when material is not being added to, or removed from, the pile.

  - Prior to any ground disturbance, including grading, excavating, and land clearing, apply sufficient water to the area to be disturbed to limit dust and minimize emissions.

- Limit the speed of any vehicles and equipment traveling across unpaved areas to no more than 5-10 miles per hour unless the road surface and surrounding area is sufficiently stabilized.

- Clean construction vehicles leaving the site to prevent dust, silt, mud, and dirt, from being released or tracked offsite.

- Dry mechanical sweeping and use of blower devices is prohibited. All visible track-out material from vehicles leaving the work site shall be removed from paved, public streets using wet sweeping or a high efficiency particulate air filter equipped vacuum device.

- Suspend grading and earthmoving operations if wind speeds are high enough to result in dust emissions crossing the construction work area boundary, despite the application of dust mitigation measures.

- Prevent dust emissions from materials hauled off-site by adequately wetting all loads and either covering completely with tarps or ensuring at least six inches of freeboard on the front, back, or sides of the cargo compartment and that no point of the load extends above the top of the cargo compartment.

- Depending on equipment availability, require that all diesel construction engines with a rating of 50 horsepower or greater meet, at a minimum, the Tier 4 California emission standards for off-road engines (13 CCR 2423(b)(1)(B)).

- Consistent with the California Air Resources Board's In-Use Off-Road Diesel-Fueled Fleets Regulations, require contractors to limit idling of construction vehicles and equipment onsite to five minutes or less, unless idling is necessary for effective work progress or equipment operation.

- Require contractors to maintain construction equipment in proper working order, and in accordance with manufacturer specifications.

1.1.2 Biological Resources Measures

1.2 General Wildlife Measures

- To avoid entrapment of small animals (e.g., amphibians or small mammals), SCE will:

  - Cover open excavations at the end of each workday or install escape ramps.

  - Inspect open excavations prior to initiation of each workday.

  - If any animal is found entrapped in an excavation and cannot leave of its own accord (e.g., using escape ramps or other passive methods), workers will follow the protocol for previously undiscovered species.

  - Federally-listed animals will not be handled except as authorized under the United States Fish and Wildlife Service Biological Opinion.

- Protocol for previously undiscovered species

  - Observances of special-status species will be reported to the SCE Environmental Resources Manager as soon as practicable.

  - All activities that have the potential to result in harassment, injury, or death of any animal will cease until the animal moves out of harm's way on its own accord.

- Work may resume after the animal moves out of harm's way.
- Animals will not be handled except by appropriately permitted individuals.

1.2.1 Fish and Aquatic Species Measures

- Prior to construction, SCE will prepare a Fish Rescue and Relocation Plan which details the approach for rescuing and relocating stranded fish prior to and during construction activities.

1.2.2 Special-Status Plant Measures

- Prior to each construction and/or restoration season, SCE will flag all whitebark pines and unknown five-needle pines within a 100-foot buffer of the Base of Operations, construction work areas, former inundation zones (restoration areas) and staging areas.
- Whitebark pine or unknown five-needle pine individuals of all size classes will be avoided, to the degree possible
- If removal of whitebark pines or unknown five-needle pines is necessary to complete the proposed Project facility modifications, the following will be implemented:
  - Whitebark pine or unknown five-needle pines will not be handled or removed except as authorized under the United States Fish and Wildlife Service Biological Opinion.
  - The location and size (diameter at breast height) of each tree removed will be recorded.
  - Whitebark pines will be replanted onsite at a 3:1 ratio as part of restoration activities.
  - Specific replanting and monitoring methods will be developed in consultation with resource agencies, documented in the Restoration Plans, and implemented as part of the project.

1.2.3 Non-Native Invasive Plant Measures

- Prior to construction, SCE will conduct a non-native invasive plant (NNIP) survey at the Base of Operations, construction work areas, former inundation zones, and staging areas consistent with methods outlined in the TERR 1 Technical Study Plan (TSP). Following completion of surveys, SCE will develop and provide a report to resource agencies (i.e., USFWS, Forest Service, State Water Resources Control Board [SWB], California Department of Fish and Wildlife [CDFW]) and file the report with FERC.

- SCE will implement the following measures to prevent the introduction or spread of NNIP:
  - All ground-disturbing construction equipment and vehicles will be cleaned prior to transport to the construction work areas.
  - SCE will maintain stockpiles of gravel and soil in a weed-free state.
  - Workers will inspect, remove, and properly dispose of readily observable weed seeds and plant parts found on their clothing and equipment. Proper disposal includes bagging the seeds and plant parts prior to disposal.
  - Equipment will be considered clean when visual inspection does not reveal soil, seeds, plant material or other such debris.
  - Any equipment to be used near project water bodies would also be inspected and verified to be free of aquatic invasive biological materials.
  - Certified weed-free hay, mulch, or straw will be used for erosion control. If certified weed-free straw is not available, certified weed-free rice straw will be used. If weed-free material is not available, SCE will consult with Forest Service botanist regarding other options (e.g., sterilized straw pellets).
- SCE will monitor restoration areas for the presence of NNIPs (introduction of new populations or expansion of existing populations)
  - New or expanded populations of NNIPs (as agreed upon in consultation with Inyo National Forest) will be removed or otherwise treated, as necessary
  - Specific NNIP monitoring and treatment methods will be developed in consultation with resource agencies, documented in the Restoration Plans, and implemented as part of the Project.

1.2.4 Riparian Measures

- Riparian vegetation removal or trimming will be limited to the minimum necessary to allow for installation of temporary bridges/establishment of temporary access routes along the downstream side of the dams; placement of concrete to support the dam abutments; and removal of the Agnew Flowline.
- All other riparian habitat located outside of immediate work areas would be flagged for avoidance.

1.2.5 Special-Status Amphibian Measures

- At the Rush Meadows Dam/Waugh Lake site, SCE will conduct a clearance survey for Sierra Nevada yellow-legged frog (SNYLF) and Yosemite toad (YT) in the construction work area and restoration area within 30 days prior to each construction and/or restoration season at Rush Meadows Dam/Waugh Lake.

- At the Rush Meadows Dam/Waugh Lake site, in the unlikely event that SNYLF individuals are encountered during clearance surveys, a biological monitor trained in identification and avoidance/protection procedures for SNYLF will be onsite during ground disturbance/excavation or other activities with the potential to harm, harass, injure or kill individual SNYLF. The biological monitor will have stop-work authority and will determine if additional measures to protect individual SNYLF are necessary. These may include, but are not limited to exclusion fencing, signage, or other measures necessary to protect the animals.

- Consistent with the Terms and Conditions specified in the Programmatic Biological Opinion on Nine Forest Programs on Nine National Forests in the Sierra Nevada of California for the Endangered Sierra Nevada Yellow-legged Frog, Endangered Northern Distinct Population Segment of the Mountain Yellow-legged Frog, and Threatened Yosemite Toad (USFWS 2014[1]), an agency approved biologist or monitor trained in YT identification and handling procedures will be on-site during construction activities and restoration activities that require use of heavy equipment or ground disturbance at Rush Meadows Dam and Waugh Lake. The agency-approved biologist or monitor can move tadpoles or adults from the direct area of impact during implementation of construction/restoration activities at Waugh Lake. Tadpoles and adults would be relocated to the closest suitable habitat within a safe location from the construction/restoration activities. Individuals would not be handled except as authorized under the USFWS Biological Opinion.

    - Each encounter shall be treated on a case-by-case basis, but the general procedure is as follows: (1) leave the non-injured animal alone if it is not in danger; or (2) move the animal to a nearby safely location if it is in danger. These two actions are further described below.

        - When YT are encountered within the construction/restoration area, the priority is to stop all activities in the surrounding area that may have the potential to result in the harassment, injury, or death of the individual. Then, the situation shall be assessed by the agency approved biologist or monitor in order to select a course of action that will minimize adverse effects to the individual.

[1] USFWS. 2014. Programmatic Biological Opinion on Nine Forest Programs on Nine National Forests in the Sierra Nevada of California for the Endangered Sierra Nevada Yellow-legged Frog, Endangered Northern Distinct Population Segment of the Mountain Yellow-legged Frog and Threatened Yosemite Toad. December 19, 2024. Sacramento, California.

- Avoidance is the preferred option if an individual is not moving or using a burrow or other refugia. The agency-approved biologist or monitor shall inspect the animal and the area to evaluate the necessity of fencing, signage, or other measures to protect the animal.

- If appropriate, YT shall be allowed to move out of the hazardous situation on their own volition to a safe location. An animal shall not be picked up and moved based on "it is not moving fast enough" or it is an inconvenience for activities associated with construction/restoration. This only applies to situations where individuals are encountered when they are moving during conditions that make their upland travel feasible. It does not apply to individuals that are uncovered, exposed, or in areas where there is not sufficient adjacent habitat to support the species should the animal move outside the immediate area.

- YT individuals shall be captured and moved by hand only when it is necessary to prevent harassment, injury, or death. If suitable habitat (outside of construction/restoration areas) is located immediately adjacent to the capture location, then the preferred option is relocation to that site. An individual shall not be moved outside of the radius it would have traveled on its own. Individuals would not be handled except as authorized under the USFWS Biological Opinion.

- Only agency approved biologists or monitors may capture YT. Nets or bare hands may be used to capture the animals. Soaps, oils, creams, lotions, repellents, or solvents of any sort cannot be used on hands within two hours before and during periods when the biologist/monitor is capturing and relocating individuals. If the animal is held for any length of time in captivity, they shall be kept in a cool, dark, moist environment with proper airflow, such as a clean and disinfected bucket or plastic container with a damp sponge. Containers used for holding or transporting shall not contain objects or chemicals that may injure or kill YT. If tadpoles are transported, they should be transported in water collected at the site where they are found. Individuals would not be handled except as authorized under the USFWS Biological Opinion.

- To avoid transferring disease or pathogens between suitable habitats during the course of translocating the YT, the agency-approved biologist or monitor shall use the most recent *Declining Amphibian Task Force Code of Practice.*

- To prevent the spread of the Chytrid pathogen, all equipment (including hand-held equipment such as shovels) will be cleaned and free of mud and dirt prior to being transported to the construction and restoration work areas at Waugh Lake, Agnew Lake, and Gem Lake.

- SCE will not use tightly woven fiber netting, plastic mono-filament netting, or similar material for erosion control or other purposes in order to minimize the chances for wildlife to be trapped, injured, or killed.

- Any water pumping will be conducted by using low velocity water pumps with associated screening devices to protect mortality of eggs, tadpoles, juveniles, and adults.

1.2.6 Special-Status Raptor Measures

- A qualified biologist will conduct a survey for active raptor nests no more than 30 days prior to initiation of each construction and/or restoration season.

- The survey area will include suitable forest or cliff habitat within 0.25 mile of Project construction work areas, Base of Operations and staging areas, worker campsites, and within 0.25 mile on either side of the helicopter flight paths.

- Surveys may be conducted on foot (including using binoculars or spotting scopes from designated observation points), by helicopter, or some combination thereof, as determined in consultation with resource agencies.

- If a nest is identified, a species-specific protective buffer will be applied consistent with SCE's Avian Protection Plan and/or previously established agency regulations and policies. Both horizontal and vertical buffers would be developed for nests located along the helicopter flight paths. All potentially disturbing activities will be excluded within the buffer until it has been determined that the nestlings have fledged and are no longer dependent on the nest.

- If SCE is unable to implement the Project with the established buffers, SCE will consult with resource agencies to develop site-specific buffers that consider site-specific conditions, the species, the location of the nest, and the nature of the construction activities to be implemented in order to avoid take of the nest.

1.2.7 Other Special-Status Bird Measures

- Vegetation removal required for implementation of Project facility modifications will occur outside of the breeding season for special-status songbirds (typically March through August, or as determined through consultation with resource agencies).

- If vegetation removal must occur during the breeding season, SCE will conduct surveys at least 2 weeks prior to removal to determine the location of any active bird nests.

- If a nest is identified, a species-specific protective buffer will be applied consistent with SCE's Avian Protection Plan. All potentially disturbing activities will be excluded within the buffer until it has been determined that the nestlings have fledged and are no longer dependent on the nest.

1.2.8 Special-Status Bat Measures

- In the year prior to each construction season, a qualified biologist will survey Project facilities that will be removed/modified during proposed Project facility modifications to determine whether active bat roosts (maternity or day roosts) are present.

- If an active roost is identified that would be affected by facility modifications or removals, SCE will install exclusion devices and/or deterrents on the Project facility in the year prior to construction. Methods of exclusion, which may include, but is not limited to sealing or modification of structures, installation of one-way doors or check-valves, caulk, flashing, or screening, will be determined based on the species, size and location of bat roost, and type of facility.

- The following measure would be implemented to minimize the potential for disturbance of roosting bats in Rush Meadows Dam:

  - If active roosts are found in Rush Meadows Dam pre-construction survey, acoustic deterrents would be implemented continuously for a week at the location of the roost. A qualified biologist would inspect the roost(s) at the end of each week to verify that bats are no longer present.

  - Once bats are no longer present, construction would immediately commence.

  - If multiple roosts are identified on the dam, this procedure would be repeated, as necessary.

1.3 CULTURAL AND TRIBAL RESOURCES MEASURES

- SCE will develop an Inadvertent Discovery Plan in consultation with the Forest Service Heritage Program Manager (HPM), Tribes and the State Historic Preservation Officer (SHPO).

- Known resources will be flagged for avoidance.

- SCE will prepare site-specific restoration plans for each dam site and reservoir, developed in consultation with the Forest Service HPM, Tribes, and resource agencies.

- Utilize the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring & Reconstructing Historic Buildings (2017) to minimize effects from Gem Dam retrofits to the dam and the Rush Creek Hydroelectric System Historic District.

- Resolution of Adverse Effects through the Section 106 process pursuant to 36 Code of Federal Regulations (CFR) Part 800.5 assessment of adverse effects and 800.6 resolution of adverse effects. Development of a Memorandum of Agreement that outlines how adverse effects will be resolved and includes a mitigation and

monitoring plan or equivalent. Resolution of an adverse effect, as defined in 36 CFR Part 800.6, requires notifying the Advisory Council on Historic Preservation; consulting with the SHPO, Tribes, the Forest Service HPM and other interested parties.

1.4 FIRE PREVENTION AND SUPPRESSION MEASURES

- Prior to construction, SCE will prepare a site-specific fire prevention and safety plan for each construction work area and the Base of Operations.
- The contractor, its employees, and subcontractors and their employees, will make all reasonable efforts to prevent and suppress wildfires, and will exercise diligence in protecting from damage the land and property of the United States.
- No burning of any kind will occur as part of the construction activities.

1.5 HAZARDOUS MATERIALS MEASURES

- Prior to construction, SCE will prepare a Spill Prevention, Control, and Countermeasure Plan intended to prevent spills of pollutants and define response procedures in the event of a spill.
- All hazardous materials will be stored in labeled and chemical compatible containers in accordance with federal, state, and local regulations.
- Emergency spill kits will be maintained onsite for fueling, maintenance, and storage of equipment and chemicals.
- All hazardous waste containers shall be stored in secondary containment.
- Compliance with all applicable local, state, and federal standards associated with handling and disposal of hazardous materials will be required.
- All equipment fueling within the lakebed will be conducted according to agency permit conditions.
- When either a fuel-driven compressor or generator is used, it will be placed in an industry-standard secondary containment that will capture any fuel or oil drips and be located on a minimum of 100 feet from surface waters.
- All fuel and oil will be stored in watertight containers with appropriate, industry standard secondary containment to prevent any spillage or leakage from entering a receiving water.
- Equipment will be refueled and serviced only in designated staging areas.
- All equipment will be cleaned of oil and grease and be inspected prior to entering the National Forest to ensure it is in proper functioning condition.

1.6 LAND USE MEASURES

- Prior to construction, SCE will prepare a Minimum Requirements Analysis for construction activities in designated wilderness areas to support Forest Service issuance of a Wilderness Act Variance. All conditions of the Wilderness Act Variance will be implemented as part of Project facility modifications.

- Prior to construction, SCE will obtain a Special Use Permit (SUP) from the Forest Service for use of the June Mountain Ski Area Parking Lot as the Base of Operations. All conditions of the SUP will be implemented as part of Project facility modifications.

- Prior to construction, SCE will obtain a SUP from the Forest Service which authorizes SCE to leave abutments at Rush Meadows and Agnew dams on National Forest Lands.

1.7 NOISE MEASURES

- Helicopter use will be limited to 8:00 a.m. to 4:00 p.m., Monday through Saturday.

- Avoid generating noise during more sensitive periods of the day (i.e., Community Noise Equivalent Level [CNEL] evening period: 7:00 p.m. to 10:00 p.m. and CNEL nighttime: 10:00 p.m. to 7:00 a.m.).

- To the extent feasible, reduce number of days of flights by condensing more trips into workdays while increasing the number of days with no flights.

- Communicate helicopter flight operations with the public ahead of time.

- Ensure that construction equipment utilizes the manufacturer's recommended/ provided mufflers and that they are functioning as designed.

- Utilize previously established flight paths to reduce impacts to noise sensitive receptors and Sierra Nevada bighorn sheep critical habitat.

- To the extent feasible, utilize the southern flight path to avoid noise sensitive receptors.

1.8 PUBLIC/AGENCY OUTREACH AND COMMUNICATION MEASURES

Prior to initiation of construction SCE will:

- Coordinate with the Forest Service and the National Park Service (NPS), as appropriate, regarding procedures for: (1) notifying the public regarding Project activities; (2) issuing future wilderness permits to backcountry recreationists; and evaluating/implementing trail closures and/or camping restrictions during construction.

- Affected trails may include Rush Creek Trail, Clark Lakes Trail, Spooky Meadows Trail, and Weber Lake Trail.
- The Rush Creek Trail terminates at its junction with the Pacific Crest Trail/John Muir Trail, which is located approximately 1.2 miles southwest of Rush Meadows Dam; therefore, notifications to hikers along the trail may be required.
- Following determination of the need for trail or camping restrictions/closures, the Forest Service may issue a future Forest Order pursuant to 16 United States Code 551 and 36 CFR 261.50(a) and (b).

Prior to initiation of construction SCE will:

- Conduct a town hall meeting at June Lake to provide an overview of the upcoming Project activities/schedule for residents, business owners, local government officials, sheriff's department, resource agencies, Tribes, and members of the public. The meeting will provide an opportunity for stakeholders to ask questions and voice concerns.

Prior to initiation of construction/restoration activities, SCE will:

- Conduct a town hall meeting at June Lake (as described above).
- Coordinate with the Forest Service and NPS regarding communicating any trail or area closures associated with the Project to the public, including:
  - Preparation of fliers, if necessary, for distribution at Forest Service visitor centers (e.g., Bishop, Mono Lake, Lone Pine, and Mammoth).
  - Posting of fliers, Forest Service Order(s), and associated maps at pertinent trailheads, Forest Service visitor centers (e.g., Bishop, Mono Lake, Lone Pine, and Mammoth), and the Forest Service website.
- Coordinate with Forest Service air operations regarding helicopter flights and proposed flight paths.

1.9 RECREATION MEASURES

- In all locations, construction activities will be limited to a designated work area (including the work corridor, Base of Operations, and staging areas). This work area will be clearly identified on the construction drawings and will be staked and flagged where necessary prior to initiation of construction activities. As much as possible, staging areas will be in areas that are not visible or only visible for a limited period from the Rush Creek Trail. Staging areas will be limited to the minimum size and extent necessary for construction activities. Where possible, staging and parking areas will be located in pre-disturbed areas.

- Prior to construction, SCE will consult with Frontier Pack Station regarding construction schedule and trail closures.

- Implement Public/Agency Outreach and Communication Measures described above.

1.10 TRAFFIC MEASURES

- Prior to construction, SCE will prepare a Traffic Management Plan that outlines strategies and measures for safe and efficient traffic flow during construction, including traffic management, signage, lane closures, and detours.

- Prior to construction, SCE will obtain appropriate transportation permits from Caltrans (e.g., oversize/overweight or variance permit) and comply with all measures outlined in the permit.

- During construction and following each construction season, construction-related impacts to roadways will be remediated according to Caltrans requirements.

- Prior to construction, SCE will obtain a county road use permit from Mono County and comply with all measures outlined in the permit.

- Temporary parking and staging areas will be limited to the minimum area needed.

1.11 VISUAL RESOURCE MEASURES

- To the extent practical, to minimize visual contrast between construction areas and the natural environment, large machinery and equipment used for construction activities will have a muted color (e.g., earth tones).

- The surface of the remaining dam abutments at Rush Meadows and Agnew dams will be blended into the natural environment as described in the restoration plan for each site.

- SCE will comply with fugitive dust reduction measures to limit dust that could otherwise reduce scenic visibility and obscure views. Refer to Air Quality Measures described above.

1.12 WATER QUALITY AND EROSION CONTROL MEASURES

- SCE will obtain: (1) coverage from United States Army Corps of Engineers under Clean Water Act Section 404, (2) a Section 401 Water Quality Certification from the SWB; and (3) a Lake or Streambed Alteration Agreement from the CDFW. SCE will comply with all measures outlined in the permits.

- Prior to construction, SCE will prepare a reservoir drawdown and operation plan that minimizes the potential for a seasonal release of high flows (timing) and minimizes the potential for high magnitude releases that could cause flooding downstream during construction. The plan will include an operational model that

includes historical hydrology and can assess the effect of proposed construction phases and sequencing on high flows downstream of the construction sites.

- SCE will adaptively implement a construction season each year that avoids construction during potential high flow periods that could exceed the bypass capabilities at the construction sites. In addition, timing of construction (sequencing), design of construction phases, and placement of equipment will be implemented in such a way that minimizes the potential for infrastructure (dams, piping systems, buildings, equipment) damage due to high flow events during construction.

- Prior to construction, SCE will prepare a Water Quality Monitoring Plan to assess and mitigate potential impacts of construction activities on nearby waterbodies.

- Prior to construction, SCE will prepare a Dewatering and Diversion Plan which details strategies and procedures for managing water during construction activities.

- Prior to construction, SCE will prepare an Erosion and Sediment Control Plan that covers all disturbed areas, including staging, stockpile, and fueling areas. The plan will include site-specific procedures and measures to minimize erosion and sedimentation in the work areas and downstream reaches.

- Prior to construction, SCE will prepare a Stormwater Pollution Prevention Plan that covers all construction sites.

- SCE will maintain minimum instream flow downstream of construction sites.

- Construction of embankment structures around constructed areas to redirect storm water runoff so that it is temporarily detained in a catchment basin, to allow sediment to settle out before water is discharged.

- Construction activities will be completed during minimal runoff periods (i.e., during the dry season or when rain and runoff are unlikely, typically during the late summer or fall) when flows are more manageable.

- Ground disturbance will primarily take place in the dry, stable, contained lakebed.

- Work areas will be returned to pre-construction grades and stabilized using compaction or natural degradable materials.

- Soil stabilization and erosion control best management practices will be implemented to minimize soil erosion resulting from Project facility modifications.

- Stabilize unpaved areas subject to vehicle traffic by watering, treating with a non-toxic chemical dust suppressant, or covering.

- Stabilize storage piles and disturbed areas not subject to vehicular traffic by keeping wet, treating with a non-toxic chemical dust suppressant, or covering when material is not being added to, or removed from, the pile.

- Prior to any ground disturbance, including grading, excavating, and land clearing, apply sufficient water to the area to be disturbed to limit dust and minimize emissions.

- Suspend grading and earthmoving operations if wind speeds are high enough to result in dust emissions, despite the application of dust mitigation measures.

- Establish designated areas for equipment staging and parking to minimize the area of ground disturbance.

- Establish and maintain construction area limits to the minimum area necessary for completing the project and confine disturbance to within this area.

- Install sediment and stormwater controls before initiating surface-disturbing activities to the extent practicable.

- Routinely inspect disturbed areas to verify that erosion and stormwater controls are implemented and functioning as designed and are suitably maintained.

- Operate equipment only when soil compaction, displacement, erosion, and sediment runoff would be minimized.

- To the extent feasible, minimize traffic along the downstream portion of the lakebed.

- Temporary structures should be placed in a manner to minimize ground disturbance.

- During construction activities, SCE will implement applicable United States Forest Service water quality best management practices identified in *National Best Management Practices for Water Quality Management on National Forest System Lands* (Forest Service 2012). See below for a preliminary list of Forest Service best management practices that may be applicable to Project facility modifications.

2 UNITED STATES FOREST SERVICE WATER QUALITY BEST MANAGEMENT PRACTICES

2.1 AQUATIC ECOSYSTEMS MANAGEMENT ACTIVITIES

2.1.1 AqEco-2. Operations in Aquatic Ecosystems

- Coordinate stream channel, shoreline, lake, pond, and wetland activities with appropriate State and Federal agencies.
- Use suitable measures to protect the waterbody when preparing the site for construction or maintenance activities.
    - Clearly delineate the work zone.
    - Refuel and service equipment only in designated staging areas.
    - Develop an erosion and sediment control plan to avoid or minimize downstream impacts using measures appropriate to the site and the proposed activity.
    - Ensure all equipment operated in or adjacent to the waterbody is clean of aquatic invasive species, as well as oil and grease, and is well maintained.
- Schedule construction or maintenance operations in waterbodies to occur in the least critical periods to avoid or minimize adverse effects to sensitive aquatic and aquatic-dependent species that live in or near the waterbody.
    - Avoid scheduling instream work during the spawning or migration seasons of resident or migratory fish and other important life history phases of sensitive species that could be affected by the project.
    - Avoid scheduling instream work during periods that could be interrupted by high flows.
- Use suitable measures to protect the waterbody when clearing the site.
    - Clearly delineate the geographic limits of the area to be cleared.
    - Use suitable drainage measures to improve the workability of wet sites.
    - Avoid or minimize unacceptable damage to existing vegetation, especially plants that are stabilizing the bank of the waterbody.

- Use suitable measures to avoid or minimize impacts to the waterbody when implementing construction and maintenance activities.
    - Minimize heavy equipment entry into or crossing water as is practicable.
    - Stage construction operations as needed to limit the extent of disturbed areas without installed stabilization measures.
    - Promptly install and appropriately maintain erosion control measures.
    - Promptly install and appropriately maintain spill prevention and containment measures.
    - Promptly rehabilitate or stabilize disturbed areas as needed following construction or maintenance activities.
    - Stockpile and protect topsoil for reuse in site vegetation.
    - Minimize bank and riparian area excavation during construction to the extent practicable.
    - Keep excavated materials out of the waterbody.
    - Use only clean, suitable materials that are free of toxins and invasive species for fill.
    - Properly compact fills to avoid or minimize erosion.
    - Balance cuts and fills to minimize disposal needs.
    - Remove all project debris from the waterbody in a manner that will cause the least disturbance.
    - Identify suitable areas offsite or away from waterbodies for disposal sites before beginning operations.
    - Contour site to disperse runoff, minimize erosion, stabilize slopes, and provide a favorable environment for plant growth.
    - Use suitable species and establishment techniques to revegetate the site in compliance with local direction and requirements per FSM 2070 and FSM 2080 for vegetation ecology and prevention and control of invasive species.

- Use suitable measures to divert or partition channelized flow around the site or to dewater the site as needed to the extent practicable.
    - Remove aquatic organisms from the construction area before dewatering and prevent organisms from returning to the site during construction.
    - Return clean flows to channel or waterbody downstream of the activity.
    - Restore flows to their natural stream course as soon as practicable after construction or before seasonal closures.
- Inspect the work site at suitable regular intervals during and after construction or maintenance activities to check on quality of the work and materials and identify need for mid-project corrections.
- Include implementation and effectiveness monitoring to evaluate success of the project in meeting design objectives and avoiding or minimizing unacceptable impacts to water quality.
- Consider long-term management of the site and nearby areas to promote project success.
    - Use suitable measures to limit human, vehicle, and livestock access to site as needed to allow for recovery of vegetation.

2.2 FACILITIES AND NON-RECREATION SPECIAL USES MANAGEMENT ACTIVITIES

2.2.1 Fac-2. Facility Construction and Stormwater Control

- Establish designated areas for equipment staging, stockpiling materials, and parking to minimize the area of ground disturbance.
- Establish and maintain construction area limits to the minimum area necessary for completing the project and confine disturbance to within this area.
- Develop and implement an erosion control and sediment plan that covers all disturbed areas, including borrow, stockpile, fueling, and staging areas used during construction activities.
- Install sediment and stormwater controls before initiating surface-disturbing activities to the extent practicable.
- Routinely inspect construction sites to verify that erosion and stormwater controls are implemented and functioning as designed and are appropriately maintained.

2.2.2 Fac-4. Sanitation Systems

- Use qualified personnel to locate, design, inspect, operate, maintain, and manage sanitation systems.

- Prepare and maintain an operation and maintenance plan for all waste treatment or disposal facilities.

2.2.3 Fac-5. Solid Waste Management

- Dispose of collected garbage at properly designed and operated municipal-, county-, or State-authorized sanitary landfills or waste recycling sites where groundwater and surface water are adequately protected.

- Obtain necessary State or local permits for solid waste disposal sites.

2.2.4 Fac-6. Hazardous Materials

- Ensure that all employees involved in the use, storage, transportation, and disposal of hazardous materials receive proper training.

- Manage the use, storage, discharge, or disposal of pollutants and hazardous or toxic substances generated by the project in compliance with applicable regulations and requirements.

- Prepare a certified Spill Prevention Control and Countermeasures Plan for each construction site.

- Respond to hazardous materials releases or spills using the established site-specific contingency plan for incidental releases and the Emergency Response Plan for larger releases.

- Ensure that hazardous spill kits are adequately stocked with necessary supplies and are maintained in accessible locations.

2.2.5 Fac-10. Facility Site Reclamation

- Develop and implement a reclamation plan to rehabilitate and restore, to the extent practicable, the natural ecological components, structures, and processes consistent with land management plan desired conditions, goals, and objectives at sites where structures or facilities have been permanently removed.

2.3 RECREATION MANAGEMENT ACTIVITIES

2.3.1 Rec-6. Pack and Riding Stock Use Areas

- Install simple temporary holding facilities in both wilderness and non-wilderness areas.
- Designate specific watering locations on streams, ponds, and lakes to avoid or minimize general use along streambanks or shorelines.
- Provide designated watering areas at developed stock use areas where practicable.
- Provide manure disposal bins at developed pack and riding stock use areas.
- Monitor pack and riding stock use areas at regular intervals to identify drainage and ground surface maintenance needs to avoid, minimize, or mitigate adverse effects to soil, water quality, and riparian resources.
- Manage pack and riding stock use areas to mitigate adverse effects to soil, water quality, and riparian resources.

2.4 ROAD MANAGEMENT ACTIVITIES

2.4.1 Road-5. Stream Crossings

- Locate stream crossings where the channel is narrow, straight, and uniform, and has stable soils and relatively flat terrain to the extent practicable.
- Design the crossing to pass a normal range of flows for the site.

2.4.2 Road-9. Parking and Staging Areas

- Design and locate parking and staging areas of appropriate size and configuration to accommodate expected vehicles and avoid or minimize adverse effects to adjacent soil, water quality, and riparian resources.
- Use suitable measures to harden and avoid or minimize damage to parking area surfaces that experience heavy use or are used during wet periods.
- Use and maintain suitable measures to collect and contain oil and grease in larger parking lots with high use and where drainage discharges directly to streams.
- Conduct maintenance activities commensurate with parking or staging area surfacing and drainage requirements as well as precipitation timing, intensity, and duration.
- Limit the size and extent of temporary parking or staging areas.

2.4.3 Road-10. Equipment Refueling and Servicing

- Develop or use existing fuel and chemical management plans (e.g., Spill Prevention Control and Countermeasures, spill response plan, and emergency response plan) when developing the management prescription for refueling and servicing sites.

- Locate, design, construct, and maintain petroleum and chemical delivery and storage facilities consistent with applicable local, State, and Federal regulations.

- Use suitable measures around vehicle service, storage and refueling areas, chemical storage and use areas, and waste dumps to fully contain spills and avoid or minimize soil contamination and seepage to groundwater.

- Provide training for all agency personnel handling fuels and chemicals in their proper use, handling, storage, and disposal.

- Use suitable measures to avoid spilling fuels, lubricants, cleaners, and other chemicals during handling and transporting.

- Prohibit excess chemicals or wastes from being stored or accumulated in the project area.

- Remove service residues, used oil, and other hazardous or undesirable materials from NFS land and properly dispose them as needed during and after completion of the project.

- Clean up and dispose of spilled materials according to specified requirements in the appropriate guiding document.

- Report spills and initiate suitable cleanup action in accordance with applicable State and Federal laws, rules, and regulations.

APPENDIX C

Proposed Action Environmental Measures

1 NEW ENVIRONMENTAL MEASURES, MANAGEMENT AND MONITORING PLANS

The Final License Application (FLA), Section 5, Appendix 5-C contains a description of environmental measures, management, and monitoring plans (environmental measures) that Southern California Edison Company (SCE or Licensee) proposes to implement under the Proposed Action for the Rush Creek Project (Project). The environmental measures are designed to protect, maintain, or enhance environmental and cultural resources over the term of the new license. The environmental measures included in the Proposed Action, by resource area, are documented in the following:

- Aquatic Resources
  - Minimum Instream Flow Measure
  - Recreation Reservoir Elevation Objectives Measure
  - Stream and Reservoir Gaging Monitoring Plan
  - Fish Stocking Measure
- Cultural Resources
  - Historic Properties Management Plan
- Terrestrial Resources
  - Vegetation Management Measure

1.1 AQUATIC RESOURCES

1.1.1 Measure 1: Minimum Instream Flow Measure

The Licensee will maintain a continuous minimum flow of 1 cubic foot per second (cfs) (or natural inflow[1] if the level of Gem Lake falls below the face of the dam) in Rush Creek below Gem Dam (USGS Gage 10287281; SCE 352 R) and 1 cfs (or natural inflow if the level of Gem Lake falls below the face of the dam) below Agnew Lake (natural lake) at the flume gage (USGS 10287289; SCE 357).

The Licensee may temporarily modify minimum instream flows if required by operating emergencies beyond the control of the Licensee. The Licensee may also modify minimum instream flows for short periods upon written consent of the Forest Service.

[1] Natural inflow if natural inflow is less than the specified minimum flow. The bottom of the dam face and low-level outlet pipe invert is approximately 8,983.88 feet elevation.

1.1.2 Measure 2: Recreation Reservoir Elevation Objectives Measure

Following retrofitting of Gem Dam, the Licensee will operate Gem Lake during the July through Labor Day weekend season to meet the primary hydropower generation purpose of the reservoir. The Licensee will also support reservoir-based recreation by making every reasonable effort to achieve the following water surface objectives as determined by the April 1 snow water equivalent at Agnew Pass:

April 1 Snow Water Equivalent Percent at Agnew Pass[1]	Gem Lake Elevation Objectives, Elevation from the Spillway (feet)	Date
>100%	5	August 1 through the Tuesday after Labor Day weekend
75-100%	5	July 1 through the Tuesday after Labor Day weekend
40-<75%	10	July 1 through the Tuesday after Labor Day weekend
<40%	15	July 1 through the Tuesday after Labor Day weekend

Note:

[1] Agnew Pass snow water equivalent is located at site AGP – Agnew Pass on the California Data Exchange Center. In the event snow water equivalent data is not available at Agnew Pass, an alternate site such as GEM – Gem Pass may be used.

1.1.3 Measure 3: Stream and Reservoir Gaging Monitoring Plan

The purpose of the Stream and Reservoir Gaging Monitoring Plan (SRGMP) is to describe:

- Project gages used to document compliance with minimum instream flow and reservoir levels;
- Operation and maintenance of the gages; and
- Reporting of compliance.

1.1.3.1 Compliance Gages

The gages used to document compliance with minimum instream flow and reservoir level requirements are identified in Table SRGMP-1.

1.1.3.2 Operations and Maintenance of Gages

All the gages will record at a time increment of ≤15 minutes. The gages will be maintained and operated by the Licensee. The Licensee will implement current USGS gaging standards for the type of measurement system specific to each location (e.g., bubble gage, acoustic Doppler current profiler, acoustic velocity meter).

1.1.3.3 Reporting

The Licensee will prepare a brief annual report to document compliance with minimum instream flow and reservoir levels for each calendar year. The annual report will be filed with Federal Energy Regulatory Commission (FERC) within the first quarter of each year. Upon completion of the QA/QC process and upon request, flow data will be provided to FERC, State Water Board, and California Department of Fish and Wildlife (CDFW).

If a deviation occurs regarding compliance with minimum instream flow and reservoir level requirements, the Licensee will file a report with the FERC within 30 days from the date that the data becomes available indicating the deviation. The report will, to the extent possible, identify the cause, severity, and duration of the deviation, any environmental impacts resulting from the deviation, a description of the measures implemented to correct the deviation, and the measures the Licensee implemented or proposes to ensure deviations do not recur.

Table SRGMP-1. Summary of Rush Creek Project Gages

Gage Name	SCE Gage Number	USGS Gage Number	Latitude/ Longitude (NAD27)	Description
Rush Creek Powerhouse	367	10287300	37°45'59" 119°07'17"	Located on the west wall side of the powerhouse and records flow through the powerhouse.
Rush Creek Below Rush Meadows Dam	359R	10287262	37°45'04" 119°10'50"	Stream gage located approximately 160 feet downstream of Rush Meadows Dam. Gage measures the storage releases from Rush Meadows Dam that travel down Rush Creek into Gem Lake.
Rush Creek below Agnew Lake	357	10287289	37°45'33" 119°07'47"	Stream Gage located approximately 600 feet downstream of Agnew Dam at the Project flume.
Rush Creek below Gem Dam	352R	10287281	37°45'05" 119°08'26"	A minimum flow gage is located downstream of Gem Dam, but it does not capture reservoir spills.
Gem Lake	352	10287280	37°45'07" 119°08'25"	Reservoir gage located at the Gem Valve House.

1.1.4 Measure 4: Fish Stocking Measure

The purpose of the Fish Stocking Measure is to continue the Licensee's off-site fish stocking commitment approved by FERC under the existing license (Article 405). The Licensee will stock rainbow trout into an off-site location, to be determined in consultation with CDFW, to offset potential fish entrainment in the Rush Creek Project hydroelectric facilities.

The Licensee will implement the following as part of this measure:

- Consult with CDFW every five years following license issuance to confirm stocking schedule and location.
- Obtain and release 1,000 catchable-sized (0.5 to 1.0 pound each) or equivalent rainbow trout at a location approved by CDFW.
    - Fish will be transported to the release site by a licensed vendor. The Licensee will release the stocked fish following proper fish-handling procedures and protocols.
- Submit a Report of Fish Stocking to FERC and CDFW within 30 days after release of fish.

1.2 CULTURAL RESOURCES

1.2.1 Measure 5: Historic Properties Management Plan (to be developed)

Section 106 of the National Historic Preservation Act (as codified in 54 USC § 306108) requires FERC to take into account the effect of licensing a hydropower project on any historic properties and allow the Advisory Council on Historic Preservation (Advisory Council) a reasonable opportunity to comment on the proposed action. "Historic Properties" are defined as any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register of Historic Places (NRHP). If there would be an adverse effect on historic properties, the applicant must develop a historic properties management plan (HPMP) to seek to avoid, reduce, or mitigate the effects. The Licensee will implement an HPMP by execution of a Programmatic Agreement as defined in 36 CFR § 8.00.14(b).

The Draft HPMP will be developed and reviewed in consultation with the Forest Service, American Indian Tribes, and the State Historic Preservation Officer in 2025. Upon completion, the HPMP will be filed with FERC as part of Volume 5 (Confidential Information) of the License Application.

The Draft HPMP will address the management and treatment of historic properties that have been determined eligible for inclusion in the NRHP and unevaluated cultural and Tribal resources within the Rush Creek Project Area of Potential Effects (APE) over the term of the new license. The HPMP will replace the existing Historic and Archaeological Protection Plan. Specifically, the HPMP will:

- Outline the regulatory context and define the APE
- Provide a summary of cultural and Tribal resource studies and results completed for the Project
- Outline the project management framework, project review, and resource management measures including:
  - Roles and responsibilities
  - Stakeholder consultation
  - Potential effects and general management measures
  - Cultural and Tribal resources project review requirements, including a facilities maintenance and repair program for the Rush Creek Hydroelectric System Historic District
- Provide historic context themes, research questions, and integrity framework to guide management of historic properties and NRHP evaluations of cultural and Tribal resources
- Provide guidance and methodologies for NRHP Evaluations
- Delineate HPMP implementation procedures including:
  - Historic properties monitoring
  - Annual reporting
  - Treatment of unanticipated discoveries including burial remains

1.3 TERRESTRIAL RESOURCES

1.3.1 Measure 6: Vegetation Management Measure

The Licensee will implement the Vegetation Management Measure which provides for protection of whitebark pine (*pinus albicaulis*) during vegetation maintenance activities and establishes measures to minimize the introduction or spread of non-native invasive plant species (NNIP).

1.3.1.1 Whitebark Pine Whitebark Pine Surveys

- Surveys will be conducted to map the location of whitebark pines in areas where vegetation management activities are implemented every 5 years following license issuance. Refer to Section 4.4.6, Vegetation Management, for the areas where vegetation management is implemented around Project facilities.

- Surveys will be conducted in accordance with methods described in the TERR 1 – Botanical Resources Technical Study Report (TSR).

1.3.1.2 Whitebark Pine Protection

- Prior to implementation of vegetation management activities, whitebark pine populations/individuals will be flagged for avoidance.

- If it is determined that trimming or removal of a whitebark pine is necessary, trimming/removal will conducted as authorized in the United States Fish and Wildlife Service Biological Opinion.

1.3.1.3 Non-Native Invasive Plants

Non-Native Invasive Plant Training Program

- The Licensee will develop an NNIP training program for Project personnel and contractors. The NNIP training program will include photographs, descriptions, and other materials to assist personnel and contractors in identifying weed species listed in the TERR 1 – Botanical Resources TSR, Table TERR 1-3 (non-native invasive plant species identified in the study area). It will also include a review of measures to control or prevent the introduction and spread of noxious weeds (see below).

Measures to Prevent the Introduction or Spread of Noxious Weeds

- Stockpiling: Stockpiles of gravel and soil will be maintained in a weed-free state.

- Clothing and Boots: Workers will inspect, remove, and properly dispose of readily observable weed seeds and plant parts found on their clothing and equipment. Proper disposal includes bagging the seeds and plant parts prior to disposal.

- Erosion Control: Certified weed-free hay, mulch, or straw will be used for erosion control. If certified weed-free straw is not available, certified weed-free rice straw will be used. If weed-free material is not available, the Licensee will consult with the Forest Service botanist regarding other options (e.g., sterilized straw pellets).

APPENDIX D

Representative Photographs of Whitebark Pines and Associated Habitat

Waugh Lake

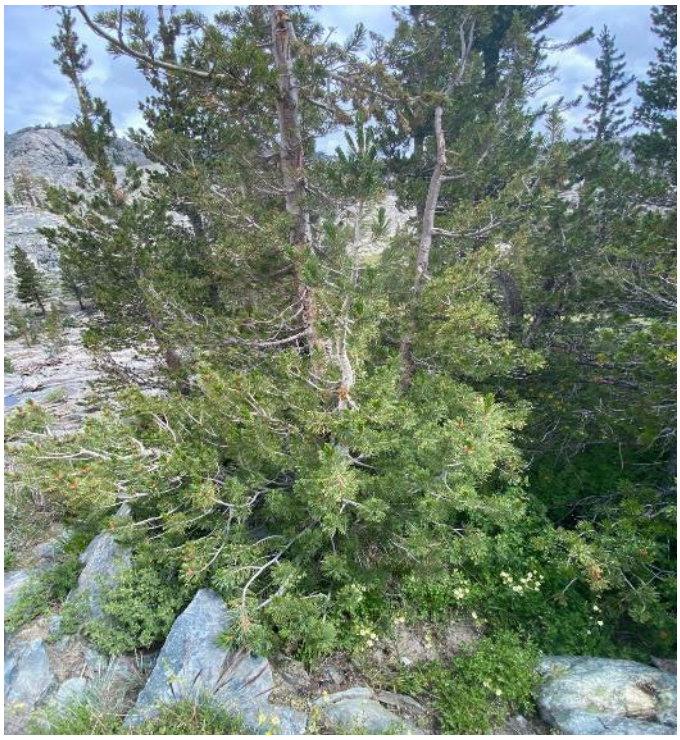
Mature whitebark pine cluster found in the PIAL 1 polygon (left). This habitat is on a north- facing slope in a Lodgepole Pine / Subalpine Conifer alliance. Large mature whitebark pines can be seen in the background (right)

Mature whitebark pine (left) and whitebark pine cone (right) found in PIAL 2 polygon. This habitat is on a south-facing slope in the Subalpine Conifer Alliance.

Mature whitebark pine growing above Rush Meadows Dam on south facing rocky slope.

Mature whitebark pine found in PIAL 6 polygon. Habitat is south facing and in the Alpine Grasses and Forbs alliance.

Rush Meadows Dam



Unknown five-needle pine cluster found in U5NP 3 polygon near Rush Meadows Dam. This habitat is on a northwest-facing slope in a Lodgepole Pine Alliance.

Whitebark pine found in the PIAL 7 polygon. This habitat is on a south facing slope in a barren area.

Unknown five-needle pine growing out of rocks near Rush Meadows Dam in the PIAL 9 polygon.

Rush Creek Below Rush Meadows Dam

Clump of mature whitebark pines found along the south shore of Rush Creek near Rush Meadows Dam. The habitat is north facing and within the Lodgepole Pine Alliance.

Mature whitebark pine found in PIAL 12 polygon. Thia habitat is along the south shore (north-facing aspect) of Rush Creek in the Lodgepole Pine Alliance.

Mature whitebark pine clump found in polygon PIAL 18. This habitat is along the south shore of Rush Creek (north-facing slope) and within the Lodgepole Pine Alliance.

Mature whitebark pine found in PIAL 22 polygon (left) with a whitebark pine cone found nearby (right). This habitat is along the north shore of Rush Creek (southwest-facing aspect) within the Lodgepole Pine Alliance.

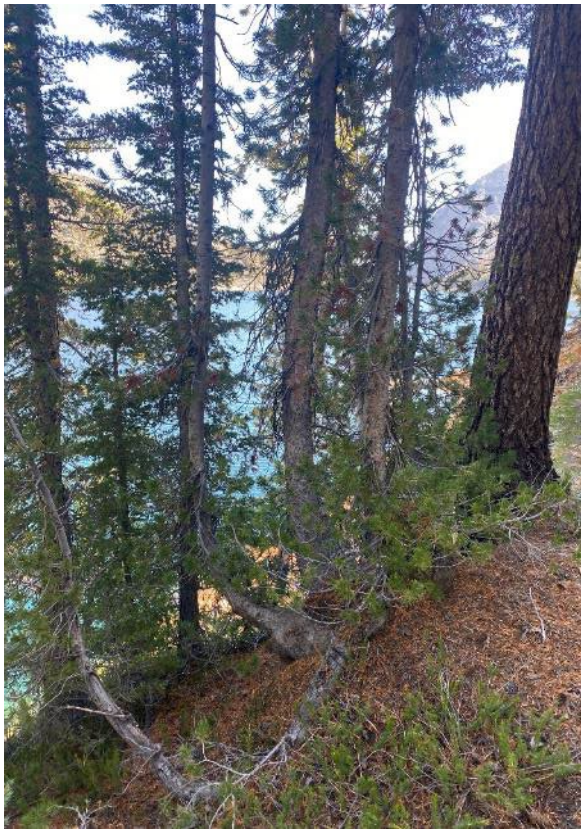
Mature whitebark pine in the polygon PIAL 10. This habitat is on the north shore of Rush Creek (south-facing slope) and within the Willow (Shrub) Alliance.

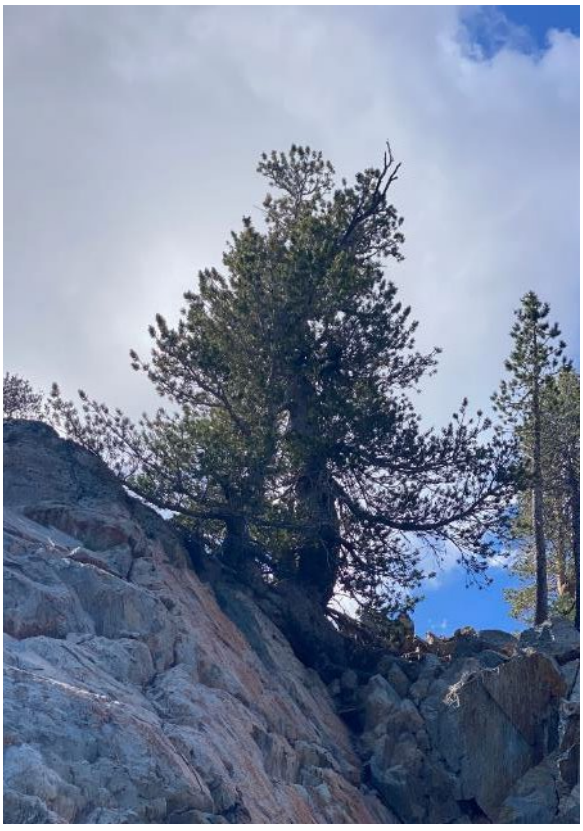
Gem Lake

Mature whitebark pine (left) and nearby whitebark pinecone (right) found along north shore of Gem Lake in the Low Sagebrush Alliance.

Mature whitebark pine found on northeast shore of Gem Lake (southwest-facing slope) within the Subalpine Conifer Alliance.

Mature whitebark pine found in polygon PIAL 34. This habitat is on the north shore of Gem Lake within the Subalpine Conifer Alliance.





Mature whitebark pines found in the PIAL 30 polygon. Thia habitat is on the southwest shore of Gem Lake (northeast-facing slope) and within the Subalpine Conifer Alliance

Gem Dam

Whitebark pine habitat around Gem Dam and Rush Creek. Mature whitebark pine trees were observed around Rush Creek. Unknown five-needle pines were observed growing out of rocky areas around Gem Dam and along Rush Creek.

Agnew Lake

Mature whitebark pine found in polygon PIAL 38. This habitat is on the southeast shore of Agnew Lake (northwest-facing slope) and within the Lodgepole Pine Alliance.

Unknown five-needle pine found in the polygon U5NP 11 near Rush Creek below Gem Dam. This habitat is on a north-facing slope in the Subalpine Conifer Alliance.

APPENDIX E

Whitebark Pine and Unknown Five-Needle Pine Populations Identified in the FERC Project Boundary

Table E-1. Whitebark Pine and Unknown Five-Needle Pine Populations Identified in the FERC Project Boundary

Scientific Name	Common Name	Population ID	Area		Number of Individuals/Percent Cover		Vegetation Alliance
			Acres	Square Feet	Confirmed Whitebark Pines	Unknown Five-needle Pines	
Rush Meadows Dam Area							
Pinus albicaulis	Whitebark pine	PIAL 1	19.52	850,313	658	801	Lodgepole Pine, Subalpine Conifer
		PIAL 2	0.69	29,924	6	3	Subalpine Conifer
		PIAL 3	1.18	51,224	5	14	Subalpine Conifer
		PIAL 4	0.09	3,781	1	1	Subalpine Conifer
		PIAL 5	1.07	46,419	29	19	Lodgepole Pine, Subalpine Conifer
		PIAL 6	0.15	6,722	2	3	Alpine Grasses and Forbs
		PIAL 7	0.05	2,150	1	1	Willow (Shrub)
		PIAL 8	0.10	4,295	6	3	Subalpine Conifer
		PIAL 9	0.17	7,206	1	3	Willow (Shrub)
Pinus spp.	Unknown five-needle pine	U5NP 1	0.03	1,331	0	2	Subalpine Conifer
		U5NP 2	0.04	1,821	0	1	Barren
		U5NP 3	0.05	2,333	0	4	Subalpine Conifer
Rush Creek Below Rush Meadows Dam							
Pinus albicaulis	Whitebark pine	PIAL 10	0.11	4,666	12	9	Willow (Shrub)
		PIAL 11	0.03	1,317	2	5	Willow (Shrub)
		PIAL 12	1.89	82,219	20	180	Lodgepole Pine
		PIAL 13	0.20	8,802	3	5	Lodgepole Pine, Willow (Shrub)
		PIAL 14	0.01	402	1	0	Lodgepole Pine
		PIAL 15	0.21	9,296	4	3	Lodgepole Pine, Willow (Shrub)
		PIAL 16	0.04	1,877	2	0	Subalpine Conifer
		PIAL 17	0.20	8,724	1	8	Lodgepole Pine, Willow (Shrub)
		PIAL 18	0.35	15,175	13	12	Lodgepole Pine, Willow (Shrub)
		PIAL 19	0.02	884	2	1	Lodgepole Pine, Subalpine Conifer
		PIAL 20	0.04	1,525	1	3	Lodgepole Pine
		PIAL 21	0.33	14,272	6	7	Lodgepole Pine
		PIAL 22	0.14	5,924	3	2	Lodgepole Pine
		PIAL 23	0.02	893	1	0	Lodgepole Pine
		PIAL 24	1.09	47,497	6	15	Lodgepole Pine
		PIAL 25	0.02	808	1	2	Lodgepole Pine
		PIAL 26	0.19	8,161	10	40	Lodgepole Pine
		PIAL 27	0.64	28,078	12	45	Lodgepole Pine, Subalpine Conifer
Pinus spp.	Unknown five-needle pine	U5NP 4	0.01	566	0	3	Lodgepole Pine, Willow (Shrub)
		U5NP 5	0.05	2,342	0	3	Lodgepole Pine, Willow (Shrub)
		U5NP 6	0.004	179	0	1	Lodgepole Pine
		U5NP 7	0.01	376	0	2	Lodgepole Pine
		U5NP 8	0.03	1,054	0	3	Lodgepole Pine, Subalpine Conifer

Scientific Name	Common Name	Population ID	Area		Number of Individuals/Percent Cover		Vegetation Alliance
			Acres	Square Feet	Confirmed Whitebark Pines	Unknown Five-needle Pines	
Gem Dam Area							
Pinus albicaulis	Whitebark pine	PIAL 28	3.50	152,443	44	65	Lodgepole Pine, Subalpine Conifer, Alpine Mixed Scrub
		PIAL 29	2.17	94,313	5	7	Subalpine Conifer
		PIAL 30	7.13	310,555	132	216	Subalpine Conifer,
		PIAL 31	7.38	321,508	48	92	Lodgepole Pine, Subalpine Conifer, Low Sagebrush,
		PIAL 32	1.43	62,472	66	66	Subalpine Conifer
		PIAL 33	0.21	9,361	10	9	Subalpine Conifer
		PIAL 34	1.48	64,350	10	11	Subalpine Conifer
		PIAL 35	0.54	23,400	4	8	Low Sagebrush, Curlleaf Mountain Mahogany
		PIAL 36	1.32	57,345	54	56	Subalpine Conifer
		PIAL 37	1.04	45,130	9	18	Subalpine Conifer
Pinus spp.	Unknown five-needle pine	U5NP 9	0.54	23,535	0	11	Barren
		U5NP 10	0.22	9,616	0	2	Curlleaf Mountain Mahogany
Agnew Dam Area							
Pinus albicaulis	Whitebark pine	PIAL 38	0.86	37,277	3	19	Lodgepole Pine
Pinus spp.	Unknown five-needle pine	U5NP 11	0.81	35,179	0	14	Subalpine Conifer
Total Trees in Study Area							
Pinus albicaulis	Whitebark pine	–	55.57	2,420,709	1,194		—
Pinus spp.	Unknown five-needle pine	–	57.30	2,495,869	1,798		—

[1] Trees missing conclusive features for identification (i.e., mature bark and cones) were classified as unknown five-needle pines consistent with INF guidance.

APPENDIX F

Presence of SNYLF Primary Constituent Elements (PCEs) within Habitats in the Study Area

Table F-1. Presence of SNYLF Primary Constituent Elements (PCEs) within Habitats in the Study Area

SNYLF Primary Constituent Elements (PCEs)[1]	Lake/Stream Segment Name and Associated Features																													
	Waugh Lake							Rush Creek Below Rush Meadows Dam					Gem Lake				Rush Creek Below Gem Dam	Agnew Lake		Rush Creek Below Agnew Dam	Rush Creek Horsetail Falls	Rush Creek Above Silver Lake				Silver Lake	Rush Creek Below Silver Lake	South Rush Creek	
	Rush Creek Above Waugh Lake	Waugh Lake	Perennial Stream 1	Pond 1	Perennial Stream 2[2]	Perennial Stream 3	Perennial Stream 4[3]	Rush Creek below Rush Meadows Dam 1	Rush Creek below Rush Meadows Dam 2	Rush Creek below Rush Meadows Dam 3	Perennial Stream 5	Meadow 1	Gem Lake	Crest Creek	Perennial Stream 6	Perennial Stream 7	Rush Creek below Gem Dam	Agnew Lake	Perennial Stream 8	Rush Creek below Agnew Dam	Rush Creek Horsetail Falls	Perennial Stream 9[4]	Rush Creek above Silver Lake 1	Rush Creek above Silver Lake 2, Meadow 2, and Reversed Creek	Rush Creek above Silver Lake 3 and Meadow 3	Silver Lake	Rush Creek Below Silver Lake	South Rush Creek and Meadow 4	Perennial Stream 10
Breeding PCEs (Most Critical)																														
For lakes, be of sufficient depth not to freeze solid (to the bottom) during the winter (no less than 1.7 meters (5.6 feet) but generally greater than 2.5 meters (8.2 feet), and optimally 5 meters (16.4 feet) or deeper (unless some other refuge from freezing is available))	X	X	X	X				X	X	X	X		X				X	X		X			X	X	X	X	X			
Be free of introduced predators				X		X	X							X	X							X						X	X
Maintain water during the entire tadpole growth phase (a minimum of 2 years). During periods of drought, these breeding sites may not hold water long enough for individuals to complete metamorphosis, but they may still be considered essential breeding habitat if they provide sufficient habitat in most years to foster recruitment within the reproductive lifespan of individual adult frogs	X	X	X	X				X	X	X	X	X	X	X			X	X		X			X	X	X	X	X			X
All Critical Breeding PCEs Present?	*No*	*No*	*No*	*Yes*	*No*	*No*	*No*	*No*	*No*	*No*	*No*	*No*	*No*	*No*	*No*	*No*	*No*	*No*	*No*	*No*	*No*	*No*	*No*	*No*	*No*	*No*	*No*	*No*	*No*	*No*

SNYLF Primary Constituent Elements (PCEs)[1]	Lake/Stream Segment Name and Associated Features																												
	Waugh Lake							Rush Creek Below Rush Meadows Dam					Gem Lake				Rush Creek Below Gem Dam	Agnew Lake		Rush Creek Below Agnew Dam	Rush Creek Horsetail Falls	Rush Creek Above Silver Lake				Silver Lake	Rush Creek Below Silver Lake	South Rush Creek	
	Rush Creek Above Waugh Lake	Waugh Lake	Perennial Stream 1	Pond 1	Perennial Stream 2[2]	Perennial Stream 3	Perennial Stream 4[3]	Rush Creek below Rush Meadows Dam 1	Rush Creek below Rush Meadows Dam 2	Rush Creek below Rush Meadows Dam 3	Perennial Stream 5	Meadow 1	Gem Lake	Crest Creek	Perennial Stream 6	Perennial Stream 7	Rush Creek below Gem Dam	Agnew Lake	Perennial Stream 8	Rush Creek below Agnew Dam	Rush Creek Horsetail Falls	Perennial Stream 9[4]	Rush Creek above Silver Lake 1	Rush Creek above Silver Lake 2, Meadow 2, and Reversed Creek	Rush Creek above Silver Lake 3 and Meadow 3	Silver Lake	Rush Creek Below Silver Lake	South Rush Creek and Meadow 4	Perennial Stream 10
Other Breeding PCEs																													
Maintain a natural flow pattern, including periodic flooding, and have functional community dynamics in order to provide sufficient productivity and a prey base to support the growth and development of rearing tadpoles and metamorphs	X		X	X	X	X	X				X	X		X	X	X		X				X					X		X
Contain bank and pool substrates consisting of varying percentages of soil or silt, sand, gravel, cobble, rock and boulders	X		X	X	X		X	X		X	X	X		X	X	X		X	X	X				X	X	X	X	X	X
Contain shallower microhabitat with solar exposure to warm lake areas and to foster primary productivity of the food web	X	X	X	X	X		X	X		X	X	X	X	X	X	X		X	X	X				X	X	X	X	X	X
Contain open gravel banks and rocks or other structures projecting above or just beneath the surface of the water for adult sunning posts	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X		X	X	X				X	X	X	X		
Contain aquatic refugia, including pools with bank overhangs, downfall logs or branches, or rocks and vegetation to provide cover from predators	X		X	X	X	X	X	X		X	X	X		X	X	X		X	X	X		X	X	X	X	X	X	X	X
Contain sufficient food resources to provide for tadpole growth and development	X	X	X	X				X		X	X	X		X		X		X		X			X	X	X	X	X	X	X
Total Number of Breeding PCEs Met (out of a maximum of 9)	*8*	*5*	*8*	*9*	*5*	*4*	*6*	*7*	*2*	*7*	*8*	*7*	*4*	*8*	*6*	*6*	*2*	*7*	*5*	*7*	*0*	*3*	*4*	*7*	*7*	*7*	*8*	*5*	*7*

SNYLF Primary Constituent Elements (PCEs)[1]	Lake/Stream Segment Name and Associated Features																													
	Waugh Lake							Rush Creek Below Rush Meadows Dam					Gem Lake				Rush Creek Below Gem Dam	Agnew Lake		Rush Creek Below Agnew Dam	Rush Creek Horsetail Falls	Rush Creek Above Silver Lake				Silver Lake	Rush Creek Below Silver Lake	South Rush Creek	
	Rush Creek Above Waugh Lake	Waugh Lake	Perennial Stream 1	Pond 1	Perennial Stream 2[2]	Perennial Stream 3	Perennial Stream 4[3]	Rush Creek below Rush Meadows Dam 1	Rush Creek below Rush Meadows Dam 2	Rush Creek below Rush Meadows Dam 3	Perennial Stream 5	Meadow 1	Gem Lake	Crest Creek	Perennial Stream 6	Perennial Stream 7	Rush Creek below Gem Dam	Agnew Lake	Perennial Stream 8	Rush Creek below Agnew Dam	Rush Creek Horsetail Falls	Perennial Stream 9[4]	Rush Creek above Silver Lake 1	Rush Creek above Silver Lake 2, Meadow 2, and Reversed Creek	Rush Creek above Silver Lake 3 and Meadow 3	Silver Lake	Rush Creek Below Silver Lake	South Rush Creek and Meadow 4	Perennial Stream 10
Non-Breeding PCEs																														
Contain bank and pool substrates consisting of varying percentages of soil or silt, sand, gravel, cobble, rock and boulders	X		X	X	X		X	X		X	X	X		X	X	X		X	X	X				X	X	X	X	X	X
Contain open gravel banks and rocks or other structures projecting above or just beneath the surface of the water for adult sunning posts	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X		X	X	X				X	X	X	X		
Contain aquatic refugia, including pools with bank overhangs, downfall logs or branches, or rocks and vegetation to provide cover from predators	X		X	X	X	X	X	X		X	X	X		X	X	X		X	X	X		X	X	X	X	X	X	X	X
Contain overwintering refugia, where thermal properties of the microhabitat protect hibernating life stages from winter freezing, such as crevices or holes within bedrock, in and near shore	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X		X			X				
Contain sufficient food resources to support juvenile and adult foraging	X		X	X	X	X	X	X		X	X	X		X	X	X		X	X	X		X	X	X	X	X	X	X	X
Contains streams, stream reaches, or wet meadow habitats that can function as corridors for movement between aquatic habitats used as breeding or foraging sites	X	X	X	X	X		X	X		X	X	X	X	X	X	X	X	X	X			X	X	X	X	X	X	X	X
Total Number of Non-Breeding PCEs Met (out of a maximum of 6)	*6*	*3*	*6*	*6*	*6*	*4*	*6*	*6*	*1*	*6*	*6*	*6*	*3*	*5*	*6*	*5*	*2*	*6*	*5*	*5*	*0*	*4*	*3*	*5*	*6*	*5*	*5*	*4*	*4*

SNYLF Primary Constituent Elements (PCEs)[1]	Lake/Stream Segment Name and Associated Features																												
	Waugh Lake							Rush Creek Below Rush Meadows Dam					Gem Lake				Rush Creek Below Gem Dam	Agnew Lake		Rush Creek Below Agnew Dam	Rush Creek Horsetail Falls	Rush Creek Above Silver Lake				Silver Lake	Rush Creek Below Silver Lake	South Rush Creek	
	Rush Creek Above Waugh Lake	Waugh Lake	Perennial Stream 1	Pond 1	Perennial Stream 2[2]	Perennial Stream 3	Perennial Stream 4[3]	Rush Creek below Rush Meadows Dam 1	Rush Creek below Rush Meadows Dam 2	Rush Creek below Rush Meadows Dam 3	Perennial Stream 5	Meadow 1	Gem Lake	Crest Creek	Perennial Stream 6	Perennial Stream 7	Rush Creek below Gem Dam	Agnew Lake	Perennial Stream 8	Rush Creek below Agnew Dam	Rush Creek Horsetail Falls	Perennial Stream 9[4]	Rush Creek above Silver Lake 1	Rush Creek above Silver Lake 2, Meadow 2, and Reversed Creek	Rush Creek above Silver Lake 3 and Meadow 3	Silver Lake	Rush Creek Below Silver Lake	South Rush Creek and Meadow 4	Perennial Stream 10
Upland Habitat																													
In areas that contain riparian habitat and upland vegetation (for example, mixed conifer, ponderosa pine, montane conifer, and montane riparian woodlands), the canopy overstory should be sufficiently thin (generally not to exceed 85 percent) to allow sunlight to reach the aquatic habitat and thereby provide basking areas for the species	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X		X	X	X		X	X	X
Upland areas (catchments) adjacent to and surrounding both breeding and nonbreeding aquatic habitat that provide for the natural hydrologic regime (water quantity) of aquatic habitats. The upland areas should also allow for the maintenance of sufficient water quality to provide for the various life stages of the frog and its prey base	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Total Number of Upland PCEs Met (out of a maximum of 2)	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*1*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*2*	*1*	*2*	*2*	*2*	*2*	*2*	*2*	*2*

[1] U.S. Fish and Wildlife Service (USFWS). 2016. Designation of Critical Habitat for the Sierra Nevada Yellow-Legged Frog, the Northern Distinct Population Segment of the Mountain Yellow-Legged Frog, and the Yosemite Toad; Final Rule (FR, Vol. 81, No. 166, Pages 59046–59119), August 26, 2016.

[2] Perennial Stream 2 did not contain water on the late season VES in 2024 and is better classified as an intermittent stream. The following changes were made from the determination of PCEs in 2023: 1) the stream does not maintain water for the entire tadpole growth phase and 2) does not contain sufficient food resources for tadpole development.

[3] Perennial Stream 4 did not contain water on the late season VES in 2024 and is better classified as an intermittent stream. However, no PCEs were changed from 2023.

[4] Perennial Stream 9 did not contain water on the late season VES in 2024 and is better classified as an intermittent stream. The only change made from 2023 is that the stream does not maintain water for the entire tadpole growth phase.

APPENDIX G

Representative Photographs of SNYLF Habitats in the Study Area

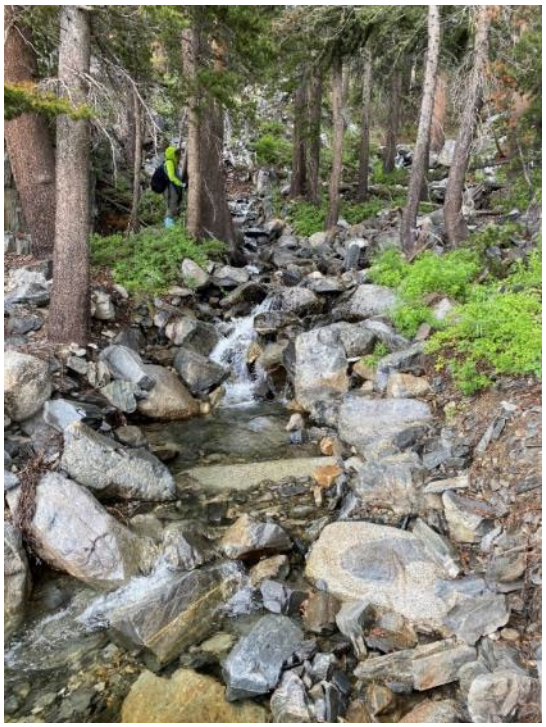
Waugh Lake

Rush Creek Above Waugh Lake. Representative photo of Rush Creek above Waugh Lake. Predatory trout populations were observed; therefore, this habitat did not meet the criteria for breeding habitat. Other breeding PCEs such as shallower microhabitats, aquatic refugia, and invertebrate prey resources were observed. This habitat contained all the non-breeding PCEs; therefore, this stream is classified as non-breeding habitat.

Waugh Lake. Representative photo of Waugh Lake from the south shore. This location contains some, but not all, of both the breeding and non-breeding PCEs for SNYLF. Predatory trout populations were observed in this lake; therefore, this habitat did not meet the criteria for breeding habitat. This lake is classified as non-breeding habitat, but lacks some PCEs such as abundant cover objects, abundant invertebrate prey resources, and a variety of bank and pool substrates.

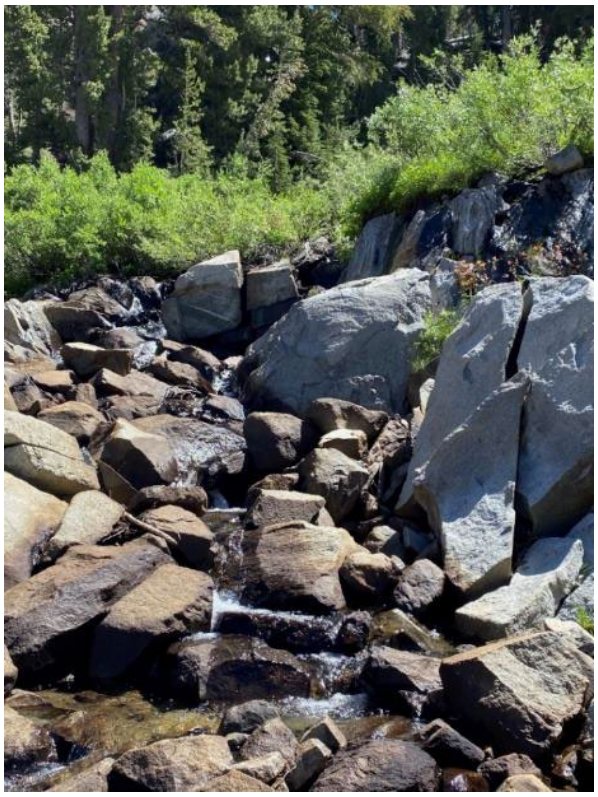
Perennial Stream 1. Representative photos of the perennial stream at the west end of Waugh Lake. This habitat contains all non-breeding PCEs and some, but not all, of the breeding PCEs for SNYLF. Predatory trout populations were observed in this stream; therefore, it did not meet the criteria for breeding habitat. This stream is classified as non-breeding habitat.

Pond 1. Representative photo of an isolated pond located at the southwest end of Waugh Lake. This habitat contains all of the breeding and non-breeding PCEs for SNYLF. It is deep enough to support tadpole overwintering for multiple years and lacks predatory fish populations. This pond is classified as breeding habitat for SNYLF.



Perennial Stream 2. Representative photo of the perennial stream midway along the north shore of Waugh Lake. This habitat contains all non-breeding PCEs, and some, but not all, breeding PCEs for SNYLF. Predatory trout populations were observed in this stream. Other breeding PCEs such as aquatic refugia, shallow water areas, and deep pool habitat were observed. This stream is classified as non-breeding habitat.

Perennial Stream 3. Representative photo of the perennial stream midway along the south shore of Waugh Lake. This location contains some but not all, of the breeding and non-breeding PCEs for SNYLF. This stream is not deep enough to support tadpole overwintering and therefore does not meet criteria for breeding habitat. This stream is classified as non-breeding habitat, but lacks some non-breeding PCEs such as a variety of bank and pool substrates.



Perennial Stream 4. Representative photo of the small perennial stream on the southeast side of Waugh Lake. This habitat contains all of the non-breeding PCEs, and some, but not all, of the breeding PCEs for SNYLF. Perennial Stream 4 was not deep enough to support tadpole overwintering or maintain water throughout the life phase of SNYLF. Therefore, this stream is classified as non-breeding habitat.

Rush Creek Below Rush Meadows Dam

Rush Creek Below Rush Meadows Dam 1. Representative photo of the upper section of Rush Creek below Rush Meadows Dam. Predatory trout were observed at this location; therefore, this habitat does not meet the criteria for breeding habitat. This habitat contains all non-breeding PCEs, and some, but not all, of the breeding PCEs for SNYLF. This stream is classified as non-breeding habitat.

Perennial Stream 5. Representative photo of the perennial stream near the temporary pack camp. Predatory trout were observed at this location; therefore, this habitat does not meet the criteria for breeding habitat. This habitat contains all non-breeding PCEs, and some, but not all, of the breeding PCEs for SNYLF. This stream is classified as non-breeding habitat.

Rush Creek Below Rush Meadows Dam 2. Representative photo of the middle section of Rush Creek below Rush Meadows Dam. Predatory trout were observed at this location; therefore, this habitat does not meet the criteria for breeding habitat. This habitat contains some, but not all, of the breeding and non-breeding PCEs for SNYLF. This habitat is located in a steep bedrock canyon with few pooled areas, vegetative cover, and logs/rocks for basking and sunning. This stream is classified as non-breeding habitat, but would most likely be used for dispersal.

Rush Creek Below Rush Meadows Dam 3. Representative photo of the lower section of Rush Creek below Rush Meadows Dam. Predatory trout were observed at this location; therefore, this habitat does not meet the criteria for breeding habitat. This habitat contains all non-breeding PCEs, and some, but not all, of the breeding PCEs for SNYLF. This stream is classified as non-breeding habitat.

Meadow 1. Representative photo of the meadow near the temporary pack camp along Rush Creek Trail. Predatory trout were observed at this location and the central pool is not deep enough to prevent freezing during the winter; therefore, this habitat does not meet the criteria for breeding habitat. This habitat contains all non-breeding PCEs, and some, but not all, of the breeding PCEs for SNYLF. This stream is classified as non-breeding habitat.

Gem Lake

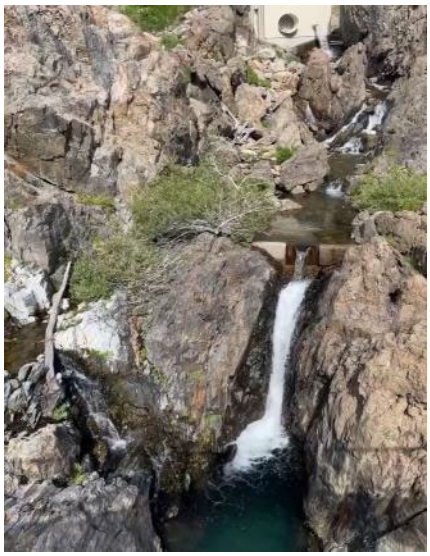
Gem Lake. Representative photo of Gem Lake from northeast corner. Predatory trout were observed at this location; therefore, this habitat does not meet the criteria for breeding habitat. This location contains some, but not all, of the breeding and non-breeding PCEs for SNYLF. Gem Lake lacks many of the preferred PCEs such as abundant cover objects, shallow areas for basking, and abundant invertebrate prey resources. Therefore, this lake is classified as non-breeding habitat but would likely only be used for dispersal or overwintering.

Crest Creek. Representative photo of Crest Creek where it connects with Gem Lake. Because Crest Creek is not deep enough to support tadpole overwintering, this creek does not meet the criteria for breeding habitat. This location contains some, but not all, of the remaining breeding and non-breeding PCEs for SNYLF. Therefore, this creek is classified as non-breeding habitat.

Perennial Stream 6. Representative photo of perennial stream on the south shore of Gem Lake. Perennial Stream 6 is not deep enough to support tadpole overwintering; therefore, this creek does not meet the criteria for breeding habitat. This habitat contains all non-breeding PCEs, and some, but not all, of the breeding PCEs for SNYLF. This stream is classified as non-breeding habitat.

Perennial Stream 7. Representative photo of perennial stream on the south shore of Gem Lake. Predatory trout populations were observed in this stream; therefore this location does not meet the criteria for breeding habitat. This location contains some, but not all, of the remaining breeding and non-breeding PCEs for SNYLF. This stream is classified as non-breeding habitat.

Rush Creek Below Gem Dam



Rush Creek Below Gem Dam. Representative photos of Rush Creek Below Gem Dam from the north shore of Agnew Lake (in background on left) and directly below Gem Dam (right). This location contains some, but not all, of the breeding and non-breeding PCEs for SNYLF. Notably, this stream contains predatory fish populations and lacks suitable cover elements, shallow water areas for basking, and varied bank and pool substrates. Therefore, this stream is classified as non-breeding habitat, but it would most likely be used for dispersal.

Agnew Lake

Perennial Stream 8. Representative photo of perennial stream at the west end of Agnew Lake. Predatory trout populations were observed in this stream; therefore, it does not meet the criteria for breeding habitat. This location contains some, but not all, of the breeding and non-breeding PCEs for SNYLF. This stream is classified as non-breeding habitat.

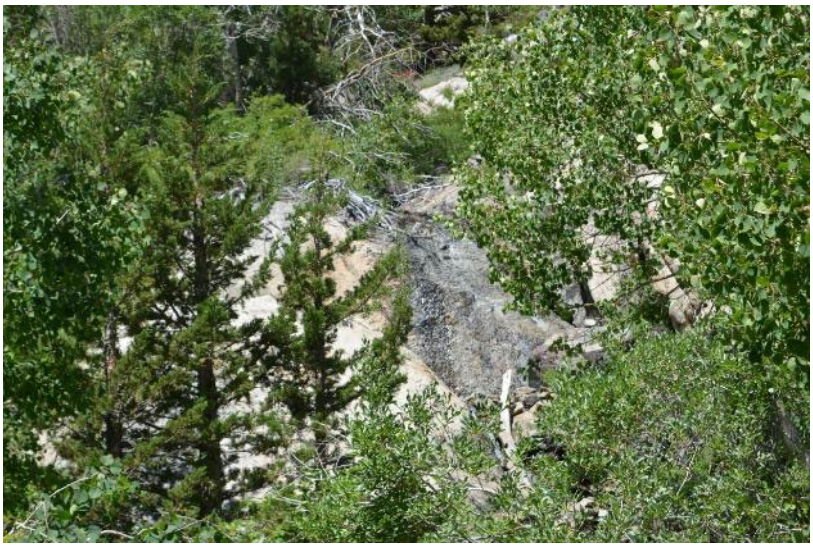
Agnew Lake. Representative photo of Agnew Lake from the southeast shore. Abundant predatory trout populations were observed in this lake; therefore, this habitat does not meet the criteria for breeding habitat. The lake does contain shallow water areas for basking and vegetative cover along the shore. Therefore, this lake is classified as non-breeding habitat.

Rush Creek Below Agnew Dam

Rush Creek Below Agnew Dam. Representative photo of the segment of Rush Creek below Agnew Dam. Predatory trout populations were observed in this stream; therefore, it does not meet the criteria for aquatic breeding habitat. This location contains some, but not all, of the breeding and non-breeding PCEs for SNYLF. This stream is classified as non-breeding habitat, but it is physically isolated from other aquatic habitats by Agnew Dam upstream and Rush Creek Horsetail Falls downstream.

Rush Creek Horsetail Falls

Rush Creek Horsetail Falls. Representative photo of Rush Creek Horsetail Falls from Meadow 3. This location does not contain suitable breeding or non-breeding PCEs for SNYLF. The falls do not provide habitat for SNYLF.



Perennial Stream 9. Representative photo of the perennial stream along the tram line. This location contains some, but not all, of the breeding and non-breeding PCEs for SNYLF. This stream is along a steep gradient for most of the length, going subterranean through the tram line with high vegetative cover. This stream is classified as non-breeding habitat, but would most likely be used only for dispersal.

Rush Creek Above Silver Lake

Rush Creek Above Silver Lake 1. Representative photo of the Rush Creek stream segment near the powerhouse. Predatory trout populations were observed in this stream; therefore, it does not meet the criteria for breeding habitat. This location contains some, but not all, of the breeding and non-breeding PCEs for SNYLF. This stream is classified as non-breeding habitat.

Meadow 2. Representative photo of the wet meadow in the enhancement area. This location does not meet the requirement for breeding habitat because it does not contain water long enough to support multiple years of tadpole development. Pools of water seasonally dry in the fall. This location contains some, but not all, of the breeding and non-breeding PCEs for SNYLF. Oil slicks and other areas of poor water quality were observed in the portion of this meadow that abuts State Route 158. This meadow is classified as non-breeding habitat.

Rush Creek Above Silver Lake 2. Representative photo of the Rush Creek segment in the enhancement area. Predatory trout populations were observed in this stream; therefore, it does not meet the criteria for suitable breeding habitat. This location contains some, but not all, of the remaining breeding and non-breeding PCEs for SNYLF. This stream is classified as non-breeding habitat.

Rush Creek Above Silver Lake 3. Representative photo of the Rush Creek segment connecting the wet meadow above Silver Lake. Predatory trout populations were observed in this stream; therefore, it does not meet the criteria for suitable breeding habitat. This habitat contains all non-breeding PCEs and some, but not all, of the breeding PCEs for SNYLF. This stream is classified as non-breeding habitat.

Meadow 3. Representative photo of the wet meadow above Silver Lake. Predatory trout populations were observed in this stream; therefore, it does not meet the criteria for suitable breeding habitat. This habitat contains all non-breeding PCEs and some, but not all, of the breeding PCEs for SNYLF. This meadow is classified as non-breeding habitat.

Silver Lake

Silver Lake. Representative photo of Silver Lake. Predatory trout populations were observed in this stream; therefore, it does not meet the criteria for suitable breeding habitat. This location contains some, but not all, of the breeding and non-breeding PCEs for SNYLF. This lake is classified as non-breeding habitat.

Rush Creek Below Silver Lake

Rush Creek Below Silver Lake. Representative photo of the Rush Creek segment below Silver Lake. Predatory trout populations were observed in this stream; therefore, it does not meet the criteria for suitable breeding habitat. This location contains some, but not all, of the breeding and non-breeding PCEs for SNYLF. This stream is classified as non-breeding habitat.

South Rush Creek

Meadow 4. Representative photo of wet meadow near South Rush Creek. This location contains some, but not all, of the breeding and non-breeding PCEs for SNYLF. Predatory trout populations were observed in the flooded areas, but flooded areas dried up by late summer. For these reasons, Meadow 4 does not meet the criteria for suitable breeding habitat. This meadow is classified as non-breeding habitat.

South Rush Creek. Representative photos of South Rush Creek in the early season (left) and late season (right). Predatory trout populations were observed in this stream when water was flowing in the area, but the creek dried up by late summer. Therefore, this location does not meet the criteria for suitable breeding habitat. This location contains some, but not all, of the breeding and non-breeding PCEs for SNYLF. This stream is classified as non-breeding habitat.

APPENDIX H

Presence of YT Primary Constituent Elements (PCEs) within Habitats in the Study Area

Table H-1. Presence of YT Primary Constituent Elements (PCEs) within Habitats in the Study Area

YT Primary Constituent Elements (PCEs)[1]	Stream Segment Name															
	Waugh Lake			Rush Creek Below Rush Meadows Dam		Gem Lake	Rush Creek Below Gem Dam	Agnew Lake	Rush Creek Below Agnew Dam	Rush Creek Horsetail Falls	Rush Creek Above Silver Lake		Silver Lake	Rush Creek Below Silver Lake	South Rush Creek	
	LP Meadow 1	Waugh Lake2	Pond 1	Pond 2	Meadow 1	Gem Lake	Rush Creek Below Gem Dam	Agnew Lake	Rush Creek Below Agnew Dam	Pond 33	Meadow 2	Meadow 3	Silver Lake	Rush Creek Below Silver Lake	Meadow 4	South Rush Creek 1
Critical Aquatic Habitat Elements[4]																
Bodies of fresh water, including wet meadows, slow-moving streams, shallow ponds, spring systems, and shallow areas of lakes that: a) Hold water for a minimum of 5 weeks, but more typically 7 to 8 weeks		X	X	X	X							X			X	X
Other Aquatic Habitat Elements																
Bodies of fresh water, including wet meadows, slow-moving streams, shallow ponds, spring systems, and shallow areas of lakes that: a) typically inundated during snowmelt	X	X	X	X	X					X	X	X			X	X
b) Contain sufficient food for tadpole development	X		X	X	X						X	X			X	X
Total Number of Aquatic Habitat Elements (out of a maximum of 3)	*2*	*2*	*3*	*3*	*3*	*0*	*0*	*0*	*0*	*1*	*2*	*3*	*0*	*0*	*3*	*3*
Upland Habitat Elements (areas within 0.78 mile [1.25 km] of breeding habitat)																
Sufficient cover (rodent burrows, logs, rocks, other surface objects) to provide summer refugia	X		X	X	X					X	X				X	X
Foraging habitat	X	X	X	X	X					X	X	X			X	X
Adequate prey resources	X	X	X	X	X					X	X	X			X	X
Physical structure for predator avoidance	X		X	X	X					X	X				X	X
Overwintering refugia for juvenile and adult YT	X		X	X	X					X	X				X	X
Dispersal corridors between breeding habitats and areas of suitable summer and winter refugia and foraging habitat	X	X	X	X	X						X	X			X	X
Upland areas should also maintain sufficient water quality to provide for the various life stages of the YT and its prey base	X	X	X	X	X					X		X			X	X
Total Number of Upland Habitat Elements (out of maximum of 7)	*7*	*4*	*7*	*7*	*7*	*0*[5]	*0*[5]	*0*[5]	*0*[5]	*6*	*6*	*4*	*0*[5]	*0*[5]	*7*	*7*

[1] U.S. Fish and Wildlife Service (USFWS). 2016. Designation of Critical Habitat for the Sierra Nevada Yellow-Legged Frog, the Northern Distinct Population Segment of the Mountain Yellow-Legged Frog, and the Yosemite Toad; Final Rule (FR, Vol. 81, No. 166, Pages 59046–59119), August 26, 2016.

[2] Two *Anaxyrus* spp. tadpoles were observed in a shallow pool in the dewatered southern lakebed of Waugh Lake during VES in 2024. Waugh Lake represents potential marginal breeding habitat for YT. Although this location generally meets the definition of suitable aquatic breeding habitat because it holds water long enough for tadpole development, the lack of aquatic vegetation and woody debris for tadpole food and cover resources make tadpoles vulnerable to predation, which may explain why more tadpoles were not observed. While areas above the historic OHWM of Waugh Lake do provide suitable upland habitat, most of the dewatered lakebed is unvegetated and lacks refugia for juvenile and adult YT.

[3] Pond 3 was observed to hold water for long enough for tadpole development in 2023, but during a more typical water year in 2024, the water in the pond dried quickly and therefore, Pond 3 was determined to lack the critical PCEs of breeding habitat for YT.

[4] Note that during periods of drought or less than average rainfall, aquatic habitats may not hold surface water long enough for individual YT to complete metamorphosis, but they are still considered essential breeding habitat because they provide habitat in most years (USFWS 2016).

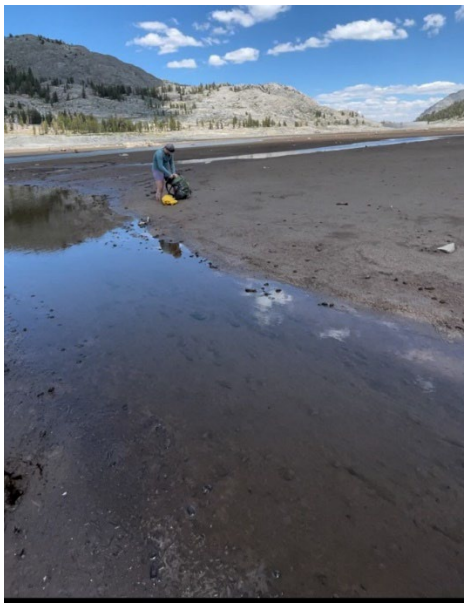
[5] While some upland habitat elements may be present (i.e., rodent burrows, logs, rocks, surface objects), the field survey did not identify suitable aquatic breeding habitat adjacent to these stream segments.

APPENDIX I

Representative Photographs of YT Habitats in the Study Area

Waugh Lake

Lodgepole (LP) Meadow 1. Representative photo of ephemeral stream in lodgepole sapling dominated depression at west end of Waugh Lake. This location contains all upland PCEs and some, but not all, of the aquatic breeding PCEs for YT. The stream does not hold enough water for tadpole development after snowmelt and does not meet the requirement for aquatic breeding habitat. This meadow is classified as a non-breeding meadow habitat.



Waugh Lake: Representative photo of shallow pool within the dewatered lakebed of Waugh Lake that contained two toad tadpoles (*Anaxyrus* spp.) during visual encounter surveys conducted in 2024. This location contains some, but not all, of the aquatic and upland breeding PCEs for YT. Due to the lack of vegetation and surface cover objects, this area does not represent high quality breeding habitat for YT. Based on conversations with CDFW biologist Jim Erdman, it is possible that tadpoles found here washed down from upstream breeding habitats, or that one adult pair used this shallow pool in 2024.

Pond 1. Representative photo of the isolated pond at southwest end of Waugh Lake. This location contains all aquatic breeding and upland PCEs for YT. This pond contains water long enough for tadpole development (at least 5 weeks) and is classified as breeding habitat.

Rush Creek Below Rush Meadows Dam

Pond 2. Representative photo of pond along the south shore of Rush Creek below Rush Meadows Dam. This location contains all aquatic breeding and upland PCEs for YT. This pond contains water long enough for tadpole development (at least 5 weeks) and is classified as breeding habitat.

Meadow 1. Representative photo of meadow on the north shore of Rush Creek Below Rush Meadows Dam. This location contains all aquatic breeding and upland PCEs for YT. This meadow contains water long enough for tadpole development (at least 5 weeks) and is classified as breeding habitat.

Rush Creek Horsetail Falls

Pond 3. Representative photo of ephemeral pond under transmission lines. This location contains all aquatic breeding and upland PCEs for YT. This pond contains water long enough for tadpole development (at least 5 weeks) and is classified as breeding habitat.

Rush Creek Above Silver Lake

Meadow 2. Representative photo of wet meadow within enhancement area. This meadow contains some, but not all, of the aquatic breeding and upland PCEs for YT. Oil slicks were observed in pooled water in portions of the meadow near State Route 158, likely due to runoff from the road. Also, water pools in this meadow dried out in less than 5 weeks and did not meet the criteria for breeding habitat. Therefore, this meadow is classified as a non-breeding meadow habitat.

Meadow 3. Representative photo of the wet meadow connected to Rush Creek above Silver Lake. This meadow contains water long enough for tadpole development (at least 5 weeks) and is therefore classified as aquatic breeding habitat. This location contains all aquatic breeding PCEs and some, but not all, of the upland PCEs for YT. The shoreline of the meadow lacks abundant rodent burrows and other cover objects favored by YT.

South Rush Creek

Meadow 4. Representative photo of wet meadow near South Rush Creek. This location contains all aquatic breeding and upland PCEs for YT. This meadow This meadow contains water long enough for tadpole development (at least 5 weeks) and is classified as breeding habitat.

South Rush Creek. Representative photo of South Rush Creek during July (left) and August (right). South Rush Creek is intermittent and ephemeral pools are present within the stream channel that provide suitable habitat for YT breeding. This meadow contains water long enough for tadpole development (at least 5 weeks) and is therefore classified as breeding habitat. This location contains all remaining aquatic breeding and upland PCEs for YT.