SOUTHERN CALIFORNIA EDISON

Kern River No. 1 Hydroelectric Project
(FERC Project No. 1930)

FINAL LICENSE APPLICATION

VOLUME 2 (PART 2c)
EXHIBIT E: SUPPORTING DOCUMENTS

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May 2026

SOUTHERN CALIFORNIA EDISON

Kern River No. 1 Hydroelectric Project
FERC Project No. 1930

Final License Application

Volume 2 (Part 2c)
Exhibit E: Supporting Documents

Southern California Edison
2244 Walnut Grove Avenue
Rosemead, CA 91770

May 2026

Support from:

Stantec

APPENDIX E.3

Draft Biological Assessment

DRAFT BIOLOGICAL ASSESSMENT

KERN RIVER NO. 1 HYDROELECTRIC PROJECT
FERC PROJECT NO. 1930

PREPARED FOR:

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

May 2026

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LIST OF ACRONYMS

ac	acres
Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
CNDDB	California Natural Diversity Database
DPS	Distinct Population Segment
Draft BA	Draft Biological Assessment
ESA	Endangered Species Act
ETP	Environmental Training Program
FERC	Federal Energy Regulatory Commission
FLA	Final License Application
Forest Service	United States Forest Service
ft	foot/feet
IPaC	Information for Planning and Consultation
m	meters
NEPA	National Environmental Policy Act
O&M	operation and maintenance

Project	Kern River No. 1 Hydroelectric Project
PUP	Pesticide Use Proposal
SERA	Syracuse Environmental Research Associates
SCE	Southern California Edison
SQF	Sequoia National Forest
USFWS	United States Fish and Wildlife Service
VES	Visual Encounter Surveys
WEAP	Worker Environmental Awareness Program
WRMP	Wildlife Resources Management Plan

1 INTRODUCTION

Southern California Edison (SCE) owns and operates the Kern River No. 1 Hydroelectric Project (Project) (Federal Energy Regulatory Commission [FERC] Project No. 1930). The 26.3-megawatt project includes Democrat Dam, the water conveyance system, the Kern River No. 1 Powerhouse, and other appurtenant facilities. SCE currently operates the Project under a 30-year license that was issued on February 4, 1997 (effective February 1, 1997), which expires on January 31, 2027. In accordance with Section 15(c)(1) of the Federal Power Act and FERC's implementing regulations, SCE filed its Draft License Application for the Project with FERC on December 18, 2025, to continue operation and maintenance (O&M) of the Project under a new license (Proposed Action). After a 90-day Stakeholder review and comment period, SCE filed its Final License Application (FLA) with FERC on May 27, 2026.

Section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 United States Code § 1536), requires federal agencies to ensure that their actions are not likely to jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of Critical Habitat of such species. This Draft Biological Assessment (Draft BA) documents potential effects of the Proposed Action to ESA-listed species and whether the Proposed Action is likely to have an adverse effect on ESA-listed or proposed species, requiring formal consultation or conference with the United States Fish and Wildlife Service (USFWS).

1.1 PROJECT LOCATION

The Project is located on the lower Kern River on the western slope of the Sierra Nevada, approximately 15 miles east of the City of Bakersfield in Kern County, California. The Project occupies federal lands within the Sequoia National Forest (SQF), which is under the jurisdiction of the United States Forest Service (Forest Service). **Map BA-1** displays the Project vicinity and associated land jurisdiction.

1.2 DEFINITION OF ACTION AREA

Under the ESA, the "Action Area" is the area that would be directly or indirectly affected by the Proposed Action. Here, the Action Area is the FERC Project boundary (excluding underground Project features) plus a 100-foot (ft) buffer and 10 ft on either side of Project access trails that are located outside the FERC Project boundary.

1.3 SPECIES CONSIDERED

SCE used the USFWS Information for Planning and Consultation (IPaC) website in February 2026 to (1) obtain a current list of threatened or endangered species that may be present in the Action Area, and (2) locate any proposed or designated Critical Habitat that may be present in the Action Area. The full IPaC report is provided in **Appendix BA-1** (Project Code 2026-0054540). The scope of this Draft BA encompasses all federally listed species identified in the IPaC report or those known to occur within 1 mile of the Action Area. Refer to **Table BA-1** for the determination of which species or Critical Habitat need to be considered for analysis. The potential for direct, indirect, and cumulative effects to individuals and Critical

Habitat were considered. Species that are indicated with a “Yes” are analyzed in detail in this Draft BA.

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

Species	Status	Determination	Species Addressed Further in Document?	Justification
Bakersfield Cactus (*Opuntia treleasei*)	FE	No effect	No	This species was not found in the Action Area during protocol-level botanical surveys completed in 2024 and 2025 (SCE 2026a).
California Jewelflower (*Caulanthus californicus)*	FE	No effect	No	This species was not found in the Action Area during protocol-level botanical surveys completed in 2024 and 2025 (SCE 2026a).
Kern Mallow (*Eremalche kernensis*)	FE	No effect	No	This species was not found in the Action Area during protocol-level botanical surveys completed in 2024 and 2025 (SCE 2026a).
San Joaquin Adobe Sunburst (*Pseudobahia peirsonii*)	FT	No effect	No	This species was not found in the Action Area during protocol-level botanical surveys completed in 2024 and 2025 (SCE 2026a).
San Joaquin Wooly-threads (*Monolopia* = [*Lembertia*] *congdonii*)	FE	No effect	No	This species was not found in the Action Area during protocol-level botanical surveys completed in 2024 and 2025 (SCE 2026a).
Monarch Butterfly (*Danaus plexippus*)	FPT	May affect, not likely to adversely affect	No	Species is known to occur. There is some potential for vegetation management that would continue under the Proposed Action to directly affect individual butterflies or host plants, particularly during the breeding season. Implementation of the Wildlife Resources Management Plan (WRMP) is expected to minimize, but cannot eliminate, the potential for these effects. Treatment of non-native invasive plant populations may improve habitat for this species. Note that USFWS is not conferencing on this proposed species at this time (refer to Section 1.4), therefore this species is not addressed in detail in this BA.
Vernal Pool Fairy Shrimp (*Branchinecta lynchi*)	FT	No effect	No	There is no suitable habitat for this species in the Action Area.

Species	Status	Determination	Species Addressed Further in Document?	Justification
Foothill Yellow-legged Frog, South Sierra Distinct Population Segment (DPS) (*Rana boylii*)	FE	No effect	No	This species historically occurred in the Kern River; however, the species has not been observed in the Action Area since the 1950s and is considered extirpated (California Natural Diversity Database [CNDDB] 2026).
Kern Canyon Slender Salamander (*Batrachoseps simatus*)	FPT	May affect, not likely to adversely affect	**Yes**	This species is known to occur and suitable habitat is present.
	PCH	No effect	No	Proposed Critical Habitat is present in the Action Area. Routine operations under the Proposed Action would generally not alter slender salamander habitat, but debris and rock removal associated with routine road and trail maintenance could affect cover objects. The WRMP minimizes potential effects to habitat by requiring crew training and retaining cover elements; with these measures, impacts to suitable or Critical Habitat would be negligible. Note that USFWS is not conferencing on this proposed Critical Habitat at this time (refer to Section 1.4).
Relictual Slender Salamander (*Batrachoseps relictus*)	FPE	May affect, not likely to adversely affect.	**Yes**	This species is historically known to occur and suitable habitat is present in the Action Area.
	PCH	No effect	No	Proposed Critical Habitat is present in the Action Area. Routine operations under the Proposed Action would generally not alter slender salamander habitat, but debris and rock removal associated with routine road and trail maintenance could affect cover objects. The WRMP minimizes potential effects to habitat by requiring crew training and retaining cover elements; with these measures, impacts to suitable or Critical Habitat would be negligible. Note that USFWS is not conferencing on this proposed Critical Habitat at this time (refer to Section 1.4), therefore this species is not addressed in detail in this BA.

Species	Status	Determination	Species Addressed Further in Document?	Justification
Western Spadefoot – Northern DPS (*Spea hammondii*)	FPT	No effect	No	There are no previously recorded occurrences of this species in the Action Area, and the species was not observed during surveys conducted in support of the relicensing. Limited suitable habitat for this species is present, but it is located outside areas where maintenance activities that would continue under the Proposed Action would occur. Note that USFWS is not conferencing on this proposed species at this time (refer to Section 1.4), therefore this species is not addressed in detail in this BA.
Northwestern Pond Turtle (*Actinemys marmorata*)	FPT	May affect, not likely to adversely affect	No	Species is known to occur in the Action Area, and there were two observations of northwestern pond turtle in the Democrat Dam Impoundment during fish population studies in 2024. Vegetation management, road and trail maintenance activities, sediment management, and water and flow management to be continued under the Proposed Action have the potential to affect individual turtles and their habitat. Potential effects would be minimized, but not completely eliminated, through implementation of the Vegetation Management Plan (VMP) and the WRMP. Note that USFWS is not conferencing on this proposed species at this time (refer to Section 1.4), therefore this species is not addressed in detail in this BA.
California Condor (*Gymnogyps californianus*)	FE	No effect	No	The Action Area does not overlap with Critical Habitat for this species and would have no effect on suitable foraging habitat. Therefore, the Project would have no indirect effect on this species. Considering that there is no history of avian mortalities related to Project powerlines, and with implementation of the WRMP and SCE's Avian Protection Program, the Proposed Action would have no direct effect on condors related to Project powerlines or helicopter use.
California Spotted Owl – Sierra Nevada DPS (*Strix occidentalis occidentalis*)	FPT	No effect	No	There is no suitable habitat for this species in the Action Area.

Species	Status	Determination	Species Addressed Further in Document?	Justification
Southwestern Willow Flycatcher (*Empidonax traillii extimus*)	FE	No effect	No	There is no suitable habitat for this species in the Action Area.
Fisher – Southern Sierra Nevada DPS *(Pekania pennanti)*	FE	No effect	No	There is no suitable habitat for this species in the Action Area.
San Joaquin Kit Fox (*Vulpes macrotis mutica*)	FE	No effect	No	There is no suitable habitat for this species in the Action Area.
Tipton Kangaroo Rat (*Dipodomys nitratoides nitratoides*)	FE	No effect	No	The Action Area is outside the geographic range for this species.

Key:
CNDDB = California Natural Diversity Database
FE = Federal Endangered
FPE = Federal Proposed Endangered
FPT = Federal Proposed Threatened
FT = Federal Threatened
PCH = Proposed Critical Habitat
VMP = Vegetation Management Plan
WRMP= Wildlife Resources Management Plan

1.4 CONSULTATION TO DATE

Under Section 7 of the ESA, consultation with the USFWS is required when a federal action, such as issuance of a federal license may affect, and is likely to adversely affect listed species. Species are defined as threatened or endangered by USFWS if they are listed in Title 50 of the Code of Federal Regulations §§ 17.11 or 17.12. SCE's Section 7 consultation efforts completed for the relicensing of the Project are summarized below.

On May 5, 2023, SCE requested designation as the non-federal representative for conducting informal ESA Section 7 consultation with the USFWS for the relicensing. On June 29, 2023, FERC initiated informal consultation with the USFWS and designated SCE as the non-federal representative for carrying out informal consultation. SCE generated an official species list from the IPaC website on February 24, 2026 (Project Code 2026-0054540) (**Appendix BA-1**).

The USFWS attended Project relicensing Technical Working Group meetings for aquatic and terrestrial biological resources held in July–September 2023. On February 5, 2026, SCE and USFWS met to discuss ESA consultation/conference requirements for the relicensing. In its FLA, SCE determined that the Proposed Action would have "no effect" on 12 federally listed species and two species proposed for listing that are included on the IPaC list (refer to **Table BA-1**). SCE also determined that the Proposed Action may affect, but is not likely to adversely affect, four species proposed for listing—monarch butterfly (*Danaus plexippus*), northwestern pond turtle (*Actinemys marmorata*), Kern Canyon slender salamander (*Batrochoseps simatus*), and relictual slender salamander (*B. relictus*). There would be no effect to proposed Critical Habitat for the two salamander species.

The following decisions were made in the meeting and in subsequent e-mail communications on February 12, 2026:

- USFWS is still evaluating the listing proposals for monarch butterfly and northwestern pond turtle, and is not conferencing on these species until a listing decision is made or evaluations of the listing proposal are more advanced.

- USFWS is conferencing on the Kern Canyon slender salamander and the relictual slender salamander, since these are species have a limited range and are endemic to the Kern River watershed.

- USFWS is not conferencing on proposed Critical Habitat for the Kern Canyon slender salamander and the relictual slender salamander at this time. However, the BA should consider and incorporate habitat protection and retention measures for the physical and biological features considered by USFWS to be necessary for this species.

This Draft BA has therefore been developed to support the USFWS conference process for Kern Canyon slender salamander and the relictual slender salamander only.

2 DESCRIPTION OF THE PROPOSED ACTION

The Proposed Action represents SCE's recommendations for continued O&M of the Project, and environmental measures, management, and monitoring plans associated with continued O&M of the Project.

Under the Proposed Action, SCE would continue to operate the Project in a run-of-river mode consistent with how the Project is configured and the water management practices implemented during the previous FERC license. The Proposed Action would continue to require a minimum instream flow of 50 cubic feet per second to be released to the bypass reach (i.e., stretch of the Kern River from Democrat Dam diversion to the Kern River No. 1 powerhouse tailrace 10.2 miles downstream) from June 1 through September 30 and 15 cubic feet per second released from October 1 through May 31, or inflow if lower than the seasonal flow requirement. The amount and timing of flow diverted is a function of releases from Lake Isabella upstream, flowline and powerhouse capacities, and minimum instream flow requirements.

Under the Proposed Action, the following routine maintenance activities would continue to occur:

- **Powerhouse inspection and maintenance**: SCE inspects powerhouse appurtenances, including the powerhouse and switchyard perimeter fence, the forebay operations area perimeter fence, and associated buildings within these fencelines daily to ensure they are operating properly. Minor maintenance and repairs to powerhouse appurtenances are made on an as-needed basis. In addition, repairs to other buildings and ancillary facilities located in the vicinity of the powerhouse are made as needed, including painting, building and fence maintenance, and access road repairs. The generating units inside the powerhouse are also maintained annually.

- **Water conveyance system maintenance**: SCE conducts monthly physical inspections of the exterior portions of the water conveyance system, including the sandbox, tunnels, flumes, conduits, adits, forebay, forebay overflow spillway, and penstock. Valves are tested during these inspections. Minor repairs include patching leaks, removing debris, and repairing support structures. These repairs do not involve the use of ground-disturbing heavy equipment and are conducted by hand.

- **Dam inspections, testing, and maintenance**: SCE visually inspects the Democrat Dam and appurtenances monthly, including concrete; trash racks; ancillary and support facilities; handrails, walkways and gates; gatehouse; and gaging stations.

- **Sediment management**: Sediment management activities are conducted in the Democrat Dam Impoundment and the Kern River No. 1 Forebay. Sediment management at Democrat Dam is conducted using flushing, full pond drain, and peak flow sediment bypass. All of these activities occur within the ordinary high water mark of the impoundment and the Kern River. Sediment management in the Kern River No. 1 Forebay is accomplished by opening the drain gate into the

spillway pipe and removing any remaining sediment by hand. The Kern River No. 1 Forebay is a concrete-lined, manmade structure.

- **Vegetation management**: Vegetation management is implemented at Project facilities as necessary to control vegetation that may affect access, functionality of facilities, and/or worker/public health and safety (including fire safety and defensible space). Vegetation management activities occur during the spring and early summer to avoid periods of high-fire danger. Vegetation management includes trimming by hand, removing hazard trees, and applying herbicide. Vegetation management often co-occurs with other facility maintenance, particularly road, trail, and powerline /communication line maintenance.

- **Road maintenance**: Project access roads are regularly inspected and are maintained on an annual basis. Annual road maintenance generally includes debris removal; mechanical brushing of road edges; basic repairs, including blading or grading of native roads within the existing road prism to ensure a smooth surface and adequate drainage; filling potholes; maintenance of erosion control features such as culverts (including inlets/outlets and dissipators), drains, ditches, and water bars; sealing or resurfacing existing roads; repairing, replacing, or installing access control structures such as posts, cables, rails, gates, and barrier rock; and repair / replacement of signage. Major road maintenance occurs as needed and generally includes placement or replacement of culverts and other drainage features; major grading, and/or road replacement.

- **Trail maintenance**: Project access trails are regularly inspected during normal Project activities. Repairs and maintenance are conducted on an as-needed basis, typically during late summer / fall. Trail maintenance generally includes debris and rock removal; basic repairs such as minor brushing; maintenance of erosion control features such as water bars; repair, replacement, or installation of access control structures such as barrier rock; and repair / replacement of signage.

- **Power and Communication Line Maintenance**: Power and communication line maintenance under the Proposed Action includes replacement of damaged poles on an as-needed basis. New poles are placed in, or immediately adjacent to, the existing holes using helicopters and/or line trucks.

A complete description of the Proposed Action can be found in Exhibit E, Section 5 of the FLA, available online at https://www.sce.com/regulatory/regulatory-information/hydro-licensing/kr1. In addition, Appendix E.1 of the FLA includes a suite of proposed environmental measures, management, and monitoring plans to be included under a new license.

2.1 PROTECTION MEASURES AND BEST MANAGEMENT PRACTICES

Protection measures and best management practices to minimize risk of effects to wildlife and their habitats over the term of the new license are described in the Wildlife Resources Management Plan (WRMP) included in Exhibit E, Appendix E.1 in the FLA. Section 2.1.1

provides a description of general measures, such as environmental training and activity screening, that are not specific to slender salamanders, but would confer a general benefit by increased awareness or ensuring that appropriate specific avoidance, protection, or conservation measures are implemented, as necessary. Section 2.1.2 provides a list of specific measures that were developed based on a review of the overlap and nature of proposed activities and suitable habitat for slender salamanders.

2.1.1 General Wildlife Measures

- Annual Environmental Training Program:
  - SCE will continue to implement the Annual Environmental Training Program (ETP), which requires SCE staff and contractors operating in the Project area to attend an Annual ETP that includes the following:
    - Information on special-status wildlife species, including Kern Canyon slender salamander and relictual slender salamander, that are known to occur or may potentially occur in the Project area.
    - Applicable measures that have been identified to minimize or avoid effects to sensitive species or their habitats.
  - The training materials will be updated as necessary based on new special-status species in the FERC Project boundary, new requirements or wildlife protection measures. SCE will incorporate the avoidance and protection measures included in the WRMP into the Annual ETP.
- SCE Environmental Screening Process:
  - SCE implements an environmental screening process for routine O&M activities and non-routine ground- or vegetation-disturbing activities. Routine O&M activities will typically have standardized measures added. Many non-routine O&M activities will go through an environmental screening and review process for a thorough review of potential resources that the activity may affect. SCE evaluates planned routine activities on an annual basis to ensure protection measures are adequate. Activities are vetted using a geographic information system that is regularly updated with inputs from public as well as external and internal database sources to account for any additional species or habitats that may be observed in the future in the FERC Project boundary. The screening process for routine O&M activities and for new or non-routine construction or maintenance activities is further described below.
- Planned Operations and Maintenance:
  - While planned routine O&M activities are screened annually under the SCE Environmental Screening Process (described above), non-routine O&M activities will go through a separate screening and a detailed site-specific review,

as the need arises. Typical avoidance and protection measures are reviewed during the Annual ETP. Measures associated with planned O&M activities may include, but are not limited to:

- Consultation with the Forest Service during the Annual Consultation Meeting.
- Annual review of the list of ESA-listed species..
- Limiting maintenance activities to defined work areas.
- Implementation of resource-specific protection measures, where applicable, including:
  - Defining work areas to avoid sensitive environmental resources, including establishing appropriate protective buffers.
  - Establishing limited operating periods.
  - Pre-activity surveys and/or activity monitoring when resources are known to be present.
  - Other species-specific protection measures
- Herbicide application consistent with approved Pesticide Use Proposals (PUPs) and all associated best management practices.

– Other measures may also be developed, as needed, based on the specific activity or resource, or in consultation with resource agencies.

- Worker Environmental Awareness Program:

  – The Worker Environmental Awareness Program (WEAP) is provided in addition to the Annual ETP on a project-specific basis to provide information about wildlife protection measures to SCE staff and contractors working at Project facilities prior to conducting a project with ground-disturbing activities. Typically, a WEAP training is prepared for activities in areas where special-status species may be present or when working in sensitive habitats. The WEAP training sessions will vary as they are based on the activity and species potentially present; however, they all include a review of background material, permit conditions, instructions, and materials on how to avoid impacts on biological resources. Project-specific meetings may be conducted in the field on a job-specific or activity-specific basis to review appropriate maintenance protocols (avoidance and protection measures) in environmentally sensitive areas.

2.1.2 Species-Specific Measures for Kern Canyon Slender Salamander and Relictual Slender Salamander

– Limit maintenance activities to defined work areas.

- Conduct maintenance activities in a manner that minimizes disturbance of suitable habitat such as minimizing (and avoiding wherever feasible) off-road vehicle travel, minimizing ground disturbance, and implementing the least ground disturbing approach to the work.
    - Retain cover objects (e.g., downed wood), to the degree possible, within suitable habitat for sensitive amphibians (e.g., Kern Canyon slender salamander, relictual slender salamander, and yellow-blotched salamander (*Ensatina eschscholtzii croceator*).
- Within occupied and suitable habitat, road and trail maintenance work or other ground-disturbing activities shall, to the extent feasible, be conducted when there are favorable weather conditions.[1]
- Herbicide applications will be conducted consistent with Forest Service approved PUPs and all associated best management practices (e.g., application during favorable[1] weather conditions and/or as consistent with label requirements).
- Major road and trail repairs that require significant ground disturbance within suitable habitat for slender salamanders will require one or more of the following, as appropriate:
    - Work crews will attend a project-specific WEAP to discuss Kern Canyon and relictual slender salamander ecology, habitat, and required avoidance measures.
    - A qualified biologist will conduct a pre-activity survey to determine whether the species or suitable habitat features (e.g., burrows or downed wood piles) are present.
    - If a Kern Canyon or relictual slender salamander is observed during pre-activity surveys or during construction activities, the following will be implemented:
        - Work activities that could result in harm of slender salamanders will cease temporarily. SCE's Environmental Department will be contacted and appropriate avoidance and protection measures will be developed with USFWS or other resources agencies, as appropriate, and implemented as part of the Project. Measures may include modification of the location or timing of work, or having a monitor present.

[1] Favorable is defined as 50 percent or less chance of rain on the day of application (according to an agreed upon weather reporting source e.g., NOAA), and if rain, showers or light rains are predicted, the amount of rain predicted shall be no more than ¼- inch of rain or less, and runoff will not occur, soil saturation does not exist or standing water is not present, and sustained winds are 2-10 mph.

3 EXISTING ENVIRONMENT

This section provides a brief species account; a description of habitat (including proposed Critical Habitat); and a summary of surveys and known occurrences of Kern Canyon slender salamander and relictual slender salamander in the Action Area. Detailed descriptions of study methods and results are provided in the TERR 2 – Wildlife Resources Technical Study Memorandum (SCE 2026b).

3.1 KERN CANYON SLENDER SALAMANDER

3.1.1 Species Account

On October 18, 2022, the USFWS proposed to list the Kern Canyon slender salamander as threatened and proposing to designate Critical Habitat for the species (USFWS 2022a). On November 21, 2023, the USFWS re-opened the comment period for the proposed listing and revised the proposed Critical Habitat (USFWS 2023).

A complete species account for the Kern Canyon slender salamander is available on the USFWS (USFWS 2022b) website at https://iris.fws.gov/APPS/ServCat/DownloadFile/222488. This information is incorporated by reference into this Draft BA. A summary of biological and habitat characteristics relevant to this analysis is provided below.

Suitable Habitat And Geographic Range

Kern Canyon slender salamanders inhabit stream and seep margins within rocky narrow canyons supporting chaparral shrubs, California sycamore (*Platanus racemosa*), California buckeye (*Aesculus californica*), willow (*Salix* spp.), Fremont cottonwood (*Populus fremontii*), interior live oak (*Quercus wislizenii*), canyon live oak (*Q. agrifolia*), and foothill pine (*Pinus sabiniana*). This species is primarily associated with riparian habitats, but the species may also utilize upland areas with moist microsite characteristics such as mesic rocky hillsides containing talus and scree with associated hydrophytic vegetation such as mosses, ferns, or herbaceous vegetation (Lannoo 2005, Jockusch 2021, USFWS 2022b, Jockusch et al. 2022).

Physical and biological features defined by USFWS (2023) as important to Kern Canyon slender salamander include:

i. Aquatic habitat consisting of seeps, springs, and streams;

ii. Riparian habitat consisting of terrestrial areas adjacent to seeps, springs, and streams that contain:

   A. Sufficient refugia consisting of woody debris, leaf litter, and rocks with abundant interstitial spaces to facilitate safe resting, foraging, and movements;

   B. Suitable prey to allow for survival, growth, and reproduction; and

C. Riparian vegetation that provides shade cover contributing to cool and moist surface conditions for maintaining homeostasis, foraging opportunities, and physical structure for predator avoidance; and

iii. Open, rocky slopes that are likely being wetted by cryptic seeps due to the presence of moisture-dependent vegetation. These slopes should be adjacent to streamside habitat and contain:

A. Sufficient refugia consisting of debris, vegetation, and rocks with abundant interstitial spaces to facilitate safe resting, foraging, and movements;

B. Suitable prey to allow for survival, growth, and reproduction; and

C. Boulders and rocks that provide shade cover contributing to cool and moist surface conditions for maintaining homeostasis, foraging opportunities, and physical structure for predator avoidance.

iv. Corridors of aquatic habitat, riparian habitat, or open, rocky slopes with moisture-dependent vegetation that provide connectivity between patches of occupied habitat to allow for movement of individuals.

The estimated range of the Kern Canyon slender salamander encompasses 21,496 hectares (53,117 acres [ac]) along the south side of the Lower Kern River Canyon within Kern County, CA (Evelyn and Sweet 2012 in USFWS 2022b). The species is known from habitat that ranges from 451–1,676 meters (m) (1,480–5,500 ft) above sea level. The known sites of the Kern Canyon slender salamander at lower elevation are within the Lower Kern River Canyon and higher elevation sites are along Bodfish and Erskine Creeks and in the Piute Mountains.

Activity

Slender salamanders are vulnerable to desiccation, as their permeable skin provides little resistance to water loss (Spotila and Berman 1976, Rothermel and Luhring 2005 in USFWS 2022b). When exposed to arid environments, fatal desiccation can occur in some lungless salamanders (family: Plethodontidae) in less than one hour (Ray 1958 in USFWS 2022b), suggesting that desiccation acts as a strong selective pressure in this family. To avoid desiccation, slender salamanders are active on the surface only when substrate is adequately moist, and temperatures are suitable. They are thought to retreat underground to escape temperature and moisture extremes and use passages made by other animals or produced by root decay, soil shrinkage, or water erosion for underground burrows (Cunningham 1960, Lannoo 2005 in USFWS 2022b).

When conditions are favorable, slender salamanders are thought to be active on the surface at night. During the day they stay in cool, damp microhabitats under the cover of woody debris, rocks, and leaf litter or in underground burrows. At elevations below approximately 1,500 m (4,921 ft), slender salamanders have been observed on the surface between winter and spring and likely seek shelter underground during warmer and drier months in the summer and fall. At elevations above approximately 1,500 m (4,921 ft), they

have been found on the surface after snow cover recedes in late spring and through early fall. Slender salamanders are most often observed under cover objects in proximity to sources of surface water such as seeps, perennial springs, and streams (Lannoo 2005 in USFWS 2022b). This species is cryptic with presumably low detectability as it is only active on the surface when conditions are favorable and when it is active on the surface, it shelters under cover objects during the day.

Movement and Dispersal

The dispersal ability, home range, and territoriality of the Kern Canyon slender salamander have not been studied. However, other species of slender salamanders have small home ranges, high site fidelity, and low movement with maximum distances traveled of 3.0–18.3 m (9.8–60.0 ft) (Hendrickson 1954, Anderson 1960, Cunningham 1960 in USFWS 2022b). California slender salamanders (*Batrachoseps attenuatus*) repeatedly use the same cover object and on average move only 1.5 m (4.9 ft) over two years (Hendrickson 1954 in USFWS 2022b). Presumably, territories are small or seasonal as breeding-sized salamanders are often found close to one another under the same cover object (Hendrickson 1954 in USFWS 2022b). Based on this data, Kern Canyon slender salamanders have similar home range sizes to the California slender salamanders.

Reproduction

Few observations have been recorded regarding reproduction of the Kern Canyon slender salamander. Other species of slender salamanders lay eggs terrestrially in protected areas, under cover objects in mesic habitat, or at the edge of aquatic habitat (Stebbins 1985, Jockusch and Mahoney 1997, Wake 2017 in USFWS 2022b). There is no data available on the timing of mating for the Kern Canyon slender salamander. Oviposition sites have not been observed for the Kern Canyon slender salamander. Kern Canyon slender salamanders are presumed to have similar reproductive behaviors to other slender salamanders.

3.1.2 Existing Habitat

Suitable habitat for Kern Canyon slender salamander was mapped as part of TERR 2 study implementation (SCE 2026b). The physical and biological features essential to conservation of the species were considered in this habitat mapping study.

There are approximately 284 ac of suitable habitat for Kern Canyon slender salamander present in the Action Area (approximately 38 percent of the Action Area). Mapped habitat for the species overlaps 58 Project facilities, including roads, trails, conduits, flumes, and many other facilities. Note that, while these facilities do not in themselves represent habitat, the area around the facility in which maintenance activities are conducted may overlap with habitat. Refer to **Appendix BA-2** for a list of Project facilities that overlap Kern Canyon slender salamander habitat.

Refer to **Map BA-2** for the location of Kern Canyon slender salamander habitat[2] in relation to Project facilities and the Action Area.

3.1.3 Existing Surveys and Known Occurrences

There are seven historic records for Kern Canyon slender salamander dated between 1970–1991 within the Action Area, including records near 1) Adit 13&14 and the Stark Creek Trail; 2) Stark Creek Road; 3) Dougherty Creek Trail and Flume No. 5; 4) Lucas Creek Trail; 5) Cow Flat Creek Trail and Flume No. 2; 6) Conduit No. 3 and the Conduit No. 3 Trail; and 7) Tunnel No. 2 just south of Conduit No. 2 and Flume No. 1 (SCE 2023, CNDDB 2026). These historic occurrences were considered during mapping of proposed Critical Habitat boundaries (USFWS 2022a, 2023).

The following recent occurrences of Kern Canyon slender salamander in the lower Kern River Canyon outside of the Action Area have also been reported since the 2022 listing:

- Two Kern Canyon slender salamanders were identified in the vicinity of SCE transmission lines (not part of the Project) (J. Goldfarb, pers. comm. 2024).
- In addition, three more observations of Kern Canyon slender salamander were made within the Kern Canyon in February/March 2024 (E. Jockusch, pers. comm. 2025).

SCE conducted Visual Encounter Surveys (VES) from March 3 to 6, 2025 in all accessible suitable habitats (as identified during the TERR 2 habitat assessment) (SCE 2026b). Conditions were optimal for salamander surveys with a light consistent rain occurring the day before the survey began and during three of the four days of the survey. There were two observations of Kern Canyon slender salamanders recorded during the 2025 VES. One was located approximately 10 ft downslope of Stark Creek Trail, under a piece of wood near a talus slope approximately 52 ft downslope of Adit 13 &14. The second was observed on an unnamed trail within the FERC Project boundary approximately 83 ft upslope of the Stark Creek Road. This salamander was found in a wooden stump on a steep rocky slope.

Refer to **Map BA-2** for the locations of Kern Canyon slender salamander observations in relation to Project facilities and the Action Area.

3.2 RELICTUAL SLENDER SALAMANDER

3.2.1 Species Account

On October 18, 2022, the USFWS proposed to list the relictual slender salamander as threatened (USFWS 2022a). On November 21, 2023, the USFWS re-opened the comment period for the listing and made revisions to the proposed Critical Habitat (USFWS 2023). A complete species account for the relictual slender salamander is available on the

[2] Map BA-2 also shows the location of proposed Critical Habitat for Kern Canyon slender salamander for informational purposes. As described in Section 1.4, the USFWS is not currently conferencing on Critical Habitat.

USFWS website at https://iris.fws.gov/APPS/ServCat/DownloadFile/222488. This information is incorporated by reference into this Draft BA. A summary of biological and habitat characteristics relevant to this analysis are provided below.

Suitable Habitat and Geographic Range

Primary habitat for the species is composed of seeps, perennial springs, and small streams in rocky areas in areas surrounded by montane coniferous forest composed of sugar pine (*Pinus lambertiana*), white fir (*Abies concolor*), and ponderosa pine (*Pinus ponderosa*) and canyon live oak woodland composed of canyon live oak (*Quercus chrysolepis*) and California black oak (*Quercus kelloggii*). Historical observations have also found this species in riparian corridors composed of California sycamore and California buckeye (Moss et al. 2024). Suitable habitat for relictual slender salamanders includes seeps, perennial springs, and streams in rocky habitat supporting limited tree cover of oaks, buckeyes, sycamores, pines, and firs (USFWS 2022b). This species is tightly associated with aquatic habitats compared to other slender salamanders, and is found in areas of reduced flow, such as side seeps and relatively flat terrain, but in contact with water or fully saturated soil (Jockusch et al. 2022).

The physical and biological features defined by USFWS (2023) as important to relictual slender salamander include:

i. Aquatic habitat consisting of seeps, springs, and streams.

ii. Riparian habitat consisting of terrestrial areas adjacent to seeps, springs, and streams that contain:

   A. Sufficient refugia consisting of woody debris, leaf litter, and rocks with abundant interstitial spaces to facilitate safe resting, foraging, and movement;

   B. Suitable prey to allow for survival, growth, and reproduction; and

   C. Riparian vegetation that provides shade cover contributing to cool and moist surface conditions for maintaining homeostasis, foraging opportunities, and physical structure for predator avoidance.

iii. Corridors of aquatic habitat or riparian habitat that provide connectivity between patches of occupied habitat to allow for movement of individuals.

The relictual slender salamander has the smallest range of the described species of slender salamander. The estimated historic range of the species encompasses 13,423 hectares (33,169 ac) and falls almost entirely within SQF (Evelyn and Sweet 2012 in USFWS 2022b). The species is known historically from 13 sites: five sites on the south side of the Kern River in the Lower Kern River Canyon from 365–731 m (1,200–2,400 ft), and eight sites on Breckenridge Mountain from 1,219–1,920 m (4,000–6,300 ft).

Activity

Slender salamanders are vulnerable to desiccation, as their permeable skin provides little resistance to water loss (Spotila and Berman 1976, Rothermel and Luhring 2005 in USFWS 2022b). When exposed to arid environments, fatal desiccation can occur in some lungless salamanders (family: Plethodontidae) in less than one hour (Ray 1958 in USFWS 2022b), suggesting that desiccation acts as a strong selective pressure in this family. To avoid desiccation, slender salamanders are active on the surface only when substrate is adequately moist, and temperatures are suitable. They are thought to retreat underground to escape temperature and moisture extremes and use passages made by other animals or produced by root decay, soil shrinkage, or water erosion for underground burrows (Cunningham 1960; Lannoo 2005 in USFWS 2022b). When conditions are favorable, slender salamanders are thought to be active on the surface at night. During the day they stay in cool, damp microhabitats under the cover of woody debris, rocks, and leaf litter or in underground burrows. On Breckenridge Mountain sites, relictual slender salamanders were found active in the spring between April and June and the fall between October and November within the margins of seeps and other aquatic habitats (Moss et al. 2024). Slender salamanders are most often observed under cover objects in proximity to sources of surface water such as seeps, perennial springs, and streams (Lannoo 2005 in USFWS 2022). This species is cryptic with presumably low detectability as it is only active on the surface when conditions are favorable and when it is active on the surface, it shelters under cover objects during the day.

Movement and Dispersal

The dispersal ability, home range, and territoriality of the relictual slender salamander have not been studied. However, other species of slender salamanders have small home ranges, high site fidelity, and low movement with maximum distances traveled of 3.0–18.3 m (9.8–60.0 ft) (Hendrickson 1954, Anderson 1960, Cunningham 1960 in USFWS 2022b). California slender salamanders repeatedly use the same cover object and on average move only 1.5 m (4.9 ft) over two years (Hendrickson 1954 in USFWS 2022). Presumably, territories are small or seasonal as breeding-sized salamanders are often found close to one another under the same cover object (Hendrickson 1954 in USFWS 2022b). The relictual slender salamanders are presumed to have similar movement and dispersal patterns to other slender salamanders.

Reproduction

Slender salamanders lay eggs terrestrially in protected areas, under cover objects in mesic habitat, or at the edge of aquatic habitat (Stebbins 1985, Jockusch and Mahoney 1997, Wake 2017 in USFWS 2022b). There is no data available on the timing of mating for the relictual slender salamander. Gravid relictual slender salamanders and eggs have been observed in the spring and early summer (Wake et al. 2002, Jockusch et al. 2012, Jockusch 2021 in USFWS 2022b). Since 2017, 13 egg clusters have been reported from seven sites on Breckenridge Mountain. These egg clusters were found under various cover objects in aquatic habitat in areas of light flow. All observed egg clusters were found in the spring between April and June (Moss et al. 2024).

3.2.2 Existing Habitat

Suitable habitat for relictual slender salamander was mapped as part of the TERR 2 study implementation (SCE 2026b). The physical and biological features essential to the conservation of the species were considered in this habitat mapping study. Due to the relictual slender salamander's dependance on water, habitat for this species is restricted to areas where suitable aquatic habitat is present. As such, habitat was typically found along creeks or where water conveyance system leaks were present, and these areas also contained abundant refugia (e.g., woody debris and rocks with abundant interstitial spaces).

There are approximately 47 ac of relictual slender salamander habitat present in the Action Area (approximately 0.06 percent of Action Area), overlapping 34 Project facilities. Refer to **Appendix BA-2** for a list of Project facilities that overlap relictual slender salamander habitat. Note that, while these facilities do not in themselves represent habitat, the area around the facility in which maintenance activities are conducted may overlap with habitat.

Refer to **Map BA-3** for the location of relictual slender salamander habitat[3] in relation to Project facilities and the Action Area.

3.2.3 Existing Surveys and Known Occurrences

There are two historic records of this species in the Action Area, including (1) a 1960 detection in Lucas Creek adjacent to the Lucas Creek Trail, and (2) a 1955 detection in Cow Flat Creek near the Cow Flat Creek Trail (Forest Service 2022 in SCE 2023). There are five other records within 1 mile of the Action Area, including observations along Stark Creek, and tributaries to the Kern River northeast of Willow Spring Creek Road (Forest Service 2022, CNDDB 2026). These historic occurrences were considered in mapping of proposed Critical Habitat (USFWS 2022a, 2023).

SCE conducted VES from March 3 to 6, 2025 in all accessible suitable habitats identified during the microhabitat assessment (SCE 2026b). Conditions were optimal for salamander surveys with a light consistent rain occurring the day before the survey began and during three of the four days of the survey. No individuals of this species were observed during VES conducted in 2025.

Refer to **Map BA-3** for the locations of Kern Canyon slender salamander observations in relation to Project facilities and the Action Area.

4 EFFECTS ANALYSIS

This section provides an analysis of potential direct and indirect effects to Kern Canyon slender salamander and relictual slender salamander from the Proposed Action, which

[3] Map BA-3 also shows the location of proposed Critical Habitat for relictual slender salamander for informational purposes. As described in Section 1.4, the USFWS is not currently conferencing on Critical Habitat.

includes both operations and routine maintenance activities. These species have similar life histories and habits, and are therefore grouped together in the analysis.

As described in Sections 3.1 and 3.2, there were two observations of Kern Canyon slender salamanders recorded in the Action Area during the 2025 TERR 2 studies (SCE 2026b). There were no observations of relictual slender salamander, but historic records are known from the Action Area. Suitable habitat for both species is present in the Action Area. Refer to **Map BA-2** for the location of 2025 VES observations and suitable habitat in the Action Area, and to **Map BA-3** for the location of suitable habitat for relictual slender salamander in the Action Area.

4.1 EFFECTS OF CONTINUED PROJECT OPERATIONS

Physical and biological features important to Kern Canyon and/or relictual slender salamanders include aquatic habitat (e.g., seeps, springs, or streams) and riparian habitat. The Project would continue to operate in the run-of-river mode consistent with the existing condition. Per Exhibit E, Section 7.8.3.1 of the FLA, the existing flow regime promotes successful establishment and maintenance of the riparian corridor along the Kern River bypass reach. Therefore, Project operations would continue to maintain riparian habitat for slender salamanders along the Kern River.

4.2 EFFECTS OF CONTINUED FACILITY MAINTENANCE

As described in Section 3.1.2 and 3.2.2, a number of Project facilities, including water conveyance facilities (e.g., flumes, conduits, adits, and penstocks), access roads, access trails, communication and powerlines, gaging and still wells, and ancillary and support facilities (e.g., water tank, aerial cable towers, and perimeter fences) lie within suitable habitat for slender salamanders. Refer to **Appendix BA-2** for a matrix showing maintenance activities that would continue to be implemented at each facility under the Proposed Action. Refer to **Table BA-2** for a summary analysis of the effects of maintenance activities on slender salamanders.

Table BA-2. Summary of Potential Effects to Slender Salamander Individuals and/or Habitat from Ongoing Facility Maintenance Activities

Type of Maintenance Activity	Does activity have potential to affect individuals and/or suitable habitat and physical/ biological features)?[1]	Rationale
Powerhouse Inspection and Maintenance	No	Powerhouse inspection and maintenance occurs within the footprint of developed, manmade structures that do not contain physical and biological features for salamander species.

Type of Maintenance Activity	Does activity have potential to affect individuals and/or suitable habitat and physical/ biological features)?[1]	Rationale
Water Conveyance System Maintenance	No	Water conveyance system maintenance occurs within the footprint of developed manmade structures that do not contain physical and biological features for salamander species and activities do not involve ground disturbance.
Dam Inspections, Testing, and Maintenance	No	Visual inspections, testing, and maintenance of developed, manmade structures would not affect individuals or physical and biological features for salamander species.
Sediment Management	**Yes, beneficial**	Sediment management at the Kern River No. 1 Forebay (a manmade feature) consists of removal using hand tools and does not involve ground disturbance. These activities would be implemented within the forebay itself, which does not represent habitat for slender salamanders. As described in Exhibit E, Section 7.8.3.2 of the FLA,[2] sediment management may indirectly benefit slender salamanders by benefitting riparian habitat within the bypass reach by providing a sediment supply that provides riparian colonization substrates and enhances riparian diversity in the floodplain.
Vegetation Management	**Yes**	Even with annual screening process and standard training measures, and conducting activities only during favorable weather conditions, some potential for effects to individuals remains from herbicide applications. Vegetation management activities may also have minor, localized effects on riparian habitat for slender salamander.
Road Maintenance	**Yes**	Even with annual screening process and standard training measures, some potential for effects to individuals and/or physical and biological features remain.
Trail Maintenance	**Yes**	Even with annual screening process and standard training measures, some potential for effects to physical and biological features remain.
Powerline and Communication Line Maintenance	No	Replacement of poles within the footprint of manmade structures without additional ground disturbance would avoid effects to physical or biological features.

[1] This evaluation considers any residual effects, even with implementation of the Annual ETP, SCE's environmental screening process, WEAP training, and conducting work in occupied and suitable habitat only in favorable weather conditions.

[2] The FLA is available at the following link: https://www.sce.com/regulatory/regulatory-information/hydro-licensing/kr1.

Overall, slender salamanders spend most of the year in burrows or other underground refugia and are only active on the surface during precipitation events. Most routine maintenance activities that involve minimal ground disturbance are (1) restricted to

immediate vicinity of developed Project facilities, and (2) implemented during dry conditions, and are therefore generally not expected to affect slender salamanders.

SCE will implement measures in the WRMP that would generally protect slender salamanders and avoid effects from most routine maintenance activities. Implementation of the Annual ETP would introduce information on slender salamander species and would cover measures that have been identified to minimize or avoid effects to these species and their habitats. Before any maintenance activities are conducted, SCE's environmental screening process would identify any avoidance or protection measures that are necessary to reduce effects to these species when working in suitable habitat. The environmental screening process also requires review of maintenance activities with the Forest Service during the annual consultation meeting to determine if activities have the potential to affect sensitive species. If work will be conducted within suitable habitat for sensitive species, SCE requires that staff and contractors attend a WEAP to review information on the species and avoidance and protection measures to be implemented during the work activities. Finally, maintenance activities within occupied and suitable habitat would be conducted only during favorable weather conditions to avoid time periods when slender salamanders are active at the surface.

With implementation of the Annual ETP, SCE's environmental screening process, WEAPs, and restrictions on work during precipitation events, the following activities would have no effect on slender salamanders: powerhouse inspection and maintenance; water conveyance system maintenance; dam inspections, testing, and maintenance; sediment management; and powerline communication line maintenance. For these activities, the maintenance work is limited to defined areas within the footprint of manmade structures and do not involve ground disturbance or extend significantly into natural area that contain physical or biological features for slender salamanders.

Even with implementation of the Annual ETP, the environmental screening process, WEAPs, and weather restrictions in occupied and suitable habitat, the following facility maintenance activities have some remaining potential to affect slender salamanders:

- Vegetation management,
- Road maintenance, and
- Trail maintenance.

Potential direct and indirect effects of these activities, as well as additional measures that would be implemented to minimize potential effects to salamanders during implementation of routine O&M, are further described below.

4.2.1 Vegetation Management

Under the Proposed Action, SCE would continue to implement vegetation management activities, including hand trimming, hazard tree removal, and herbicide application, within defined areas around the dam, exposed water conveyance system features, the forebay

perimeter fence, the powerhouse and switchyard, communications and power lines, and access roads and trails. Vegetation trimming and brushing may also occur as part of road and trail maintenance. In general, hand trimming and hazard tree removal are not expected to directly affect slender salamanders. Hand trimming is typically conducted at the end of the vegetative growing season in late spring/early summer when salamanders have retreated to their underground refugia (e.g., burrows, rocks). These species spend most of the year in underground refugia and are only active on the surface during precipitation events. Furthermore, as discussed above, SCE would restrict work activities within occupied and suitable habitat to outside these precipitation events and therefore work would take place when salamanders are not active at the surface.

Hand trimming and hazard tree removal would not significantly affect physical or biological features that are important components of slender salamander habitat. Hand trimming and hazard tree removal may temporarily affect a limited amount of riparian vegetation (e.g., through trimming of tree limbs or shrubs) that is present around Project facilities but would not affect microhabitat features that are important to slender salamanders.

Kern Canyon slender salamander and relictual slender salamander may, however, be affected by herbicide applications. Refer to **Table BA-3** for a summary of areas where proposed herbicide applications occur within suitable habitat.

Table BA-3. Herbicide Application Locations within Suitable Habitat and for Kern Canyon Slender Salamander and Relictual Slender Salamander

Herbicide Application Location		Kern Canyon Slender Salamander Suitable Habitat	Relictual Slender Salamander Suitable Habitat
Facility	**Herbicide Application Notes**		
Willow Spring Creek Road	Within barren areas along both sides of the road.	X	X
Flume No. 1 Road	Within barren areas along both sides of the road.	X	
Flume No.1	Within barren areas along and underneath the flume.	X	X
Stark Creek Road	Within barren areas along both sides of the road between Stark Creek Trail and Flume No. 6.	X	X
Lower and Upper Powerhouse roads	Within barren areas along both sides of the roads.	X	
Kern No. 1 Forebay, Aerial Tram Upper Landing, and Communication Site	Within barren areas directly along these Project Facilities, along both sides of the Forebay Operations Area to Aerial Tram Upper Landing Trail connecting the forebay to the Aerial Tram Upper Landing and between the landing and communication site.	X	

Pre-emergent herbicides are typically applied in the early growing season in February when target plants have just emerged. Vegetation emergence is monitored for a month,

then a second round of post-emergent herbicide (glyphosate) is applied in March only if the initial treatment was unsuccessful in preventing vegetation growth. In the Kern Canyon, the February and March herbicide application time period overlaps with the rainy season in late winter/early spring when the salamanders are most active at the surface. Amphibian skin is particularly sensitive to the absorption of chemicals. Therefore, slender salamanders could potentially be affected by herbicides through direct contact with the application spray (Brühl et al. 2011) during their active period. During other times of the year (summer/fall), salamanders would be in their underground refugia and would not be affected by herbicide applications.

Upon review of the chemical-specific Syracuse Environmental Research Associates (SERA) risk assessments prepared for the Forest Service and other relevant literature, most of the chemicals utilized by SCE for vegetation management pose little to no risk to the salamanders in the concentrations authorized in the PUPs (Grove 2019, McFall et al. 2023, SERA 2007, SERA 2011a, SERA 2011b, Wan et al. 1992, Yahnke et al. 2013, Yahnke et al. 2017). However, direct contact with glyphosate could result in lethal effects to Kern Canyon slender salamander or relictual slender salamander. Glyphosate has a short persistence time in soil, with an average half-life of approximately 6 days in loam soils (SERA 2007), so the potential for effects to slender salamanders would greatest immediately post-application.

Glyphosate, along with the common additive R-11, has been shown to be highly lethal to amphibians when individuals are directly sprayed (Relyea 2005). Glyphosate may also affect amphibians that come into contact with contaminated water (Trumbo 2005), or when concentrated applications are sprayed on soil or vegetation and individuals move over the contaminated habitats (Brühl et al. 2011). Relictual slender salamanders may also be indirectly affected by runoff of herbicides into their suitable aquatic breeding habitats.

The potential for direct effects to the Kern Canyon slender salamander or relictual slender salamander from planned routine use of herbicides would be minimized through implementation of the Annual ETP and measures requiring weather restrictions on herbicide applications in occupied and suitable habitat. Under the Annual ETP, herbicide crews would be trained in the identification and habitat characteristics of slender salamanders. With implementation of this training, individual slender salamanders would be much less likely to be directly sprayed during herbicide applications. Furthermore, conducting herbicide application activities only during favorable (dry) weather conditions, when salamanders are unlikely to be at the surface, would further reduce the potential for slender salamanders to be directly sprayed.

The potential for indirect effects would be further minimized by conducting herbicide applications under the best management practices outlined in Forest Service approved PUPs, which SCE obtains annually for work conducted on Forest Service lands. These PUPs require SCE to implement best management practices for effects on sensitive species and aquatic habitats. Although the specific best management practices in the PUPs may vary annually as a function of the herbicide work proposed for the year, applicator training requirements, selective application techniques such as spot treatments, special precautions during periods of inclement weather, and appropriate application and

mixing buffers for waterways are typically included in PUPs (SCE 2026c). Outside of active rain events, slender salamanders typically retreat to underground refugia and are not active on the surface. Therefore, conducting applications only during favorable (dry) weather would prevent direct effects. These best management practices would also reduce the potential for runoff of chemicals into waterways or through drift and would prevent adverse effects to aquatic habitat quality for relictual slender salamander, which is an aquatic breeding species.

Even with implementation of these measures, it is still possible that herbicide residues may be present on the ground surface because applications would be conducted in the early spring emergent period when salamanders could potentially be active on the soil surface. Slender salamanders may therefore be indirectly exposed to chemical residue when walking over the soil surface or vegetation where herbicides have recently been applied. Therefore, there is still some risk that Kern Canyon and/or relictual slender salamanders could come into secondary contact with chemicals following herbicide applications and experience sub-lethal or chronic effects from herbicide exposure. However, given that most of the chemicals proposed for use pose little to no risk to slender salamanders, that, while glyphosate can pose lethal effects to slender salamanders, such effects would be limited to approximately 6 days post-application, and with implementation of all requirements of the PUPs, the targeted and limited application to vegetation around developed facilities would result in negligible effects to slender salamanders.

Therefore, with implementation of the measures under the WRMP, herbicide applications may affect, but are not likely to adversely affect, Kern Canyon and relictual slender salamanders.

4.2.2 Road Maintenance

As shown in **Appendix BA-2,** suitable habitat for Kern Canyon and/or relictual slender salamanders can be found along four Project roads, including Willow Spring Creek Road (Democrat Dam Road), Flume No. 1 Road, Dougherty Creek Road, and Stark Creek Road. Under the Proposed Action, SCE would continue to implement routine road maintenance activities, which may include minor repairs (e.g., debris removal, filling of potholes, maintenance of erosion control features, etc.) or major road maintenance that involve ground disturbance such as the replacement of culverts. Minor road maintenance activities within the prism of existing roads would not affect slender salamanders, as salamanders are unlikely to occur on or immediately adjacent to the road. Manmade structures do not contain physical or biological features necessary for the species (USFWS 2023), so work on the surface of existing roads would not affect suitable habitat for the species.

However, major road maintenance activities that involve ground-disturbance outside the footprint of the existing road or that involve culvert replacement may potentially affect salamanders sheltering under cover objects. Considering that major road maintenance activities are conducted infrequently, and that suitable habitat for slender salamanders is typically not present immediately adjacent to roads where such work would occur, the presence of slender salamanders is considered unlikely. However, in the case that suitable cover objects are present, there remains some potential for contact with ground-disturbing

heavy equipment to result in injury or mortality to salamanders in these areas. Ground-disturbing activities may also remove or disturb surface cover objects that provide refugia for these salamanders (e.g., physical and/or biological features). As described in the WRMP, non-routine construction efforts (e.g., new or major repair of existing structures, relocating a section of Project road, or major culvert upgrade, etc.) that have the potential to directly affect wildlife and/or their habitat would be subject to separate, site-specific additional environmental review.

To reduce potential direct and indirect effects to slender salamanders from major road maintenance, SCE will implement the environmental screening process to determine if activities overlap with suitable habitat for Kern Canyon and/or relictual slender salamander. If suitable habitat is present, SCE will implement measures designed to reduce the effects of major non-routine road maintenance on slender salamanders including limiting activities to defined work areas, retaining cover objects, limiting work to dry periods, conducting WEAP trainings to inform crews of slender salamander biology and avoidance measures, and having a qualified biologist conduct pre-activity surveys. In the unlikely case that slender salamanders are observed during pre-activity surveys, work activities that could result in harm would cease and SCE would consult with USFWS and other agencies, as appropriate, to determine avoidance and protection measures to be implemented (e.g., modification of the location or timing of work, or having a monitor present).

These measures would also be covered in the Annual ETP. Refer to Section 2.1, above, for a full description of these measures.

Limiting work activities to reduce ground-disturbing activities to the maximum extent possible and retaining surface cover objects during work would protect any slender salamander individuals in the vicinity as well as retain suitable surface refugia that represent important physical or biological features for the species. Because salamanders are much less likely to be active on the surface outside of active precipitation events, limiting major road work to dry periods would reduce the likelihood that salamanders are injured or crushed at the surface. Implementing a WEAP training would allow workers to recognize and avoid slender salamander species, as well as physical and/or biological features important to their habitat. Pre-activity surveys would identify any slender salamanders in the work areas and allow implementation of avoidance and protection measures to prevent direct effects to individuals.

Therefore, with implementation of the measures in the WRMP, major road maintenance activities may affect, but are not likely to adversely affect, Kern Canyon slender salamander or relictual slender salamander individuals or physical and/or biological features important for their habitat.

4.2.3 Trail Maintenance

As shown in **Appendix BA-2,** there are 12 trails that are located within suitable habitat for Kern Canyon and/or relictual slender salamanders.

Under the Proposed Action, SCE would continue to conduct trail maintenance and repair. Trail maintenance activities include as-needed repairs, debris and rock removal, minor brushing, and maintenance of erosion control features. Refer to **Map BA-2** for the location of trails within suitable or proposed Critical Habitat for Kern Canyon slender salamander; and to **Map BA-3** for the location of trails within suitable or proposed Critical Habitat for relictual slender salamander.

Trail maintenance activities would be implemented in the late summer/fall, a time of year when slender salamanders would be sheltering in underground refugia (e.g., burrows, rock outcrops) and would not be present at the soil surface. Under existing conditions, the trail footprint is kept clear of debris and rock and slender salamanders would be unlikely to shelter in the trail footprint itself. Therefore, trail maintenance activities would not directly affect Kern Canyon or relictual slender salamanders.

However, trail maintenance has some potential to affect cover objects that represent temporary refugia (i.e., physical and/or biological features) for slender salamanders. Kern Canyon slender salamanders and relictual slender salamanders select microhabitat sites under suitable cover objects when terrestrially active. Debris and rocks that fall into the trails may provide temporary cover objects that allow dispersal during the surface active period in the spring. Some routine trail maintenance activities, particularly the removal of debris and rocks, may result in indirect effects to slender salamanders through removal of suitable refugia (i.e., cover objects) from the Action Area. These activities are restricted to the immediate vicinity of the existing trails themselves and would not occur within surrounding natural areas. No construction of new trails is required under the Proposed Action. Removal of refugia may make dispersal movements more restricted for these salamanders, which have limited home range sizes and may make them more vulnerable to desiccation or exposure to predators during their surface activity periods.

To reduce potential indirect effects to slender salamanders through removal of refugia, SCE will implement measures in the WRMP to limit trail maintenance activities to defined work areas, implementing the least ground-disturbing approach to the work, and retaining cover objects to the degree possible within suitable habitat for slender salamanders.

By reducing the footprint of trail maintenance activities and implementing the least ground-disturbing approach to the work, only a minimal number of surface cover objects would be potentially affected by work activities and surrounding habitat would be unaffected. Temporary cover objects that provide important physical habitat structure for slender salamanders would also be retained within the landscape.

Therefore, with implementation of measures in the WRMP to retain refugia for slender salamanders, the Proposed Action will have no effect on suitable habitat for Kern Canyon slender salamander or relictual slender salamander.

5 CUMULATIVE EFFECTS

Under the ESA, cumulative effects are defined as “those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the

action area of the Federal action subject to consultation." The spatial boundary for analyzing the potential cumulative effects to federally listed species from the implementation of the Proposed Action is the same as the Action Area.

Most of the Project facilities occupy federal lands within the SQF, which is under the jurisdiction of the Forest Service. A few non-federal activities occur within the Action Area, including:

1. The California Department of Transportation (Caltrans) manages Highway 178, which intersects with the Action Area. Maintenance of roads and highways may reduce microhabitat available within the vicinity of the road by altering soil moisture and removing cover objects, and degrade otherwise suitable aquatic habitat by altering flow routing and increasing sedimentation and chemical runoff. Historically, Highway 178 has been a dispersal barrier for slender salamanders in the Kern Canyon. Currently there is no planned work on Highway 178 in the Action Area, outside of routine maintenance. Caltrans adheres to regulations for ESA-listed and California Endangered Species Act–listed species, therefore no cumulative effects are expected from Caltrans activities on Highway 178.

2. SCE has proposed to construct the Gorman-Kern River 66 kV Project, which involves rebuilding 65.3 miles of existing 66 kV sub-transmission circuits (California Public Utilities Commission 2025) that extend from the Kern River No. 1 switchyard to substations in Los Angeles County. This project is subject to California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) regulations for ESA-listed and California Endangered Species Act–listed species. Kern Canyon slender salamanders have been identified during field surveys in the vicinity of this project (California Public Utilities Commission 2025), and the CEQA Initial Study, Mitigated Negative Declaration requires SCE to implement slender salamander specific protection measures, including habitat protection measures. Given that this project adheres to CEQA and NEPA guidelines and is implementing protection measures specific to Kern Canyon slender salamanders, there are no cumulative effects expected from this project.

3. Dispersed recreation activities outside of SQF-designated recreation areas are common throughout the Action Area. During VES field studies in 2025, litter, compaction of soils on non-official trails, and disturbance to salamander refugia (i.e., cover objects) were observed. These activities may potentially disturb slender salamanders, but this disturbance is likely infrequent and temporary. Therefore, dispersed recreation may result in additional minor cumulative effects.

6 DETERMINATION SUMMARY

6.1 KERN CANYON SLENDER SALAMANDER

The Proposed Action ***may affect, but is not likely to adversely affect*** the Kern Canyon slender salamander. This determination is based on the following considerations:

- **Vegetation Management (Herbicide Application):** Herbicide use has the potential to indirectly affect salamanders through secondary contact if individuals disperse across recently treated surfaces. However, implementation of conservation measures—including application buffers, timing restrictions, and avoidance of suitable habitat—would avoid direct exposure of individuals and prevent degradation of suitable habitat. As a result, adverse effects are unlikely.

- **Road Maintenance:** Major road maintenance activities involving ground disturbance could potentially result in injury to individuals or disturbance of surface cover objects. The implementation of measures such as weather and seasonal restrictions, worker environmental awareness training, and pre-activity surveys would substantially reduce the likelihood of encountering individuals and minimize disturbance. Therefore, adverse effects to the species are unlikely.

- **Trail Maintenance:** Trail maintenance would occur during late summer and fall, when Kern Canyon slender salamanders are expected to be inactive at the surface and occupying underground refugia. Although limited debris or rock removal along trail surfaces could temporarily reduce cover objects, conservation measures—including limiting the spatial extent of work and retaining or replacing cover materials—would avoid effects to suitable habitat. Consequently, trail maintenance activities are not expected to result in adverse effects.

6.2 RELICTUAL SLENDER SALAMANDER

The Proposed Action ***may affect, but is not likely to adversely affect*** relictual slender salamander. This determination is based on the following.:

- **Vegetation Management (Herbicide Application):** Herbicide use has the potential to indirectly affect salamanders through secondary contact if individuals disperse across recently treated surfaces. However, implementation of conservation measures—including application buffers, timing restrictions, and avoidance of suitable habitat—would avoid direct exposure of individuals and prevent degradation of suitable habitat. As a result, adverse effects are unlikely.

- **Road Maintenance:** Major road maintenance activities involving ground disturbance could potentially result in injury to individuals or disturbance of surface cover objects. The implementation of measures such as weather and seasonal restrictions, worker environmental awareness training, and pre-activity surveys would substantially reduce the likelihood of encountering individuals and minimize disturbance. Therefore, adverse effects to the species are unlikely.

- **Trail Maintenance:** Trail maintenance would occur during late summer and fall, when Kern Canyon slender salamanders are expected to be inactive at the surface and occupying underground refugia. Although limited debris or rock removal along trail surfaces could temporarily reduce cover objects, conservation measures—including limiting the spatial extent of work and retaining or replacing cover

materials—would avoid effects to suitable habitat. Consequently, trail maintenance activities are not expected to result in adverse effects.

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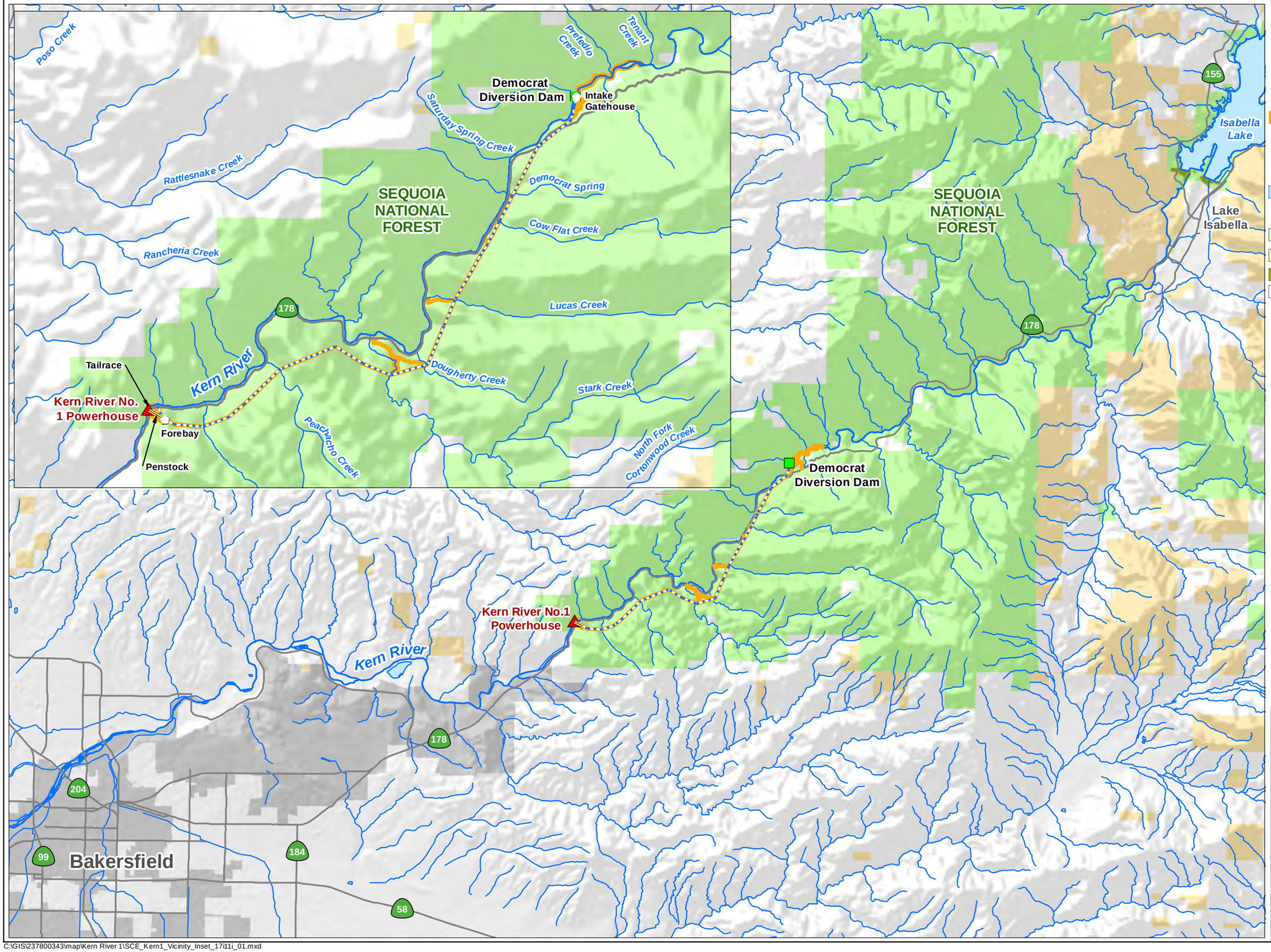
MAPS



Facilities

- Dam
- Powerhouse
- Water Conveyence Feature
- Flowline
- Penstock
- FERC Boundary

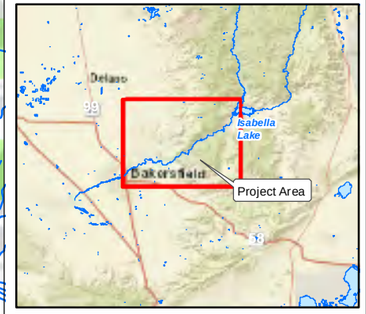
Other Features

- Highway
- Watercourse
- Water Body

Land Jurisdiction*

- U.S. Forest Service
- U.S. Bureau of Land Management
- U.S. Army Corps of Engineers
- Private (Blank)

*SOURCE: BLM 2021



SOUTHERN CALIFORNIA EDISON
Energy for What's Ahead

Kern River No. 1 Hydroelectric Project
FERC Project No. 1930

Map BA-1

Project Vicinity and Land Jurisdiction

0 0.5 1 2 Miles

Projection: UTM Zone 11
Datum: NAD 83

Date: 10/10/2025

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 FERC's regulations regarding confidential filings, visit: https://www.ferc.gov/foia.

Map BA-2a–g. Kern Canyon Slender Salamander Habitat within the Action Area and Observations During the 2025 Visual Encounter Survey (CONFIDENTIAL)

Map BA-2a–g 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 Kadi Whiteside, SCE Relicensing Project Manager at (626) 807-3641 / karen.whiteside@sce.com.

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 FERC's regulations regarding confidential filings, visit: https://www.ferc.gov/foia.

Map BA-3a–g. Relictual Slender Salamander Habitat within the Action Area (CONFIDENTIAL)

Map BA-3a–g 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 Kadi Whiteside, SCE Relicensing Project Manager at (626) 807-3641 / karen.whiteside@sce.com.

APPENDIX BA-1

USFWS Information for Planning and Consultation Resource List

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
Phone: (916) 414-6600 Fax: (916) 414-6713

In Reply Refer To: 02/24/2026 22:24:07 UTC
Project Code: 2026-0054540
Project Name: Kern River No. Hydroelectric 1 Project

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

To Whom It May Concern:

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

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

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

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

(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

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

https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf

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

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

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

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

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

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

This species list is provided by:

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

PROJECT SUMMARY

Project Code: 2026-0054540
Project Name: Kern River No. Hydroelectric 1 Project
Project Type: Power Gen - Hydropower - FERC
Project Description: The Proposed Action represents Southern California Edison Company's (SCE) recommendations for continued operation and maintenance of the Kern River No. Hydroelectric 1 Project (Project) including routine facility inspections and maintenance, sediment management, vegetation management, pest management and road, trail and powerline maintenance , as well as any environmental measures, management, and monitoring plans associated with continued operation and maintenance of the Project.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@35.4949239,-118.69626596265026,14z

Counties: Kern County, California

ENDANGERED SPECIES ACT SPECIES

There is a total of 18 threatened, endangered, or candidate species on this species list.

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

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

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

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

MAMMALS

NAME	STATUS
Fisher *Pekania pennanti*	Endangered
Population: SSN DPS There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3651 General project design guidelines: https://ipac.ecosphere.fws.gov/project/CK22TO64J5B5FEIGHQA6LT5JWA/documents/generated/11271.pdf	
San Joaquin Kit Fox *Vulpes macrotis mutica*	Endangered
No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2873 General project design guidelines: https://ipac.ecosphere.fws.gov/project/CK22TO64J5B5FEIGHQA6LT5JWA/documents/generated/11271.pdf	
Tipton Kangaroo Rat *Dipodomys nitratoides nitratoides*	Endangered
No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7247 General project design guidelines: https://ipac.ecosphere.fws.gov/project/CK22TO64J5B5FEIGHQA6LT5JWA/documents/generated/11271.pdf	

BIRDS

NAME	STATUS
California Condor *Gymnogyps californianus*	Endangered
Population: Wherever found, except where listed as an experimental population There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8193 General project design guidelines: https://ipac.ecosphere.fws.gov/project/CK22TO64J5B5FEIGHQA6LT5JWA/documents/generated/11271.pdf	
California Spotted Owl *Strix occidentalis occidentalis*	Proposed Threatened
Population: Sierra Nevada No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7266 General project design guidelines: https://ipac.ecosphere.fws.gov/project/CK22TO64J5B5FEIGHQA6LT5JWA/documents/generated/11271.pdf	
Southwestern Willow Flycatcher *Empidonax traillii extimus*	Endangered
There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6749 General project design guidelines: https://ipac.ecosphere.fws.gov/project/CK22TO64J5B5FEIGHQA6LT5JWA/documents/generated/11271.pdf	

REPTILES

NAME	STATUS
Northwestern Pond Turtle *Actinemys marmorata* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1111 General project design guidelines: https://ipac.ecosphere.fws.gov/project/CK22TO64J5B5FEIGHQA6LT5JWA/documents/generated/11271.pdf	Proposed Threatened

AMPHIBIANS

NAME	STATUS
Foothill Yellow-legged Frog *Rana boylii* Population: South Sierra Distinct Population Segment (South Sierra DPS) There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5133 General project design guidelines: https://ipac.ecosphere.fws.gov/project/CK22TO64J5B5FEIGHQA6LT5JWA/documents/generated/11271.pdf	Endangered
Kern Canyon Slender Salamander *Batrachoseps simatus* There is **proposed** critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5736	Proposed Threatened
Relictual Slender Salamander *Batrachoseps relictus* There is **proposed** critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7408	Proposed Endangered
Western Spadefoot *Spea hammondii* Population: Northern DPS No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5425 General project design guidelines: https://ipac.ecosphere.fws.gov/project/CK22TO64J5B5FEIGHQA6LT5JWA/documents/generated/11271.pdf	Proposed Threatened

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9743 General project design guidelines: https://ipac.ecosphere.fws.gov/project/CK22TO64J5B5FEIGHQA6LT5JWA/documents/generated/11271.pdf	Proposed Threatened

CRUSTACEANS

NAME	STATUS
Vernal Pool Fairy Shrimp *Branchinecta lynchi* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/498 General project design guidelines: https://ipac.ecosphere.fws.gov/project/CK22TO64J5B5FEIGHQA6LT5JWA/documents/generated/11271.pdf	Threatened

FLOWERING PLANTS

NAME	STATUS
Bakersfield Cactus *Opuntia treleasei* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7799	Endangered
California Jewelflower *Caulanthus californicus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4599	Endangered
Kern Mallow *Eremalche kernensis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1731	Endangered
San Joaquin Adobe Sunburst *Pseudobahia peirsonii* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2931	Threatened
San Joaquin Wooly-threads *Monolopia (=Lembertia) congdonii* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/3746	Endangered

CRITICAL HABITATS

There are 2 critical habitats wholly or partially within your project area under this office's jurisdiction.

NAME	STATUS
Kern Canyon Slender Salamander *Batrachoseps simatus* https://ecos.fws.gov/ecp/species/5736#crithab	Proposed
Relictual Slender Salamander *Batrachoseps relictus* https://ecos.fws.gov/ecp/species/7408#crithab	Proposed

IPAC USER CONTACT INFORMATION

Agency: JNA Consulting
Name: Joshua Lowy
Address: 504 Pleasant Valley Road
City: Diamond Springs
State: CA
Zip: 95619
Email joshua@jna-consulting.com
Phone: 2176383237

APPENDIX BA-2

Location of Project Facilities in Relation to Suitable Habitat for Kern Canyon Slender Salamander and Relictual Slender Salamander, and Associated Ongoing Maintenance Activities

Location of Project Facilities in Relation to Suitable Habitat for Kern Canyon Slender Salamander and Relictual Slender Salamander, and Associated Ongoing Maintenance Activities

Project Facility	Suitable Habitat Present		Project Maintenance Activities														
	Kern Canyon slender salamander (KCSS)	Relictual slender salamander (RSS)	Powerhouse Maintenance	Water Conveyance System Maintenance	Dam Inspections, Testing Maintenance	Sediment Management – Democrat Dam Impoundment	Sediment Management – Forebay	Vegetation Management – Hand Trimming	Vegetation Management – Hazard Tree Removal	Vegetation Management – Herbicide Application	Woody Debris Removal	Pest Management	Road Maintenance	Trail Maintenance	Power and Communication Line Maintenance	Proposed New Vegetation Management (Herbicide)
Diversion Dam																	
Democrat Dam	–	–			X	X		X	X		X						
Impoundment																	
Democrat Dam Impoundment	–	–				X			X		X						
Water Conveyance System																	
Sandbox	X	X		X				X	X	X							
Tunnels[1]	NA	NA		X					X								
Flume No. 1	X	X		X				X	X	X							
Flume No. 2 Cow Flat Creek	X	X		X				X	X	X							
Flume No. 3	X	X		X				X	X	X							
Flume No. 4 Lucas Creek	X	X		X				X	X	X							
Flume No. 5 Dougherty Creek	X	X		X				X	X	X							
Flume No. 6 Stark Creek	X	X		X				X	X	X							
Conduit No. 1	–	–		X				X	X	X							
Conduit No. 2	X	X		X				X	X	X							
Conduit No. 3	X	X		X				X	X	X							
Conduit No. 4	X	X		X				X	X	X							
Conduit No. 5	X	X		X				X	X	X							
Conduit No. 6	X	–		X				X	X	X							
Conduit No. 7	X	–		X				X	X	X							
Conduit No. 8	X	–		X				X	X	X							
Conduit No. 9	X	–		X				X	X	X							
Adit 2&3[2]	NA	NA							X	X							
Adit 4&5[3]	NA	NA							X	X							
Adit 9&10[3]	NA	NA							X	X							
Adit 12&13	X	X							X	X							
Adit 13&14	X	–							X	X							
Adit 14&15	X	–							X	X							
Adit 15&16[3]	NA	NA							X	X							
Adit 16&17[3]	NA	NA							X	X							
Adit 18&19	X	–							X	X							
Forebay	X	–		X			X	X	X	X						X	
Forebay Overflow Spillway	X	–						X	X	X							
Penstock	X	–		X				X	X	X							
Powerhouse and Switchyard																	
Kern River No. 1 Powerhouse and Switchyard	–	–	X					X	X	X		X					

Location of Project Facilities in Relation to Suitable Habitat for Kern Canyon Slender Salamander and Relictual Slender Salamander, and Associated Ongoing Maintenance Activities

Project Facility	Suitable Habitat Present		Project Maintenance Activities														
	Kern Canyon slender salamander (KCSS)	Relictual slender salamander (RSS)	Powerhouse Maintenance	Water Conveyance System Maintenance	Dam Inspections, Testing Maintenance	Sediment Management – Democrat Dam Impoundment	Sediment Management – Forebay	Vegetation Management – Hand Trimming	Vegetation Management – Hazard Tree Removal	Vegetation Management – Herbicide Application	Woody Debris Removal	Pest Management	Road Maintenance	Trail Maintenance	Power and Communication Line Maintenance	Proposed New Vegetation Management (Herbicide)
Access Roads																	
Willow Spring Creek Road (Democrat Dam Road)	X	X						X	X	X			X			
Powerline Road	–	–						X	X	X			X			
Flume No. 1 Road	X	X						X	X	X			X			
Dougherty Creek Road	X	X						X	X	X			X			
Stark Creek Road	X	X						X	X	X			X			
Forebay Operations Area Road	X	–						X	X	X			X			
Lower Powerhouse Road	–	–						X	X	X			X			
Upper Powerhouse Road	–	–						X	X	X			X			
Access Trails																	
Democrat Gage Trail	X	X						X	X					X		X
Conduit No. 3 Trail	X	X						X	X					X		X
Cow Flat Creek to Conduit No. 6 Trail	X	X						X	X					X		X
Lucas Creek Trail	X	X						X	X					X		X
Dougherty Creek Trail	X	X						X	X					X		X
Stark Creek Trail	X	X						X	X					X		X
Unnamed FERC Trail	X	–						X	X					X		X
Forebay to Conduit No. 9 Trail	X	X						X	X					X		X
Overflow Spillway Trail	X	–						X	X					X		X
Forebay Operations Area to Aerial Tram Upper Landing Trail	X	–						X	X					X		X
Access Trail to Aerial Cable Upper Mount	X	–						X	X					X		X
Communication and Power Lines																	
Erskine 12 kV Distribution Line	X	X						X	X						X	
Camp 2.4 kV Distribution/ Communication Line	X	–						X	X						X	
Gages																	
USGS Gage No. 11192500 / SCE Gage No. 409 (Kern River near Democrat Springs)	X	–			X				X							
USGS Gage No. 11192000 / SCE Gage No. 410 (Kern River No. 1 Conduit Near Democrat Springs)	X	X			X				X							

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Project Facility	Suitable Habitat Present		Project Maintenance Activities													
	Kern Canyon slender salamander (KCSS)	Relictual slender salamander (RSS)	Powerhouse Maintenance	Water Conveyance System Maintenance	Dam Inspections, Testing Maintenance	Sediment Management – Democrat Dam Impoundment	Sediment Management – Forebay	Vegetation Management – Hand Trimming	Vegetation Management – Hazard Tree Removal	Vegetation Management – Herbicide Application	Woody Debris Removal	Pest Management	Road Maintenance	Trail Maintenance	Power and Communication Line Maintenance	Proposed New Vegetation Management (Herbicide)
USGS Gage No. 11192501 (Kern River near Democrat Springs; calculated 11192500+11192000)	X	–			X				X							
Ancillary and Support Facilities																
Democrat Dam Area																
Buoy Line	–	–			X				X		X					
Democrat Dam Intake Gatehouse	–	–		X	X				X			X				
Democrat Dam Drainage Tower	–	–			X				X							
Democrat Dam Drainage Tunnel	–	–			X				X							
Democrat Dam Drainage Tunnel Outlet	–	–			X				X							
Democrat Dam Access Walkway	X	X			X				X							
Sandbox Drainage Channel	X	X			X				X							
Gaging Cableway	X	–			X				X							
Water Conveyance																
Flume No. 6 Access Platform	X	X		X				X	X	X						
Forebay Operations Area																
Building No. 0110 (Admin Building)	–	–	X					X	X			X				
Building No. 0146 (Garage)	–	–	X					X	X			X				
Building No. 0133 (Garage)	–	–	X					X	X			X				
Building No. 0118 (Ice House)	–	–	X					X	X			X				
Water Tank	X	–	X						X							
Aerial Cable Tower	X	–							X							
Building No. 0111 (Aerial Tram Hoist House)	X	–	X					X	X			X				
Aerial Tram Lower Landing	X	–	X					X	X			X				
Aerial Tram	X (cable)	–	X					X	X							
Aerial Tram Upper Landing	X	–	X						X							
Aerial Tram Upper Landing to Forebay Walkway	X	–	X					X	X							
Communication Site	X	–	X						X							
Forebay Operations Area Perimeter Fence	X	–	X					X	X							X
Forebay Perimeter Fence	X							X	X							X
Chlorinator House	X	–	X					X	X			X				

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Project Facility	Suitable Habitat Present		Project Maintenance Activities														
	Kern Canyon slender salamander (KCSS)	Relictual slender salamander (RSS)	Powerhouse Maintenance	Water Conveyance System Maintenance	Dam Inspections, Testing Maintenance	Sediment Management – Democrat Dam Impoundment	Sediment Management – Forebay	Vegetation Management – Hand Trimming	Vegetation Management – Hazard Tree Removal	Vegetation Management – Herbicide Application	Woody Debris Removal	Pest Management	Road Maintenance	Trail Maintenance	Power and Communication Line Maintenance	Proposed New Vegetation Management (Herbicide)
Powerhouse Area																	
Building No. 0112 (Machine Shop)	–	–	X					X	X	X		X					
Office/Lunchroom	–	–	X					X	X	X		X					
Building No. 0142 (Restroom)	–	–	X					X	X	X		X					
Powerhouse and Switchyard Perimeter Fence	X	–	X					X	X	X							

[1] Because tunnels are underground facilities and located in inaccessible steep terrain, tunnels were not evaluated for special-status salamander habitat and were not part of the study area for visual encounter surveys.
[2] Adit 2&3 was not safely accessible from Highway 178, therefore, special-status salamander habitat evaluation and visual encounter surveys were not conducted in this location.
[3] Adit 3&4, Adit 9&10, and Adit 15&16 were not safely accessible by foot travel on the steep slopes of the Kern Canyon, therefore, special-status salamander habitat evaluation and visual encounter surveys were not conducted at this location.