Rush Creek Project, FERC Project No. 1389

AQ 7 – Special-Status Amphibians Technical Study Report

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Table of Contents

List of Appendices

List of Tables

List of Maps

List of Acronyms

CDFW	California Department of Fish and Wildlife
CFP	California Fully Protected
CNDDB	California Natural Diversity Database
ESA	Endangered Species Act
FE	Federal Endangered
FERC	Federal Energy Regulatory Commission
Forest Service	U.S. Forest Service
FSCC	Inyo National Forest Service Species of Conservation Concern
FT	Federal Threatened
GIS	Geographic Information System
GPS	Global Positioning System
INF	Inyo National Forest
IPaC	Information for Planning and Consultation (USFWS)
ISR	Initial Study Report
OHWM	Ordinary High Water Mark
PAD	Pre-Application Document
PBO	Programmatic Biological Opinion
PCEs	Primary Constituent Elements
Project	Rush Creek Hydroelectric Project
SCE	Southern California Edison Company
SNYLF	Sierra Nevada Yellow-legged Frog
SSC	Species of Special Concern
ST	State Threatened
TSP	Technical Study Plan
TSR	Technical Study Report
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VES	Visual Encounter Surveys
YT	Yosemite Toad

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1 INTRODUCTION

This Technical Study Report (TSR) describes the methods and results developed by Southern California Edison Company (SCE) in association with implementation of the AQ 7 – Special-status Amphibian Technical Study Plan (AQ 7 – TSP) for the Rush Creek Hydroelectric Project (Project).

Special-status amphibians addressed in this TSP include the Sierra Nevada yellow-legged frog (SNYLF) (Federal Endangered [FE], State Threatened [ST]) and the Yosemite toad (YT) (Federal Threatened [FT], California Species of Special Concern [SSC]). SNYLF and YT were both listed on the Endangered Species Act (ESA) on April 29, 2014; Critical Habitat was designated for both species on August 26, 2016. No other special-status amphibians have potential to occur in the study area.

The AQ 7 – TSP was approved by the Federal Energy Regulatory Commission (FERC) on October 26, 2022, as part of its Study Plan Determination for the Project. This report provides a detailed description of the methods and results of special-status amphibian studies completed in 2023.

2 STUDY OBJECTIVES

The objectives of the special-status amphibian studies as described in the AQ 7 – TSP are provided below:

- Identify and map potential habitat (including Primary Constituent Elements [PCEs]) for SNYLF and YT.
- Conduct visual encounter surveys (VES) to determine the presence of SNYLF and YT.

3 EXTENT OF STUDY AREA

The study area is defined as follows:

- Documentation of SNYLF habitat (including PCEs) includes areas within, and/or immediately adjacent to, Project-affected stream segments, Project reservoirs, and the potential enhancement area (i.e., portions of the Lower Rush Creek and South Rush Creek).[1] For the purposes of this study, “immediately adjacent” was defined as within 300 feet of the FERC Project boundary and Project-affected stream segments.

[1] The potential enhancement area includes portions of the Rush Creek and South Rush Creek channels upstream and downstream of the State Route 158 crossing. The purpose of the potential enhancement area is to address local flooding of residences during high-flow events, if neccessary.

- The study area for SNYLF VES includes select stream reaches (i.e., sampling locations)[2] (Map AQ 7-1 and Table AQ 7-1); and meadows and meadow systems adjacent to Project-affected stream segments, Project reservoirs, and the potential enhancement area.

- Documentation of YT habitat (including PCEs) includes meadows and meadow systems adjacent to Project-affected stream segments, Project reservoirs, and the potential enhancement area. For the purposes of this study, "immediately adjacent" was defined as within 300 feet of the FERC Project boundary and Project-affected stream segments.

- The study area for YT VES includes meadows and meadow-like systems (i.e., ponds, shallow lakes, ephemeral pools, etc.) adjacent to Project-affected stream segments, Project reservoirs, and the potential enhancement area that contain suitable habitat (PCEs).

- Studies will not be conducted at locations where access is unsafe (e.g., where there is very steep terrain) or on private property for which SCE has not received specific approval from the landowner to enter the property to perform the study.

4 STUDY ELEMENTS COMPLETED

Study elements described in the AQ 7 – TSP were initiated in 2023. A summary of the study elements that have been completed, outstanding study elements, and any deviations or proposed modifications to the AQ 7 – TSP are discussed in the following subsections.

4.1 STUDY ELEMENTS COMPLETED

4.1.1 Sierra Nevada Yellow-legged Frog

- Prepared preliminary maps of potential SNYLF habitat.
- Conducted field survey to document the presence of PCEs in SNYLF habitat.
- Developed a final Geographic Information Systems (GIS) map of SNYLF habitat in the study area.
- Conducted VES for SNYLF at selected sampling locations.
- Documented incidental sightings of SNYLF recorded during other technical studies.

[2] Reaches are shorter sections of streams within a longer segment (length of stream with homogeneous flow) that are delineated due to differences in fluvial geomorphology (e.g., stream gradient, channel confinement). .

4.1.2 Yosemite Toad

- Prepared preliminary maps of potential YT habitat.
- Conducted field survey to document the presence of PCEs in YT habitat.
- Developed a final GIS map of YT habitat in the study area.
- Conducted VES for YT at selected sampling locations.
- Documented incidental sightings of YT recorded during other technical studies.

4.2 VARIANCES FROM THE AQ 7 – TSP

All studies were conducted in accordance with the AQ 7 – TSP.

4.3 OUTSTANDING STUDY ELEMENTS

In California Department of Fish and Wildlife (CDFW) and the State Water Resources Control Board (State Water Board) comments on the Initial Study Report (ISR) filed with FERC on October 26, 2023, they requested that an additional year of amphibian studies to be conducted in 2024 (because of anomalous environmental conditions). The hydrology in 2023 was not an anomalous condition in the study area, rather it was representative of wet year hydrology with flows returning to lower flows in August 2023. SCE believes that the 2023 survey results were representative of the study area because data was collected consistent with the survey requirements established in the U.S. Fish and Wildlife Service (USFWS) survey guidance, as outlined in the 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* (USFWS 2014) (2014 PBO). Specifically, the PBO stipulates that at least one survey for SNYLF and YT be conducted in the spring/summer following a winter that results in 80 percent or greater average snowpack to maximize the probability of detecting the species.

The snowpack results for water year 2023 met the hydrologic condition of 80 percent or greater average snowpack. Both SNYLF and YT are more active and visible when breeding conditions are suitable (i.e., in wet years). In addition, habitat mapping conducted in 2023 is more conservative and inclusive, because more water was present on the landscape than would be present in a drier year. Per the PBO, SNYLF and YT are also more likely to be actively breeding and therefore more likely to be encountered in a wet year. Therefore, visual encounter surveys conducted in 2023 (i.e., wet year) would have the maximum probability of detecting SNYLF and YT in the study area.

Two visual encounter surveys were conducted for SNYLF and YT in 2023, and no individuals were detected. Thus, SCE maintains that a study modification is not justified on the basis of the “anomalous environmental conditions” standard of 18 C.F.R. § 5.15(d).

However, SCE has committed to conducting a second year of amphibian VES in 2024 because additional surveys for SNYLF would meet the requirements for determining occupied habitat under the PBO. Two VES were conducted for both SNYLF and YT in 2023. If no SNYLF are detected in 2024, the study area would be considered as "unutilized potential habitat" for SNYLF in the study area for a period of 10 years, consistent with the 2014 PBO.

Therefore, the following study elements from the AQ 7 – TSP will be conducted in 2024:

- Conduct VES for SNYLF.
    - If SNYLF are detected in Project-affected stream reaches, quantify habitat versus flow relationship in occupied habitat.
- Document incidental sightings of SNYLF during other technical studies conducted in 2024.
- Conduct VES for YT.
- Document incidental sightings of YT during other technical studies conducted in 2024.

5 STUDY APPROACH

The following sections provide details on the study approach for documenting habitat and conducting VES for SNYLF and YT.

5.1 SIERRA NEVADA YELLOW-LEGGED FROG

5.1.1 Prepare Preliminary Maps of Potential SNYLF Habitat

Preliminary maps of potential SNYLF habitat—defined to include breeding, non-breeding, and upland habitats—were developed based on a review of existing literature on SNYLF occurrences and habitat.

The following references were reviewed for information on SNYLF occurrences and habitat requirements:

- Resource agency websites and databases (e.g., the California Natural Diversity Database [CNDDB]) were reviewed to obtain any new data on SNYLF known to occur or potentially occurring in the study area that had become available since the development of the preliminary amphibian occurrence maps for the Rush Creek Project Preliminary Application Document (PAD) (SCE 2021).
- Endangered Species Status for Sierra Nevada Yellow-legged Frog and Northern Distinct Population Segment of the Mountain Yellow-legged Frog, and Threatened Species Status for Yosemite Toad (Federal Register, Volume 79, No. 82, Pages 24256–24310) (USFWS 2014a)

- 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 2014b)

- 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 (Federal Register, Volume 81, No. 166, Pages 59046–59119) (USFWS 2016)

Based on these references, suitable habitat for SNYLF typically occurs above 4,500 feet in elevation and 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. Suitable habitat also includes adjacent areas, up to a distance of 82 feet (25 meters). When water bodies occur within 984 feet (300 meters) 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 and meadow systems, the entire contiguous or proximate areas are suitable habitat for dispersal and foraging.

A combination of sources were reviewed to prepare preliminary maps of SNYLF habitat, including the following:

- Recent Google Earth imagery (2023);

- Riparian features that were delineated during previous SCE studies (SCE 2017a,b);

- Permanent and intermittent watercourses identified on the U.S. Geological Survey's (USGS) National Hydrography Dataset (USGS 2023);

- Wet meadows alliances identified in CalVeg vegetation polygon data (U.S. Forest Service [Forest Service] 2018); and

- Freshwater emergent wetland and freshwater forested/shrub wetlands identified in USFWS's National Wetlands Inventory Data (USFWS 2023).

Once these resources were compiled, preliminary GIS maps were developed showing the location of permanent or intermittent waterbodies and an 82-foot upland habitat buffer around these aquatic features along each of the stream segments identified in Table AQ 7-1.

5.1.2 Conduct Field Survey to Document the Presence of Primary Constituent Elements

Field studies were conducted in July and August 2023 within aquatic habitats identified on the preliminary SNYLF habitat maps. All potential habitat was evaluated for the presence of PCEs for SNYLF. PCEs are defined as the physical or biological features of critical habitat that are essential to the conservation of the species, including but not limited to: (1) space for individual and population growth, and for normal behavior; (2) food, water, air, light, minerals, or other nutritional or physiological requirements; (3) cover or shelter; (4) sites for breeding, reproduction, and rearing of offspring; (5) habitats that are protected from disturbance or are representative of the historic geographic and ecological distributions of a species (USFWS 2016).

PCEs for SNYLF are listed below:

1. 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:

    a. For lakes, be of sufficient depth not to freeze solid (to the bottom) during the winter (no less than 5.6 feet (1.7 meters) but generally greater than 8.2 feet (2.5 meters), and optimally 16.4 feet (5 meters) or deeper (unless some other refuge from freezing is available)).

    b. Maintain a natural flow pattern, including periodic flooding, and have functional community dynamics to provide sufficient productivity and a prey base to support the growth and development of rearing tadpoles and metamorphs.

    c. Be free of introduced predators.

    d. 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.

    e. Contain:

        i. Bank and pool substrates consisting of varying percentages of soil or silt, sand, gravel, cobble, rock, and boulders (for basking and cover);

        ii. Shallower microhabitat with solar exposure to warm lake areas and to foster primary productivity of the food web;

iii. Open gravel banks and rocks or other structures projecting above or just beneath the surface of the water for adult sunning;

iv. Aquatic refugia, including pools with bank overhangs, downfall logs or branches, or rocks and vegetation to provide cover from predators; and

v. Sufficient food resources to provide for tadpole growth and development.

2. Aquatic nonbreeding 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. Aquatic nonbreeding habitat contains:

   a. Bank and pool substrates consisting of varying percentages of soil or silt, sand, gravel, cobble, rock, and boulders (for basking and cover);

   b. Open gravel banks and rocks projecting above or just beneath the surface of the water for adult sunning;

   c. Aquatic refugia, including pools with bank overhangs, downfall logs or branches, or rocks and vegetation to provide cover from predators;

   d. Sufficient food resources to support juvenile and adult foraging;

   e. 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; and

   f. Streams, stream reaches, or wet meadow habitats that can function as corridors for movement between aquatic habitats used as breeding or foraging sites.

3. Upland areas.

   a. Upland areas adjacent to or surrounding breeding and nonbreeding aquatic habitat that provide area for feeding and movement by SNYLF.

      i. For stream habitats, this area extends 82 feet (25 meters) from the bank or shoreline.

      ii. 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.

iii. For areas between proximate (within 984 feet [300 meters]) water bodies (typical of some high mountain lake habitats), the upland area extends from the bank or shoreline between such water bodies.

iv. Within mesic habitats such as lake and meadow systems, the entire area of physically contiguous or proximate habitat is suitable for dispersal and foraging.

b. 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.

A team of two biologists conducted a pedestrian survey of potentially suitable aquatic habitats in the study area and assessed each for the presence of PCEs. The biologists walked around the shorelines of the potential habitat and used binoculars to identify pertinent PCEs within the aquatic features and on the banks. Water depths were approximated using trekking poles (maximum length 2 meters), where safely accessible. Boats were used to access areas on the southern shoreline of Gem and Agnew lakes that are not accessible via the Rush Creek Trail.

Any aquatic habitats that were not identified on the preliminary GIS map, but were determined to have suitable habitat characteristics in the field, were mapped with a submeter-level Trimble Geo7x Global Positioning System (GPS) unit and evaluated for the presence of PCEs.

Portions of Rush Creek that flow through inaccessibly steep terrain and canyons were not surveyed for safety reasons. Portions of Project-affected stream reaches that fall within private property for which SCE had not obtained permission to access were also not surveyed. To the extent possible, potential habitat areas that were inaccessible from the ground were scanned with binoculars from suitable vantage points. Any remaining areas not visible from the ground vantage points were further examined using aerial imagery/photographs to assess potential habitat suitability features.

Field results were recorded on a SNYLF habitat datasheet, which is provided in **Appendix A**. A final table was then developed that provides the presence of the PCEs, as defined above, in each of the aquatic habitats evaluated during the field survey.

5.1.3 Develop GIS Map of Habitat

Data obtained during the field evaluation of SNYLF habitats and the presence of PCEs was used to develop GIS maps of aquatic breeding and non-breeding habitat for SNYLF.

Requirements for SNYLF aquatic breeding habitat are more specific than non-breeding habitats. SNYLF tadpoles take at least 2 years (more typically 3–4 years) to metamorphose into adult life stages and therefore cannot survive in shallower aquatic habitats that experience desiccation in the summer and/or freezing in the winter. SNYLF breeding

populations are also much less likely to persist in water bodies that have abundant introduced predatory fish populations (Knapp and Matthews 2000, Lacan et al. 2008). Because they are the most critical PCEs to the tadpole life cycle of SNYLF, an area was mapped as aquatic breeding habitat only when all of the following PCEs were present:

1. The aquatic habitat was of sufficient depth (i.e., greater than 5.6 feet deep) to not freeze solid during the winter;

2. The aquatic habitat maintains water during the entire tadpole growth phase (i.e., for a minimum of 2 years); and

3. 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).

SNYLF can use a wider variety of non-breeding habitats to support their adult life phases. Adults typically overwinter in deeper water habitats (Matthews and Preisler 2010), but during the active summer season can be found foraging and moving in a wider range of aquatic habitats as long as surface water is present (Brown et al. 2019). Therefore, if aquatic habitats contained any of the non-breeding PCEs, they could potentially provide non-breeding habitat for SNYLF.

Suitable breeding and non-breeding SNYLF habitats in the study area were overlaid on a GIS layer of Project facilities, construction areas, restoration areas, and the potential enhancement area.

5.1.4 Conduct Visual Encounter Surveys

VES were conducted within potentially suitable SNYLF habitat along representative Project-affected stream segments (refer to Table AQ 7-1) (including meadows and meadow systems adjacent to Project-affected stream segments), Project reservoirs, and the potential enhancement area), with a focus on those habitats within USFWS-designated Critical Habitat (refer to Map AQ 7-1). For habitats within Critical Habitat, the entirety of the habitat within the FERC Project boundary were surveyed which could be safely accessed.

The Project-affected stream/lake segments that are within USFWS-designated Critical Habitat for SNYLF include:

- Waugh Lake

- Rush Creek Below Rush Meadows Dam

- Gem Lake (Critical Habitat is located on the shoreline surrounding the reservoir, the reservoir itself is excluded [USFWS 2016])

The Project-affected stream/lake segments that are outside of USFWS-designated Critical Habitat for SNYLF include:

- Rush Creek Below Gem Dam
- Agnew Lake
- Rush Creek Below Agnew Dam
- Rush Creek at Horsetail Falls
- Rush Creek Above Silver Lake
- Rush Creek Below Silver Lake
- South Rush Creek

VES were conducted consistent with the methods described in *A Standardized Protocol for Surveying Aquatic Amphibians* (Fellers and Freel 1995). Two diurnal visits were completed between the onset of the breeding season (shortly after snowmelt) and when tadpoles are beginning to metamorphose (late summer).

Because SNYLF are more likely to be detected during warm conditions, surveys began when thermal conditions were appropriate for amphibian basking (i.e., 9:00 a.m. to 6:00 p.m.). Surveys were not conducted during periods of heavy precipitation, as these conditions may affect detection probability (Fellers and Freel 1995).

Surveys were conducted by a two-person crew using binoculars. The biologists used a "stop and scan method", where after walking 33 to 49 feet (10 to 15 meters), the biologists would stop and scan suitable habitats with binoculars before advancing further. One surveyor slowly walked on each side of a stream, scanning ahead with binoculars to look for basking frogs. Meadows were searched using zig-zag transects that covered the entire meadow, making sure to walk along the main channel of any streams and circling all potholes and pools of water in the meadow. In particular, the banks, rocks, logs, open water bottoms, shallow surfaces, and any floating vegetation were scanned for the presence of SNYLF. Pool habitat was inspected for the presence of tadpoles. Dip-netting was not conducted during surveys, but the surveyors used trekking poles to gently part vegetation to detect movement of any tadpoles or metamorphs.

A SNYLF survey datasheet was completed for each sampling location. All amphibian and reptile species found during surveys were identified to the nearest taxonomic level, and age classes were recorded. If SNYLF were observed, the individual or population was documented with a GPS unit and photographed. A photograph of the habitat where the individual/population was observed was also obtained. CDFW was notified of any SNYLF observations. In addition, a California Native Species Field Survey Form was completed and submitted to the CNDDB.

Upon completion of the VES, a table and map were then developed summarizing the results of surveys and the location of any SNYLF observed.

5.1.5 Quantify Habitat Versus Flow Relationship in Occupied Habitat

No occupied habitat was observed in 2023, therefore the relationships between habitat and flow was not modeled.

5.1.6 Document Incidental Sightings of SNYLF

Upon completion of the 2023 field season, an email was circulated to all field crews on the Rush Creek Project requesting any incidental sightings of SNYLF that were observed during technical study implementation. These sightings were then compiled and added to the map of SNYLF observed during VES, reported to CDFW, and CNDDB forms were completed for each observation.

Any new location data, including data obtained from implementation of other technical studies or from the compilation of incidental amphibian observation data, was recorded, digitized, and incorporated into GIS layers. A final map and table of SNYLF occurrences within 1 mile of the FERC Project boundary was then developed.

5.2 YOSEMITE TOAD

5.2.1 Prepare Preliminary Maps of Potential YT Habitat

Preliminary maps of potential YT habitat—defined to include breeding and upland habitat—were developed based on a review of existing literature on YT occurrences and habitat.

The following references were reviewed for information on YT occurrences and habitat requirements:

- Resource agency websites and databases (e.g., CNDDB) were reviewed to obtain any new data on SNYLF known to occur or potentially occurring in the study area that had become available since the development of the preliminary amphibian occurrence maps for the Rush Creek Project PAD (SCE 2021).

- Endangered Species Status for Sierra Nevada Yellow-legged Frog and Northern Distinct Population Segment of the Mountain Yellow-legged Frog, and Threatened Species Status for Yosemite Toad (Federal Register, Volume 79, No. 82, Pages 24256 – 24310) (USFWS 2014a)

- 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 2014b)

- 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 (Federal Register, Volume 81, No. 166, Pages 59046 – 59119) (USFWS 2016)

Based on these references, suitable breeding and rearing habitat for YT includes 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 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 (1.25 kilometers) depending on surrounding landscapes and dispersal barriers. In some cases, additional areas may be important for dispersal.

A combination of sources were reviewed to prepare preliminary maps of YT habitat, including the following:

- Recent Google Earth imagery (2023);
- Permanent and intermittent lakes and ponds identified on the USGS's National Hydrography Dataset (USGS 2023);
- Wet meadows alliances identified in CalVeg vegetation polygon data (Forest Service 2018); and
- Freshwater emergent wetland and freshwater forested/shrub wetlands identified in USFWS's National Wetlands Inventory Data (USFWS 2023).

Once these resources were compiled, preliminary GIS maps were developed showing the location of permanent or intermittent waterbodies and wet meadows and an 0.78-mile upland habitat buffer around these aquatic features along each of the stream segments and lakes identified in Table AQ 7-1.

5.2.2 Conduct Field Survey to Document the Presence of Primary Constituent Elements

Field studies were conducted in July and August 2023 within aquatic habitats identified on the preliminary YT habitat maps. All potential habitat was evaluated for the presence of PCEs for YT, as defined in *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 (Federal Register, Volume 81, No. 166, Pages 59046 – 59119)* (USFWS 2016).

PCEs for YT are listed below:

1. Aquatic breeding habitat.
    a. This habitat consists of bodies of fresh water, including wet meadows, slow-moving streams, shallow ponds, spring systems, and shallow areas of lakes, that:
        i. Are typically (or become) inundated during snowmelt;
        ii. Hold water for a minimum of 5 weeks, but more typically 7 to 8 weeks; and
        iii. Contain sufficient food for tadpole development.
    b. During periods of drought or less than average rainfall, these breeding sites may not hold surface water long enough for individual Yosemite toads to complete metamorphosis, but they are still considered essential breeding habitat because they provide habitat in wetter years.
2. Upland areas.
    a. 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:
        i. Sufficient cover (including rodent burrows, logs, rocks, and other surface objects) to provide summer refugia,
        ii. Foraging habitat,
        iii. Adequate prey resources,
        iv. Physical structure for predator avoidance,
        v. Overwintering refugia for juvenile and adult YT,
        vi. Dispersal corridors between aquatic breeding habitats,
        vii. Dispersal corridors between breeding habitats and areas of suitable summer and winter refugia and foraging habitat, and
        viii. The natural hydrologic regime of aquatic habitats (the catchment).
    b. These upland areas should also maintain sufficient water quality to provide for the various life stages of the YT and its prey base.

A team of two biologists conducted a pedestrian survey of all potentially suitable aquatic habitats and their surrounding upland habitats in the study area and assessed each for the presence of PCEs.

Any aquatic habitats that were not identified on the preliminary GIS map but were determined to have suitable habitat characteristics in the field were mapped with a submeter-level Trimble Geo7x GPS unit and evaluated for PCEs.

Portions of Rush Creek that flow through inaccessibly steep terrain and canyons were not surveyed for safety reasons. Portions of meadows adjacent to Project-affected stream reaches that fall within private property for which SCE had not obtained permission to access were also not surveyed. To the extent possible, inaccessible areas were scanned with binoculars from suitable vantage points. Any remaining areas not visible from the ground were examined using aerial imagery/photographs to assess potential habitat suitability features.

Field results were recorded on a YT habitat datasheet, which is provided in **Appendix B**. A final table was then developed that provides the presence of the PCEs, as defined above, in each of the aquatic habitats evaluated during the field survey.

5.2.3 Develop GIS Map of Habitat

Data obtained during the field evaluation of YT habitats and the presence of PCEs was used to develop GIS maps of potential aquatic breeding and upland habitat for YT.

YT breed in shallow water habitats that must hold water for a minimum of 5 weeks to support tadpole metamorphosis (USFWS 2014b), otherwise tadpoles can desiccate as the ephemeral ponds dry up (Brown et al. 2015). An area was mapped as aquatic breeding habitat only when the aquatic habitat holds water for a minimum of 5 weeks, but more typically 7 to 8 weeks.

Yosemite toads can use a wide variety of upland habitats surrounding aquatic breeding habitats. Adults have been found in meadows, ephemeral streams, seeps, springs, and dry lupine barren habitats (Liang et al. 2010, Brown et al. 2015). Surface cover objects such as boulders, rocks, logs, talus slopes, and particularly rodent burrows are the important upland habitat elements for YT (Brown et al. 2015). Due to the ubiquitous presence of these features on most landscapes, a buffer of 0.78 mile from suitable aquatic breeding habitat was to delineate potential upland habitat for YT. However, it should be acknowledged that not all areas within potential upland habitat polygons may support such cover features preferred by YT.

Additionally, because there are known occurrences of YT in the Project vicinity upstream of Waugh Lake, we identified whether any portions of the study area are within the 0.78-mile upland dispersal distance of known breeding populations of YT.

Finally, a GIS map was developed showing suitable YT aquatic breeding, upland habitats, and upland habitats within 0.78-mile of known YT breeding populations. These habitats were overlaid on Project facilities, construction areas, restoration areas, and the potential enhancement area.

5.2.4 Conduct Visual Encounter Surveys

VES were conducted within potentially suitable YT habitat along representative Project-affected stream segments (including along Project reservoirs, and the potential enhancement area) (refer to Table AQ 7-1), with a focus on those habitats within USFWS-designated Critical Habitat (refer to Map AQ 7-1). For habitats within Critical Habitat, the entirety of the habitat (i.e., full extent of ponds within the FERC boundary and meadows adjacent to the FERC boundary) was surveyed where safely accessible.

The Project-affected stream/lake segments that are within USFWS-designated Critical Habitat for YT include:

- Waugh Lake
- Rush Creek Below Rush Meadows Dam

The Project-affected stream/lake segments that are outside of USFWS-designated Critical Habitat for YT include:

- Gem Lake
- Rush Creek Below Gem Dam
- Agnew Lake
- Rush Creek Below Agnew Dam
- Rush Creek at Horsetail Falls
- Rush Creek Above Silver Lake
- Rush Creek Below Silver Lake
- South Rush Creek

VES were conducted consistent with the methods described in the *Sierra Nevada Forest Plan Amendment Final Supplemental Environmental Impact Statement – Record of Decision Attachment D* (Record of Decision Attachment D, Forest Service 2004). Surveys were timed to maximize the detection of tadpoles (i.e., when they are large enough to identify easily). Two diurnal visits at each suitable aquatic habitat were completed during the period beginning shortly after snowmelt and ending approximately 6 to 8 weeks into the summer.

Because YT are more likely to be detected during warm conditions, surveys began when thermal conditions were appropriate for amphibian basking (i.e., 9:00 a.m. to 6:00 p.m.). Surveys were not conducted during periods of heavy precipitation, as these conditions may affect detection probability (Fellers and Freel 1995).

Surveys were conducted by a two-person crew using binoculars in appropriate ponds and meadows. The biologists used binoculars to scan aquatic habitats for individuals while walking slowly along mainstream channels and circling all potholes and pools of water (including shallow pools and seeps as shallow as 0.78 inch [2 centimeters] deep). When not following obvious channels, meadows were searched using zig-zag transects (32-foot [10-meter] wide sweeps) that covered the entire meadow. Dip-netting was not conducted during surveys, but the surveyors used trekking poles to gently part vegetation to detect movement of any tadpoles or small metamorphs.

A YT survey datasheet was completed for each study site. All amphibian and reptile species found during surveys were identified to the nearest taxonomic level, and age classes were recorded. If YT were observed, the individual or population was documented with a GPS unit, photographed, and a photograph was taken of the habitat where the individual/population was observed. CDFW was notified of any YT observations. In addition, a California Native Species Field Survey Form was completed and submitted to the CNDDB.

Upon completion of the VES, a table and map were then developed summarizing the results of surveys and the location of any YT observed.

5.2.5 Document Incidental Sightings of YT

Upon completion of the 2023 field season, an email was circulated to all field crews on the Rush Creek Project requesting any incidental sightings of YT observed during technical study implementation. No incidental sightings of YT were reported.

6 RESULTS

This section summarizes the results of the SNYLF and YT habitat surveys and VES for both species.

6.1 SIERRA NEVADA YELLOW-LEGGED FROG

The study area contains potential breeding and non-breeding habitat for SNYLF. Only one isolated pond at the southwest corner of Waugh Lake contains potential breeding habitat for SNYLF. Potential non-breeding habitat was identified along several Project-affected stream segments and the perimeter of lakes in the study area. No SNYLF individuals of any life stage were observed in the study area during VES surveys. SNYLF were incidentally observed by REC-1 survey crews approximately 1 mile west of Waugh Lake near the Pacific Crest Trail. This location overlaps with a known CNDDB occurrence of SNYLF and is the closest known occupied habitat to the study area.

Detailed results of the habitat survey and VES for SNYLF are provided below.

6.1.1 Prepare Preliminary Maps of Potential SNYLF Habitat

In addition to the sections of Rush Creek, preliminary habitat maps identified nine adjacent streams, one adjacent pond, and two adjacent meadow systems as potential habitat for SNYLF in the study area. An upland habitat buffer of 82 feet was applied to all aquatic features identified as potential breeding and non-breeding habitat for SNYLF. This preliminary map of potential SNYLF habitat was used during the field survey to document the presence of PCEs, as described in section 6.1.2 below.

6.1.2 Conduct Field Survey to Document the Presence of Primary Constituent Elements and Develop GIS Map of Habitat

The field survey to document the presence of PCEs at preliminary habitat features was conducted between July 18 and July 22 and August 23 and 28, 2023. This survey was conducted concurrently with VES surveys.

Provided below is a discussion of the results of the characterization of aquatic breeding and non-breeding PCEs at potential SNYLF habitats in the study area. Refer to Table AQ 7-2 for a complete list of breeding, non-breeding, and upland PCEs identified at each of the habitats documented along Project lakes/stream segments.

Aquatic habitats were classified as either potential breeding or non-breeding habitat based on the evaluation of PCEs, as described in Section 5.1.3, above. These classifications were used to develop a map of SNYLF aquatic habitats in the study area. Refer to Maps AQ 7-2a–g for the location of these habitats. Note that upland habitats are also defined for SNYLF as areas within 82 feet of the shoreline of aquatic features, or areas within 984 feet of proximate water bodies (such as high mountain lake and meadow systems). For simplicity, these upland habitats are not shown on Maps AQ 7-2a-g, but it can be assumed that these buffers apply to the aquatic breeding and non-breeding habitats depicted on the maps.

Provided below is a discussion of the results of the characterization of aquatic breeding and non-breeding PCEs at each potential SNYLF habitat along Project-affected stream/lake segments in the study area. Refer to **Appendix C** for photographs of each of the SNYLF aquatic habitats.

Waugh Lake

Waugh Lake is within USFWS-Designated Critical Habitat for SNYLF (refer to Map AQ 7-1). The field survey identified seven habitats that lie within and adjacent the FERC Project boundary in the vicinity of Waugh Lake, including Rush Creek above Waugh Lake, Waugh Lake, four perennial streams (perennial streams 1 – 4), and one isolated pond (Pond 1).

Breeding PCEs

Pond 1 is the only habitat in the study area that contains all three of the critical aquatic breeding features (refer to Section 5.1.3, above) and therefore meets the criteria for aquatic breeding habitat. The pond is deep enough to prevent tadpole freezing during the winter, is free of introduced predators, and maintains water for the entire tadpole growth phase. The pond also contains all of the remaining breeding and all of the non-breeding PCEs such as suitable cover, areas with solar exposure, and food resources for adult and tadpole foraging (refer to Table AQ 7-2 for a complete list of PCEs within Pond 1).

Rush Creek above Waugh Lake, Perennial Stream 1 and Perennial Stream 2, meet all of the aquatic non-breeding PCEs for SNYLF, but all of these habitats contain predatory trout populations (refer to the AQ 6 – Fish Populations TSR for more detailed information on fish abundance in Rush Creek and Waugh Lake) and, therefore, do not meet the criteria for suitable breeding habitat. Perennial Stream 4 is not deep enough to support tadpole overwintering or provide aquatic habitat for the entire tadpole life stage of SNYLF. These features do contain some breeding PCEs such as a variety of bank and pool substrates, aquatic refugia, shallow microhabitats, and invertebrate prey resources (refer to Table AQ 7-2). Therefore, these habitats are classified as suitable non-breeding habitat for SNYLF.

Non-Breeding PCEs

Perennial Stream 3 and Waugh Lake contain some, but not all, of the non-breeding PCEs for SNYLF and are classified as suitable non-breeding habitat for SNYLF. Even though these habitats do not meet all aquatic non-breeding PCEs, they could still be used by SNYLF for dispersal. A further discussion of which breeding and non-breeding PCEs are lacking in these features is provided below:

- Perennial Stream 3 was found to lack a variety of bank and pool substrates, which are preferred habitat elements for SNYLF for basking.

- Waugh Lake contains abundant predatory trout populations and is an impounded feature that experiences wide fluctuations in water levels both within and between seasons. Under current conditions, the lakebed is sometimes filled with water, similar to a reservoir, but is sometimes drawn down resembling a stream feature. The lakebed lacks significant growth of vegetation and woody debris that would provide suitable cover elements for SNYLF. Biologists also noticed a lack of invertebrate prey resources on the shoreline of the lake, most likely because there is such limited vegetative growth.

Refer to Map AQ 7-2a for the location of all aquatic habitats in the vicinity of Waugh Lake.

Rush Creek Below Rush Meadows Dam

Rush Creek Below Rush Meadows Dam is within USFWS-Designated Critical Habitat for SNYLF (refer to Map AQ 7-1). The field survey identified five habitats that lie within and adjacent to the FERC Project boundary in this reach, including three distinct sections of

Rush Creek (1, 2, and 3), a perennial stream (Perennial Stream 5), and one meadow (Meadow 1).

Breeding PCEs

None of these habitats met the critical requirements for suitable aquatic breeding habitat because all of these aquatic features were observed to contain predatory fish populations (refer to the AQ 6 – Fish Populations TSR for more detailed information on fish abundance in Rush Creek Below Rush Meadows Dam). Except for Meadow 1, all of the features are deep enough to provide for tadpole overwintering. These features do contain other breeding PCEs such as a variety of bank and pool substrates, shallower microhabitats, aquatic refugia, and invertebrate prey resources.

Non-breeding PCEs

There are two sections (1 and 3) of Rush Creek Below Rush Meadows Dam that contain all of the aquatic non-breeding PCEs for SNYLF. Perennial Stream 5 and Meadow 1 also contain all of the non-breeding PCEs for SNYLF. These habitats were classified as suitable non-breeding habitat for SNYLF.

Section 2 of Rush Creek Below Rush Meadows Dam runs through a steep channel of incised bedrock, where water moves in cascades at high velocity. Because this section does not contain significant pools, banks, gravel bars, or other features preferred by SNYLF, it does not contain all the breeding and non-breeding PCEs for SNYLF. However, this habitat was classified as non-breeding habitat because it could still be used for dispersal between the other sections of Rush Creek.

Refer to Map AQ 7-2b for the location of habitats in the vicinity of Rush Creek Below Rush Meadows Dam.

Gem Lake

Gem Lake itself is outside of USFWS-designated Critical Habitat for SNYLF (USFWS 2016), but some areas along the shoreline fall within the Critical Habitat (refer to Map AQ 7-1). The field survey identified four habitats that lie within and adjacent to the FERC Project boundary in this reach, including Gem Lake and three perennial streams (Crest Creek and perennial streams 7 and 8).

Breeding PCEs

None of these habitats contained all three of the critical aquatic breeding PCEs (refer to Section 5.1.3, above) for SNYLF for the following reasons:

- Although no predatory fish were observed, Perennial Stream 6 is not deep enough to support tadpole overwintering. Also, this stream was not identified as a perennial or intermittent feature on the USGS National Hydrography Dataset, and in most years, may not typically hold water long enough for the tadpole life phase development. Perennial Stream 6 did support some breeding PCEs such as a

variety of bank and pool substrates, shallow microhabitats, and aquatic refugia. Aquatic invertebrates were not abundant at this location.

- Although no predatory fish were observed, Crest Creek is not deep enough to support tadpole overwintering. None of the pools measured for depth were greater than 5.6 feet deep. Crest Creek did support some breeding PCEs such as a variety of bank and pool substrates, shallow microhabitats, aquatic refugia, and invertebrate prey resources.

- Gem Lake and Perennial Stream 7 were observed to contain predatory fish populations (refer to the AQ 6 – Fish Populations TSR for more detailed information on fish abundance in Gem Lake). Perennial Stream 7 also is not deep enough to support tadpole overwintering. Gem Lake lacked a variety of breeding PCEs such as varied bank and pool substrates, aquatic refugia, and abundant invertebrate prey resources.

Non-breeding PCEs

Perennial Stream 6 contained all of the non-breeding PCEs for SNYLF and was classified as non-breeding habitat for SNYLF.

Gem Lake, Crest Creek, and Perennial Stream 7 contained some, but not all, of the aquatic non-breeding PCEs for SNYLF (refer to Table AQ 7-2). Even though these habitats do not meet all aquatic non-breeding PCEs, they could still be used by SNYLF for dispersal and were therefore classified as non-breeding habitat for SNYLF. A further discussion of which non-breeding PCEs are lacking in these features is provided below:

- The center of Gem Lake is very deep, and the shorelines were observed to contain little invertebrate or algal prey resources. The shoreline lacked a variety of bank and pool substrates; open gravel banks and rocks projecting above the surface; and surface cover objects such as vegetation, logs, and rocks. Gem Lake was eliminated from the designation of Critical Habitat for SNYLF because of the very low recovery potential due to highly fluctuating water levels, recreational use, and distance from extant frog populations (USFWS 2016). Because of these factors, as well as the history of predatory trout stocking, Gem Lake is considered highly unlikely to support the species (USFWS 2016).

- Perennial Stream 7 and Crest Creek contain most of the non-breeding PCEs but lack adult overwintering refugia such as bedrock crevices and deep pools.

Refer to Map AQ 7-2c for the location of habitats in the vicinity of Gem Lake.

Rush Creek Below Gem Dam

Rush Creek below Gem Lake is outside of USFWS-designated Critical Habitat for SNYLF (refer to Map AQ 7-1).

Breeding PCEs

Although Rush Creek below Gem Dam contains pools deep enough for tadpole overwintering, predatory fish were observed where this stream segment outlets into Agnew Lake, therefore, Rush Creek Below Gem Dam does not meet the requirements for suitable breeding habitat. Also, several of the other breeding PCEs were lacking such as shallower microhabitats, aquatic refugia, and abundant invertebrate prey resources (refer to Table AQ 7-2).

Non-breeding PCEs

Rush Creek below Gem Dam does not meet all of the PCEs for non-breeding habitat. Specifically, it lacks cover elements, shallow water areas preferred for adult basking, and abundant invertebrate prey resources. However, even though this habitat does not meet all aquatic non-breeding PCEs, it could still be used by SNYLF for dispersal.

Refer to Map AQ 7-2c for the location of this habitat.

Agnew Lake

Agnew Lake is outside of USFWS-designated Critical Habitat (refer to Map AQ 7-1). The field survey identified two habitats at Agnew Lake that lie within and adjacent to the FERC Project boundary in this reach, including Agnew Lake and a perennial stream (Perennial Stream 8).

Breeding PCEs

Predatory fish species were observed in both habitats (refer to the AQ 6 – Fish Populations TSR for more detailed information on fish abundance in Agnew Lake); therefore, neither habitat is suitable breeding habitat. Perennial Stream 8 also lacks the deep pools required for tadpole overwintering. Other breeding PCEs such as open gravel banks and rocks, aquatic refugia, and shallower microhabitats were present in each habitat (refer to Table AQ 7-2).

Non-breeding PCEs

Agnew Lake contains all of the non-breeding PCEs for SNYLF and contains suitable shallow water areas around the edges of the lake for basking and foraging. Therefore, Agnew Lake was classified as suitable non-breeding habitat.

Perennial Stream 8 contains some, but not all, of the non-breeding PCEs for SNYLF. Specifically, it lacks overwintering refugia such as deep pools and bedrock crevices. However, this stream could still be used as foraging or dispersal habitat and was classified as suitable non-breeding habitat.

Refer to Maps AQ 7-2c–d for the location of habitats in the vicinity of Agnew Lake.

Rush Creek Below Agnew Dam

Rush Creek below Agnew Dam is outside of USFWS-designated Critical Habitat for SNYLF (refer to Map AQ 7-1).

Breeding and Non-breeding PCEs

Rush Creek below Gem Lake was observed to contain predatory fish populations and therefore does not meet requirements for suitable breeding habitat (refer to the AQ 6 – Fish Populations TSR for more detailed information on fish abundance in Rush Creek Below Agnew Dam). Rush Creek below Agnew Lake contains some, but not all, of the non-breeding PCEs for SNYLF. Rush Creek below Agnew Lake is separated from connected aquatic habitats by Agnew Dam and the steep slopes of the surrounding peaks and, therefore, does not contain suitable movement corridors for SNYLF to disperse to other habitats.

Refer to Map AQ 7-2d for the location of this habitat.

Rush Creek Horsetail Falls

Rush Creek Horsetail Falls is outside of USFWS-designated Critical Habitat for SNYLF (refer to Map AQ 7-1). Rush Creek Horsetail Falls does not contain any of the breeding and non-breeding PCEs for SNYLF and is characterized by water moving at high velocity over steep bedrock with little associated aquatic vegetation. Rush Creek Horsetail Falls is located in steep rocky terrain that would likely provide a natural barrier to SNYLF dispersal. Therefore, Rush Creek Horsetail falls was not classified as suitable habitat for SNYLF.

Refer to Map AQ 7-2d for the location of Rush Creek Horsetail Falls.

Rush Creek Above Silver Lake

Rush Creek Above Silver Lake is outside of USFWS-designated Critical Habitat for SNYLF (refer to Map AQ 7-1). The field survey identified seven habitats that lie within and adjacent to the FERC Project boundary in this reach, including three distinct sections of Rush Creek (1, 2, and 3), two meadows (Meadows 2 and 3), Reversed Creek, and one perennial stream (Perennial Stream 9).

Breeding PCEs

None of these aquatic habitats meet the requirements for breeding habitat because they are either too shallow to provide tadpole overwintering (Perennial Stream 9) or contain predatory fish populations (Rush Creek 1, 2, 3; Meadows 2 and 3). In particular, Rush Creek above Silver Lake 3 and Wet Meadow 3 were observed to contain high numbers of predatory fish populations (i.e., several schools of large fish) and abundant evidence of fishing (i.e., fisherman and fishing tackle). Refer to the AQ 6 – Fish Populations TSR for more detailed information on fish abundance in Rush Creek Above Silver Lake. However, these habitats did contain other breeding PCEs such as varied bank and pool

substrates, shallower microhabitats, aquatic refugia, and abundant invertebrate prey resources (refer to Table AQ 7-2).

Non-breeding PCEs

All of these habitats were classified as non-breeding habitats. A discussion of non-breeding PCEs for each feature is provided below.

- The first section of Rush Creek Above Silver Lake (1) lies within the gated powerhouse complex to the west of State Route 158. This section of Rush Creek contains some, but not all, of the non-breeding PCEs for SNYLF. This section of Rush Creek is highly shaded by dense canopy cover and does not provide the sunny microhabitats preferred for basking. However, it could be used for dispersal between more suitable habitats and is therefore classified as non-breeding habitat. Refer to Map AQ 7-2d for the location of this habitat.

- Perennial Stream 9 meets Rush Creek above Silver Lake just inside the FERC boundary to the west of the powerhouse complex. Perennial Stream 9 also meets some, but not all, of the aquatic non-breeding PCEs for SNYLF. Where Perennial Stream 9 crosses the tramway and powerline, it flows in an area with very high canopy cover of aspen and dense understory shrubs. Therefore, it lacks the open canopy preferred for SNYLF basking. However, it could be used for dispersal between more suitable habitats and is therefore classified as non-breeding habitat. Refer to Map AQ 7-2d for the location of this habitat.

- The second section of Rush Creek Above Silver Lake lies within the potential enhancement area to the east of State Route 158. Meadow 2 is bisected by this stretch of Rush Creek. Rush Creek Above Silver Lake 2 and Meadow 2 contain some, but not all, of non-breeding PCEs for SNYLF. Portions of Rush Creek Above Silver Lake 2 and Meadow 2 that are immediately adjacent to State Route 158 were observed to contain oil slicks/residue, most likely due to runoff from the road. However, it could be used for dispersal between more suitable habitats and is therefore classified as non-breeding habitat. Refer to Map AQ 7-2d for the location of these habitats.

- The third section of Rush Creek Above Silver Lake is located downstream of the FERC Project boundary and intersects with a large wet meadow complex (Meadow 3) that lies just south of Silver Lake. These habitats contain all of the aquatic non-breeding PCEs for SNYLF and are classified as non-breeding habitat. Refer to Map AQ 7-2e for the location of these habitats.

Silver Lake

Silver Lake is outside of USFWS-designated Critical Habitat for SNYLF (refer to Map AQ 7-1).

Breeding PCEs

Although it is deep enough to support tadpole overwintering, Silver Lake was observed to contain abundant predatory fish populations and is a well-known destination for recreational fishing; therefore, Silver Lake does not meet all of the requirements for suitable breeding habitat. Other breeding PCEs such as varied bank and pool substrates, shallower microhabitats, aquatic refugia, and invertebrate prey resources were observed.

Non-breeding PCEs

Silver Lake contains some, but not all, of the aquatic non-breeding PCEs for SNYLF. Shallow areas along the shoreline provide basking habitat, while the center of the lake is dark and deep. There are no suitable bedrock crevices along the shoreline for over-wintering refugia and the shoreline is highly developed for recreation, so natural surface cover objects and vegetation is less abundant. However, this habitat could be used for foraging or dispersal and is therefore classified as non-breeding habitat.

Refer to Map AQ 7-2e for the location of this habitat.

Rush Creek Below Silver Lake

Rush Creek Below Silver Lake is outside of USFWS-designated Critical Habitat for SNYLF (refer to Map AQ 7-1).

Breeding PCEs

Although it is deep enough to support tadpole overwintering, Rush Creek Below Silver Lake was observed to contain abundant predatory fish populations (i.e., several schools of large fish) and is known for its recreational fishing. Therefore, Rush Creek below Silver Lake does not meet the requirements for breeding habitat. Refer to the AQ 6 – Fish Populations TSR for more detailed information on fish abundance in Rush Creek Below Silver Lake. Other breeding PCEs such as varied bank and pool substrates, shallower microhabitats, aquatic refugia, and invertebrate prey resources were observed.

Non-breeding PCEs

Rush Creek Below Silver Lake contains some, but not all, of the non-breeding PCEs for SNYLF. Rush Creek Below Silver Lake is located in a valley bottom and lacks suitable overwintering refugia for non-breeding such as bedrock crevices. However, this habitat could be used for foraging or dispersal and is therefore classified as non-breeding habitat.

Refer to Maps AQ 7-2f–g for the location of this habitat.

South Rush Creek

South Rush Creek is outside of USFWS-designated Critical Habitat for SNYLF (refer to Map AQ 7-1).

Breeding PCEs

Aquatic habitats along South Rush Creek did not contain the critical PCEs for breeding habitat for the following reasons:

- South Rush Creek west of State Route 158 is intermittent and would not hold water for the entire tadpole growth phase, particularly as it was intermittent in a very wet year. Wet Meadow 4 contains only ephemeral pools of water that are not suitable for SNYLF breeding. The main stream course of South Rush Creek and pools of water in Meadow 4 observed in July had dried by the August survey. After it merges with Perennial Stream 10, South Rush Creek does not contain pools of sufficient depth to prevent overwintering tadpoles from freezing.

- Perennial Stream 10 does not contain pools of sufficient depth to prevent overwintering tadpoles from freezing.

Non-breeding PCEs

South Rush Creek, the associated Meadow 4, and Perennial Stream 10 contain some, but not all, of non-breeding PCEs for SNYLF. South Rush Creek and Meadow 4 do not contain open gravel banks for sunning, nor crevices in bedrock for overwintering refugia. South Rush Creek east of State Route 158 is perennial after it merges with an un-named perennial stream (Perennial Stream 10), but both lack suitable overwintering refugia such as crevices in bedrock. However, this habitat could be used for foraging or dispersal and is therefore classified as non-breeding habitat.

Refer to Maps AQ 7-2d for the location of habitats in the vicinity of South Rush Creek.

6.1.3 Conduct Visual Encounter Surveys

VES were conducted twice during the season at 25 selected sampling locations. The first VES was conducted between July 18 and July 22, 2023, and the second VES was conducted between August 18 and August 28, 2023.

As described in Section 5.1.3, surveys focused on habitat within Critical Habitat. During the habitat evaluation, it was determined that the majority of Waugh Lake did not contain many of the PCEs for SNYLF habitat (refer to Section 6.1.2, above). Therefore, VES were only conducted at safely accessible locations along the shoreline where suitable cover elements, vegetation, or other characteristics preferred by frogs were observed and the entirety of the shoreline was not surveyed.

VES were not conducted at Gem Lake because the lake itself is excluded from Critical Habitat and was determined unlikely to support SNYLF based on the paucity of non-breeding PCEs (refer to Section 6.1.2, above). Perennial streams that outlet into Gem Lake were surveyed for SNYLF.

No SNYLF of any life stage were identified in the study area. Salmonid fish were observed within 20 of the surveyed habitats (refer to Map AQ 7-2 for locations where fish were observed). Six species of common amphibians and reptiles were observed during visual encounter surveys, including:

- One unknown frog species (dead and in a degraded condition);
- Sierra treefrog (*Pseudacris sierrae*);
- Unknown garter snake species (*Thamnophis* spp.);
- Western terrestrial garter snake (*Thamnophis elegans*);
- Common garter snake (*Thamnophis sirtalis*); and
- Unknown alligator lizard species (*Elgaria* spp.).

Refer to Table AQ 7-3 for the results of early season VES surveys for SNYLF. Refer to Table AQ 7-4 for the results of late-season VES surveys for SNYLF. Refer to **Appendix D** for all SNYLF survey datasheets.

Refer to Map AQ 7-3 for the VES survey area and species observed. Note that Map AQ 7-4 includes both results of VES for both SNYLF and YT. Because there was some overlap in suitable habitats for each species, in several cases VES for SNYLF and YT were conducted simultaneously.

6.1.4 Quantify Habitat Versus Flow Relationship in Occupied Habitat

No occupied SNYLF breeding habitat identified during surveys; therefore, the quantification of habitat versus flow relationship was not conducted.

6.1.5 Document Incidental Sightings of SNYLF

Survey crews conducting REC 1 studies reported an incidental observation of SNYLF on August 31, 2023. SNYLF of all life stages were observed in a meadow complex located just over 1 mile west of Waugh Lake (well outside of the study area). This meadow was previously mapped as occupied by SNYLF in the Rush Creek PAD (SCE 2021). Photographs of the species were verified by a qualified aquatic biologist. Refer to **Appendix E** for the CNDDB form corresponding to this observation. Refer to Map AQ 7-4 for the location of this incidental observation, as well as known SNYLF populations within 1 mile of the FERC Project boundary. Refer to Table AQ 7-5 for a table of known occurrences of SNYLF within 1 mile of the FERC Project boundary.

6.2 YOSEMITE TOAD

The study area contains potential breeding, non-breeding, and upland habitat for YT. There are three ponds and three meadows that are adjacent to Project-affected stream segments and lakes that represent potential breeding habitat for YT. There are also two meadows that represent potential non-breeding habitat. Potential upland habitat is present within 0.78-mile of suitable breeding habitats. No YT individuals of any life stage were observed in the study area during VES surveys, nor were YT observed incidentally during other technical studies conducted in 2023. The nearest known occurrence/breeding population of YT is in a pond approximately 0.7 mile south of Waugh Lake. Therefore, the southern

shoreline of Waugh Lake falls within the upland dispersal distance of known occupied YT habitat. The remainder of Project-affected stream segments and lakes are outside the upland dispersal distance of known occupied YT habitat.

Detailed results of the habitat survey and VES for YT are provided below.

6.2.1 Prepare Preliminary Maps of Potential YT Habitat

In addition to the sections of Rush Creek described in Table AQ 7-1, preliminary habitat maps identified one adjacent pond and two adjacent meadow systems as potential aquatic habitat for YT in the study area. This habitat was then buffered by 0.78 mile for a potential upland habitat buffer. This preliminary map of potential YT habitat was used during the field survey to document the presence of PCEs, as described in section 6.2.2 below.

6.2.2 Conduct Field Survey to Document the Presence of Primary Constituent Elements and Develop GIS Map of Habitat

Provided below is a discussion of YT habitat surveys at each of the stream reaches identified in Table AQ 7-1 followed by discussion of the results of the characterization of aquatic and upland PCEs at potential YT habitats in the study area. The field survey to document the presence of PCEs was conducted between July 18 and July 22 and August 23 and 28, 2023.

Refer to Table AQ 7-6 for a complete list of PCEs identified at each of the habitats documented along Project lakes/stream segments. Refer to Maps AQ 7-5 a-e for the location of these habitats. Refer to **Appendix F** for photographs of each of the YT aquatic habitats.

Waugh Lake

Aquatic Breeding PCEs

Waugh Lake is within USFWS-Designated Critical Habitat for YT (refer to Map AQ 7-1). The field survey identified 2 habitats that lie within and adjacent to the FERC Project boundary in the vicinity of Waugh Lake, including a lodgepole pine (LP) meadow (LP Meadow 1) at the westernmost end of Waugh Lake and a pond within the FERC Project boundary on the southwest shoreline of Waugh Lake (Pond 1).

LP Meadow 1 is a depression within the historic Ordinary High Water Mark (OHWM) of Waugh Lake that is currently dominated by dense regrowth of young lodgepole pines with a lesser growth of herbaceous vegetation. There is an ephemeral spring that flows in the center of the meadow, but it does not hold water after snowmelt long enough to support tadpole development (i.e., a minimum of 5 weeks). LP Meadow 1 contains abundant cover for YT refugia and abundant invertebrate prey resources. Therefore, LP Meadow 1 contains some, but not all, of the aquatic breeding PCEs for YT and was classified as a non-breeding meadow.

Pond 1 is an isolated pond feature, characterized by shallow water edges with a deeper central pool. Pond 1 holds water long enough to support tadpole development (at least 5 weeks) and therefore meets the criteria for aquatic breeding habitat. Pond 1 contains all of the other aquatic breeding PCEs for YT (refer to Table AQ 7-6). Abundant algae, aquatic invertebrates, and cover objects were observed within this pond.

Refer to Map AQ 7-5a for the location of aquatic breeding and non-breeding habitats in the vicinity of Waugh Lake.

Upland PCEs

Suitable upland habitats were observed around LP Meadow 1 and Pond 1. During the field surveys, upland PCEs such as invertebrate prey, cover refugia, and rodent burrows were observed near LP Meadow 1 and Pond 1, as well as other areas along the shorelines of Waugh Lake in the FERC Project boundary.

The south shoreline of Waugh Lake is known to be within 0.78-mile of known occupied YT aquatic habitat. Refer to Map AQ 7-5f for a depiction of this area in relation to the known occupied YT aquatic habitat.

Rush Creek Below Rush Meadows Dam

Aquatic Breeding PCEs

Rush Creek Below Rush Meadows Dam is partially within the USFWS-Designated Critical Habitat for YT (refer to Map AQ 7-1). The field survey identified two aquatic breeding habitats that lie within and adjacent to the FERC Project boundary in the vicinity of Waugh Lake, including an isolated pond (Pond 2) and a wet meadow (Meadow 1).

Pond 2 is a shallow pond near the south shoreline of Rush Creek Below Rush Meadow Dam. In the early season, this habitat is inundated by overflow from Rush Creek. Later in the summer, the pond becomes an isolated feature. This pond holds water long enough to support tadpole development (at least 5 weeks) and therefore meets the criteria for aquatic breeding habitat. Pond 2 contains all of the remaining aquatic breeding PCEs for YT. Refer to Map AQ 7-5b for the location of this habitat.

Meadow 1 is a wet meadow located north of Rush Creek and west of Gem Lake. This meadow contains all of the aquatic breeding PCEs for YT. The meadow was completely saturated with water at the time of the survey. The meadow contains a deep pool at its center that is likely too deep for YT, but there was abundant shallow warmwater areas surrounding the edges of the meadow that provide suitable aquatic breeding habitat. The meadow holds water long enough to support tadpole development (at least 5 weeks) and therefore meets the criteria for aquatic breeding habitat.

Refer to Map AQ 7-5b for the location of these habitats.

Upland PCEs

Upland habitats are assumed within 0.78 mile of suitable breeding habitat. Upland habitats in the vicinity of Pond 2 and Meadow 1 were observed to contain suitable upland PCEs for YT such as burrows, logs, and invertebrate prey resources.

However, both of these aquatic breeding habitats are more than 0.78 mile from known occupied aquatic breeding habitats (refer to Map AQ 7-5f).

Gem Lake

Aquatic Breeding Habitat

Gem Lake is outside of USFWS-Designated Critical Habitat for YT (refer to Map AQ 7-1). Based on the field survey, there are no ponds or meadow systems adjacent to Gem Lake that provide suitable aquatic breeding habitat for YT.

Upland Habitat

Although the forest and shorelines surrounding Gem Lake contain upland habitat features such as logs, rocks, and talus slopes, there is no suitable aquatic breeding habitat for YT in the vicinity of Gem Lake.

The nearest known occupied aquatic breeding habitats are more than 0.78 mile away (refer to Map AQ 7-5f).

Rush Creek Below Gem Dam

Aquatic Breeding Habitat

Rush Creek Below Gem Dam is outside of USFWS-Designated Critical Habitat for YT (refer to Map AQ 7-1). Based on the field survey, there are no ponds or meadow systems adjacent to Rush Creek Below Gem Dam that provide suitable aquatic breeding habitat for YT.

Upland Habitat

There is no suitable aquatic breeding habitat for YT in the vicinity of Rush Creek Below Gem Dam The nearest known occupied aquatic breeding habitats are more than 0.78 mile away (refer to Map AQ 7-5f).

Agnew Lake

Aquatic Breeding Habitat

Agnew Lake is outside of USFWS-Designated Critical Habitat for YT (refer to Map AQ 7-1). Based on the field survey, there are no ponds or meadow systems adjacent to Agnew Lake that provide suitable aquatic breeding habitat for YT.

Upland Habitat

Although the forest and shorelines surrounding Agnew Lake contain upland habitat features such as logs, rocks, and talus slopes, there is no suitable aquatic breeding habitat for YT in the vicinity of Agnew Lake. The nearest known occupied aquatic breeding habitats are more than 0.78 mile away (refer to Map AQ 7-5f).

Rush Creek Below Agnew Dam

Aquatic Breeding Habitat

Rush Creek Below Agnew Dam is outside of USFWS-Designated Critical Habitat for YT (refer to Map AQ 7-1). Based on the field survey, there are no ponds or meadow systems adjacent to Rush Creek Below Agnew Dam that provide suitable aquatic breeding habitat for YT.

Upland Habitat

Although the forest and shorelines surrounding Agnew Lake contain upland habitat features such as logs, rocks, and talus slopes, there is no suitable aquatic breeding habitat for YT in the vicinity of Rush Creek Below Agnew Dam. The nearest known occupied aquatic breeding habitats are more than 0.78 mile away (refer to Map AQ 7-5f).

Rush Creek Horsetail Falls

Aquatic Breeding Habitat

Rush Creek Horsetail Falls is outside of USFWS-Designated Critical Habitat for YT (refer to Map AQ 7-1). The field survey identified one ephemeral pond (Pond 3) underneath the 4 kV Rush Creek Powerhouse to Agnew Dam Power Line that contains all of the aquatic breeding PCEs for YT and was identified as suitable aquatic breeding habitat. Although it was dry by the time of the second survey, this pond was observed to hold water for at least 5 weeks based on observations from TERR 1 field studies which were conducted in early July. Therefore this pond meet the criteria for aquatic breeding habitat. Refer to Map AQ 7-5d for the location of this habitat.

Upland Habitat

Upland PCEs such as burrows, logs, and invertebrate prey resources were observed near Pond 3.

However, this pond is more than 0.78 mile from known occupied aquatic breeding populations of YT (refer to Map AQ 7-5f). Rush Creek Horsetail Falls is also a likely dispersal barrier to such populations.

Rush Creek Above Silver Lake

Aquatic Breeding Habitat

Rush Creek Above Silver Lake is outside of USFWS-Designated Critical Habitat for YT (refer to Map AQ 7-1). The field survey identified two meadows (Meadows 2 and 3) adjacent to Rush Creek Above Silver Lake that could provide suitable habitat for YT.

Meadow 2 is located underneath an existing non-Project transmission line corridor and evidence of vegetation management is present. The surrounding habitats are lodgepole and aspen forest. Meadow 2 contains some, but not all, of the aquatic breeding PCEs for YT. Water in the meadow drains quickly following snowmelt, and likely does not hold water long enough for tadpole development (i.e., minimum of 5 weeks). The few water pools that were observed also contained oil slicks, likely from road runoff, and would not provide sufficient water quality for YT. Therefore, Meadow 2 was classified as non-breeding meadow habitat for YT. Refer to Map AQ 7-5d for the location of this habitat.

Meadow 3 contains all of the aquatic breeding PCEs for YT. Pools of water were observed for at least five weeks and therefore, Meadow 3 was classified as breeding habitat. Meadow 3 experienced higher than usual floodwater from Rush Creek Above Silver Lake during the July habitat survey. Water levels had receded significantly by the time of the August survey, but the meadow contained plenty of ephemeral pools suitable for YT breeding. Refer to Map AQ 7-5d–e for the location of this habitat.

Upland Habitat

Upland PCEs such as burrows, logs, and invertebrate prey resources were observed near Meadow 2. Meadow 3 had fewer of these cover objects surrounding the meadow and no rodent burrows were observed in upland habitats.

Both Meadow 2 and Meadow 3 are more than 0.78 mile from known occupied populations of YT (refer to Map AQ 7-5f).

Silver Lake

Aquatic Breeding Habitat

Silver Lake is outside of USFWS-Designated Critical Habitat for YT (refer to Map AQ 7-1). Based on the field survey, the majority of Silver Lake does not contain suitable aquatic breeding PCEs for YT, though shallow water areas along the southern OHWM that blend with Meadow 3 do contain suitable aquatic PCEs. Refer to Map AQ 7-5e for the location of this habitat.

Upland Habitat

Silver Lake experiences high recreation levels and there is significant development along the shoreline. Therefore, upland PCEs such as surface cover objects and rodent burrows are less abundant compared to other surveyed areas.

Silver Lake is more than 0.78 mile from known occupied aquatic breeding populations of YT (refer to Map AQ 7-5f).

Rush Creek below Silver Lake

Aquatic Breeding Habitat

Rush Creek Below Silver Lake is outside of USFWS-Designated Critical Habitat for YT (refer to Map AQ 7-1). Based on the field survey, there are no ponds or adjacent meadow systems along Rush Creek Below Silver Lake that could provide suitable aquatic breeding habitat for YT.

Upland Habitat

Although the forest and shorelines surrounding Rush Creek Below Silver Lake contain upland habitat features such as logs, rocks, and talus slopes, there is no suitable aquatic breeding habitat for YT in the vicinity of Rush Creek Below Silver Lake. Rush Creek below Silver Lake is more than 0.78 mile from known occupied populations of YT (refer to Map AQ 7-5f).

South Rush Creek

Aquatic Breeding Habitat

South Rush Creek is outside of USFWS-Designated Critical Habitat for YT (refer to Map AQ 7-1). The field survey identified two aquatic breeding habitats, including one meadow (Meadow 4) and one intermittent stream (South Rush Creek before it joins with Perennial Stream 10).

Meadow 4 contains all of the aquatic breeding PCEs for YT. Meadow 4 contains several ephemeral water pools that held water for at least 5 weeks, mainly in the root wads of fallen lodgepole pine. Therefore, Meadow 4 meets the requirement for aquatic breeding habitat for YT. Refer to Map AQ 7-5d for the location of this habitat.

South Rush Creek flows through Meadow 4 and eventually joins with an un-named perennial stream just before flowing into a culvert under State Route 158. Upstream of this intersection, flows in South Rush Creek are intermittent and ephemeral pools containing the PCEs for YT breeding were observed in the stream channel in August. In July, flows were high as the stream conveyed meltwater. Refer to Map AQ 7-5d for the location of this habitat.

Upland Habitat

Suitable upland PCEs such as burrows, surface objects for cover, and abundant invertebrate prey were observed around the intermittent portion of South Rush Creek and Meadow 4.

However, both Meadow 4 and the intermittent portion of South Rush Creek are located more than 0.78 mile from known occupied aquatic breeding habitat for YT (refer to Map AQ 7-5f).

6.2.3 Conduct Visual Encounter Surveys

VES were twice during the season at 9 selected sampling locations. The first VES was conducted between July 18 and July 22, 2023, and the second VES was conducted between August 18 and August 28, 2023.

No YT of any life stage were identified in the study area. Salmonid fish were observed within 5 of the surveyed habitats. Three species of common amphibians and reptiles were observed during VES, including:

- Sierra treefrog (*Pseudacris sierrae*);
- Unknown garter snake species (*Thamnophis* spp.); and
- Common garter snake (*Thamnophis sirtalis*).

Refer to Table AQ 7-7 for the results of early season VES surveys for YT. Refer to Table AQ 7-8 for the results of late-season VES surveys for YT. Refer to **Appendix G** for all YT survey datasheets.

Refer to Map AQ 7-3 for the VES survey area and species observed during surveys. Note that Map AQ 7-3 includes both results of VES for SNYLF and VES for YT. Because there was some overlap in habitats and survey area between the two species, in some cases VES for both species were conducted simultaneously.

6.2.4 Document Incidental Sightings of YT

No incidental sightings of YT were recorded during technical studies completed in the Rush Creek Project area in 2023. Refer to Map AQ 7-4 for the location of known YT populations within 1 mile of the FERC Project boundary. Refer to Table AQ 7-5 for a table of known occurrences of YT within 1 mile of the FERC Project boundary.

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TABLES

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Table AQ 7-1. Special-Status Amphibian Sampling Locations.

Reach Name	Reach Length (miles) / River Miles (RM)	Sampling Location River Mile / Site ID
Rush Creek		
Waugh Lake	1.51 (RM 22.24–23.75)	RM 23.0 / RC23.0
Rush Creek Below Rush Meadows Dam	1.83 (RM 20.41–22.24)	RM 21.65 / RC21.65
Gem Lake	0.93 (RM 19.48–20.41)	—
Rush Creek Below Gem Dam	0.30 (RM 19.18–19.48)	—
Agnew Lake	0.58 (RM 18.60–19.18)	—
Rush Creek Below Agnew Dam	0.40 (RM 18.2–18.60)	RM 18.55 / RC18.55
Rush Creek Horsetail Falls	0.54 (RM 17.66–18.2)	—
Rush Creek Above Silver Lake	0.94 (RM 16.72–17.66)	RM 17.05 / RC17.05 RM 17.55 / RC17.55
Silver Lake	0.83 (RM 15.89–16.72)	—
Rush Creek Below Silver Lake	2.69 (RM 13.20–15.89)	RM 15.2 / RC15.2
South Rush Creek		
South Rush Creek	0.46 (RM 0.0–0.46)	RM 0.15 / SRC0.15

Notes: RM = River Mile

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Table AQ 7-2. Presence of SNYLF Primary Constituent Elements (PCEs) within Habitats in the Study Area.

SNYLF Primary Constituent Elements (PCE's)[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	Perennial Stream 3	Perennial Stream 4	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	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			
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	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
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

SNYLF Primary Constituent Elements (PCE's)[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	Perennial Stream 3	Perennial Stream 4	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	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
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	X
Total Number of Breeding PCEs Met (out of a maximum of 9)	8	5	8	9	7	4	6	7	2	7	8	7	4	8	6	6	2	7	5	7	0	4	4	7	7	7	8	5	7
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		

SNYLF Primary Constituent Elements (PCE's)[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	Perennial Stream 3	Perennial Stream 4	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	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
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
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**
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

SNYLF Primary Constituent Elements (PCE's)[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	Perennial Stream 3	Perennial Stream 4	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	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 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.

Table AQ 7-3. Results of First Visual Encounter Surveys for Sierra Nevada Yellow-Legged Frog

Survey Location	Survey Date	Habitat Type	Length of Shoreline Surveyed (meters)	Observer Time[1] (minutes)	Weather Parameters	Water Temperature (°C)	Water Turbidity[2]	Species Observed	Count and Life Stages
Waugh Lake									
Rush Creek Above Waugh Lake	7/18/2023	Perennial Stream	300	110	Partly cloudy; 25°C	4	1	None	—
Waugh Lake[3]	7/18/2023, 7/19/2023	Reservoir	1,800	720	Partly cloudy; 20°C	4	1	Salmonid spp.	20 adults; >500 juveniles
Perennial Stream 1	7/18/2023	Perennial Stream	200	92	Partly cloudy; 23°C	4	1	Alligator lizard species (*Elgaria* spp.)	2 adults
Pond 1	7/19/2023	Pond	91	152	Partly cloudy; 20°C	15	1	Sierra tree frog (*Pseudacris sierrae*)	2 adults, 40 larvae, and 167 egg masses
Perennial Stream 2	7/18/2023	Perennial Stream	45	40	Partly cloudy and raining; 20°C	6	1	None	—
Perennial Stream 3	7/18/2023	Perennial Stream	91	26	Partly cloudy; 19°C	3	1	None	—
Perennial Stream 4[3]	—	Perennial Stream	—	—	—	—	—	—	—
Rush Creek Below Rush Meadows Dam									
Rush Creek Below Rush Meadows Dam 1	7/19/2023	Perennial Stream	800	300	Partly cloudy; 20°C	4	1	Salmonid spp.	52 of various life stages
Perennial Stream 5	7/18/2023	Perennial Stream	200	44	Partly cloudy; 17°C	7	1	Salmonid spp.	10 adults
Rush Creek Below Rush Meadows Dam 3	7/17/2023	Perennial Stream	1,000	90	Partly cloudy; 24°C	5	1	Salmonid spp.	10 of various life stages

Survey Location	Survey Date	Habitat Type	Length of Shoreline Surveyed (meters)	Observer Time[1] (minutes)	Weather Parameters	Water Temperature (°C)	Water Turbidity[2]	Species Observed	Count and Life Stages
Meadow 1	7/17/2023	Wet Meadow	300	116	Partly cloudy; 25°C	17	2	Salmonid spp.	5 adults and 3 juveniles
								Sierra tree frog	25 larvae
								Common garter snake (*Thamnophis sirtalis*)	1 adult
Gem Lake									
Crest Creek	7/20/2023	Perennial Stream	300	78	Clear; 22°C	4	1	None	—
Perennial Stream 6[3]	—	Perennial Stream	—	—	—	—	—	—	—
Perennial Stream 7[3]	—	Perennial Stream	—	—	—	—	—	—	—
Agnew Lake									
Perennial Stream 8[5]	—	Perennial Stream	—	—	—	—	—	—	—
Agnew Lake	7/20/2023	Lake	1,000	68	Clear; 25°C	10	1	Salmonid spp.	11 juveniles
Rush Creek Below Agnew Dam									
Rush Creek Below Agnew Dam	7/20/2023	Perennial Stream	160	44	Clear; 23°C	7	1	Salmonid spp.	1 adult
Rush Creek Above Silver Lake									
Rush Creek Above Silver Lake 1	7/21/2023	Perennial Stream	150	280	Partly cloudy; 24°C	11	1	None	—
Meadow 2	7/21/2023	Wet Meadow	500	280	Partly cloudy; 24°C	11	3	None	—

Survey Location	Survey Date	Habitat Type	Length of Shoreline Surveyed (meters)	Observer Time[1] (minutes)	Weather Parameters	Water Temperature (°C)	Water Turbidity[2]	Species Observed	Count and Life Stages
Rush Creek Above Silver Lake 2	7/21/2023	Perennial Stream	300	280	Partly cloudy; 24°C	11	3	None	—
Rush Creek Above Silver Lake 3	7/22/2023	Perennial Stream	1,000	200	Clear; 25°C	11	2	None	—
Meadow 3	7/22/2023	Wet Meadow	1,000	200	Clear; 25°C	11	2	None	—
Rush Creek Below Silver Lake									
Rush Creek Below Silver Lake 1	7/21/2023	Perennial Stream	650	150	Partly cloudy; 24°C	14	2	Salmonid spp.	2 juveniles
South Rush Creek									
Meadow 4	7/22/2023	Wet Meadow	200	90	Partly cloudy; 20°C	10	2	None	—
South Rush Creek	7/22/2023	Intermittent Stream	200	90	Partly cloudy; 20°C	10	2	None	—

[1] Observer time is calculated as the total survey time per observer. For instance, if two people conducted VES at a survey location for 10 minutes, the total observer time for the survey location would be 20 minutes.

[2] Water turbidity was ranked on a scale from 1 (clear) to 5 (turbid) as outlined in *A Standardized Protocol for Surveying for Aquatic Amphibians* (Fellers and Freel 1995).

[3] Waugh Lake was surveyed as biologists walked between other connected habitat features. Some areas on the shoreline were inaccessible for safety reasons (i.e., deep sediment, steep rocky talus shorelines, etc.), and surveys were focused on areas with vegetation and cover objects.

[4] No VES was conducted because this sampling location was covered in snow. This location was surveyed on the second visual encounter survey (refer to Table AQ 7-4).

[5] No VES was conducted because this sampling location was inaccessible due to safety concerns (i.e., due to steep terrain and high runoff). This location was surveyed on the second visual encounter survey (refer to Table AQ 7-4).

Table AQ 7-4. Results of Second Visual Encounter Surveys for Sierra Nevada Yellow-Legged Frog

Survey Location	Survey Date	Location Description	Length of Shoreline Surveyed (meters)	Observer Time[1] (minutes)	Weather Parameters	Water Temperature (°C)	Water Turbidity[2]	Species Observed	Count and Life Stages
Waugh Lake									
Rush Creek Above Waugh Lake	8/24/2023	Perennial Stream	300	190	Partly Cloudy; 18°C	6	1	Salmonid spp.	30 of various life stages
								Unknown frog species	1 adult (deceased and in degraded condition)
Waugh Lake[3]	8/24/2023, 8/25/2023	Reservoir	1,800	720	Mostly cloudy (8/24), Clear (8/25); 17°C	10	1	Salmonid spp.	10 adults; >500 juveniles
Perennial Stream 1	8/24/2023	Perennial Stream	200	72	Mostly Cloudy; 19°C	9	1	Salmonid spp.	5 juveniles
Pond 1	8/25/2023	Pond	250	210	Clear; 20°C	16	3	Sierra tree frog (*Pseudacris sierrae*)	900 larvae
Perennial Stream 2	8/24/2023	Perennial Stream	100	42	Mostly Cloudy and Rain; 15°C	8	1	Salmonid spp.	10 of various life stages
Perennial Stream 3	8/25/2023	Perennial Stream	100	38	Clear; 19°C	12	1	Salmonid spp.	2 juveniles
Perennial Stream 4	8/25/2023	Perennial Stream	300	30	Clear; 19°C	12	1	None	—

Survey Location	Survey Date	Location Description	Length of Shoreline Surveyed (meters)	Observer Time[1] (minutes)	Weather Parameters	Water Temperature (°C)	Water Turbidity[2]	Species Observed	Count and Life Stages
Rush Creek Below Rush Meadows Dam									
Rush Creek Below Rush Meadows Dam 1	8/24/2023	Perennial Stream	800	330	Partly Cloudy; 17°C	11	1	Salmonid spp.	45 of various life stages
Perennial Stream 5	8/25/2023	Perennial Stream	200	48	Clear; 19°C	12	1	Salmonid spp.	16 of various life stages
Rush Creek Below Rush Meadows Dam 3	8/26/2023	Perennial Stream	1000	182	Clear; 15°C	8	1	Salmonid spp.	83 of various life stages
Meadow 1	8/25/2023	Wet Meadow	300	116	Clear; 12°C	14	2	Salmonid spp.	1 adult
								Sierra treefrog	1 subadult tree frog, 76 tree frog larvae
								Garter snake species (*Thamnophis* spp.)	1 adult garter snake
Gem Lake									
Crest Creek	8/26/2023	Perennial Stream	300	62	Clear; 20°C	11	1	None	—
Perennial Stream 6	8/23/2023	Perennial Stream	100	32	Partly cloudy; 22°C	12	1	None	—
Perennial Stream 7	8/23/2023	Perennial Stream	100	48	Clear; 22°C	11	1	None	—
Agnew Lake									
Perennial Stream 8	8/27/2023	Perennial Stream	100	60	Clear; 22°C	12	1	Salmonid spp.	2 juveniles

Survey Location	Survey Date	Location Description	Length of Shoreline Surveyed (meters)	Observer Time[1] (minutes)	Weather Parameters	Water Temperature (°C)	Water Turbidity[2]	Species Observed	Count and Life Stages
Agnew Lake	8/27/2023	Lake	1800	134	Clear; 23°C	17	2	Salmonid spp.	5 adults, 1000 juveniles
Rush Creek Below Agnew Dam									
Rush Creek Below Agnew Dam	8/27/2023	Perennial Stream	200	84	Clear; 22°C	17	1	Salmonid spp.	17 of various life stages
Rush Creek Above Silver Lake									
Rush Creek Above Silver Lake 1	8/28/2023	Perennial Stream	200	50	Clear; 23°C	13	1	Salmonid spp.	2 juveniles
Meadow 2	8/28/2023	Wet Meadow	500	236	Partly cloudy; 27°C	13	3	Sierra tree frog	4 adults
Rush Creek Above Silver Lake 2	8/28/2023	Perennial Stream	300	236	Clear; 19°C	13	3	Salmonid spp.	40 of various life stages
								Sierra tree frog	2 adults
Rush Creek Above Silver Lake 3	8/18/2023	Perennial Stream	1000	460	Partly cloudy; 27°C	13	1	Salmonid spp.	50 adult Salmonids
Meadow 3	8/18/2023	Wet Meadow	500	460	Partly cloudy; 27°C	13	4	Salmonid spp.	2000 juveniles
								Sierra tree frog	5 adults and 551 larvae
								Common garter snake (*Thamnophis sirtalis*)	1 adult

Survey Location	Survey Date	Location Description	Length of Shoreline Surveyed (meters)	Observer Time[1] (minutes)	Weather Parameters	Water Temperature (°C)	Water Turbidity[2]	Species Observed	Count and Life Stages
Rush Creek Below Silver Lake[4]									
Rush Creek Below Silver Lake 1	8/18/2023	Perennial Stream	800	120	Partly cloudy; 29°C	17	1	Salmonid spp.	10 adults and 10 juveniles
								Sierra tree frog	6 adults
Rush Creek Below Silver Lake 1	8/28/2023	Perennial Stream	700	190	Clear; 27°C	16	1	Salmonid spp.	33 of various life stages
								Sierra tree frog	9 adults
								Garter snake species	1 adult
South Rush Creek									
Meadow 4	8/18/2023	Wet Meadow	200	58	Partly cloudy; 28°C	12	2	None	—
South Rush Creek	8/18/2023	Intermittent Stream	200	58	Partly cloudy; 28°C	12	2	Salmonid spp.	6 of various life stages

[1] Observer time is calculated as the total survey time per observer. For instance, if two people conducted VES at a survey location for 10 minutes, the total observer time for the survey location would be 20 minutes.

[2] Water turbidity was ranked on a scale from 1 (clear) to 5 (turbid) as outlined in *A Standardized Protocol for Surveying for Aquatic Amphibians* (Fellers and Freel 1995).

[3] Waugh Lake was surveyed as biologists walked between other connected habitat features. Some areas on the shoreline were inaccessible for safety reasons (i.e., deep sediment, icy bedrock, steep rocky talus shorelines, etc.), and surveys were focused on areas with vegetation and cover objects.

[4] This location was surveyed twice in August as a hurricane warning and mandatory evacuation prevented completion of the first survey at this location on August 18, 2023.

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Table AQ 7-5. Occurrences of Special-Status Amphibians in the Project Vicinity

Scientific/Common Name	Federal Status	Forest Service Status	State Status	Habitat	Likelihood for Occurrence
May Potentially Occur, Known to Occur within 1 Mile of the FERC Project Boundary					
Rana sierrae Sierra Nevada yellow-legged frog	FE	—	ST	Streams, lakes, and ponds in montane riparian, lodgepole pine, subalpine conifer, and wet meadow habitats. Breeds in shallow water in low gradient perennial streams and lakes. Known at elevations ranging from 4,500 to 12,000 feet.	**May potentially occur in Project area, known to occur within 1 mile of the FERC Project boundary.** **Critical Habitat is present in the FERC Project Boundary.** Critical Habitat Unit 3/Subunit 3B (USFWS 2016) encompasses Waugh Lake and Gem Lake (and Rush Creek between the two lakes). Refer to Map AQ 7-1 for the location of the Critical Habitat. The CNDDB query yielded four records within 1 mile of the FERC Project boundary: • A 1993 record approximately 0.5 mile east of the Rush Creek Powerhouse in the Reversed Peak Study Area. This population was revisited in 2003 but no individuals were found. • A 2010 record approximately 1 mile west of the western point of Waugh Lake in a tributary stream. • A 2010 record approximately 0.25 mile south of Waugh Lake in a tributary stream. • A 2013 record approximately 1 mile south of Waugh Lake in a tributary stream and associated alpine lakes. The NRIS query yielded 98 records within 1 mile of the FERC Project boundary between 2000 and 2010 (Forest Service 2017). These records are located in the same general vicinity as the CNDDB records. There are five known breeding populations within 1 mile of the FERC Project boundary (CDFW 2016). On August 31, 2023, surveyors conducting a REC study observed SNYLF of all life stages in 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.
Anaxyrus canorus Yosemite toad	FT	—	SSC	Montane meadows and forest borders; breeds in shallow pools, at lake margins, or in pools of quiet streams at elevations ranging from 6,400 to 11,300 feet.	**May potentially occur in Project area, known to occur within 1 mile of the FERC Project boundary.** **Critical Habitat is present in the FERC Project Boundary.** Critical Habitat Unit 5 (Tuolumne Meadows/Cathedral) (USFWS 2016) encompasses Waugh Lake and Rush Creek downstream of Rush Meadows Dam. Refer to Map AQ 7-1 for the location of the Critical Habitat. The NRIS query yielded three records within 1 mile of the FERC Project boundary: • A 2002 record from adjacent to a tributary stream upstream of the western end of Waugh Lake. • Two 2003 records approximately 1 mile south of Waugh Lake within a large meadow system. There are no known breeding populations within 1 mile of the FERC Project boundary (CDFW 2016).
Unlikely to Occur					
Batrachoseps campi Inyo Mountains slender salamander	—	FSCC	SSC	Distribution is limited to the west and east slopes of the Inyo Mountains. Only known from 15 locations in the Inyo Mountains. Inhabits very dry mountain ranges typically in the immediate vicinity of springs, seeps, and their associated riparian growth where there is a small area of suitable habitat surrounded by inhospitable desert terrain. They are found in damp soil under rocks or in humid crevices, not in open water. Found at elevations from 1,800 to 8,600 feet (Calherps 2023).	**Unlikely to occur.** The Project is outside the geographic range of this species.

Scientific/Common Name	Federal Status	Forest Service Status	State Status	Habitat	Likelihood for Occurrence
Batrachopseps robsutus Kern Plateau salamander	—	FSCC	—	The distribution of this species is limited to the Kern Plateau of the southeastern Sierra in Kern County from 5,580 to 9,200 feet in elevation and also in the Scodie mountains (Calherps 2023).	**Unlikely to occur.** The Project is outside the geographic range of this species.
Anaxyrus exsul black toad	—	FSCC	ST, CFP	The distribution of this species is limited to the Deep Springs Valley between the White and Inyo Mountains in Inyo County CA at elevations ranging from 4,900 to 5,600 feet (Calherps 2023).	**Unlikely to occur.** The Project is outside the geographic range of this species.

Federal Status
FE = Federal Endangered
FT = Federal Threatened

State Status
CFP = California Fully Protected
SSC = California Species of Conservation Concern
ST = California Threatened

Forest Service Status
FSCC = Inyo National Forest Service Species of Conservation Concern

Table AQ 7-6. Presence of YT Primary Constituent Elements (PCEs) within Habitats in the Study Area.

YT Primary Constituent Elements (PCE's)[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	Pond 1	Pond 2	Meadow 1	Gem Lake	Rush Creek Below Gem Dam	Agnew Lake	Rush Creek Below Agnew Dam	Pond 3	Meadow 2	Meadow 3	Silver Lake	Rush Creek Below Silver Lake	Meadow 4	South Rush Creek 1
Critical Aquatic Habitat Elements[2]															
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
b) Contain sufficient food for tadpole development	X	X	X	X					X	X	X			X	X
Total Number of Aquatic Habitat Elements (out of a maximum of 3)	**2**	**3**	**3**	**3**	**0**	**0**	**0**	**0**	**3**	**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
Adequate prey resources	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
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
Total Number of Upland Habitat Elements (out of maximum of 7)	**7**	**7**	**7**	**7**	**0**[3]	**0**[3]	**0**[3]	**0**[3]	**6**	**6**	**4**	**0**[3]	**0**[3]	**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] 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).

[3] 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.

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Table AQ 7-7. Results of First Visual Encounter Surveys for Yosemite Toad

Survey Location	Survey Parameters												
	Survey Date	Location Description	Meadow/Lake Acres	Observer Time[1] (minutes)	Starting Air Temperature (°C)	Ending Air Temperature (°C)	Starting Water Temperature (°C)	Ending Water Temperature (°C)	Type of Water Present	Fish Present?	Signs of Cattle/ Packstock	Species Observed	Count and Life Stages
Waugh Lake													
LP Meadow 1	7/18/2023	Lodgepole pine meadow	0.60	84	23	23	27	27	Ephemeral	No	No	Sierra tree frog (*Pseudacris sierrae*)	1 adult
Pond 1	7/19/2023	Pond	1.00	152	20	20	17	15	Ephemeral; Perennial	No	No	Sierra tree frog	2 adults, 40 larvae, and 167 eggs
Rush Creek Below Rush Meadows Dam													
Pond 2[2]	7/19/2023	Pond	0.15	30	20	20	—	—	Ephemeral; Intermittent; Perennial	No	No	None	—
Meadow 1	7/17/2023	Wet meadow	1.40	116	25	22	17	15	Ephemeral; Intermittent; Perennial	Yes	No	Salmonid spp.	5 adults and 3 juveniles
												Sierra tree frog	25 larvae
												Common garter snake (*Thamnophis sirtalis*)	1 adult
Rush Creek Horsetail Falls													
Pond 3	7/21/2023	Ephemeral pond	0.12	38	21	21	15	15	Ephemeral	No	No	None	—
Rush Creek Above Silver Lake													
Meadow 2	7/21/2023	Wet meadow	2.50	280	24	24	11	11	Ephemeral; Intermittent; Perennial	No	No	None	—
Meadow 3	7/22/2023	Wet meadow	25.40	200	25	25	11	11	Ephemeral; Intermittent; Perennial	No	No	None	—
South Rush Creek													
Meadow 4	7/22/2023	Wet meadow	0.20	90	20	20	10	10	Ephemeral; Intermittent	No	No	None	—
South Rush Creek	7/22/2023	Intermittent stream	1.13	90	20	20	10	10	Ephemeral; Intermittent	No	No	None	—

[1] Observer time is calculated as the total survey time per observer. For instance, if two people conducted VES at a survey location for 10 minutes, the total observer time for the survey location would be 20 minutes.

[2] This survey location was extensively flooded during the July survey and was not yet a distinct feature from Rush Creek below Rush Meadows Dam.

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Table AQ 7-8. Results of Second Visual Encounter Surveys for Yosemite Toad

Survey Location	Survey Parameters												
	Survey Date	Location Description	Meadow/ Lake Acres	Observer Time[1] (minutes)	Starting Air Temperature (°C)	Ending Air Temperature (°C)	Starting Water Temperature (° C)	Ending Water Temperature (° C)	Type of Water Present	Fish Present	Signs of Cattle/ Packstock	Species Observed	Count and Life Stages
Waugh Lake													
LP Meadow 1	8/23/2023	Lodgepole pine meadow	0.60	20	18	18	—	—	None	No	No	None	—
Pond 1	8/25/2023	Pond	1.00	210	20	20	16	16	Perennial	No	No	Sierra tree frog (*Pseudacris sierrae*)	600 tadpoles, 300 metamorphs
Rush Creek Below Rush Meadows Dam													
Pond 2	8/24/2023	Pond	0.15	30	17	17	—	—	Ephemeral; Intermittent; Perennial	No	No	Sierra tree frog	4 tadpoles
Meadow 1	8/26/2023	Wet meadow	1.40	116	12	12	14	14	Ephemeral; Intermittent; Perennial	Yes	No	Salmonid spp.	1 adult
												Sierra tree frog	1 juvenile, 67 larvae, 9 metamorphs
												Garter snake species (*Thamnophis* spp.)	1 adult
Rush Creek Horsetail Falls													
Pond 3[2]	—	Pond	0.12	—	—	—	—	—	—	—	—	—	—
Rush Creek Above Silver Lake													
Meadow 2	8/28/2023	Wet meadow	2.50	236	19	19	13	13	Ephemeral; Intermittent; Perennial	Yes	No	Salmonid spp.	40 of various life stages (observed in Rush Creek Above Silver Lake, which bisects the meadow)
												Sierra tree frog	4 adults
Meadow 3	8/18/2023	Wet meadow	25.40	494	27	30	14	27	Ephemeral; Intermittent; Perennial	Yes	No	Salmonid spp.	2000 juveniles
												Sierra tree frog	5 adult tree frogs and 551 tree frog tadpoles
												Common garter snake (*Thamnophis sirtalis*)	1 adult
South Rush Creek													
Meadow 4	8/18/2023	Wet meadow	0.20	58	28	28	12	12	Ephemeral; Intermittent	Yes	No	None	—
South Rush Creek	8/18/2023	Intermittent stream	1.13	58	28	28	12	12	Ephemeral; Intermittent	Yes	No	None	—

[1] Observer time is calculated as the total survey time per observer. For instance, if two people conducted VES at a survey location for 10 minutes, the total observer time for the survey location would be 20 minutes.

[2] No VES survey was conducted as this site no longer contained water. However, based on observations of this habitat in early July during other TERR 1 field studies, this habitat does contain water for at least 5 weeks and is therefore considered suitable YT aquatic breeding habitat.

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MAPS

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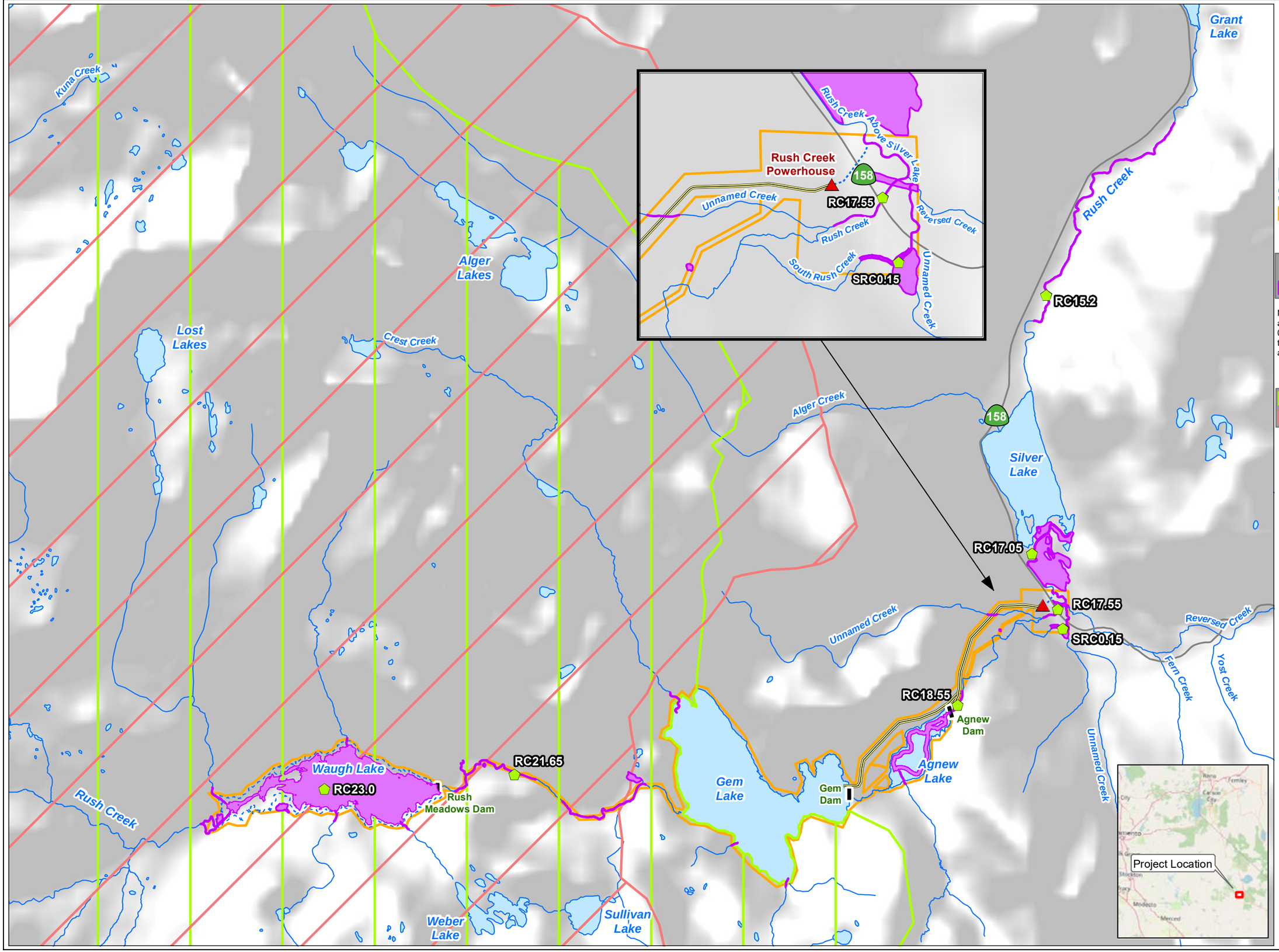

SCE Facilities

- Dam
- Powerhouse
- Flowline / Penstock
- Tailrace

Other Features

- Highway
- River/Stream
- Lake/Reservoir
- Dry Lake/Reservoir
- FERC Boundary

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)

SOUTHERN CALIFORNIA EDISON
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Rush Creek Project (FERC 1389)

Map AQ 7-1

Special-Status Amphibian Critical Habitat and VES Sampling Area/Locations

0 0.25 0.5 Miles

Projection: UTM Zone 11
Datum: NAD 83

Date: 2/22/2024

C:\GIS\2378003343\map\Rush Creek\AquaticMaps\SCE_RUSH_CREEK_AQ7_SNYLF_YT_Crit_Hab_VES_SA_Locs_Overview_17i11i_01.mxd

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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)

Perennial_Stream_01
Perennial_Stream_02
Perennial_Stream_03
Perennial_Stream_04
Perennial_Stream_05
LP_Meadow_01
Pond_01
Rush_Creek_Above_Waugh_Lake
Waugh Lake
RC23.0
RUSH CREEK TR
WEBER LAKE TR
WEBER LAKE SPUR TR
Frontier Pack Station Camp Pack Station
Rush Meadows Dam
Rush Creek
23.3
23.2
23
22.9
22.8
23.1
23.4
23.5
23.6
23.7
23.8
23.9
24
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

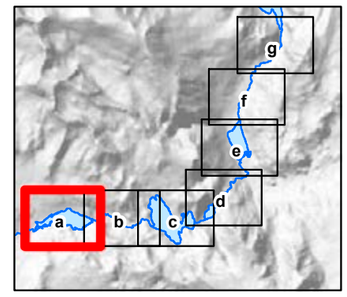
Other Features

- Non-Project Trail
- 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 AQ 7-1a

Special-Status Amphibian Critical Habitat and VES Sampling Area/Locations

0 125 250 500 Feet

Date: 2/22/2024

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_01.mxd

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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)

Perennial_Stream_05

Rush_Creek_Below_Rush_Meadows_Dam_01

Rush_Creek_Below_Rush_Meadows_Dam_03

Pond_02

RC21.65

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

Waugh Lake

Rush Creek

Gem Lake

22.4 22.3 22.2 22.1 22 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

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

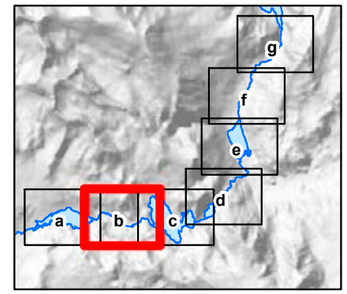
Other Features

- 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 AQ 7-1b

Special-Status Amphibian Critical Habitat and VES Sampling Area/Locations

0 125 250 500 Feet

Projection: UTM Zone 11
Datum: NAD 83

Date: 2/22/2024

C:\GIS\237800343\map\Rush Creek\AquaticMaps\SCE_RUSH_CREEK_AQ7_SNYLF_YT_Crit_Hab_VES_SA_Locs_17i11i_01.mxd

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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)

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

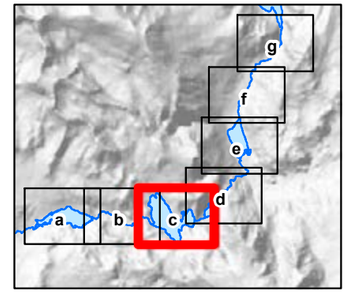
Other Features

- 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 AQ 7-1c

Special-Status Amphibian Critical Habitat and VES Sampling Area/Locations

Date: 2/22/2024

0 125 250 500 Feet

Projection: UTM Zone 11
Datum: NAD 83

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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)

Rush_Creek_Above_Silver_Lake_01
Rush_Creek_Above_Silver_Lake_
Meadow_02
Rush Creek Powerhouse
Perennial_Stream_09
RC17.55
Rush Creek
Pond_03
SRC0.15
Meadow_04
South_Rush_Creek
Rush_Creek_Below_Agnew_Dam
RC18.55
Agnew Dam
RUSH CREEK TR
SPOOKY MEADOW TR
Agnew Lake
Agnew_Lake
Perennial_Stream_08
Gem Lake
Gem Dam
Meadow_03
Rush Creek Above Silver Lake
Unnamed Creek
Reversed Creek
South Rush Creek
Unnamed 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

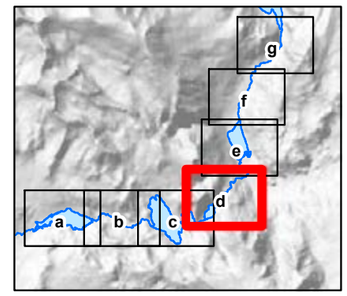
Other Features

- 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
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Rush Creek Project (FERC 1389)

Map AQ 7-1d

Special-Status Amphibian Critical Habitat and VES Sampling Area/Locations

0 125 250 500 Feet

Projection: UTM Zone 11
Datum: NAD 83

Date: 2/22/2024

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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 BENCH TR
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
Rush Creek
16.7
Meadow_03
16.9
16.8
17
RC17.05
Meadow_03
Rush_Creek_Above_Silver_Lake_03
17.1
17.2
17.3
Rush_Creek_Above_Silver_Lake_02
17.4
Meadow_02
Rush_Creek_Above_Silver_Lake_01
Rush Creek Powerhouse
17.5
Perennial_Stream_09
RC17.55

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

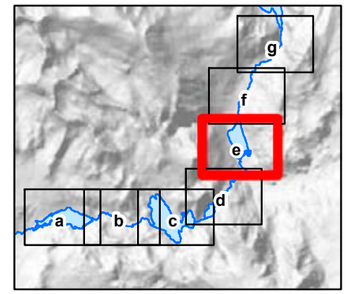
Other Features

- 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 AQ 7-1e

Special-Status Amphibian Critical Habitat and VES Sampling Area/Locations

0 125 250 500 Feet

Projection: UTM Zone 11
Datum: NAD 83

Date: 2/22/2024

C:\GIS\2378000343\map\Rush Creek\AquaticMaps\SCE_RUSH_CREEK_AQ7_SNYLF_YT_Crit_Hab_VES_SA_Locs_17i11i_01.mxd

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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)

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
Silver Lake
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

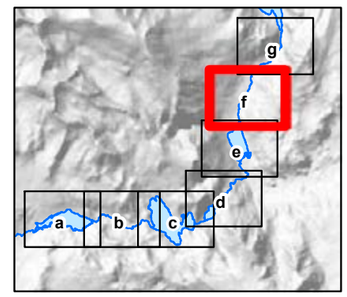
Other Features

- Non-Project Trail
- 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 AQ 7-1f

Special-Status Amphibian Critical Habitat and VES Sampling Area/Locations

0 125 250 500 Feet

Projection: UTM Zone 11
Datum: NAD 83

Date: 2/22/2024

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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
14.1
Rush Creek
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

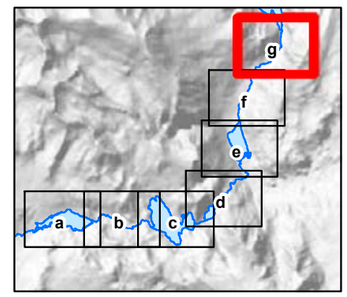
Other Features

- 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.



SOUTHERN CALIFORNIA EDISON
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Rush Creek Project (FERC 1389)

Map AQ 7-1g

Special-Status Amphibian Critical Habitat and VES Sampling Area/Locations

0 125 250 500 Feet

Projection: UTM Zone 11
Datum: NAD 83

Date: 2/22/2024

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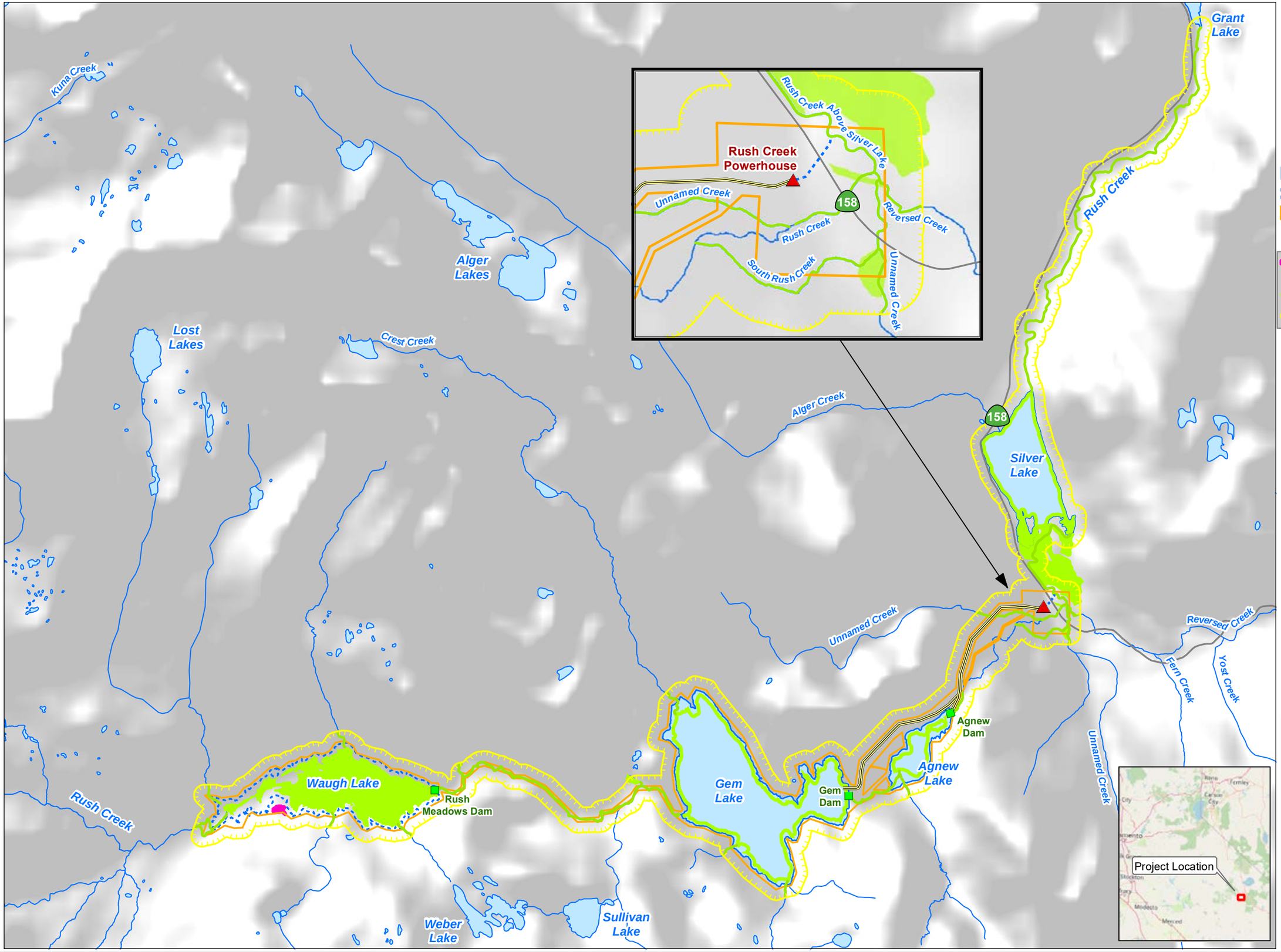

SCE Facilities

- Dam
- Powerhouse
- Flowline / Penstock
- Tailrace

Other Features

- Highway
- River/Stream
- Lake/Reservoir
- Dry Lake/Reservoir
- FERC Boundary

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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Rush Creek Project (FERC 1389)

Map AQ 7-2

Potential SNYLF Habitat within the Study Area - Overview Map

0 0.25 0.5 Miles

Projection: UTM Zone 11
Datum: NAD 83

Date: 2/21/2024

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Upland habitat for SNYLF includes
1) all areas within 82 feet of the banks of streams and
2) the entire upland area between proximate (i.e., within 984 feet) water bodies such as lakes, meadows, ponds etc.

Perennial_Stream_01
Perennial_Stream_02
Waugh_Lake
Pond_01
Perennial_Stream_03
Perennial_Stream_04
Rush_Creek_Above_Waugh_Lake
Reversed Creek
RUSH CREEK TR
Frontier Pack Station Camp
Pack Station
Rush Meadows Dam
WEBER LAKE TR
WEBER LAKE SPUR TR
23.3
23.2
23
22.9
22.8
23.1
23.4
23.5
23.6
23.9
23.8
23.7
24
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

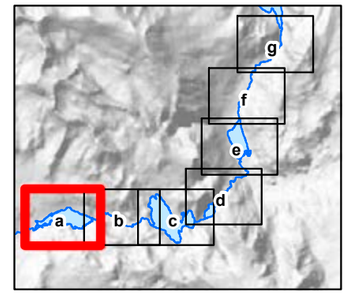
Other Features

- 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
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Rush Creek Project (FERC 1389)

Map AQ 7-2a

Potential SNYLF Habitat within the Study Area

0 125 250 500 Feet

Projection: UTM Zone 11
Datum: NAD 83

Date: 2/21/2024

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Upland habitat for SNYLF includes
1) all areas within 82 feet of the banks of streams and
2) the entire upland area between proximate (i.e., within 984 feet) water bodies such as lakes, meadows, ponds etc.

Perennial_Stream_05
Rush_Creek_Below_Rush_Meadows_Dam_01
Rush_Creek_Below_Rush_Meadows_Dam_02
Rush_Creek_Below_Rush_Meadows_Dam_03
Crest_Creek
Meadow_01
Waterfall
RUSH CREEK TR
ALGER LAKES TR
WEBER LAKE TR
WEBER LAKE SPUR TR
CLARK LAKES TR
Reversed Creek
Frontier Pack Station Camp Pack Station
Rush Meadows Dam
Billy Lake Stock Camp Pack Station
22.4
22.3
22.2
22.1
22
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

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

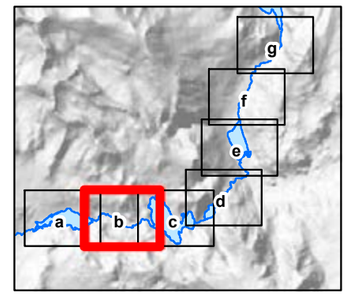
Other Features

- 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 AQ 7-2b

Potential SNYLF Habitat within the Study Area

0 125 250 500 Feet

Projection: UTM Zone 11
Datum: NAD 83

Date: 2/21/2024

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Upland habitat for SNYLF includes
1) all areas within 82 feet of the banks of streams 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
RUSH CREEK TR
Reversed Creek
Agnew_Lake
Meadow_01
Gem_Lake
Gem Dam
Rush_Creek_Below_Gem_Dam
Waterfall
Perennial_Stream_06
Perennial_Stream_07
CLARK LAKES TR
SPOOKY MEADOW TR
Silver Lake Stock Camp Pack Station
18.9
19
19.1
19.2
19.3
19.4
19.5
19.6
19.7
19.8
19.9
20
20.1
20.2
20.3
20.4
20.5
20.6
20.7
20.8

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

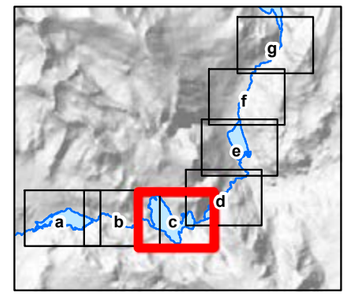
Other Features

- 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 AQ 7-2c

Potential SNYLF Habitat within the Study Area

0 125 250 500 Feet

Projection: UTM Zone 11
Datum: NAD 83

Date: 2/21/2024

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Upland habitat for SNYLF includes
1) all areas within 82 feet of the banks of streams 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
Perennial_Stream_09
Rush Creek Powerhouse
Meadow_02
Reversed Creek
Rush Creek Horsetail Falls
South_Rush_Creek
Meadow_04
Perennial_Stream_10
Rush_Creek_Below_Agnew_Dam
Agnew_Lake
Agnew Dam
RUSH CREEK TR
SPOOKY MEADOW TR
Perennial_Stream_08
Gem Dam
Rush_Creek_Below_Gem_Dam
Rush_Creek_Above_Silver_Lake_02
Meadow_03
Rush Creek Above Silver Lake
Unnamed Creek
Rush 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
- 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 AQ 7-2d

Potential SNYLF Habitat within the Study Area

0 125 250 500 Feet

Projection: UTM Zone 11
Datum: NAD 83

Date: 2/21/2024

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Upland habitat for SNYLF includes
1) all areas within 82 feet of the banks of streams 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
PARKER BEACH TR
RUSH CREEK TR
SILVER LAKE HORSE TR
Reversed Creek
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

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

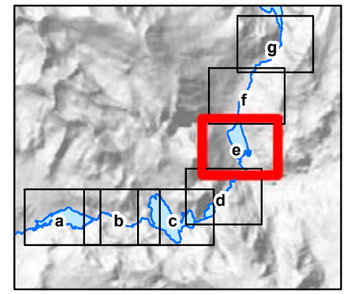
Other Features

- 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 AQ 7-2e

Potential SNYLF Habitat within the Study Area

0 125 250 500 Feet

Projection: UTM Zone 11
Datum: NAD 83

Date: 2/21/2024

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Upland habitat for SNYLF includes
1) all areas within 82 feet of the banks of streams and
2) the entire upland area between proximate (i.e., within 984 feet) water bodies such as lakes, meadows, ponds etc.

PARKER BENCH TR

LOWER RUSH CREEK LOOP TR

Reversed Creek

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

Rush_Creek_Below_Silver_Lake_01

158

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

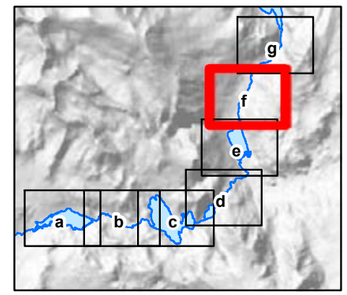
Other Features

- 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 AQ 7-2f

Potential SNYLF Habitat within the Study Area

0 125 250 500 Feet

Projection: UTM Zone 11
Datum: NAD 83

Date: 2/21/2024

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Upland habitat for SNYLF includes
1) all areas within 82 feet of the banks of streams 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
Reversed 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

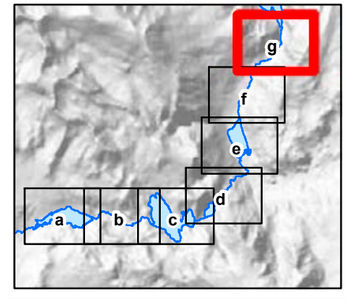
Other Features

- Non-Project Trail
- 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 AQ 7-2g

Potential SNYLF Habitat within the Study Area

0 125 250 500 Feet

Projection: UTM Zone 11
Datum: NAD 83

Date: 2/21/2024

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Perennial_Stream_02
Perennial_Stream_05
Perennial_Stream_01
Waugh Lake
RUSH CREEK TR
Frontier Pack Station
Pack Station
Rush Meadows Dam
Rush Creek
WEBER LAKE TR
WEBER LAKE SPUR TR
Aligator lizard
RC23.0
Sierra treefrog
LP_Meadow_01
Pond_01
Unknown frog species
Rush_Creek_Above_Waugh_Lake
Perennial_Stream_03
Perennial_Stream_04
22
22.1
22.2
22.3
22.4
22.5
22.6
22.7
22.8
22.9
23
23.1
23.2
23.3
23.4
23.5
23.6
23.7
23.8
23.9
24

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 Locations

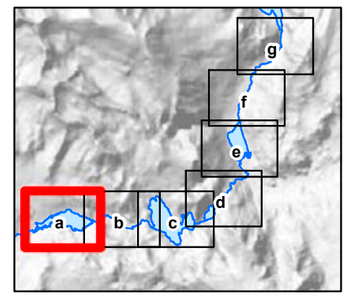
- Amphibian Study Site Location
- SNYLF Aquatic Habitat Feature
- YT Aquatic Habitat Feature

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.

Species Observed During VES

- Location Where Amphibian/Reptile Species Observed

* Refer to Tables AQ 7-3, AQ 7-4, AQ 7-7, and AQ 7-8 for a complete list of species by location.



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Rush Creek Project (FERC 1389)

Map AQ 7-3a

Species Observed During SNYLF and YT Visual Encounter Surveys

0 125 250 500 Feet

Date: 2/21/2024

Projection: UTM Zone 11
Datum: NAD 83

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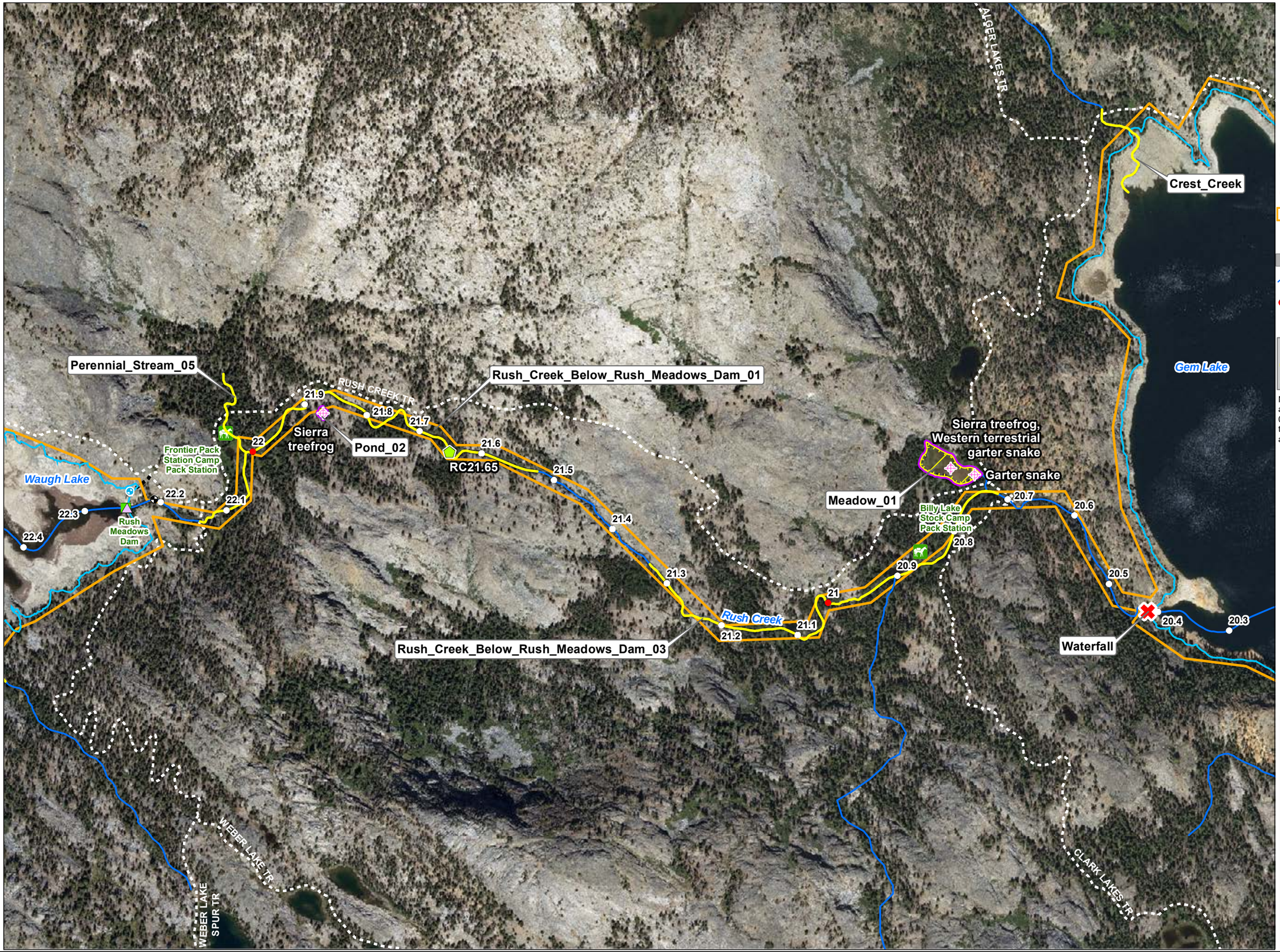


SCE Facilities

- 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 Locations

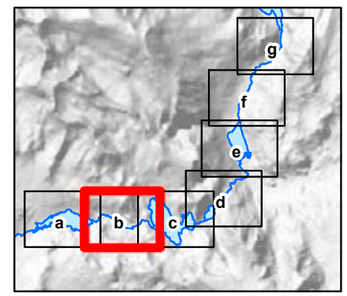
- Amphibian Study Site Location
- SNYLF Aquatic Habitat Feature
- YT Aquatic Habitat Feature

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.

Species Observed During VES

- Location Where Amphibian/Reptile Species Observed

* Refer to Tables AQ 7-4, AQ 7-5, AQ 7-7, and AQ 7-8 for a complete list of species by location.



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Rush Creek Project (FERC 1389)

Map AQ 7-3b

Species Observed During SNYLF and YT Visual Encounter Surveys

0 125 250 500 Feet

Projection: UTM Zone 11
Datum: NAD 83

Date: 2/2/2024

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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 Locations

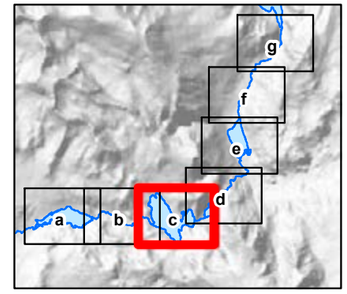
- Amphibian Study Site Location
- SNYLF Aquatic Habitat Feature
- YT Aquatic Habitat Feature

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.

Species Observed During VES

- Location Where Amphibian/Reptile Species Observed

* Refer to Tables AQ 7-4, AQ 7-5, AQ 7-7, and AQ 7-8 for a complete list of species by location.



SOUTHERN CALIFORNIA EDISON
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Rush Creek Project (FERC 1389)

Map AQ 7-3c

Species Observed During SNYLF and YT Visual Encounter Surveys

0 125 250 500 Feet

Date: 2/2/2024

Projection: UTM Zone 11
Datum: NAD 83

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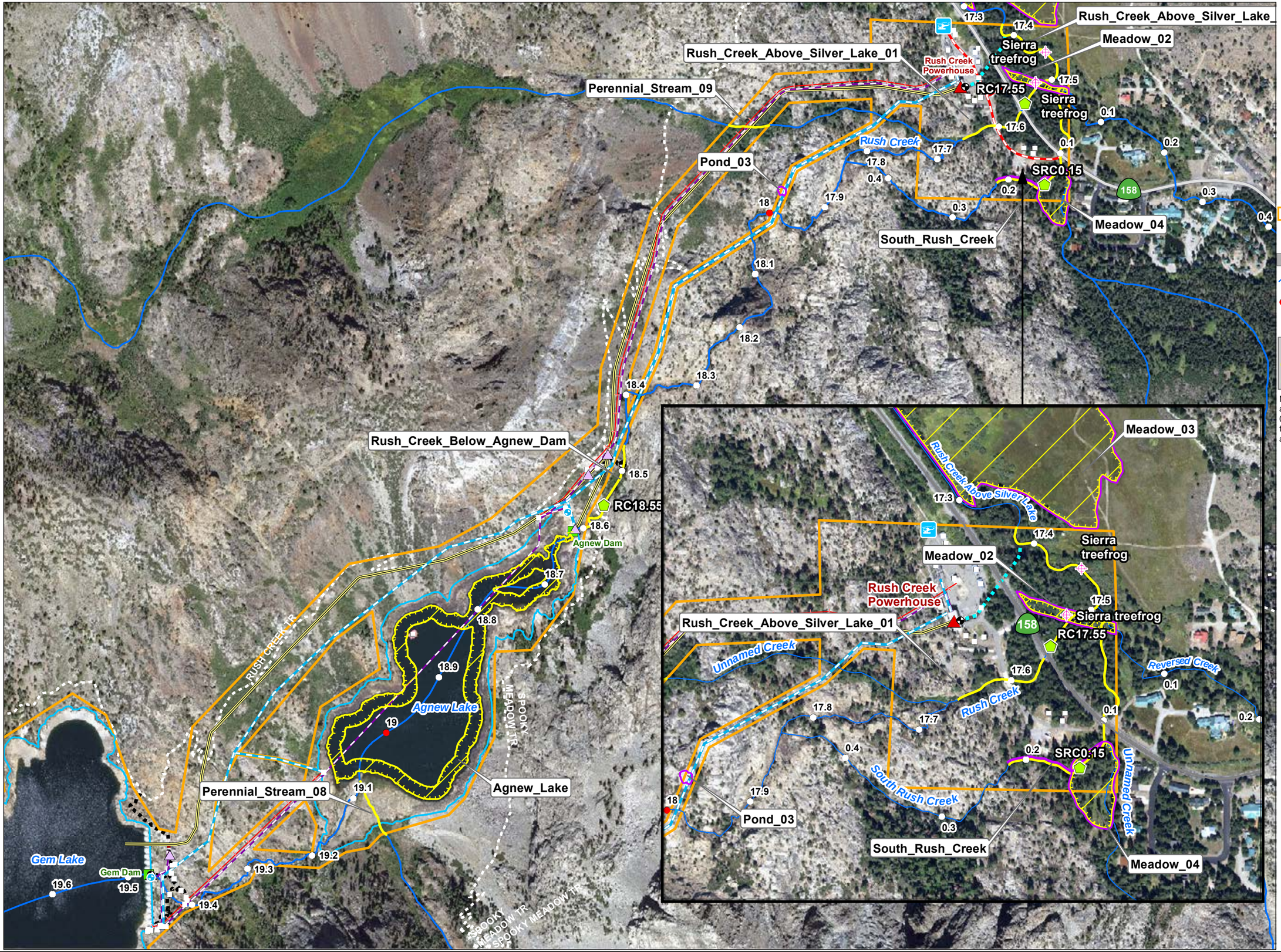


SCE Facilities

- 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 Locations

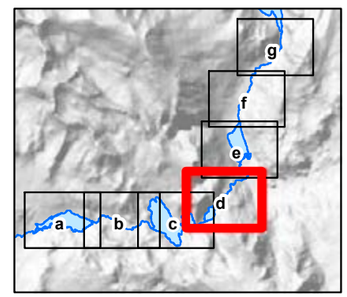
- Amphibian Study Site Location
- SNYLF Aquatic Habitat Feature
- YT Aquatic Habitat Feature

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.

Species Observed During VES

- Location Where Amphibian/Reptile Species Observed

* Refer to Tables AQ 7-3, AQ 7-4, AQ 7-7, and AQ 7-8 for a complete list of species by location.



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Rush Creek Project (FERC 1389)

Map AQ 7-3d

Species Observed During SNYLF and YT Visual Encounter Surveys

Date: 2/6/2024

0 125 250 500 Feet

Projection: UTM Zone 11
Datum: NAD 83

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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 Locations

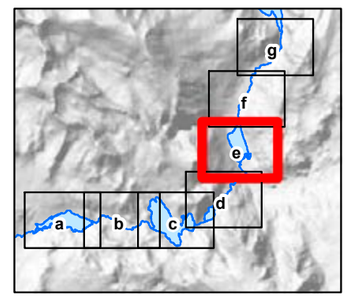
- Amphibian Study Site Location
- SNYLF Aquatic Habitat Feature
- YT Aquatic Habitat Feature

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.

Species Observed During VES

- Location Where Amphibian/Reptile Species Observed

* Refer to Tables AQ 7-4, AQ 7-5, AQ 7-7, and AQ 7-8 for a complete list of species by location.



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Rush Creek Project (FERC 1389)

Map AQ 7-3e

Species Observed During SNYLF and YT Visual Encounter Surveys

0 125 250 500 Feet

Projection: UTM Zone 11
Datum: NAD 83

Date: 2/2/2024

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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 Locations

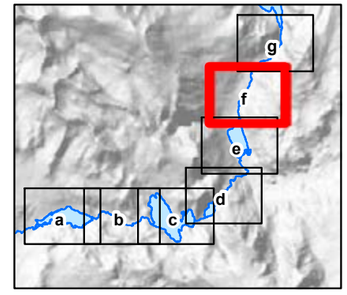
- Amphibian Study Site Location
- SNYLF Aquatic Habitat Feature
- YT Aquatic Habitat Feature

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.

Species Observed During VES

- Location Where Amphibian/Reptile Species Observed

* Refer to Tables AQ 7-4, AQ 7-5, AQ 7-7, and AQ 7-8 for a complete list of species by location.



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Rush Creek Project (FERC 1389)

Map AQ 7-3f

Species Observed During SNYLF and YT Visual Encounter Surveys

0 125 250 500 Feet

Date: 2/2/2024

Projection: UTM Zone 11
Datum: NAD 83

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

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 Locations

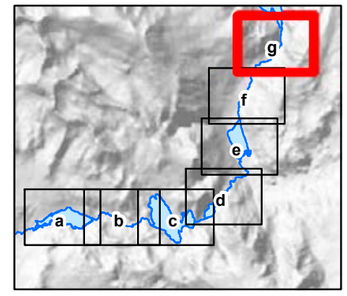
- Amphibian Study Site Location
- SNYLF Aquatic Habitat Feature
- YT Aquatic Habitat Feature

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.

Species Observed During VES

- Location Where Amphibian/Reptile Species Observed

* Refer to Tables AQ 7-4, AQ 7-5, AQ 7-7, and AQ 7-8 for a complete list of species by location.



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Rush Creek Project (FERC 1389)

Map AQ 7-3g

Species Observed During SNYLF and YT Visual Encounter Surveys

0 125 250 500 Feet

Projection: UTM Zone 11
Datum: NAD 83

Date: 2/2/2024

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CONFIDENTIAL INFORMATION

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

Map AQ 7-4 SNYLF and YT Known Populations Within 1 Mile of the FERC Project Boundary (Confidential)

Map AQ 7-4 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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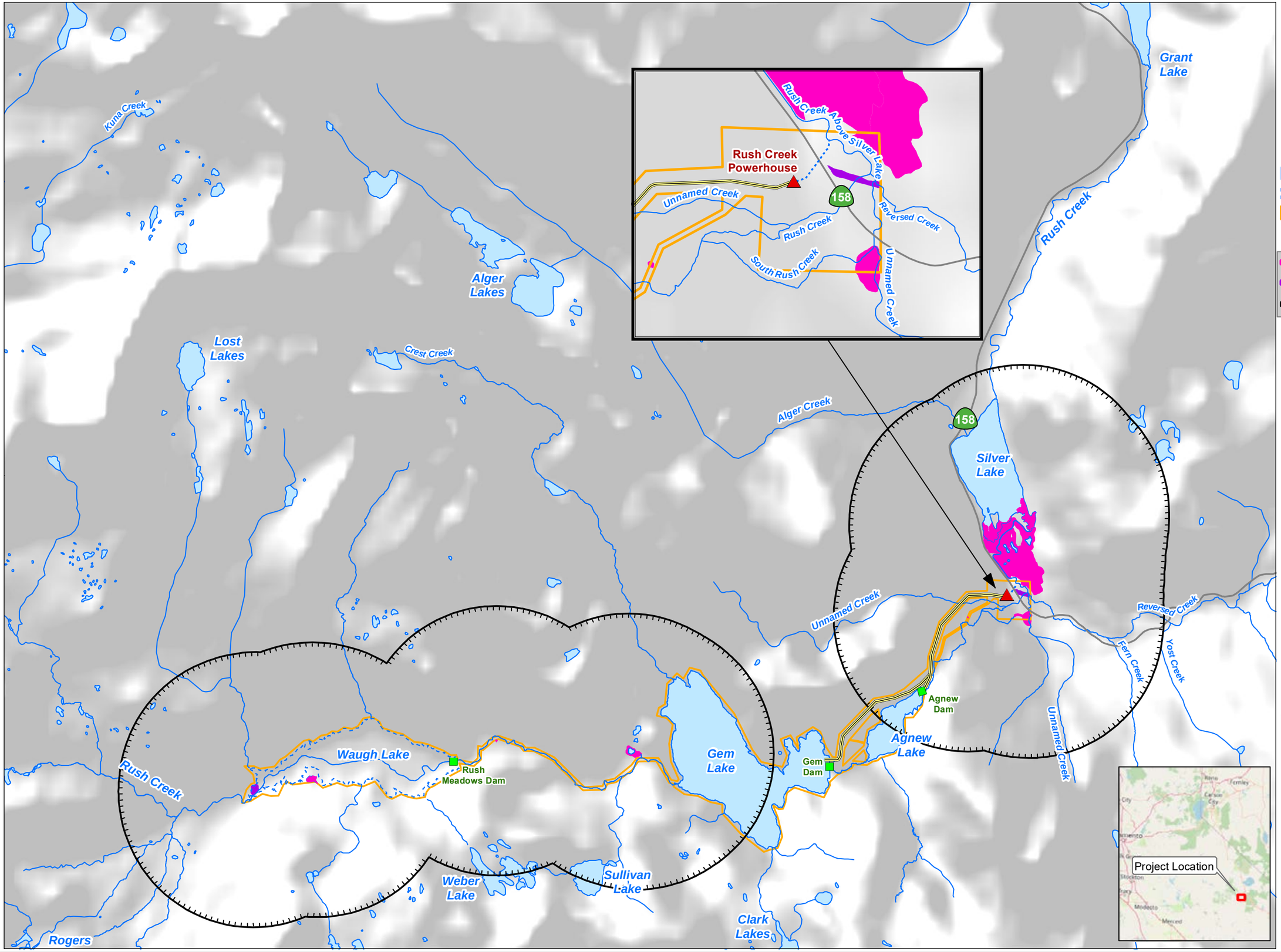

SCE Facilities

- Dam
- Powerhouse
- Flowline / Penstock
- Tailrace

Other Features

- Highway
- River/Stream
- Lake/Reservoir
- Dry Lake/Reservoir
- FERC Boundary

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 AQ 7-5

Potential YT Habitat within the Study Area - Overview Map

0 0.25 0.5 Miles

Projection: UTM Zone 11
Datum: NAD 83

Date: 2/21/2024

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

RUSH CREEK TR

Frontier Pack Station Camp
Pack Station

Waugh Lake

Rush Meadows Dam

Rush Creek

WEBER LAKE TR

WEBER LAKE SPUR TR

LP_Meadow_01

Pond_01

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

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*

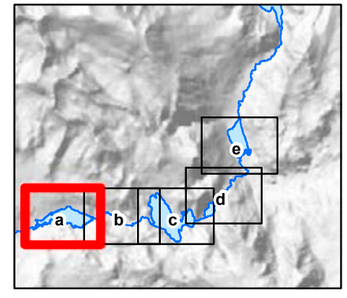
* (Not suitable for YT aquatic habitat)

- 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 AQ 7-5a

Potential YT Habitat within the Study Area

0 125 250 500 Feet

Projection: UTM Zone 11
Datum: NAD 83

Date: 2/21/2024

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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
Billy Lake Stock Camp Pack Station
Rush Meadows Dam
Waugh Lake
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*

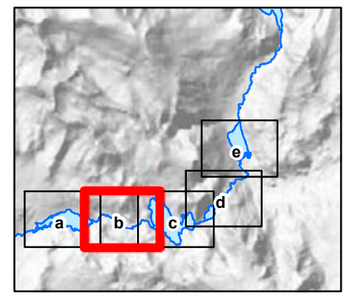
* (Not suitable for YT aquatic habitat)

- 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
An EDISON INTERNATIONAL Company

Rush Creek Project (FERC 1389)

Map AQ 7-5b

Potential YT Habitat within the Study Area

0 125 250 500 Feet

Projection: UTM Zone 11
Datum: NAD 83

Date: 2/21/2024

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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
SPECK MEADOW
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*

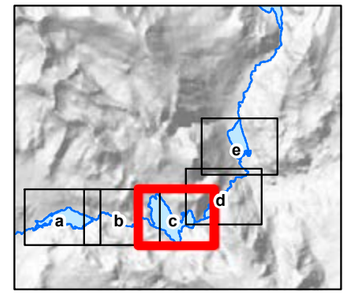
* (Not suitable for YT aquatic habitat)

- 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
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Rush Creek Project (FERC 1389)

Map AQ 7-5c

Potential YT Habitat within the Study Area

0 125 250 500 Feet

Projection: UTM Zone 11
Datum: NAD 83

Date: 2/21/2024

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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
Pond_03
18
17.9
Rush Creek/Horsetail Falls
0.3
South_Rush_Creek
Meadow_04
Reversed Creek
0.3
0.4
18.1
18.2
18.3
18.4
18.5
18.6
Agnew Dam
18.7
18.8
18.9
RUSH CREEK TR
Agnew Lake
19
SPOOKY MEADOW TR
19.1
19.2
19.3
Gem Lake
Gem Dam
19.6
19.5
19.4
SPOOKY MEADOW TR
SPOOKY MEADOW TR
LOOKOUT PT TR
MEADOW

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*

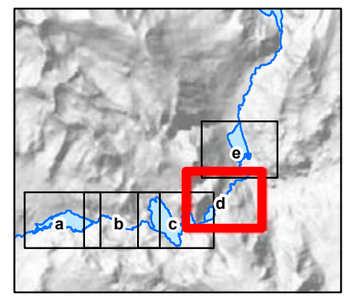
* (Not suitable for YT aquatic habitat)

- 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 AQ 7-5d

Potential YT Habitat within the Study Area

0 125 250 500 Feet

Projection: UTM Zone 11
Datum: NAD 83

Date: 2/21/2024

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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*

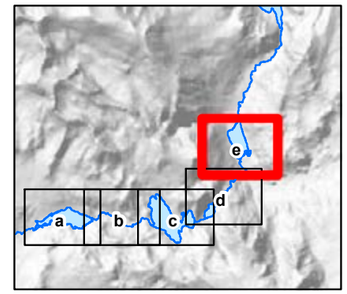
* (Not suitable for YT aquatic habitat)

- 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



SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

Rush Creek Project (FERC 1389)

Map AQ 7-5e

Potential YT Habitat within the Study Area

0 125 250 500 Feet

Projection: UTM Zone 11
Datum: NAD 83

Date: 2/21/2024

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CONFIDENTIAL INFORMATION

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

Map AQ 7-5f Potential YT Habitat within the Study Area (Confidential)

Map AQ 7-5f will not be distributed to the general public. Documents containing Confidential Information may be requested by entities and organizations with jurisdiction over these resources. To request copies, please contact Matthew Woodhall, SCE Relicensing Project Manager at (909) 362-1764 or matthew.woodhall@sce.com.

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APPENDIX A

Sierra Nevada Yellow-legged Frog Habitat Assessment Datasheet

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Rush Creek Hydroelectric Project Relicensing 2023 **SNYLF** **AQ 7 - SNYLF Habitat Assessment Datasheet**

Date: **Stream Segment Name[1]:** **Sampling Location[1]:**

Trimble ID #: **Photograph Numbers:**

Sierra Nevada Yellow-legged Frog (SNYLF) Aquatic Feature Type:

Lake/Reservoir Pond Perennial Stream Pool within Intermittent Stream Seep/Spring Other

Notes:

Primary Constituent Elements (SNYLF):

SNYLF Aquatic Habitat Elements	**Is Element Present?**	**Notes**
Water at least 5.6 feet deep, does not freeze solid in winter (B)	NO YES	
Unimpaired/natural flow regime (B)	NO YES	
Free of introduced predators (B)	NO YES	
Maintains sufficient water in most years for entire 2-year tadpole growth phase (B)	NO YES	
Variety of bank and pool substrates (silts, sands, cobble, boulders) (B, NB)	NO YES	
Shallow water areas with solar exposure (B)	NO YES	
Open gravel banks and rocks for sunning (B, NB)	NO YES	
Aquatic refugia for predator avoidance (overhanging banks, logs, rocks, vegetation) (B, NB)	NO YES	
Overwintering refugia (holes and crevices in bedrock in or near shore) (NB)	NO YES	
Food resources for tadpole growth and development (B)	NO YES	
Food resources for juvenile and adult foraging (NB)	NO YES	
Corridors for movement between breeding or foraging sites (meadows, streams) (NB)	NO YES	
Canopy cover of riparian/upland habitats within 82 feet less than 85 percent?	NO YES	
High water quality present within the catchment (upstream and within feature)	NO YES	

[1] Refer to Table AQ-7 in the TSP for the stream segment and sampling location names.

APPENDIX B
Yosemite Toad Habitat Assessment Datasheet

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Date: **Stream Segment Name[1]:** **Sampling Location[1]:**

Trimble ID #: **Photograph Numbers:**

Yosemite Toad (YT) Aquatic Feature Type:

Wet Meadows Ponds Slow-moving Streams Seeps/Springs Seep/Spring Shallow areas of lakes

YT Upland Feature Type:

Talus and boulders Rodent Burrows Logs Boulders Dry, Lupine Areas

Notes:

Primary Constituent Elements (YT):

Aquatic Habitat Elements	**Is Element Present?**		**Notes**
Habitat is typically inundated during snowmelt (B)	NO	YES	
Holds water for a minimum of 5 weeks in most years (B)	NO	YES	
Food resources for tadpole growth and development (B)	NO	YES	
Sufficient water quality of aquatic habitats upstream and within habitat	NO	YES	
Upland Habitat Elements (Upland habitats are areas within 0.78 mile (1.25 km) of breeding habitat)	**Is Element Present?**		**Notes**
Sufficient cover (rodent burrows, logs, rocks, other surface objects) for summer refugia, winter refugia, and predator avoidance (NB)	NO	YES	
Foraging habitat and adequate prey resources (abundance of invertebrate prey) (NB)	NO	YES	
Dispersal corridors between breeding habitats and summer and winter refugia (i.e., streams, springs, riparian) (NB)	NO	YES	

[1] Refer to Table AQ-7 in the TSP for the stream segment and sampling location names.

APPENDIX C
Representative Photographs of SNYLF Habitats in the Study Area

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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.

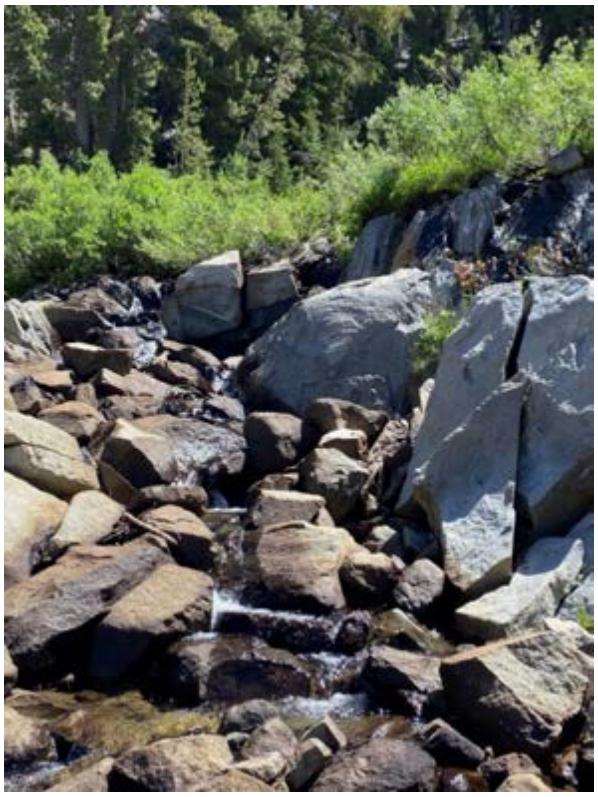
Waugh Lake. Representative photo of Waugh Lake from the south shore. This location contains some, but not all, of both the breeding and non-breeding PCEs for SNYLF. Predatory trout populations were observed in this lake; therefore, this habitat did not meet the criteria for breeding habitat. This lake 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.

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APPENDIX D
SNYLF Visual Encounter Survey Datasheets

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Aquatic Survey Data Sheet

Site: Rush Creek

Date: 7/18/23 (mm-dd-yy)	Begin Time: 12:06pm	Total Time: 55 min	Observer(s): Robyn Smith + Emily Ferrell
Locality: Rush Creek Above Waugh Lake			Owner: ? NPS (FS) BLM St. Pvt. Oth.
County: Mono	Elevation: 9400 m (ft)	North UTM: 4180222 mN GPS Map	East UTM: 305987 mE 10 (11) 345678
Topographic Map: (7.5') 15' Mt. Ritter		North UTM: 4180201 mN GPS Map	East UTM: 305845 mE 10 (11) 345678
Distance to Mapped trail: 0.5 km	Distance to Public dirt road: 16 km	Distance to Public paved road: 16 km	

Weather:	Clear	Overcast	Rain	Wind:	0	5 - 20	Air Temp.: (at 1 m) 25 (C) F	Water Temp.: (0.5 m out) 4 (C) F
	(Pt. Cloudy)	Mostly Cloudy	Snow	(mph)	(<5)	>20		

Habitat: Natural (1) 2 3 4 5 Altered	Description: Lake, River, Woodland, Meadow/Wetl., Ditch, Pond, (Stream), Grassland, Spring	Drainage: (Permanent) Seasonal			
Site Length: 300 m	Aver. Width: 6 m	Aver. Depth: unknown m	Max. Depth: unknown m	Water Flow sec./10 ft. 0, 7-11 sec., (<7 sec.), >11 sec.	
Water Turbidity: Clear (1) 2 3 4 5 Turbid	Mid-day Shade: 30 %	Emergent Vegetation: 5 %	Floating Vegetation: 0 %		
Water-shed: ✓ Natural, ___ Grazed, ___ Logged (last 15 yr.), ___ Urban, ___ Agricul., ___ Other	Substrate: ✓ Silt, ___ Bedrock, ✓ < 2 mm, ✓ 2 - 75 mm, ✓ 75 - 300 mm, ✓ >300 mm				
Predominant Vegetation: mountain heather, willows, azalea, lodgepole pine overstory					

Fishing Tackle: Yes (No)	Fish Present: Yes (No) ?	Species and Approx. Number: hydrologically connected to Waugh Lake which has fish

Species	Adults	Subadults	Larvae	Eggs	DNA #	Survey Method(s)		Other
None					N / A	Visual, Aural, Dip Net	Hand, TCS, Seine	Voucher, Pathology, Photo
					N / A	Visual, Aural, Dip Net	Hand, TCS, Seine	Voucher, Pathology, Photo
					N / A	Visual, Aural, Dip Net	Hand, TCS, Seine	Voucher, Pathology, Photo
					N / A	Visual, Aural, Dip Net	Hand, TCS, Seine	Voucher, Pathology, Photo
					N / A	Visual, Aural, Dip Net	Hand, TCS, Seine	Voucher, Pathology, Photo
					N / A	Visual, Aural, Dip Net	Hand, TCS, Seine	Voucher, Pathology, Photo

Aquatic Survey Data Sheet

Site: Rush Creek

Date: 7/18/23 (mm-dd-yy) 7/19/23	Begin Time: 9:00 am	Total Time: ~720 min	Observer(s): 1 (2) 3 4 Robyn Smith + Emily Ferrell
Locality: Waugh Lake			Owner: ? NPS (FS) BLM St. Pvt. Oth.
County: Mono	Elevation: 9,400 m (ft)	North UTM: GPS Map 4180291.80mN	East UTM: 345678 305959.06 10 (11)
Topographic Map: (7.5') 15' Mt. Ritter + Koip Peak		North UTM: GPS Map 4180466.58	East UTM: 345678 307792.01 10 (11)
Distance to Mapped trail: 0.1 km	Distance to Public dirt road: 16 km	Distance to Public paved road: 16 km	

Weather: Clear Overcast Rain (Pt. Cloudy) Mostly Cloudy Snow	Wind: (mph) 0 (5 - 20) <5 >20	Air Temp.: (at 1 m) 20 (C) F	Water Temp.: (0.5 m out) 4 (C) F

Historic reservoir bed and dam cause wide seasonal fluctuations

Habitat: Natural 1 2 3 4 Altered (5)	Description: (Lake) River Woodland Meadow/Wetl. Ditch Pond Stream Grassland Spring			Drainage: (Permanent) (Seasonal)
Site Length: 1,800 m	Aver. Width: ~330 m	Aver. Depth: Unknown m	Max. Depth: Unknown m	Water Flow sec./10 ft.: 0 <7 sec. 7-11 sec. (>11 sec.)
Water Turbidity: Clear (1) 2 3 4 5 Turbid	Mid-day Shade: 0 %	Emergent Vegetation: 0.1 %		Floating Vegetation: 0 %
Watershed: X Natural ___ Grazed ___ Logged (last 15 yr.) ___ Urban ___ Agricul. X Other Hydro		Substrate: X Silt X Bedrock X <2 mm X 2 - 75 mm X 75 - 300 mm X >300 mm		
Predominant Vegetation: Very little vegetation, small growth of Carex. and willows along shoreline				

Surveys were completed intermittently with other surveys on connected streams/ponds in the vicinity.

Fishing Tackle: Yes (No)	Fish Present: (Yes) No ?	Species and Approx. Number: Trout ~20 adults seen, >500 juveniles

Species	Adults	Subadults	Larvae	Eggs	DNA #	Survey Method(s)	Other
NA						N Visual Hand / Aural TCS / A Dip Net Seine	Voucher / Pathology / Photo
						N Visual Hand / Aural TCS / A Dip Net Seine	Voucher / Pathology / Photo
						N Visual Hand / Aural TCS / A Dip Net Seine	Voucher / Pathology / Photo
						N Visual Hand / Aural TCS / A Dip Net Seine	Voucher / Pathology / Photo
						N Visual Hand / Aural TCS / A Dip Net Seine	Voucher / Pathology / Photo
						N Visual Hand / Aural TCS / A Dip Net Seine	Voucher / Pathology / Photo

Aquatic Survey Data Sheet

Site: Rush Creek

Date: (mm-dd-yy) 7/18/23	Begin Time: 10:28 am	Total Time: 46 min	Observer(s): Robyn Smith + Emily Ferrell 1 (2) 3 4	
Locality: Perennial Stream 01				Owner: ? NPS (FS) BLM St. Pvt. Oth.
County: Mono	Elevation: 9500 m (ft)	North UTM: 4180326 mN GPS Map	East UTM: 305947 mE 10 (11) 345678	
Topographic Map: (7.5) 15' Koip Peak		North UTM: 4180436 mN GPS Map	East UTM: 305860 mE 10 (11) 345678	
Distance to Mapped trail: 0 km	Distance to Public dirt road: 16 km	Distance to Public paved road: 16 km		

Weather: Clear (Pt. Cloudy) Overcast Mostly Cloudy Rain Snow	Wind: (mph) 0 (<5) 5 - 20 > 20	Air Temp.: (at 1 m) 23 (C) F	Water Temp.: (0.5 m out) 4 (C) F

Habitat: Natural (1) 2 3 4 5 Altered	Description: Lake River Woodland Meadow/Wetl. Ditch Pond (Stream) Grassland Spring			Drainage: (Permanent) Seasonal
Site Length: 200 m	Aver. Width: 9 m	Aver. Depth: 1 m	Max. Depth: 2 m	Water Flow sec./10 ft.: 0 (<7 sec) 7-11 sec. >11 sec.
Water Turbidity: Clear (1) 2 3 4 5 Turbid	Mid-day Shade: 15 %	Emergent Vegetation: 20 %		Floating Vegetation: 0 %
Watershed: ✓ Natural ___ Grazed ___ Logged (last 15 yr.) ___ Urban ___ Agricul. ___ Other ___		Substrate: ✓ Silt ✓ Bedrock ✓ < 2 mm ✓ 2 - 75 mm ✓ 75 - 300 mm ✓ >300 mm		
Predominant Vegetation: Lodgepole pine overstory, willows, violets				

Fishing Tackle: Yes (No)	Fish Present: Yes (No) ?	Species and Approx. Number: hydrologically connected to Waugh Lake where fish were observed

Species	Adults	Subadults	Larvae	Eggs	DNA #	Survey Method(s)	Other
Elgaria spp. (dark eye)	2					N (Visual) Hand Aural TCS A Dip Net Seine	Voucher Pathology Photo
						N Visual Hand Aural TCS A Dip Net Seine	Voucher Pathology Photo
						N Visual Hand Aural TCS A Dip Net Seine	Voucher Pathology Photo
						N Visual Hand Aural TCS A Dip Net Seine	Voucher Pathology Photo
						N Visual Hand Aural TCS A Dip Net Seine	Voucher Pathology Photo
						N Visual Hand Aural TCS A Dip Net Seine	Voucher Pathology Photo

Aquatic Survey Data Sheet

Site: Rush Creek

Date: 7/19/23 (mm-dd-yy)	Begin Time: 3:50 pm	Total Time: 76 min	Observer(s): Robyn Smith + Emily Ferrell 1 (2) 3 4
Locality: Pond 01			Owner: ? NPS (FS) BLM St. Pvt. Oth.
County: Mono	Elevation: 9600 m (ft)	North UTM: 4180235 mN GPS Map	East UTM: 306498 mE 10 3 4 5 6 7 8 (11)
Topographic Map: (7.5) 15' Mt. Ritter		North UTM: 4180302 mN GPS Map	East UTM: 306455 mE 10 3 4 5 6 7 8 (11)
Distance to Mapped trail: 1.6 km	Distance to Public dirt road: 16 km	Distance to Public paved road: 16 km	

Weather: Clear (Pt. Cloudy)	Overcast Mostly Cloudy	Rain Snow	Wind: (mph)	0 < 5	(5 - 20) > 20	Air Temp.: (at 1 m)	20 (C) F	Water Temp.: (0.5 m out) 15 C F

Habitat: Natural (1) 2 3 4 5 Altered	Description: Lake (Pond) River Woodland Meadow/Wetl. Ditch Stream Grassland Spring						Drainage: (Permanent) Seasonal		
Site Length: 91 m	Aver. Width: 45 m	Aver. Depth: 3 m	Max. Depth: Unknown m	Water Flow sec./10 ft. (0) < 7 sec. 7-11 sec. >11 sec.					
Water Turbidity: Clear (1) 2 3 4 5 Turbid	Mid-day Shade: 10 %	Emergent Vegetation: 15 %	Floating Vegetation: 0 %						
Water-shed: ✓ Natural ___ Urban ___ Grazed ___ Agricul. ___ Logged (last 15 yr.) ___ Other	Substrate: ✓ Silt ___ Bedrock ___ < 2 mm ✓ 2 - 75 mm ✓ 75 - 300 mm ✓ >300 mm								
Predominant Vegetation: emergent grasses, heather, azalea, lodgepole pines									

Fishing Tackle: Yes (No)	Fish Present: Yes (No) ?	Species and Approx. Number:

Species	Adults	Subadults	Larvae	Eggs	DNA #	Survey Method(s)		Other
PSRE	2		40	167	N A	(Visual) (Aural) Dip Net	Hand TCS Seine	Voucher Pathology Photo
					N A	Visual Aural Dip Net	Hand TCS Seine	Voucher Pathology Photo
					N A	Visual Aural Dip Net	Hand TCS Seine	Voucher Pathology Photo
					N A	Visual Aural Dip Net	Hand TCS Seine	Voucher Pathology Photo
					N A	Visual Aural Dip Net	Hand TCS Seine	Voucher Pathology Photo
					N A	Visual Aural Dip Net	Hand TCS Seine	Voucher Pathology Photo

Aquatic Survey Data Sheet

Site: Rush Creek

Date: 7/18/23 (mm-dd-yy)	Begin Time: 3:05 pm	Total Time: 20 min	Observer(s): Robyn Smith + Emily Ferrell (1 2 3 4)

Locality: Perennial Stream 02

Owner: ? NPS (FS) BLM St. Pvt. Oth.

County: Mono	Elevation: 9600 m (ft)	North UTM: 4180884 mN GPS Map	East UTM: 307001 mE (10) (11) 3 4 5 6 7 8
Topographic Map: Koip Peak (7.5) 15'		North UTM: 4180807 mN GPS Map	East UTM: 307006 mE (10) (11) 3 4 5 6 7 8
Distance to Mapped trail: 0 km	Distance to Public dirt road: 14 km	Distance to Public paved road: 14 km	

Weather: Clear, (Pt. Cloudy), Overcast, Mostly Cloudy, (Rain), Snow	Wind: (mph) 0, (<5), 5 - 20, >20	Air Temp.: (at 1 m) 20 (C) F	Water Temp.: (0.5 m out) 6 (C) F	

Habitat: Natural (1) 2 3 4 5 Altered	Description: Lake, River, Woodland, Meadow/Wetl., Ditch, Pond, (Stream), Grassland, Spring	Drainage: (Permanent), Seasonal			
Site Length: 45 m	Aver. Width: 6 m	Aver. Depth: 0.5 m	Max. Depth: 1 m	Water Flow sec./10 ft. 0, (<7 sec), 7-11 sec., >11 sec.	
Water Turbidity: Clear (1) 2 3 4 5 Turbid	Mid-day Shade: 50 %	Emergent Vegetation: 1 %	Floating Vegetation: 0 %		
Water-shed: (✓) Natural, ___ Grazed, ___ Logged (last 15 yr.), ___ Urban, ___ Agricul., ___ Other	Substrate: ___ Silt, (✓) < 2 mm, (✓) 75 - 300 mm, ___ Bedrock, (✓) 2 - 75 mm, (✓) >300 mm				
Predominant Vegetation: Lodgepole pine overstory					

- waterfall prevented surveying beyond FERC boundary

Fishing Tackle: Yes (No)	Fish Present: Yes (No) ?	Species and Approx. Number:

Species	Adults	Subadults	Larvae	Eggs	DNA # (N / A)	Survey Method(s)		Other
None					N / A	Visual, Aural, Dip Net	Hand, TCS, Seine	Voucher, Pathology, Photo
					N / A	Visual, Aural, Dip Net	Hand, TCS, Seine	Voucher, Pathology, Photo
					N / A	Visual, Aural, Dip Net	Hand, TCS, Seine	Voucher, Pathology, Photo
					N / A	Visual, Aural, Dip Net	Hand, TCS, Seine	Voucher, Pathology, Photo
					N / A	Visual, Aural, Dip Net	Hand, TCS, Seine	Voucher, Pathology, Photo
					N / A	Visual, Aural, Dip Net	Hand, TCS, Seine	Voucher, Pathology, Photo

Aquatic Survey Data Sheet

Site: Rush Creek

Date: 7/18/23 (mm-dd-yy)	Begin Time: 2:39 pm	Total Time: 13 min	Observer(s): Robyn Smith + Emily Ferrell — 1 (2) 3 4

Locality: Perennial Stream 03	Owner: ? NPS (FS) BLM St. Pvt. Oth.

County: Mono	Elevation: 9500 m (ft)	North UTM: 4180240 m N GPS Map	East UTM: 306920 m E 10 (11) 345678
Topographic Map: Mt. Ritter (7.5') 15'		North UTM: 4180188 m N GPS Map	East UTM: 306912 m E 10 (11) 345678

Distance to Mapped trail: 1.6 km	Distance to Public dirt road: 14 km	Distance to Public paved road: 14 km

Weather: Clear, Overcast, Rain, (Pt. Cloudy), Mostly Cloudy, Snow	Wind (mph): 0, (5 - 20), < 5, > 20	Air Temp. (at 1 m): 19 (C) F	Water Temp. (0.5 m out): 3 (C) F

Habitat: Natural (1) 2 3 4 5 Altered	Description: Lake, River, Woodland, Meadow/Wetl., Ditch, Pond, (Stream), Grassland, Spring		Drainage: (Permanent) Seasonal
Site Length: 91 m	Aver. Width: 6 m	Aver. Depth: 0.25 m	Max. Depth: 0.5 m
Water Flow sec./10 ft.: 0, (<7 sec.), 7-11 sec., >11 sec.	Water Turbidity: Clear (1) 2 3 4 5 Turbid	Mid-day Shade: 5 %	Emergent Vegetation: 5 %
Floating Vegetation: 0 %	Watershed: ✓ Natural, ___ Grazed, ___ Logged (last 15 yr.), ___ Urban, ___ Agricul., ___ Other ___	Substrate: ___ Silt, ___ < 2 mm, ✓ 75 - 300 mm, ___ Bedrock, ___ 2 - 75 mm, ✓ >300 mm	

Predominant Vegetation: willows in patches along stream, lodgepole pines, mosses

– stream is steep and waterfall-like in FERC boundary (unsafe to walk)

Fishing Tackle: Yes (No)	Fish Present: Yes (No) ?	Species and Approx. Number:

Species	Adults	Subadults	Larvae	Eggs	DNA #	Survey Method(s)	Other
None					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo

Aquatic Survey Data Sheet

Site: Rush Creek

Date: (mm-dd-yy) 7/19/23	Begin Time: 9:40 am	Total Time: 150 min	Observer(s): Robyn Smith + Emily Ferrell 1 **2** 3 4

Locality: Rush Creek Below Rush Meadows Dam 01	Owner: ? NPS **FS** BLM St. Pvt. Oth.

County: Mono	Elevation: 9400 m **ft**	North UTM: 4180418 mN GPS Map	East UTM: 307942 mE 10 **11** 345678
Topographic Map: Koip Peak **7.5** 15'		North UTM: 4180531 mN GPS Map	East UTM: 308634 mE 10 **11** 345678

Distance to Mapped trail: 0 km	Distance to Public dirt road: 14 km	Distance to Public paved road: 14 km

Weather: Clear Overcast Rain **Pt. Cloudy** Mostly Cloudy Snow	Wind: (mph) **0** 5 - 20 < 5 > 20	Air Temp.: (at 1 m) 20 **C** F	Water Temp.: (0.5 m out) 4 **C** F

altered by Rush Meadows Dam

Habitat: Natural 1 2 **3** 4 5 Altered	Description: Lake River Woodland Meadow/Wetl. Ditch Pond **Stream** Grassland Spring	Drainage: **Permanent** Seasonal

Site Length: 800 m	Aver. Width: 30 m	Aver. Depth: unknown m	Max. Depth: unknown m	Water Flow sec./10 ft.: 0 7-11 sec. **<7 sec** >11 sec.

Water Turbidity: Clear **1** 2 3 4 5 Turbid	Mid-day Shade: 25 %	Emergent Vegetation: 10 %	Floating Vegetation: 0 %

Watershed: ✓ Natural __ Grazed __ Logged (last 15 yr.) __ Urban __ Agricul. ✓ Other hydro	Substrate: ✓ Silt ✓ < 2 mm ✓ 75 - 300 mm ✓ Bedrock ✓ 2 - 75 mm ✓ >300 mm

Predominant Vegetation: Lodgepole pine overstory, willows, heather, azaleas

Fishing Tackle: Yes **No**	Fish Present: **Yes** No ?	Species and Approx. Number: 52 trout observed

Species	Adults	Subadults	Larvae	Eggs	DNA #	Survey Method(s)	Other
None					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo

Aquatic Survey Data Sheet

Site: Rush Creek

Date: (mm-dd-yy) 7/18/23	Begin Time: 4:45 pm	Total Time: 22 min	Observer(s): Robyn Smith + Emily Ferrell — 1 (2) 3 4
Locality: Perennial Stream 05			Owner: ? NPS (FS) BLM St. Pvt. Oth.
County: Mono	Elevation: 9400 m (ft)	North UTM: 4180577 mN GPS Map	East UTM: 308018 mE 10 (11) 345678
Topographic Map: Koip Peak (7.5') 15'		North UTM: 4180713 mN GPS Map	East UTM: 307994 mE 10 (11) 345678
Distance to Mapped trail: 0 km	Distance to Public dirt road: 15 km	Distance to Public paved road: 15 km	

Weather: Clear, (Pt. Cloudy), Overcast, Mostly Cloudy, Rain, Snow	Wind: (mph) (0) < 5 5 - 20 > 20	Air Temp.: (at 1 m) 17 (C) F	Water Temp.: (0.5 m out) 7 (C) F

culvert on trail

Habitat: Natural 1 (2) 3 4 5 Altered	Description: Lake, River, Woodland, Meadow/Wetl., Ditch, Pond, (Stream), Grassland, Spring			Drainage: (Permanent) Seasonal
Site Length: 200 m	Aver. Width: 2 m	Aver. Depth: 1 m	Max. Depth: 2 m	Water Flow sec./10 ft.: 0, < 7 sec., (7-11 sec), >11 sec.
Water Turbidity: Clear (1) 2 3 4 5 Turbid	Mid-day Shade: 90 %	Emergent Vegetation: 5 %		Floating Vegetation: 0 %
Water-shed: ✓ Natural, ___ Grazed, ___ Logged (last 15 yr.), ___ Urban, ___ Agricul., ___ Other ___		Substrate: ✓ Silt, ___ Bedrock, ✓ < 2 mm, ✓ 2 - 75 mm, ___ 75 - 300 mm, ___ >300 mm		
Predominant Vegetation: Lodgepole pine overstory, corn lilies, grasses				

Fishing Tackle: Yes (No)	Fish Present: (Yes) No ?	Species and Approx. Number: 10 large trout observed

Species	Adults	Subadults	Larvae	Eggs	DNA #	Survey Method(s)	Other
None					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo

Aquatic Survey Data Sheet

Site: Rush Creek

Date: (mm-dd-yy) 7/17/23	Begin Time: 2:24 pm	Total Time: 45 min	Observer(s): Robyn Smith + Emily Ferrell — 1 (2) 3 4
Locality: Rush Creek Below Rush Meadows Dam 03			Owner: ? NPS (FS) BLM St. Pvt. Oth.
County: Mono	Elevation: 8900 m (ft)	North UTM: 4180435 mN GPS Map	East UTM: 309633 mE 10 (11) 345678
Topographic Map: Koip Peak (7.5) 15'		North UTM: 4180328 mN GPS Map	East UTM: 308859 mE 10 (11) 345678
Distance to Mapped trail: 0 km	Distance to Public dirt road: 13 km	Distance to Public paved road: 13 km	

Weather: Clear, Overcast, Rain, (Pt. Cloudy), Mostly Cloudy, Snow	Wind (mph): 0, 5-20, (<5), >20	Air Temp. (at 1 m): 24 (C) F	Water Temp. (0.5 m out): 5 (C) F

Habitat: Natural 1 2 (3) 4 5 Altered	Description: Lake, River, Woodland, Meadow/Wetl., Ditch, Pond, Stream, Grassland, Spring		Drainage: Permanent, Seasonal
Site Length: 1000 m	Aver. Width: 9 m	Aver. Depth: > 2 m	Max. Depth: unknown m
Water Flow sec./10 ft.: 0, (<7 sec.), 7-11 sec., >11 sec.			
Water Turbidity: Clear (1) 2 3 4 5 Turbid	Mid-day Shade: 25 %	Emergent Vegetation: 10 %	Floating Vegetation: 0 %
Watershed: ✓ Natural, ___ Grazed, ___ Logged (last 15 yr.), ___ Urban, ___ Agricul., ___ Other ___		Substrate: ✓ Silt, ✓ Bedrock, ✓ < 2 mm, ✓ 2 - 75 mm, ✓ 75 - 300 mm, ✓ >300 mm	
Predominant Vegetation: Lodgepole pine overstory, willows, mountain heather			

Rush Meadows Dam is upstream — notched with passive flow

Fishing Tackle: (Yes) No	Fish Present: (Yes) No ?	Species and Approx. Number: 10 trout of various sizes observed

Species	Adults	Subadults	Larvae	Eggs	DNA #	Survey Method(s)	Other
None					N / A	Visual, Hand, Aural, TCS, Dip Net, Seine	Voucher, Pathology, Photo
					N / A	Visual, Hand, Aural, TCS, Dip Net, Seine	Voucher, Pathology, Photo
					N / A	Visual, Hand, Aural, TCS, Dip Net, Seine	Voucher, Pathology, Photo
					N / A	Visual, Hand, Aural, TCS, Dip Net, Seine	Voucher, Pathology, Photo
					N / A	Visual, Hand, Aural, TCS, Dip Net, Seine	Voucher, Pathology, Photo
					N / A	Visual, Hand, Aural, TCS, Dip Net, Seine	Voucher, Pathology, Photo

Aquatic Survey Data Sheet

Site: Rush Creek

Date: 7/17/23 (mm-dd-yy)	Begin Time: 12:18 pm	Total Time: 58 min	Observer(s): Robyn Smith + Emily Ferrell (1 (2) 3 4)
Locality: Meadow 01			Owner: ? NPS (ES) BLM St. Pvt. Oth.
County: Mono	Elevation: 9100 m (ft)	North UTM: 4180516 mN GPS Map	East UTM: 309540 mE 10 (11) 3 4 5 6 7 8
Topographic Map: (7.5) 15' Koip Peak		North UTM: 4180574 mN GPS Map	East UTM: 309440 mE 10 (11) 3 4 5 6 7 8
Distance to Mapped trail: 0 km	Distance to Public dirt road: 13 km	Distance to Public paved road: 13 km	

Weather: Clear (Pt. Cloudy) Overcast Mostly Cloudy Rain Snow	Wind: (mph) 0 (<5) 5 - 20 > 20	Air Temp.: (at 1 m) 25 (C) F	Water Temp.: (0.5 m out) 17 (C) F	

Habitat: Natural 1 (2) 3 4 5 Altered	Description: Lake, River, Woodland, (Meadow/Wet), Ditch, Pond, (Stream), Grassland, Spring	Drainage: (Permanent), (Seasonal)			
Site Length: 300 m	Aver. Width: 40 m	Aver. Depth: 0.5 m	Max. Depth: 1.2 m	Water Flow sec./10 ft. (0) <7 sec. 7-11 sec. (>11 sec.)	
Water Turbidity: Clear 1 (2) 3 4 5 Turbid	Mid-day Shade: 10 %	Emergent Vegetation: 60 %	Floating Vegetation: 0 %		
Water-shed: ✓ Natural, ___ Grazed, ___ Logged (last 15 yr.), ___ Urban, ___ Agricul., ___ Other	Substrate: ✓ Silt, ___ Bedrock, ___ < 2 mm, ✓ 2 - 75 mm, ✓ 75 - 300 mm, ___ >300 mm				
Predominant Vegetation: iris-leaved rush, willows					

Fishing Tackle: Yes (No)	Fish Present: (Yes) No ?	Species and Approx. Number: 5 large trout and 3 fry observed

Species	Adults	Subadults	Larvae	Eggs	DNA #	Survey Method(s)		Other
PSRE			25		N A	(Visual) Aural Dip Net	Hand TCS Seine	Voucher Pathology Photo
THEL	1				N A	(Visual) Aural Dip Net	Hand TCS Seine	Voucher Pathology Photo
					N A	Visual Aural Dip Net	Hand TCS Seine	Voucher Pathology Photo
					N A	Visual Aural Dip Net	Hand TCS Seine	Voucher Pathology Photo
					N A	Visual Aural Dip Net	Hand TCS Seine	Voucher Pathology Photo
					N A	Visual Aural Dip Net	Hand TCS Seine	Voucher Pathology Photo

Aquatic Survey Data Sheet

Site: Rush Creek

Date: (mm-dd-yy) 7/20/23	Begin Time: 9:32 am	Total Time: 39 min	Observer(s): Robyn Smith + Emily Ferrell 1 2 (circled) 3 4

Locality: Crest Creek	Owner: ? NPS FS (circled) BLM St. Pvt. Oth.

County: Mono	Elevation: 9100 m ft (circled)	North UTM: 4181155 mN GPS Map	East UTM: 309863 mE 10 345678 11 (circled)
Topographic Map: Koip Peak 7.5 (circled) 15'		North UTM: 4181232 mN GPS Map	East UTM: 309843 mE 10 345678 11 (circled)

Distance to Mapped trail: 0 km	Distance to Public dirt road: 9.6 km	Distance to Public paved road: 8 km

Weather: Clear (circled) Overcast Rain Pt. Cloudy Mostly Cloudy Snow	Wind: (mph) 0 5 - 20 <5 (circled) > 20	Air Temp.: (at 1 m) 22 C (circled) F	Water Temp.: (0.5 m out) 4 C (circled) F

Habitat: Natural 1 (circled) 2 3 4 5 Altered	Description: Lake River Woodland Meadow/Wetl. Ditch Pond Stream (circled) Grassland Spring		Drainage: Permanent (circled) Seasonal
Site Length: 300 m	Aver. Width: 10 m	Aver. Depth: 0.5 m	Max. Depth: 3 m
Water Flow sec./10 ft.: 0 <7 sec (circled) 7-11 sec. >11 sec.			
Water Turbidity: Clear 1 (circled) 2 3 4 5 Turbid	Mid-day Shade: 50 %	Emergent Vegetation: 10 %	Floating Vegetation: 0 %
Watershed: ✓ Natural ___ Grazed ___ Logged (last 15 yr.) ___ Urban ___ Agricul. ___ Other ______		Substrate: ✓ Silt ___ Bedrock ✓ < 2 mm ✓ 2 - 75 mm ✓ 75 - 300 mm ✓ >300 mm	
Predominant Vegetation:			

Fishing Tackle: Yes No (circled)	Fish Present: Yes No (circled) ?	Species and Approx. Number:

Species	Adults	Subadults	Larvae	Eggs	DNA #	Survey Method(s)	Other
None					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo

Aquatic Survey Data Sheet

Site: Rush Creek

Date: (mm-dd-yy) 7/20/23	Begin Time: 1:32 pm	Total Time: 34 min	Observer(s): Robyn Smith + Emily Ferrell 1 (2) 3 4

Locality: Agnew Lake

Owner: ? NPS (FS) BLM St. Pvt. Oth.

County: Mono	Elevation: 8500 m (ft)	North UTM: 4181067 mN GPS Map	East UTM: 312194 mE 10 (11) 345678
Topographic Map: Kaip Peak (7.5) 15'		North UTM: 4180938 mN GPS Map	East UTM: 312047 mE 10 (11) 345678

Distance to Mapped trail: 0 km	Distance to Public dirt road: 3 km	Distance to Public paved road: 1.6 km

Weather: (Clear) Overcast Rain Pt. Cloudy Mostly Cloudy Snow	Wind: (mph) 0 (5-20) < 5 > 20	Air Temp.: (at 1 m) 25 (C) F	Water Temp.: (0.5 m out) 10 (C) F

Habitat: Natural 1 2 3 4 (5) Altered	Description: (Lake) River Woodland Meadow/Wetl. Ditch Pond Stream Grassland Spring			Drainage: (Permanent) Seasonal
Site Length: 1000 m	Aver. Width: 190 m	Aver. Depth: unknown m	Max. Depth: unknown m	Water Flow sec./10 ft.: (0) < 7 sec. 7-11 sec. >11 sec.
Water Turbidity: Clear (1) 2 3 4 5 Turbid	Mid-day Shade: 0 %	Emergent Vegetation: 5 %		Floating Vegetation: 0 %
Watershed: ___ Natural ___ Grazed ___ Logged (last 15 yr.) ___ Urban ___ Agricul. ✓ Other hydro		Substrate: ✓ Silt ✓ Bedrock ✓ < 2 mm ✓ 2 - 75 mm ✓ 75 - 300 mm ✓ >300 mm		

Predominant Vegetation: willows, carex spp.

- dammed reservoir with stocked fish

Fishing Tackle: (Yes) No	Fish Present: (Yes) No ?	Species and Approx. Number: ~11 trout fry

Species	Adults	Subadults	Larvae	Eggs	DNA #	Survey Method(s)	Other
None					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo

Aquatic Survey Data Sheet

Site: Rush Creek

Date: 7/20/23 (mm-dd-yy)	Begin Time: 3:00 pm	Total Time: 22 min	Observer(s): Robyn Smith + Emily Ferrell (1 2 3 4)

Locality: Rush Creek Below Agnew Dam

Owner: ? NPS (FS) BLM St. Pvt. Oth.

County: Mono	Elevation: 8500 m (ft)	North UTM: 4181104 mN GPS Map	East UTM: 312227 mE 10 (345678) (11)
Topographic Map: (7.5) 15' Koip Peak		North UTM: 4181239 mN GPS Map	East UTM: 312310 mE 10 (345678) (11)
Distance to Mapped trail: 0 km	Distance to Public dirt road: 3 km	Distance to Public paved road: 1.6 km	

Weather: (Clear) Pt. Cloudy / Overcast Mostly Cloudy / Rain Snow	Wind: (mph) 0 / (<5) / (5-20) / (>20)	Air Temp.: (at 1 m) 23 (C) F	Water Temp.: (0.5 m out) 7 (C) F	

Habitat: Natural 1 2 3 4 Altered (5)	Description: Lake River Woodland Meadow/Wetl. Ditch Pond (Stream) Grassland Spring	Drainage: (Permanent) Seasonal		
Site Length: 160 m	Aver. Width: 9 m	Aver. Depth: unknown m	Max. Depth: unknown m	Water Flow sec./10 ft. 0 / (<7 sec) / 7-11 sec. / >11 sec.
Water Turbidity: Clear (1) 2 3 4 5 Turbid	Mid-day Shade: 35 %	Emergent Vegetation: 30 %	Floating Vegetation: 0 %	
Water-shed: ___ Natural ___ Urban ___ Grazed ___ Agricul. ___ Logged (last 15 yr.) ✓ Other hydro	Substrate: ___ Silt ✓ Bedrock ✓ <2 mm ✓ 2-75 mm ✓ 75-300 mm ✓ >300 mm			
Predominant Vegetation: Willows, Carex spp.				

water controlled by dam and downstream emergency release pipe

Fishing Tackle: Yes (No)	Fish Present: (Yes) No ?	Species and Approx. Number: 1 large trout seen in pool

Species	Adults	Subadults	Larvae	Eggs	DNA # (N / A)	Survey Method(s)		Other
None						Visual / Aural / Dip Net	Hand / TCS / Seine	Voucher / Pathology / Photo
						Visual / Aural / Dip Net	Hand / TCS / Seine	Voucher / Pathology / Photo
						Visual / Aural / Dip Net	Hand / TCS / Seine	Voucher / Pathology / Photo
						Visual / Aural / Dip Net	Hand / TCS / Seine	Voucher / Pathology / Photo
						Visual / Aural / Dip Net	Hand / TCS / Seine	Voucher / Pathology / Photo
						Visual / Aural / Dip Net	Hand / TCS / Seine	Voucher / Pathology / Photo

Aquatic Survey Data Sheet

Site: Rush Creek

Date: (mm-dd-yy) 7/21/23	Begin Time: 1:55pm	Total Time: 140 min	Observer(s): Robyn Smith + Emily Ferrell — 1 (2) 3 4

Locality: Rush Creek Above Silver Lake 01	Owner: ? NPS (FS) BLM St. Pvt. Oth.

County: Mono	Elevation: 7250 m (ft)	North UTM: 4181929 mN GPS Map	East UTM: 313049 mE 10 (11) 345678
Topographic Map: June Lake (7.5') 15'		North UTM: 4181929 mN GPS Map	East UTM: 313049 mE 10 (11) 345678

Distance to Mapped trail: 1 km	Distance to Public dirt road: 1 km	Distance to Public paved road: 0 km

Weather: Clear (Pt. Cloudy) Overcast Mostly Cloudy Rain Snow	Wind: (mph) 0 (<5) 5 - 20 > 20	Air Temp.: (at 1 m) 24 (C) F	Water Temp.: (0.5 m out) 11 (C) F

culverts under road and hydroelectric development

Habitat: Natural 1 2 3 4 (5) Altered	Description: Lake River Woodland Meadow/Wetl. Ditch Pond (Stream) Grassland Spring	Drainage: (Permanent) Seasonal

Site Length: 150 m	Aver. Width: 9 m	Aver. Depth: 1 m	Max. Depth: 2 m	Water Flow sec./10 ft.: 0 (<7 sec.) 7-11 sec. >11 sec.

Water Turbidity: Clear (1) 2 3 4 5 Turbid	Mid-day Shade: 95 %	Emergent Vegetation: 10 %	Floating Vegetation: 0 %

Watershed: ___ Natural ___ Grazed ___ Logged (last 15 yr.) ___ Urban ___ Agricul. ✓ Other hydro	Substrate: ✓ Silt ✓ < 2 mm ___ 75 - 300 mm ___ Bedrock ✓ 2 - 75 mm ___ >300 mm

Predominant Vegetation: Aspen, willows, lodgepole pine overstory

Fishing Tackle: Yes (No)	Fish Present: Yes (No) ?	Species and Approx. Number:

Species	Adults	Subadults	Larvae	Eggs	DNA #	Survey Method(s)	Other
None					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo

Aquatic Survey Data Sheet

Site: Rush Creek

Date: (mm-dd-yy) 7/21/23	Begin Time: 1:55 pm	Total Time: 140 min	Observer(s): Robyn Smith + Emily Ferrell 1 (2) 3 4

Locality: Meadow 02	Owner: ? NPS (FS) BLM St. (Pvt) Oth.

County: Mono	Elevation: 7250 m (ft)	North UTM: 4181900 mN GPS Map	East UTM: 313220 mE 10 (11) 345678
Topographic Map: June Lake (7.5') 15'		North UTM: 4182054 mN GPS Map	East UTM: 313095 mE 10 (11) 345678

Distance to Mapped trail: 1 km	Distance to Public dirt road: 1 km	Distance to Public paved road: 0 km

Weather: Clear Overcast Rain (Pt. Cloudy) Mostly Cloudy Snow	Wind: (mph) 0 (<5) 5 - 20 > 20	Air Temp.: (at 1 m) 24 (C) F	Water Temp.: (0.5 m out) 11 (C) F

Habitat: Natural 1 2 3 4 (5) Altered	Description: Lake River (Woodland) (Meadow/Wet) Ditch Pond (Stream) Grassland Spring			Drainage: (Permanent) Seasonal
Site Length: 500 m	Aver. Width: 15 m	Aver. Depth: 2 m	Max. Depth: 6 m	Water Flow sec./10 ft.: 0 (<7 sec.) 7-11 sec. >11 sec.
Water Turbidity: Clear 1 2 (3) 4 5 Turbid	Mid-day Shade: 95 %	Emergent Vegetation: 90 %		Floating Vegetation: 0 %
Watershed: ___ Natural ___ Grazed ___ Logged (last 15 yr.) ___ Urban ___ Agricul. ✓ Other hydro		Substrate: ✓ Silt ___ Bedrock ✓ < 2 mm ✓ 2 - 75 mm ___ 75 - 300 mm ___ >300 mm		
Predominant Vegetation: Lodgepole pine overstory, aspen, willow				

Fishing Tackle: (Yes) No	Fish Present: Yes (No) ?	Species and Approx. Number:

Species	Adults	Subadults	Larvae	Eggs	DNA #	Survey Method(s)	Other
None					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo

Aquatic Survey Data Sheet

Site: Rush Creek

Date: 7/21/23 (mm-dd-yy)	Begin Time: 1:55 pm	Total Time: 140 min	Observer(s): Robyn Smith & Emily Ferrell (1 2 3 4)
Locality: Rush Creek Above Silver Lake 02			Owner: ? NPS (FS) BLM St. (Pvt.) Oth.
County: Mono	Elevation: 7250 m (ft)	North UTM: 4181969 mN GPS Map	East UTM: 313152 mE (10) (11) 3 4 5 6 7 8
Topographic Map: June Lake (7.5) 15'		North UTM: 4182135 mN GPS Map	East UTM: 313083 mE (10) (11) 3 4 5 6 7 8
Distance to Mapped trail: 1 km	Distance to Public dirt road: 1 km	Distance to Public paved road: 0 km	

Weather:	Clear	Overcast	Rain	Wind: (mph)	0	5 - 20	Air Temp.: (at 1 m)	24 (C) F	Water Temp.: (0.5 m out)	11 (C) F
	(Pt. Cloudy)	Mostly Cloudy	Snow		(<5)	> 20				

Habitat:	Natural 1 2 3 4 (5) Altered		Description:	Lake	River	(Woodland)	Meadow/Wetl.	Drainage:	(Permanent)
				Ditch	Pond	(Stream)	Grassland	Spring	Seasonal

Site Length:	300 m	Aver. Width:	15 m	Aver. Depth:	2 m	Max. Depth:	6 m	Water Flow sec./10 ft.	0 (<7 sec.) 7-11 sec. >11 sec.
Water Turbidity:	Clear 1 2 (3) 4 5 Turbid	Mid-day Shade:	95 %	Emergent Vegetation:	90 %	Floating Vegetation:	0 %		
Water-shed:	___ Natural ___ Grazed ___ Logged (last 15 yr.) ___ Urban ___ Agricul. ✓ Other hydro			Substrate:	✓ Silt ___ Bedrock	✓ < 2 mm ✓ 2 - 75 mm	___ 75 - 300 mm ___ >300 mm		
Predominant Vegetation:	Lodgepole pine overstory, aspen, willow								

Fishing Tackle:	Fish Present:	Species and Approx. Number:
(Yes) No	Yes (No) ?	

Species	Adults	Subadults	Larvae	Eggs	DNA #	Survey Method(s)		Other
None					N A	Visual / Aural / Dip Net	Hand / TCS / Seine	Voucher / Pathology / Photo
					N A	Visual / Aural / Dip Net	Hand / TCS / Seine	Voucher / Pathology / Photo
					N A	Visual / Aural / Dip Net	Hand / TCS / Seine	Voucher / Pathology / Photo
					N A	Visual / Aural / Dip Net	Hand / TCS / Seine	Voucher / Pathology / Photo
					N A	Visual / Aural / Dip Net	Hand / TCS / Seine	Voucher / Pathology / Photo
					N A	Visual / Aural / Dip Net	Hand / TCS / Seine	Voucher / Pathology / Photo

Aquatic Survey Data Sheet

Site: Rush Creek

Date (mm-dd-yy): 7/22/23	Begin Time: 10:50 am	Total Time: 100 min	Observer(s): Robyn Smith + Emily Ferrell; 1 (2) 3 4
Locality: Rush Creek Above Silver Lake 03			Owner: ? NPS FS BLM St. (Pvt) Oth.
County: Mono	Elevation: 7100 m (ft)	North UTM: 4182378 mN; GPS Map	East UTM: 313066 mE 10; 345678 (ft)
Topographic Map: June Lake; (7.5) 15'		North UTM: 4182644 mN; GPS Map	East UTM: 313057 mE 10; 345678 (11)
Distance to Mapped trail: 1.6 km	Distance to Public dirt road: 0 km	Distance to Public paved road: 0 km	

Weather: (Clear) Overcast Rain Pt. Cloudy Mostly Cloudy Snow	Wind (mph): 0 5-20 (<5) >20	Air Temp. (at 1 m): 25 (C) F	Water Temp. (0.5 m out): 11 (C) F

Signs of human presence and upstream hydro dams

Habitat: Natural 1 2 (3) 4 5 Altered	Description: Lake River Woodland (Meadow/Wet) Ditch Pond (Stream) Grassland Spring			Drainage: (Permanent) (Seasonal)
Site Length: 1000 m	Aver. Width: 300 m	Aver. Depth: 1.2 m	Max. Depth: 6 m	Water Flow sec./10 ft.: 0, <7 sec., 7-11 sec., (>11 sec.)
Water Turbidity: Clear 1 (2) 3 4 5 Turbid	Mid-day Shade: 15 %	Emergent Vegetation: 90 %		Floating Vegetation: 0 %
Watershed: ✓ Natural ___ Grazed ___ Logged (last 15 yr.) ___ Urban ___ Agricul. ✓ Other recreation		Substrate: ✓ Silt ✓ <2 mm ✓ 75 - 300 mm ✓ Bedrock ✓ 2 - 75 mm ✓ >300 mm		
Predominant Vegetation: aquatic grasses, Juncus spp., Carex spp., Salix spp., Sierra rose, algae				

Fishing Tackle: Yes (No)	Fish Present: Yes (No) ?	Species and Approx. Number: osprey and bald eagle seen (fish eating raptors)

Species	Adults	Subadults	Larvae	Eggs	DNA #	Survey Method(s)	Other
None					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo

Aquatic Survey Data Sheet

Site: Rush Creek

Date: 7/22/23 (mm-dd-yy)	Begin Time: 10:50 am	Total Time: 100 min	Observer(s): Robyn Smith + Emily Ferrell (1 2 3 4)

Locality: Meadow 03

Owner: ? NPS FS BLM St. (Pvt) Oth.

County: Mono	Elevation: 7100 m (ft)	North UTM: 4182378 mN GPS Map	East UTM: 313066 mE 10 (11) 3 4 5 6 7 8
Topographic Map: June Lake (7.5) 15'		North UTM: 4182644 mN GPS Map	East UTM: 313057 mE 10 (11) 3 4 5 6 7 8
Distance to Mapped trail: 1.6 km	Distance to Public dirt road: 0 km	Distance to Public paved road: 0 km	

Weather: (Clear) Pt. Cloudy	Overcast Mostly Cloudy	Rain Snow	Wind: (mph) 0 (<5)	5 - 20 > 20	Air Temp.: (at 1 m) 25 (C) F
Water Temp.: (0.5 m out) 11 (C) F					

signs of human presence and upstream hydro dams

Habitat: Natural 1 2 (3) 4 5 Altered	Description: Lake River Woodland (Meadow/Wet) Ditch Pond (Stream) Grassland Spring	Drainage: (Permanent) (Seasonal)		
Site Length: 1000 m	Aver. Width: 300 m	Aver. Depth: 1.2 m	Max. Depth: 6 m	Water Flow sec./10 ft. 0 < 7 sec. 7-11 sec. (>11 sec.)
Water Turbidity: Clear 1 (2) 3 4 5 Turbid	Mid-day Shade: 15 %	Emergent Vegetation: 90 %	Floating Vegetation: 0 %	
Water-shed: ✓ Natural ___ Urban ___ Grazed ___ Agricul.	___ Logged (last 15 yr.) ✓ Other recreation	Substrate: ✓ Silt ✓ Bedrock	✓ < 2 mm ✓ 2 - 75 mm	✓ 75 - 300 mm ✓ >300 mm

Predominant Vegetation: aquatic grasses, Juncus spp., Carex spp., Salix spp., Sierra rose, algae

Fishing Tackle: Yes (No)	Fish Present: Yes (No) ?	Species and Approx. Number: osprey and bald eagle seen

Species	Adults	Subadults	Larvae	Eggs	DNA #	Survey Method(s)		Other
None					N A	Visual / Aural	Hand / TCS	Voucher / Pathology
						Dip Net	Seine	Photo
					N A	Visual / Aural	Hand / TCS	Voucher / Pathology
						Dip Net	Seine	Photo
					N A	Visual / Aural	Hand / TCS	Voucher / Pathology
						Dip Net	Seine	Photo
					N A	Visual / Aural	Hand / TCS	Voucher / Pathology
						Dip Net	Seine	Photo
					N A	Visual / Aural	Hand / TCS	Voucher / Pathology
						Dip Net	Seine	Photo
					N A	Visual / Aural	Hand / TCS	Voucher / Pathology
						Dip Net	Seine	Photo

Aquatic Survey Data Sheet

Site: Rush Creek

Date: 7/21/23 (mm-dd-yy)	Begin Time: 3:50 pm	Total Time: 75 min	Observer(s): Robyn Smith + Emily Ferrell (1 (2) 3 4)

Locality: Rush Creek Below Silver Lake 01

Owner: ? NPS (FS) BLM St. Pvt. Oth.

County: Mono	Elevation: 7250 m (ft)	North UTM: 4184468 mN GPS Map	East UTM: 312886 mE 10 (11) 3 4 5 6 7 8
Topographic Map: June Lake (7.5) 15'		North UTM: 4185384 mN GPS Map	East UTM: 313269 mE 10 (11) 3 4 5 6 7 8

Distance to Mapped trail: 0 km	Distance to Public dirt road: 0.1 km	Distance to Public paved road: 0.1 km

Weather: Clear (Pt. Cloudy)	Overcast Mostly Cloudy	Rain Snow	Wind: (mph) 0 (<5)	5 - 20	> 20	Air Temp.: (at 1 m) 24 (C) F	Water Temp.: (0.5 m out) 14 (C) F	

Habitat: Natural 1 (2) 3 4 5 Altered	Description: Lake River Woodland Meadow/Wetl. Ditch Pond (Stream) Grassland Spring	Drainage: (Permanent) Seasonal			
Site Length: 650 m	Aver. Width: 15 m	Aver. Depth: 1.2 m	Max. Depth: 3 m	Water Flow sec./10 ft. 0 (<7 sec.) 7-11 sec. >11 sec.	
Water Turbidity: Clear 1 (2) 3 4 5 Turbid	Mid-day Shade: 40 %	Emergent Vegetation: 30 %	Floating Vegetation: 0 %		
Water-shed: ✓ Natural ___ Urban ___ Grazed ___ Agricul. ___ Logged (last 15 yr.) ✓ Other hydro	Substrate: ✓ Silt ___ Bedrock ✓ < 2 mm ✓ 2 - 75 mm ✓ 75 - 300 mm ✓ >300 mm				
Predominant Vegetation: Aspen, willows, herbaceous assortment along edges					

Fishing Tackle: (Yes) No	Fish Present: (Yes) No ?	Species and Approx. Number: 2 small trout and a variety of tackle

aquatic vole observed

Species	Adults	Subadults	Larvae	Eggs	DNA # (N / A)	Survey Method(s)		Other
None					N / A	Visual, Aural, Dip Net	Hand, TCS, Seine	Voucher, Pathology, Photo
					N / A	Visual, Aural, Dip Net	Hand, TCS, Seine	Voucher, Pathology, Photo
					N / A	Visual, Aural, Dip Net	Hand, TCS, Seine	Voucher, Pathology, Photo
					N / A	Visual, Aural, Dip Net	Hand, TCS, Seine	Voucher, Pathology, Photo
					N / A	Visual, Aural, Dip Net	Hand, TCS, Seine	Voucher, Pathology, Photo
					N / A	Visual, Aural, Dip Net	Hand, TCS, Seine	Voucher, Pathology, Photo

Aquatic Survey Data Sheet

Site: Rush Creek

Date: (mm-dd-yy) 7/22/23	Begin Time: 9:17 am	Total Time: 45 min	Observer(s): Robyn Smith + Emily Ferrell 1 2 3 4 (2 circled)

Locality: Meadow 04	Owner: ? NPS FS BLM St. Pvt. Oth. (FS, Pvt. circled)

County: Mono	Elevation: 7250 m ft	North UTM: 4181864 mN GPS Map	East UTM: 313198 mE 10 345678 11 (11 circled)
Topographic Map: June Lake 7.5' 15' (7.5' circled)		North UTM: 4181822 mN GPS Map	East UTM: 313099 mE 10 345678 11 (11 circled)

Distance to Mapped trail: 1.6 km	Distance to Public dirt road: 1.6 km	Distance to Public paved road: 0 km

Weather: Clear Overcast Rain Pt. Cloudy Mostly Cloudy Snow (Pt. Cloudy circled)	Wind: (mph) 0 5 - 20 < 5 > 20 (0 circled)	Air Temp.: (at 1 m) 20 C F (C circled)	Water Temp.: (0.5 m out) 10 C F (C circled)

Habitat: Natural 1 2 3 4 5 Altered (1 circled)	Description: Lake River Woodland Meadow/Wet. Ditch Pond Stream Grassland Spring (Meadow/Wet., Stream circled)			Drainage: Permanent Seasonal (Seasonal circled)
Site Length: 200 m	Aver. Width: 3 m	Aver. Depth: 0.25 m	Max. Depth: 1.2 m	Water Flow sec./10 ft.: 0 7-11 sec. <7 sec >11 sec. (0, <7 sec circled)
Water Turbidity: Clear 1 2 3 4 5 Turbid (2 circled)	Mid-day Shade: 60 %	Emergent Vegetation: 90 %		Floating Vegetation: 0 %
Watershed: ✓ Natural ___ Grazed ___ Logged (last 15 yr.) ___ Urban ___ Agricul. ___ Other ___		Substrate: ✓ Silt ___ Bedrock ✓ < 2 mm ✓ 2 - 75 mm ✓ 75 - 300 mm ___ >300 mm		
Predominant Vegetation: Lodgepole pine overstory, grasses, Schoenoplectus, swamp onion, aspen				

Fishing Tackle: Yes No (No circled)	Fish Present: Yes No ? (No circled)	Species and Approx. Number:

Species	Adults	Subadults	Larvae	Eggs	DNA #	Survey Method(s)	Other
None					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo

Aquatic Survey Data Sheet

Site: ______________

Date: 7/22/23 (mm-dd-yy)	Begin Time: 9:17 am	Total Time: 45 min	Observer(s): Robyn Smith + Emily Ferrell 1 **2** 3 4

Locality: South Rush Creek	Owner: ? NPS **FS** BLM St. **Pvt** Oth.

County: Mono	Elevation: 7250 m **ft**	North UTM: 4181864 mN GPS Map	East UTM: 313198 mE 10 **11** 345678
Topographic Map: June Lake **7.5'** 15'		North UTM: 418 1822 mN GPS Map	East UTM: 313099 mE 10 **11** 345678

Distance to Mapped trail: 1.6 km	Distance to Public dirt road: 1.6 km	Distance to Public paved road: 0 km

Weather: Clear Overcast Rain **Pt. Cloudy** Mostly Cloudy Snow	Wind: (mph) **0** 5 - 20 < 5 > 20	Air Temp.: (at 1 m) 20 **C** F	Water Temp.: (0.5 m out) 10 **C** F

Habitat: Natural **1** 2 3 4 5 Altered	Description: Lake River Woodland **Meadow/Wet** Ditch Pond **Stream** Grassland Spring			Drainage: Permanent **Seasonal**
Site Length: 200 m	Aver. Width: 3 m	Aver. Depth: 0.25 m	Max. Depth: 1.2 m	Water Flow sec./10 ft.: **0** **< 7 sec** 7-11 sec. >11 sec.
Water Turbidity: Clear 1 **2** 3 4 5 Turbid	Mid-day Shade: 60 %	Emergent Vegetation: 90 %		Floating Vegetation: 0 %
Watershed: ✓ Natural ___ Grazed ___ Logged (last 15 yr.) ___ Urban ___ Agricul. ___ Other ___		Substrate: ✓ Silt ___ Bedrock ✓ < 2 mm ✓ 2 - 75 mm ✓ 75 - 300 mm ___ >300 mm		
Predominant Vegetation: Lodgepole pine overstory, grasses, Schoenoplectus, swamp onion, aspen				

Fishing Tackle: Yes **No**	Fish Present: Yes **No** ?	Species and Approx. Number:

Species	Adults	Subadults	Larvae	Eggs	DNA #	Survey Method(s)	Other
None					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo

Aquatic Survey Data Sheet

Site: Rush Creek

Date: 8/24/23 (mm-dd-yy)	Begin Time: 10:05am	Total Time: 95 min	Observer(s): Robyn Smith + Emily Ferrell 1 (2) 3 4

Locality: Rush Creek Above Waugh Lake	Owner: ? NPS (FS) BLM St. Pvt. Oth.

County: Mono	Elevation: 9433 m (ft)	North UTM: 4180166 mN GPS Map	East UTM: 305894 mE 10 345678 (11)
Topographic Map: Koip Peak (7.5) 15'		North UTM: 4180166 mN GPS Map	East UTM: 305894 mE 10 345678 (11)

Distance to Mapped trail: 0.5 km	Distance to Public dirt road: 16 km	Distance to Public paved road: 16 km

Weather: Clear Overcast Rain (Pt. Cloudy) Mostly Cloudy Snow	Wind: (mph) 0 5-20 (<5) >20	Air Temp.: (at 1 m) 18 (C) F	Water Temp.: (0.5 m out) 6 (C) F

Habitat: Natural (1) 2 3 4 5 Altered	Description: Lake River Woodland Meadow/Wetl. Ditch Pond (Stream) Grassland Spring	Drainage: (Permanent) Seasonal

Site Length: 300 m	Aver. Width: 20 m	Aver. Depth: 1 m	Max. Depth: 3 m	Water Flow sec./10 ft.: 0 (<7 sec) 7-11 sec. >11 sec.

Water Turbidity: Clear (1) 2 3 4 5 Turbid	Mid-day Shade: 50 %	Emergent Vegetation: 10 %	Floating Vegetation: 0 %

Watershed: ✓ Natural ___ Grazed ___ Logged (last 15 yr.) ___ Urban ___ Agricul. ___ Other ___	Substrate: ✓ Silt ✓ < 2 mm ✓ 75 - 300 mm ✓ Bedrock ✓ 2 - 75 mm ✓ >300 mm
Predominant Vegetation: willows, heather, lodgepole pine overstory, lupines	

Fishing Tackle: (Yes) No	Fish Present: (Yes) No ?	Species and Approx. Number: 30 trout of various sizes

Species	Adults	Subadults	Larvae	Eggs	DNA #	Survey Method(s)	Other
dead frog legs of unknown spp.	1					N (Visual) Hand Aural TCS A Dip Net Seine	Voucher Pathology Photo
						N Visual Hand Aural TCS A Dip Net Seine	Voucher Pathology Photo
						N Visual Hand Aural TCS A Dip Net Seine	Voucher Pathology Photo
						N Visual Hand Aural TCS A Dip Net Seine	Voucher Pathology Photo
						N Visual Hand Aural TCS A Dip Net Seine	Voucher Pathology Photo
						N Visual Hand Aural TCS A Dip Net Seine	Voucher Pathology Photo

Aquatic Survey Data Sheet

Site: Rush Creek

Date: (mm-dd-yy) 8/24/23 8/25/23	Begin Time: 9:00 am	Total Time: ~720 min	Observer(s): 1 (2) 3 4 Robyn Smith + Emily Ferrell
Locality: Waugh Lake			Owner: ? NPS (FS) BLM St. Pvt. Oth.
County: Mono	Elevation: 9,400 m (ft)	North UTM: GPS Map 4180291.80mN	East UTM: 345678 305959.06 10 (11)
Topographic Map: (7.5') 15' Mt. Ritter + Koip Peak		North UTM: GPS Map 4180466.58	East UTM: 345678 307792.01 10 (11)
Distance to Mapped trail: 0.1 km	Distance to Public dirt road: 16 km	Distance to Public paved road: 16 km	

Weather: (Clear) 8/25 Overcast Rain Pt. Cloudy (Mostly Cloudy) 8/24 Snow	Wind: (mph) 0 (<5) 5 - 20 > 20	Air Temp.: (at 1 m) 17 (C) F	Water Temp.: (0.5 m out) 10 (C) F

Historic reservoir bed and dam cause wide seasonal fluctuations

Habitat: Natural 1 2 3 4 Altered (5)	Description: (Lake) River Woodland Meadow/Wetl. Ditch Pond Stream Grassland Spring				Drainage: (Permanent) (Seasonal)
Site Length: 1,800 m	Aver. Width: 330 m	Aver. Depth: Unknown m	Max. Depth: Unknown m		Water Flow sec./10 ft. 0 7-11 sec. < 7 sec. (>11 sec.)
Water Turbidity: Clear (1) 2 3 4 5 Turbid	Mid-day Shade: 0 %	Emergent Vegetation: 0.1 %			Floating Vegetation: 0 %
Water-shed: X Natural ___ Grazed ___ Logged (last 15 yr.) ___ Urban ___ Agricul. X Other hydro		Substrate: X Silt X Bedrock X < 2 mm X 2 - 75 mm X 75 - 300 mm X >300 mm			
Predominant Vegetation: Very little vegetation, small growth of graminoids and forbs. Most of exposed reservoir bed is barren					

Surveys at Waugh Lake were completed while walking between connected ephemeral streams and ponds.

Fishing Tackle: Yes (No)	Fish Present: (Yes) No ?	Species and Approx. Number: trout ~10 adults, >500 juveniles

Species	Adults	Subadults	Larvae	Eggs	DNA #	Survey Method(s)	Other
NA						N Visual Hand Aural TCS A Dip Net Seine	Voucher Pathology Photo
						N Visual Hand Aural TCS A Dip Net Seine	Voucher Pathology Photo
						N Visual Hand Aural TCS A Dip Net Seine	Voucher Pathology Photo
						N Visual Hand Aural TCS A Dip Net Seine	Voucher Pathology Photo
						N Visual Hand Aural TCS A Dip Net Seine	Voucher Pathology Photo
						N Visual Hand Aural TCS A Dip Net Seine	Voucher Pathology Photo

Aquatic Survey Data Sheet

Site: Rush Creek

Date: (mm-dd-yy) 8/24/23	Begin Time: 12:15 pm	Total Time: 36 min	Observer(s): Robyn Smith + Emily Ferrell; 1 (2) 3 4

Locality: Perennial Stream 01	Owner: ? NPS (FS) BLM St. Pvt. Oth.

County: Mono	Elevation: 9432 m (ft)	North UTM: 4180331 mN GPS Map	East UTM: 305952 mE 10 3 4 5 6 7 8 (11)
Topographic Map: Koip Peak (7.5') 15'		North UTM: 4180331 mN GPS Map	East UTM: 305952 mE 10 3 4 5 6 7 8 (11)
Distance to Mapped trail: 0 km	Distance to Public dirt road: 16 km	Distance to Public paved road: 16 km	

Weather: Clear, Overcast, Rain, Pt. Cloudy, (Mostly Cloudy), Snow	Wind: (mph) 0, (<5), 5 - 20, > 20	Air Temp.: (at 1 m) 19 (C) F	Water Temp.: (0.5 m out) 9 (C) F

Habitat: Natural (1) 2 3 4 5 Altered	Description: Lake, River, Woodland, Meadow/Wetl., Ditch, Pond, (Stream), Grassland, Spring				Drainage: (Permanent) Seasonal
Site Length: 200 m	Aver. Width: 5 m	Aver. Depth: 0.5 m	Max. Depth: 2 m		Water Flow sec./10 ft.: 0, <7 sec., (7-11 sec.), >11 sec.
Water Turbidity: Clear (1) 2 3 4 5 Turbid	Mid-day Shade: 30 %	Emergent Vegetation: 10 %			Floating Vegetation: 0 %
Watershed: ✓ Natural, ___ Grazed, ___ Logged (last 15 yr.), ___ Urban, ___ Agricul., ___ Other ___		Substrate: ✓ Silt, ✓ Bedrock, ✓ < 2 mm, ✓ 2 - 75 mm, ✓ 75 - 300 mm, ✓ >300 mm			
Predominant Vegetation: monkey flower, columbine, lodgepole, willows					

Fishing Tackle: Yes (No)	Fish Present: (Yes) No ?	Species and Approx. Number: 5 young trout at stream mouth

Species	Adults	Subadults	Larvae	Eggs	DNA #	Survey Method(s)	Other
None					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo

Aquatic Survey Data Sheet

Site: Rush Creek

Date: (mm-dd-yy) 8/25/23	Begin Time: 11:06 am	Total Time: 105 min	Observer(s): Robyn Smith + Emily Ferrell 1 (2) 3 4

Locality: Pond 01	Owner: ? NPS (FS) BLM St. Pvt. Oth.

County: Mono	Elevation: 9440 m (ft)	North UTM: 4180273 mN GPS Map	East UTM: 306444 mE 10 (11) 345678
Topographic Map: Mt. Ritter (7.5) 15'		North UTM: 4180273 mN GPS Map	East UTM: 306444 mE 10 (11) 345678
Distance to Mapped trail: 1.6 km	Distance to Public dirt road: 16 km	Distance to Public paved road: 16 km	

Weather: (Clear) Overcast Rain Pt. Cloudy Mostly Cloudy Snow	Wind: (mph) 0 (<5) 5 - 20 > 20	Air Temp.: (at 1 m) 20 (C) F	Water Temp.: (0.5 m out) 16 (C) F

Habitat: Natural (1) 2 3 4 5 Altered	Description: Lake River Woodland Meadow/Wetl. Ditch (Pond) Stream Grassland Spring			Drainage: (Permanent) Seasonal
Site Length: 250 m	Aver. Width: 60 m	Aver. Depth: 1 m	Max. Depth: >2 m	Water Flow sec./10 ft.: (0) <7 sec. 7-11 sec. >11 sec.
Water Turbidity: Clear 1 2 (3) 4 5 Turbid	Mid-day Shade: 2 %	Emergent Vegetation: 5 %		Floating Vegetation: 0 %
Watershed: ✓ Natural ___ Urban ___ Grazed ___ Agricul. ___ Logged (last 15 yr.) ___ Other ___		Substrate: ✓ Silt ✓ Bedrock ✓ < 2 mm ✓ 2 - 75 mm ___ 75 - 300 mm ✓ >300 mm		
Predominant Vegetation: lodgepole pine, carex spp.				

Fishing Tackle: Yes (No)	Fish Present: Yes (No) ?	Species and Approx. Number:

Species	Adults	Subadults	Larvae	Eggs	DNA #	Survey Method(s)	Other
PSRE			900		N A	(Visual) Hand Aural TCS Dip Net Seine	Voucher Pathology (Photo)
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo

Aquatic Survey Data Sheet

Site: Rush Creek

Date: 8/24/23 (mm-dd-yy)	Begin Time: 1:51 pm	Total Time: 21 min	Observer(s): Robyn Smith + Emily Ferrell 1 **2** 3 4

Locality: Perennial Stream 02	Owner: ? NPS **FS** BLM St. Pvt. Oth.

County: Mono	Elevation: 9600 m **ft**	North UTM: 4180884 mN GPS Map	East UTM: 307001 mE 10 345678 **11**
Topographic Map: Koip Peak **7.5'** 15'		North UTM: 4180807 mN GPS Map	East UTM: 307006 mE 10 345678 **11**

Distance to Mapped trail: 0 km	Distance to Public dirt road: 14 km	Distance to Public paved road: 14 km

Weather: Clear Overcast **Rain** Pt. Cloudy **Mostly Cloudy** Snow	Wind: (mph) 0 5 - 20 **<5** > 20	Air Temp.: (at 1 m) 15 **C** F	Water Temp.: (0.5 m out) 8 **C** F

Habitat: Natural **1** 2 3 4 5 Altered	Description: Lake River Woodland Meadow/Wetl. Ditch Pond **Stream** Grassland Spring		Drainage: **Permanent** Seasonal
Site Length: 100 m	Aver. Width: 0.75 m	Aver. Depth: 0.1 m	Max. Depth: 0.75 m
Water Flow sec./10 ft.: 0 <7 sec. **7-11 sec.** >11 sec.			
Water Turbidity: Clear **1** 2 3 4 5 Turbid	Mid-day Shade: 40 %	Emergent Vegetation: 5 %	Floating Vegetation: 0 %
Watershed: ✓ Natural ___ Urban ___ Grazed ___ Agricul. ___ Logged (last 15 yr.) ___ Other ___		Substrate: ✓ Silt ✓ Bedrock ✓ < 2 mm ✓ 2 - 75 mm ✓ 75 - 300 mm ✓ >300 mm	
Predominant Vegetation: Lodgepole pine overstory, willows, Fendler's meadow rue, Sierra gooseberry			

Fishing Tackle: Yes **No**	Fish Present: **Yes** No ?	Species and Approx. Number: 10 trout near outlet into lake

Species	Adults	Subadults	Larvae	Eggs	DNA #	Survey Method(s)	Other
None					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo

Aquatic Survey Data Sheet

Site: Rush Creek

Date: 8/25/23 (mm-dd-yy)	Begin Time: 1:51 pm	Total Time: 19 min	Observer(s): Robyn Smith + Emily Ferrell 1 (2) 3 4
Locality: Perennial Stream 03			Owner: ? NPS (FS) BLM St. Pvt. Oth.
County: Mono	Elevation: 9500 m (ft)	North UTM: 4180240 mN GPS Map	East UTM: 306920 mE 10 (11) 345678
Topographic Map: Mt. Ritter (7.5') 15'		North UTM: 4180188 mN GPS Map	East UTM: 306912 mE 10 (11) 345678
Distance to Mapped trail: 1.6 km	Distance to Public dirt road: 14 km	Distance to Public paved road: 14 km	

Weather: (Clear) Overcast Rain Pt. Cloudy Mostly Cloudy Snow	Wind: (mph) 0 (<5) 5 - 20 > 20	Air Temp.: (at 1 m) 19 (C) F	Water Temp.: (0.5 m out) 12 (C) F

Habitat: Natural (1) 2 3 4 5 Altered	Description: Lake River Woodland Meadow/Wetl. Ditch Pond (Stream) Grassland Spring			Drainage: (Permanent) Seasonal
Site Length: 100 m	Aver. Width: 2 m	Aver. Depth: 0.1 m	Max. Depth: 0.3 m	Water Flow sec./10 ft.: 0 <7 sec. (7-11 sec) >11 sec.
Water Turbidity: Clear (1) 2 3 4 5 Turbid	Mid-day Shade: 30 %	Emergent Vegetation: 20 %		Floating Vegetation: 0 %
Watershed: ✓ Natural ___ Grazed ___ Logged (last 15 yr.) ___ Urban ___ Agricul. ___ Other ___		Substrate: ✓ Silt ✓ < 2 mm ✓ 75 - 300 mm ✓ Bedrock ✓ 2 - 75 mm ✓ >300 mm		
Predominant Vegetation: Willows, crimson columbine, Carex spp.				

Fishing Tackle: Yes (No)	Fish Present: (Yes) No ?	Species and Approx. Number: 2 small trout - upstream waterfall likely a fish passage barrier

Species	Adults	Subadults	Larvae	Eggs	DNA #	Survey Method(s)	Other
None					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo

Aquatic Survey Data Sheet

Site: Rush Creek

Date: (mm-dd-yy) 8/25/23	Begin Time: 2:36 pm	Total Time: 15 min	Observer(s): Robyn Smith + Emily Ferrell; 1 (2) 3 4
Locality: Perennial Stream 04			Owner: ? NPS (FS) BLM St. Pvt. Oth.
County: Mono	Elevation: 9440 m (ft)	North UTM: 4180147 mN; GPS Map	East UTM: 307471 mE; 10 (11); 345678
Topographic Map: Mt. Ritter; (7.5') 15'		North UTM: 4180081 mN; GPS Map	East UTM: 307534 mE; 10 (11); 345678
Distance to Mapped trail: 1.6 km	Distance to Public dirt road: 14 km	Distance to Public paved road: 14 km	

Weather: (Clear) Overcast Rain Pt. Cloudy Mostly Cloudy Snow	Wind: (mph) 0 (<5) 5 - 20 > 20	Air Temp.: (at 1 m) 19 (C) F	Water Temp.: (0.5 m out) 12 (C) F

Habitat: Natural (1) 2 3 4 5 Altered	Description: Lake River Woodland Meadow/Wetl. Ditch Pond (Stream) Grassland Spring			Drainage: (Permanent) Seasonal
Site Length: 300 m	Aver. Width: 1 m	Aver. Depth: 0.1 m	Max. Depth: 0.25 m	Water Flow sec./10 ft.: 0 < 7 sec. (7-11 sec) >11 sec.
Water Turbidity: Clear (1) 2 3 4 5 Turbid	Mid-day Shade: 40 %	Emergent Vegetation: 5 %		Floating Vegetation: 0 %
Water-shed: ✓ Natural ___ Grazed ___ Logged (last 15 yr.) ___ Urban ___ Agricul. ___ Other ___		Substrate: ✓ Silt ✓ < 2 mm ✓ 75 - 300 mm ___ Bedrock ✓ 2 - 75 mm ✓ >300 mm		
Predominant Vegetation: willows, mountain heather, subalpine conifer overstory				

Fishing Tackle: Yes (No)	Fish Present: Yes (No) ?	Species and Approx. Number:

Species	Adults	Subadults	Larvae	Eggs	DNA #	Survey Method(s)	Other
None					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo

Aquatic Survey Data Sheet

Site: Rush Creek

Date: 8/24/23 (mm-dd-yy)	Begin Time: 3:21 pm	Total Time: 165 min	Observer(s): Robyn Smith + Emily Ferrell (1 2 3 4)
Locality: Rush Creek Below Rush Meadows Dam 01			Owner: ? NPS FS BLM St. Pvt. Oth.
County: Mono	Elevation: 9400 m (ft)	North UTM: 4180418 mN GPS Map	East UTM: 307942 mE 10 11 (3 4 5 6 7 8)
Topographic Map: Koip Peak (7.5) 15'		North UTM: 4180531 mN GPS Map	East UTM: 308634 mE 10 11 (3 4 5 6 7 8)
Distance to Mapped trail: 0 km	Distance to Public dirt road: 14 km	Distance to Public paved road: 14 km	

Weather:	Clear	Overcast	Rain	Wind: (mph)	0	5 - 20	Air Temp.: (at 1 m)	17 (C) F	Water Temp.: (0.5 m out)	11 (C) F
	(Pt. Cloudy)	Mostly Cloudy	Snow		(<5)	> 20				

flow regulated by Rush Meadows Dam

Habitat: Natural 1 2 (3) 4 5 Altered	Description:	Lake	River	Woodland	Meadow/Wetl.	Drainage:	(Permanent)		
	Ditch	Pond	(Stream)	Grassland	Spring		Seasonal		
Site Length: 800 m	Aver. Width: 40 m	Aver. Depth: 1 m	Max. Depth: 5 m	Water Flow sec./10 ft.	0 (<7 sec)	7-11 sec. >11 sec.			
Water Turbidity: Clear (1) 2 3 4 5 Turbid	Mid-day Shade: 30 %	Emergent Vegetation: 5 %	Floating Vegetation: 0 %						
Water-shed: ✓ Natural ___ Urban ___ Grazed ___ Agricul. ___ Logged (last 15 yr.) ✓ Other hydro	Substrate: ___ Silt ✓ Bedrock ✓ < 2 mm ✓ 2 - 75 mm ✓ 75 - 300 mm ✓ >300 mm								
Predominant Vegetation: Labrador tea, willow, mountain heather, lodgepole pine overstory									

Fishing Tackle: Yes (No)	Fish Present: (Yes) No ?	Species and Approx. Number: 45 trout observed

Species	Adults	Subadults	Larvae	Eggs	DNA #	Survey Method(s)		Other
None					N A	Visual / Aural / Dip Net	Hand / TCS / Seine	Voucher / Pathology / Photo
					N A	Visual / Aural / Dip Net	Hand / TCS / Seine	Voucher / Pathology / Photo
					N A	Visual / Aural / Dip Net	Hand / TCS / Seine	Voucher / Pathology / Photo
					N A	Visual / Aural / Dip Net	Hand / TCS / Seine	Voucher / Pathology / Photo
					N A	Visual / Aural / Dip Net	Hand / TCS / Seine	Voucher / Pathology / Photo
					N A	Visual / Aural / Dip Net	Hand / TCS / Seine	Voucher / Pathology / Photo

Aquatic Survey Data Sheet

Site: Rush Creek

Date: 8/25/23 (mm-dd-yy)	Begin Time: 4:12 pm	Total Time: 24 min	Observer(s): 1 (2) 3 4 Robyn Smith + Emily Ferrell
Locality: Perennial Stream 05			Owner: ? NPS (FS) BLM St. Pvt. Oth.
County: Mono	Elevation: 9400 m (ft)	North UTM: 4180577 mN GPS Map	East UTM: 308018 mE 10 3 4 5 6 7 8 (11)
Topographic Map: Koip Peak (7.5) 15'		North UTM: 4180713 mN GPS Map	East UTM: 307944 mE 10 3 4 5 6 7 8 (11)
Distance to Mapped trail: 0 km	Distance to Public dirt road: 15 km	Distance to Public paved road: 15 km	

Weather: (Clear) Pt. Cloudy	Overcast Mostly Cloudy	Rain Snow	Wind: (mph) (0) < 5	5 - 20 > 20	Air Temp.: (at 1 m) 19 (C) F
Water Temp.: (0.5 m out) 12 (C) F					

Habitat: Natural (1) 2 3 4 5 Altered	Description: Lake River Woodland Meadow/Wetl. Ditch Pond (Stream) Grassland Spring	Drainage: (Permanent) Seasonal			
Site Length: 200 m	Aver. Width: 2 m	Aver. Depth: 0.25 m	Max. Depth: 1 m	Water Flow sec./10 ft. 0 < 7 sec. 7-11 sec. (>11 sec)	
Water Turbidity: Clear (1) 2 3 4 5 Turbid	Mid-day Shade: 95 %	Emergent Vegetation: 20 %	Floating Vegetation: 0 %		
Water-shed: ✓ Natural ___ Urban ___ Grazed ___ Agricul. ___ Logged (last 15 yr.) ___ Other	Substrate: ✓ Silt ___ Bedrock ✓ < 2 mm ✓ 2 - 75 mm ✓ 75 - 300 mm ✓ >300 mm				
Predominant Vegetation: Lodgepole pine, corn lilies, crimson columbine, goldenrod					

Fishing Tackle: Yes (No)	Fish Present: (Yes) No ?	Species and Approx. Number: 16 trout observed

Species	Adults	Subadults	Larvae	Eggs	DNA #	Survey Method(s)		Other
None					N A	Visual / Aural / Dip Net	Hand / TCS / Seine	Voucher / Pathology / Photo
					N A	Visual / Aural / Dip Net	Hand / TCS / Seine	Voucher / Pathology / Photo
					N A	Visual / Aural / Dip Net	Hand / TCS / Seine	Voucher / Pathology / Photo
					N A	Visual / Aural / Dip Net	Hand / TCS / Seine	Voucher / Pathology / Photo
					N A	Visual / Aural / Dip Net	Hand / TCS / Seine	Voucher / Pathology / Photo
					N A	Visual / Aural / Dip Net	Hand / TCS / Seine	Voucher / Pathology / Photo

Aquatic Survey Data Sheet

Site: Rush Creek

Date: 8/26/23 (mm-dd-yy)	Begin Time: 10:30 am	Total Time: 91 min	Observer(s): Robyn Smith + Emily Ferrell (1 2 3 4)

Locality: Rush Creek Below Rush Meadows Dam 03

Owner: ? NPS (FS) BLM St. Pvt. Oth.

County: Mono	Elevation: 8900 m (ft)	North UTM: 4180435 mN GPS Map	East UTM: 309633 mE 10 (3 4 5 6 7 8) (11)
Topographic Map: Koip Peak (7.5) 15'		North UTM: 4180328 mN GPS Map	East UTM: 308859 mE 10 (3 4 5 6 7 8) (11)
Distance to Mapped trail: 0 km	Distance to Public dirt road: 13 km	Distance to Public paved road: 13 km	

Weather: (Clear) Pt. Cloudy	Overcast Mostly Cloudy	Rain Snow	Wind: (0) (mph)	5 - 20 < 5	> 20	Air Temp.: (at 1 m) 15	(C) F
Water Temp.: (0.5 m out) 8	(C) F						

Rush Meadows Dam upstream

Habitat: Natural 1 2 (3) 4 5 Altered	Description: Lake River Woodland Meadow/Wetl. Ditch Pond (Stream) Grassland Spring					Drainage: (Permanent) Seasonal	
Site Length: 1000 m	Aver. Width: 15 m	Aver. Depth: 2 m	Max. Depth: 5 m	Water Flow sec./10 ft. 0 < 7 sec. (7-11 sec.) >11 sec.			
Water Turbidity: Clear (1) 2 3 4 5 Turbid	Mid-day Shade: 20 %	Emergent Vegetation: 5 %	Floating Vegetation: 0 %				
Water-shed: ✓ Natural ___ Urban ___ Grazed ___ Agricul. ___ Logged (last 15 yr.) ✓ Other hydro	Substrate: ✓ Silt ✓ Bedrock ✓ < 2 mm ✓ 2 - 75 mm ✓ 75 - 300 mm ✓ >300 mm						
Predominant Vegetation: Lodgepole pine overstory, willows, azaleas, mountain heather							

Fishing Tackle: Yes (No)	Fish Present: (Yes) No ?	Species and Approx. Number: 83 trout observed

Species	Adults	Subadults	Larvae	Eggs	DNA #	Survey Method(s)		Other
None					N A	Visual / Aural / Dip Net	Hand / TCS / Seine	Voucher / Pathology / Photo
					N A	Visual / Aural / Dip Net	Hand / TCS / Seine	Voucher / Pathology / Photo
					N A	Visual / Aural / Dip Net	Hand / TCS / Seine	Voucher / Pathology / Photo
					N A	Visual / Aural / Dip Net	Hand / TCS / Seine	Voucher / Pathology / Photo
					N A	Visual / Aural / Dip Net	Hand / TCS / Seine	Voucher / Pathology / Photo
					N A	Visual / Aural / Dip Net	Hand / TCS / Seine	Voucher / Pathology / Photo

Aquatic Survey Data Sheet

Site: Rush Creek

Date: 8/25/23 (mm-dd-yy)	Begin Time: 9:10 am	Total Time: 58 min	Observer(s): Robyn Smith + Emily Ferrell (1 2 3 4)
Locality: Meadow 01			Owner: ? NPS (FS) BLM St. Pvt. Oth.
County: Mono	Elevation: 9100 m (ft)	North UTM: 4180516 mN GPS Map	East UTM: 309540 mE 10 11 (3 4 5 6 7 8)
Topographic Map: Koip Peak (7.5) 15'		North UTM: 4180574 mN GPS Map	East UTM: 309440 mE 10 11 (3 4 5 6 7 8)
Distance to Mapped trail: 0 km	Distance to Public dirt road: 13 km	Distance to Public paved road: 13 km	

Weather: (Clear) Pt. Cloudy / Overcast / Mostly Cloudy / Rain / Snow	Wind: (mph) 0 / (<5) / 5 - 20 / > 20	Air Temp.: (at 1 m) 12 (C) F	Water Temp.: (0.5 m out) 14 (C) F

Habitat: Natural (1) 2 3 4 5 Altered	Description: Lake, River, Woodland, (Meadow/Wetl), Ditch, Pond, Stream, Grassland, Spring	Drainage: (Permanent), Seasonal			
Site Length: 300 m	Aver. Width: 60 m	Aver. Depth: 0.5 m	Max. Depth: 1 m	Water Flow sec./10 ft. (0) <7 sec. 7-11 sec. >11 sec.	
Water Turbidity: Clear 1 (2) 3 4 5 Turbid	Mid-day Shade: 10 %	Emergent Vegetation: 60 %	Floating Vegetation: 5 %		
Water-shed: ✓ Natural, Urban, Grazed, Agricul., Logged (last 15 yr.), Other	Substrate: ✓ Silt, Bedrock, ✓ < 2 mm, 2 - 75 mm, 75 - 300 mm, ✓ >300 mm				
Predominant Vegetation:					

Fishing Tackle: Yes (No)	Fish Present: (Yes) No ?	Species and Approx. Number: 1 large trout in central pool

Species	Adults	Subadults	Larvae	Eggs	DNA #	Survey Method(s)		Other
PSRE		1	76		N	(Visual) Hand		Voucher
						Aural TCS		Pathology
					A	Dip Net Seine		Photo
THSP	1				N	(Visual) Hand		Voucher
						Aural TCS		Pathology
					A	Dip Net Seine		Photo
					N	Visual Hand		Voucher
						Aural TCS		Pathology
					A	Dip Net Seine		Photo
					N	Visual Hand		Voucher
						Aural TCS		Pathology
					A	Dip Net Seine		Photo
					N	Visual Hand		Voucher
						Aural TCS		Pathology
					A	Dip Net Seine		Photo
					N	Visual Hand		Voucher
						Aural TCS		Pathology
					A	Dip Net Seine		Photo

Aquatic Survey Data Sheet

Site: Rush Creek

Date: (mm-dd-yy) 8/26/23	Begin Time: 1:02pm	Total Time: 31 min	Observer(s): Robyn Smith + Emily Ferrell; 1 (2) 3 4
Locality: Crest Creek			Owner: ? NPS (FS) BLM St. Pvt. Oth.
County: Mono	Elevation: 9100 m (ft)	North UTM: 4181155 mN GPS Map	East UTM: 309863 mE 10 (11) 345678
Topographic Map: Koip Peak (7.5') 15'		North UTM: 4181232 mN GPS Map	East UTM: 309843 mE 10 (11) 345678
Distance to Mapped trail: 0 km	Distance to Public dirt road: 9.6 km	Distance to Public paved road: 8 km	

Weather: (Clear) Overcast Rain Pt. Cloudy Mostly Cloudy Snow	Wind: (mph) 0 (<5) 5 - 20 > 20	Air Temp.: (at 1 m) 20 (C) F	Water Temp.: (0.5 m out) 11 (C) F

Habitat: Natural (1) 2 3 4 5 Altered	Description: Lake River Woodland Meadow/Wetl. Ditch Pond (Stream) Grassland Spring			Drainage: (Permanent) Seasonal
Site Length: 300 m	Aver. Width: 8 m	Aver. Depth: 0.25 m	Max. Depth: 0.75 m	Water Flow sec./10 ft.: 0 <7 sec. (7-11 sec) >11 sec.
Water Turbidity: Clear (1) 2 3 4 5 Turbid	Mid-day Shade: 20 %	Emergent Vegetation: 10 %		Floating Vegetation: 0 %
Watershed: ✓ Natural ___ Grazed ___ Logged (last 15 yr.) ___ Urban ___ Agricul. ___ Other ______		Substrate: ✓ Silt ✓ < 2 mm ✓ 75 - 300 mm ✓ Bedrock ✓ 2 - 75 mm ✓ >300 mm		
Predominant Vegetation: Lodgepole pine, willows, monkey flower				

Fishing Tackle: Yes (No)	Fish Present: Yes (No) ?	Species and Approx. Number:

Species	Adults	Subadults	Larvae	Eggs	DNA #	Survey Method(s)	Other
None					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo

Aquatic Survey Data Sheet

Site: Rush Creek

Date: 8/23/23 (mm-dd-yy)	Begin Time: 1:26pm	Total Time: 16 min	Observer(s): Robyn Smith + Emily Ferrell 1 (2) 3 4
Locality: Perennial Stream 06			Owner: ? NPS (FS) BLM St. Pvt. Oth.
County: Mono	Elevation: 9100 m (ft)	North UTM: 4179970 mN GPS Map	East UTM: 310375 mE 10 345678 (11)
Topographic Map: Mt. Ritter (7.5') 15'		North UTM: 4179944 mN GPS Map	East UTM: 310326 mE 10 345678 (11)
Distance to Mapped trail: 3 km	Distance to Public dirt road: 16 km	Distance to Public paved road: 16 km	

Weather: Clear Overcast Rain (Pt. Cloudy) Mostly Cloudy Snow	Wind: (mph) 0 5 - 20 (<5) > 20	Air Temp.: (at 1 m) 22 (C) F	Water Temp.: (0.5 m out) 12 (C) F

Habitat: Natural (1) 2 3 4 5 Altered	Description: Lake River Woodland Meadow/Wetl. Ditch Pond (Stream) Grassland Spring		Drainage: (Permanent) Seasonal
Site Length: 100 m	Aver. Width: 2 m	Aver. Depth: 0.25 m / Max. Depth: 0.5 m	Water Flow sec./10 ft.: 0 (7-11 sec.) < 7 sec. >11 sec.
Water Turbidity: Clear (1) 2 3 4 5 Turbid	Mid-day Shade: 40 %	Emergent Vegetation: 5 %	Floating Vegetation: 0 %
Watershed: ✓ Natural ___ Grazed ___ Logged (last 15 yr.) ___ Urban ___ Agricul. ___ Other ______		Substrate: ✓ Silt ✓ < 2 mm ✓ 75 - 300 mm ✓ Bedrock ✓ 2 - 75 mm ✓ >300 mm	
Predominant Vegetation: Lodgepole pine, crimson columbine			

Fishing Tackle: Yes (No)	Fish Present: Yes (No) ?	Species and Approx. Number:

Species	Adults	Subadults	Larvae	Eggs	DNA #	Survey Method(s)	Other
None					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo

Aquatic Survey Data Sheet

Site: Rush Creek

Date: (mm-dd-yy) 8/23/23	Begin Time: 4:12 pm	Total Time: 24 min	Observer(s): Robyn Smith + Emily Ferrell 1 (2) 3 4

Locality: Perennial Stream 07	Owner: ? NPS (FS) BLM St. Pvt. Oth.

County: Mono	Elevation: 9100 m (ft)	North UTM: 4179662 mN GPS Map	East UTM: 310810 mE 345678 10 (11)
Topographic Map: Mt. Ritter (7.5') 15'		North UTM: 4179594 mN GPS Map	East UTM: 310793 mE 345678 10 (11)

Distance to Mapped trail: 3.5 km	Distance to Public dirt road: 16.5 km	Distance to Public paved road: 16.5 km

Weather: (Clear) Overcast Rain Pt. Cloudy Mostly Cloudy Snow	Wind: (mph) 0 5 - 20 (<5) > 20	Air Temp.: (at 1 m) 22 (C) F	Water Temp.: (0.5 m out) 11 (C) F

Habitat: Natural (1) 2 3 4 5 Altered	Description: Lake River Woodland Meadow/Wetl. Ditch Pond (Stream) Grassland Spring	Drainage: (Permanent) Seasonal

Site Length: 100 m	Aver. Width: 2 m	Aver. Depth: 0.25 m	Max. Depth: 0.75 m	Water Flow sec./10 ft.: 0 (7-11 sec.) < 7 sec. >11 sec.

Water Turbidity: Clear (1) 2 3 4 5 Turbid	Mid-day Shade: 30 %	Emergent Vegetation: 10 %	Floating Vegetation: 0 %

Water-shed: ✓ Natural ___ Grazed ___ Logged (last 15 yr.) ___ Urban ___ Agricul. ___ Other ___	Substrate: ___ Silt ✓ < 2 mm ✓ 75 - 300 mm ___ Bedrock ✓ 2 - 75 mm ✓ >300 mm

Predominant Vegetation: Willows, twinberry, sweet cecily

Fishing Tackle: Yes (No)	Fish Present: Yes (No) ?	Species and Approx. Number:

Species	Adults	Subadults	Larvae	Eggs	DNA #	Survey Method(s)	Other
None					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo

Aquatic Survey Data Sheet

Site: Rush Creek

Date: 8/27/23 (mm-dd-yy)	Begin Time: 11:29 am	Total Time: 30 min	Observer(s): Robyn Smith + Emily Ferrell 1 (2) 3 4
Locality: Perennial Stream 08			Owner: ? NPS (FS) BLM St. Pvt. Oth.
County: Mono	Elevation: 8500 m (ft)	North UTM: 4180488 mN GPS Map	East UTM: 311810 mE 345678 10 (11)
Topographic Map: Koip Peak (7.5) 15'		North UTM: 4180565 mN GPS Map	East UTM: 311777 mE 345678 10 (11)
Distance to Mapped trail: 0.5 km	Distance to Public dirt road: 2.5 km	Distance to Public paved road: 1.5 km	

Weather: (Clear) Overcast Rain Pt. Cloudy Mostly Cloudy Snow	Wind: (mph) (0) 5 - 20 < 5 > 20	Air Temp.: (at 1 m) 22 (C) F	Water Temp.: (0.5 m out) 12 (C) F

Habitat: Natural (1) 2 3 4 5 Altered	Description: Lake River Woodland Meadow/Wetl. Ditch Pond Stream Grassland Spring				Drainage: Permanent Seasonal
Site Length: 100 m	Aver. Width: 1 m	Aver. Depth: 0.25 m	Max. Depth: 0.5 m		Water Flow sec./10 ft.: 0 (7-11 sec) < 7 sec. >11 sec.
Water Turbidity: Clear (1) 2 3 4 5 Turbid	Mid-day Shade: 40 %	Emergent Vegetation: 40 %			Floating Vegetation: 0 %
Watershed: ✓ Natural ___ Grazed ___ Logged (last 15 yr.) ___ Urban ___ Agricul. ___ Other ___			Substrate: ___ Silt ___ Bedrock ✓ < 2 mm ✓ 2 - 75 mm ✓ 75 - 300 mm ___ >300 mm		
Predominant Vegetation: Willows					

once stream enters willows shade is ~100%

Fishing Tackle: Yes (No)	Fish Present: (Yes) No ?	Species and Approx. Number: 2 small trout near Agnew Lake

Species	Adults	Subadults	Larvae	Eggs	DNA #	Survey Method(s)	Other
None					N / A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N / A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N / A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N / A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N / A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N / A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo

Aquatic Survey Data Sheet

Site: Rush Creek

Date: (mm-dd-yy) 8/21/23	Begin Time: 12:30pm	Total Time: 67 min	Observer(s): Robyn Smith + Emily Ferrell 1 (2) 3 4

Locality: Agnew Lake	Owner: ? NPS (FS) BLM St. Pvt. Oth.

County: Mono	Elevation: 8500 m (ft)	North UTM: 4181067 mN GPS Map	East UTM: 312194 mE 10 (11) 345678
Topographic Map: Koip Peak (7.5') 15'		North UTM: 4180938 mN GPS Map	East UTM: 312047mE 10 (11) 345678

Distance to Mapped trail: 0 km	Distance to Public dirt road: 3 km	Distance to Public paved road: 1.6 km

Weather: (Clear) Overcast Rain Pt. Cloudy Mostly Cloudy Snow	Wind: (mph) 0 (<5) 5 - 20 > 20	Air Temp.: (at 1 m) 23 (C) F	Water Temp.: (0.5 m out) 17 (C) F

man-made reservoir

Habitat: Natural 1 2 3 4 Altered (5)	Description: (Lake) River Woodland Meadow/Wetl. Ditch Pond Stream Grassland Spring	Drainage: (Permanent) Seasonal

Site Length: 1800 m	Aver. Width: 150 m	Aver. Depth: 4 m	Max. Depth: unknown m	Water Flow sec./10 ft.: 0 <7 sec. 7-11 sec. (>11 sec.)

Water Turbidity: Clear 1 (2) 3 4 5 Turbid	Mid-day Shade: 0 %	Emergent Vegetation: 5 %	Floating Vegetation: 0 %

Watershed: ___ Natural ___ Grazed ___ Logged (last 15 yr.) ___ Urban ___ Agricul. ✓ Other hydro	Substrate: ✓ Silt ✓ < 2 mm ✓ 75 - 300 mm ✓ Bedrock ✓ 2 - 75 mm ✓ >300 mm

Predominant Vegetation: Willows, Juncus spp., Carex spp., algae

Fishing Tackle: Yes (No)	Fish Present: (Yes) No ?	Species and Approx. Number: 1000 young trout and 5 adult trout observed

Species	Adults	Subadults	Larvae	Eggs	DNA #	Survey Method(s)	Other
None					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo

Aquatic Survey Data Sheet

Site: Rush Creek

Date: 8/27/23 (mm-dd-yy)	Begin Time: 2:47 pm	Total Time: 42 min	Observer(s): Robyn Smith + Emily Ferrell; 1 (2) 3 4
Locality: Rush Creek Below Agnew Dam			Owner: ? NPS (FS) BLM St. Pvt. Oth.
County: Mono	Elevation: 8500 m (ft)	North UTM: 4181104 mN GPS Map	East UTM: 312227 mE 10 345678 (11)
Topographic Map: Koip Peak (7.5') 15'		North UTM: 4181239 mN GPS Map	East UTM: 312310 mE 10 345678 (11)
Distance to Mapped trail: 0 km	Distance to Public dirt road: 3 km	Distance to Public paved road: 1.6 km	

Weather: (Clear) Overcast Rain Pt. Cloudy Mostly Cloudy Snow	Wind: (mph) 0 (<5) 5-20 >20	Air Temp.: (at 1 m) 23 (C) F	Water Temp.: (0.5 m out) 17 (C) F

Agnew Dam impedes flow

Habitat: Natural 1 2 3 4 (5) Altered	Description: Lake River Woodland Meadow/Wetl. Ditch Pond (Stream) Grassland Spring			Drainage: (Permanent) Seasonal
Site Length: 200 m	Aver. Width: 3 m	Aver. Depth: 0.25 m	Max. Depth: 3 m	Water Flow sec./10 ft.: 0 <7 sec. (7-11 sec.) >11 sec.
Water Turbidity: Clear (1) 2 3 4 5 Turbid	Mid-day Shade: 10 %	Emergent Vegetation: 10 %		Floating Vegetation: 0 %
Watershed: ___ Natural ___ Grazed ___ Logged (last 15 yr.) ___ Urban ___ Agricul. ✓ Other hydro		Substrate: ✓ Silt ✓ Bedrock ✓ <2 mm ✓ 2-75 mm ✓ 75-300 mm ✓ >300 mm		
Predominant Vegetation: willows, dogwood, carex spp.				

Fishing Tackle: (Yes) No	Fish Present: (Yes) No ?	Species and Approx. Number: 17 trout and 1 potential sculpin observed

Species	Adults	Subadults	Larvae	Eggs	DNA #	Survey Method(s)	Other
None					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo

Aquatic Survey Data Sheet

Site: Rush Creek

Date: 8/28/23 (mm-dd-yy)	Begin Time: 12:02	Total Time: 25 min	Observer(s): Robyn Smith + Emily Ferrell (1 2 3 4)
Locality: Rush Creek Above Silver Lake 01			Owner: ? NPS (FS) BLM St. Pvt. Oth.
County: Mono	Elevation: 7250 m (ft)	North UTM: 4181929 mN GPS Map	East UTM: 313049 mE 10 (11) 345678
Topographic Map: June Lake (7.5) 15'		North UTM: 4181929 mN GPS Map	East UTM: 313049mE 10 (11) 345678
Distance to Mapped trail: 1 km	Distance to Public dirt road: 1 km	Distance to Public paved road: 0 km	

Weather: (Clear) Pt. Cloudy / Overcast / Mostly Cloudy / Rain / Snow	Wind: (0) / 5 - 20 / (mph) < 5 / > 20	Air Temp.: 23 (C) F (at 1 m)	Water Temp.: (C) F (0.5 m out) 13

Habitat: Natural 1 2 (3) 4 5 Altered	Description: Lake / River / Woodland / Meadow/Wetl. / Ditch / Pond / (Stream) / Grassland / Spring	Drainage: (Permanent) / Seasonal			
Site Length: 200 m	Aver. Width: 3 m	Aver. Depth: 0.5 m	Max. Depth: 1 m	Water Flow sec./10 ft. 0 / < 7 sec. / (7-11 sec) / >11 sec.	
Water Turbidity: Clear (1) 2 3 4 5 Turbid	Mid-day Shade: 60 %	Emergent Vegetation: 10 %	Floating Vegetation: 0 %		
Water-shed: ___ Natural ___ Urban ___ Grazed ___ Agricul. ___ Logged (last 15 yr.) ✓ Other hydro	Substrate: ✓ Silt ✓ Bedrock ✓ < 2 mm ✓ 2 - 75 mm ✓ 75 - 300 mm ✓ >300 mm				
Predominant Vegetation: Willows, aspen, horsetails, dogwood, sierra rose					

Fishing Tackle: Yes (No)	Fish Present: (Yes) No ?	Species and Approx. Number: 2 small trout

Species	Adults	Subadults	Larvae	Eggs	DNA #	Survey Method(s)		Other
None					N A	Visual / Aural / Dip Net	Hand / TCS / Seine	Voucher / Pathology / Photo
					N A	Visual / Aural / Dip Net	Hand / TCS / Seine	Voucher / Pathology / Photo
					N A	Visual / Aural / Dip Net	Hand / TCS / Seine	Voucher / Pathology / Photo
					N A	Visual / Aural / Dip Net	Hand / TCS / Seine	Voucher / Pathology / Photo
					N A	Visual / Aural / Dip Net	Hand / TCS / Seine	Voucher / Pathology / Photo
					N A	Visual / Aural / Dip Net	Hand / TCS / Seine	Voucher / Pathology / Photo

Aquatic Survey Data Sheet

Site: Rush Creek

Date: (mm-dd-yy) 8/28/23	Begin Time: 9:32 am	Total Time: 118 min	Observer(s): Robyn Smith + Emily Ferrell; 1 (2) 3 4	
Locality: Meadow 02				Owner: ? NPS (FS) BLM St. (Pvt) Oth.
County: Mono	Elevation: 7250 m (ft)	North UTM: 4181900 mN GPS Map	East UTM: 313220 mE 10 345678 (11)	
Topographic Map: June Lake (7.5) 15'		North UTM: 4182054 mN GPS Map	East UTM: 313095 mE 10 345678 (11)	
Distance to Mapped trail: 1 km	Distance to Public dirt road: 1 km	Distance to Public paved road: 0 km		

Weather: (Clear) Pt. Cloudy Overcast Mostly Cloudy Rain Snow	Wind: (mph) (0) <5 5-20 >20	Air Temp.: (at 1 m) 19 (C) F	Water Temp.: (0.5 m out) 13 (C) F

cutting vegetation for transmission corridor

Habitat: Natural 1 2 (3) 4 5 Altered	Description: Lake River (Woodland) (Meadow/Wet) Ditch Pond (Stream) Grassland Spring			Drainage: (Permanent) (Seasonal)
Site Length: 500 m	Aver. Width: 100 m	Aver. Depth: 0.25 m	Max. Depth: 3 m	Water Flow sec./10 ft.: 0 7-11 sec. <7 sec. (>11 sec.)
Water Turbidity: Clear 1 2 (3) 4 5 Turbid	Mid-day Shade: 90 %	Emergent Vegetation: 95 %		Floating Vegetation: 0 %
Watershed: ___ Natural ✓ Urban ___ Grazed ___ Agricul. ___ Logged (last 15 yr.) ✓ Other hydro	Substrate: ✓ Silt ___ Bedrock ✓ <2 mm ✓ 2-75 mm ___ 75-300 mm ___ >300 mm			
Predominant Vegetation: Lodgepole pine, aspen, willows, bulrush, grasses				

Fishing Tackle: (Yes) No	Fish Present: (Yes) No ?	Species and Approx. Number: 40 trout observed

Species	Adults	Subadults	Larvae	Eggs	DNA #	Survey Method(s)	Other
PSRE	4				N A	(Visual) Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo

Aquatic Survey Data Sheet

Site: Rush Creek

Date: 8/28/23 (mm-dd-yy)	Begin Time: 9:32 am	Total Time: 118 min	Observer(s): Robyn Smith + Emily Ferrell 1 (2) 3 4
Locality: Rush Creek Above Silver Lake 02			Owner: ? NPS (FS) BLM St. (Pvt) Oth.
County: Mono	Elevation: 7250 m (ft)	North UTM: 4181969 mN GPS Map	East UTM: 313152mE 10 (11) 345678
Topographic Map: June Lake (7.5') 15'		North UTM: 4182135 mN GPS Map	East UTM: 313083 mE 10 (11) 345678
Distance to Mapped trail: 1 km	Distance to Public dirt road: 1 km	Distance to Public paved road: 0 km	

Weather: (Clear) Pt. Cloudy Overcast Mostly Cloudy Rain Snow	Wind: (mph) (0) <5 5-20 >20	Air Temp.: (at 1 m) 19 (C) F	Water Temp.: (0.5 m out) 13 (C) F

Habitat: Natural 1 2 (3) 4 5 Altered	Description: Lake Pond River (Stream) Ditch (Woodland) Grassland (Meadow/Wet) Spring			Drainage: (Permanent) (Seasonal)
Site Length: 300 m	Aver. Width: 100 m	Aver. Depth: 0.25 m	Max. Depth: 3 m	Water Flow sec./10 ft.: 0 <7 sec. 7-11 sec. (>11 sec)
Water Turbidity: Clear 1 2 (3) 4 5 Turbid	Mid-day Shade: 90 %	Emergent Vegetation: 95 %		Floating Vegetation: 0 %
Watershed: __ Natural ✓ Urban __ Grazed __ Agricul. __ Logged (last 15 yr.) ✓ Other hydro		Substrate: ✓ Silt __ Bedrock ✓ < 2 mm ✓ 2 - 75 mm __ 75 - 300 mm __ >300 mm		
Predominant Vegetation: Lodgepole pine, aspen, willows, bulrush, grasses				

Fishing Tackle: (Yes) No	Fish Present: (Yes) No ?	Species and Approx. Number: 40 trout observed

Species	Adults	Subadults	Larvae	Eggs	DNA #	Survey Method(s)	Other
PSRE	4					N (Visual) Hand Aural TCS A Dip Net Seine	Voucher Pathology Photo
						N Visual Hand Aural TCS A Dip Net Seine	Voucher Pathology Photo
						N Visual Hand Aural TCS A Dip Net Seine	Voucher Pathology Photo
						N Visual Hand Aural TCS A Dip Net Seine	Voucher Pathology Photo
						N Visual Hand Aural TCS A Dip Net Seine	Voucher Pathology Photo
						N Visual Hand Aural TCS A Dip Net Seine	Voucher Pathology Photo

Aquatic Survey Data Sheet

Site: Rush Creek

Date: 8/18/23 (mm-dd-yy)	Begin Time: 10:23 am	Total Time: 230 min	Observer(s): Robyn Smith + Emily Ferrell (1 2 3 4)

Locality: Rush Creek Above Silver Lake 03

Owner: ? NPS FS BLM St. (Pvt) Oth.

County: Mono	Elevation: 7200 m (ft)	North UTM: 4182166 mN GPS Map	East UTM: 313030 mE 10 3 4 5 6 7 8 (11)
Topographic Map: June Lake (7.5) 15'		North UTM: 4182625 mN GPS Map	East UTM: 313215 mE 10 3 4 5 6 7 8 (11)
Distance to Mapped trail: 0 km	Distance to Public dirt road: 0 km	Distance to Public paved road: 0 km	

Weather: Clear (Pt. Cloudy)	Overcast Mostly Cloudy	Rain Snow	Wind: (mph) 0 (<5)	5 - 20 > 20
Air Temp.: (at 1 m) 27 (C) F	Water Temp.: (0.5 m out) 13 (C) F			

Habitat: Natural 1 2 (3) 4 5 Altered	Description: Lake River Woodland (Meadow/Wetl.) Ditch Pond (Stream) Grassland Spring	Drainage: Permanent Seasonal		
Site Length: 1000 m	Aver. Width: 300 m	Aver. Depth: 1.2 m	Max. Depth: 6 m	Water Flow sec./10 ft. 0 (<7 sec.) <7 sec. >11 sec.
Water Turbidity: Clear (1) 2 3 4 5 Turbid	Mid-day Shade: 15 %	Emergent Vegetation: 100 %	Floating Vegetation: 0 %	
Water-shed: ___ Natural ___ Grazed ___ Logged (last 15 yr.) ___ Urban ___ Agricul. ✓ Other recreation	Substrate: ✓ Silt ✓ Bedrock	✓ < 2 mm ✓ 2 - 75 mm	✓ 75 - 300 mm ✓ >300 mm	
Predominant Vegetation: Willows, sedges, grasses				

Fishing Tackle: (Yes) No	Fish Present: (Yes) No ?	Species and Approx. Number: 50 large trout observed

Species	Adults	Subadults	Larvae	Eggs	DNA #	Survey Method(s)		Other
PSRE	5		551		N	(Visual)	Hand	Voucher
						Aural	TCS	Pathology
					A	Dip Net	Seine	Photo
THSI	1				N	(Visual)	Hand	Voucher
						Aural	TCS	Pathology
					A	Dip Net	Seine	Photo
					N	Visual	Hand	Voucher
						Aural	TCS	Pathology
					A	Dip Net	Seine	Photo
					N	Visual	Hand	Voucher
						Aural	TCS	Pathology
					A	Dip Net	Seine	Photo
					N	Visual	Hand	Voucher
						Aural	TCS	Pathology
					A	Dip Net	Seine	Photo
					N	Visual	Hand	Voucher
						Aural	TCS	Pathology
					A	Dip Net	Seine	Photo

Aquatic Survey Data Sheet

Site: Rush Creek

Date: 8/18/23 (mm-dd-yy)	Begin Time: 10:23am	Total Time: 230 min	Observer(s): Robyn Smith + Emily Ferrell (1 (2) 3 4)
Locality: Meadow 03			Owner: ? NPS FS BLM St. (Pvt) Oth.
County: Mono	Elevation: 7200 m (ft)	North UTM: 4182129 mN GPS Map	East UTM: 313212 mE 10 (11) 3 4 5 6 7 8
Topographic Map: June Lake (7.5') 15'		North UTM: 4182570 mN GPS Map	East UTM: 312957 mE 10 (11) 3 4 5 6 7 8
Distance to Mapped trail: 0 km	Distance to Public dirt road: 0 km	Distance to Public paved road: 0 km	

Weather:	Clear	Overcast	Rain	Wind: (mph)	0	5 - 20	Air Temp.: (at 1 m)	27 (C) F	Water Temp.: (0.5 m out)	13 (C) F
	(Pt. Cloudy)	Mostly Cloudy	Snow		(<5)	> 20				

Habitat:	Natural 1 2 (3) 4 5 Altered			Description:	Lake	River	Woodland	(Meadow/Wetl.)	Drainage:	(Permanent)
					Ditch	Pond	(Stream)	Grassland	Spring	(Seasonal)

Site Length:	500 m	Aver. Width:	100 m	Aver. Depth:	0.2 m	Max. Depth:	1 m	Water Flow sec./10 ft.	(0)	7-11 sec.	
									< 7 sec.	>11 sec.	

Water Turbidity:	Clear 1 2 3 (4) 5 Turbid			Mid-day Shade:	15 %	Emergent Vegetation:	100 %	Floating Vegetation:	30 %			
Water-shed:	___ Natural	___ Grazed	___ Logged (last 15 yr.)	Substrate:	✓ Silt	✓ < 2 mm	✓ 75 - 300 mm					
	___ Urban	___ Agricul.	✓ Other recreation		___ Bedrock	✓ 2 - 75 mm	✓ >300 mm					

Predominant Vegetation: willows, sedges, grasses

Fishing Tackle: (Yes) No	Fish Present: (Yes) No ?	Species and Approx. Number:	2000 small trout observed

Species	Adults	Subadults	Larvae	Eggs	DNA #	Survey Method(s)		Other
PSRE	5		551		N	(Visual)	Hand	Voucher
						Aural	TCS	Pathology
					A	Dip Net	Seine	Photo
THSI	1				N	(Visual)	Hand	Voucher
						Aural	TCS	Pathology
					A	Dip Net	Seine	Photo
					N	Visual	Hand	Voucher
						Aural	TCS	Pathology
					A	Dip Net	Seine	Photo
					N	Visual	Hand	Voucher
						Aural	TCS	Pathology
					A	Dip Net	Seine	Photo
					N	Visual	Hand	Voucher
						Aural	TCS	Pathology
					A	Dip Net	Seine	Photo
					N	Visual	Hand	Voucher
						Aural	TCS	Pathology
					A	Dip Net	Seine	Photo

Aquatic Survey Data Sheet

Site: Rush Creek

Date (mm-dd-yy): 8/18/23	Begin Time: 4:55 pm	Total Time: 60 min	Observer(s): Robyn Smith + Emily Ferrell; 1 (2) 3 4
Locality: Rush Creek Below Silver Lake 01			Owner: ? NPS (FS) BLM St. Pvt. Oth.
County: Mono	Elevation: 7100 m (ft)	North UTM: 4184468 mN GPS Map	East UTM: 312886mE 10 (11) 345678
Topographic Map: June Lake (7.5') 15'		North UTM: 4184833mN GPS Map	East UTM: 313100mE 10 (11) 345678
Distance to Mapped trail: 0 km	Distance to Public dirt road: 0.1 km	Distance to Public paved road: 0.1 km	

Weather: Clear, Overcast, Rain, (Pt. Cloudy), Mostly Cloudy, Snow	Wind (mph): 0, (<5), 5-20, > 20	Air Temp. (at 1 m): 29 (C) F	Water Temp. (0.5 m out): 17 (C) F

Habitat: Natural 1 (2) 3 4 5 Altered	Description: Lake, River, Woodland, Meadow/Wetl., Ditch, Pond, (Stream), Grassland, Spring			Drainage: (Permanent) Seasonal
Site Length: 800 m	Aver. Width: 9 m	Aver. Depth: 1 m	Max. Depth: 2 m	Water Flow sec./10 ft.: 0, <7 sec., (7-11 sec.), >11 sec.
Water Turbidity: Clear (1) 2 3 4 5 Turbid	Mid-day Shade: 20 %	Emergent Vegetation: 10 %		Floating Vegetation: 0 %
Watershed: ✓ Natural, ___ Urban, ___ Grazed, ___ Agricul., ___ Logged (last 15 yr.), ✓ Other recreation		Substrate: ✓ Silt, ___ Bedrock, ✓ <2 mm, ✓ 2-75 mm, ✓ 75-300 mm, ✓ >300 mm		
Predominant Vegetation: Willows, aspen, rushes, sedges				

Fishing Tackle: (Yes) No	Fish Present: (Yes) No ?	Species and Approx. Number: 10 large and 10 small trout observed

Species	Adults	Subadults	Larvae	Eggs	DNA #	Survey Method(s)	Other
PSRE	6					N (Visual) Hand, Aural TCS, A Dip Net Seine	Voucher, Pathology, Photo
						N Visual Hand, Aural TCS, A Dip Net Seine	Voucher, Pathology, Photo
						N Visual Hand, Aural TCS, A Dip Net Seine	Voucher, Pathology, Photo
						N Visual Hand, Aural TCS, A Dip Net Seine	Voucher, Pathology, Photo
						N Visual Hand, Aural TCS, A Dip Net Seine	Voucher, Pathology, Photo
						N Visual Hand, Aural TCS, A Dip Net Seine	Voucher, Pathology, Photo

Aquatic Survey Data Sheet

Site: Rush Creek

Date: 8/28/23 (mm-dd-yy)	Begin Time: 1:22 pm	Total Time: 95 min	Observer(s): Robyn Smith + Emily Ferrell	
Locality: Rush Creek Below Silver Lake 01				Owner: ? NPS (FS) BLM St. Pvt. Oth.
County: Mono	Elevation: 7100 m (ft)	North UTM: 4184833 mN GPS Map	East UTM: 313100 mE 10 (11) 345678	
Topographic Map: (7.5) 15' June Lake		North UTM: 4185384 mN GPS Map	East UTM: 313269 mE 10 (11) 345678	
Distance to Mapped trail: 0 km	Distance to Public dirt road: 0 km	Distance to Public paved road: 0 km		

Weather: (Clear) Pt. Cloudy	Overcast Mostly Cloudy	Rain Snow	Wind: (mph)	(0) <5	5 - 20 >20	Air Temp.: (at 1 m)	27 (C) F	Water Temp.: (0.5 m out)	16 (C) F

Habitat: Natural 1 2 (3) 4 5 Altered	Description: Lake, River, (Woodland), Meadow/Wetl., Ditch, Pond, (Stream), Grassland, Spring							Drainage: (Permanent) Seasonal	
Site Length: 700 m	Aver. Width: 10 m	Aver. Depth: 1 m	Max. Depth: 3 m	Water Flow sec./10 ft.	0	< 7 sec.	(7-11 sec)	>11 sec.	
Water Turbidity: Clear (1) 2 3 4 5 Turbid	Mid-day Shade: 20 %	Emergent Vegetation: 10 %	Floating Vegetation: 0 %						
Water-shed: ✓ Natural, ___ Grazed, ___ Logged (last 15 yr.), ___ Urban, ___ Agricul., ✓ Other recreation	Substrate: ✓ Silt, ___ Bedrock, ✓ < 2 mm, ✓ 2 - 75 mm, ✓ 75 - 300 mm, ✓ >300 mm								
Predominant Vegetation: Lodgepole pine, Jeffrey pine, aspen, willow, Juncus spp., Carex spp.									

Fishing Tackle: (Yes) No	Fish Present: (Yes) No ?	Species and Approx. Number: 33 trout observed

Species	Adults	Subadults	Larvae	Eggs	DNA #	Survey Method(s)		Other
PSRE	9				N	(Visual)	Hand	Voucher
						Aural	TCS	Pathology
					A	Dip Net	Seine	(Photo)
THSP	1				N	(Visual)	Hand	Voucher
						Aural	TCS	Pathology
					A	Dip Net	Seine	Photo
					N	Visual	Hand	Voucher
						Aural	TCS	Pathology
					A	Dip Net	Seine	Photo
					N	Visual	Hand	Voucher
						Aural	TCS	Pathology
					A	Dip Net	Seine	Photo
					N	Visual	Hand	Voucher
						Aural	TCS	Pathology
					A	Dip Net	Seine	Photo
					N	Visual	Hand	Voucher
						Aural	TCS	Pathology
					A	Dip Net	Seine	Photo

Aquatic Survey Data Sheet

Site: Rush Creek

Date: 8/18/23 (mm-dd-yy)	Begin Time: 3:58 pm	Total Time: 29 min	Observer(s): Robyn Smith + Emily Ferrell 1 (2) 3 4
Locality: Meadow 04			Owner: ? NPS FS BLM St. (Pvt) Oth.
County: Mono	Elevation: 7250 m (ft)	North UTM: 4181864 mN GPS Map	East UTM: 313198 mE 10 (11) 345678
Topographic Map: June Lake (7.5) 15'		North UTM: 4181822 mN GPS Map	East UTM: 313099 mE 10 (11) 345678
Distance to Mapped trail: 1.6 km	Distance to Public dirt road: 1.6 km	Distance to Public paved road: 0 km	

Weather: Clear Overcast Rain (Pt. Cloudy) Mostly Cloudy Snow	Wind: (mph) 0 (<5) 5-20 >20	Air Temp.: (at 1 m) 28 (C) F	Water Temp.: (0.5 m out) 12 (C) F

Habitat: Natural 1 2 (3) 4 5 Altered	Description: Lake River Woodland (Meadow/Wet) Ditch Pond (Stream) Grassland Spring			Drainage: Permanent (Seasonal)
Site Length: 200 m	Aver. Width: 1 m	Aver. Depth: 0.25 m	Max. Depth: 0.5 m	Water Flow sec./10 ft.: 0 <7 sec. 7-11 sec. (>11 sec)
Water Turbidity: Clear 1 (2) 3 4 5 Turbid	Mid-day Shade: 70 %	Emergent Vegetation: 30 %		Floating Vegetation: 0 %
Watershed: ✓ Natural ___ Grazed ___ Logged (last 15 yr.) ___ Urban ___ Agricul. ✓ Other hydro		Substrate: ✓ Silt ✓ < 2 mm ✓ 75 - 300 mm ✓ Bedrock ✓ 2 - 75 mm ✓ >300 mm		
Predominant Vegetation: Lodgepole pine overstory, bulrush, grasses				

Fishing Tackle: Yes (No)	Fish Present: (Yes) No ?	Species and Approx. Number: 6 trout and potentially 1 stickleback observed

Species	Adults	Subadults	Larvae	Eggs	DNA #	Survey Method(s)	Other
None					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo

Aquatic Survey Data Sheet

Site: Rush Creek

Date: (mm-dd-yy) 8/18/2023	Begin Time: 3:58 pm	Total Time: 29 min	Observer(s): Robyn Smith + Emily Ferrell — 1 (2) 3 4
Locality: South Rush Creek			Owner: ? NPS FS BLM St. (Pvt) Oth.
County: Mono	Elevation: 7250 m (ft)	North UTM: 4181864 mN GPS Map	East UTM: 313198 mE 10 (11) 345678
Topographic Map: June Lake (7.5) 15'		North UTM: 4181822 mN GPS Map	East UTM: 313099 mE 10 (11) 345678
Distance to Mapped trail: 1.6 km	Distance to Public dirt road: 1.6 km	Distance to Public paved road: 0 km	

Weather: Clear, Overcast, Rain, (Pt. Cloudy), Mostly Cloudy, Snow	Wind: (mph) 0, 5 - 20, (<5), > 20	Air Temp.: (at 1 m) 28 (C) F	Water Temp.: (0.5 m out) 12 (C) F

Habitat: Natural 1 2 (3) 4 5 Altered	Description: Lake, River, Woodland, (Meadow/Wetl.), Ditch, Pond, (Stream), Grassland, Spring			Drainage: Permanent (Seasonal)
Site Length: 200 m	Aver. Width: 1 m	Aver. Depth: 0.25 m	Max. Depth: 0.5 m	Water Flow sec./10 ft.: 0, <7 sec., 7-11 sec., (>11 sec.)
Water Turbidity: Clear 1 (2) 3 4 5 Turbid	Mid-day Shade: 70 %	Emergent Vegetation: 30 %		Floating Vegetation: 0 %
Watershed: ✓ Natural, ___ Grazed, ___ Logged (last 15 yr.), ___ Urban, ___ Agricul., ✓ Other hydro		Substrate: ___ Silt, ___ < 2 mm, ___ 75 - 300 mm, ___ Bedrock, ___ 2 - 75 mm, ___ >300 mm		
Predominant Vegetation: Lodgepole pine overstory, bulrush, grasses				

Fishing Tackle: Yes (No)	Fish Present: (Yes) No ?	Species and Approx. Number: 6 trout and potentially 1 stickleback observed

Species	Adults	Subadults	Larvae	Eggs	DNA #	Survey Method(s)	Other
None					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo
					N A	Visual Hand Aural TCS Dip Net Seine	Voucher Pathology Photo

APPENDIX E
CNDDB Form for Incidental SNYLF Observations

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CONFIDENTIAL INFORMATION

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

AQ 7, Appendix E California Natural Diversity Database Forms (Confidential)

AQ 7, Appendix E 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 F
Representative Photographs of YT Habitats in the Study Area

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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.

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.

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APPENDIX G
YT Visual Encounter Survey Datasheets

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Yosemite Toad Data Sheet

Page ___ of ___

Date: 7/18/23 (mm/dd/year) Observers Robyn Smith + Emily Ferrell

Location Information:

Location Description: Waugh Lake Elevation: 9500 (feet) or meters

R5 ID#: INF Meadow #: LP Meadow 1 Meadow/Lake Name: Waugh Lake

Meadow Type: dry, upland Meadow/Lake Acres: 0.6

Wilderness: Ansel Adams Allotment: —

Subwatershed #: HUC 12-180901010301 Quad Map #: Mt. Ritter

Township: T2S Range: R25E Section: S27

GPS Coordinates - center of meadow: NAD 83 Accuracy: +- 1 ft or (m)

East UTM: North UTM

East UTM: 305917.01 mE North UTM: 4180185.03 mN

Survey Information:

Survey Start Time: 12:20 am or (pm)

Survey End Time: 1:02 am or (pm)

Survey Total Time: 42 minutes

Weather (circle all that apply): clear (partly-cloudy) cloudy (light-rain) heavy-rain snow no-wind (light-wind) very-windy

Temperature - Air Start: 23 (C) Temperature - Water Start: 27 (C)

Temperature - Air End: 23 (C) Temperature - Water End: 27 (C)

Habitat Information:

Water Present? (Yes) or No (Ephemeral) or Intermittent or Perennial?

% of Meadow Wet: 5% % Slope of Meadow: 2%

Fish Present? Yes or (No) Signs of Cattle? Yes or (No) Signs of Packstock? Yes or (No)

Comments about habitat condition: Looks like historic inundation zone of Waugh Lake. Lots of lodgepole pine saplings establishing. Grasses and sedges present

Dry slopes with abundant rodent burrows

Species Information:

Species Code	Life Stage	#	Sex	Obs Method	Disease	Comments
PSRE	E/T/J/(A)/M	1	M / F	(Visual) / Call	Y / (N)	hopping in open area
	E/T/J/A/M		M / F	Visual / Call	Y / N	
	E/T/J/A/M		M / F	Visual / Call	Y / N	
	E/T/J/A/M		M / F	Visual / Call	Y / N	
	E/T/J/A/M		M / F	Visual / Call	Y / N	
	E/T/J/A/M		M / F	Visual / Call	Y / N	
	E/T/J/A/M		M / F	Visual / Call	Y / N	
	E/T/J/A/M		M / F	Visual / Call	Y / N	

Yosemite Toad Data Sheet

Page ___ of ___

Date: 7/19/23 (mm/dd/year) Observers: Robyn Smith + Emily Ferrell

Location Information:

Location Description: Waugh Lake Elevation: 9400 (feet) or meters

R5 ID#: INF Meadow #: Pond 01 Meadow/Lake Name: Waugh Lake

Meadow Type: pond Meadow/Lake Acres: 1.0

Wilderness: Ansel Adams Allotment: —

Subwatershed #: HUC 12-180901010301 Quad Map #: Mt. Ritter

Township: T2S Range: R25E Section: S27

GPS Coordinates - center of meadow: NAD 83 Accuracy: +- 10 (ft) or m

East UTM: North UTM

East UTM: 306440.60 m E North UTM: 4180273.80 m N

Survey Information:

Survey Start Time: 3:50 am or (pm)

Survey End Time: 5:06 am or (pm)

Survey Total Time: 76 minutes

Weather (circle all that apply): clear (partly-cloudy) cloudy light-rain heavy-rain snow no-wind (light-wind) very-windy

Temperature - Air Start: 20 (C) Temperature - Water Start: 17 (C)

Temperature - Air End: 20 (C) Temperature - Water End: 15 (C)

Habitat Information:

Water Present? (Yes) or No (Ephemeral) or Intermittent or (Perennial?)

% of Meadow Wet: 100 % % Slope of Meadow: 0 %

Fish Present? Yes or (No) Signs of Cattle? Yes or (No) Signs of Packstock? Yes or (No)

Comments about habitat condition: Snow-melt fed pond at base of slope on a shelf above Waugh Lake

Species Information:

Species Code	Life Stage	#	Sex	Obs Method	Disease	Comments
PSRE	E/T/J/(A)/M	2	(M)/F	Visual /(Call)	Y / N	
PSRE	E/(T)/J/A/M	40	M / F	(Visual) / Call	Y / (N)	newly emerged
PSRE	(E)/T/J/A/M	167	M / F	(Visual) / Call	Y / N	some about to hatch
	E/T/J/A/M		M / F	Visual / Call	Y / N	
	E/T/J/A/M		M / F	Visual / Call	Y / N	
	E/T/J/A/M		M / F	Visual / Call	Y / N	
	E/T/J/A/M		M / F	Visual / Call	Y / N	
	E/T/J/A/M		M / F	Visual / Call	Y / N	

Yosemite Toad Data Sheet

Page ___ of ___

Date: 7/19/23 (mm/dd/year) Observers Robyn Smith + Emily Ferrell

Location Information: Rush Creek Below Rush

Location Description: Meadows Dam Elevation: 9400 (feet) or meters

R5 ID#: INF Meadow #: Pond 02 Meadow/Lake Name: Rush Creek Below Rush Meadows Dam

Meadow Type: wet, stream-fed, pond Meadow/Lake Acres: 0.15

Wilderness: Ansel Adams Allotment: —

Subwatershed #: HUC 12-180901010301 Quad Map #: Koip Peak

Township: T2S Range: R25E Section: S24

GPS Coordinates - center of meadow: NAD 83 Accuracy: +- 1 ft or (m)

East UTM: North UTM

East UTM: 308297.85 mE North UTM: 4180585.13 mN

Survey Information:

Survey Start Time: 9:40 (am) or pm

Survey End Time: 9:55 (am) or pm

Survey Total Time: 15 minutes

Weather (circle all that apply): clear (partly-cloudy) cloudy light-rain heavy-rain snow (no-wind) light-wind very-windy

Temperature - Air Start: 20 (C)

Temperature - Air End: 20 (C)

Temperature - Water Start: — (C)

Temperature - Water End: — (C)

Habitat Information:

Water Present? (Yes) or No (Ephemeral) or (Intermittent) or (Perennial)

% of Meadow Wet: 100 % % Slope of Meadow: 1 %

Fish Present? Yes or (No) Signs of Cattle? Yes or (No) Signs of Packstock? Yes or (No)

Comments about habitat condition: Fish present in Rush Creek which is hydrologically connected Surveyed in conjunction with Rush Creek

Species Information:

Species Code	Life Stage	#	Sex	Obs Method	Disease	Comments
None	E/T/J/A/M	___	M / F	Visual / Call	Y / N	
	E/T/J/A/M	___	M / F	Visual / Call	Y / N	
	E/T/J/A/M	___	M / F	Visual / Call	Y / N	
	E/T/J/A/M	___	M / F	Visual / Call	Y / N	
	E/T/J/A/M	___	M / F	Visual / Call	Y / N	
	E/T/J/A/M	___	M / F	Visual / Call	Y / N	
	E/T/J/A/M	___	M / F	Visual / Call	Y / N	
	E/T/J/A/M	___	M / F	Visual / Call	Y / N	

Yosemite Toad Data Sheet

Page ___ of ___

Date: 7/17/23 (mm/dd/year) Observers Robyn Smith + Emily Ferrell

Location Information: Rush Creek Below

Location Description: Rush Meadows Dam Elevation: 9200 (feet) or meters

R5 ID#: INF Meadow #: Meadow 01 Meadow/Lake Name: Rush Creek Below Rush Meadows Dam

Meadow Type: wet, stream-fed Meadow/Lake Acres: 1.4

Wilderness: Ansel Adams Allotment: —

Subwatershed #: HUC 12-180901010301 Quad Map #: Koip Peak

Township: T2S Range: R25E Section: S24

GPS Coordinates - center of meadow: NAD 83 Accuracy: +- 1 ft or (m)

East UTM: North UTM

East UTM: 309461.16 mE North UTM: 4180539.64 mN

Survey Information:

Survey Start Time: 12:18 am or (pm)

Survey End Time: 1:16 am or (pm)

Survey Total Time: 58 minutes

Weather (circle all that apply): clear (partly-cloudy) cloudy light-rain heavy-rain snow no-wind (light-wind) very-windy

Temperature - Air Start: 25 (C) Temperature - Water Start: 17 (C)

Temperature - Air End: 22 (C) Temperature - Water End: 15 (C)

Habitat Information:

Water Present? (Yes) or No (Ephemeral) or (Intermittent) or (Perennial)?

% of Meadow Wet: 98% % Slope of Meadow: 1%

Fish Present? (Yes) or No Signs of Cattle? Yes or (No) Signs of Packstock? Yes or (No)

Comments about habitat condition: Meadow near trail used by packers, meadow edge lined by willows, only the edges contain suitable shallow habitat with dense emergent vegetation. Adult and hatching trout observed. Meadow hydrologically connected to Rush Creek

Species Information:

Species Code	Life Stage	#	Sex	Obs Method	Disease	Comments
PSRE	E/(T)/J/A/M	25	M / F	(Visual) / Call	Y / (N)	newly emerged
THEL	E/T/J/(A)/M	1	M / F	(Visual) / Call	Y / (N)	
	E/T/J/A/M		M / F	Visual / Call	Y / N	
	E/T/J/A/M		M / F	Visual / Call	Y / N	
	E/T/J/A/M		M / F	Visual / Call	Y / N	
	E/T/J/A/M		M / F	Visual / Call	Y / N	
	E/T/J/A/M		M / F	Visual / Call	Y / N	
	E/T/J/A/M		M / F	Visual / Call	Y / N	

Yosemite Toad Data Sheet

Page ___ of ___

Date: 7/21/23 (mm/dd/year) Observers Robyn Smith + Emily Ferrell

Location Information:

Location Description: Rush Creek Horsetail Falls Elevation: 7800 (feet) or meters

R5 ID#: INF Meadow #: Pond 03 Meadow/Lake Name: Rush Creek Horsetail Falls

Meadow Type: pond Meadow/Lake Acres: 0.12

Wilderness: — Allotment: —

Subwatershed #: HUC 12-180901010301 Quad Map #: Koip Peak

Township: T2S Range: R26E Section: 32O

GPS Coordinates - center of meadow: NAD 83 Accuracy: +- 10 (ft) or m

East UTM: North UTM

East UTM: 312634.08 m E North UTM: 4181800.20 m N

Survey Information:

Survey Start Time: 11:03 (am) or pm

Survey End Time: 11:22 (am) or pm

Survey Total Time: 19 minutes

Weather (circle all that apply): (clear) partly-cloudy cloudy light-rain heavy-rain snow (no-wind) light-wind very-windy

Temperature - Air Start: 21 (C) Temperature - Water Start: 15 (C)

Temperature - Air End: 21 (C) Temperature - Water End: 15 (C)

Habitat Information:

Water Present? (Yes) or No (Ephemeral) or Intermittent or Perennial?

% of Meadow Wet: 60% % Slope of Meadow: 0%

Fish Present? Yes or (No) Signs of Cattle? Yes or (No) Signs of Packstock? Yes or (No)

Comments about habitat condition: Ephemeral pond in a rocky bowl under the Rush Creek transmission line. Looks like a snowmelt fed pond with abundant invertebrates and algae. Rocky areas with logs and burrows in uplands Not much emergent vegetation

Species Information:

Species Code	Life Stage	#	Sex	Obs Method	Disease	Comments
None	E/T/J/A/M	___	M / F	Visual / Call	Y / N	
	E/T/J/A/M	___	M / F	Visual / Call	Y / N	
	E/T/J/A/M	___	M / F	Visual / Call	Y / N	
	E/T/J/A/M	___	M / F	Visual / Call	Y / N	
	E/T/J/A/M	___	M / F	Visual / Call	Y / N	
	E/T/J/A/M	___	M / F	Visual / Call	Y / N	
	E/T/J/A/M	___	M / F	Visual / Call	Y / N	
	E/T/J/A/M	___	M / F	Visual / Call	Y / N	

Yosemite Toad Data Sheet

Page ___ of ___

Date: 7/21/23 (mm/dd/year) Observers Robyn Smith + Emily Ferrell

Location Information:

Location Description: Rush Creek Above Silver Lake Elevation: 7250 (feet) or meters

R5 ID#: INF Meadow #: Meadow 02 Meadow/Lake Name: Rush Creek Above Silver Lake

Meadow Type: wet, stream-fed Meadow/Lake Acres: 2.5

Wilderness: — Allotment: —

Subwatershed #: HUC 12-180901010301 Quad Map #: June Lake

Township: T2S Range: R26E Section: S20

GPS Coordinates - center of meadow: NAD 83 Accuracy: +- 1 ft or (m)

East UTM: North UTM

East UTM: 313191.94 m E North UTM: 4181952.38 m N

Survey Information:

Survey Start Time: 1:55 am or (pm)

Survey End Time: 4:15 am or (pm)

Survey Total Time: 140 minutes

Weather (circle all that apply): clear (partly-cloudy) cloudy light-rain heavy-rain snow no-wind (light-wind) very-windy

Temperature - Air Start: 24 (C)

Temperature - Air End: 24 (C)

Temperature - Water Start: 11 (C)

Temperature - Water End: 11 (C)

Habitat Information:

Water Present? (Yes) or No (Ephemeral) or (Intermittent) or (Perennial)?

% of Meadow Wet: 100 % % Slope of Meadow: 1%

Fish Present? Yes or (No) Signs of Cattle? Yes or (No) Signs of Packstock? Yes or (No)

Comments about habitat condition: Enhancement area is completely flooded waist high in some areas. Fallen logs and debris prevent safe survey of whole area

Species Information:

Species Code	Life Stage	#	Sex	Obs Method	Disease	Comments
None	E/T/J/A/M	___	M / F	Visual / Call	Y / N	
	E/T/J/A/M	___	M / F	Visual / Call	Y / N	
	E/T/J/A/M	___	M / F	Visual / Call	Y / N	
	E/T/J/A/M	___	M / F	Visual / Call	Y / N	
	E/T/J/A/M	___	M / F	Visual / Call	Y / N	
	E/T/J/A/M	___	M / F	Visual / Call	Y / N	
	E/T/J/A/M	___	M / F	Visual / Call	Y / N	
	E/T/J/A/M	___	M / F	Visual / Call	Y / N	

Yosemite Toad Data Sheet

Page ___ of ___

Date: 7/22/23 (mm/dd/year) Observers Robyn Smith + Emily Ferrell

Location Information:

Location Description: Rush Creek Above Silver Lake Elevation: 7200 (feet) or meters

R5 ID#: INF Meadow #: Meadow 03 Meadow/Lake Name: Rush Creek Above Silver Lake

Meadow Type: wet, stream-fed Meadow/Lake Acres: 25.4

Wilderness: — Allotment: —

Subwatershed #: HUC 12-180901010301 Quad Map #: June Lake

Township: T2S Range: R26E Section: S17

GPS Coordinates - center of meadow: NAD 83 Accuracy: +- 10 (ft) or m

East UTM: North UTM

East UTM: 312998.48 mE North UTM: 4182505.61 mN

Survey Information:

Survey Start Time: 10:50 (am) or pm

Survey End Time: 12:30 am or (pm)

Survey Total Time: 100 minutes

Weather (circle all that apply): (clear) partly-cloudy cloudy light-rain heavy-rain snow no-wind (light-wind) very-windy

Temperature - Air Start: 25 (C)

Temperature - Air End: 25 (C)

Temperature - Water Start: 11 (C)

Temperature - Water End: 11 (C)

Habitat Information:

Water Present? (Yes) or No (Ephemeral) or (Intermittent) or (Perennial)?

% of Meadow Wet: 99% % Slope of Meadow: 0%

Fish Present? Yes or (No) Signs of Cattle? Yes or (No) Signs of Packstock? Yes or (No)

Comments about habitat condition: Rush Creek has flooded meadow, osprey and bald eagle seen foraging (fish eating raptors), shallow water areas were even temperature with deeper water.

Species Information:

Species Code	Life Stage	#	Sex	Obs Method	Disease	Comments
None	E/T/J/A/M	___	M / F	Visual / Call	Y / N	
	E/T/J/A/M	___	M / F	Visual / Call	Y / N	
	E/T/J/A/M	___	M / F	Visual / Call	Y / N	
	E/T/J/A/M	___	M / F	Visual / Call	Y / N	
	E/T/J/A/M	___	M / F	Visual / Call	Y / N	
	E/T/J/A/M	___	M / F	Visual / Call	Y / N	
	E/T/J/A/M	___	M / F	Visual / Call	Y / N	
	E/T/J/A/M	___	M / F	Visual / Call	Y / N	

Yosemite Toad Data Sheet

Page ___ of ___

Date: 7/22/23 (mm/dd/year) Observers Robyn Smith + Emily Ferrell

Location Information:

Location Description: South Rush Creek Elevation: 7200 (feet) or meters

R5 ID#: INF Meadow #: Meadow 04 Meadow/Lake Name: South Rush Creek

Meadow Type: stream-fed Meadow/Lake Acres: 0.20

Wilderness: — Allotment: —

Subwatershed #: HUC 12-180901010301 Quad Map #: June Lake

Township: T2S Range: R26E Section: S20

GPS Coordinates - center of meadow: NAD 83 Accuracy: +- 10 (ft) or m

East UTM: North UTM

East UTM: 313181.50 mE North UTM: 4181814.28 mN

Survey Information:

Survey Start Time: 9:17 (am) or pm

Survey End Time: 10:03 (am) or pm

Survey Total Time: 45 minutes

Weather (circle all that apply): clear (partly-cloudy) cloudy light-rain heavy-rain snow (no-wind) light-wind very-windy

Temperature - Air Start: 20 (C)

Temperature - Air End: 20 (C)

Temperature - Water Start: 10 (C)

Temperature - Water End: 10 (C)

Habitat Information:

Water Present? (Yes) or No (Ephemeral) or (Intermittent) or Perennial?

% of Meadow Wet: 85% % Slope of Meadow: 2%

Fish Present? Yes or (No) Signs of Cattle? Yes or (No) Signs of Packstock? Yes or (No)

Comments about habitat condition: Meadow forms at intersection of South Rush Creek and another stream. Shaded and vegetation is a little less than waist height.

Species Information:

Species Code	Life Stage	#	Sex	Obs Method	Disease	Comments
None	E/T/J/A/M	___	M / F	Visual / Call	Y / N	
	E/T/J/A/M	___	M / F	Visual / Call	Y / N	
	E/T/J/A/M	___	M / F	Visual / Call	Y / N	
	E/T/J/A/M	___	M / F	Visual / Call	Y / N	
	E/T/J/A/M	___	M / F	Visual / Call	Y / N	
	E/T/J/A/M	___	M / F	Visual / Call	Y / N	
	E/T/J/A/M	___	M / F	Visual / Call	Y / N	
	E/T/J/A/M	___	M / F	Visual / Call	Y / N	

Yosemite Toad Data Sheet

Page ___ of ___

Date: 7/22/23 (mm/dd/year) Observers Robyn Smith + Emily Ferrell

Location Information:

Location Description: South Rush Creek Elevation: 7200 (feet) or meters

R5 ID#: INF Meadow #: South Rush Creek Meadow/Lake Name: South Rush Creek

Meadow Type: Stream-Fed Meadow/Lake Acres: 1.13

Wilderness: — Allotment: —

Subwatershed #: HUC 12-180901010301 Quad Map #: June Lake

Township: T2S Range: R26E Section: S20

GPS Coordinates - center of meadow: NAD 83 Accuracy: +- 10 (ft) or m

East UTM: North UTM

East UTM: 313181.50 m E North UTM: 4181814.28 m N

Survey Information:

Survey Start Time: 9:17 (am) or pm

Survey End Time: 10:03 (am) or pm

Survey Total Time: 45 minutes

Weather (circle all that apply): clear (partly-cloudy) cloudy light-rain heavy-rain snow (no-wind) light-wind very-windy

Temperature - Air Start: 20 (C)

Temperature - Air End: 20 (C)

Temperature - Water Start: 10 (C)

Temperature - Water End: 10 (C)

Habitat Information:

Water Present? (Yes) or No (Ephemeral) or (Intermittent) or Perennial?

% of Meadow Wet: 85% % Slope of Meadow: 2%

Fish Present? Yes or (No) Signs of Cattle? Yes or (No) Signs of Packstock? Yes or (No)

Comments about habitat condition: Meadow forms at intersection of South Rush Creek and another creek. Shaded and vegetation is a little less than waist height

Species Information:

Species Code	Life Stage	#	Sex	Obs Method	Disease	Comments
None	E/T/J/A/M	___	M / F	Visual / Call	Y / N	
	E/T/J/A/M	___	M / F	Visual / Call	Y / N	
	E/T/J/A/M	___	M / F	Visual / Call	Y / N	
	E/T/J/A/M	___	M / F	Visual / Call	Y / N	
	E/T/J/A/M	___	M / F	Visual / Call	Y / N	
	E/T/J/A/M	___	M / F	Visual / Call	Y / N	
	E/T/J/A/M	___	M / F	Visual / Call	Y / N	
	E/T/J/A/M	___	M / F	Visual / Call	Y / N	

Yosemite Toad Data Sheet

Page ___ of ___

Date: 8/23/23 (mm/dd/year) Observers Robyn Smith + Emily Ferrell

Location Information:

Location Description: Waugh Lake Elevation: 9500 (feet) or meters

R5 ID#: INF Meadow #: LP Meadow 1 Meadow/Lake Name: Waugh Lake

Meadow Type: dry, upland Meadow/Lake Acres: 0.6

Wilderness: Ansel Adams Allotment: —

Subwatershed #: HUC 12-180901010301 Quad Map #: Mt. Ritter

Township: T2S Range: R25E Section: S27

GPS Coordinates - center of meadow: NAD 83 Accuracy: +- 1 ft or (m)

East UTM: North UTM

East UTM: 305917.01 m E North UTM: 4180185.03 m N

Survey Information:

Survey Start Time: 11:50 (am) or pm

Survey End Time: 12:00 am or (pm)

Survey Total Time: 10 minutes

Weather (circle all that apply): clear partly-cloudy (cloudy) light-rain heavy-rain snow no-wind (light-wind) very-windy

Temperature - Air Start: 18 (C) Temperature - Water Start: — (C)

Temperature - Air End: 18 (C) Temperature - Water End: — (C)

Habitat Information:

Water Present? Yes or (No) Ephemeral or Intermittent or Perennial?

% of Meadow Wet: 0% % Slope of Meadow: 1%

Fish Present? Yes or (No) Signs of Cattle? Yes or (No) Signs of Packstock? Yes or (No)

Comments about habitat condition: all ephemeral features observed on last survey had completely dried out

Species Information:

Species Code	Life Stage	#	Sex	Obs Method	Disease	Comments
None	E/T/J/A/M		M / F	Visual / Call	Y / N	
	E/T/J/A/M		M / F	Visual / Call	Y / N	
	E/T/J/A/M		M / F	Visual / Call	Y / N	
	E/T/J/A/M		M / F	Visual / Call	Y / N	
	E/T/J/A/M		M / F	Visual / Call	Y / N	
	E/T/J/A/M		M / F	Visual / Call	Y / N	
	E/T/J/A/M		M / F	Visual / Call	Y / N	
	E/T/J/A/M		M / F	Visual / Call	Y / N	

Yosemite Toad Data Sheet

Page ___ of ___

Date: 8/25/23 (mm/dd/year) Observers Robyn Smith + Emily Ferrell

Location Information:

Location Description: Waugh Lake Elevation: 9400 (feet) or meters

R5 ID#: INF Meadow #: Pond 01 Meadow/Lake Name: Waugh Lake

Meadow Type: pond Meadow/Lake Acres: 1.0

Wilderness: Ansel Adams Allotment: —

Subwatershed #: HUC 12 - 180901010301 Quad Map #: Mt. Ritter

Township: T2S Range: R25E Section: S27

GPS Coordinates - center of meadow: NAD 83 Accuracy: +- 10 (ft) or m

East UTM: North UTM

East UTM: 306440.60 m E North UTM: 4180273.80 m N

Survey Information:

Survey Start Time: 11:06 (am) or pm

Survey End Time: 12:51 am or (pm)

Survey Total Time: 105 minutes

Weather (circle all that apply): (clear) partly-cloudy cloudy light-rain heavy-rain snow no-wind (light-wind) very-windy

Temperature - Air Start: 20 (C)

Temperature - Air End: 20 (C)

Temperature - Water Start: 16 (C)

Temperature - Water End: 16 (C)

Habitat Information:

Water Present? (Yes) or No Ephemeral or Intermittent or (Perennial?)

% of Meadow Wet: 100%. % Slope of Meadow: 0%.

Fish Present? Yes or (No) Signs of Cattle? Yes or (No) Signs of Packstock? Yes or (No)

Comments about habitat condition: Pond deep at middle with shallow water edges with warmer water and emergent vegetation

Species Information:

Species Code	Life Stage	#	Sex	Obs Method	Disease	Comments
PSRE	E/(T)/J/A/M	600	M / F	(Visual) / Call	Y / (N)	mixed ages and sizes
PSRE	E/T/J/A/(M)	300	M / F	(Visual) / Call	Y / (N)	both 2-leg and 4-leg
	E/T/J/A/M		M / F	Visual / Call	Y / N	
	E/T/J/A/M		M / F	Visual / Call	Y / N	
	E/T/J/A/M		M / F	Visual / Call	Y / N	
	E/T/J/A/M		M / F	Visual / Call	Y / N	
	E/T/J/A/M		M / F	Visual / Call	Y / N	
	E/T/J/A/M		M / F	Visual / Call	Y / N	

Yosemite Toad Data Sheet

Page ___ of ___

Date: 8/24/23 (mm/dd/year) Observers Robyn Smith + Emily Ferrell

Location Information: Rush Creek Below

Location Description: Rush Meadows Dam Elevation: 9400 (feet) or meters

R5 ID#: INF Meadow #: Pond 02 Meadow/Lake Name: Rush Creek Below Rush Meadows Dam

Meadow Type: Stream-fed, pond Meadow/Lake Acres: 0.15

Wilderness: Ansel Adams Allotment: —

Subwatershed #: HUC 12-180901010301 Quad Map #: Koip Peak

Township: T2S Range: R25E Section: S24

GPS Coordinates - center of meadow: NAD 83 Accuracy: +- 1 ft or (m)

East UTM: North UTM

East UTM: 308297.85 mE North UTM: 4180585.13 mN

Survey Information:

Survey Start Time: 3:30 am or (pm)

Survey End Time: 3:45 am or (pm)

Survey Total Time: 15 minutes

Weather (circle all that apply): clear (partly-cloudy) cloudy light-rain heavy-rain snow no-wind (light-wind) very-windy

Temperature - Air Start: 17 (C) Temperature - Water Start: — (C)

Temperature - Air End: 17 (C) Temperature - Water End: — (C)

Habitat Information:

Water Present? (Yes) or No (Ephemeral) or (Intermittent) or (Perennial?)

% of Meadow Wet: ___ % Slope of Meadow: ___

Fish Present? Yes or (No) Signs of Cattle? Yes or (No) Signs of Packstock? Yes or (No)

Comments about habitat condition: Fish present in hydrologically connected Rush Creek

Surveyed in conjunction with Rush Creek

Species Information:

Species Code	Life Stage	#	Sex	Obs Method	Disease	Comments
PSRE	E/(T)/J/A/M	4	M / F	(Visual) / Call	Y / N	
	E/T/J/A/M		M / F	Visual / Call	Y / N	
	E/T/J/A/M		M / F	Visual / Call	Y / N	
	E/T/J/A/M		M / F	Visual / Call	Y / N	
	E/T/J/A/M		M / F	Visual / Call	Y / N	
	E/T/J/A/M		M / F	Visual / Call	Y / N	
	E/T/J/A/M		M / F	Visual / Call	Y / N	
	E/T/J/A/M		M / F	Visual / Call	Y / N	

Yosemite Toad Data Sheet

Page ___ of ___

Date: 8/26/23 (mm/dd/year) Observers Robyn Smith + Emily Ferrell

Location Information:

Location Description: Rush Meadows Dam Elevation: _____ feet or meters

R5 ID#: INF Meadow #: Meadow 01 Meadow/Lake Name: Rush Creek Below Rush Meadows Dam

Meadow Type: wet, stream-fed Meadow/Lake Acres: 1.4

Wilderness: Ansel Adams Allotment: —

Subwatershed #: HUC 12-180901010301 Quad Map #: Koip Peak

Township: T2S Range: R25E Section: S24

GPS Coordinates - center of meadow: NAD 83 Accuracy: +- 1 ft or (m)

East UTM: North UTM

East UTM: 309461.16 mE North UTM: 4180539.64 m N

Survey Information:

Survey Start Time: 9:10 (am) or pm

Survey End Time: 10:08 (am) or pm

Survey Total Time: 58 minutes

Weather (circle all that apply): (clear) partly-cloudy cloudy light-rain heavy-rain snow (no-wind) light-wind very-windy

Temperature - Air Start: 12 (C)

Temperature - Air End: 12 (C)

Temperature - Water Start: 14 (C)

Temperature - Water End: 14 (C)

Habitat Information:

Water Present? ~~Yes~~ or No (Ephemeral) or (Intermittent) or (Perennial)

% of Meadow Wet: 95 % % Slope of Meadow: 1 %

Fish Present? (Yes) or No Signs of Cattle? Yes or (No) Signs of Packstock? Yes or (No)

Comments about habitat condition: Fish observed in center of meadow, all tadpoles observed in shallow edges

Species Information:

Species Code	Life Stage	#	Sex	Obs Method	Disease	Comments
PSRE	E/(T)/J/A/M	67	M / F	(Visual) / Call	Y / N	
PSRE	E/T/J/A/(M)	9	M / F	(Visual) / Call	Y / N	
PSRE	E/T/(J)/A/M	1	M / F	(Visual) / Call	Y / N	
THSP	E/T/J/(A)/M	1	M / F	(Visual) / Call	Y / N	
	E/T/J/A/M		M / F	Visual / Call	Y / N	
	E/T/J/A/M		M / F	Visual / Call	Y / N	
	E/T/J/A/M		M / F	Visual / Call	Y / N	
	E/T/J/A/M		M / F	Visual / Call	Y / N	

Yosemite Toad Data Sheet

Page ___ of ___

Date: 8/28/23 (mm/dd/year) Observers Robyn Smith + Emily Ferrell

Location Information:

Location Description: Rush Creek Above Silver Lake Elevation: 7250 (feet) or meters

R5 ID#: INF Meadow #: Meadow 02 Meadow/Lake Name: Rush Creek Above Silver Lake

Meadow Type: wet, stream-fed Meadow/Lake Acres: 2.5

Wilderness: — Allotment: —

Subwatershed #: HUC12-180901010301 Quad Map #: June Lake

Township: T2S Range: R26E Section: S20

GPS Coordinates - center of meadow: NAD 83 Accuracy: +- 1 ft or (m)

East UTM: North UTM

East UTM: 313191.94 m E North UTM: 4181952.38 m N

Survey Information:

Survey Start Time: 9:32 (am) or pm

Survey End Time: 11:30 (am) or pm

Survey Total Time: 118 minutes

Weather (circle all that apply): (clear) partly-cloudy cloudy light-rain heavy-rain snow (no-wind) light-wind very-windy

Temperature - Air Start: 19 (C)

Temperature - Air End: 19 (C)

Temperature - Water Start: 13 (C)

Temperature - Water End: 13 (C)

Habitat Information:

Water Present? (Yes) or No (Ephemeral) or ~~Intermittent~~ or ~~Perennial~~?

% of Meadow Wet: 40 % % Slope of Meadow: 1 %

Fish Present? (Yes) or No Signs of Cattle? Yes or (No) Signs of Packstock? Yes or (No)

Comments about habitat condition: 40 trout observed in stream portion area is shady with poor water quality in the shallow water areas

Species Information:

Species Code	Life Stage	#	Sex	Obs Method	Disease	Comments
PSRE	E/T/J/(A)/M	4	M / F	(Visual) / Call	Y / (N)	
	E/T/J/A/M		M / F	Visual / Call	Y / N	
	E/T/J/A/M		M / F	Visual / Call	Y / N	
	E/T/J/A/M		M / F	Visual / Call	Y / N	
	E/T/J/A/M		M / F	Visual / Call	Y / N	
	E/T/J/A/M		M / F	Visual / Call	Y / N	
	E/T/J/A/M		M / F	Visual / Call	Y / N	
	E/T/J/A/M		M / F	Visual / Call	Y / N	

Yosemite Toad Data Sheet

Page ___ of ___

Date: 8/18/23 (mm/dd/year) Observers Robyn Smith + Emily Ferrell

Location Information:

Location Description: Rush Creek Above Silver Lake Elevation: 7250 feet or meters

R5 ID#: INF Meadow #: Meadow 03 Meadow/Lake Name: Rush Creek Above Silver Lake

Meadow Type: wet, stream-fed Meadow/Lake Acres: 25.4

Wilderness: — Allotment: —

Subwatershed #: HUC 12-180901010301 Quad Map #: June Lake

Township: T2S Range: R26E Section: S17

GPS Coordinates - center of meadow: NAD 83 Accuracy: +- 10 ft or m

East UTM: North UTM

East UTM: 312998.48 m E North UTM: 4182505.61 m N

Survey Information:

Survey Start Time: 10:23 am or pm

Survey End Time: 2:30 am or pm

Survey Total Time: 247 minutes

Weather (circle all that apply): clear partly-cloudy cloudy light-rain heavy-rain snow no-wind light-wind very-windy

Temperature - Air Start: 27 (C)

Temperature - Air End: 30 (C)

Temperature - Water Start: 14 (C)

Temperature - Water End: 27 (C)

Habitat Information:

Water Present? Yes or No Ephemeral or Intermittent or Perennial?

% of Meadow Wet: 70% % Slope of Meadow: 1%

Fish Present? Yes or No Signs of Cattle? Yes or No Signs of Packstock? Yes or No

Comments about habitat condition: On private property portion of meadow tire tracks and oil slicks were observed

Almost all tadpoles observed were in flooded tire tracks

Species Information:

Species Code	Life Stage	#	Sex	Obs Method	Disease	Comments
PSRE	E/T/J/A/M	551	M / F	Visual / Call	Y / N	
PSRE	E/T/J/A/M	5	M / F	Visual / Call	Y / N	
THSI	E/T/J/A/M	1	M / F	Visual / Call	Y / N	
	E/T/J/A/M		M / F	Visual / Call	Y / N	
	E/T/J/A/M		M / F	Visual / Call	Y / N	
	E/T/J/A/M		M / F	Visual / Call	Y / N	
	E/T/J/A/M		M / F	Visual / Call	Y / N	
	E/T/J/A/M		M / F	Visual / Call	Y / N	

Yosemite Toad Data Sheet

Page ___ of ___

Date: 8/18/23 (mm/dd/year) Observers Robyn Smith + Emily Ferrell

Location Information:

Location Description: South Rush Creek Elevation: 7200 (feet) or meters

R5 ID#: INF Meadow #: Meadow 04 Meadow/Lake Name: South Rush Creek

Meadow Type: Stream-fed Meadow/Lake Acres: 0.20

Wilderness: — Allotment: —

Subwatershed #: HUC 12-180901010301 Quad Map #: June Lake

Township: T2S Range: R26E Section: S20

GPS Coordinates - center of meadow: NAD 83 Accuracy: +- 10 (ft) or m

East UTM: North UTM

East UTM: 313181.50 mE North UTM: 4181814.28 m N

Survey Information:

Survey Start Time: 3:58 am or (pm)

Survey End Time: 4:27 am or (pm)

Survey Total Time: 29 minutes

Weather (circle all that apply): clear (partly-cloudy) cloudy light-rain heavy-rain snow no-wind (light-wind) very-windy

Temperature - Air Start: 28 (C)

Temperature - Air End: 28 (C)

Temperature - Water Start: 12 (C)

Temperature - Water End: 12 (C)

Habitat Information:

Water Present? (Yes) or No (Ephemeral) or (Intermittent) or Perennial?

% of Meadow Wet: 1% % Slope of Meadow: 1%

Fish Present? (Yes) or No Signs of Cattle? Yes or (No) Signs of Packstock? Yes or (No)

Comments about habitat condition: grassy area between South Rush Creek and other stream had almost completely dried out with one root ball with water left.

Species Information:

Species Code	Life Stage	#	Sex	Obs Method	Disease	Comments
None	E/T/J/A/M	___	M / F	Visual / Call	Y / N	
	E/T/J/A/M	___	M / F	Visual / Call	Y / N	
	E/T/J/A/M	___	M / F	Visual / Call	Y / N	
	E/T/J/A/M	___	M / F	Visual / Call	Y / N	
	E/T/J/A/M	___	M / F	Visual / Call	Y / N	
	E/T/J/A/M	___	M / F	Visual / Call	Y / N	
	E/T/J/A/M	___	M / F	Visual / Call	Y / N	
	E/T/J/A/M	___	M / F	Visual / Call	Y / N	

Yosemite Toad Data Sheet

Page ___ of ___

Date: 8/18/23 (mm/dd/year) Observers Robyn Smith + Emily Ferrell

Location Information:

Location Description: South Rush Creek Elevation: 7200 (feet) or meters

R5 ID#: INF Meadow #: South Rush Creek Meadow/Lake Name: South Rush Creek

Meadow Type: Stream Meadow/Lake Acres: 1.13

Wilderness: — Allotment: —

Subwatershed #: HUC 12-180901010301 Quad Map #: June Lake

Township: T2S Range: R26E Section: 520

GPS Coordinates - center of meadow: NAD 83 Accuracy: +- 10 (ft) or m

East UTM: North UTM

East UTM: 313181.50 mE North UTM: 4181814.28 mN

Survey Information:

Survey Start Time: 3:58 am or (pm)

Survey End Time: 4:27 am or (pm)

Survey Total Time: 29 minutes

Weather (circle all that apply): clear (partly-cloudy) cloudy light-rain heavy-rain snow no-wind (light-wind) very-windy

Temperature - Air Start: 28 (C) Temperature - Water Start: 12 (C)

Temperature - Air End: 28 (C) Temperature - Water End: 12 (C)

Habitat Information:

Water Present? (Yes) or No (Ephemeral) or (Intermittent) or Perennial?

% of Meadow Wet: 1% % Slope of Meadow: 1%

Fish Present? (Yes) or No Signs of Cattle? Yes or (No) Signs of Packstock? Yes or (No)

Comments about habitat condition: Grassy area between South Rush Creek and other stream had almost completely dried out with one root ball left with water

Species Information:

Species Code	Life Stage	#	Sex	Obs Method	Disease	Comments
None	E/T/J/A/M	___	M / F	Visual / Call	Y / N	
	E/T/J/A/M	___	M / F	Visual / Call	Y / N	
	E/T/J/A/M	___	M / F	Visual / Call	Y / N	
	E/T/J/A/M	___	M / F	Visual / Call	Y / N	
	E/T/J/A/M	___	M / F	Visual / Call	Y / N	
	E/T/J/A/M	___	M / F	Visual / Call	Y / N	
	E/T/J/A/M	___	M / F	Visual / Call	Y / N	
	E/T/J/A/M	___	M / F	Visual / Call	Y / N	