# Memorandum

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|---|---|
| **To:** | Southern California Edison<br>Mindy Davis, Environmental Science Advisor<br>Mindy.Davis@sce.com |
| **From:** | Shelleena Pernot<br>Director of Environmental Compliance<br>ICF |
| **Date:** | May 21, 2024 |
| **Re:** | **Tehachapi Slender Salamander and Kern Canyon Slender Salamander Survey Report for Southern California Edison's Gorman Kern River Project** |

Dear Mrs. Davis,

This report documents the methods and results of focused surveys for the Tehachapi slender salamander (*Batrachoseps stebbinsi*; TSS), a species listed as threatened under California Endangered Species Act (CESA), and Kern Canyon slender salamander (*Batrachoseps simatus*; KCSS), a species listed as threatened under the CESA and a candidate species for threatened status under the federal Endangered Species Act (FESA). Southern California Edison's (SCE) Gorman Kern River Project is implementing work activities that will include removing and replacing towers to support high-capacity overhead transmission lines. The project will be taking place in three focal areas that may contain these sensitive salamanders: Tejon and Stallion Springs, where *Batrachoseps stebbinsi* does or may occur, and the lower Kern River Canyon, where *Batrachoseps simatus* may occur. An overview map of these three focal areas in relation to the overall project is presented in Appendix A, Figure 1.

## Project Study Area Description

The project study area is divided into three mountainous regions where the transmission lines may pass through salamander habitat: Tejon, Stallion Springs, and the Kern River Canyon, shown on Appendix A, Figures 2, 3, and 4, respectively. Elevation ranges from approximately 820 to 4,100 feet above sea level. There are significant slopes and elevation gain, particularly within the Kern River Canyon. Much of the lower elevations of the project area are characterized by nonnative grassland, particularly Brome (*Bromus* sp.). At each of the three focal areas, some developments occur in the immediate vicinity of the project area, including roads, houses, and other structures.

### Tejon

Sites to be surveyed within this region are split up into two sections: west and east of Interstate (I-) 5 (Appendix A, Figure 2). The towers east of the freeway, as well as the few lowest-elevation sites on the west side, are nearly devoid of trees or large shrubs and have a greater sun exposure. At the sites farther up Grapevine Canyon on the west side of I-5, approaching and within Fort Tejon State

Historic Park, the slope aspect is often north-facing, considered to be more favorable for salamanders, and has more mesic vegetative communities, such as blue oak (*Quercus douglasii*), valley oak (*Q. lobata*), and California buckeye (*Aesculus californica*) woodlands. Large granitic outcrops are present across Tejon, comprising potential structured habitat for slender salamanders to utilize and retreat to. Photographs of this location are provided in Appendix B (*Tejon Study Area Survey Details*). The elevation at the Tejon sites surveyed range from 2,200 to 3,320 feet above sea level. Tejon is an area where TSS are known to occur, and the project passes through appropriate habitat for this species.

### Stallion Springs

This section is the highest elevation part of the project, with survey sites ranging from 3,060 to 4,100 feet above sea level (Appendix A, Figure 3). Gray pine (*Pinus sabiniana*), blue oak, and valley oak are consistent through this part of the project area, although patches of Sierra gooseberry (*Ribes roezlii*) and big sagebrush (*Artemisia tridentata*) chaparral do occur around several of the towers. Granitic outcrops are also present in this area. Photographs of this location are provided in Appendix C (*Stallion Springs Study Area Survey Details*). TSS are not known to occur in close proximity to Stallion Springs, though they are found to the north and south of the project area and the project passes through appropriate salamander habitat.

### Kern River Canyon

The Kern River Canyon is characterized by dramatically steep cliffs studded with huge granite boulders (Appendix A, Figure 4). Elevation of the project area ranges from 820 to 1,650 feet in elevation. KCSS are not known to occur within the project area, but the project passes through appropriate habitat for this species. Nearly treeless, except for a few California buckeye near one of the towers, much of this area is dominated by introduced annual grasses, although some native shrubs such as rock bush monkeyflower (*Diplacus calycinus*) occur sporadically on north-facing parts of the slope, among boulders. Photographs of this location are provided in Appendix D (*Kern River Canyon Study Area Survey Details*).

## Background

### Tehachapi Slender Salamander

Based on recent and historical records as well as data from species experts, TSS occurs in southern/central Kern County, from the vicinity of Lebec and Fort Tejon State Historic Park in the southwest, through the Tehachapi Mountains, terminating in the north near Twin Oaks in the Caliente Creek drainage. Elevational range of the species is approximately 1,800 to 6,000 feet above sea level. Though spottily distributed across their range, TSS are known from mesic habitats within various vegetative communities, including desert scrub, oak woodland, pinyon-juniper associations, and montane conifer forest. Shaded, north-facing slopes retain the most moisture and cooler temperatures and are therefore commonly considered to be the preferred slope aspect for TSS occurrence, but they can occur at other slope aspects. Rock structure is frequently utilized by this species, with rocky hillsides and talus slopes being particularly well-known microhabitats utilized by TSS. Salamanders are nocturnal and take refuge under rocks, logs, pine cones, and even decaying yucca rosettes during the day.

As with many salamanders, the natural history of TSS is poorly understood due to their fossorial nature, sensitive environmental requirements, and lack of focused studies. Their primary activity window coincides with California's wet season, with most reports of this species occurring between November and March, potentially into April and May at higher elevations. During the summer months, this species likely accesses underground retreats, where moderated temperatures and elevated moisture levels may be found. TSS appear to not be active when surface temperatures are too warm, nor when they drop to near-freezing, with a middle ground common of early winter and spring weather patterns being ideal to locate this species. Diet is largely unknown but likely consists of invertebrates that are active within the same space and time as TSS. This species is fully terrestrial, lacking any aquatic life stage, and oviposits in discrete locations, likely underground.

The range of the non-listed black-bellied slender salamander (*Batrachoseps nigriventris*; BBSS) overlaps with much of TSS range, but sympatry is only known from Grapevine Canyon in the vicinity of Fort Tejon State Historic Park. BBSS are generally less robust, with smaller feet and overall body proportions, and have 20 to 21 costal grooves. TSS have comparatively larger feet and legs and possess 18 to 19 costal grooves.

## Kern Canyon Slender Salamander

Based on recent and historical records as well as data from species experts, KCSS occurs in north-central Kern County, from Stark Creek in the lower Kern River Canyon east to Erskine Creek on the northern slope of Piute Mountains. This species is only known from the south side of the Kern River and has not been recorded at most of the localities in the lower Kern River Canyon in three decades or longer. Road construction, climate change, cattle grazing, and disease (*Batrachochytrium dendrobatidis*) have been implicated as potential causative factors in this decline. Elevational range of KCSS is approximately 1,500 to 5,600 feet above sea level. KCSS inhabit mesic habitats primarily within oak woodland or chaparral, occurring most readily on north-facing slopes that retain moisture and retain shade for the longest part of the year. Talus and rock outcrops, logs, and leaf litter are common cover objects used by this species.

Similar to TSS, the activity window of KCSS is squarely within California's wet season, from November to March or April, depending on local rainfall. This species will retreat underground during the heat of the summer to maintain appropriate environmental conditions. Diet is assumed to be invertebrates, and this species is fully terrestrial.

KCSS overlaps (or nearly so) with two other species in the genus, one of which is the relictual slender salamander (*B. relictus*; RSS). RSS is a California Department of Fish and Wildlife (CDFW) Species of Special Concern and a candidate species for endangered status under the FESA. RSS occurs in the lower Kern River Canyon and on Breckenridge Mountain, although it, too, has apparently been extirpated from all Kern River Canyon sites, with no records of the species in this area in five decades. RSS and KCSS were formerly found in some of the same canyons, albeit in different microhabitats. RSS has smaller legs and feet and is only found within wet microhabitats along creeks and springs, while KCSS has comparatively larger proportions and is not closely associated with riparian habitats. RSS has 16 to 19 costal grooves, and KCSS has 19 to 20.

The other species whose range approaches that of KCSS is the non-listed gregarious slender salamander (*B. gregarius*; GSS). This species, which occurs in habitats as variable as grassland on the floor of the Central Valley to mixed coniferous forests in the mid-elevation of the Sierra Nevada,

reaches its southern terminus at the mouth of the Kern River Canyon at Cottonwood Creek, on the south bank of the Kern River, several miles downstream from the nearest historic KCSS population. GSS have much smaller proportions than KCSS and generally appear more "worm-like" compared to the larger-limbed and more robust KCSS. The costal groove count for GSS is typically 17 to 21. The southern GSS at Cottonwood Creek were determined via genetic analysis to possess mitochondrial DNA from KCSS, likely indicating past hybridization event(s) between them and KCSS, but a modern zone of contact is not known.

# Methods

Prior to field work, TSS and KCSS occurrence records within and around the project area were reviewed and species experts were consulted to determine habitat suitability. Field surveys were conducted between February 12 and March 14, 2024, by Casey Moss and Noah Morales, who are authorized individuals under Scientific Collecting Permit S-202420001-20242-001 from CDFW to conduct surveys for and take specimens and/or genetic biopsies of slender salamanders (*Batrachoseps* sp.) and toothy skinks (*Plestiodon* sp.).

The field efforts were general, non-restricted herpetological surveys within appropriate habitat and at sites where work will be taking place or staging areas would be established, generally around the base of towers and along power lines. Appropriate habitat was judged by species experts and cover objects were turned at will during each site visit. In general, focused survey efforts took place during the day in areas that had sufficient amounts of cover objects (rocks, logs, vegetation mats, and the like), and cover objects were turned and gently replaced to minimize damage. TSS and KCSS are predominantly known to occur on north-facing slope aspects, and although these zones within the project area were specifically targeted, not every site that was surveyed contained the habitat or slope aspect typically associated with these species. Regardless, very few sites were deemed as unsuitable, and what would be considered somewhat marginal habitat was also searched.

Across the three project areas (Tejon, Stallion Springs, and Kern River Canyon), sites were to be visited and re-surveyed no more than four times each, or until a TSS or KCSS was located, in which case that site was no longer visited. A minimum of 5 days elapsed between site visits to allow the cover objects to resettle and animals to reoccupy them. Surveyors searched each site without a specific time frame, as the size and quality of individual sites did not allow for a consistent time effort across sites, searching just as long as it took to turn the cover objects within each area. Person-hours searching for salamanders per site visit were minimally 30 minutes and frequently longer, up to 90 minutes. Species experts were accompanied by one to two MESA Biological representatives at a time and, depending on site size and the proximity of sites to one another, two to three (rarely four) people searched each site at a time.

The first session occurred from February 12 to February 15, 2024. The second session occurred the following week, from February 21 to February 24, 2024. The third session occurred from February 28 to March 1, 2024. The fourth and final survey session took place from March 11 to March 14, 2024. Table 1 shows the survey conditions during each survey. Appendices B, C, and D contain the specific weather conditions for each survey site and day for the Tejon, Stallion Springs, and Kern River Canyon Study Areas, respectively.

**Table 1. Survey Conditions**

| Date | Weather Conditions |
|---|---|
| *Tejon* | |
| 2/14/2024 | 51–52°F, 7–9 MPH wind, 63–67% H |
| 2/15/2024 | 46–50°F, 6–9 MPH wind, 80–97% H |
| 2/21/2024 | 48–57°F, 2–5 MPH wind, 70–87% H |
| 2/22/2024 | 48°F, 2 MPH wind, 89% H |
| 2/28/2024 | 60–64°F, 5–13 MPH wind, 32–35% H |
| 2/29/2024 | 52–56°F, 5–11 MPH wind, 63–74% H |
| 3/11/2024 | 50–60°F, 2–8 MPH wind, 59–69% H |
| 3/12/2024 | 48–57°F, 2–3 MPH wind, 77–89% H |
| *Stallion Springs* | |
| 2/13/2024 | Data not available |
| 2/14/2024 | 49–50°F, 4–5 MPH wind, 52–70% H |
| 2/22/2024 | 47–59°F, 1–4 MPH wind, 68–91% H |
| 2/29/2024 | 55–66°F, 2–3 MPH wind, n/a% H |
| 3/13/2024 | 41–46°F, 0–5 MPH wind, 87–100% H |
| *Kern River Canyon* | |
| 2/12/2024 | 53–61°F, 0–2 MPH wind, 53–71% H |
| 2/13/2024 | Data not available |
| 2/23/2024 | 57–62°F, 3–4 MPH wind, 69–79% H |
| 3/1/2024 | 65–71°F, 4–11 MPH wind, 42–53% H |
| 3/12/2024 | 70°F, 0 MPH wind, 57% H |

°F = degrees Fahrenheit; MPH = miles per hour; H = humidity; n/a = not available

# Results

Across the project areas, six species of reptiles and five species of amphibians were found under cover objects or active during survey efforts: southern alligator lizard (*Elgaria multicarinata*), western fence lizard (Sceloporus occidentalis), common side-blotched lizard (*Uta stansburiana*), Gilbert's skink (*Plestiodon gilberti*), desert night lizard (*Xantusia vigilis*), California kingsnake (*Lampropeltis californiae*), Pacific chorus frog (*Pseudacris regilla*), western toad (*Anaxyrus boreas*), ensatina (*Ensatina eschscholtzii*), BBSS, and KCSS (discussed further below). Photographs of each work location surveyed and species observations within each study area are provided in Appendix B (*Tejon Study Area Survey Details*), Appendix C (*Stallion Springs Study Area Survey Details*), and Appendix D (*Kern River Canyon Study Area Survey Details*).

## TSS and KCSS Occurrences in the Project Area

Two areas of the project, Tejon and Stallion Springs, are within the range of TSS. There are no records of the species in close proximity to the Stallion Springs sites, although they occur at higher elevations south of there on Tejon Ranch property and at lower elevations in the Caliente Creek drainage to the north. TSS are known to occur within 0.25 mile or less of some of the project sites within Tejon, and appropriate habitat for the species can be found at several of the project sites. No

TSS were located during the survey efforts, despite repeated visits to the sites during favorable environmental conditions (Table 1).

The project area in the lower Kern River Canyon is just outside of the known range of KCSS, being roughly 5 miles down the canyon from the nearest historical locality for the species at Stark Creek. However, KCSS were located at four of the project sites in this area, all representing new localities for the species: M1-T1, M1-T2, M1-T3, and the northern CA 178 Guard Site. The locations of these observations are shown in Appendix A, Figure 5, with details of each observation provided in Table 2. Photographs of the habitat conditions and KCSS observed are provided in Appendix B (*Tejon Study Area Survey Details*).

**Table 2. Kern Canyon Slender Salamander Observation Locations**

| Date | Longitude | Latitude | Notes |
|---|---|---|---|
| *Kern River Canyon* | | | |
| 2/12/2024 | -118.785307° | 35.446434° | Site M1-T1. |
| 2/12/2024 | -118.789341° | 35.441944° | Site M1-T3. |
| 2/23/2024 | -118.780128° | 35.456672° | CA 178 Guard Site (1.5 road miles east of the Kern River Canyon mouth); 3 individuals observed (1 adult, 2 juveniles) |
| 3/1/2024 | -118.788099° | 35.443277° | Site M1-T2. 1 juvenile observed. |

# Discussion

These surveys were carried out during the time of year that is perhaps most conducive for salamander activity: lows frequently above 40 degrees Fahrenheit (°F), highs not above 70°F for much of the survey period, with precipitation falling before and during the survey period. Both species of salamander were certainly active during this time frame around the project area.

## Tejon

Within the Tejon area, the sites on the east side of I-5 are more xeric but possess adequate rock structure; if the species are present here, it is likely in low numbers and harder to detect, as these sites are the first to lose moisture with their more exposed slope aspect. On the west side of I-5, around Fort Tejon Historical Park, the lack of TSS detections is harder to explain. Throughout each of the four rounds of surveys, these sites retained appropriate moisture levels and possessed the mesic vegetation associations typical of TSS haunts, California buckeye and rooreh (*Claytonia perfoliata*) paramount among them. Rocks, logs, and decaying clumps of chaparral yucca (*Hesperoyucca whipplei*), known cover objects utilized by TSS in parts of their range, were present at many of these sites and often contained moisture levels more than sufficient for use by TSS.

Several yellow-blotched ensatina (*Ensatina eschscholtzii croceater*) were located at project sites within the Tejon region, on the west side of I-5. This species co-occurs with TSS across much of the Tehachapi Mountains and is indicative of the presence of quality habitat for plethodontid salamanders. Photographs of the habitat conditions and location details of these observations are provided in Appendix B (*Tejon Study Area Survey Details*) and Table 3.

Ultimately, the sites on the east side of I-5 seem possible for TSS presence but are of significantly lower quality. The sites around Fort Tejon Historic Park west of I-5 are generally very good habitat, and TSS are very likely to occur there. These surveys should be followed up on during the next winter/spring season to try and confirm TSS presence or absence within the project area.

Incidental to these surveys, an active red-tailed hawk nest was observed at Site NO 17 (Appendix B).

## Stallion Springs

The sites in the Stallion Springs area are equally or more mesic than those in the Tejon area. Several yellow-blotched ensatina were located in this area, at a few of the project sites (Appendix C and Table 3). BBSS were consistently located at one of the project sites, confirming the suitability of this area for slender salamanders. Stallion Springs is not too far north of where TSS are known to occur in the Tehachapi Mountains, although those occurrences are in high-elevation coniferous forest. The Stallion Springs project sites are largely blue oak and gray pine woodland, which are floral associations that TSS are known to inhabit in the Caliente Creek drainage and in the Tejon area. With the lack of nearby records of TSS, it is possible that they do not occur in this area, but more surveys are recommended to confirm TSS presence or absence. Photographs of this location are provided in Appendix C (*Stallion Springs Study Area Survey Details*).

## Kern River Canyon

The project sites in the lower Kern River Canyon contain appropriate habitat for KCSS, but they were not known to occur in that part of the Kern River Canyon. The surveyors located a KCSS on the first visit to two of the tower sites (M1-T1 and M1-T3),and in subsequent weeks KCSS were found at two more sites near here: the other two towers on steep slopes near the mouth of the Kern River Canyon (M1-T2) and at the last survey site before the end of the transmission line (Highway 178 Guard Site). The locations of these observations are provided in Appendix A, Figure 5, and photographs of the survey locations and results are provided in Appendix D (*Kern River Canyon Study Area Survey Details*).

The discovery of KCSS at these project sites is quite important, given that they were not known from this area and that animals from the nearest localities have not been seen in several decades and are presumed extirpated. However, these surveys have shown that KCSS are extant even lower down the canyon and are now known to occur at a lower elevation than was previously recorded—950 feet in elevation. Clearly, this part of the project area contains high-quality habitat and may potentially be important for the conservation of the species. KCSS is currently listed as threatened under the CESA and is a candidate species for threatened under the FESA, a designation given prior to the discovery of these four new sites. Determining which factors facilitated the survival of these populations when others in the lower Kern River Canyon were extirpated may be of special importance; perhaps the lack of cattle within the project area has a part to play. Cattle grazing disturbance was not observed at any of the project sites due to the steepness of some and proximity to Highway 178 of others, whereas cattle have grazed extensively within other parts of Kern River Canyon where KCSS and RSS have become extirpated.

The westernmost KCSS found during these surveys occurred within approximately 1.25 airline miles of the nearest known GSS population, which are known to possess KCSS mitochondrial DNA. The taxonomic status of the *Batrachoseps* recovered from the four project sites in the lower Kern River

Canyon has yet to be confirmed by genetic analysis but, based on habitat, morphology, and consultation with other species experts, they are strongly believed to represent novel KCSS populations.

At the northernmost CA 178 Guard Site, surveyors located a night lizard (*Xantusia vigilis*) under a granite rock before KCSS were located at the same site in the following weeks (Appendix D, Photograph 2). This lizard very possibly represents a Sierra night lizard (*X. vigilis sierrae*), which is known to occur in the southern part of the Greenhorn Mountains near the mouth of the Kern River Canyon. The nominate desert night lizard (*X. vigilis vigilis*) occurs farther east in the Kern River drainage but, due to the location near the mouth of the Kern River Canyon, this individual's taxonomic status is in question. The Sierra night lizard is a CDFW Species of Special Concern, and species experts should be contacted to determine the status of the *Xantusia* within the project area, which contains much appropriate habitat for night lizards. Table 3 provides the location details of this observation.

During the course of this project, three special-status amphibian and reptile species (KCSS, yellow-blotched ensatina, and potentially Sierra night lizard) were located within the project areas (Appendix A, Figure 5, and Tables 2 and 3). Additionally, a red-tailed hawk nest was observed in the Tejon area at NO 17, as well as a lone golden eagle at NO 15. In the Stallion Springs study area, yellow-blotched ensatinas were observed at Sites M9-T4 and M10-T9. In the Kern River Canyon, a pair of red-tailed hawks was observed copulating on tower M1-T3 and a peregrine falcon was observed on M1-T1. These records have yet to be submitted to CDFW's California Natural Diversity Database but are relevant to the implementation of this project.

**Table 3. Incidental Special-Status Species Observations**

| Date | Longitude | Latitude | Notes |
|---|---|---|---|
| *Tejon* | | | |
| 2/14/2024 | -118.912221 | 34.888462 | Yellow-blotched ensatina. Demo Pull Site 324/NO 18. Additional observations on 2/28 and 3/11/2024. |
| 2/21/2024 | -118.908540 | 34.884592 | Yellow-blotched ensatina (one juvenile). Digier Road Guard Site (next to Site NO 19). |
| 2/21/2024 | -118.92015 | 34.89866 | Adult golden eagle observed flying in canyon near tower (closest to Site NO 15). |
| 3/11/2024 | -118.916361 | 34.890692 | Red-tailed hawk nest in structure; NO 17. |
| *Stallion Springs* | | | |
| 2/14/2024 | -118.67486 | 35.10267 | Tower M9-T4. One large adult yellow-blotched ensatina was observed. |
| 3/13/2024 | -118.652914 | 35.094819 | Tower M10-T9. One juvenile yellow-blotched ensatina was observed. |
| *Kern River Canyon* | | | |
| 2/12/2024 | -118.78011 | 35.45640 | CA 178 Guard Site (1.5 road miles east of the Kern River canyon mouth). One juvenile night lizard observed. |
| 3/1/2024 | -118.78921 | 35.4421 | Tower M1-T3. A pair of red-tailed hawks was copulating on the tower. |

| Date | Longitude | Latitude | Notes |
|---|---|---|---|
| 3/1/2024 | -118.7853 | 35.44648 | Tower M1-T1. One adult peregrine falcon perched on tower and flying in vicinity. |

Should you have any questions, please contact me at (209) 650-8983 or noahmorales01@gmail.com.

Sincerely,

Noah Morales
Senior Biologist
ICF

Enclosed:

Appendix A: Project Maps

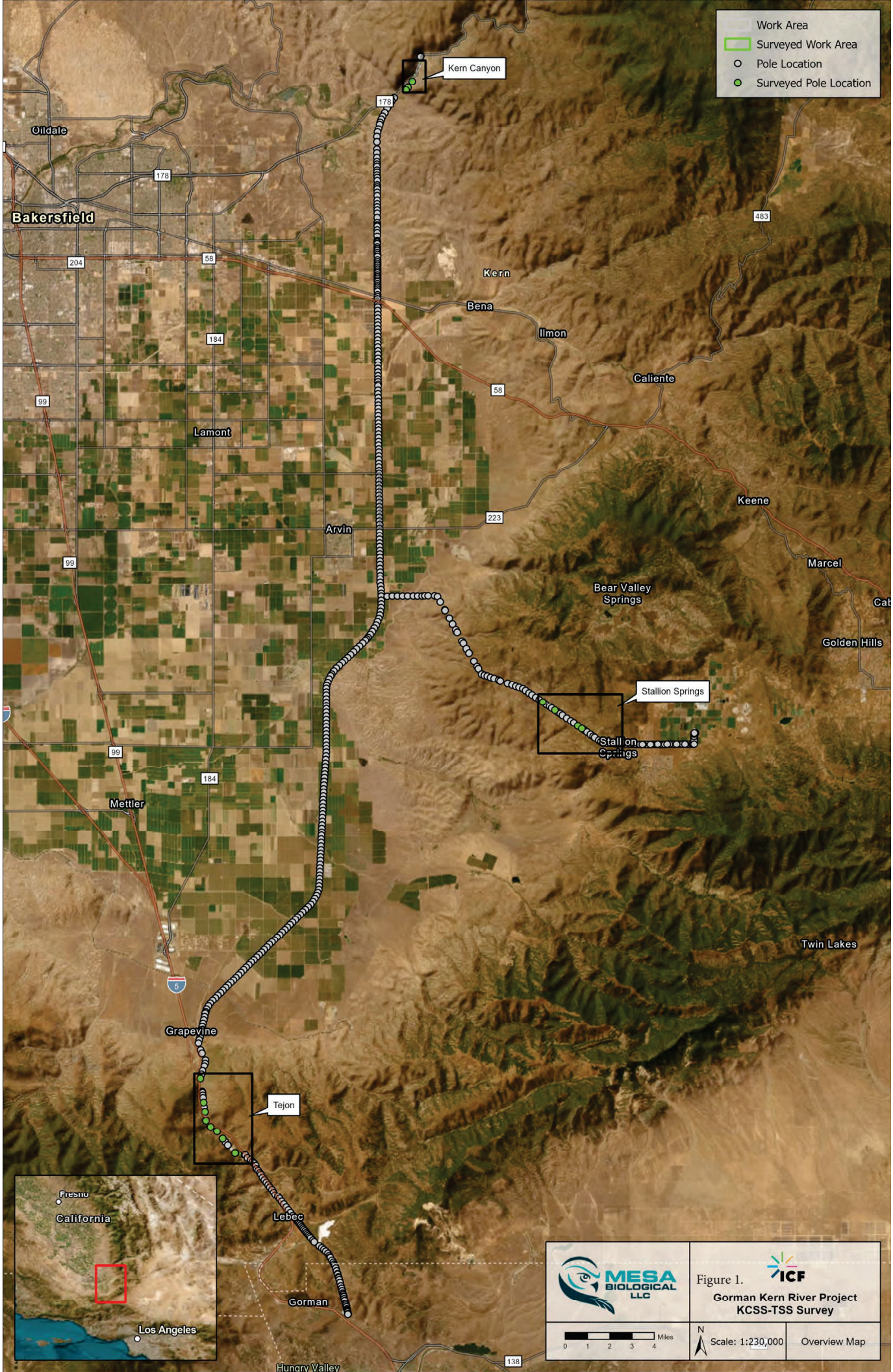
Appendix B: Tejon Study Area Survey Details

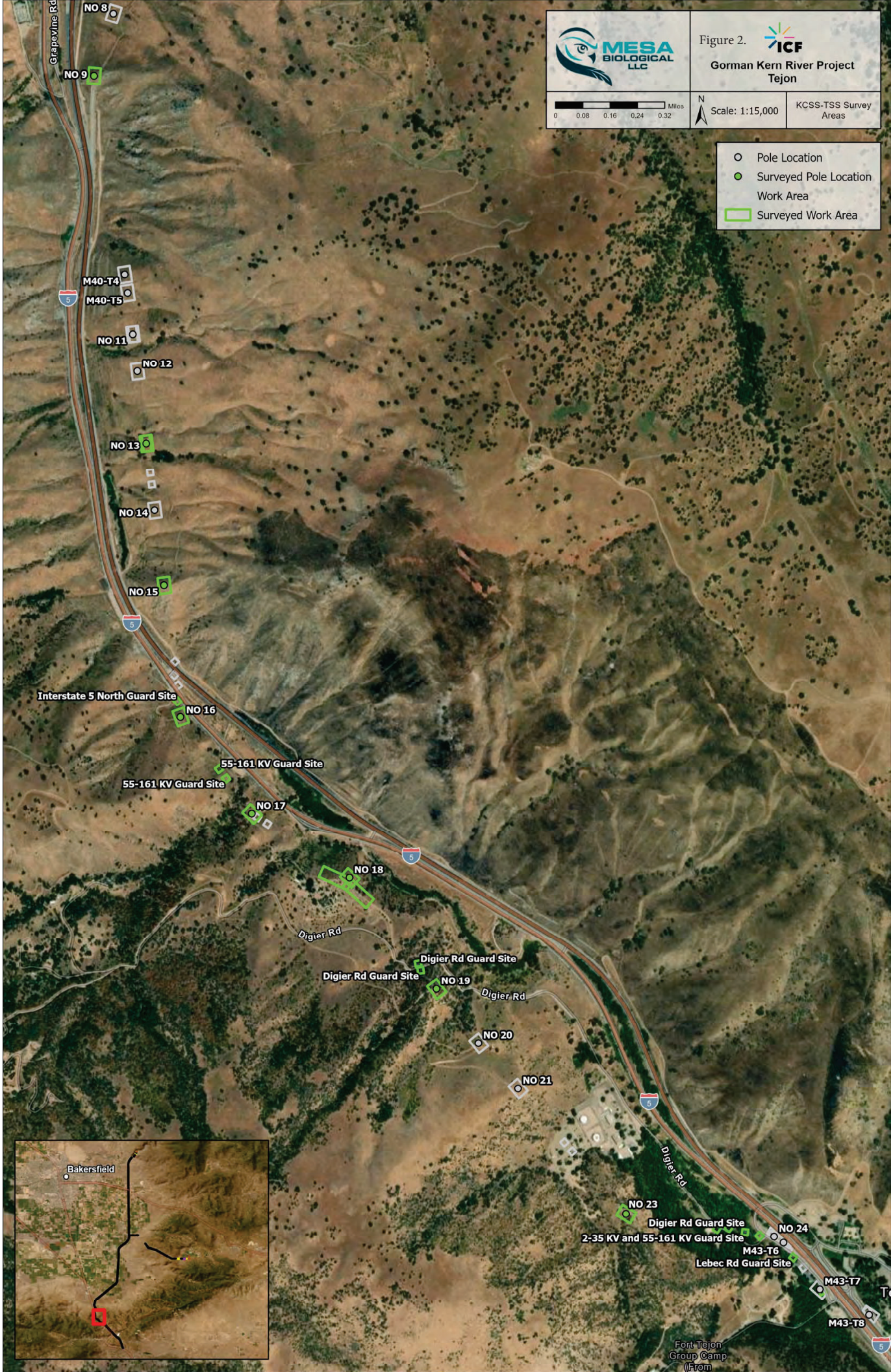
Appendix C: Stallion Springs Study Area Survey Details

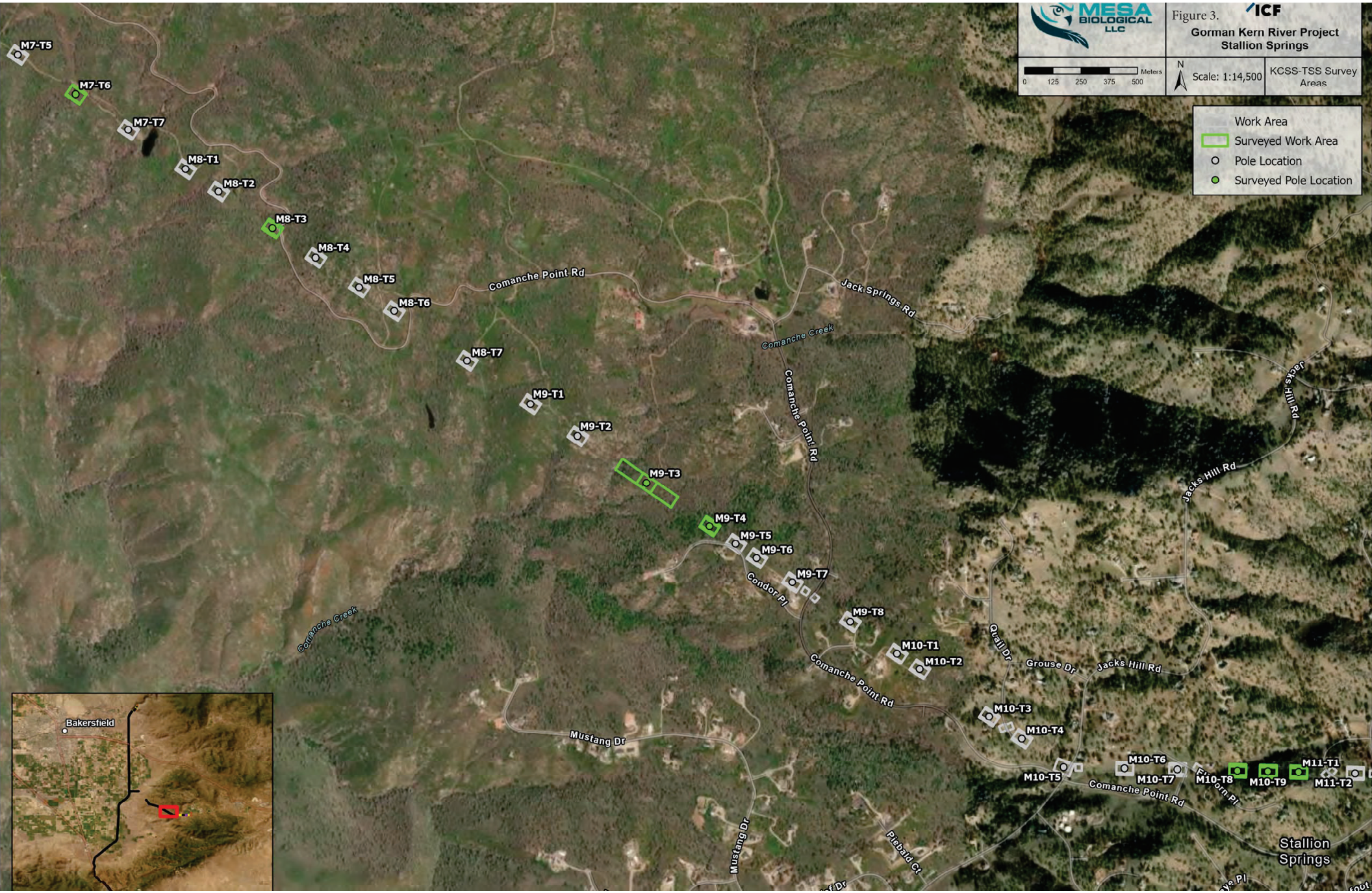
Appendix D: Kern River Canyon Study Area Survey Details

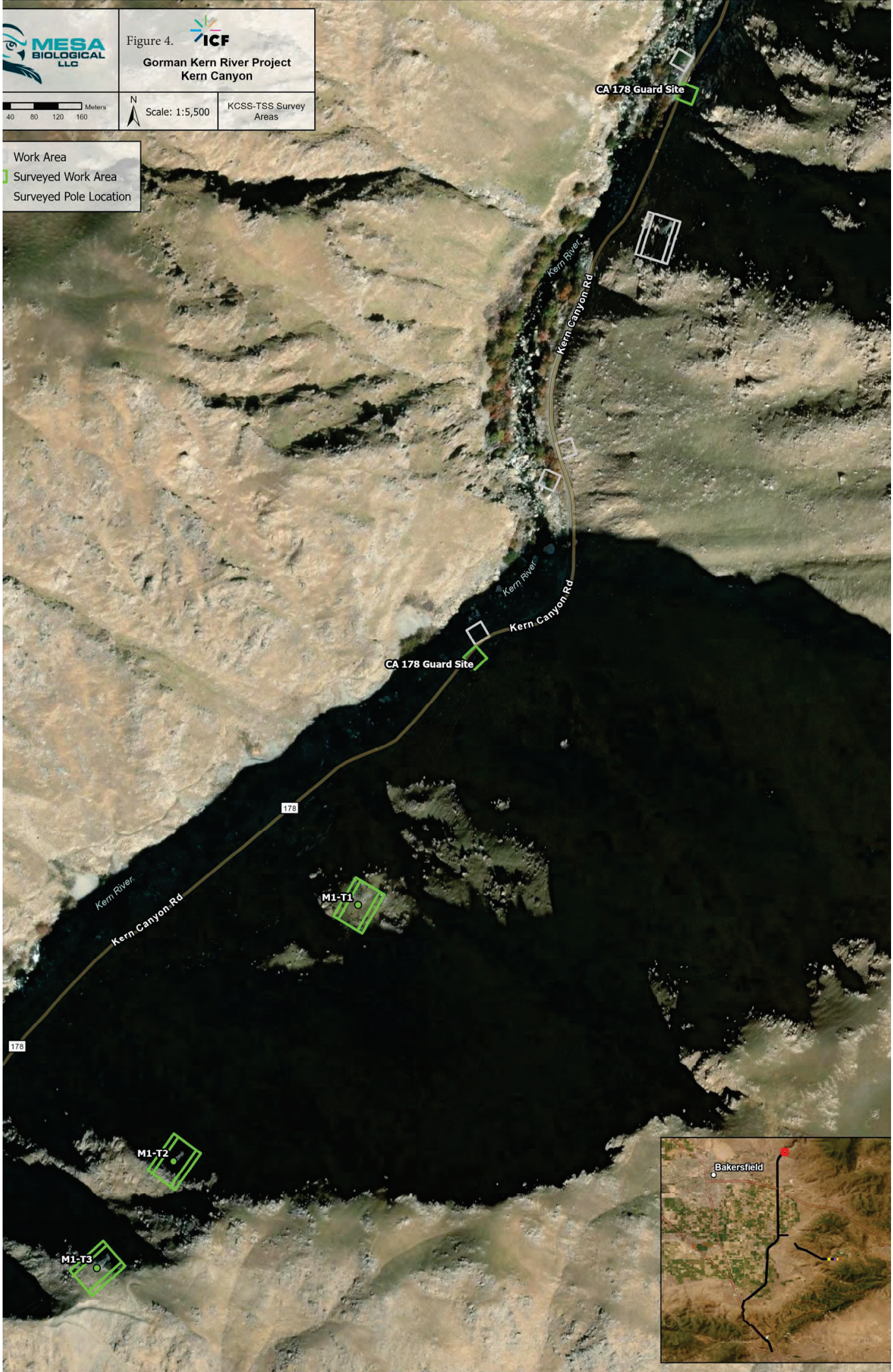
Appendix A

# Project Maps


Work Area
Surveyed Work Area
Pole Location
Surveyed Pole Location
Kern Canyon
Oildale
Bakersfield
Kern
Bena
Ilmon
Caliente
Lamont
Keene
Arvin
Marcel
Bear Valley Springs
Golden Hills
Stallion Springs
Mettler
Twin Lakes
Grapevine
Tejon
Lebec
Gorman
Hungry Valley
Fresno
California
Los Angeles
178
204
58
184
99
483
223
5
138
MESA BIOLOGICAL LLC
ICF
Figure 1.
Gorman Kern River Project
KCSS-TSS Survey
Miles
0 1 2 3 4
N
Scale: 1:230,000
Overview Map


MESA BIOLOGICAL LLC
Figure 2.
ICF
Gorman Kern River Project
Tejon
0 0.08 0.16 0.24 0.32 Miles
N
Scale: 1:15,000
KCSS-TSS Survey Areas
Pole Location
Surveyed Pole Location
Work Area
Surveyed Work Area
Grapevine Rd
NO 8
NO 9
M40-T4
M40-T5
NO 11
NO 12
NO 13
NO 14
NO 15
Interstate 5 North Guard Site
NO 16
55-161 KV Guard Site
55-161 KV Guard Site
NO 17
NO 18
Digier Rd
Digier Rd Guard Site
Digier Rd Guard Site
NO 19
Digier Rd
NO 20
NO 21
Digier Rd
NO 23
Digier Rd Guard Site
2-35 KV and 55-161 KV Guard Site
NO 24
M43-T6
Lebec Rd Guard Site
M43-T7
M43-T8
Fort Tejon
Group Camp
(From
Bakersfield


MESA BIOLOGICAL LLC
Figure 3.
ICF
Gorman Kern River Project
Stallion Springs
Meters
0 125 250 375 500
N
Scale: 1:14,500
KCSS-TSS Survey Areas
Work Area
Surveyed Work Area
Pole Location
Surveyed Pole Location
M7-T5
M7-T6
M7-T7
M8-T1
M8-T2
M8-T3
M8-T4
M8-T5
M8-T6
M8-T7
M9-T1
M9-T2
M9-T3
M9-T4
M9-T5
M9-T6
M9-T7
M9-T8
M10-T1
M10-T2
M10-T3
M10-T4
M10-T5
M10-T6
M10-T7
M10-T8
M10-T9
M11-T1
M11-T2
Comanche Point Rd
Jack Springs Rd
Comanche Creek
Jacks Hill Rd
Condor Pl
Quail Dr
Grouse Dr
Mustang Dr
Piebald Ct
Stallion Springs
Bakersfield


MESA BIOLOGICAL LLC
Figure 4.
ICF
Gorman Kern River Project
Kern Canyon
Meters
40 80 120 160
N
Scale: 1:5,500
KCSS-TSS Survey Areas
Work Area
Surveyed Work Area
Surveyed Pole Location
CA 178 Guard Site
Kern River
Kern Canyon Rd
CA 178 Guard Site
178
Kern River
Kern Canyon Rd
M1-T1
178
M1-T2
M1-T3
Bakersfield

Work Area
Surveyed Work Area
Pole Location
Surveyed Pole Location
Kern Canyon Slender Salamander Observation
Kern River Substation
CA 178 Guard Site
M0-T1
M1-T1
M1-T2
M1-T4
M2-T6
M2-T4
M2-T7
M3-T1
M3-T2
M3-T4
M3-T6
M5-T7
M6-T2
M12-T6
M12-T4
M1-T5
2145311E_2145312E
2145305E_2145306E_2145307E
M21-T1
M21-T5
M20-T7
M21-T2
M22-T2
M21-T6
M22-T6
M22-T3
M23-T2
M22-T7
M24-T1
M23-T7
M3-T3
M3-T4
M4-T2
M4-T3
M4-T5
M5-T5
M5-T1
M5-T6
M6-T5
M7-T4
M7-T1
M8-T2
M7-T6
M8-T7
M8-T6
M9-T7
M9-T3
M10-T2
4141089E
SUB
M31-T6
M32-T3
M31-T4
M31-T7
2299363E_2299364E
M32-T4
M33-T5
M33-T1
M34-T3
M33-T6
M34-T7
M34-T4
M35-T4
M34-T8
M36-T1
M35-T5
M36-T5
M36-T2
M37-T2
M36-T7
M38-T7
2175040E
NO 2
2175041E
NO 5
NO 9
NO 8
M40-T4
NO 15
NO 16
NO 17
NO 19
NO 18
NO 21
NO 20
NO 23
M44-T3
M44-T7
M44-T3A
M45-T3
M44-T8
M45-T7
M45-T4
M46-T3
M45-T8
M46-T4
4410456E 4410457E
4410454E 4410455E
NO #
Gorman Sub
Oildale
Bakersfield
Kern
Bena
Lamont
Arvin
Bear Valley Springs
Marcel
Golden Hills
Mettler
Twin Lakes
Grapevine
Gorman
Hungry Valley
Fresno
California
Los Angeles
Kern River
Kern Canyon Rd
CA 178 Guard Site
M1-T1
M1-T2
M1-T3
MESA BIOLOGICAL LLC
ICF
Figure 5.
Gorman Kern River Project
KCSS-TSS Survey
Miles
0 1 2 3 4
N
Scale: 1:230,000
KCSS Observations Map

Appendix B

# Tejon Study Area Survey Details

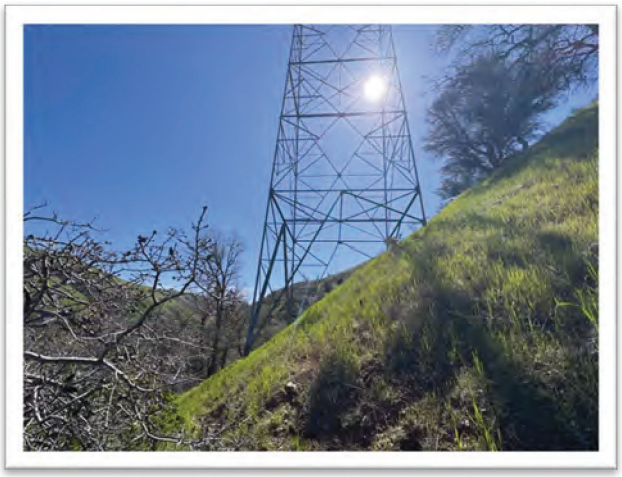
## Tejon Study Area Survey Details

**Photograph 1**. Potential Tehachapi slender salamander (*Batrachoseps stebbinsi*) habitat in the project area, just outside of Fort Tejon State Historic Park. Photo by Noah Morales.

| **Site:** NO23 | | | | -118.900277°, 34.877203° |
|---|---|---|---|---|
| | | | | |
| **Photograph 2: s**ite overview | | | | |
| **Date:** | **Temp: (F)** | **Humidity: (%)** | **Wind: (mph)** | **Species Observations** |
| 02/14/24 | 51 | 67 | 9 | n/a |
| 02/21/24 | 50.8 | 78.3 | 4.4 | n/a |
| 02/28/24 | 60 | 32 | 5 | n/a |
| 03/11/24 | 51.7 | 68.8 | 4 | n/a |

## Tejon Study Area Survey Details

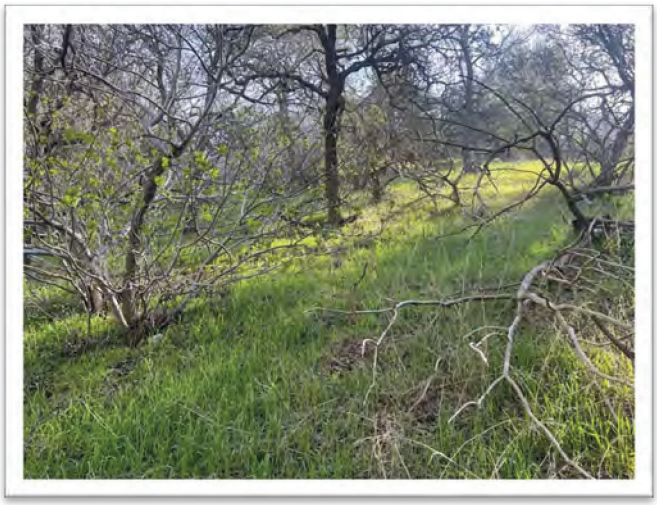
| **Site:** NO19 | -118.908540, 34.884592 |
|---|---|



**Photograph 3:** Site overview

| Date: | Temp: (F) | Humidity: (%) | Wind: (mph) | Species Observations |
|---|---|---|---|---|
| 02/14/24 | 52. | 63 | 7 | n/a |
| 02/21/24 | 50.8 | 78.3 | 4.4 | yellow-blotched ensatina *(Ensatina eschscholtzii croceater)* |
| 02/28/24 | 60 | 5 | 34 | n/a |
| 03/11/24 | 50.3 | 67.4 | 4.5 | n/a |

| **Site:** DIGIER RD Guard Site | -118.909208, 34.885231 |
|---|---|



**Photograph 4:** site overview

| Date: | Temp: (F) | Humidity: (%) | Wind: (mph) | Species Observations |
|---|---|---|---|---|
| 02/14/24 | 51 | 67 | 9 | n/a |
| 02/21/24 | 54.4 | 73.5 | 4 | n/a |
| 02/28/24 | 64 | 35 | 13 | n/a |
| 03/11/24 | 60.1 | 58.9 | 2 | n/a |

## Tejon Study Area Survey Details

| **Site:** Demo Pull Site 324/ NO18 | -118.912221, 34.888462 |
|---|---|
| | |
| **Photograph 5:** site overview | **Photograph 6:** site overview |
| | |
| **Photograph 7:** site overview | **Photograph 8:** Yellow-blotched ensatina *(Ensatina eschscholtzii croceater)* |

| Date: | Temp: (F) | Humidity: (%) | Wind: (mph) | Species Observations |
|---|---|---|---|---|
| 02/14/24 | 51 | 67 | 9 | Yellow-blotched ensatina *(Ensatina eschscholtzii croceater)* |
| 02/21/24 | 55.8 | 75.7 | 2.6 | n/a |
| 02/28/24 | 60 | 32 | 5 | Gilbert's skink *(Plestiodon gilberti)*, yellow-blotched ensatina *(Ensatina eschscholtzii croceater)* |
| 03/11/24 | 52 | 67.8 | 8 | Gilbert skink *(Plestiodon gilberti)*, yellow-blotched ensatina *(Ensatina eschscholtzii croceater)* western fence lizard *(Sceloporus occidentalis)* |

## Tejon Study Area Survey Details

| **Site:** NO17 | 118.916361, 34.890692 |
|---|---|

**Photograph 9:** site overview

| Date: | Temp: (F) | Humidity: (%) | Wind: (mph) | Species Observations |
|---|---|---|---|---|
| 02/14/24 | 51 | 67 | 9 | large raptor nest in structure |
| 02/21/24 | 53.7 | 78.9 | 4 | n/a |
| 02/28/24 | 64 | 35 | 5 | n/a |
| 03/11/24 | 52 | 67.8 | 7 | Red-tail hawk *(Buteo jamaicensis)* |

| **Site:** 55-161 KV Guard Site | -118.917451, 34.891911 |
|---|---|

**Photograph 10:** site overview

**Photograph 11:** site overview

| Date: | Temp: (F) | Humidity: (%) | Wind: (mph) | Species Observations |
|---|---|---|---|---|
| 02/15/24 | 46 | 80 | 6 | n/a |
| 02/21/24 | 55.1 | 69.6 | 4 | n/a |
| 02/28/24 | 64 | 35 | 5 | n/a |
| 03/11/24 | not avail. | not avail. | not avail. | n/a |

## Tejon Study Area Survey Details

| **Site:** 55-161 KV Guard Site | | | | -118.917749, 34.892242 |
|---|---|---|---|---|

**Photograph 12:** site overview

| Date: | Temp: (F) | Humidity: (%) | Wind: (mph) | Species Observations |
|---|---|---|---|---|
| 02/15/24 | 46 | 80 | 6 | n/a |
| 02/21/24 | 55.1 | 69.6 | 4 | n/a |
| 02/28/24 | 64 | 35 | 10 | n/a |
| 03/11/24 | 55 | 61 | 4 | n/a |

| **Site:** NO16 | | | | -118.919386, 34.894050 |
|---|---|---|---|---|

**Photograph 13:** site overview

| Date: | Temp: (F) | Humidity: (%) | Wind: (mph) | Species Observations |
|---|---|---|---|---|
| 02/15/24 | 46 | 80 | 6 | n/a |
| 02/21/24 | 78.6 | 53.7 | 3 | n/a |
| 02/28/24 | 64 | 35 | 10 | n/a |
| 03/11/24 | 55 | 61 | 4 | n/a |

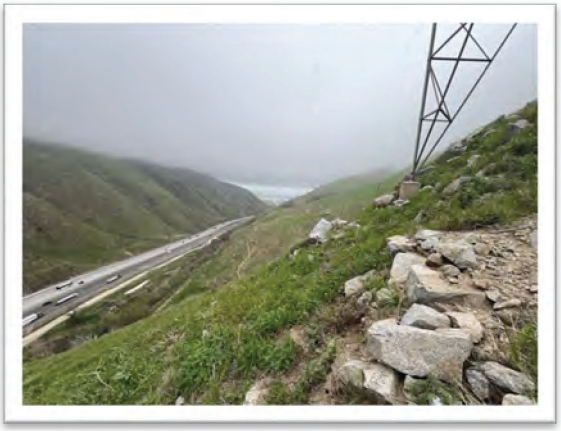
## Tejon Study Area Survey Details

| **Site:** Interstate 5 North Guard Site | | | | -118.919505, 34.894597 |
|---|---|---|---|---|

**Photograph 14:** site overview

| Date: | Temp: (F) | Humidity: (%) | Wind: (mph) | Species Observations |
|---|---|---|---|---|
| 02/15/24 | 48 | 7 | 90 | n/a |
| 02/21/24 | 78.6 | 53.7 | 4 | n/a |
| 02/28/24 | 64 | 35 | 10 | n/a |
| 03/11/24 | 55 | 61 | 4 | n/a |

| **NO15** | -118.920080, 34.898621 |
|---|---|



**Photograph 15:** site overview

| Date: | Temp: (F) | Humidity: (%) | Wind: (mph) | Species Observations |
|---|---|---|---|---|
| 02/15/24 | 48 | 7 | 90 | n/a |
| 02/21/24 | 78.6 | 53.7 | 3 | n/a |
| 02/28/24 | 60 | 35 | 6 | n/a |
| 03/11/24 | 55 | 69 | 4 | n/a |

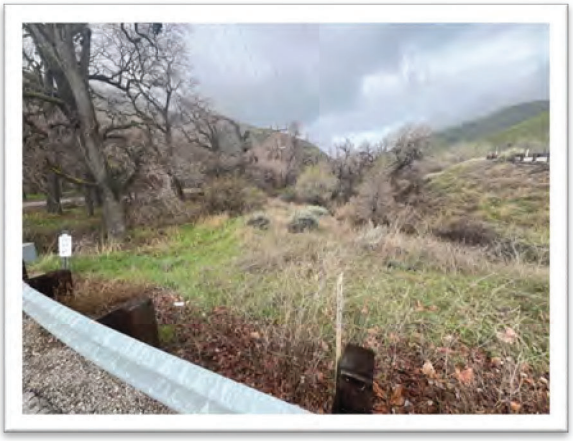
## Tejon Study Area Survey Details

| **Site:** NO13 | | | | -118.920832, 34.903571 |
|---|---|---|---|---|
| | | | | |
| **Photograph 16:** site overview | | | | |
| **Date:** | **Temp: (F)** | **Humidity: (%)** | **Wind: (mph)** | **Species Observations** |
| 02/22/24 | 47.7 | 89.3 | 2 | n/a |
| **Final notes:** Habitat not present | | | | |

| **Site:** NO9 | | | | -118.923050, 34.916355 |
|---|---|---|---|---|
| | | | | |
| **Photograph 17:** site overview | | | | |
| **Date:** | **Temp: (F)** | **Humidity: (%)** | **Wind: (mph)** | **Species Observations** |
| 02/15/24 | 48 | 7 | 90 | n/a |
| 02/21/24 | 56.6 | 73.6 | 2.0 | n/a |
| 02/29/24 | 52 | 63 | 5 | Large stick nest |
| 03/12/24 | 57.4 | 77.5 | 2.7 | n/a |

## Tejon Study Area Survey Details

| **Site:** Lebec Rd. Guard Site | -118.894837, 34.876003 |
|---|---|



**Photograph 18:** site overview

| Date: | Temp: (F) | Humidity: (%) | Wind: (mph) | Species Observations |
|---|---|---|---|---|
| 02/15/24 | 50 | 9 | 97 | n/a |
| 02/21/24 | 51.6 | 87.2 | 4 | n/a |
| 02/28/24 | 60 | 35 | 5 | n/a |
| 03/11/24 | 55 | 61 | 4 | n/a |

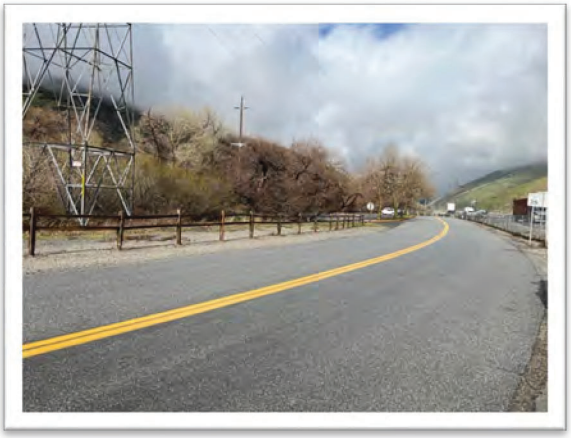
| **Site:** 2-35 KV And 55-161 KV Guard Site | -118.895461, 34.876128 |
|---|---|

**Photograph 19:** Site overview

| Date: | Temp: (F) | Humidity: (%) | Wind: (mph) | Species Observations |
|---|---|---|---|---|
| 02/15/24 | 50 | 9 | 97 | n/a |
| 02/21/24 | 48.6 | 76.7 | 3.6 | n/a |
| 02/28/24 | 60 | 35 | 5 | n/a |
| 03/11/24 | 55 | 61 | 4 | n/a |

## Tejon Study Area Survey Details

| **Site:** Lebec Rd. Guard Site | | | | -118.893424, 34.875251 |
|---|---|---|---|---|
| | | | | |
| **Photograph 20:** site overview | | | | |
| **Date:** | **Temp: (F)** | **Humidity : (%)** | **Wind: (mph)** | **Species Observations** |
| 02/15/24 | 50 | 9 | 97 | n/a |
| 02/21/24 | 51.5 | 86.7 | 3.6 | n/a |
| 02/28/24 | 60 | 35 | 5 | n/a |
| 03/11/24 | not avail. | not avail. | not avail. | n/a |

| **Site:** Lebec Rd. Guard Site | | | | -118.892291, 34.874151 |
|---|---|---|---|---|
|  | | | | |
| **Photograph 21:** site overview | | | | |
| **Date:** | **Temp: (F)** | **Humidity: (%)** | **Wind: (mph)** | **Species Observations** |
| 02/15/24 | 50 | 9 | 97 | n/a |
| 02/21/24 | not avail. | not avail. | not avail. | n/a |
| Removed from survey: suitable habitat not present | | | | |

## Tejon Study Area Survey Details

| **Site:** Digier Rd. Guard Site | -118.896660, 34.876240 |
|---|---|

**Photograph 22:** site overview

| Date: | Temp: (F) | Humidity: (%) | Wind: (mph) | Species Observations |
|---|---|---|---|---|
| 02/15/24 | 48 | 7 | 90 | n/a |
| 02/21/24 | 48.6 | 74.2 | 4 | n/a |
| Removed from survey: Suitable habitat not present | | | | |

| **Site:** Digier Rd. Guard Site | -118.896154, 34.876271 |
|---|---|

**Photograph 23:** site overview

| Date: | Temp: (F) | Humidity: (%) | Wind: (mph) | Species Observations |
|---|---|---|---|---|
| 02/15/24 | 48 | 7 | 90 | n/a |
| 02/21/24 | 48.6 | 74.2 | 4 | n/a |
| 02/28/24 | 64 | 32 | 5 | n/a |
| 03/11/24 | 55 | 61 | 4 | n/a |

## Tejon Study Area Survey Details

| **Site:** DIGIER RD Guard Site | | | | -118.909311, 34.885459 |
|---|---|---|---|---|
| | | | | |
| **Photograph 24:** site overview | | | | |
| **Date:** | **Temp: (F)** | **Humidity: (%)** | **Wind: (mph)** | **Species Observations** |
| 02/15/24 | 46 | 6 | 80 | n/a |
| 02/21/24 | 51.8 | 72 | not avail. | n/a |
| 02/28/24 | 60 | 35 | 5 | n/a |
| 03/11/24 | 60.1 | 58.9 | 2 | n/a |

Appendix C

# Stallion Springs Study Area Survey Details

## Stallion Springs Study Area Survey Details

**Photograph 1**. Potential Tehachapi slender salamander (*Batrachoseps stebbinsi*) habitat in the project area near Stallion Sprin s. ello blotched ensatina (*Ensatina eschscholtzii croceater*) ere located at this site. Photo by Noah Morales.

| **Site: M8T3** | | | | -118.692580, 35.112546 |
|---|---|---|---|---|
| | | | | |
| **Photograph 2:** site overview | | | | |
| **Date** | **Temp (F)** | **Humidity (%)** | **Wind (mph)** | **Incidental Species** |
| 02/14/24 | 49 | 52 | 5 | n/a |
| 02/22/24 | 53.9 | 77.9 | 1.2 | n/a |
| 02/29/24 | 60.9 | not avail. | 1.8 | n/a |
| 03/13/24 | 43.3 | 95 | 4.5 | n/a |

## Stallion Springs Study Area Survey Details

| **Site: M7T6** | -118.700411, 35.116913 |
|---|---|
| | |
| **Photograph 3:** site overview | **Photograph 4**: black-bellied salamander (*Batrachoseps nigriventris*) observed on 2/22/24 |

**Photograph 5:** western red-tailed skink (*Plestiodon gilberti rubricaudatus*) observed on 2/22/24

| Date | Temp (F) | Humidity (%) | Wind (mph) | Incidental Species |
|---|---|---|---|---|
| 02/14/24 | 50 | 70 | 4 | n/a |
| 02/22/24 | 49.7 | 90.8 | 2.1 | western red-tailed skink (*Plestiodon gilberti rubricaudatus*)<br>black-bellied slender salamander (*Batrachoseps nigriventris*) |
| 02/29/24 | 65.3 | not avail. | 1.7 | n/a |
| 03/13/24 | 46.0 | 87.2 | 0.1 | n/a |

| **Site: M9T4** | -118.675160, 35.102827 |
|---|---|

**Photograph 6:** Site overview

| Date | Temp (F) | Humidity (%) | Wind (mph) | Incidental Species |
|---|---|---|---|---|
| 02/14/24 | 49 | 70 | 4 | n/a |
| 02/22/24 | 53.3 | 74.3 | 2.2 | n/a |
| 02/29/24 | 597. | not avail. | 1.7 | n/a |
| 03/13/24 | 43.9 | 100 | 1 | n/a |

| **Site: M9T3 Pull Site** | -118.677673, 35.104229 |
|---|---|

**Photograph 7:** site overview

**Photograph 8:** site overview

Stallion Springs Study Area Survey Details

**Photograph 9:** Gilbert's skink (*Plestiodon gilberti*)

**Photograph 10:** Gilbert's skink (*Plestiodon gilberti*)

**Photograph 11:** alligator lizard (*Elgaria sp.*)

**Photograph 12:** California toad (*Anaxyrus boreas* ssp. *Halophilus*)

| Date | Temp (F) | Humidity (%) | Wind (mph) | Incidental Species |
|---|---|---|---|---|
| 02/14/24 | 50 | 65 | 5 | alligator lizard (*Elgaria sp.*) |
| 02/22/24 | 59.1 | 67.8 | 1.0 | Gilbert's skink (*Plestiodon gilberti*), California toad (*Anaxyrus boreas ssp. Halophilus*) |
| 02/29/24 | 65.8 | not avail. | 1.9 | Gilbert's skink (*Plestiodon gilberti*) |
| 03/13/24 | 42.6 | 94.2 | 4 | black-bellied slender salamander (*Batrachoseps nigriventris*), Gilbert's skink (*Plestiodon gilberti*), western fence lizard (*Sceloporus occidentalis*) |

## Stallion Springs Study Area Survey Details

| **Site: M10T8 M10T9, M11T1** | -118.652914, 35.094819 |
|---|---|
| | |
| **Photograph 13:** site overview | **Photograph14:** site overview |
| | |
| **Photograph 15:** site overview | **Photograph 16:** yellow-blotched ensatina (*Ensatina eschscholtzii croceater*) |

| **Date** | **Temp (F)** | **Humidity (%)** | **Wind (mph)** | **Incidental Species** |
|---|---|---|---|---|
| 02/13/24 | not avail. | not avail. | not avail. | n/a |
| 02/22/24 | 47.3 | 77.9 | 4.3 | n/a |
| 02/29/24 | 55.2 | not avail. | 2.7 | n/a |
| 03/13/24 | 41.5 | 100 | 2 | yellow-blotched ensatina (*Ensatina eschscholtzii croceater*) |

Appendix D

# Kern River Canyon Study Area Survey Details

## Kern River Canyon Study Area Survey Details

**Photograph 1**. ern anyon slender salamander (*Batrachoseps si at s*) habitat ithin the project area at the mouth of the ern i er anyon. Photo by Noah Morales.

**Photograph** . ern anyon slender salamander (*Batrachoseps si at s*) and Sierra ni ht li ard ( *ant sia i ilis sierrae*) habitat ithin the project area, . road miles east of the mouth of the ern i er anyon. Photo by Noah Morales.

## Kern River Canyon Study Area Survey Details

**Photograph** . ern anyon slender salamander (*Batrachoseps si at s*) from ithin the project area, . road miles east of the mouth of the ern i er anyon. Photo by Noah Morales.

| Site: M1T1 | | | | -118.785307°, 35.446434° |
|---|---|---|---|---|
| | | | | |
| Photograph 4: site overview photo | | | | Photograph 5: location (under turned rock) where Kern Canyon slender salamander (*Batrachoseps simatus*) was observed. |
| Date: | Temp: (F) | Humidity: (%) | Wind: (mph) | Species Observations |
| 02/12/24 | 53 | 71 | 0 | Kern Canyon slender salamander (*Batrachoseps simatus*) |

## Kern River Canyon Study Area Survey Details

| Site: M1T2 | | | | -118.788099°, 35.443277° |
|---|---|---|---|---|
| | | | | |
| Photograph 6: site overview | | | | Photograph 7: Kern Canyon slender salamander (*Batrachoseps simatus*) observed |
| Date: | Temp: (F) | Humidity: (%) | Wind: (mph) | Species Observations |
| 02/12/24 | 56 | 65 | 2 | n/a |
| 02/23/24 | 56.8 | 79.2 | 4 | n/a |
| 03/01/24 | 65 | 53 | 4 | Gilbert skink (*Plestiodon gilberti*), Kern Canyon slender salamander (*Batrachoseps simatus*) |

| Site: CA 178 Guard Site | | | | -118.782731°, 35.450295° |
|---|---|---|---|---|
| | | | | |
| Photograph 8: site overview photo | | | | |
| Date: | Temp: (F) | Humidity: (%) | Wind: (mph) | Species Observations |
| 02/13/24 | not avail. | not avail. | not avail. | n/a |
| 02/23/24 | 56.8 | 70.1 | 3 | n/a |
| 03/01/24 | 71 | 42 | 11 | n/a |
| 03/12/24 | 70.3 | 57.3 | 0 | n/a |

## Kern River Canyon Study Area Survey Details

| Site: M1T3 | | | | -118.789341°, 35.441944° |
|---|---|---|---|---|
| | | | | |
| Photograph 9: site overview photo | | | | Photograph 10: Kern Canyon slender salamander (*Batrachoseps simatus*) found on 2/12/24. |
| Date: | Temp: (F) | Humidity: (%) | Wind: (mph) | Species Observations |
| 2/12/24 | 61 | 53 | 2 | Kern Canyon slender salamander (*Batrachoseps simatus*) |

## Kern River Canyon Study Area Survey Details

| Site: CA 178 Guard site | | | | -118.780128°, 35.456672° |
|---|---|---|---|---|
| | | | | |
| Photograph 11: site overview photo | | | | Photograph 12: Kern Canyon slender salamander found on 2/23/24 |
| | | | | |
| Photograph 13: second Kern Canyon slender salamander found on 2/23/24. | | | | Photograph 14: California kingsnake (*Lampropeltis getula californiae*), found on site 2/23/24. |
| Date: | Temp: (F) | Humidity: (%) | Wind: (mph) | Species Observations |
| 02/13/24 | not avail. | not avail. | not avail. | n/a |
| 02/23/24 | 61.5 | 68.8 | 3.6 | California kingsnake (*Lampropeltis getula californiae*), 2 Kern Canyon slender salamanders (*Batrachoseps simatus*) |