
APPENDIX E
Biological Evaluation Report

Biological Evaluation Report for the
McAllister Ranch Groundwater
Banking Project, Bakersfield,
Kern County, California

SEPTEMBER 2021

PREPARED FOR

**Rosedale-Rio Bravo Water Storage District
Buena Vista Water Storage District**

PREPARED BY

SWCA Environmental Consultants

**BIOLOGICAL EVALUATION REPORT FOR THE
MCALLISTER RANCH GROUNDWATER BANKING PROJECT,
BAKERSFIELD, KERN COUNTY, CALIFORNIA**

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EXECUTIVE SUMMARY

SWCA Environmental Consultants (SWCA) has prepared this Biological Evaluation Report (BER) for the proposed McAllister Ranch Groundwater Banking Project (proposed project) in Bakersfield, Kern County, California. The purpose of this BER is to provide technical information and analysis as to potential proposed project-related impacts on sensitive biological resources, to satisfy compliance with the California Environmental Quality Act (CEQA) in support of the proposed project's Environmental Impact Report (EIR). The City of Bakersfield (City) is the CEQA lead agency. This BER updates the previous *Biological Evaluation for the James Groundwater Storage and Recovery Project, Kern County, California* prepared by Live Oak Associates, Inc.

The proposed project consists of construction and operation of a water banking project on approximately 2,070 acres of undeveloped property located north of Panama Lane and west of South Allen Road in Bakersfield. Water supplies available to Buena Vista Water Storage District (BVWSD) (the proposed project applicant) and Rosedale-Rio Bravo Water Storage District (RRBWSD) (jointly described as the Districts) would be diverted from the Kern River, recharged, and stored at the proposed project site, and would later be recovered for irrigation and municipal and industrial (M&I) uses when needed. The proposed project would include constructing several shallow percolation ponds to facilitate the recharge activities and other features to enable the storage and transport of water. At full buildout, up to approximately 200,000 acre-feet (AF) of water could be diverted and recharged in the groundwater basin in any 1 year. The maximum recovery of stored water in a single year would be approximately 56,000 AF.

Construction of the proposed project would involve developing levees to create approximately 1,600 acres of percolation ponds, up to 14 groundwater extraction wells, water conveyance facilities, up to four pumping plants and two gravity turnouts, and up to eight groundwater monitoring wells.

The proposed project site, also referred to as the Biological Study Area (BSA), encompasses approximately 2,070 acres of land comprised mainly of fallow agricultural fields and residential ruderal (encompassing the footprint of the former McAllister Ranch), a patch of chenopod scrub habitat at the southwest corner of the proposed project site, a patch of disturbed annual grassland at the northwestern corner, a patch of what can be characterized as ruderal oil field toward the eastern edge of the proposed project area, and an irrigation canal/drainage ditch that borders the northern edge of the proposed project area before traversing southward through the western side of the proposed project site.

Several biological surveys were required to provide a comprehensive understanding of the biological resources occurring within the BSA. A summary of the biological surveys conducted for the proposed project is included in the table below. Representative photo point locations were recorded with Global Positioning System (GPS) technology throughout the BSA; a map of photo point locations was prepared, and site photographs are included in the BER. Habitat mapping of the site chiefly followed the previous habitat mapping by Live Oak Associates with adjustments as noted based on current observed site conditions. In addition, potential areas that could require compliance with federal and/or state regulations, such as "Waters of the United States" and "Waters of the State," were considered during the field investigation. No jurisdictional wetlands, streams, or other waters were observed within the BSA, consistent with the 2013 Live Oak Associates findings.

Botanical surveys were conducted in April and June 2020 in the 160-acre area of chenopod scrub at the southwestern corner of the BSA and the 12-acre triangular-shaped area at the northwestern edge of the BSA, which were the only areas of the BSA with potential habitat for rare plants. The botanical surveys revealed the presence of two special-status plant species: Kern mallow (*Eremalche parryi* ssp. *kernensis*) and Hoover's eriastrum (*Eriastrum hooveri*).

Summary of Biological Surveys Conducted for the Proposed Project

Type of Survey	Methodology/Protocol	Dates Surveys Conducted	Personnel
Botanical Surveys	U.S. Fish and Wildlife Service (USFWS) <i>Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants</i> California Department of Fish and Wildlife (CDFW) <i>Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities</i>	April 1–3, 2020 June 26, 2020	John Moule Marlee Antill
Blunt-nosed Leopard Lizard Protocol Surveys	CDFW <i>Revised Survey Methodology for the Blunt-Nosed Leopard Lizard</i>	April 24–27, 2020 May 2, 3, 8, 9, and 29–31, 2020 June 5, 2020 August 29 and 30, 2020 September 25–27, 2020	Ben Ruiz (Level II Surveyor, BPR Consulting) assisted by other BPR Consulting staff (Level I and II Surveyors)
Swainson's Hawk Surveys	Swainson's Hawk Technical Advisory Committee <i>Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley</i>	April 4, 18, and 24, 2020 May 3, 8–10, and 23, 2020 July 2, 2020	Ben Ruiz
Burrowing Owl	The California Burrowing Owl Consortium <i>Burrowing Owl Survey Protocol and Mitigation Guidelines</i>	April 26, 2020 May 3, 8, and 9, 2020 December 9, 11, 15, and 21, 2020	Ben Ruiz assisted by other BPR Consulting staff
Biological Reconnaissance Survey ¹	No formal protocol	December 12 and 13, 2020	Ben Ruiz assisted by other BPR Consulting staff

¹ Additional reconnaissance wildlife surveys also coincided with each of the other survey efforts.

No observations of the federally and state endangered blunt-nosed leopard lizard (BNLL) (*Gambelia sila*) were documented during protocol BNLL surveys. The cumulative survey effort for the state threatened Swainson's hawk (SWHA) (*Buteo swainsoni*) resulted in no observations of SWHA within the survey radius and the species was determined to not currently nest in or within 0.5 mile of the BSA. No observations of the California Species of Special Concern (SSC) burrowing owl (BUOW) (*Athene cunicularia*) were documented during protocol BUOW surveys. A reconnaissance survey of the BSA showed potential burrows for the federally and state endangered Tipton kangaroo rat (TKR) (*Dipodomys nitratoides nitratoides*) restricted to the 160-acre path of chenopod scrub habitat in the southwestern area of the BSA. Survey forms and reports are included in the BER appendices.

Potential habitat occurs for various special-status species within the BSA, and impacts have been assessed and mitigation proposed to offset impacts to these species, including impacts and mitigation for Kern mallow, BNLL, coast horned lizard (*Phrynosoma blainvillii*), Bakersfield legless lizard (*Anniella grinnelli*), California legless lizard (*Anniella* spp.), California glossy snake (*Arizona elegans occidentalis*), San Joaquin coachwhip (*Masticophis flagellum ruddocki*), SWHA, BUOW, California horned lark (*Eremophila alpestris actia*), LeConte's thrasher (*Toxostoma lecontei*), other nesting birds, giant kangaroo rat (GKR) (*Dipodomys ingens*), TKR, San Joaquin pocket mouse (*Perognathus inornatus*), Tulare grasshopper mouse (*Onychomys torridus tularensis*), San Joaquin kit fox (SJKF) (*Vulpes macrotis mutica*), and American badger (*Taxidea taxus*).

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Abbreviations and Acronyms

°F	degrees Fahrenheit
AF	acre-feet
APN	Assessor's Parcel Number
BER	Biological Evaluation Report
BIOS	Biogeographic Information and Observation System
BNLL	blunt-nosed leopard lizard
BSA	Biological Study Area
BUOW	burrowing owl
BVLS	Buena Vista Lake shrew
BVWSD	Buena Vista Water Storage District
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFGC	California Fish and Game Code
CFR	Code of Federal Regulations
cfs	cubic feet per second
City	City of Bakersfield
CNDDDB	California Natural Diversity Database
CNPS	California Native Plant Society
County	County of Kern
CRC	California Resources Corporation
CVP	Central Valley Project
CWA	Clean Water Act
Delta	Sacramento–San Joaquin River Delta
Districts	Buena Vista Water Storage District and Rosedale-Rio Bravo Water Storage District
EIR	Environmental Impact Report
ESA	Environmentally Sensitive Area
FESA	Federal Endangered Species Act
GPS	global positioning system
HCP	Habitat Conservation Plan
HDPP	high-density polyethylene
IPaC	Information for Planning and Consultation
ITP	Incidental Take Permit
KCWA	Kern County Water Agency
M&I	municipal and industrial
MBHCP	Metropolitan Bakersfield Habitat Conservation Plan
MBTA	Migratory Bird Treaty Act
MDM	Mount Diablo Meridian
MOU	Memorandum of Understanding

mph	miles per hour
NCCP	Natural Community Conservation Plan
NEPA	National Environmental Policy Act
NOAA Fisheries	National Oceanic and Atmospheric Administration National Marine Fisheries Service
NOP	CEQA Notice of Preparation
NPPA	National Plant Protection Act
NWI	National Wetlands Inventory
ORV	off-road vehicle
proposed project	McAllister Ranch Groundwater Banking Project
PVC	polyvinyl chloride
RCP	reinforced concrete pipe
RRBWSD	Rosedale-Rio Bravo Water Storage District
SGMA	Sustainable Groundwater Management Act
SJAS	San Joaquin antelope squirrel
SJKF	San Joaquin kit fox
SSC	California Species of Special Concern
SWCA	SWCA Environmental Consultants
SWHA	Swainson's hawk
SWP	State Water Project
TKR	Tipton kangaroo rat
UPRR	Union Pacific Railroad
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WL	CDFW Watch List

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1 INTRODUCTION

SWCA Environmental Consultants (SWCA) has prepared this Biological Evaluation Report (BER) for the proposed McAllister Ranch Groundwater Banking Project (proposed project) in Bakersfield, Kern County, California. The purpose of this BER is to provide technical information and analysis as to potential proposed project-related impacts on sensitive biological resources and to satisfy compliance with the California Environmental Quality Act (CEQA) in support of the proposed project's Environmental Impact Report (EIR). The City of Bakersfield (City) is the CEQA lead agency. This BER updates the previous *Biological Evaluation for the James Groundwater Storage and Recovery Project, Kern County, California* (Live Oak Associates 2013).

1.1 Project Overview

The proposed project consists of construction and operation of a water banking project on approximately 2,070 acres of undeveloped property located north of Panama Lane and west of South Allen Road in Bakersfield (Figure 1). Water supplies available to Buena Vista Water Storage District (BVWSD) (the proposed project applicant) and Rosedale-Rio Bravo Water Storage District (RRBWS) (jointly described as the Districts) would be diverted from the Kern River, recharged, and stored at the proposed project site and would later be recovered for irrigation and municipal and industrial (M&I) uses when needed. The proposed project would include constructing several shallow percolation ponds to facilitate the recharge activities and other features to enable the storage and transport of water. At full buildout, up to approximately 200,000 acre-feet (AF) of water could be diverted and recharged in the groundwater basin in any 1 year. The maximum recovery of stored water in a single year would be approximately 56,000 AF.

1.2 Project Location

1.2.1 Project Site and Vicinity

The proposed project site, known locally as McAllister Ranch, is located in the city of Bakersfield, north of Panama Lane and west of South Allen Road (see Figures 1 and 2). The proposed project site is bound by the Stevens, California U.S. Geological Survey (USGS) 7.5-minute quadrangle within Sections 16, 21, 22, and 23, Township 30 South, Range 26 East, Mount Diablo Meridian (MDM). The property is located on the Kern River alluvial fan, which is well suited for groundwater banking operations. The proposed project site was formerly a planned residential development that was in the early stages of construction. Due to the downturn in the real estate market, development was discontinued, and the property was sold in a bankruptcy proceeding. The Districts jointly purchased the property in 2011. The McAllister Ranch property is located in the western area of Bakersfield and encompasses approximately 2,070 acres. The property has been disturbed and continues to be disturbed; most of the proposed project site had been used for agricultural purposes before it was extensively graded for development. Additionally, the property contains several active and abandoned oil wells and several reserved drill islands. The drill islands are areas zoned for drilling (by others) for the purpose of extracting subsurface oil or gas resources, the rights to which are owned by the California Resources Corporation (CRC).

Assessor's Parcel Numbers (APNs) for the site include 537-010-40, 537-010-42, 537-010-47, 537-010-50, 537-010-54, 537-010-56, 537-010-59, 537-030-07, 537-030-08, 537-030-09, 537-030-10, 537-030-14, 537-030-15, 537-030-16, 537-030-17, 537-030-18, 537-030-19, 537-030-20, 537-030-21, 537-030-22, 537-030-23, 537-030-24, 537-030-25, 537-030-26, 537-030-27, 537-030-28, 537-030-29, 537-030-30, 537-030-31, 537-030-32, 537-030-33, 537-030-34, 537-030-35, 537-030-36, and 537-030-37.



Figure 1. Project vicinity map.

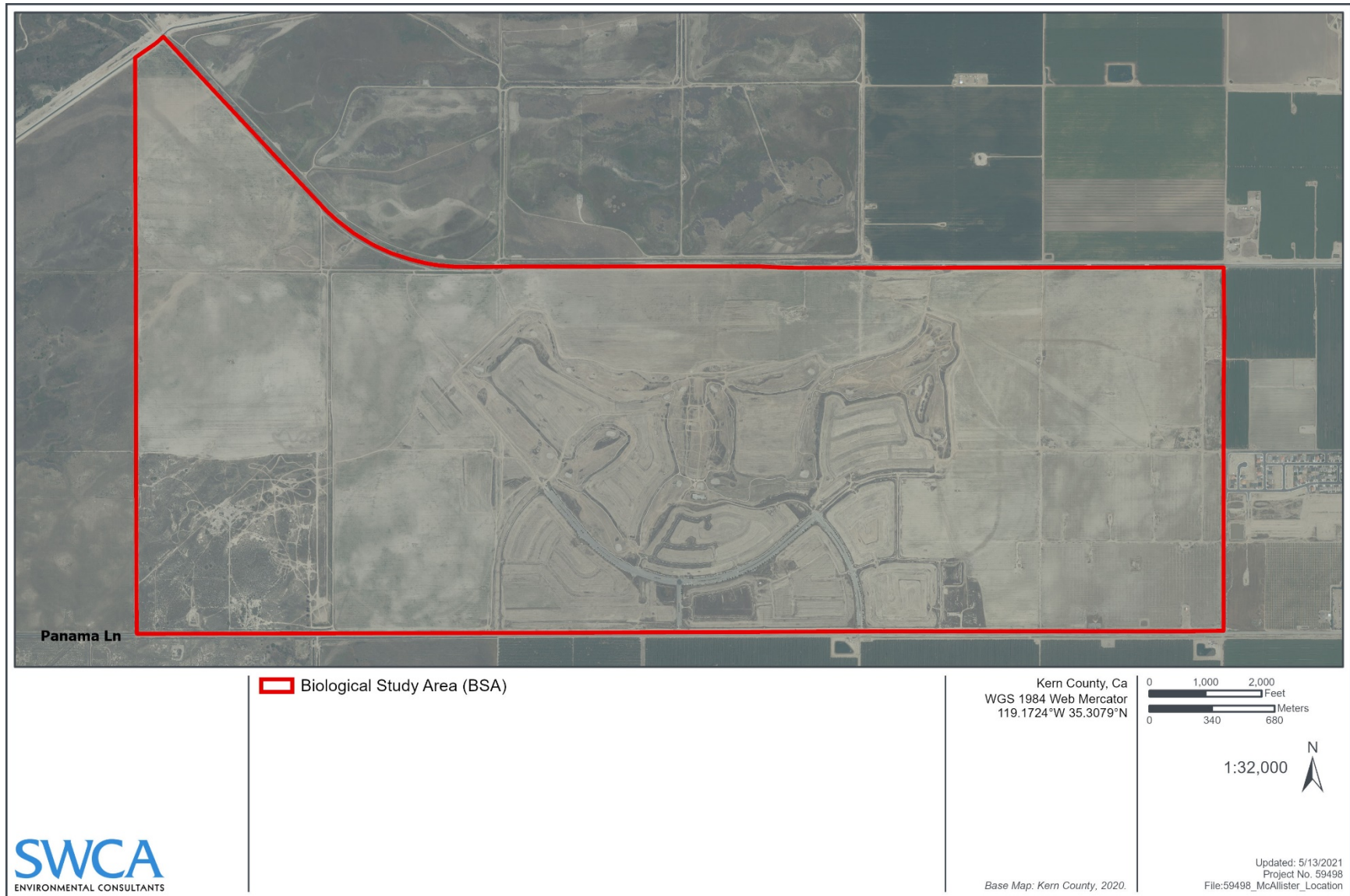


Figure 2. Project location map.

1.2.2 Surrounding Land Uses

The proposed project site is located just within the western extent of Bakersfield’s city limits. Land uses surrounding the site include water banking operations owned by the Kern County Water Agency (KCWA), City, and Kern Water Bank to the north and west; CRC petroleum production operations to the southwest; agriculture and Kern Delta Water District water banking operations to the south; residential, commercial development, agricultural, and the Pioneer Project water bank to the east and northeast; and agriculture, CRC petroleum production, and open space to the north and northeast. Portions of the City’s 2,800-Acre Groundwater Recharge Facility and the Pioneer Banking Project are located farther north and west of the proposed project site.

1.2.3 Climate

The climate of the proposed project area is typical of the southern San Joaquin Valley, with temperatures ranging from an average maximum of 97 degrees Fahrenheit (°F) during summer months to an average minimum of 37°F during winter months. Precipitation averages approximately 5.7 inches per year, with most rainfall occurring from December through April. While the immediate proposed project area has very little rainfall and high rates of evapotranspiration, water supply sources are available to support the proposed project from the Kern River and other federal, state, or local programs.

1.3 Purpose and Objectives

Primary water management goals of independent water storage districts, such as BVWSD (the applicant) and RRBWSD, are to benefit the lands, landowners, and water users within their respective boundaries, as well as water banking partners, by providing a reliable, affordable, and usable water supply through economic and efficient storage, distribution, and use of available water supplies. Such districts must also facilitate programs that protect and benefit the groundwater basins that underlie their areas, as required by the Sustainable Groundwater Management Act (SGMA).

In support of the general water management goal described above, the proposed project would provide the following benefits (purposes):

- Conserve available water supplies for use during below-average years or as otherwise needed for the Districts’ purposes;
- Provide water storage and recovery capacity for the Districts, which would allow for the efficient management of water supplies in the Districts’ service areas; and
- Provide flexibility for the Districts in implementing their Conjunctive Use Programs.

More specific objectives of the proposed project include the following:

- Increase water supply reliability in the area, in a cost-effective and environmentally sound manner, by providing a means to store water in the groundwater aquifer and provide a means to extract and use the stored groundwater when needed;
- Reduce the Districts’ dependence on the Sacramento–San Joaquin River Delta (Delta) through programs, such as the State Water Project (SWP) and Central Valley Project (CVP), by storing water locally in the groundwater aquifer for later extraction and use;
- Capture, recharge, and store water from the Kern River, SWP, federal projects, and other available sources for later use;

- Provide operating flexibility for the Districts' existing and future Conjunctive Use Programs with banking partners, exchanges, and sales;
- Assist in achieving groundwater sustainability within the Kern County Subbasin of the San Joaquin Valley Groundwater Basin through implementation of projects consistent with California Executive Order N-10-19 directing state agencies to develop a "water resilience portfolio;" and
- Provide ecosystem public benefits and water supply benefits for agricultural, M&I, and wildlife refuge uses.

1.4 Proposed Construction Activities

Construction of the proposed project would involve developing levees to create approximately 1,600 acres of percolation ponds, up to 14 groundwater extraction wells, water conveyance facilities, up to four pumping plants and two gravity turnouts, and up to eight groundwater monitoring wells, as shown in Figure 3. Preliminary Project Plans are included in Appendix A.

1.4.1 Intake/Conveyance Facilities

To convey water to the proposed project site, a new head gate and gravity turnout would be constructed at the southeast corner of Basin 1 of the City's 2,800-Acre Groundwater Recharge Facility. This facility would have a capacity of approximately 500 cubic feet per second (cfs). This facility will be used to serve the proposed project but built as part of a separate project (known as the Pioneer Project). The applicant will be responsible for the siphon crossing under Union Pacific Railroad (UPRR) railway from the Pioneer Project to the proposed project site.

The proposed project is the construction and operation of a groundwater recharge and recovery facility on approximately 2,072 acres of undeveloped land, commonly known as McAllister Ranch in western Bakersfield.

1.4.2 Demolition and Grading

All remaining aboveground infrastructure components from the McAllister Ranch development would be removed, including street pavement, curbs, sidewalks, golfcart paths, block walls footings, and the burned down building foundation. Underground utilities would be removed as needed during the grading process for the recharge ponds. The residential development portion of the site would not be regraded before grading commences for construction of the recharge ponds.

The materials removed during demolition and grading would be ground and used on-site for roadways and levy protection, assuming the materials are determined to be suitable for these uses. Additionally, the housing and golf course areas would be regraded after construction of the recharge ponds to facilitate interbasin flow transfer. It is estimated that most materials removed during demolition and grading would be used on-site; plastic and conduit would be disposed of off-site.

1.4.3 Recharge Basins and Interbasin Flow Control Structures

The proposed project would consist of 24 individual recharge ponds with perimeter and contour levees. All levees would have a trapezoidal cross section, with a top width of 16 feet, a bottom width ranging from 28 to 40 feet, and a height ranging from 3 to 6 feet above the original grade. The perimeter levees would be located along the outer edges of the proposed project site and would be offset about 15 feet inside the property line. The contour levees would be internal to the site and would generally follow the existing ground contours.

Recharge basins were designed based on the following considerations: (1) levees were located to avoid existing, permanent, aboveground facilities, the petroleum extraction area, and locations of protected cultural and biological resources; (2) the height of the perimeter and contour levees was limited to 6 feet; and (3) the minimum allowance for freeboard was 2 feet.

To assist in the layout of the recharge basins, the Districts retained Aerial Photomapping Services to prepare an aerial survey map of the proposed project site showing the property boundary, ground elevation contours at 2-foot intervals, all visible features (including aboveground permanent facilities), and spot ground elevations. This aerial survey map was used to design the layout of the recharge basins and determine levee elevations and proposed project water surface elevations for the recharge basins.

The total recharge basin area comprises 24 individual recharge basins. The gross area for each basin was estimated by scaling from the topographic survey map. The net basin area was assumed to be 85% of the gross area to account for levees, well pads, and other areas that would not be wetted during recharge operations. The gross and net area of each basin would range from about 11 acres to about 139 acres. In all, the recharge basin area would cover 1,898 gross acres (1,613 net acres).

The individual recharge basins would be connected by a series of interbasin flow control structures, which would convey water from basin to basin. At least one interbasin structure would be located at every levee; larger recharge basins with longer levees would have two interbasin structures. There would be 42 interbasin structures; the size of each interbasin structure has not yet been determined, but capacity in each would range from 5 cfs to 83 cfs.

1.4.4 Construction Equipment and Personnel

Various types of equipment would be needed to construct the features of the proposed project. The types of equipment that would be used are listed in Table 1.

During construction, approximately 12 workers would be on-site daily. At the peak of construction, five trips are anticipated to take place each day for material deliveries.

1.4.5 Construction Schedule

The proposed project is anticipated to be under construction for 5 years, from 2022 to 2027. Construction activities would take place Monday through Friday, from 6:00 a.m. to 4:00 p.m.

The length of construction for each portion of the proposed project is shown in Table 2. A total of 1,856 construction days are estimated.

1.5 Proposed Project Operations

The proposed project would be constructed, operated, and managed by BVWSD, as the applicant, and RRBWSD, although day-to-day operations or portions thereof may be contracted to other parties. Operation of the proposed project would include conveying water to the proposed project site, storing that water in an underground aquifer, and recovering water from the aquifer for beneficial use. The proposed project would be in active operation primarily when sufficient water is available to allow conveyance to the proposed project site (i.e., during wet seasons in wet years) and when water is needed to meet demand within the Districts' service areas (i.e., during irrigation seasons in extremely dry years).

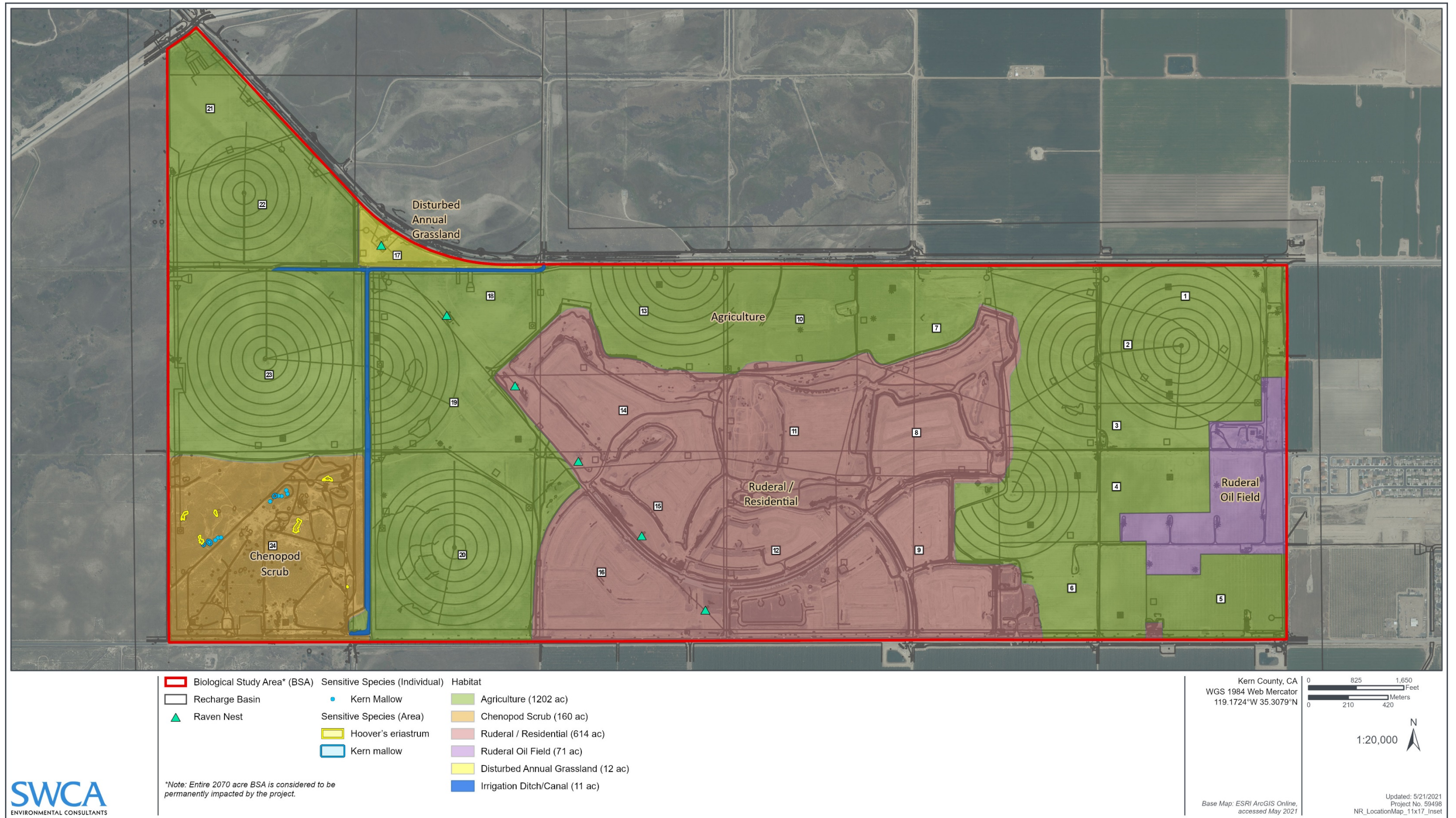


Figure 3. Proposed project site aerial map with project layout overlay and habitats.

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Table 1. Types of Equipment Used for Proposed Project Construction

Equipment Type	Pipelines	Ponds	Pumps	Control Structures	Canal Improvements	Wells	Demolition
Front-end Loader	X		X				X
Excavator	X		X	X	X		X
Bulldozer					X		
Motorized Grader	X	X			X		
Backhoe	X			X		X	
Boom Truck				X		X	
Work Truck	X	X	X	X	X	X	X
Drill Rig						X	
Service Truck	X	X		X	X	X	X
Mixer-equipped Concrete Truck			X	X		X	
Generator			X	X		X	
Welder			X	X		X	
Semi-trailer Truck	X		X	X		X	X
Crane	X		X				
Compactor	X						
Water Truck	X	X	X	X	X		X
Self-loading Scraper		X					
Self-propelled Compactor							
Trencher		X					
Forklift		X				X	
Manual Compactor	X		X	X			

Table 2. Proposed Project Construction Schedule

Units	Pipelines	Ponds	Pumps	Control Structures	Canal Improvements	Wells	Demolition
Construction Units	mile	1,600 acres	station	structure	mile	well	10 acres
Construction Unit Values (Days Per Unit)	18	30	25	25	4	20	2
Project Units	7.8	11.25	3	37	4.5	12	60
Project Days	140	338	75	925	18	240	120
Total Construction Days	1,856						

Note: Assumes one construction crew; ponds require three scrapers per crew.

It is expected that up to 200,000 AF of water could be stored by the proposed project during any given year. The most likely period when water would be conveyed to the proposed project site would be December through July. In an exceptionally wet year, however, water could be diverted to the proposed project site throughout the year. It is anticipated that up to 56,000 AF of stored water could be extracted from the aquifer in any given year. Of that amount, approximately 75% is expected to be recovered from wells within the proposed project site; the remaining 25% is expected to be recovered from existing off-site facilities within the Districts' service areas and used for irrigation and M&I uses and consistent with the Districts' Conjunctive Use Programs, all existing points of use.

The proposed project would be inactive 85% of the time; infrequently operating when sufficient water is available and sitting as open land to be maintained. Similar timing for extraction activities, which would only pump in extreme dry years. The proposed project would operate continuously 7 days per week when in operation. Employees on-site would be one to two daily, with occasional (less than one per day) deliveries. During times of inactivity, the site would be fenced and maintained as dry ponds. Operation of the proposed project is expected to include the following activities:

- Conveyance of water to percolation ponds from an intake structure constructed through the Pioneer Project area;
- Percolation and storage of water in the groundwater aquifer through up to 24 proposed percolation ponds;
- Operational exchanges of water with other entities to optimize proposed project operations (although such actions would be evaluated more specifically, as necessary, for their potential environmental effects when such exchanges are identified and planned for implementation);
- Recovery of stored water from the groundwater aquifer through operation of up to 14 on-site and off-site groundwater recovery wells;
- Monitoring of groundwater levels and quality in the area through proposed groundwater monitoring wells;
- Banking of water for other entities, if and when capacity is available, to expand the benefits of the proposed project (although such actions would be evaluated more specifically, as necessary, for their potential environmental effects when such partnerships are identified and planned for implementation); and
- Transfers of banked supplies for other entities located within Kern County.

All Kern River water stored at the proposed project site would remain in Kern County.

1.5.1 Water Conveyance to the Project Site

Water to fill the recharge basins would be conveyed through a new head gate at the southeast corner of Basin 1 on the City's 2800-Acre Groundwater Recharge Facility to a new, unlined canal built along the eastern boundary of the Pioneer Project site. The canal would be gravity fed with pumps and siphons installed at several crossing locations, described in more detail below. The anticipated capacity of the canal is sufficient to provide 500 cfs to the proposed project site.

1.5.2 Groundwater Recharge

Long-term recharge rates are expected to be in the range of 0.2–0.3 foot per day. Initial rates are anticipated to be higher but, as soil moisture content increases, the infiltration rate is anticipated to decrease. To facilitate initial filling of the recharge basins, the conveyance facilities (i.e., pumping plants,

pipelines, and turnouts) were designed to accommodate an infiltration rate of 0.6 foot per day (twice the maximum expected long-term rate, but more representative of initial higher infiltration rates).

Up to four pumping plants would be located on the proposed project site, equipped with pumps ranging from 75 cfs to 200 cfs in capacity. The Districts could cycle these pumps to allow for maximum efficiency at varying flow rates over time.

1.5.3 Groundwater Recovery

Stored groundwater would be recovered through both on-site and existing off-site facilities. It is expected that up to 56,000 AF of stored water could be extracted from the aquifer in any given year. Of that amount, approximately 75% is expected to be recovered from wells within the proposed project site; the remaining 25% is expected to be recovered from existing off-site facilities within the Districts' service areas. Off-site recovery would not involve any new construction and would continue using existing programs already in operation, including integration with the Districts' Conjunctive Use Programs and other projects by means of existing recovery facilities within the Districts' boundaries.

Recovery operations would be subject to an operations plan that is generally consistent with the *Project Recovery Operations Plan Regarding Pioneer Project, Rosedale-Rio Bravo Water Storage District and Kern Water Bank Authority Projects* (Joint Operating Plan) (Kern County Water Agency 2017) and the Mitigation Agreement with the City. Banking and recovery would be monitored for potential groundwater-level impacts resulting from operation of the proposed project on neighboring agricultural, municipal, and domestic wells, and significant impacts would be avoided, eliminated, or mitigated by implementing one or more of the corrective actions listed therein.

Operation of on-site and off-site recovery facilities is described below.

1.5.3.1 ON-SITE RECOVERY FACILITIES

On-site recovery would include the development of a well field, including new and existing recovery wells, a system of collector pipelines to convey water away from the recovery wells, and an outflow structure at the Kern River Canal. These facilities are described below.

1.5.3.1.1 Well Field and Collector Pipelines

The well field would consist of a network of wells and collector pipelines to facilitate recovery and conveyance of stored water. Up to 14 recovery wells and up to eight monitoring wells would comprise the well field, six of which are existing. Each well would be located a minimum of one-third of a mile from any existing wells, in accordance with the Kern Fan Operation and Monitoring Memorandum of Understanding (MOU). Each recovery well would be plumbed to the recovery pipeline.

The recovery pipeline would be constructed as a branching system of buried polyvinyl chloride (PVC), high-density polyethylene (HDPE), and reinforced concrete pipe (RCP) that would collect stored water being pumped from the recovery wells and convey it to the Kern River Canal outflow structure. The well spacing would determine the exact location and alignment of the recovery pipeline, but approximate locations are shown in Figure 3. Based on the conceptual layout of the well field, approximately 35,450 linear feet of pipeline would be required, ranging in diameter from 15 to 96 inches. The size of each segment of the recovery pipeline was determined based on the number of wells plumbed to that segment and assuming that all wells would be operated simultaneously at their design discharge rate of approximately 6.2 cfs. The pipeline would also serve a recharge conveyance role, however, and certain segments were sized based on recharge conveyance requirements rather than recovery requirements. Furthermore, the collector pipe was sized to maintain a maximum flow rate of approximately 5–6 feet per

second. Power lines would be installed at the proposed project site to convey electricity to each of the wells. Pipeline diameters would range from 15 to 60 inches.

1.5.3.1.2 Outflow Structure

Recovered groundwater would be pumped from the well field and conveyed through the collector pipeline to the outlet structure at the northwestern corner of the proposed project site for discharge into the Kern River Canal. The outlet structure was sized under the assumption that all recovery wells could be operated simultaneously and would convey the full 87 cfs (14 wells × 6.2 cfs per well) of design recovery capacity.

1.5.3.2 OFF-SITE RECOVERY FACILITIES

Off-site recovery would rely on existing recovery wells and extraction facilities owned by the Districts. Recovery activities would be integrated with recovery operations of the Districts' existing conjunctive use programs. No new construction would be required for off-site recovery. The proposed project would provide flexibility for the Districts in the management of surface water and groundwater to improve overall reliability of water supply. Water banked on the proposed project site (less losses) could be recovered from any combination of the proposed project's wells and other existing extraction facilities owned by BVWSD, and landowners within RRBWSD's service area could recover water banked on the proposed project site by means of their off-site private wells and existing RRBWSD wells. Recovery would occur to meet the Districts' existing recovery obligations for agricultural, domestic, and industrial uses.

1.5.4 Water Sources

Recharge water for the proposed project would be secured and acquired by the Districts from various sources, potentially including federal, state, and local supplies. Water would be acquired through transfers, balanced and unbalanced exchange agreements, purchase or temporary transfers, or other means, as available. Potential sources of water for recharge and storage during operation of the proposed project include water from the Kern River, SWP, and CVP, depending on annual availability and appropriative (pre-1914 and post-1914) water rights; the Friant-Kern Canal; floodwater; and possibly other sources that may be available to the Districts from time to time.

2 EXISTING CONDITIONS

2.1 Physical Conditions

The proposed project site exhibits limited topographical relief with elevations between 330 to 350 feet. The region experiences a Mediterranean climate with dry, hot summers and mild winters with low annual precipitation, with most rainfall occurring between October and March. Much of the site had previously been in agricultural production for over 20 years, with aerial imagery showing the site in agricultural production as far back as 1985 (Google Earth). Crops cultivated on the site include grains, carrots, potatoes, and others. It was only recently taken out of agricultural production (i.e., within the last few years) and is now routinely disked/disturbed (BPR Consulting 2020). Four soil map units have been identified in the proposed project area (Figure 4): Map Unit 127 – Granoso sandy loam, 0 to 2 percent slopes, overwash; Map Unit 152 – Excelsior sandy loam; Map Unit 174 – Kimberlina fine sandy loam, 0 to 2 percent slopes; and Map Unit 179 – Kimberlina fine sandy loam, saline-sodic, 0 to 2 percent slopes (U.S. Department of Agriculture [USDA] Natural Resources Conservation Service [NRCS] 2021).

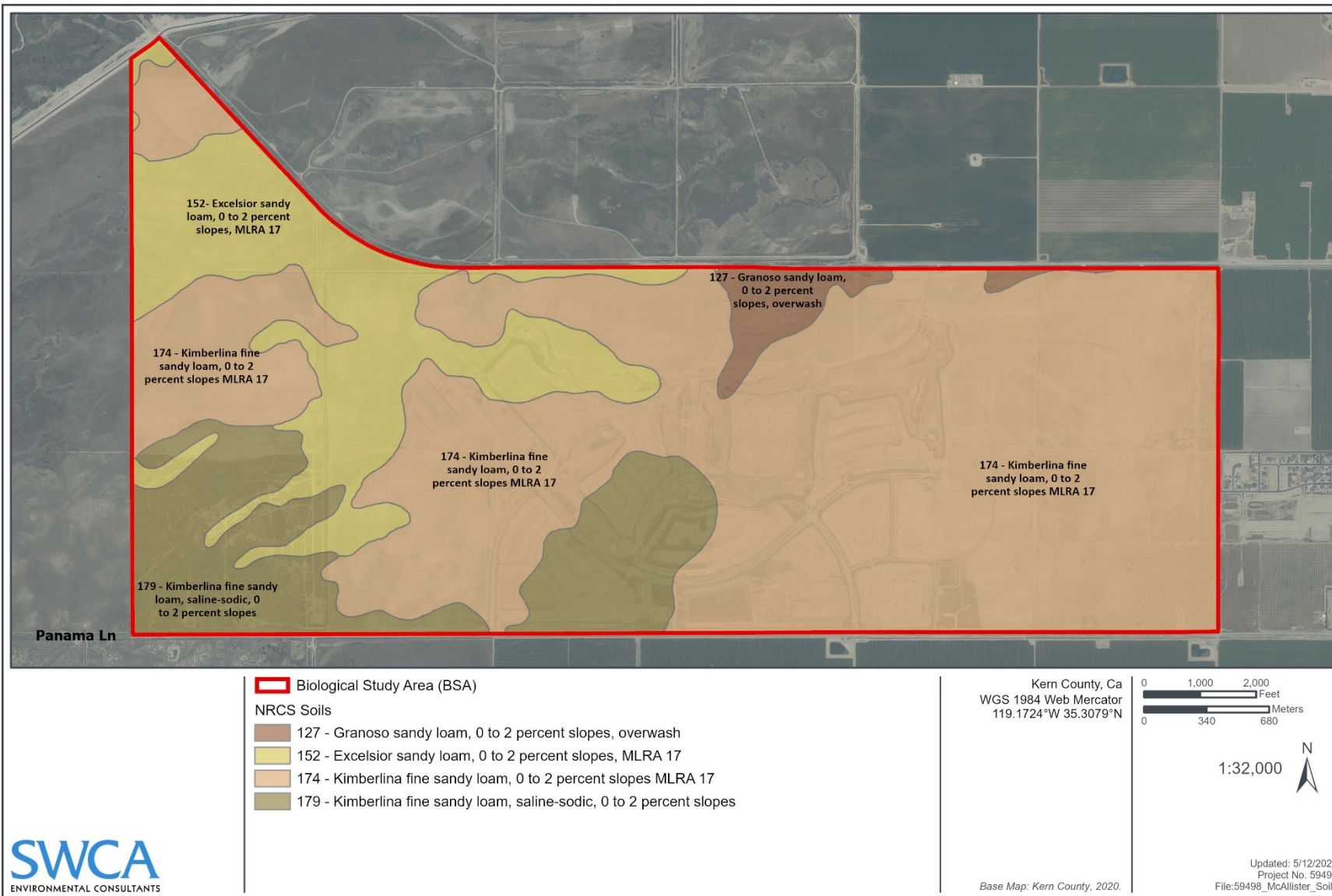


Figure 4. Soils map.

A brief description of each soil map unit follows:

- **127 Granoso sandy loam, 0 to 2 percent slopes, overwash** is a somewhat excessively drained soil that formed in alluvium derived from rocks of mixed mineralogy. Slope is 0 to 2 percent. Permeability is moderately rapid. Runoff is negligible to low, and flooding is none to rare.
- **152 Excelsior sandy loam** is a deep, well-drained soil that is found on alluvial fans. It formed in alluvium derived from a mixed rock source. Slope is 0 to 2 percent. Permeability is slow and the available water capacity is low to moderate. Runoff is slow and the hazard for water erosion is slight.
- **174 Kimberlina fine sandy loam, 0 to 2 percent slopes** is a deep, well-drained soil on alluvial fans and plains. It is formed in alluvium derived dominantly from granitic and sedimentary rock. Permeability is moderate. Available water capacity is high. Runoff is slow, and the hazard for erosion slight.
- **179 Kimberlina fine sandy loam, saline-sodic, 0 to 2 percent slopes** is a deep, well-drained soil on recent alluvial fans and plains. It is formed in alluvium derived dominantly from granitic and sedimentary rock. Permeability is moderately slow. Available water capacity is very low to moderate. Runoff is slow, and the hazard for erosion slight.

2.2 Hydrological Conditions

The Kern River occurs just north of the proposed project site and drains approximately northwest to southeast before heading south to its terminus at Buena Vista Lake, located approximately 7.5 miles southeast of the proposed project site. Agricultural fields in the region support various canals/ditches that divert water from the Kern River for irrigation. The California Department of Fish and Wildlife (CDFW) Biogeographic Information and Observation System (BIOS) and U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) data accessible online show historical drainage features that previously occurred on-site (BIOS 2020; NWI 2020) (Figure 5). SWCA accessed NWI metadata that shows those drainage features were mapped based on 1984 aerial imagery and were characterized as excavated drainage features (presumably for irrigation/agricultural purposes). The site has undergone extensive site disturbance and land conversion since 1984. While there is an old irrigation ditch/canal feature known as the James Canal that borders a portion of the northern area of the proposed project site and then proceeds south through the western area of the proposed project site toward Panama Lane, based on the recent (i.e., 2020 and 2021) observations of SWCA field biologists, there are no potentially jurisdictional drainage features or wetlands currently on-site.

2.3 Habitats/Land Uses

The proposed project site, also referred to as the Biological Study Area (BSA), encompasses approximately 2,070 acres of land comprised mainly of fallow agricultural fields and residential ruderal (encompassing the footprint of the former McAllister Ranch). There is also a patch of chenopod scrub habitat at the southwestern corner of the proposed project site, a patch of disturbed annual grassland at the northwestern corner, a patch of what can be characterized as ruderal oil field toward the eastern edge of the proposed project area, and an irrigation canal/drainage ditch that borders the northern edge of the proposed project area before traversing southward through the western side of the proposed project site (see Figure 3).

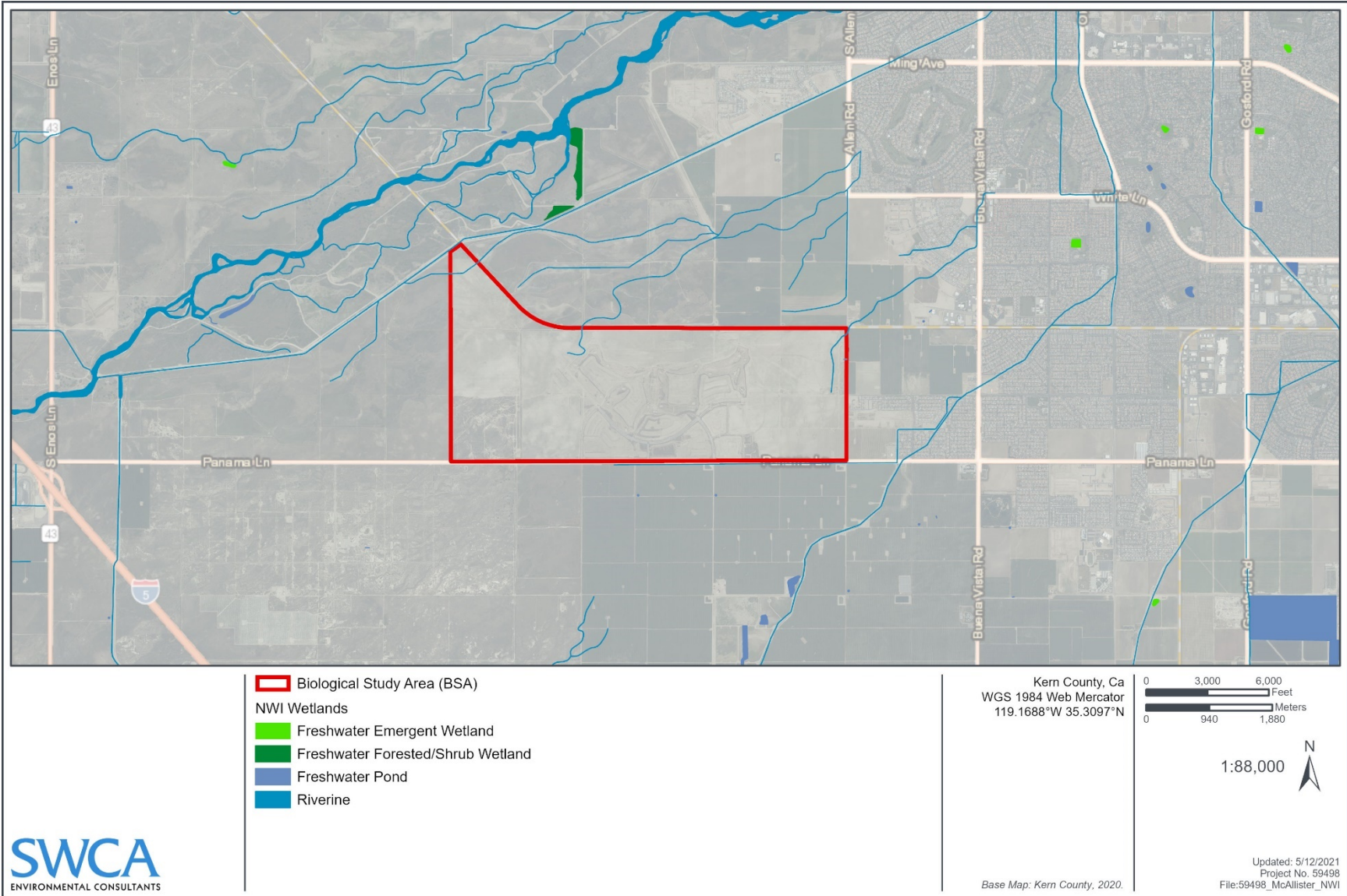


Figure 5. National Wetlands Inventory map.

2.3.1 Fallow Agricultural Fields

The vast majority of the BSA (approximately 1,202 acres) supports agricultural fields that were observed to be fallow during the April and June 2020 field surveys. Wheat (*Triticum vulgare*) and potatoes (*Solanum tuberosum*) have been reported as past crops grown on-site (Live Oak Associates 2013). Aerial imagery shows the site in agricultural production dating back to 1985 (Google Earth). Analysis of available historic (1985–present) aerial imagery revealed that the natural topography of the fields has been significantly modified over the years, presumably to implement various irrigation methods. Due to its long-standing use for agricultural production and recent routine disking, these fallow agricultural fields support extremely low habitat values for native plants and animals and are not expected to support suitable habitat conditions for special-status species. At the time of the site assessment, the dominant species within the fallow agricultural fields were limited to weedy species, such as Russian thistle/tumbleweed (*Salsola tragus*) and non-native annual grasses.

2.3.2 Residential Ruderal

Areas classified as residential ruderal (approximately 614 acres) were previously under development to be the McAllister Ranch residential development. As mentioned previously, the proposed McAllister Ranch project was abandoned during the 2008 financial crisis. Roads, sidewalks, landscaping, curbs and gutters, electrical lines and other related development infrastructure had been built/installed, but then abandoned, prior to project completion. Residential ruderal areas on-site are highly disturbed with chiefly non-native weedy plants. Typical species are weeds, such as Russian thistle and London rocket (*Sisymbrium irio*), and non-native brome grasses (*Bromus* spp.). Few ornamental/landscaped plants successfully have survived without supplemental irrigation, and most planted trees or shrubs have died. Residential ruderal areas are not expected to provide suitable habitat for special-status plant and wildlife species.

2.3.3 Ruderal Oil Field

Ruderal oil field (approximately 71 acres) occurs along the eastern edge of the BSA. Approximately 10 oil wells are located sporadically within an otherwise fallow field. Minimal ruderal vegetation, such as Russian thistle, London rocket, and non-native brome grasses, was observed growing around oil wells (which have vegetation periodically cleared around the wells). The ruderal oil fields will not be impacted by the proposed project.

2.3.4 Chenopod Scrub

Chenopod scrub habitat (approximately 160 acres) was identified within the BSA as habitat with potential for special-status plant and wildlife species. Live Oak Associates (2013) identified additional small areas of chenopod scrub just south of the railroad tracks and along the northeastern edge of the BSA, but these areas were observed to be no longer vegetated by chenopod scrub in 2020. There is evidence of off-road vehicle (ORV) use sporadically observed throughout the chenopod scrub habitat, along with piles of rubble and debris. Some areas are sparsely vegetated due to high use; other areas that are less disturbed are densely vegetated and did not show much sign of disturbance.

Chenopod scrub on-site is dominated by allscale saltbush (*Atriplex polycarpa*) and big saltbush (*Atriplex lentiformis*) with occasional western honey mesquite (*Prosopis glandulosa* var. *torreyana*) shrubs. Other associated sub-shrubs in this habitat include Russian thistle/tumbleweed, bracted alkali goldenbush (*Isocoma acradenia* var. *bracteosa*), iodine bush (*Allenrolfea occidentalis*), and bush seepweed (*Suaeda nigra*). Forbs (herbaceous plants) observed blooming during the April and June 2020 surveys included small-flowered fiddleneck (*Amsinckia menziesii*), field sun cup (*Camissonia campestris* ssp. *campestris*), common tarweed (*Centromadia pungens* ssp. *pungens*), gilia (*Gilia* spp.), popcorn flower (*Plagiobothrys*

spp.), redstem filaree (*Erodium cicutarium*), goldfields (*Lasthenia* spp.), and peppergrass (*Lepidium* spp.). Grasses commonly observed during the surveys included ripgut brome (*Bromus diandrus*), common wild oat (*Avena fatua*), foxtail barley (*Hordeum murinum*), schismus (*Schismus* spp.), and salt grass (*Distichlis spicata*). Two rare plant species were observed in chenopod scrub habitat within the southwestern corner of the BSA: Kern mallow (*Eremalche parryi* ssp. *kernensis*) and Hoover's eriastrum (*Eriastrum hooveri*). The area of chenopod scrub habitat was the only area of the proposed project site determined to have small mammal burrows with the potential to support special-status species.

2.3.5 Disturbed Annual Grassland

Disturbed annual grassland (approximately 12 acres) occurs in a triangular-shaped area at the northwestern corner of the BSA. This area is routinely disturbed through trespass by ORV use and as a makeshift recreational target range. Several small berms and dirt mounds have been formed in the area. Vegetation in this area includes Mediterranean grasses, such as common wild oats, brome grasses, and rattail fescue (*Festuca myuros*); dense weeds, such as Russian thistle/tumbleweed, black mustard (*Brassica nigra*), and summer mustard (*Hirschfeldia incana*); and a few saltbush (*Atriplex* spp.) shrubs. Due to disturbances in this area, it is considered marginal habitat for special-status species. No signs of sensitive biological resources, such as dens, burrows, scat, pray remains or white-wash, were detected during the biological reconnaissance survey (Appendix H).

2.3.6 Irrigation Ditch/Canal

An irrigation ditch/canal traverses the northern boundary of the BSA before turning due south through the western area of the BSA, totaling approximately 11 acres/9,258 linear feet. This irrigation ditch/canal is referred to locally as the "James Canal." Other areas with historical irrigation ditches/canals on-site have evidently been filled or otherwise altered. None of the ditches/canals were inundated during the April and June 2020 surveys. Commonly growing within the irrigation ditch/canal were dense weedy species, such as Russian thistle, black mustard, summer mustard, and non-native annual grasses. No wetland or riparian plant species were observed in the ditch, and it had no visible signs of an Ordinary High Water Mark (OHWM). The ditch contains no natural flows and does not support fish or wildlife. It is not subject to CDFW Section 1602 jurisdiction. No other wetland vegetation was observed in the BSA. Most areas along the irrigation/ditch canal are unsuitable for special-status species due to overgrowth of weeds, but it could be occasionally used as a travel/dispersal corridor by species such as the San Joaquin kit fox (SJKF) (*Vulpes macrotis mutica*).

2.3.7 Borrow Pits

In 2013 Live Oak Associates mapped four borrow pits within the BSA totaling approximately 2.6 acres (Live Oak Associates 2013). These pits were all located on the southern boundary of the property adjacent to Panama Lane. In 2013, the basins appeared to be seasonally inundated and were generally dominated by salt grass, red brome (*Bromus madritensis* ssp. *rubens*), and Russian thistle, with scattered mule fat (*Baccharis salicifolia*) and saltcedar (*Tamarix ramosissima*) shrubs. Since 2013, the land has been heavily disturbed by ORV use, making the borrow pits indistinguishable from the surrounding landscape. They are mostly devoid of vegetation and contain human-made debris, such as tires, and extensive amounts of trash and show no signs of wetland hydrology or wetland vegetation. The borrow pits were not included on the habitat map because they are indistinguishable from the surrounding areas and no longer warrant a separate habitat designation.

3 METHODOLOGY

3.1 Literature Review

Prior to conducting field surveys, SWCA conducted a literature review to evaluate special-status species and other sensitive biological resources with potential to occur within the vicinity of the proposed project. This included a review of the previous *Biological Evaluation for the James Groundwater Storage and Recovery Project, Kern County, California* (Live Oak Associates 2013) and the current *Metropolitan Bakersfield Habitat Conservation Plan* (MBHCP) (MBHCP Steering Committee 1984).

To facilitate compliance with CEQA/State of California requirements for consideration of special-status biological resources, a query of the California Natural Diversity Database (CNDDDB) maintained by CDFW was conducted using the RareFind 5 internet application tool on May 14, 2020, for the search area encompassing the Stevens, California USGS 7.5-minute quadrangle and the surrounding eight quadrangles (Tupman, Rio Bravo, Rosedale, Oildale, Gosford, Conner, Millux, and Mouth of Kern) (CNDDDB 2021). The CNDDDB list of special-status plants, animals, and sensitive natural communities documented to occur within the search area is included in Appendix B. In addition to the CNDDDB, the California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants of California (CNPS 2021) was reviewed online to provide additional information on rare plants that are known to occur in the vicinity of the proposed project.

To facilitate compliance with the Federal Endangered Species Act (FESA), SWCA accessed the Information for Planning and Consultation (IPaC) website maintained by the USFWS to obtain an automatically generated IPaC Resource List of federally listed species, migratory birds, and other resources such as critical habitat (collectively referred to as trust resources) under the jurisdiction of USFWS that are known or expected to be on or near the proposed project area (USFWS 2021). The most recent USFWS IPaC Resource List is included in Appendix B. No species list request from the National Oceanic and Atmospheric Administration National Marine Fisheries Service (NOAA Fisheries) was determined to be necessary because the proposed project site occurs in an inland location and no resources under the jurisdiction of NOAA Fisheries (e.g., anadromous fish, marine mammals, other marine species) are expected to be affected by the proposed project.

3.2 Field Survey Methodologies

Several biological surveys were required to provide a comprehensive understanding of the biological resources occurring within the BSA. A summary of the biological surveys conducted for the proposed project is included in Table 3. Representative photo point locations were recorded with Global Positioning System (GPS) technology throughout the BSA; a map of photo point locations and site photographs are included in Appendix C. Habitat mapping of the site chiefly followed the previous habitat mapping by Live Oak Associates with adjustments as noted based on current observed site conditions. For example, the areas mapped as borrow pits in 2013 did not warrant a separate habitat mapping designation in 2020 because the vegetation in them was no longer noticeably different from the surrounding areas.

Botanical surveys for sensitive plants were conducted on April 1–3 and June 26, 2020, by SWCA biologists John Moule and Marlee Antill. The botanical surveys were floristic (i.e., conducted within a range of months when target species were flowering and identifiable) following the *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants* (USFWS 2000) and *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant*

Populations and Sensitive Natural Communities (CDFW 2018). The latter is designed to meet CEQA requirements for adequate disclosure of potential impacts to plants and sensitive natural communities.

Meandering transect surveys focused on the 160-acre area vegetated by chenopod scrub and the 12-acre disturbed annual grassland area, as they are the only areas remaining with natural habitat on-site. The larger on-site and off-site improvement areas were surveyed at a more preliminary level on August 18, 2020, by SWCA Senior Biologist Geoff Hoetker and BPR Consulting Senior Biologist Ben Ruiz as they drove roads throughout the remainder of the BSA and off-site improvement areas looking with binoculars for land use/habitat types and values. It was determined that areas associated with the previous McAllister Ranch development and areas with previous disturbance from routine disking, grading, and agricultural activities were not suitable habitat for special-status plant species. Plants were identified with dichotomous keys using *The Jepson Manual: Vascular Plants of California* (Baldwin et al. 2012). Reconnaissance wildlife surveys for non-target species coincided with various protocol wildlife survey efforts. A list of plant and wildlife species observed during surveys of the BSA is included in Appendix D.

Table 3. Summary of Biological Surveys Conducted for the Proposed Project

Type of Survey	Methodology/Protocol	Dates Surveys Conducted	Personnel
Botanical Surveys	<i>Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants</i> (USFWS 2000) <i>Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities</i> (CDFW 2018) ¹	April 1–3, 2020 June 26, 2020	John Moule Marlee Antill
Blunt-Nosed Leopard Lizard Protocol Surveys	<i>Revised Survey Methodology for the Blunt-Nosed Leopard Lizard</i> (CDFW 2019)	April 24–27, 2020 May 2, 3, 8, 9, and 29–31, 2020 June 5, 2020 August 29 and 30, 2020 September 25–27, 2020	Ben Ruiz, Michelle Olinger, Eric Olinger, Kyle Tabor, Jonathan Butin (Level II Surveyors, BPR Consulting) assisted by other BPR Consulting staff (Level I Surveyors)
Swainson’s Hawk Surveys	<i>Recommended Timing and Methodology for Swainson’s Hawk Nesting Surveys in California’s Central Valley</i> (Swainson’s Hawk Technical Advisory Committee 2000)	April 4, 18, and 24, 2020 May 3, 8–10, and 23, 2020 July 2, 2020	Ben Ruiz
Burrowing Owl	<i>Burrowing Owl Survey Protocol and Mitigation Guidelines</i> (The California Burrowing Owl Consortium 1993)	April 26, 2020 May 3, 8, and 9, 2020 December 9, 11, 15, and 21, 2020	Ben Ruiz assisted by other BPR Consulting staff
Biological Reconnaissance Survey ²	No formal protocol	December 12 and 13, 2020	Ben Ruiz assisted by other BPR Consulting staff

¹ CDFW Protocols are designed to meet CEQA requirements for adequate disclosure of potential impacts to plants and sensitive natural communities (CDFW 2018).

² Additional reconnaissance wildlife surveys also coincided with each of the other survey efforts.

Protocol surveys for the federally and state endangered blunt-nosed leopard lizard (BNLL) (*Gambelia sili*) were completed per the *Revised Survey Methodology for the Blunt-Nosed Leopard Lizard* (CDFW 2019). BNLL surveys were led by Mr. Ruiz serving as a Level II Researcher and other BPR biologists serving as Level I Researchers. Protocol BNLL surveys were conducted within areas identified as potential BNLL habitat, which included a 160-acre area of chenopod scrub at the southwestern corner of the BSA and a 12-acre triangular-shaped area at the northwestern edge of the BSA; the rest of the BSA has been subjected to previous disturbance from routine disking, grading, or agricultural activities and was not considered suitable habitat for BNLL. Twelve surveys for BNLL adults were completed from April 24 to June 5, 2020, and five surveys for BNLL hatchlings/subadults were completed from August 29 to September 27, 2020. A Blunt-Nosed Leopard Lizard Survey Report and Survey Reporting Forms are included in Appendix E.

Surveys for the state threatened Swainson's hawk (SWHA) (*Buteo swainsoni*) were conducted by BPR Consulting. Eight SWHA surveys were conducted from April 4 to May 23, 2020, to determine whether suitable nest trees for raptors and other avian species were present within an approximately 0.5-mile radius of the proposed project site. Surveys consisted of driving and walking the proposed project site to locate birds and nests in the proposed project area. A Swainson's Hawk Survey Report with Nest Survey Data Forms are included in Appendix F.

Protocol surveys for the California Species of Special Concern (SSC) burrowing owl (BUOW) (*Athene cunicularia*) were completed per the *Burrowing Owl Survey Protocol and Mitigation Guidelines* (The California Burrowing Owl Consortium 1993). BUOW surveys were conducted by Mr. Ruiz and other BPR Consulting biologists. Four BUOW breeding/nesting season (defined as February 1 to August 31) surveys were conducted from April 26 to May 9, 2020, and four BUOW wintering/non-breeding season (defined as December 1 to January 31) surveys were conducted from December 9 to 21, 2020. Surveys were conducted throughout the entirety of the BSA in areas identified as potential BUOW habitat. A Burrowing Owl Survey Report with Survey Data Forms are included in Appendix G.

No small mammal trapping effort to replicate the previous 2013 Live Oak Associates effort was conducted. The applicant has proposed that an updated small mammal trapping effort would be conducted during the proposed project permitting process, if necessary.

General reconnaissance-level wildlife surveys coincided with botanical and protocol wildlife surveys, and species that were observed were documented. An additional reconnaissance survey was conducted by Mr. Ruiz and other BPR Consulting biologists in December 2020 to investigate the potential for special-status species—primarily SJKF, Tipton kangaroo rat (TKR) (*Dipodomys nitratooides nitratooides*), and Nelson's (San Joaquin) antelope squirrel (SJAS) (*Ammospermophilus nelsoni*)—throughout the BSA. The primary focus of the December survey was to visually identify SJKF dens and TKR and SJAS burrows. A visual survey of the entire site was conducted by dividing the project in five different sections. Each section was completely covered in transects. All personnel walked in transects while meandering for complete visual coverage of each section. The site survey was conducted during a time with high probability of visual detection of potentially occurring special-status species including signs (e.g., scat, tracks, potential dens, potential burrows, etc.) of current or previous presence in the vicinity of the site. The Biological Reconnaissance Survey Report is included in Appendix H.

In addition, potential areas that could require compliance with federal and/or state regulations such as "Waters of the United States" and "Waters of the State" were considered during the field investigation. No jurisdictional wetlands, streams, or other waters were observed within the BSA, consistent with the 2013 Live Oak Associates findings.

4 RESULTS

4.1 Special-Status Plant Species Considered

For the purposes of this section, special-status plant species are defined as the following:

- Plants listed or proposed for listing as threatened or endangered under the FESA (50 Code of Federal Regulations [CFR] Section 17.12 for listed plants and various notices in the *Federal Register* for proposed species).
- Plants that are candidates for possible future listing as threatened or endangered under the FESA.
- Plants that meet the definitions of rare or endangered species under CEQA (State CEQA Guidelines Section 15380).
- Plants considered by the CNPS to be “rare, threatened, or endangered” in California (CNPS Ranks 1A, 1B, 2A, and 2B in CNPS 2021).
- Plants listed by the CNPS as plants about which we need more information and plants of limited distribution (Ranks 3 and 4 in CNPS 2021).
- Plants listed or proposed for listing by the State of California as threatened or endangered under the California Endangered Species Act (CESA) (14 California Code of Regulations [CCR] Section 670.5).
- Plants listed under the California Native Plant Protection Act (NPPA) (California Fish and Game Code [CFGC] Section 1900 et seq.).
- Plants considered sensitive by other federal agencies (i.e., U.S. Forest Service, U.S. Bureau of Land Management), state and local agencies, or jurisdictions.

Based on the literature review for this proposed project, 20 special-status plant species and five special-status plant communities have been documented by the CNDDDB (2021) in the Stevens, California USGS 7.5-minute quadrangle and the surrounding eight quadrangles (Table 4). A CNDDDB map of rare plant occurrences reported within a 5-mile radius of the BSA is included in Figure 6. SWCA evaluated the list of special-status plant species considered in Table 4 to assess which special-status plant species have suitable habitat, soil, and elevation conditions within the BSA. The results of floristic surveys verified which special-status plant species were observed to occur within the BSA and allow for an assessment of potential proposed project-related impacts. A list of plant species observed on-site is included in Appendix D.

Table 4. Special-Status Plant Species Evaluated for Potential Occurrence

Species Name	Habitat and Distribution	Flowering Season	Legal Status Federal/State/ CNPS Rare Plant Rank	Rationale for Expecting Presence or Absence
Horn's milk-vetch <i>Astragalus homii</i> var. <i>homii</i>	Annual herb; occurs in alkaline soils of meadows and seeps, playas and lake margins. Elevation: 60–850 meters.	May–October	--/--1B.1	Suitable Conditions Absent / Species Absent: Suitable habitat does not occur in the BSA. The species was not observed during botanical surveys and is not expected to occur.
heartscale <i>Atriplex cordulata</i> var. <i>cordulata</i>	Annual herb; occurs in saline or alkaline chenopod scrub, meadows and seeps, and valley and foothill grasslands. Elevation: 0–560 meters.	April–October	--/--1B.2	Suitable Conditions Absent / Species Absent: Suitable habitat does not occur in the BSA. The species was not observed during botanical surveys and is not expected to occur.
Lost Hills crownscale <i>Atriplex coronata</i> var. <i>vallicola</i>	Annual herb; occurs in chenopod scrub, valley and foothill grassland, and vernal pools. Elevation: 50–635 meters.	April–September	--/--1B.2	Suitable Conditions Present / Species Absent: Suitable habitat occurs in the BSA. However, this species was not observed during botanical surveys and is not expected to occur.
Bakersfield smallscale <i>Atriplex tularensis</i>	Annual herb; occurs in chenopod scrub. Elevation: 90–200 meters.	June–October	--/SE/1A	Suitable Conditions Present / Species Absent: Suitable habitat occurs in the BSA. However, this species was not observed during botanical surveys and is not expected to occur.
alkali mariposa lily <i>Calochortus striatus</i>	Perennial bulbiferous herb; occurs in chaparral, chenopod scrub, Mojavean desert scrub, and meadows and seeps (alkaline, mesic). Elevation: 70–1,595 meters.	April–June	--/--1B.2	Suitable Conditions Present / Species Absent: Suitable habitat occurs in the BSA. However, this species was not observed during botanical surveys and is not expected to occur.
California jewel-flower <i>Caulanthus californicus</i>	Annual herb; occurs in chenopod scrub, pinyon-juniper woodland, and valley and foothill grassland (sandy). Elevation: 61–1,000 meters.	February–May	FE/CE/1B.1	Suitable Conditions Present / Species Absent: Suitable habitat occurs in the BSA. However, this species was not observed during botanical surveys and is not expected to occur.
hispid salty bird's-beak <i>Chloropyron molle</i> ssp. <i>hispidum</i>	Annual herb (hemiparasitic); occurs in alkaline soils of meadows and seeps, playas, and valley and foothill grassland. Elevation: 1–155 meters.	June–September	--/--1B.1	Suitable Conditions Absent / Species Absent: Suitable habitat does not occur in the BSA. The species was not observed during botanical surveys and is not expected to occur.
slough thistle <i>Cirsium crassicaule</i>	Annual/perennial herb; occurs in chenopod scrub; marshes and swamps (along sloughs), and riparian scrub. Elevation: 3–100 meters.	May–August	--/--1B.1	Suitable Conditions Present / Species Absent: Suitable habitat occurs in the BSA. However, this species was not observed during botanical surveys and is not expected to occur.
recurved larkspur <i>Delphinium recurvatum</i>	Perennial herb; occurs in alkaline soils of chenopod scrub, valley and foothill grassland, and cismontane woodland. Elevation: 3–790 meters.	March–June	--/--1B.2	Suitable Conditions Present / Species Absent: Suitable habitat occurs in the BSA. However, this species was not observed during botanical surveys and is not expected to occur.

Species Name	Habitat and Distribution	Flowering Season	Legal Status Federal/State/ CNPS Rare Plant Rank	Rationale for Expecting Presence or Absence
Kern mallow <i>Eremalche kernensis</i>	Annual herb; occurs on dry, open sandy to clay soils; often at edge of bald areas, in chenopod scrub, pinyon and juniper woodland, and valley and foothill grassland. Elevation: 70–1,290 meters.	January–May	FE/--/1B.2	Suitable Conditions Present / Species Present: Approximately 200 individual plants were observed in chenopod scrub habitat within the southwestern corner of the BSA. Mitigation measures have been recommended.
Hoover's eriastrum <i>Eriastrum hooveri</i>	Annual herb; occurs in chenopod scrub, pinyon and juniper woodland, and valley and foothill grassland (sometimes in gravelly soil). Elevation: 50–915 meters.	February–July	--/--/4.2	Suitable Conditions Present / Species Present: Approximately 2,000 individual plants were observed in chenopod scrub habitat within the southwestern corner of the BSA. Potential impacts to individuals of this species are considered less than significant due to regional abundance of this species. No mitigation is proposed.
Tejon poppy <i>Eschscholzia lemmonii</i> ssp. <i>kernensis</i>	Annual herb; occurs in chenopod scrub and valley and foothill grassland. Elevation 160–1,000 meters.	February–May	--/--/1B.1	Suitable Conditions Present / Species Absent: Suitable habitat occurs in the BSA. However, this species was not observed during botanical surveys and is not expected to occur.
California satintail <i>Imperata brevifolia</i>	Perennial rhizomatous herb; occurs in chaparral, coastal scrub, Mojavean desert scrub, meadows and seeps (often alkali), and riparian scrub in mesic areas. Elevation: 0–1,215 meters.	September– May	--/--/2B.1	Suitable Conditions Absent / Species Absent: Suitable habitat does not occur in the BSA. The species was not observed during botanical surveys and is not expected to occur.
alkali sink goldfields <i>Lasthenia chrysantha</i>	Annual herb; occurs in vernal pools and wet saline flats. Elevation: 1–100 meters.	February–June	--/--/1B.1	Suitable Conditions Absent / Species Absent: Suitable habitat does not occur in the BSA. The species was not observed during botanical surveys and is not expected to occur.
Coulter's goldfields <i>Lasthenia glabrata</i> ssp. <i>coulteri</i>	Annual herb; occurs in coastal salt marshes and swamps, playas, and vernal pools. Elevation: 1–1,220 meters.	February–June	--/--/1B.1	Suitable Conditions Absent / Species Absent: Suitable habitat does not occur in the BSA. The species was not observed during botanical surveys and is not expected to occur.
San Joaquin woollythreads <i>Monolopia congdonii</i>	Annual herb; occurs in chenopod scrub and valley and foothill grassland (sandy). Elevation 60–800 meters.	January–May	FE/CE/1B.2	Suitable Conditions Present / Species Absent: Suitable habitat occurs in the BSA. However, this species was not observed during botanical surveys and is not expected to occur.
Bakersfield cactus <i>Opuntia basilaris</i> var. <i>treleasei</i>	Perennial stem succulent; occurs in chenopod scrub, cismontane woodland, and valley and foothill grassland (sandy or gravelly soils). Elevation 120–1,450 meters.	April–May	FE/CE/1B.2	Suitable Conditions Present / Species Absent: Suitable habitat occurs in the BSA. However, this species was not observed during botanical surveys and is not expected to occur.

Species Name	Habitat and Distribution	Flowering Season	Legal Status Federal/State/ CNPS Rare Plant Rank	Rationale for Expecting Presence or Absence
California chalk moss <i>Pterygoneurum californicum</i>	Bryophyte/moss; occurs in disturbed, highly calcareous soil in pits and quarries, amongst rocks and on sea cliffs; most frequently found on chalk, but also grows on other substrates, including base-rich sandstones and base-rich clays. Elevation: 10–100 meters.	N/A	--/--/formerly 1B.1 but currently considered but rejected by CNPS	Suitable Conditions Absent / Species Absent: This species was previously included in the list of species considered by Live Oak Associates (2013) but does not currently appear on the CNDDDB list of species queried for the region (CNDDDB 2021). No suitable habitat occurs in the BSA, and the species is not expected to occur.
oil neststraw <i>Stylocline citroleum</i>	Annual herb; occurs in chenopod scrub, coastal scrub, and valley and foothill grasslands in clay soils. Elevation: 50–400 meters.	March–May	--/--/1B.1	Suitable Conditions Present / Species Absent: Suitable habitat occurs in the BSA. However, this species was not observed during botanical surveys and is not expected to occur.
Mason's neststraw <i>Stylocline masonii</i>	Annual herb; occurs in chenopod scrub and pinyon and juniper woodland in sandy soils. Elevation: 100–1,200 meters.	March–May	--/--/1B.1	Suitable Conditions Present / Species Absent: Suitable habitat occurs in the BSA. However, this species was not observed during botanical surveys and is not expected to occur.

General references: Baldwin et al. 2012. All plant descriptions paraphrased from CNPS 2021.

Status Codes:

-- = No status

Federal: FE = Federally Endangered; FT = Federally Threatened

State: SE = State Endangered; ST = State Threatened; SR = State Rare

California Native Plant Society (CNPS):

Rank 1A = presumed extirpated in California and either rare or extinct elsewhere

Rank 1B = rare, threatened, or endangered in California and elsewhere

Rank 2A = presumed extirpated in California but common elsewhere

Rank 2B = rare, threatened, or endangered in California but more common elsewhere

Rank 3 = plants about which more information is needed

Rank 4 = Watch List: plants of limited distribution

CNPS Threat Ranks:

_.1 = Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)

_.2 = Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)

_.3 = Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

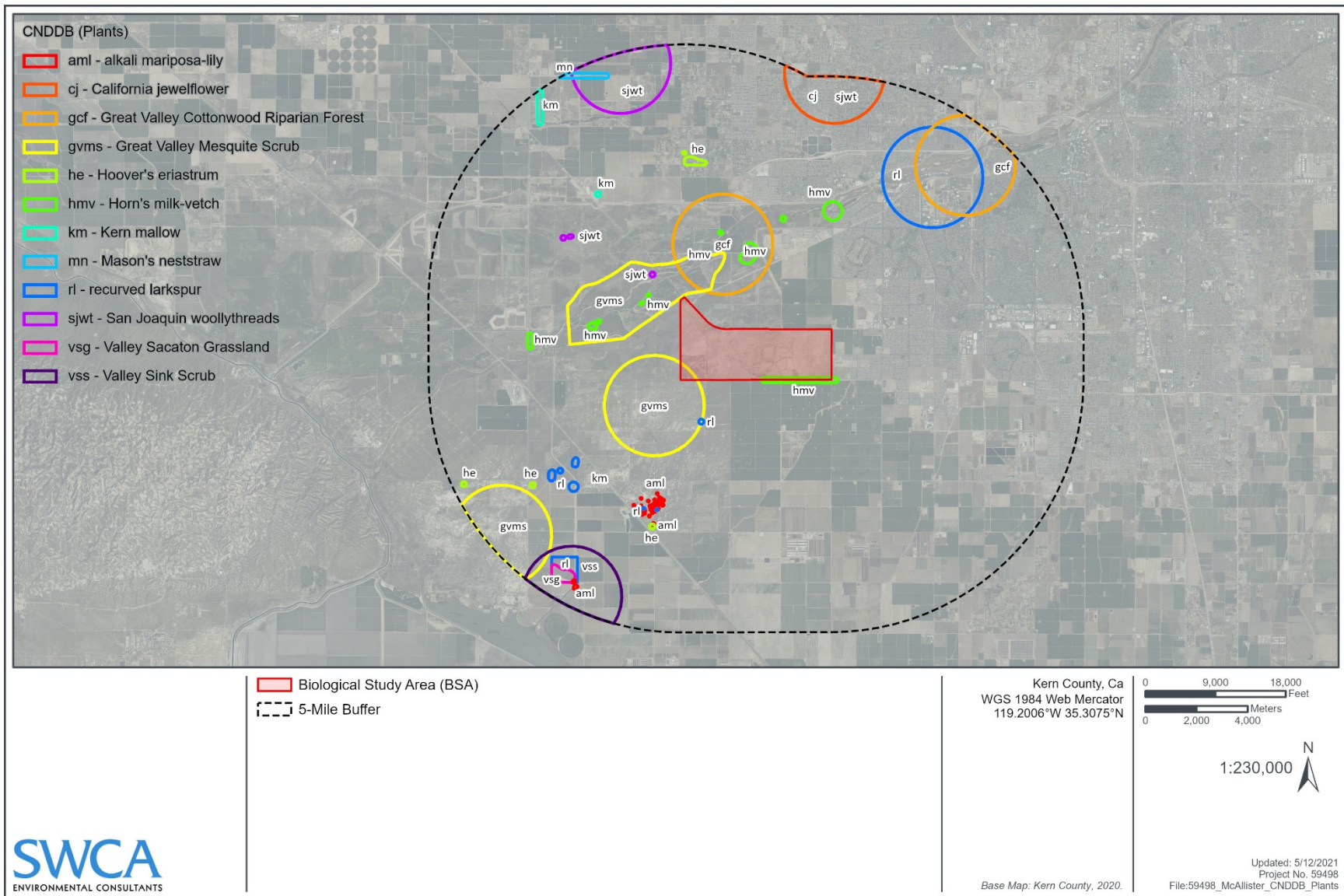


Figure 6. CNDDDB rare plant occurrences map.

4.2 Special-Status Animal Species Considered

For the purposes of this section, special-status animal species are defined as the following:

- Animals listed or proposed for listing as threatened or endangered under the FESA (50 CFR 17.11 for listed animals and various notices in the *Federal Register* for proposed species).
- Animals that are candidates for possible future listing as threatened or endangered under the FESA.
- Animals that meet the definitions of rare or endangered species under CEQA (State CEQA Guidelines Section 15380).
- Animals listed or proposed for listing by the State of California as threatened and endangered under the CESA (14 CCR 670.5).
- Animal species considered by the State of California/CDFW to be California SSC or included on CDFW's Watch List (WL).
- Animal species that are fully protected in California (CFGC Sections 3511 [birds], 4700 [mammals], and 5050 [reptiles and amphibians]).

Based on a CNDDDB query and a review of existing literature, 49 special-status wildlife species have been documented by the Stevens, California USGS 7.5-minute quadrangle and surrounding eight quadrangles (CNDDDB 2021) (Table 5). A CNDDDB map of rare animal occurrences reported within a 5-mile radius of the BSA is included in Figure 7. The federally endangered Buena Vista Lake shrew (*Sorex ornatus relictus*) was considered because this species was addressed in the previous Live Oak Associates study, and it is also included on the USFWS IPaC Resource List (see Appendix B). Other species included on the USFWS IPaC Resource List included the federally threatened vernal pool fairy shrimp (*Branchinecta lynchi*) and the federally and state endangered southwestern willow flycatcher (*Empidonax traillii extimus*). In addition, the “other nesting birds” category was added for the numerous species of birds with potential for occurrence in the BSA that are protected by the Migratory Bird Treaty Act (MBTA) and CFGC Section 3503. SWCA evaluated the list of special-status animal species considered in Table 5 to assess which special-status animal species have suitable habitat conditions within the BSA, assess which special animal species were observed during reconnaissance surveys, and allow for an assessment of potential proposed project-related impacts. A list of animal species observed on-site is included in Appendix D.

4.3 Regional Sensitive Habitats Considered

The CNDDDB (2021) documents several sensitive habitats/natural communities that occur within the region. These are included in Table 6, as well as a general description of the habitat types. The rationale section summarizes the potential for these habitats to occur in the BSA or be affected by the proposed project.

Table 5. Special-Status Animal Species Evaluated for Potential Occurrence

Species Name	Habitat and Distribution	Legal Status Federal/State/ Other Status	Rationale for Expecting Presence or Absence
Invertebrates			
vernal pool fairy shrimp <i>Branchinecta lynchi</i>	Endemic to the grasslands of the Central Valley, Central Coast mountains, and South Coast mountains, in astatic rain-filled pools. Inhabit small, clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools.	FT/--/--	Suitable Conditions Absent: Suitable habitat for this species does not occur in the BSA. The species was not observed during surveys and is not expected to occur.
Crotch bumblebee <i>Bombus crotchii</i>	Occurs in coastal California east to the Sierra-Cascade crest and south into Mexico. Food plant genera include <i>Antirrhinum</i> , <i>Phacelia</i> , <i>Clarkia</i> , <i>Dendromecon</i> , <i>Eschscholzia</i> , and <i>Eriogonum</i> .	--/CE/--	Suitable Conditions Absent: Suitable habitat for this species does not occur in the BSA. The species was not observed during surveys and is not expected to occur.
Kern shoulderband <i>Helminthoglypta callistoderma</i>	Known only from Tulare and Kern Counties, along the lower Kern River Canyon. Has been collected from dead vegetation along the water's edge.	--/--/SA	Suitable Conditions Absent: Suitable habitat for this species does not occur in the BSA. The species was not observed during surveys and is not expected to occur.
Fish			
N/A			
Amphibians			
western spadefoot <i>Spea hammondi</i>	Inhabits vernal pools in primarily grassland, but also in valley and foothill hardwood woodlands. Vernal pools are essential for breeding and egg-laying.	--/--/SSC	Suitable Conditions Absent: Suitable breeding habitat for this species does not occur in the BSA and uplands are likely located too far from potential breeding habitat. The species was not observed during surveys and is not expected to occur.
Reptiles			
western pond turtle <i>Emys marmorata</i>	Occurs in quiet waters of ponds, lakes, streams, and marshes, typically in the deepest parts with an abundance of basking sites.	--/--/SSC	Suitable Conditions Absent: Suitable aquatic habitat necessary to support this species is not present within the BSA. The species was not observed during surveys and is not expected to occur.
blunt-nosed leopard lizard <i>Gambelia sila</i>	Resident of sparsely vegetated alkali and desert scrub habitats, in areas of low topographic relief. Seeks cover in mammal burrows, under shrubs, or structures such as fence posts. Does not excavate their own burrows.	FE/SE/FP	Suitable Conditions Present / Species Confirmed Absent with Protocol Surveys: Suitable habitat for this species occurs in chenopod scrub habitat within the southwestern corner of the BSA and grassland habitat in the northwestern corner of the BSA. Protocol surveys were conducted, and the species was not observed. The species is not expected to occur, but preconstruction clearance surveys are recommended.

Species Name	Habitat and Distribution	Legal Status Federal/State/ Other Status	Rationale for Expecting Presence or Absence
coast horned lizard <i>Phrynosoma blainvillii</i>	Frequents wide variety of habitats, most commonly in lowlands along sandy washes with scattered low bushes. Uses open areas for sunning, bushes for cover, loose soil for burial, and abundant supply of ants and other insects for food.	--/--/SSC	Suitable Conditions Present: Suitable habitat for this species occurs within the southwestern corner of the BSA and grassland habitat in the northwestern corner of the BSA. The species was not observed during surveys. Preconstruction clearance surveys are recommended.
Bakersfield legless lizard <i>Anniella grinnelli</i>	Occurs in southern San Joaquin Valley. Known from two disjunct areas: east side of Carrizo Plain and portions of city limits of Bakersfield. Microhabitat is poorly known. Other legless lizard species occur in sparsely vegetated areas with moist, loose soils. Often found underneath leaf litter, rocks, and logs.	--/--/SSC	Marginal Conditions Present: Sandy soils occur within the BSA; however, soil moisture and vegetative cover is low. Marginal habitat for this species occurs within the southwestern corner of the BSA and grassland habitat in the northwestern corner of the BSA. The species was not observed during surveys. Preconstruction clearance surveys are recommended.
California legless lizard <i>Anniella</i> spp.	Occurs from Contra Costa County south to San Diego, in variety of open habitats. This element represents California records of <i>Anniella</i> not yet assigned to new species within the <i>Anniella</i> complex. Occurs in variety of habitats, generally in moist, loose soil. Prefer soils with high moisture content.	--/--/SSC	Marginal Conditions Present: Sandy soils occur within the BSA; however, soil moisture and vegetative cover is low. Marginal habitat for this species occurs within the southwestern corner of the BSA and grassland habitat in the northwestern corner of the BSA. The species was not observed during surveys. Preconstruction clearance surveys are recommended.
California glossy snake <i>Arizona elegans occidentalis</i>	Patchily distributed from eastern San Francisco Bay, southern San Joaquin Valley, and Coast, Transverse, and Peninsular Ranges, south to Baja California. Generalist reported from range of scrub and grassland habitats, often with loose or sandy soils.	--/--/SSC	Suitable Conditions Present: Suitable habitat for this species occurs within the southwestern corner of the BSA and grassland habitat in the northwestern corner of the BSA. The species was not observed during surveys. Preconstruction clearance surveys are recommended.
San Joaquin coachwhip <i>Masticophis flagellum ruddocki</i>	Occurs in open, dry habitats with little or no tree cover. Found in valley grassland and saltbush scrub in the San Joaquin Valley. Needs mammal burrows for refuge and oviposition.	--/--/SSC	Suitable Conditions Present: Suitable habitat for this species occurs within the southwestern corner of the BSA and grassland habitat in the northwestern corner of the BSA. The species was not observed during surveys. Preconstruction clearance surveys are recommended.
giant garter snake <i>Thamnophis gigas</i>	Most aquatic of garter snakes in California. Prefers freshwater marsh and low-gradient streams. Has adapted to drainage canals and irrigation ditches.	FT/ST/--	Suitable Conditions Absent: Suitable aquatic habitat necessary to support this species is not present within the BSA. There have been no regional observations of this species in several decades (CNDDB 2021). The species was not observed during surveys and is not expected to occur.
Birds			
fulvous whistling duck <i>Dendrocygna bicolor</i>	Occurs in fresh and brackish shallow water and cultivated fields, primarily in tropical and subtropical regions.	--/--/SSC	Suitable Nesting Conditions Absent: Suitable nesting habitat for this species does not occur in the BSA. The species was not observed during surveys and is not expected to occur.

Species Name	Habitat and Distribution	Legal Status Federal/State/ Other Status	Rationale for Expecting Presence or Absence
white-faced ibis <i>Plegadis chihi</i>	Occurs in shallow freshwater marshes. Uses dense tule thickets for nesting and foraging.	--/--/WL	Suitable Nesting Conditions Absent: Suitable nesting habitat for this species does not occur in the BSA. The species was not observed during surveys and is not expected to occur.
Swainson's hawk <i>Buteo swainsoni</i>	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with groves or lines of trees. Requires adjacent suitable foraging areas, such as grasslands, or alfalfa or grain fields supporting rodent populations.	--/ST/--	Suitable Conditions Present within 0.5 mile of BSA / / Species Confirmed Absent with Protocol Surveys: Because of suitable nesting habitat conditions within 0.5 mile of the BSA, protocol surveys were conducted. No species or nests were observed. The species is not expected to occur, but preconstruction clearance surveys are recommended.
white-tailed kite <i>Elanus leucurus</i>	Occurs along rolling foothills and valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland. Open grasslands, meadows, or marshes are used for foraging close to isolated, dense-topped trees for nesting and perching.	--/--FP	Suitable Nesting Conditions Absent: Suitable nesting habitat for this species does not occur in the BSA. The species was not observed during surveys and is not expected to occur.
western snowy plover <i>(Charadrius alexandrinus nivosus)</i>	Occurs on sandy beaches, salt pond levees, and large alkali lake shores. Needs sandy, gravelly, or friable soils for nesting.	FT/--/SSC	Suitable Nesting Conditions Absent: Suitable nesting habitat for this species does not occur in the BSA. The species was not observed during surveys and is not expected to occur.
mountain plover (wintering) <i>Charadrius montanus</i>	Inhabits short grasslands, newly sprouting grain fields, and sometimes sod farms with short vegetation, bare ground, and flat topography. Prefer grazed areas with burrowing rodents.	--/--/SSC	Suitable Wintering Conditions Absent: Suitable wintering habitat for this species does not occur in the BSA. The species was not observed during surveys and is not expected to occur.
western yellow-billed cuckoo (nesting) <i>Coccyzus americanus occidentalis</i>	Occurs in forests to open riparian woodlands with thick understory.	FT/SE/--	Suitable Nesting Conditions Absent: Suitable nesting habitat for this species does not occur in the BSA. The species was not observed during surveys and is not expected to occur.
burrowing owl (burrow and wintering sites) <i>Athene cucularia</i>	Occurs in open, dry grasslands, deserts, and scrublands; subterranean nester, dependent upon burrowing mammals.	--/-- /SSC	Suitable Conditions Present / Species Confirmed Absent with Protocol Surveys: Suitable burrow and wintering habitat occurs in chenopod scrub habitat within the southwestern corner of the BSA, and marginal habitat occurs in other areas of the BSA. This species was observed within the BSA during previous protocol surveys by Live Oak Associates (2013), but recent protocol surveys were conducted throughout the BSA in 2020 and no species or sign (e.g., pellets, droppings) were observed. The species is not expected to occur, but preconstruction clearance surveys are recommended.

Species Name	Habitat and Distribution	Legal Status Federal/State/ Other Status	Rationale for Expecting Presence or Absence
least Bell's vireo (nesting) <i>Vireo bellii pusillus</i>	Nesting summer resident of southern California in low riparian areas near water or river bottoms. Nests placed along margins of bushes or on twigs.	FE/SE/--	Suitable Nesting Conditions Absent: The only CNDDDB regional record is from 1907 at the mouth of the Kern River, at the north end of the Buena Vista Lakebed (CNDDDB 2021); suitable nesting habitat no longer remains in this area as it has been converted to agricultural. Suitable nesting habitat necessary to support this species is not present within the BSA. The species was not observed during surveys and is not expected to occur.
southwestern willow flycatcher <i>Empidonax traillii extimus</i>	Occurs in riparian woodlands in southern California.	FE/SE/--	Suitable Nesting Conditions Absent: Suitable nesting habitat for this species does not occur in the BSA. The species was not observed during surveys and is not expected to occur.
California horned lark <i>Eremophila alpestris actia</i>	In coastal regions, occurs chiefly from Sonoma County to San Diego County. Also occurs in main part of San Joaquin Valley and east to foothills. Uses short grass prairie, bald hills, mountain meadows, open coastal plains, and alkali flats.	--/WL/--	Suitable Nesting Conditions Present: Suitable nesting habitat for this species occurs in chenopod scrub habitat within the southwestern corner of the BSA. This species was observed flying through the BSA during SWHA and BUOW protocol surveys. Preconstruction nest surveys are recommended.
LeConte's thrasher <i>Toxostoma lecontei</i>	Desert resident, primarily of open desert wash, desert scrub, alkali desert scrub, and desert succulent scrub habitats. Commonly nests in a dense, spiny shrub or densely branched cactus in desert wash habitat, usually 2 to 8 feet aboveground.	--/--/SSC	Suitable Nesting Conditions Present: Marginal nesting habitat for this species occurs in chenopod scrub habitat within the southwestern corner of the BSA. The species was not observed during surveys. Preconstruction nest surveys are recommended.
tricolored blackbird <i>Agelaius tricolor</i>	(Nesting colony); requires open water, protected nesting substrate such as cattails or tall rushes, and foraging area with insect prey.	--/ST/SSC	Suitable Nesting Conditions Absent: Suitable nesting habitat for this species does not occur in the BSA. The species was not observed during surveys and is not expected to occur.
yellow-headed blackbird <i>Xanthocephalus xanthocephalus</i>	Nests in freshwater marshes in central-western North America and disperses to open cultivated land and marshes as far as southern Mexico.	FE/SE/--	Suitable Nesting Conditions Absent: Suitable nesting habitat for this species does not occur in the BSA. The species was not observed during surveys and is not expected to occur.
other nesting birds Class Aves	Various habitats (nesting).	MBTA/--/CFGC	Suitable Nesting Conditions Present: Suitable nesting habitat for migratory birds occurs in chenopod scrub habitat within the southwestern corner of the BSA, in ornamental trees within the BSA, and on power line towers that traverse the BSA. Preconstruction nest surveys are recommended.

Species Name	Habitat and Distribution	Legal Status Federal/State/ Other Status	Rationale for Expecting Presence or Absence
Mammals			
Buena Vista Lake shrew <i>Sorex ornatus relictus</i>	Occurs in marshlands and riparian areas in the Tulare Basin. Prefers moist soil. Uses stumps, logs and litter for cover.	FE/--/SSC	Suitable Conditions Absent: Marginal habitat was identified by Live Oak Associates (2013) in a former improvement area near the Kern River that was identified as a proposed Critical Habitat Unit for this species, but this component is no longer part of the proposed project. Live trapping by Live Oak Associates did not result in any capture of this species. Suitable habitat for this species does not occur in the BSA. The species was not observed during surveys and is not expected to occur.
hoary bat <i>Lasiurus cinereus</i>	Prefers open habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees. Feeds primarily on moths. Requires water.	--/--/SA	Suitable Conditions Absent: Suitable roosting habitat for bats does not occur in the BSA. The species was not observed during surveys and is not expected to occur.
western mastiff bat <i>Eumops perotis californicus</i>	Occurs in many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, and chaparral. Roosts in crevices in cliff faces, high buildings, trees, and tunnels.	--/--/SSC	Suitable Conditions Absent: Suitable roosting habitat for bats does not occur in the BSA. The species was not observed during surveys and is not expected to occur.
Nelson's (San Joaquin) antelope squirrel <i>Ammospermophilus nelsoni</i>	Occurs in the western San Joaquin Valley from 200 to 1,200 feet elevation on dry, sparsely vegetated loam soils. Digs burrows or uses kangaroo rat burrows. Needs widely scattered shrubs, forbs, and grasses in broken terrain with gullies and washes.	--/ST/--	Suitable Conditions Present: Suitable habitat occurs in chenopod scrub habitat within the southwestern corner of the BSA. The species was not observed during recent surveys of the BSA, was not observed during 2012 small mammal trapping efforts (Live Oak Associates 2013) and is not expected to occur on-site.
giant kangaroo rat (GKR) <i>Dipodomys ingens</i>	Occurs in annual grasslands on the western side of the San Joaquin Valley; alkali scrub is marginal habitat. Needs level terrain and sandy loam soils for burrowing.	FE/SE/--	Marginal Conditions Present: Marginal habitat occurs in chenopod scrub habitat within the southwestern corner of the BSA. This species was not observed during 2012 small mammal trapping efforts (Live Oak Associates 2013), and no precincts were observed during 2020 surveys within the BSA. If impacts to chenopod scrub habitat are proposed, small mammal trapping prior to construction is recommended to confirm presence/absence of the species.
Tipton kangaroo rat <i>Dipodomys nitratoideus nitratoideus</i>	Occurs in saltbush scrub and sink scrub communities in the Tulare Lake Basin of the southern San Joaquin Valley. Needs soft friable soils that escape seasonal flooding. Digs burrows in elevated soil mounds at bases of shrubs.	FE/SE/--	Suitable Conditions Present: Suitable habitat occurs in chenopod scrub habitat within the southwestern corner of the BSA. One individual was observed during 2012 small mammal trapping efforts (Live Oak Associates 2013); chenopod scrub habitat within the BSA is considered occupied, but likely at small density for the species. If impacts to chenopod scrub habitat are proposed, small mammal trapping prior to construction is recommended to confirm presence/absence of the species.

Species Name	Habitat and Distribution	Legal Status Federal/State/ Other Status	Rationale for Expecting Presence or Absence
San Joaquin pocket mouse <i>Perognathus inornatus</i>	Occurs in grassland, oak savannah, and arid scrubland in the southern Sacramento Valley, San Joaquin Valley, and adjacent foothills, south to the Mojave Desert. Associated with fine-textured, sandy, friable soils.	--/--/SA	Suitable Conditions Present: Suitable habitat occurs in chenopod scrub habitat within the southwestern corner of the BSA. One dead individual was observed in 2012 but none were trapped during small mammal trapping efforts (Live Oak Associates 2013); chenopod scrub habitat within the BSA is considered occupied, but likely at small density for the species. If impacts to chenopod scrub habitat are proposed, small mammal trapping prior to construction is recommended to confirm presence/absence of the species.
Tulare grasshopper mouse <i>Onychomys torridus tularensis</i>	Occurs in hot, arid valleys and scrub deserts in the southern San Joaquin Valley. Their diet is almost exclusively composed of arthropods; therefore, needs abundant supply of insects.	--/--/SSC	Suitable Conditions Present: Suitable habitat occurs in chenopod scrub habitat within the southwestern corner of the BSA. One individual was observed during 2012 small mammal trapping efforts (Live Oak Associates 2013); chenopod scrub habitat within the BSA is considered occupied, but likely at small density for the species. If impacts to chenopod scrub habitat are proposed, small mammal trapping prior to construction is recommended to confirm presence/absence of the species.
San Joaquin kit fox <i>Vulpes macrotis mutica</i>	Occurs in annual grasslands or grassy open stages with scattered shrubby vegetation. Needs loose-textured sandy soils for burrowing and suitable prey base.	FE/ST/--	Suitable Conditions Present: Suitable SJKF habitat occurs in chenopod scrub habitat within the southwestern corner of the BSA, and marginal habitat occurs in other areas of the BSA. No species or potential dens were observed during recent surveys or during previous studies; however, the species has the potential to disperse through and/or forage in the BSA. Preconstruction clearance surveys are recommended.
American badger <i>Taxidea taxus</i>	Occurs in drier open stages of shrub, forest, and herbaceous habitats, with friable soils; needs sufficient food and open, uncultivated ground; digs burrows.	--/--/SSC	Suitable Habitat Absent: Suitable habitat occurs in chenopod scrub habitat within the southwestern corner of the BSA, and marginal habitat occurs in other areas of the BSA. No species or potential dens were observed during recent surveys or during previous studies; however, the species has the potential to disperse through and/or forage in the BSA. Preconstruction clearance surveys are recommended.

General references: Unless otherwise noted all habitat and distribution data provided by the CNDDDB.

Status Codes

--= No status

Federal: FE = Federal Endangered; FT = Federal Threatened; FC = Federal Candidate; CH = Federal Critical Habitat; MBTA = Protected by Federal Migratory Bird Treaty Act

State: SE = State Endangered; ST = State Threatened; FP = Fully Protected Species; CFGC = Protected by CFGC Code Section 3503

CDFW: SSC = California Species of Special Concern; SA = Not formally listed but included in CDFW "Special Animal" List; WL = Watch List

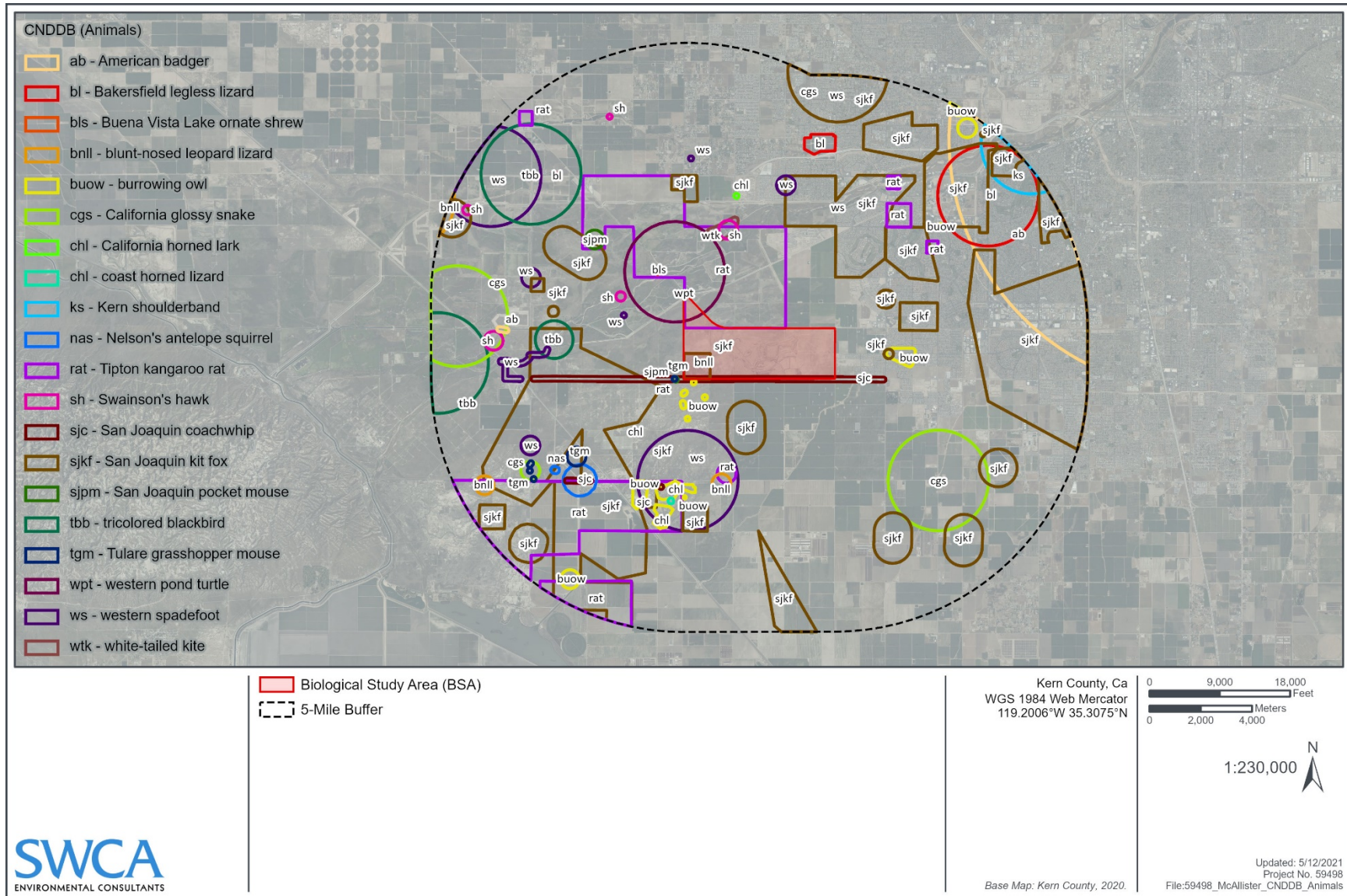


Figure 7. CNDDDB rare animal occurrences map.

Table 6. Sensitive Habitats Evaluated for Potential Occurrence

Habitat / Natural Community	Description	Rationale for Expecting Presence or Absence
Great Valley Cottonwood Riparian Forest	Tall, dense, winter-deciduous, broad-leafed riparian forest. Tree canopy usually is fairly well-closed and moderately to densely stocked with several species, including <i>Acer negundo</i> , <i>Juglans hindsii</i> , <i>Platanus racemosa</i> , <i>Populus fremontii</i> , <i>Salix gooddingii</i> , <i>S. laevigata</i> , and <i>S. lasiandra</i> . Occurs along floodplains of low-gradient, depositional streams of the Great Valley/Central Valley, usually below about 500 feet in elevation.	Suitable Conditions Absent: This habitat was not observed in the BSA.
Great Valley Mesquite Scrub	Open woodland or savanna dominated by <i>Prosopis glandulosa</i> var. <i>torreyana</i> and <i>Atriplex polycarpa</i> . Understories are grassy and usually dominated by introduced annuals. Perennial cover usually is low, with mesquite densities as low as two to three per acre. Occurs in alluvial sandy loams, often with wind-modified microtopography.	Suitable Conditions Absent: Sparse western honey mesquite occurs in the southwestern corner of the BSA, but the vegetation community in this area can best be characterized as chenopod scrub/valley saltbush scrub. This is consistent with the characterization by previous investigators (Live Oak Associates 2013).
Valley Sacaton Grassland	Tussock-forming grassland to 3 feet high dominated by <i>Sporobolus airoides</i> . Occurs in fine-textured, poorly drained, usually alkaline soils. Most sites have seasonally high water tables or are overflowed during winter flooding.	Suitable Conditions Absent: This habitat was not observed in the BSA.
Valley Saltbush Scrub	Open, gray- or blue-green chenopod scrubs (10–40% cover), usually over a low herbaceous annual understory. Cover types dominated by <i>Atriplex polycarpa</i> or <i>A. spinifera</i> . Typically occurs in sandy to loam soils without surface alkalinity; largely on rolling, dissected alluvial fans with low relief. Long, hot, dry summers; short, damp winters shrouded in tule fog for weeks at a time from December through February.	Suitable Conditions Present: Chenopod scrub/valley saltbush scrub habitat occurs in the southwestern 160 acres of the BSA.
Valley Sink Scrub	Low, open-to-dense succulent shrublands dominated by alkali-tolerant Chenopodiaceae, especially <i>Allenrolfea occidentalis</i> or several <i>Suaeda</i> spp. Understories usually are lacking, though sparse herbaceous cover dominated by <i>Bromus madritensis</i> ssp. <i>rubens</i> develops occasionally. Occurs in heavy, saline and/or alkaline clays of lakebeds or playas. Soil surfaces often have white salty crust over dark, sticky clay. Hot, dry summers, and damp winters with long periods of tule fog	Suitable Conditions Absent: Iodine bush (<i>Allenrolfea occidentalis</i>) and bush seepweed (<i>Suaeda nigra</i>) were observed in the southwestern corner of the BSA characterized as chenopod scrub/valley saltbush scrub. No heavy, saline, or alkaline clays indicative of past lakebed or playa features were observed within the BSA.

4.4 Results of Biological Surveys

4.4.1 Botanical Survey Results

Botanical surveys were completed by SWCA biologists following the guidelines of USFWS (2000) and CDFW (2018). Botanical surveys were conducted in April and June 2020 in the 160-acre area of chenopod scrub at the southwestern corner of the BSA and the 12-acre triangular shaped area at the northwestern edge of the BSA, which were the only areas of the BSA with potential habitat for rare plants. The botanical surveys revealed the presence of two special-status plant species: Kern mallow and Hoover's eriastrum. A list of all plant species observed during surveys is included in Appendix D.

4.4.1.1 KERN MALLOW

Kern mallow is an annual herb in the mallow (Malvaceae) family. It has small (8- to 25-millimeter-long) white-to-purple flowers (either pistillate or bisexual/perfect flowers) and grows to a height of up to 50 centimeters, often with ascending basal branches. Its leaves are generally 2 to 5 centimeters wide, deeply three- to five-lobed to dissected, with the lobe tips typically deeply toothed. After flowering, it produces small, wheel- or disk-like fruits that contain nine to 19 wedge-shaped segments. Kern mallow is endemic to the southern San Joaquin Valley in Kern and San Luis Obispo Counties. It flowers from January to May and grows on dry, open sandy to clay soils, often at the edge of denuded areas, in chenopod scrub, pinyon and juniper woodland, and valley and foothill grassland habitats at elevations from 230 to 4,230 feet (70 to 1,290 meters).

Kern mallow is listed as federally endangered and is considered a CNPS List 1B.2 species (rare, threatened, or endangered in California and elsewhere; moderately threatened in California). It is threatened by agriculture, grazing, road construction and maintenance, vehicles, oil development, and possibly by non-native plants (CNPS 2021). Approximately 200 Kern mallow plants were observed within chenopod scrub habitat within the southwestern corner of the BSA (see Figure 3 and photos in Appendix C).

4.4.1.2 HOOVER'S ERIASTRUM

Hoover's eriastrum is an annual herb in the phlox (Polemoniaceae) family. It has tiny (5- to 7-millimeter-long), white, salverform-shaped flowers and grows to a height of up to 15 centimeters, often with ascending basal branches. Its linear-shaped leaves are generally 5 to 25 millimeters long, entire or three-lobed at the base, and range from glabrous to wooly. Hoover's eriastrum is endemic to the southern San Joaquin Valley, southern Sierra Nevada foothills, and areas of the Western Transverse Range. It flowers from February to July and grows in chenopod scrub, pinyon and juniper woodland, and valley and foothill grassland habitats (occasionally in gravelly soils) at elevations from 164 to 3,000 feet (50 to 915 meters).

Hoover's eriastrum is ranked as a CNPS List 4.2 species (Watch List: plants of limited distribution; moderately threatened in California). It is threatened by agriculture, grazing, urbanization, energy development, and vehicles (CNPS 2021). Approximately 2,000 Hoover's eriastrum plants were observed throughout chenopod scrub habitat within the southwestern corner of the BSA (see Figure 3 and photos in Appendix C).

4.4.2 Protocol Animal Survey Results

4.4.2.1 BLUNT-NOSED LEOPARD LIZARD

Protocol BNLL surveys were conducted by BPR Consulting in accordance with the *Revised Survey Methodology for the Blunt-nosed Leopard Lizard* (CDFW 2019). Protocol BNLL surveys were conducted in the 160-acre area of chenopod scrub at the southwestern corner of the BSA and the 12-acre triangular shaped area at the northwestern edge of the BSA, which were the only areas of the BSA with potential habitat for BNLL. Per the protocol, 12 surveys for BNLL adults were completed from April 24 to June 5, 2020, and five surveys for BNLL hatchlings/subadults were completed from August 29 to September 27, 2020. A Blunt-Nosed Leopard Lizard Survey Report and Survey Reporting Forms are included in Appendix E. No BNLL were observed during the protocol surveys.

4.4.2.2 SWAINSON'S HAWK

SWHA surveys were conducted within the BSA and a 0.5-mile radius by BPR Consulting. A Swainson's Hawk Survey Report with Nest Survey Data Forms is included in Appendix F.

Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley (Swainson's Hawk Technical Advisory Committee [SHTAC] 2000) separates the survey effort into five survey periods: Period I (January–March 20; recommended optional), Period II (March 20–April 5), Period III (April 5–April 20), Period IV (April 21–June 10), and Period V (June 10–July 30; post-fledging). *Swainson's Hawk Survey Protocols, Impact Avoidance, and Minimization Measures for Renewable Energy Projects in the Antelope valley of Los Angeles and Kern Counties, California* (California Energy Commission [CEC] and CDFW 2010) separates the survey effort into four survey periods: Period I (January–March 31), Period II (April 1–April 30), Period III (May 1–May 31), Period IV (June 1–July 15). The discrepancy in the survey periods is based on observations suggesting that SWHA may arrive in nesting territories later than the Central Valley Population (CEC and CDFW 2010).

No surveys were conducted during the optional Period I for either the SHTAC or CEC and CDFW protocol). One survey was conducted during the SHTAC Survey Period II on April 4, 2020. Species observed during this survey include red-tailed hawk (*Buteo jamaicensis*), killdeer (*Charadrius vociferus*), mourning dove (*Zenaida macroura*), western kingbird (*Tyrannus verticalis*), common raven (*Corvus corax*), California horned lark (*Eremophila alpestris actia*), northern mockingbird (*Mimus polyglottos*), American kestrel (*Falco sparverius*), great egret (*Ardea alba*), house finch (*Haemorhous mexicanus*), California/valley quail (*Callipepla californica*), and greater roadrunner (*Geococcyx californianus*). One active red-tailed hawk nest and several common raven nests were observed on transmission line poles within the survey radius. No SWHA were observed.

One survey was conducted during the SHTAC Survey Period III on April 18, 2020. Species observed during this survey include common raven, mourning dove, house finch, greater roadrunner, American kestrel, killdeer, great egret, northern mockingbird, and great blue heron (*Ardea herodias*). No additional nests were observed during this survey beyond what was originally observed on April 4, 2020. No SWHA were observed.

Six surveys were conducted during the SHTAC Survey Period IV on April 24 and May 3, 8, 9, 10, and 23, 2020. While initiating surveys is typically not recommended during this period, additional surveys were conducted to determine if late-season initiation of SWHA nesting was occurring. Species observed during these surveys include barn owl (*Tyto alba*), northern mockingbird, American kestrel, common raven, California horned lark, killdeer, mourning dove, red-tailed hawk, western kingbird, great blue heron, greater roadrunner, house finch, great egret, red-shouldered hawk (*Buteo lineatus*), and

California/valley quail. No additional nests were observed beyond those originally observed during the first survey on April 4, 2020. No SWHA were observed.

Finally, one survey was conducted during the SHTAC Survey Period V (post-fledging) on July 2, 2020. Species observed during this survey include mourning dove, California horned lark, common raven, western kingbird, greater roadrunner, great egret, northern mockingbird, and American kestrel. No additional nests were observed beyond those observed on April 4, 2020. No SWHA were observed.

The cumulative SWHA survey effort, totaling nine surveys, resulted in no observations of SWHA within the BSA or within a 0.5-mile radius of the BSA; therefore, the species was determined to not currently nest in or within 0.5 mile of the BSA.

4.4.2.3 BURROWING OWL

Protocol BUOW surveys were conducted by BPR Consulting following the *Burrowing Owl Survey Protocol and Mitigation Guidelines* (The California Burrowing Owl Consortium 1993). Protocol BUOW surveys were conducted throughout the BSA. Per the protocol, four BUOW breeding/nesting season (February 1 to August 31) surveys were conducted on April 26 and May 3, 8, and 9, 2020, and four BUOW wintering/non-breeding season (December 1 to January 31) surveys were conducted on December 9, 11, 15, and 21, 2020. A Burrowing Owl Survey Report with Survey Data Forms are included in Appendix G.

During the April 26 to May 9, 2020, protocol BUOW breeding/nesting season surveys, bird species observed included American kestrel, western kingbird, common raven, California horned lark, mourning dove, house finch, California/valley quail, great blue heron, northern mockingbird, killdeer, and great egret. No BUOW or sign of BUOW were observed during any of the nesting season surveys.

During the December 9 to 21, 2020, protocol BUOW wintering/non-breeding season surveys, bird species observed included mourning dove, American kestrel, common raven, greater roadrunner (*Geococcyx californianus*), house finch, great egret, Eurasian collared dove (*Streptopelia decaocto*), California/valley quail, northern mockingbird, and killdeer. No BUOW or sign of BUOW were observed during any of the wintering/non-breeding season surveys.

4.4.3 Biological Reconnaissance Survey Results

On December 12 and 13, 2020, a two-day site reconnaissance survey was conducted by BPR Consulting. The primary focus of the survey was the detection of the presence of potentially occurring sensitive biological resources and special-status species, primarily SJKF, TKR, and SJAS and potential dens and burrows. Evidence of wildlife within the proposed project area was limited to side-blotched lizard (*Uta stansburiana*), California ground squirrel (*Otospermophilus beecheyi*), common raven, Brewer's blackbird (*Euphagus cyanocephalus*), house finch, common starling (*Sturnus vulgaris*), and mourning dove. No special-status plant species were observed. In the southwestern corner of the BSA with 160 acres of chenopod scrub habitat, survey personnel identified 14 areas of potential TKR burrows; however, no TKR sightings occurred during the entirety of the survey. No SJKF or SJAS sightings or signs of their presence were identified. The Biological Reconnaissance Survey Report is included in Appendix H.

5 REGULATORY SETTING

5.1 Federal Policies and Regulations

5.1.1 Federal Endangered Species Act of 1973

The FESA provides legislation to protect federally listed plant and animal species. FESA Section 9 protects federally listed plant and animal species from unlawful take. “Take” is defined by the FESA as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” Under the FESA, all take of federally listed fish and wildlife species as detailed in a Biological Opinion (or Habitat Conservation Plan [HCP]) must be incidental to otherwise lawful activities and not the purpose of such activities. Impacts to listed species resulting from the implementation of a project would require the responsible agency or the applicant to coordinate with the USFWS or NOAA Fisheries to determine the extent of impact to a particular species. If the USFWS or NOAA Fisheries determine that impacts to a federally listed species would likely occur, alternatives and measures to avoid or reduce impacts must be identified. The USFWS and NOAA Fisheries also regulate activities conducted in federal critical habitat, which are geographic units designated as areas that support primary habitat constituent elements for listed species.

Applicants proposing projects must comply with the FESA either through FESA Section 7 or Section 10. FESA Section 7 requires all federal agencies to use their authorities to conserve endangered and threatened species in consultation with the USFWS and directs all federal agencies to ensure that the actions they authorize, fund, or carry out do not jeopardize the continued existence of endangered or threatened species or destroy or adversely modify critical habitat. FESA Section 7 formal consultation typically results in the issuance to the applicant of a Biological Opinion and Incidental Take Statement, which states the opinion of the USFWS as to whether or not the federal action is likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat. A Biological Opinion typically requires terms and conditions that the applicant must follow to remain in compliance with the FESA. FESA Section 10 authorizes the USFWS to issue permits to non-federal entities allowing for the incidental take of threatened or endangered species, which would otherwise be prohibited under FESA. This requires the applicant to develop an HCP and obtain a federal Incidental Take Permit (ITP) from the USFWS (or qualify for coverage under an HCP/ITP already in place), and typically requires terms and conditions that the applicant must follow to remain in compliance with the FESA.

As the proposed project does not require any federal authorization, funding, or any other identified federal nexus, FESA compliance is expected to be facilitated through FESA Section 10.

5.1.1.1 METROPOLITAN BAKERSFIELD HABITAT CONSERVATION PLAN

The proposed project would need to remain in compliance with the provisions of the FESA. The proposed project is located within the coverage area of the MBHCP, which addresses biological impacts within the Metropolitan Bakersfield General Plan area. SWCA’s review of the MBHCP, specifically the MBHCP’s Implementation/Management Agreement, indicates the applicability of the MBHCP pertains primarily to “Urban Development.” According to MBHCP Implementing Agreement Section 2.20 Urban Development:

The term “Urban Development” means a change in land use from Open Land to any other land use for which a permit such as a grading permit, grading plan approval, building permit or use permit is required from the City or County, including but not

limited to, the construction of buildings on lots of record and projects undertaken directly by the City or County.

According to MBHCP Implementing Agreement Section 2.21 Urban Development Permit:

The term “Urban Development Permit” means issuance of a building permit by the City or County for a project that would result in Urban Development. Where a project would ultimately result in Urban Development, the term “Urban Development Permit” also means issuance of a use permit or grading plan approval, or approval of activities undertaken by a public agency including but not limited to public works construction and related activities, if applicable by the City or County.

Development within the Metropolitan Bakersfield area requires a one-time MBHCP habitat mitigation fee of \$2,145.00 per gross acre of land development. The habitat mitigation fee is submitted to the County of Kern (County) Building Inspection Division along with any other fees that are associated with the building or grading permit. The habitat mitigation fee is due at the time the grading or building permit is issued.

Based on SWCA’s interpretation of the MBHCP Implementing Agreement text (i.e., Section 2.21 Urban Development Permit), the proposed project would appear to be covered under the MBHCP for FESA compliance. The current MBHCP expires on February 28, 2022, and a revision is currently in progress. Species covered under the current MBHCP with a federal ITP are included in Table 7.

Table 7. Species Covered under the MBHCP/Federal ITP

Common Name	Scientific Name
Plants	
Bakersfield cactus	<i>Opuntia basilaris</i> var. <i>treleasei</i>
California jewelflower	<i>Caulanthus californicus</i>
San Joaquin woollythreads	<i>Monolopia congdonii</i>
Hoover’s eriastrum	<i>Eriastrum hooveri</i>
Kern mallow	<i>Eremalche parryi</i> ssp. <i>kernensis</i>
Animals	
blunt-nosed leopard lizard	<i>Gambelia sila</i>
giant kangaroo rat	<i>Dipodomys ingens</i>
Tipton kangaroo rat	<i>Dipodomys nitratoides nitratoides</i>
San Joaquin kit fox	<i>Vulpes macrotis mutica</i>

5.1.2 Migratory Bird Treaty Act of 1918

The MBTA protects all migratory birds, including their eggs, nests, and feathers. The MBTA was originally drafted to put an end to the commercial trade in bird feathers popular in the latter part of the 1800s. The MBTA is enforced by the USFWS, and potential impacts to species protected under the MBTA are evaluated by the USFWS in consultation with other federal agencies. On April 11, 2018, the USFWS issued guidance on the recent M-Opinion affecting MBTA implementation. The M-Opinion concludes that the take of birds resulting from an activity is not prohibited by the MBTA when the underlying purpose of that activity is not to take birds. The USFWS interprets the M-Opinion to mean the

MBTA prohibitions on take apply when the purpose of the action is to take migratory birds, their eggs, or their nests. Working with other federal agencies on migratory bird conservation is an integral mission of the USFWS; therefore, the USFWS maintains that potential impacts to migratory birds resulting from federal actions should be addressed under the National Environmental Policy Act (NEPA). The chenopod scrub habitat in the BSA may support habitat for nesting birds. If proposed ground-disturbing activities are implemented during the nesting bird season, preconstruction nesting bird surveys should be conducted to avoid impacts to nesting migratory birds.

5.2 State Policies and Regulations

Guidance for determining CEQA significance thresholds is based on Appendix G of the State CEQA Guidelines. Using these guidelines, activities requiring CEQA review within the proposed project study area would have a significant impact on biological resources if they would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by the CDFW or the USFWS;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the CDFW or USFWS;
- Have a substantial adverse effect on federally protected wetlands as defined by Clean Water Act (CWA) Section 404;
- Interfere substantially with the movement of any resident or migratory species of wildlife, wildlife corridors, or wildlife nursery sites;
- Conflict with any local policies or ordinances protecting biological resources; or
- Conflict with the provisions of an adopted HCP, Natural Community Conservation Plan (NCCP), or other approved state, regional, or local HCP.

This BER has been prepared in support of the applicant's application submittal to the City and the CEQA environmental document for the proposed project.

5.2.1 **California Endangered Species Act and Species of Special Concern**

California has a parallel mandate to the FESA, which is embodied in the CESA. The CESA ensures legal protection for plants listed as rare or endangered and wildlife species formally listed as endangered or threatened. The state also maintains a list of California SSC. SSC status is assigned to species that have limited distribution, declining populations, diminishing habitat, or unusual scientific, recreational, or educational value. Under state law, CDFW is empowered to review projects for their potential to impact special-status species and their habitats. Under the CESA, CDFW reserves the right to request the replacement of lost habitat that is considered important to the continued existence of CESA-protected species. The CDFW regulates activities that may result in the "take" of such species. CESA has a much less inclusive definition of "take" (limited to direct take, such as hunting, shooting, capturing, etc.) that does not include the broader definitions in federal law.

The proposed project would need to remain in compliance with the provisions of CESA. The CDFW indicated in their comment and recommendation letter (CDFW 2020a) in response to the CEQA Notice of Preparation (NOP) that, in regard to the 2014 ITP No. 2081-2013-058-04 issued to the City and County for CESA compliance, the ITP pertains to "Urban Development." For the purpose of the ITP, the CDFW

stated that Urban Development does not include activities for water recharge and extraction facilities (not including wells developed in an urban setting) within lands owned by the California Department of Water Resources, Kern County Water Agency, Kern Water Bank Authority, or other water districts. The CDFW did not concur that the proposed project is an activity covered under ITP No. 2081-2013-058-04. The CDFW recommended that the land ownership within and adjacent to the proposed project site be disclosed in the proposed project EIR. Further, the CDFW has advised that the applicant coordinate with the CDFW to comply with the CESA in advance of any proposed project approval or implementation.

As a result of this determination by the CDFW, any proposed project-related activities that could result in take of state-listed species would need to be covered under a separate ITP to be obtained by the applicant for CESA compliance.

5.2.2 California Fish and Game Code

Pursuant to Division 2, Chapter 6, Sections 1600–1602 of the CFGC, the CDFW regulates all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake that supports fish or wildlife. The CDFW defines a “stream” (including creeks and rivers) as “a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having surface or subsurface flow that supports or has supported riparian vegetation.” The CDFW’s definition of “lake” includes “natural lakes or man-made reservoirs.” The CDFW jurisdiction within altered or artificial waterways is based upon the value of those waterways to fish and wildlife.

The CDFW also manages the California NPPA (CFGC Section 1900 et seq.), which was enacted to identify, designate, and protect rare plants. In accordance with CDFW guidelines, plant species with CNPS Rare Plant Ranks 1A, 1B, 2A, 2B, and 3 are considered “rare” under the NPPA. Impacts to plants with these rarity rankings must be fully evaluated under CEQA. Plants with CNPS Rank 4 have limited distributions but are not necessarily eligible for listing; however, it is recommended that impacts to plants with CNPS Rank 4 also be evaluated per CEQA.

Per CFGC Section 2835, in absence of a CDFW-approved NCCP, the CDFW cannot authorize take of a Fully Protected species. The classification of Fully Protected was the state’s initial effort in the 1960s to identify and provide additional protection to those animals that were rare or faced possible extinction. Most “fully” protected species have been listed as threatened or endangered species under the CESA. CFGC Sections 3511 (birds), 4700 (mammals), 5050 (reptiles and amphibians), and 5515 (fish) include provisions to protect Fully Protected species, such as: (1) prohibiting take or possession “at any time” of the species listed in the statute, with few exceptions; (2) stating that “no provision of this code or any other law shall be construed to authorize the issuance of permits or licenses to “take” a species that has been designated as Fully Protected; and (3) stating that no previously issued permits or licenses for take of these species “shall have any force or effect” for authorizing take or possession. Unless an applicant has developed a CDFW-approved NCCP, CDFW is unable to authorize incidental take of Fully Protected species when activities are proposed in areas inhabited by those species.

CFGC Section 3503 (Protections of Bird’s Nests) includes provisions to protect the nests and eggs of birds. Section 3503 states: “It is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto.”

6 IMPACT ASSESSMENT AND MITIGATION

The proposed project will involve construction of a water banking project with up to 24 percolation ponds, up to 14 groundwater extraction wells, water conveyance facilities, up to four pumping plants and two gravity turnouts, and up to eight groundwater monitoring wells. Grading and other earthwork, infrastructure improvements, pumping plant construction, and installation of a network of pipeline systems will be required. It is conservatively estimated that up to 1,999 acres of the 2,070-acre site would be permanently impacted by grading/earthwork, construction, and operations of the proposed project; the 71 acres of ruderal oil fields would not be impacted by the proposed project.

The proposed project is expected to operate similarly as other regionally recharge facilities (e.g., Kern Water Bank). The proposed project would be inactive 85% of the time, infrequently operating when sufficient water is available and sitting as open land to be maintained. During wet years, water supply will inundate the percolation ponds and render them unsuitable for terrestrial plant and animal species, while potentially providing suitable foraging habitat for water and shore birds. During dry years, the percolation ponds will remain dry or mostly dry and, during several consecutive dry years, upland conditions may form and potentially provide habitat for regional plant and animal species, including some locally occurring special-status species (e.g., BUOW, TKR, SJKF, etc.). However, such formation of upland habitat conditions would likely be temporary, and the presence of the percolation ponds, associated infrastructure, and alteration of the hydrological regime would result in permanent landscape impacts.

Due to routine disturbances from disking and other activities, the vast majority of the site has minimal potential to support potential for special-status plant or wildlife species. With the full project alternative, the areas of the proposed project with the highest potential to support special-status species include the 160-acre area of chenopod scrub at the southwestern corner of the BSA that would be impacted by the construction and operation of percolation pond #24. The 12-acre triangular area toward the northwestern corner of the BSA would be impacted by the construction and operation of percolation pond #17 but has a much lower likelihood of supporting special-status species due to routine disturbances (e.g., ORV use and target range) that occurs in that area.

Construction and operation of the proposed project will impact habitat that could support special-status species. While areas of the proposed project site supporting chenopod scrub and annual grassland have the highest potential to support special-status species, other areas of the proposed project site could have a minor potential to support species such as BUOW or SJKF that are mobile and have wide areas of activity; therefore, a series of general mitigation measures have been recommended that are applicable throughout the site as well as more species-specific measures. The proposed project will incorporate and implement appropriate impact avoidance, minimization, mitigation, and/or compensation measures to offset such impacts.

6.1 General Mitigation Measures

The following general mitigation measures will be applicable for all special-status/sensitive plants, animals, and habitats that could be impacted by the proposed project:

- BIO-1 An approved Project Biologist shall be assigned to the project who shall be responsible for overseeing environmental compliance and protections for special-status/sensitive plants, animals, and habitats. The Project Biologist shall be the main point of contact between the applicant and regulatory agencies for matters involving regulatory compliance for biological resources.

A qualified biological monitor shall be on-site during all earthwork activities to monitor construction activities, monitor avoidance of buffer areas, and ensure compliance with all environmental requirements pertaining to biological resources. The monitoring biologist shall be contacted as soon as possible following the release of potentially hazardous materials into habitat. Agency-approved biologists may be required to conduct or supervise particular activities (e.g., burrow/den excavation, species relocation) for federally and/or state-listed species. The monitoring biologist shall have the authority to halt any activities that could result in take or injury/mortality of special-status species. Work shall proceed only after the imminent threat of take has been resolved. Potential responsibilities of the monitoring biologist include:

- a. Monitoring project avoidance, minimization, and compensation compliance;
- b. Notifying field crews of compliance requirements and potential or actual incidences of non-compliance;
- c. Documenting and reporting incidences of non-compliance;
- d. Surveying ahead of crews as needed to locate and avoid sensitive species and habitat features; and
- e. Routing equipment access to minimize impacts to habitat features.

BIO-2 The Project Biologist shall prepare a project Environmental Training Program. Employees and supervising staff working on the project shall participate in an initial program session provided by the Project Biologist prior to initiation of construction activity. At a minimum, the program shall cover the general behavior and ecology of the pertinent special-status species, legal protection, penalties for federal and state law violations, and protective measures. A fact sheet/brochure or PowerPoint presentation conveying this information shall be made available to on-site personnel, construction workers, staff involved in operations, and other individuals who may enter the project site. New employees shall receive the training prior to working on the active site, with training provided by the Project Biologist or a qualified biologist/biological monitor, or by viewing a PowerPoint presentation. Upon receiving the training, each trainee shall sign a record sheet verifying their participation in the training and acknowledging their environmental compliance responsibilities while working within the project site.

BIO-3 Prior to construction, the Project Biologist shall prepare a special-status species Relocation Plan that allows for relocation of special-status species, excluding California fully protected species, encountered prior to or during construction and operations. The Relocation Plan shall be submitted to the involved regulatory agencies for review/approval prior to implementation.

BIO-4 Work area boundaries shall be delineated with flagging, temporary fencing, or other markers deemed warranted by the Project Biologist to minimize the potential for off-site impacts associated with potential vehicle straying.

BIO-5 Existing roads/routes of travel shall be used to the maximum extent feasible. Off-road/cross-country travel by construction equipment and vehicles is prohibited unless specifically authorized by the Project Biologist.

BIO-6 Within 30 days prior to initiation of construction, qualified biologists shall conduct preconstruction surveys of all areas that will be permanently or temporarily impacted, plus a 200-meter buffer in areas subject to legal access, to locate special-status resources on-site. Any special-status resources observed such as potential dens/burrows/nests for special-status

species shall be marked with flagging, mapped with GPS, and reported to the CNDDDB. Special-status resources that can be avoided shall have avoidance buffers implemented; the appropriate size/radius of avoidance buffers shall be determined by the Project Biologist based on the species/resource and in compliance with any agency-required standards. Special-status resources that cannot be avoided shall be addressed with species-specific mitigation measures (detailed in various mitigation measures below). A preconstruction survey report shall be prepared by the Project Biologist and provided to the applicant.

- BIO-7 Project employees shall exercise caution when traveling or working within listed species' habitats. To minimize wildlife injury/mortality, the daytime speed limit on unpaved roads shall be a maximum of 20 miles per hour (mph). If conditions warrant, the maximum speed may be lowered to 10 mph, for example along a narrow road in highly sensitive habitat; this determination shall be made by the biological monitor. The maximum speed shall be posted in the project area.
- BIO-8 All vehicle/equipment operators shall check for wildlife under vehicles and equipment prior to operation. If wildlife are observed, vehicles and equipment will not be moved until observed wildlife move away on their own so that they are not under threat of injury/mortality, or the Project Biologist has relocated the wildlife out of harm's way (if such relocation is authorized by the involved regulatory agencies).
- BIO-9 Trash and food items shall be contained in closed, wildlife-proof containers and removed weekly at a minimum from the project site.
- BIO-10 Firearms and pets shall be prohibited from the project site. Wildlife-friendly fencing will be installed along the bike trail to prevent pets from accessing sensitive habitat areas.
- BIO-11 The construction contractor shall have hazardous materials spill and containment kits kept on-site at all times to be immediately deployed if necessary. All releases of potentially hazardous materials will be contained closest to the source site as possible. The released materials will be cleaned up by the contractor immediately and disposed of properly. If a release of potentially hazardous materials occurs within special-status species habitat, the Project Biologist will be contacted immediately and the Project Biologist and/or biological monitor will monitor cleanup and containment. The involved regulatory agencies (e.g., USFWS, CDFW, the City) will be notified of the release of potentially hazardous materials and the remedial action taken by the contractor as soon as possible, but not later than 24 hours after the release occurs or is discovered. Within 30 days of completing cleanup activities, a compliance report will be submitted by the Project Biologist/biological monitor to the involved regulatory agencies.
- BIO-12 Any contractor, employee, or third party responsible for incidentally taking a federally and/or state-listed wildlife species shall immediately report the incident to the Project Biologist who will then notify the involved regulatory agencies (e.g., USFWS, CDFW, the City) within 24 hours by phone and email. All non-emergency actions will cease immediately until guidance is received from the regulatory agencies. Notification must include the date, time, location, and other pertinent information of the incident or of the finding of a dead or injured animal. Written notification will be provided to the regulatory agencies within 3 working days of the incidental take and will include the same notification information listed above.
- BIO-13 At minimum, weekly monitoring reports and an Annual Compliance Report shall be prepared by the Project Biologist and/or biological monitor(s) documenting compliance during construction. Monitoring reports for operations activities will be required if the operations

activities require either a federal or state ITP. The frequency of monitoring reports for operations activities will be determined by the requirements of the federal or state ITP. Monitoring/compliance reports will include documentation of project compliance/non-compliance, special-status species observations, protective/corrective actions taken, project site photographs, copies of Environmental Training Program sign-in sheets, and any other information considered useful or relevant.

6.2 Potential Project-Related Impacts and Mitigation for Special-Status Plant Species

6.2.1 Potential Impacts

Surveys for special-status plant species detected the federally endangered Kern mallow and the CNPS List 4.2 Hoover's eriastrum. Although not observed during previous surveys (Live Oak Associates 2013), approximately 200 individuals of Kern mallow were observed during 2020 botanical surveys in the chenopod scrub habitat in the southwestern corner of the BSA; Hoover's eriastrum was observed during previous surveys (Live Oak Associates 2013) and approximately 2,000 individuals of Hoover's eriastrum were observed during 2020 botanical surveys (see Figure 3). With the full project alternative, the entire populations of these species on-site could be impacted, as the area would be converted to percolation pond #24.

6.2.2 Significance

Kern mallow is a federally endangered species. The MBHCP provides coverage/protections for Kern mallow; coverage/protections also were included for Hoover's eriastrum (this species is since no longer federally listed). Impacts to individuals of Kern mallow are considered less than significant with mitigation incorporated.

The USFWS delisted Hoover's eriastrum in 2003 and it is considered a CNPS List 4.2 species (Watch List; moderately threatened in California). This species is known to be relatively abundant in the region with populations surrounding the proposed project site in all directions; the population formerly documented on the site by Live Oak Associates (2013) and again confirmed in 2020 does not extend the range of the species. Potential impacts to individuals of Hoover's eriastrum are considered less than significant due to the abundance of this species regionally. No mitigation is proposed for this species.

6.2.3 Mitigation Measures

The MBHCP encourages the salvage and relocation of plants (MBHCP Steering Committee 1984:60–61), but no specific methods/plans are provided.

- BIO-14 If the 160-acre area of chenopod scrub habitat on-site will be impacted by project-related activities, an appropriately timed preconstruction survey for Kern mallow shall be conducted by a qualified biologist during the spring season (or when reference populations are flowering) that precedes construction. The distribution of the Kern mallow population shall be marked in the field with flagging and mapped with GPS, and population size/number of individual Kern mallow plants will be estimated.
- BIO-15 A minimum 50-foot avoidance buffer measured outward from the individual plant, cluster of plants, or mapped population boundaries shall be maintained around populations of Kern mallow.

- BIO-16 If impacts must encroach on Kern mallow avoidance buffers, a qualified biologist shall quantify the impact to Kern mallow (e.g., impacted number of plants, impacted acreage). The applicant shall comply with MBHCP requirements, and, if applicable, coordinate with USFWS to develop a Salvage/Relocation Plan for Kern mallow. For example, a Relocation Plan strategy may include:
- a. Collection of seed by a biologist with proper plant collecting permits, with reseeded undertaken at the site following the activity during appropriate seasonal timeframes and weather conditions favorable for germination and growth.
 - b. In areas where mapped Kern mallow will be impacted, stockpiling the top 6 inches of topsoil collected to preserve the seed banks. The soil may be redistributed in other areas of the project site that are to be left undisturbed (if available) or at a protected off-site location (e.g., Kern Water Bank land, other lands owned by the Districts).

6.3 Potential Project-Related Impacts and Mitigation for Special-Status Animal Species

6.3.1 *Blunt-Nosed Leopard Lizard*

6.3.1.1 POTENTIAL IMPACTS

Potential BNLL habitat was identified in the 160-acre area of chenopod scrub in the southwestern corner of the BSA; there is a CNDDDB occurrence record of a BNLL observation in 1991 at this location (CNDDDB 2021). The 12-acre triangular area of annual grassland in the northwestern corner of the BSA may also support marginal BNLL habitat. Construction and operation within these areas could impact BNLL through direct injury or mortality and/or entombment in burrows from construction equipment conducting earthwork if BNLL are found to be present on-site. Operation of percolation ponds #17 and #24 would permanently alter/eliminate potential BNLL habitat. No BNLL were observed in suitable habitat on-site as reported by Live Oak Associates (2013) or during recent protocol surveys conducted in 2020 as part of updating this BRE.

6.3.1.2 SIGNIFICANCE

BNLL is a federally and state endangered species protected under the FESA and CESA and is also Fully Protected by the State of California. No incidental take can be authorized by the State of California for Fully Protected species. Based on the results of protocol surveys, BNLL are not anticipated to occur on-site, but preconstruction surveys are recommended to reverify absence; if BNLL are observed during preconstruction surveys, construction, or operations, mitigation has been recommended to avoid impacts. Impacts to BNLL are considered less than significant with mitigation incorporated.

6.3.1.3 MITIGATION MEASURES

The following mitigation measures for BNLL will be implemented:

- BIO-17 If suitable BNLL habitat is proposed for disturbance, preconstruction surveys shall be conducted by a qualified biologist following *Revised Survey Methodology for the Blunt-Nosed Leopard Lizard* (CDFW 2019). Surveys must be completed, and a survey report must be submitted to CDFW and USFWS, a minimum of 30 calendar days prior to initiation of construction and a maximum of 1 year prior to initiation of construction for negative findings to be accepted. If BNLL absence is reverified, project activities can proceed providing

acceptance by the USFWS and CDFW of the survey results. The USFWS and CDFW may require additional protocol surveys prior to construction for FESA and CESA compliance.

- BIO-18 If BNLL are observed during preconstruction surveys or construction, the applicant shall coordinate with the USFWS and CDFW to develop and implement measures to avoid take of BNLL.

6.3.2 Coast Horned Lizard, Bakersfield Legless Lizard, California Legless Lizard, California Glossy Snake, San Joaquin Coachwhip

Coast horned lizard, Bakersfield legless lizard, California legless lizard, California glossy snake, and San Joaquin coachwhip have been addressed as a group because they are reptiles with similar status as California SSCs with similar potential impacts and mitigation.

6.3.2.1 POTENTIAL IMPACTS

Potential habitat for coast horned lizard, Bakersfield legless lizard, California legless lizard, California glossy snake, and San Joaquin coachwhip occurs in the 160-acre area of chenopod scrub in the southwestern corner of the BSA and in the 12-acre triangular area of annual grassland in the northwestern corner of the BSA. Construction and operation within these areas could impact these species through direct injury or mortality and/or entombment in burrows from construction equipment conducting earthwork if these species are found to be present on-site. Operation of percolation ponds #17 and #24 would permanently alter/eliminate potential habitat for these species. None of these species were observed in suitable habitat on-site as reported by Live Oak Associates (2013), and none of these species were observed in suitable habitat on-site during protocol BNLL surveys and reconnaissance surveys conducted in 2020 and 2021.

6.3.2.2 SIGNIFICANCE

Coast horned lizard, Bakersfield legless lizard, California legless lizard, California glossy snake, and San Joaquin coachwhip are California SSCs and considered rare species under CEQA. Preconstruction surveys are recommended to reverify absence; if any of these species are observed during preconstruction surveys, construction, or operations, mitigation has been recommended to avoid impacts. Impacts to coast horned lizard, Bakersfield legless lizard, California legless lizard, California glossy snake, and San Joaquin coachwhip are considered less than significant with mitigation incorporated.

6.3.2.3 MITIGATION MEASURES

The following mitigation measures for coast horned lizard, Bakersfield legless lizard, California legless lizard, California glossy snake, and San Joaquin coachwhip will be implemented:

- BIO-19 Within 30 days prior to initiation of construction, qualified biologists shall conduct a preconstruction survey in areas of suitable habitat for coast horned lizard, Bakersfield legless lizard, California legless lizard, California glossy snake, and San Joaquin coachwhip that are proposed for disturbance. If absence of these species is reverified, project activities can proceed.
- BIO-20 If coast horned lizard, Bakersfield legless lizard, California legless lizard, California glossy snake, and/or San Joaquin coachwhip are observed during preconstruction surveys or construction, the location(s) where they are observed shall be marked with flagging and

mapped with GPS. To avoid the potential for injury/mortality to these species resulting from project-related activities:

- a. Minimum 50-foot avoidance buffers shall be implemented at the point(s) of observation; or
- b. A qualified biologist shall capture and relocate individuals of these species to suitable habitat outside of the area of impact per the approved Relocation Plan.

6.3.3 Swainson's Hawk

6.3.3.1 POTENTIAL IMPACTS

There are past CNDDDB records for SWHA in areas along the Kern River, and Live Oak Associates reported SWHA nest observations in 2013 (Live Oak Associates 2013), but no SWHA were observed during protocol surveys conducted in 2020. If SWHA are found to be nesting within 0.5 mile of the proposed project site during construction, SWHA could be impacted by the loss of foraging habitat or disturbances leading to nest abandonment.

6.3.3.2 SIGNIFICANCE

SWHA is a state threatened species protected under the CESA. Based on the results of protocol surveys, SWHA are not anticipated to occur within 0.5 mile of the proposed project site, but preconstruction surveys are recommended to reverify absence; if SWHA are observed during preconstruction surveys, construction, or operations, mitigation has been recommended to avoid impacts. Impacts to SWHA are considered less than significant with mitigation incorporated.

6.3.3.3 MITIGATION MEASURES

The following mitigation measures for SWHA will be implemented:

- BIO-21 At a minimum, within 30 days prior to initiation of construction, qualified biologists shall conduct a preconstruction survey of suitable nesting habitat (e.g., potential nest trees, power line towers, etc.) within 0.5 mile of the project site. If SWHA absence is reverified, project activities can proceed providing acceptance by the CDFW of the survey results. The CDFW may require additional protocol surveys prior to construction for CESA compliance.
- BIO-22 If SWHA are observed within 0.5 mile of the project site during pre-construction surveys or during construction, the applicant shall coordinate with the CDFW to determine if a State ITP is required and implement measures to avoid take of SWHA. Such measures may include but may not be limited to:
- a. Implementation of avoidance buffers.
 - b. When possible, seasonal restrictions of project activities during the nesting season.
 - c. Acquisition of SWHA conservation lands and/or bank credits.

6.3.4 Burrowing Owl

6.3.4.1 POTENTIAL IMPACTS

Suitable burrowing and wintering habitat for this species occurs in chenopod scrub habitat within the southwestern corner of the BSA; marginal habitat occurs in other areas of the BSA. There are several

regional CNDDDB records for BUOW, including on the south side of Panama Lane opposite south of the proposed project site. BUOW were detected on-site during previous protocol surveys conducted by Live Oak Associates (Live Oak Associates 2013), but no BUOW were observed during protocol surveys conducted in 2020. If BUOW are found to occupy the proposed project site, construction and operation within potential habitat could impact BUOW through direct injury or mortality, entombment in burrows, abandonment of nest and/or wintering sites, and/or loss of foraging habitat.

6.3.4.2 SIGNIFICANCE

BUOW is a California SSC and considered a rare species under CEQA. Based on the results of protocol surveys, BUOW are not anticipated to occur within the proposed project site, but preconstruction surveys are recommended to reverify absence; if BUOW are observed during preconstruction surveys, construction, or operations, mitigation has been recommended to avoid impacts. Impacts to BUOW are considered less than significant with mitigation incorporated.

6.3.4.3 MITIGATION MEASURES

The following mitigation measures for BUOW will be implemented:

- BIO-23 A qualified biologist shall conduct preconstruction surveys of all areas of potential habitat that will be permanently or temporarily impacted, plus a 200-meter buffer in areas subject to legal access, to locate active breeding or wintering BUOW burrows. The survey(s) shall occur no more than 14 days prior to ground-disturbing activities (i.e., vegetation clearance, grading) or decommissioning. The survey methodology shall be consistent with the take avoidance survey methods outlined in the CDFW *Staff Report on Burrowing Owl Mitigation* (CDFW 2012). Because BUOW may re-colonize a site after only a few days, time lapses between project activities may trigger subsequent surveys, including, but not limited to, a final survey conducted within 24 hours prior to ground disturbance to identify any additional BUOW or burrows necessitating avoidance, minimization, or mitigation measures. The need for additional surveys will be at the final discretion of the Project Biologist. If BUOW absence is reverified, project activities can proceed providing acceptance by CDFW of the survey results.
- BIO-24 If BUOW are detected on-site during preconstruction surveys or during construction, no ground-disturbing activities within a minimum 200-meter avoidance buffer shall occur around occupied burrows during the breeding season (February 1 to August 31), unless authorized by CDFW. During the non-breeding season (September 1 to January 31), no ground-disturbing activities within a minimum 50-meter avoidance buffer shall occur around occupied burrows, unless authorized by CDFW.
- BIO-25 If burrow avoidance is infeasible during the non-breeding season or during the breeding season where resident owls have not yet begun egg laying or incubation, or where the juveniles are foraging independently and capable of independent survival, the applicant shall coordinate with CDFW to develop a BUOW Exclusion and Mitigation Plan. For example, an Exclusion and Mitigation Plan strategy may include:
- a. Passive exclusion of BUOW from burrows within the project site using one-way doors.
 - b. Excavation of potential BUOW burrows that are confirmed to be empty of BUOW adults and/or young.

- c. Creation of artificial BUOW burrows to offset the loss of known occupied BUOW burrows.
- d. Acquisition of BUOW conservation lands and/or bank credits.

6.3.5 California Horned Lark, LeConte's Thrasher, and Other Nesting Birds

California horned lark, LeConte's thrasher, and other nesting birds have been addressed as a group because they are special-status birds with similar potential impacts and mitigation.

6.3.5.1 POTENTIAL IMPACTS

Suitable nesting habitat for California horned lark, LeConte's thrasher, and other nesting birds occurs in chenopod scrub habitat within the southwestern corner of the BSA; marginal habitat occurs for various nesting birds in other areas of the BSA that support ornamental trees. California horned lark is typically a ground nester, and individuals were observed flying through the BSA during SWHA and BUOW protocol surveys (see Appendices F and G). LeConte's thrasher typically nests in shrubby habitat, such as chenopod scrub. Power line towers that traverse the BSA were shown to support common raven nests (see Appendix F). One active red-tailed hawk nest was observed approximately 0.48 mile north of the BSA on a transmission line pole. No other nesting birds were observed during the various protocol surveys conducted in 2020 or reconnaissance surveys conducted in 2021. If nesting birds are found to be occupying the proposed project site, construction and operation within potential habitat could impact nesting birds by altering foraging and nest behaviors and could potentially cause nest abandonment unless avoidance measures are implemented.

6.3.5.2 SIGNIFICANCE

California horned lark is on CDFW's Watch List and LeConte's thrasher is a California SSC. These species and various other nesting birds are protected under CEQA, the MBTA, and the CFGC. Preconstruction surveys are recommended to determined locations of nesting birds and to avoid impacts to active nests. Impacts to California horned lark, LeConte's thrasher, and other nesting birds are considered less than significant with mitigation incorporated.

6.3.5.3 MITIGATION MEASURES

The following mitigation measures for California horned lark, LeConte's thrasher, and other nesting birds will be implemented:

- BIO-26 If feasible, if removal of trees or shrubs shall be scheduled to occur in the fall and winter (between October 1 and January 31), outside of the typical nesting season.
- BIO-27 If any construction activities are proposed to occur during the typical nesting season (February 1 to August 31), a nesting bird survey in areas of suitable nesting habitat (as determined by the Project Biologist) shall be conducted by qualified biologists no more than 2 weeks prior to construction to determine presence/absence of nesting birds. If absence of nesting birds is verified, construction can proceed.
- BIO-28 If an active bird nest is observed during preconstruction surveys or during construction, at a minimum, a 500-foot avoidance buffer surrounding the nest shall implemented for nesting raptors and a 250-foot avoidance buffer shall be implemented for other nesting avian species, unless USFWS or CDFW authorize a reduction of these buffers. Nests, eggs, or young of

birds covered by the MBTA and CFGC shall not be moved or disturbed until a qualified biologist has determined that the nest has become inactive or young have fledged and become independent of the nest.

6.3.6 Giant Kangaroo Rat, Tipton Kangaroo Rat, San Joaquin Pocket Mouse, and Tulare Grasshopper Mouse

GKR, TKR, San Joaquin pocket mouse (*Perognathus inornatus*), and Tulare grasshopper mouse (*Onychomys torridus tularensis*) have been addressed together as a group because they are special-status small mammals with similar potential impacts and mitigation.

6.3.6.1 POTENTIAL IMPACTS

The previous trapping effort by Live Oak Associates in 2012 resulted in 31 small mammal captures including one deer mouse (*Peromyscus maniculatus*), one Southern grasshopper mouse (*Onychomys torridus*), 27 Heermann's kangaroo rats (*Dipodomys heermanni*), and one TKR (Live Oak Associates 2013). Once TKR presence was determined, the trapping effort ceased. No additional trapping effort was conducted for the 2021 BER. Based on the results of a site-wide reconnaissance survey in 2021, the only area within the proposed project site with suitable habitat for GKR, TKR, San Joaquin pocket mouse, and Tulare grasshopper mouse occurs in chenopod scrub habitat within the southwestern corner of the BSA (see Appendix H). Construction and operation within chenopod scrub habitat could impact special-status small mammal species through direct injury or mortality and/or entombment in burrows from construction equipment conducting earthwork. Operation of percolation pond #24 would permanently alter/eliminate potential habitat for special-status small mammal species.

6.3.6.2 SIGNIFICANCE

GKR and TKR are each federally and state endangered species, and San Joaquin pocket mouse and Tulare grasshopper mouse are California SSCs and considered rare species under CEQA. Additional small mammal live trapping and agency coordination will be required prior to impacts to chenopod scrub habitat on-site. If special-status small mammal species are detected in chenopod scrub habitat, mitigation has been recommended to avoid impacts. Impacts to GKR, TKR, San Joaquin pocket mouse, and Tulare grasshopper mouse are considered less than significant with mitigation incorporated.

6.3.6.3 MITIGATION MEASURES

The following mitigation measures for GKR, TKR, San Joaquin pocket mouse, and Tulare grasshopper mouse will be implemented:

- BIO-29 If impacts to chenopod scrub habitat on-site can be avoided, then the project can proceed and no small mammal trapping, agency coordination, or other mitigation will be required for GKR, TKR, San Joaquin pocket mouse, and Tulare grasshopper mouse other than any applicable MBHCP Habitat Mitigation Fees.
- BIO-30 If the project will impact chenopod scrub habitat on-site, within 30 days prior to grading or other ground-disturbing activities, a qualified biologist shall conduct a preconstruction Biological Clearance Survey per MBHCP requirements. The survey shall include all areas of potential habitat to be permanently and/or temporarily impacted, as well as a 50-foot buffer of impacted areas. If the Biological Clearance Survey identifies potential small mammal burrows within the proposed area disturbance, a qualified biologist shall conduct a minimum of 5 consecutive nights of live small mammal trapping following the USFWS Sacramento

Field Office *Survey Protocol for Determining Presence of San Joaquin Kangaroo Rats* (USFWS 2013). The qualified biologist shall email a Biological Clearance Survey Report to the proper agencies (e.g., USFWS, CDFW, County) per MBHCP requirements. If no special-status small mammals are detected during a minimum of 5 consecutive nights of live small mammal trapping, then the project can proceed with payment of MBHCP Habitat Mitigation Fees and no additional agency coordination or other mitigation will be required for GKR, TKR, San Joaquin pocket mouse, and Tulare grasshopper mouse.

- BIO-31 If special-status small mammal species are detected during live trapping, the applicant shall coordinate with the USFWS and/or CDFW to obtain all necessary regulatory authorizations and develop a Small Mammal Relocation Plan per MBHCP *Exhibit D Covered Species Minimization Measures* to facilitate FESA and/or CESA compliance, if required. This coordination may include, but may not be limited to:
- a. Coordination to ensure compliance with the MBHCP, including payment of all required Habitat Mitigation Fees.
 - b. Acquisition of a State ITP if GKR and/or TKR are found to occur on-site, including any additional State ITP measures required by CDFW.
 - c. Acquisition of GKR and/or TKR conservation lands and/or bank credits if required by the CDFW.
 - d. Additional live trapping to capture and relocate small mammals prior to ground disturbance.
 - e. Excavation of potential small mammal burrows and additional relocation of small mammals encountered during excavation.

6.3.7 San Joaquin Kit Fox and American Badger

SJKF and American badger (*Taxidea taxus*) have been addressed together because they are special-status mammals with similar potential impacts and mitigation.

6.3.7.1 POTENTIAL IMPACTS

Potential SJKF and badger habitat was identified in the 160-acre area of chenopod scrub in the southwestern corner of the BSA; there is a CNDDDB occurrence record of an SJKF observation in 1991 at this location (CNDDDB 2021). Other areas within the BSA may support marginal habitat for these species. Construction and operation within these areas could impact SJKF or badgers through direct injury or mortality and/or entombment in dens from construction equipment conducting earthwork if SJKF or badgers are found to be present on-site. Construction activities could also disrupt SJKF and badger foraging behaviors. No SJKF or badgers were observed in suitable habitat on-site as reported by Live Oak Associates (2013) or during recent protocol surveys conducted in 2020.

6.3.7.2 SIGNIFICANCE

The SJKF is a federally endangered and state threatened species protected under the FESA and CESA; the American badger is a California SSC and considered a rare species under CEQA. Both the SJKF and American badger are highly mobile species with large home ranges; therefore, preconstruction surveys are recommended to determine if these species are present or absent on-site leading up to construction. If SJKF or American badger are observed during preconstruction surveys, construction, or operations, mitigation has been recommended to avoid impacts. Impacts to SJKF and American badger are considered less than significant with mitigation incorporated.

6.3.7.3 MITIGATION MEASURES

The following mitigation measures for SJKF and American badger will be implemented:

- BIO-32 Within 30 days prior to grading or other ground-disturbing activities, a qualified biologist shall conduct a preconstruction Biological Clearance Survey per MBHCP requirements. The survey shall include all areas of potential habitat to be permanently and/or temporarily impacted, as well as a 50-foot buffer of impacted areas.
- BIO-33 If the Biological Clearance Survey results determine that no known, active, or natal SJKF or badger dens will be impacted, then the project can proceed, and no agency coordination or other mitigation will be required other than any applicable MBHCP Habitat Mitigation Fees for SJKF (American badger is not a Covered Species under the MBHCP, and no MBHCP Habitat Mitigation Fees are required for this species).
- BIO-34 If the Biological Clearance Survey results determine that known, active, or natal SJKF or badger dens will be impacted, then the following mitigation measures shall be implemented per MBHCP *Exhibit D Covered Species Minimization Measures* Condition of Approval 7.5 (SJKF Den Avoidance):
- a. A permanent minimum avoidance buffer using fencing or flagging shall be maintained as follows:
 - i. At least 100 feet around den(s);
 - ii. At least 200 feet around natal dens (in which young are reared); and
 - iii. At least 500 feet around any natal dens with observed young (i.e., SJKF pups or badger kits) (except for any portions of the buffer zone that are already fully developed).
 - b. Avoidance buffer zones shall be considered Environmentally Sensitive Areas (ESAs), and no Covered Activities are allowed within a buffer except per MBHCP *Exhibit D Covered Species Minimization Measures* Condition of Approval 7.6 (SJKF Den Excavation), and as follows: If the work within the buffer area will not result in the destruction of the den, the den should be conserved. If the den is unoccupied (based on the required 4 consecutive days of monitoring), then the den can be covered in a secure manner to prevent access by SJKF or badgers while the work is being conducted. After the work is done, the den can be uncovered to allow use by SJKF or badgers. If the den is occupied and the SJKF/badger does not vacate the den, then a smaller buffer could be established, including a barricade to prevent the SJKF/badger from exiting the den and entering the work site. A qualified biologist shall monitor the den while the work is being conducted. The County shall be notified immediately via telephone or e-mail if any SJKF active dens, natal dens, or occupied atypical dens are discovered within or immediately adjacent to any proposed development footprint. The applicant shall coordinate with the CDFW if any badger active dens, natal dens, or occupied atypical dens are discovered within or immediately adjacent to any proposed development footprint, as American badger is not a Covered Species under the MBHCP, and no County notice is required. The applicant shall bear the costs of implementing the SJKF/badger den avoidance requirements. A reduced avoidance buffer may be authorized with regulatory agency approval.
 - c. For active dens and potential dens that exhibit signs of SJKF use or characteristics suggestive of SJKF dens (including dens in natural substrate and in/under manmade

structures) that cannot be avoided as per MBHCP *Exhibit D Covered Species Minimization Measures* Condition of Approval 7.5 (SJKF Den Avoidance), and if, after 4 consecutive days of monitoring with tracking medium or infrared camera, a qualified biologist has determined that SJKF is not currently present, the den may be excavated. Natal dens shall not be excavated until the pups and adults have vacated and then only after consultation with the USFWS and CDFW. If the excavation process reveals evidence of current use by SJKF, then den excavation shall cease immediately and tracking or camera monitoring, as described above, shall be conducted/resumed. Excavation of the den may be completed when, in the judgment of a qualified biologist, the SJKF has escaped from the partially excavated den. SJKF dens shall be carefully excavated until it is certain no SJKF individuals are inside. Dens shall be fully excavated, filled with dirt, and compacted to ensure that SJKF cannot reenter or use the den during Covered Activities. If an individual SJKF does not vacate a den within the proposed construction footprint within a reasonable timeframe, the applicant shall coordinate with USFWS and CDFW and obtain written/email guidance from both agencies prior to proceeding with den excavation. The applicant shall bear the costs of implementing the SJKF den excavation requirements.

- d. For active dens and potential dens that exhibit signs of American badger use or characteristics suggestive of American badger dens, the same approach shall be used as outlined above, except the applicant shall coordinate with CDFW and obtain written/email guidance from CDFW prior to proceeding with den excavation; no USFWS coordination is required for American badger since it is not a federally protected species.

BIO-35 If active SJKF dens are detected on-site, the applicant shall coordinate with the USFWS and/or CDFW to obtain all necessary regulatory authorizations to facilitate FESA and/or CESA compliance, if required. This coordination may include, but may not be limited to:

- a. Coordination to ensure compliance with the MBHCP, including payment of all required Habitat Mitigation Fees.
- b. Acquisition of a State ITP for SJKF.
- c. Acquisition of SJKF conservation lands and/or bank credits if required by CDFW.

BIO-36 The following construction and ongoing operational requirements as included in the *Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance* (USFWS 2011) will be implemented:

- a. Project-related vehicles should observe a daytime speed limit of 20 mph throughout the site in all project areas, except on county roads and federal and state highways; this is particularly important at night when SJKF are most active. Nighttime construction should be minimized to the extent possible. However, if it does occur, then the speed limit should be reduced to 10 mph. Off-road traffic outside of designated project areas should be prohibited.
- b. To prevent inadvertent entrapment of SJKF or other animals during the construction phase of a project, all excavated, steep-walled holes or trenches more than 2 feet deep should be covered at the close of each working day by plywood or similar materials. If the trenches cannot be closed, one or more escape ramps constructed of earthen-fill or wooden planks shall be installed. Before such holes or trenches are filled, they should be thoroughly inspected for trapped animals. If at any time a trapped or

injured SJKF is discovered, the USFWS and CDFW shall be contacted as noted under measure BIO-36(m).

- c. SJKF are attracted to den-like structures, such as pipes, and may enter stored pipes and become trapped or injured. All construction pipes, culverts, or similar structures with a diameter of 4 inches or greater that are stored at a construction site for one or more overnight periods should be thoroughly inspected for SJKF before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If SJKF are discovered inside a pipe, that section of pipe should not be moved until USFWS has been consulted. If necessary, and under the direct supervision of the biological monitor, the pipe may be moved only once to remove it from the path of construction activity, until the fox has escaped.
- d. All food-related trash items such as wrappers, cans, bottles, and food scraps should be disposed of in securely closed containers and removed at least once a week from a construction or project site.
- e. No firearms shall be allowed on the project site.
- f. No pets, such as dogs or cats, should be permitted on the project site to prevent harassment, mortality of SJKF, or destruction of dens.
- g. Use of rodenticides and herbicides in project areas should be restricted. This is necessary to prevent primary or secondary poisoning of SJKF and the depletion of prey populations on which they depend. All uses of such compounds should observe label and other restrictions mandated by the U.S. Environmental Protection Agency, California Department of Food and Agriculture, and other federal and state legislation, as well as additional project-related restrictions deemed necessary by the USFWS. If rodent control must be conducted, zinc phosphide should be used because of a proven lower risk to SJKF.
- h. A representative shall be appointed by the applicant who will be the contact source for any employee or contractor who might inadvertently kill or injure a SJKF or who finds a dead, injured, or entrapped SJKF. The representative will be identified during the employee education program and their name and telephone number shall be provided to the USFWS.
- i. An employee education program should be conducted for any project that has anticipated impacts to SJKF or other endangered species. The program should consist of a brief presentation by persons knowledgeable in SJKF biology and legislative protection to explain endangered species concerns to contractors, their employees, and military and/or agency personnel involved in the project. The program should include the following: A description of the SJKF and its habitat needs; a report of the occurrence of SJKF in the project area; an explanation of the status of the species and its protection under the FESA and CESA; and a list of measures being taken to reduce impacts to the species during project construction and implementation. A fact sheet conveying this information should be prepared for distribution to the previously referenced people and anyone else who may enter the project site.
- j. Upon completion of the project, all areas subject to temporary ground disturbances, including storage and staging areas, temporary roads, pipeline corridors, etc., should be re-contoured, if necessary, and revegetated to promote restoration of the area to pre-project conditions. An area subject to “temporary” disturbance means any area that is disturbed during the project, but after project completion will not be subject to further disturbance and has the potential to be revegetated. Appropriate methods and

plant species used to revegetate such areas should be determined on a site-specific basis in consultation with the USFWS, the CDFW, and revegetation experts.

- k. In the case of trapped animals, escape ramps or structures should be installed immediately to allow the animal(s) to escape, or the USFWS should be contacted for guidance.
- l. Any contractor, employee, or military or agency personnel who are responsible for inadvertently killing or injuring an SJKF shall immediately report the incident to their representative. This representative shall contact the CDFW immediately in the case of a dead, injured, or entrapped SJKF. The USFWS shall be contacted at (916) 414-6620 or (916) 414-6600. The CDFW contact for immediate assistance is State Dispatch at (916) 445-0045.
- m. The Sacramento USFWS and CDFW shall be notified in writing within 3 working days of the accidental death or injury to an SJKF during project-related activities. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal and any other pertinent information.
- n. New sightings of SJKF shall be reported to the CNDDDB. A copy of the reporting form and a topographic map clearly marked with the location of where the SJKF was observed should also be provided to the USFWS.

6.4 Potential Project-Related Impacts and Mitigation for Riparian Habitat or Other Sensitive Natural Communities

6.4.1 *Potential Impacts*

No riparian habitat was mapped within the BSA; therefore, proposed project activities will have no impacts to riparian habitat considered jurisdictional by CDFW. Chenopod scrub occurs in the southwestern corner of the BSA. This habitat is most closely aligned with Valley Saltbush Scrub and is dominated by allscale saltbush and big saltbush. Approximately 160 acres of chenopod scrub habitat could be impacted or otherwise permanently altered. This vegetation supports suitable shelter and foraging habitat for a variety of regional special-status species.

6.4.2 *Significance*

Chenopod scrub with big saltbush and its alliances are included on the CDFW California Natural Community List (CDFW 2020b), are considered sensitive under CEQA, and require mitigation if impacted. Impacts to chenopod scrub habitat are considered less than significant with mitigation incorporated.

6.4.3 *Mitigation Measures*

The following mitigation measures for chenopod scrub habitat will be implemented:

- BIO-37 The payment of Habitat Mitigation Fees through MBHCP compliance will be sufficient to offset project-related impacts to chenopod scrub habitat.

- BIO-38 Permanent and temporary construction disturbances to chenopod scrub habitat shall be minimized to the extent feasible. Areas of chenopod scrub that do not require earthwork shall be marked with brightly colored flagging or equivalent as ESAs to be avoided. No construction activities or construction-related access or staging will be authorized within ESAs.
- BIO-39 If project-related activities can avoid the 160-acre area of chenopod scrub habitat on-site, then the boundary of this area shall be marked with brightly colored flagging or equivalent as an ESA to be avoided. No construction activities or construction-related access or staging will be authorized within the ESA.

6.5 Potential Project-Related Impacts and Mitigation for Wetlands Protected by Section 404 of the Clean Water Act

No wetlands considered jurisdictional by the U.S. Army Corps of Engineers (USACE) were mapped within the BSA. Therefore, there will be no proposed project-related impacts to wetlands protected by CWA Section 404. No mitigation is required.

6.6 Potential Project Impacts and Mitigation for Movement of Resident or Migratory Fish or Wildlife Species, Established Native Resident or Migratory Wildlife Corridors, or Native Wildlife Nursery Sites

There will be no proposed project-related impacts to resident or migratory fish species or native wildlife nursery sites. No mitigation is required.

Many terrestrial wildlife species require various habitats to accommodate all of their biological activities. With increasing encroachment of humans on wildlife habitats, it is important to establish and maintain linkages for animals to be able to access locations containing different biotic resources that are essential to maintaining their life cycles. Terrestrial animals use ridges, canyons, riparian areas, and open spaces for movement between their required habitats. Formal studies of wildlife movement in the area were not conducted; however, because water recovery and inundation are seasonal in Kern County, animal movement would occur unimpeded for most of each year of operation. Potential movement corridors for terrestrial wildlife would be limited when the ponds receive water, but also at the benefit of waterfowl that could use inundated ponds for foraging and migration.

The proposed project site is not identified in the *Recovery Plan for Upland Species of the San Joaquin Valley, California* (USFWS 1998) as being located in the vicinity of an area identified where linkages should be pursued. According to *California Essential Habitat Connectivity Project: A Strategy for Conserving a Connected California* (Spencer et al. 2010) and *Missing Linkages: Restoring Connectivity to the California Landscape* (Penrod et al. 2001), the BSA is not located in an essential habitat connectivity or linkage area. The proposed project would include development of a groundwater banking project in a semi-rural setting and would not be anticipated to create any new barriers to habitat connectivity in the region. No wildlife migration/connectivity impacts are anticipated. No mitigation is required.

6.7 Potential Project Impacts and Mitigation for Conflicts with Local Policies or Ordinances Protecting Biological Resources

The proposed project is not expected to conflict with the goals or policies of the *Kern County General Plan* or any other local policies or ordinances. No mitigation is required.

6.8 Potential Project Impacts and Mitigation for Conflicts with Habitat Conservation Plans, Natural Community Conservation Plans, or Other Approved Conservation Plans

The proposed project is not expected to conflict with the current MBHCP. There are no other known conflicts with any other approved conservation plans. No mitigation is required.

7 LITERATURE CITED

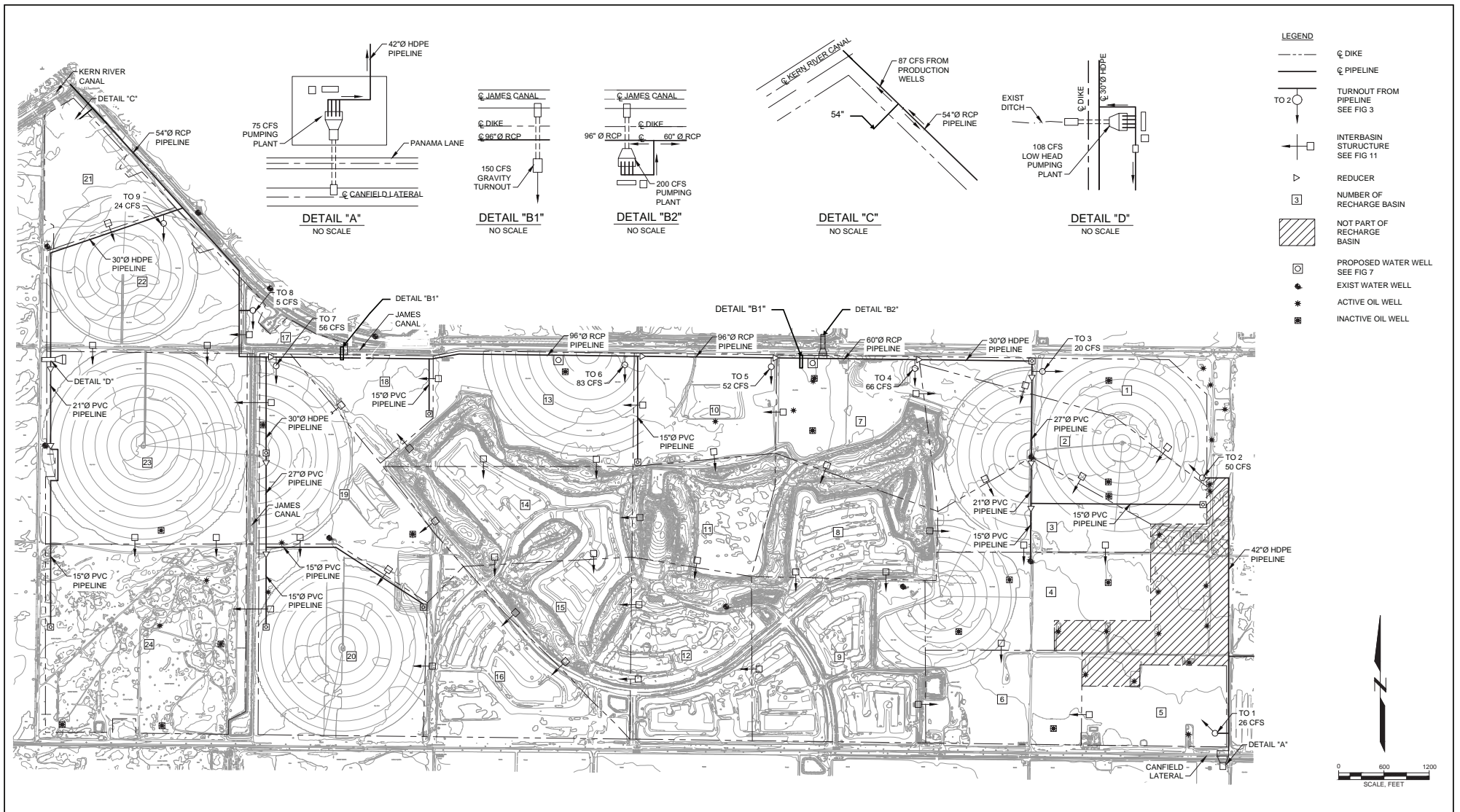
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APPENDIX A

Preliminary Project Plans



Source: GEI 2019

Prepared by:
Horizon
WATER AND ENVIRONMENT

Figure 2-3.
Proposed Project Site Plan

McAllister Ranch Groundwater Banking Project

APPENDIX B

CNDDDB and USFWS IPaC Species Lists



Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database



Query Criteria: Quad (Stevens (3511932) OR Tupman (3511933) OR Rio Bravo (3511943) OR Rosedale (3511942) OR Oildale (3511941) OR Gosford (3511931) OR Conner (3511921) OR Millux (3511922) OR Mouth of Kern (3511923))

Table with 7 columns: Species, Element Code, Federal Status, State Status, Global Rank, State Rank, Rare Plant Rank/CDFW SSC or FP. Rows include species like Agelaius tricolor, Ammospermophilus nelsoni, etc.



Selected Elements by Scientific Name
California Department of Fish and Wildlife
California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Delphinium recurvatum</i> recurved larkspur	PDRAN0B1J0	None	None	G2?	S2?	1B.2
<i>Dendrocygna bicolor</i> fulvous whistling-duck	ABNJB01010	None	None	G5	S1	SSC
<i>Dipodomys ingens</i> giant kangaroo rat	AMAFD03080	Endangered	Endangered	G1G2	S1S2	
<i>Dipodomys nitratooides brevinasus</i> short-nosed kangaroo rat	AMAFD03153	None	None	G3T1T2	S1S2	SSC
<i>Dipodomys nitratooides nitratooides</i> Tipton kangaroo rat	AMAFD03152	Endangered	Endangered	G3T1T2	S1S2	
<i>Elanus leucurus</i> white-tailed kite	ABNKC06010	None	None	G5	S3S4	FP
<i>Emys marmorata</i> western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
<i>Eremalche parryi ssp. kernensis</i> Kern mallow	PDMAL0C031	Endangered	None	G3G4T3	S3	1B.2
<i>Eremophila alpestris actia</i> California horned lark	ABPAT02011	None	None	G5T4Q	S4	WL
<i>Eriastrum hooveri</i> Hoover's eriastrum	PDPLM03070	Delisted	None	G3	S3	4.2
<i>Eschscholzia lemmonii ssp. kernensis</i> Tejon poppy	PDPAP0A071	None	None	G5T2	S2	1B.1
<i>Eumops perotis californicus</i> western mastiff bat	AMACD02011	None	None	G4G5T4	S3S4	SSC
<i>Gambelia sila</i> blunt-nosed leopard lizard	ARACF07010	Endangered	Endangered	G1	S1	FP
<i>Great Valley Cottonwood Riparian Forest</i> Great Valley Cottonwood Riparian Forest	CTT61410CA	None	None	G2	S2.1	
<i>Great Valley Mesquite Scrub</i> Great Valley Mesquite Scrub	CTT63420CA	None	None	G1	S1.1	
<i>Helminthoglypta callistoderma</i> Kern shoulderband	IMGASC2080	None	None	G1	S1	
<i>Imperata brevifolia</i> California satintail	PMPOA3D020	None	None	G4	S3	2B.1
<i>Lasiurus cinereus</i> hoary bat	AMACC05030	None	None	G3G4	S4	
<i>Lasthenia chrysantha</i> alkali-sink goldfields	PDAST5L030	None	None	G2	S2	1B.1
<i>Lasthenia glabrata ssp. coulteri</i> Coulter's goldfields	PDAST5L0A1	None	None	G4T2	S2	1B.1
<i>Masticophis flagellum ruddocki</i> San Joaquin coachwhip	ARADB21021	None	None	G5T2T3	S2?	SSC



Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Monolopia congdonii</i> San Joaquin woollythreads	PDASTA8010	Endangered	None	G2	S2	1B.2
<i>Onychomys torridus tularensis</i> Tulare grasshopper mouse	AMAFF06021	None	None	G5T1T2	S1S2	SSC
<i>Opuntia basilaris var. treleasei</i> Bakersfield cactus	PDCAC0D055	Endangered	Endangered	G5T1	S1	1B.1
<i>Perognathus inornatus</i> San Joaquin pocket mouse	AMAFD01060	None	None	G2G3	S2S3	
<i>Phrynosoma blainvillii</i> coast horned lizard	ARACF12100	None	None	G3G4	S3S4	SSC
<i>Plegadis chihi</i> white-faced ibis	ABNGE02020	None	None	G5	S3S4	WL
<i>Sorex ornatus relictus</i> Buena Vista Lake ornate shrew	AMABA01102	Endangered	None	G5T1	S1	SSC
<i>Spea hammondii</i> western spadefoot	AAABF02020	None	None	G2G3	S3	SSC
<i>Stylocline citroleum</i> oil neststraw	PDAST8Y070	None	None	G3	S3	1B.1
<i>Stylocline masonii</i> Mason's neststraw	PDAST8Y080	None	None	G1	S1	1B.1
<i>Taxidea taxus</i> American badger	AMAJF04010	None	None	G5	S3	SSC
<i>Thamnophis gigas</i> giant gartersnake	ARADB36150	Threatened	Threatened	G2	S2	
<i>Toxostoma lecontei</i> Le Conte's thrasher	ABPBK06100	None	None	G4	S3	SSC
Valley Sacaton Grassland Valley Sacaton Grassland	CTT42120CA	None	None	G1	S1.1	
Valley Saltbush Scrub Valley Saltbush Scrub	CTT36220CA	None	None	G2	S2.1	
Valley Sink Scrub Valley Sink Scrub	CTT36210CA	None	None	G1	S1.1	
<i>Vireo bellii pusillus</i> least Bell's vireo	ABPBW01114	Endangered	Endangered	G5T2	S2	
<i>Vulpes macrotis mutica</i> San Joaquin kit fox	AMAJA03041	Endangered	Threatened	G4T2	S2	
<i>Xanthocephalus xanthocephalus</i> yellow-headed blackbird	ABPBXB3010	None	None	G5	S3	SSC

Record Count: 59

Mail to:
California Natural Diversity Database
California Dept. of Fish & Wildlife
P.O. Box 944209
Sacramento, CA 94244-2090
CNDDDB@wildlife.ca.gov

For Office Use Only

Source Code: _____ Quad Code: _____
Elm Code: _____ Occ No.: _____
EO Index: _____ Map Index: _____

Date of Field Work (mm/dd/yyyy): 04/03/2020

Clear Form

California Native Species Field Survey Form

Print Form

Scientific Name: *Eremalche kernensis*

Common Name: Kern mallow

Species Found? Yes No _____
If not found, why?

Total No. Individuals: ~ 200 Subsequent Visit? Yes No

Is this an existing NDDDB occurrence? _____
Yes, Occ. # No Unk.

Collection? If yes: _____
Number _____ Museum / Herbarium _____

Reporter: John Moule, Biologist

Address: SWCA Environmental

1422 Monterey St, Suite B-C200, San Luis Obispo, CA

E-mail Address: jmoule@swca.com

Phone: (805) 539-2869

Plant Information

Phenology:
_____ 200 _____
% vegetative % flowering % fruiting

Animal Information

adults # juveniles # larvae # egg masses # unknown
 wintering breeding nesting rookery burrow site lek other

Location Description (please attach map AND/OR fill out your choice of coordinates, below)

Southwest corner of McAllister Ranch, north of Panama Lane and west of Buena Vista Rd.

County: Kern Landowner / Mgr: Rosedale-Rio Bravo Water Storage District

Quad Name: Stevens Elevation: 330 ft

T 30S R 26E Sec 21, SW 1/4 of SW 1/4, Meridian: H M S Source of Coordinates (GPS, topo. map & type): GoogleEarth

T _____ R 1 Sec _____, _____ 1/4 of _____ 1/4, Meridian: H M S GPS Make & Model: Samsung Galaxy Tab&Juniper Geode

DATUM: NAD27 NAD83 WGS84 Horizontal Accuracy: 1 m _____ meters/feet

Coordinate System: UTM Zone 10 UTM Zone 11 OR Geographic (Latitude & Longitude)

Coordinates: Lat. 35.300131; Long. -119.197397

Habitat Description (plants & animals) plant communities, dominants, associates, substrates/soils, aspects/slope:

Animal Behavior (Describe observed behavior, such as territoriality, foraging, singing, calling, copulating, perching, roosting, etc., especially for avifauna):

Sparse chenopod scrub with allscale saltbush (*Atriplex polycarpa*) and big saltbush (*Atriplex lentiformis*) with occasional western honey mesquite (*Prosopis glandulosa* var. *torreyana*) shrubs. Other associated sub-shrubs include Russian thistle/tumbleweed, bracted alkali goldenbush (*Isocoma acradenia* var. *bracteosa*), iodine bush (*Allenrolfea occidentalis*), and bush seepweed (*Suaeda nigra*). Various forbs common to the region also occur. Approximately 200 Kern mallow plants observed onsite. Hoover's eriastrum (*Eriastrum hooveri*) also observed.

Please fill out separate form for other rare taxa seen at this site. *Eriastrum hooveri*

Site Information Overall site/occurrence quality/viability (site + population): Excellent Good Fair Poor

Immediate AND surrounding land use: open space surrounded by fallow ag

Visible disturbances: Occasional ORV trespass and trash dumping

Threats: Proposed water bank storage project

Comments:

Determination: (check one or more, and fill in blanks)

- Keyed (cite reference): The Jepson Manual: Vascular Plants of California, 2nd ed
- Compared with specimen housed at: _____
- Compared with photo / drawing in: _____
- By another person (name): _____
- Other: _____

Photographs: (check one or more)

	Slide	Print	Digital
Plant / animal	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Habitat	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Diagnostic feature	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

May we obtain duplicates at our expense? yes no

Mail to:
California Natural Diversity Database
California Dept. of Fish & Wildlife
P.O. Box 944209
Sacramento, CA 94244-2090
CNDDDB@wildlife.ca.gov

For Office Use Only

Source Code: _____ Quad Code: _____
Elm Code: _____ Occ No.: _____
EO Index: _____ Map Index: _____

Date of Field Work (mm/dd/yyyy): 04/03/2020

Clear Form

California Native Species Field Survey Form

Print Form

Scientific Name: *Eriastrum hooveri*

Common Name: Hoover's eriastrum

Species Found? Yes No _____
If not found, why?

Total No. Individuals: ~ 2,000 Subsequent Visit? Yes No

Is this an existing NDDDB occurrence? _____
Yes, Occ. # No Unk.

Collection? If yes: _____
Number _____ Museum / Herbarium _____

Reporter: John Moule, Biologist

Address: SWCA Environmental
1422 Monterey St, Suite B-C200, San Luis Obispo, CA

E-mail Address: jmoule@swca.com

Phone: (805) 539-2869

Plant Information

Phenology:
_____ 2000 _____
% vegetative % flowering % fruiting

Animal Information

adults # juveniles # larvae # egg masses # unknown
 wintering breeding nesting rookery burrow site lek other

Location Description (please attach map AND/OR fill out your choice of coordinates, below)

Southwest corner of McAllister Ranch, north of Panama Lane and west of Buena Vista Rd.

County: Kern Landowner / Mgr: Rosedale-Rio Bravo Water Storage District

Quad Name: Stevens Elevation: 330 ft

T 30S R 26E Sec 21, SW 1/4 of SW 1/4, Meridian: H M S Source of Coordinates (GPS, topo. map & type): GoogleEarth

T _____ R 1 Sec _____, _____ 1/4 of _____ 1/4, Meridian: H M S GPS Make & Model: Samsung Galaxy Tab&Juniper Geode

DATUM: NAD27 NAD83 WGS84 Horizontal Accuracy: 1 m _____ meters/feet

Coordinate System: UTM Zone 10 UTM Zone 11 OR Geographic (Latitude & Longitude)

Coordinates: Lat. 35.300742 Long. -119.192788

Habitat Description (plants & animals) plant communities, dominants, associates, substrates/soils, aspects/slope:

Animal Behavior (Describe observed behavior, such as territoriality, foraging, singing, calling, copulating, perching, roosting, etc., especially for avifauna):

Sparse chenopod scrub with allscale saltbush (*Atriplex polycarpa*) and big saltbush (*Atriplex lentiformis*) with occasional western honey mesquite (*Prosopis glandulosa* var. *torreyana*) shrubs. Other associated sub-shrubs include Russian thistle/tumbleweed, bracted alkali goldenbush (*Isocoma acradenia* var. *bracteosa*), iodine bush (*Allenrolfea occidentalis*), and bush seepweed (*Suaeda nigra*). Various forbs common to the region also occur. Approximately 2000 Hoover's eriastrum plants observed onsite. Kern mallow (*Eremalche kernensis*) also observed.

Please fill out separate form for other rare taxa seen at this site. *Eremalche kernensis*

Site Information Overall site/occurrence quality/viability (site + population): Excellent Good Fair Poor

Immediate AND surrounding land use: open space surrounded by fallow ag

Visible disturbances: Occasional ORV trespass and trash dumping

Threats: Proposed water bank storage project

Comments:

Determination: (check one or more, and fill in blanks)

- Keyed (cite reference): The Jepson Manual: Vascular Plants of California, 2nd ed
- Compared with specimen housed at: _____
- Compared with photo / drawing in: _____
- By another person (name): _____
- Other: _____

Photographs: (check one or more)

	Slide	Print	Digital
Plant / animal	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Habitat	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Diagnostic feature	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

May we obtain duplicates at our expense? yes no

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

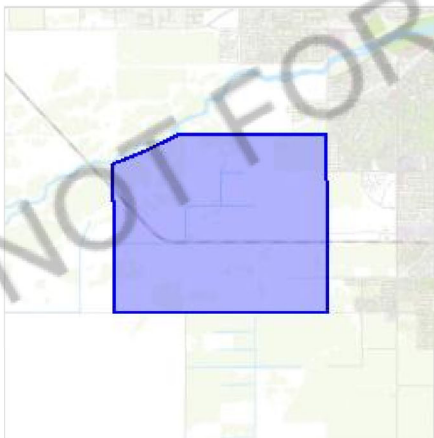
Project information

NAME

James Groundwater Storage and Recovery Project

LOCATION

Kern County, California



DESCRIPTION

Because of the high recharge potential of the lands located on the Kern River alluvial fan, the RRBWSD and Buena Vista Water Storage District purchased 2,070 acres (which includes the McAllister Ranch site) for the purposes of creating 17 recharge ponds totaling approximately 1,319 acres. In addition, the Project calls for infrastructure improvements to Canfield Lateral, James Canal, Kern River Canal, and the Kern Water Bank Lateral Ditch. Modifications to these conveyance canals systems will enhance water recovery and recharge making the project possible. Earthwork, infrastructure

improvements, pumping plant construction, and the installation of a network of pipeline systems will be required.

Local office

Sacramento Fish And Wildlife Office

☎ (916) 414-6600

📠 (916) 414-6713

Federal Building

2800 Cottage Way, Room W-2605

Sacramento, CA 95825-1846

NOT FOR CONSULTATION

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Log in to IPaC.
2. Go to your My Projects list.
3. Click PROJECT HOME for this project.
4. Click REQUEST SPECIES LIST.

Listed species

¹ and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

-
1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information.
 2. [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.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
<p>Buena Vista Lake Ornate Shrew <i>Sorex ornatus relictus</i></p> <p>There is final critical habitat for this species. Your location is outside the critical habitat.</p> <p>https://ecos.fws.gov/ecp/species/1610</p>	Endangered
<p>Giant Kangaroo Rat <i>Dipodomys ingens</i></p> <p>No critical habitat has been designated for this species.</p> <p>https://ecos.fws.gov/ecp/species/6051</p>	Endangered
<p>San Joaquin Kit Fox <i>Vulpes macrotis mutica</i></p> <p>No critical habitat has been designated for this species.</p> <p>https://ecos.fws.gov/ecp/species/2873</p>	Endangered
<p>Tipton Kangaroo Rat <i>Dipodomys nitratoides nitratoides</i></p> <p>No critical habitat has been designated for this species.</p> <p>https://ecos.fws.gov/ecp/species/7247</p>	Endangered

Birds

NAME	STATUS
<p>Southwestern Willow Flycatcher <i>Empidonax traillii extimus</i></p> <p>There is final critical habitat for this species. Your location is outside the critical habitat.</p> <p>https://ecos.fws.gov/ecp/species/6749</p>	Endangered

Reptiles

NAME	STATUS
<p>Blunt-nosed Leopard Lizard <i>Gambelia silus</i></p> <p>No critical habitat has been designated for this species.</p> <p>https://ecos.fws.gov/ecp/species/625</p>	Endangered
<p>Giant Garter Snake <i>Thamnophis gigas</i></p> <p>No critical habitat has been designated for this species.</p> <p>https://ecos.fws.gov/ecp/species/4482</p>	Threatened

Amphibians

NAME	STATUS
<p>California Red-legged Frog <i>Rana draytonii</i></p> <p>There is final critical habitat for this species. Your location is outside the critical habitat.</p> <p>https://ecos.fws.gov/ecp/species/2891</p>	Threatened

Fishes

NAME	STATUS
Delta Smelt <i>Hypomesus transpacificus</i> There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/321	Threatened

Crustaceans

NAME	STATUS
Vernal Pool Fairy <i>Shrimp</i> <i>Branchinecta lynchi</i> There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/498	Threatened

Flowering Plants

NAME	STATUS
California Jewelflower <i>Caulanthus californicus</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4599	Endangered
San Joaquin Woolly-threads <i>Monolopia</i> (=Lembertia) <i>congdonii</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/3746	Endangered

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act

¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

1. The [Migratory Birds Treaty Act](#) of 1918.

2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

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

NAME

BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)

Burrowing Owl *Athene cucularia*

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
<https://ecos.fws.gov/ecp/species/9737>

Breeds Mar 15 to Aug 31

<p>California Thrasher <i>Toxostoma redivivum</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds Jan 1 to Jul 31
<p>Common Yellowthroat <i>Geothlypis trichas sinuosa</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/2084</p>	Breeds May 20 to Jul 31
<p>Costa's Hummingbird <i>Calypte costae</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9470</p>	Breeds Jan 15 to Jun 10
<p>Lawrence's Goldfinch <i>Carduelis lawrencei</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9464</p>	Breeds Mar 20 to Sep 20
<p>Nuttall's Woodpecker <i>Picoides nuttallii</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9410</p>	Breeds Apr 1 to Jul 20
<p>Song Sparrow <i>Melospiza melodia</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA</p>	Breeds Feb 20 to Sep 5
<p>Spotted Towhee <i>Pipilo maculatus clementae</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/4243</p>	Breeds Apr 15 to Jul 20
<p>Tricolored Blackbird <i>Agelaius tricolor</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3910</p>	Breeds Mar 15 to Aug 10

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) and/or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [AKN Phenology Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go to the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangelwide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangelwide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

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

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

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

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

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

This location overlaps the following wetlands:

FRESHWATER FORESTED/SHRUB WETLAND

[PSSA](#)

FRESHWATER POND

[PUBFx](#)

RIVERINE

[R4SBJ](#)

[R4SBCx](#)

[R5UBFx](#)

[R4SBC](#)

[R5UBF](#)

A full description for each wetland code can be found at the [National Wetlands Inventory website](#)

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and *proprietary jurisdictions that may affect such activities.*

NOT FOR CONSULTATION

APPENDIX C

Photo Point Map and Photo Documentation



Figure C-1. Photo point location map.



Photo C-1. Northeast view from Photo Point (PP)-1 (August 18, 2020).



Photo C-2. East view of chenopod scrub habitat from PP-2 (August 18, 2020).



Photo C-3. North view of disturbed/ruderal area from PP-3 (August 18, 2020).



Photo C-4. North view of "James Canal" from PP-4 (August 18, 2020).



Photo C-5. South view of “James Canal” from PP-5 (August 18, 2020).



Photo C-6. West view of disturbed/ruderal area from PP-6 (August 18, 2020).



Photo C-7. East view of disturbed/ruderal area from PP-7 (August 18, 2020).



Photo C-8. West view of "James Canal" from PP-8 (August 18, 2020).



Photo C-9. East view of "James Canal" from PP-9 (August 18, 2020).



Photo C-10. Northwest view of disturbed annual grassland from PP-10 (August 18, 2020).



Photo C-11. South view of disturbed/ruderal area from PP-11 (August 18, 2020).



Photo C-12. North view from PP-12 of “James Canal” that passes under railway through culvert (August 18, 2020).



Photo C-13. South view of disturbed/ruderal area from PP-13 (August 18, 2020).



Photo C-14. South view of disturbed/ruderal area from PP-14; an old derrick is partially visible on the right (August 18, 2020).



Photo C-15. Southeast view of disturbed/ruderal area from PP-15a (August 18, 2020).



Photo C-16. South view of disturbed/ruderal area from PP-15b (August 18, 2020).



Photo C-17. Southwest view of disturbed/ruderal area from PP-15c (August 18, 2020).



Photo C-18. Northwest view of disturbed/ruderal area from PP-16 (August 18, 2020).



Photo C-19. North view of disturbed/ruderal area from PP-17 (August 18, 2020).



Photo C-20. North view of disturbed/ruderal area from PP-18 (August 18, 2020).



Photo C-21. North view of disturbed/ruderal area from PP-19 (August 18, 2020).



Photo C-22. North view of chenopod scrub habitat from PP-20 (August 18, 2020).



Photo C-23. Representative photo of open area in chenopod scrub habitat supporting Kern mallow and Hoover's eriastrum (April 2, 2020).



Photo C-24. Representative photo of Kern mallow (April 2, 2020).

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APPENDIX D

List of Species Observed

Table D-1. Plant Species Observed On-Site

Scientific Name	Common Name	Native	Species Status / Notes*
Vascular Plants nomenclature follows <i>The Jepson Manual</i> and http://ucjeps.berkeley.edu/interchange.html .			
Angiosperms (Dicots)			
Anacardiaceae		Sumac family	
<i>Rhus glabra</i>	smooth sumac	No	
Asteraceae		Sunflower family	
<i>Centromadia pungens</i> ssp. <i>pungens</i>	common tarweed	Yes	
<i>Corethrogyne filaginifolia</i>	common sandaster	Yes	
<i>Isocoma acradenia</i> var. <i>bracteosa</i>	bracted alkali goldenbush	Yes	
<i>Lactuca serriola</i>	prickly lettuce	No	
<i>Lasthenia coronaria</i>	royal goldfields	Yes	
<i>Lasthenia minor</i>	smooth Lasthenia	Yes	
<i>Lessingia glandulifera</i>	valley vinegar weed	Yes	
<i>Lessingia pectinata</i> var. <i>tenuipes</i>	sticky lessingia	Yes	
<i>Malacothrix coulteri</i>	snake's head	Yes	
<i>Matricaria discoidea</i>	pineapple weed	Yes	
<i>Monolopia lanceolata</i>	common hillside daisy	Yes	
<i>Stephanomeria</i> sp.	wirelettuce	Yes	
Boraginaceae		Borage family	
<i>Amsinckia menziesii</i>	small flowered fiddleneck	Yes	
<i>Pectocarya penicillata</i>	winged combseed	Yes	
<i>Plagiobothrys arizonicus</i>	Arizona popcornflower	Yes	
<i>Plagiobothrys canescens</i>	valley popcornflower	Yes	
Brassicaceae		Mustard family	
<i>Brassica nigra</i>	black mustard	No	Cal-IPC moderate
<i>Capsella bursa-pastoris</i>	shepherd's purse	No	
<i>Caulanthus lasiophyllus</i>	California mustard	Yes	
<i>Descurainia sophia</i>	herb sophia	Yes	Cal-IPC limited
<i>Hirschfeldia incana</i>	summer mustard	Yes	Cal-IPC moderate
<i>Lepidium dictyotum</i>	Alkali pepperweed	Yes	
<i>Lepidium nitidum</i>	shining peppergrass	Yes	
<i>Sisymbrium irio</i>	London rocket	No	Cal-IPC moderate
<i>Tropidocarpum gracile</i>	slender tropidocarpum	Yes	
Caryophyllaceae		Pink family	
<i>Spergularia bocconi</i>	Boccone's sand spurry	No	
Chenopodiaceae		Goosefoot family	
<i>Allenrolfea occidentalis</i>	iodine bush	Yes	
<i>Atriplex argentea</i> var. <i>expansa</i>	Mojave silverscale	Yes	
<i>Atriplex lentiformis</i>	big saltbrush	Yes	
<i>Atriplex polycarpa</i>	cattle spinach	Yes	

Scientific Name	Common Name	Native	Species Status / Notes*
<i>Atriplex rosea</i>	redscale	No	
<i>Salsola tragus</i>	Russian thistle	No	Cal-IPC limited
<i>Stutzia covillei</i>	Coville's orach	Yes	
<i>Suaeda nigra</i>	bush seepweed	Yes	
Crassulaceae	Stonecrop family		
<i>Crassula connata</i>	pigmy stone crop	Yes	
Euphorbiaceae	Spurge family		
<i>Euphorbia ocellata</i> ssp. <i>ocellata</i>	valley spurge	Yes	
Fabaceae	Pea family		
<i>Acemispion americanus</i> var. <i>americanus</i>	American bird's foot trefoil	Yes	
<i>Lupinus nanus</i>	sky lupine	Yes	
<i>Melilotus indicus</i>	yellow sweetclover	Yes	
<i>Prosopis glandulosa</i> var. <i>torreyana</i>	western honey mesquite	Yes	
Geraniaceae	Geranium family		
<i>Erodium cicutarium</i>	redstem filaree	No	Cal-IPC limited
Malvaceae	Mallow family		
<i>Brachychiton populneus</i>	whiteflower kurrajong	No	
<i>Eremalche parryi</i> ssp. <i>kernensis</i>	Kern mallow	Yes	Federally Endangered, CNPS Rare Plant Rank 1B.2
<i>Malva parviflora</i>	cheeseweed	No	
Myrtaceae	Myrtle family		
<i>Eucalyptus polyanthemos</i>	redbox	No	
Onagraceae	Evening-Primrose family		
<i>Camissonia campestris</i> ssp. <i>campestris</i>	field sun cup	Yes	
Pinaceae	Pine family		
<i>Pinus halepensis</i>	Aleppo pine	No	
Polemoniaceae	Phlox family		
<i>Eriastrum hooveri</i>	Hoover's eriastrum	Yes	CNPS Rare Plant Rank 4.2
<i>Gilia clivorum</i>	purple spot gilia	Yes	
<i>Gilia tricolor</i>	bird's eye gilia	Yes	
Polygonaceae	Buckwheat family		
<i>Lastarriaea coriacea</i>	leather spineflower	Yes	
Solanaceae	Nightshade family		
<i>Datura wrightii</i>	jimsonweed	Yes	
Urticaceae	Nettle family		
<i>Urtica urens</i>	dwarf nettle	No	
Verbenaceae	Vervain family		
<i>Verbena lasiostachys</i> var. <i>lasiostachys</i>	western vervain	Yes	

Scientific Name	Common Name	Native	Species Status / Notes*
Angiosperms (Monocots)			
Poaceae	Grass family		
<i>Avena fatua</i>	common wild oat	No	Cal-IPC moderate
<i>Bromus arenarius</i>	Australian brome	Yes	
<i>Bromus diandrus</i>	ripgut brome	No	Cal-IPC moderate
<i>Bromus madritensis</i> ssp. <i>rubens</i>	red brome	No	Cal-IPC high
<i>Distichlis spicata</i>	salt grass	Yes	
<i>Festuca microstachys</i>	small fescue	Yes	
<i>Festuca myuros</i>	rattail fescue	No	Cal-IPC moderate
<i>Hordeum murinum</i>	foxtail barley	No	Cal-IPC moderate
<i>Schismus arabicus</i>	Arabian schismus	No	Cal-IPC limited
<i>Schismus barbatus</i>	common Mediterranean grass	No	Cal-IPC limited

* California Invasive Plant Council (Cal-IPC) Ratings:

High: These species have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. Most are widely distributed ecologically.

Moderate: These species have substantial and apparent-but generally not severe-ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal, though establishment is generally dependent upon ecological disturbance. Ecological amplitude and distribution may range from limited to widespread.

Limited: These species are invasive, but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score. Their reproductive biology and other attributes result in low to moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but these species may be locally persistent and problematic.

Table D-2. Wildlife Species Observed On-Site

Scientific Name	Common Name	Native	Species Status / Notes*
Reptiles			
<i>Uta stansburiana</i>	side-blotched lizard	Yes	
<i>Aspidoscelis tigris</i>	western whiptail	Yes	
Birds			
<i>Ardea herodias</i>	great blue heron	Yes	
<i>Ardea alba</i>	great egret	Yes	
<i>Charadrius vociferus</i>	killdeer	Yes	
<i>Callipepla californica</i>	California/valley quail	Yes	
<i>Buteo jamaicensis</i>	red-tailed hawk	Yes	
<i>Buteo lineatus</i>	red-shouldered hawk	Yes	
<i>Falco sparverius</i>	American kestrel	Yes	
<i>Tyto alba</i>	barn owl	Yes	
<i>Charadrius vociferus</i>	killdeer	Yes	
<i>Zenaida macroura</i>	mourning dove	Yes	
<i>Streptopelia decaocto</i>	Eurasian collared dove	No	
<i>Geococcyx californianus</i>	greater roadrunner	Yes	
<i>Tyrannus verticalis</i>	western kingbird	Yes	
<i>Eremophila alpestris actia</i>	California horned lark	Yes	CDFW WL species
<i>Corvus corax</i>	common raven	Yes	
<i>Sturnus vulgaris</i>	European starling	No	
<i>Mimus polyglottos</i>	northern mockingbird	Yes	
<i>Euphagus cyanocephalus</i>	Brewer's blackbird	Yes	
<i>Haemorhous mexicanus</i>	house finch	Yes	
Mammals			
<i>Otospermophilus beecheyi</i>	California ground squirrel		

APPENDIX E

Blunt-Nosed Leopard Lizard Survey Report



BPR Environmental Consulting

11625 Jubilee Lane -- Bakersfield, California 93311 -- (661) 444-3239

Blunt-Nosed Leopard Lizard Survey Findings for McAllister Ranch Groundwater Banking Project, Rosedale-Rio Bravo Water Storage District, Kern County

Prepared by: Tyler Armstrong, BPR Consulting

Date: May 14, 2021

Prepared for: Geoff Hoetker, SWCA Environmental Consultants

BPR Consulting conducted blunt-nosed leopard lizard (BNLL) (*Gambelia sila*) protocol surveys to determine the feasibility of the McAllister Ranch Groundwater Banking Project (Proposed Project), which consists of construction and operation of a water banking project on approximately 2,070 acres of undeveloped real property located north of Panama Lane and west of South Allen Road, in Bakersfield, California (Figure 1). Water supplies available to the Buena Vista Water Storage District (BVWSD), Project applicant, and Rosedale-Rio Bravo Water Storage District (RRBWSD) (jointly described as the Districts in the draft Environmental Impact Report [EIR]) would be diverted from the Kern River, recharged, and stored at the Project site and would later be recovered for irrigation and municipal and industrial (M&I) uses when needed. The Proposed Project would include constructing several shallow percolation ponds to facilitate the recharge activities, as well as other features to enable the storage and transport of water. At full buildout, up to approximately 200,000 acre-feet (AF) of water could be diverted and recharged in the groundwater basin in any one year. The maximum recovery of stored water in a single year would be approximately 56,000 AF.

The Project site, known locally as McAllister Ranch, is located in the city of Bakersfield, Kern County, California north of Panama Lane and west of South Allen Road (see Figures 1 and 2). The Project site is bound by the Stevens, California U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle within Sections 16, 21, 22, and 23, Township 30 South, Range 26 East, Mount Diablo Meridian (MDM) The property is located on the Kern River alluvial fan, which is well suited for groundwater banking operations. The site was formerly a planned residential development that was in the early stages of construction. Due to the downturn in the real estate market, development was discontinued, and the property was sold in a bankruptcy proceeding. BVWSD and RRBWSD jointly purchased the property in 2011.

The McAllister Ranch property is located in the western area of Bakersfield and encompasses approximately 2,070 acres. The property has been disturbed and continues to be disturbed; most of the site had been used for agricultural purposes before it was extensively graded for development. Additionally, the property contains several active and abandoned oil wells and several reserved drill islands. The drill islands are areas zoned for drilling (by others) for the purpose of extracting subsurface oil or gas resources, the rights to which are owned by the California Resources Corporation (CRC).

Figure 1. BNLL Survey Location

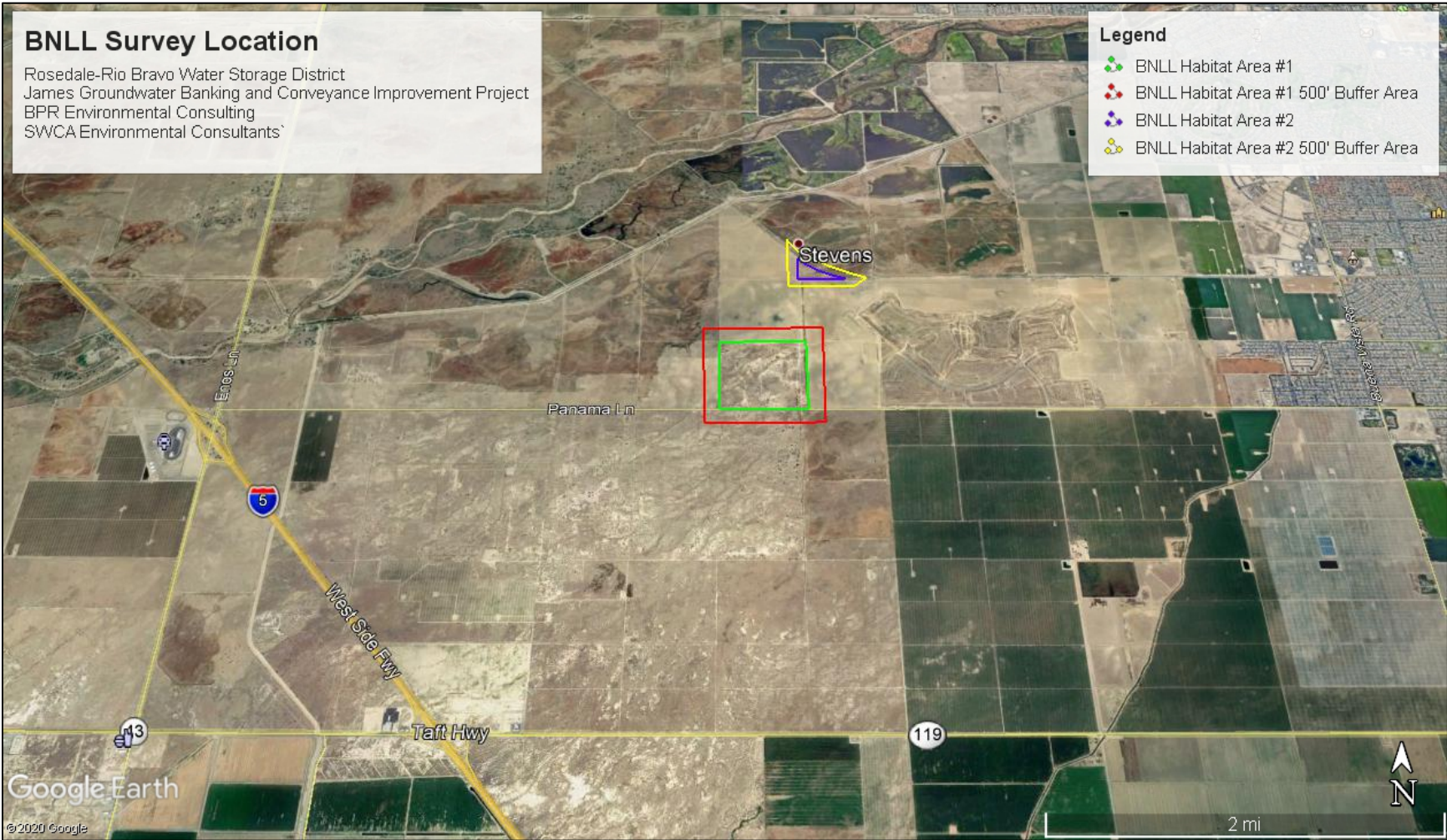
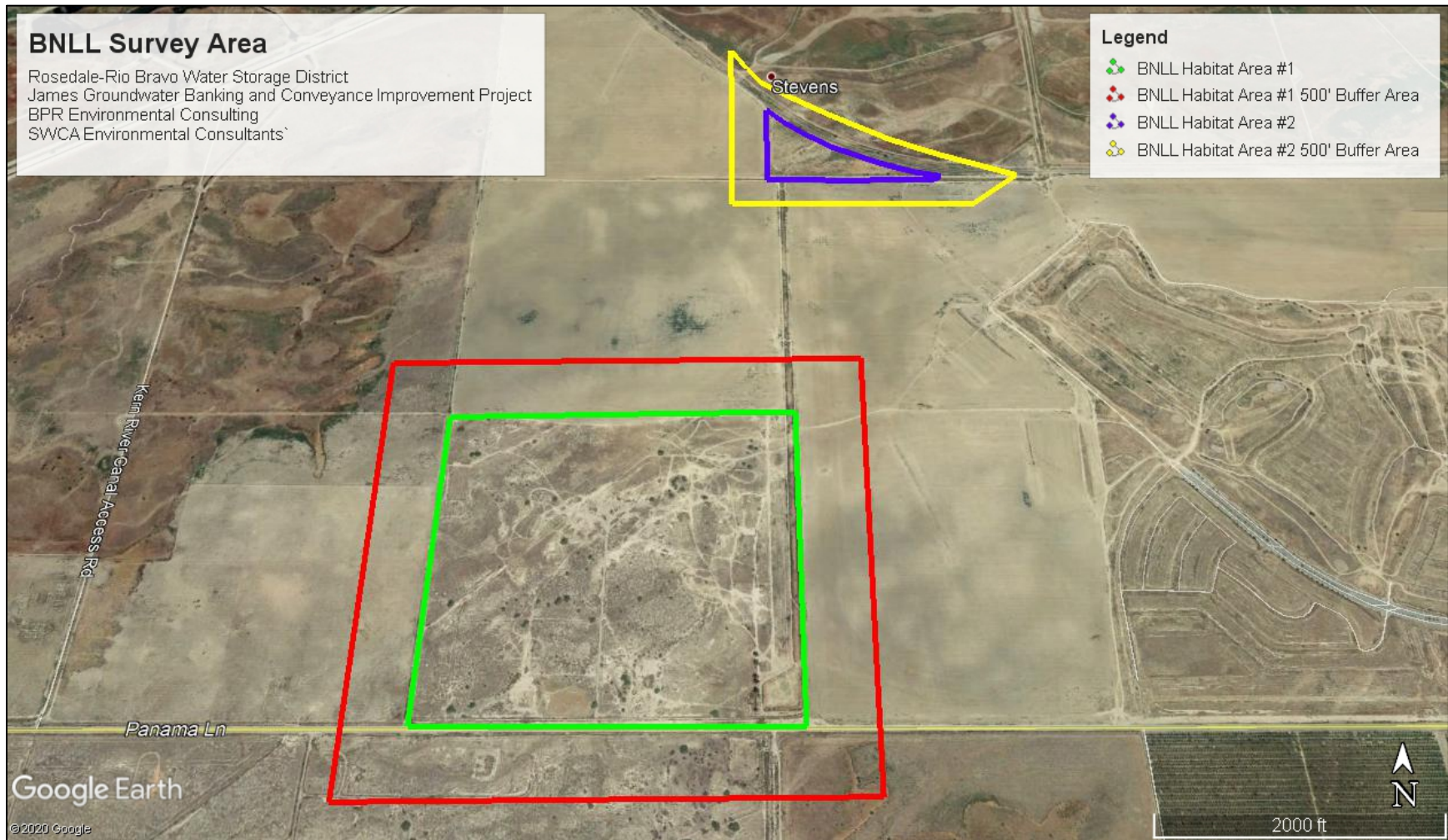


Figure 2. BNLL Survey Area



The Assessor's Parcel Numbers (APNs) for the site include 537-010-40, 537-010-42, 537-010-47, 537-010-50, 537-010-54, 537-010-56, 537-010-59, 537-030-07, 537-030-08, 537-030-09, 537-030-10, 537-030-14, 537-030-15, 537-030-16, 537-030-17, 537-030-18, 537-030-19, 537-030-20, 537-030-21, 537-030-22, 537-030-23, 537-030-24, 537-030-25, 537-030-26, 537-030-27, 537-030-28, 537-030-29, 537-030-30, 537-030-31, 537-030-32, 537-030-33, 537-030-34, 537-030-35, 537-030-36, 537-030-37.

SWCA Environmental Consultants (SWCA) requested that BPR Consulting conduct an absence/presence survey for BNLL in accordance with California Department of Fish and Wildlife (CDFW) protocol.¹ All survey methods were acquired and conducted with guidance from the October 2019 revision of the CDFW BNLL protocol.

Absence/presence surveys included 12 survey days that were conducted for adult BNLL over a 90-day period between April 15 and July 15, 2020. These surveys were followed by five additional survey days between August 15 and September 30, 2020, to detect BNLL hatchlings and subadults.

CDFW survey methodology requires a minimum number of surveys to be conducted within the high activity period for the species. Several environmental parameters must be considered, such as season, air temperature, soil temperature, wind speed, cloud cover, time of day, etc.

All surveys included within the methodology also require qualified biologists (Level I and Level II) to conduct surveys utilizing transects 10 to 30 meters apart, with the use of binoculars (minimum 7 × 35 magnification) and specific observation techniques to maximize the detecting potential of BNLL and assessment of habitat suitability. Once a BNLL has been observed, consultation with CDFW must begin regarding whether surveys should continue to determine distribution within the Project site and to develop avoidance measures.¹ All surveys were led by BPR Consulting Senior Biologist Tyler Armstrong (Level I). Supporting staff and data collected during each survey are included in Table 1.

It should also be noted that the constraint of private property boundaries limited the optimal 500-foot buffer area that is typically utilized for this protocol survey. Where necessary, surveyors used binoculars to make visual observations beyond the Project boundaries.

BPR Consulting completed all the required 12 adult BNLL surveys and five juvenile BNLL surveys within the protocol survey window. Two reference-level surveys were conducted on May 4 and 5, 2020, in an area off Lokern Road (approximately 5 aerial miles west of Buttonwillow) where BNLL are known to populate. The purpose of these

¹ California Department of Fish and Wildlife (CDFW). 2019. *Approved Survey Methodology for the Blunt-Nosed Leopard Lizard*. October (Revised). Available at: <http://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=174900&inline>.

Blunt-Nosed Leopard Lizard Survey Findings

surveys was to assess BNLL activity levels in the area for the season and allow the surveying biologists to reestablish a visual search image. BNLL were observed during both surveys, indicating that BNLL were active at the time surveys were conducted for the proposed Project (see BNLL reference locations and photos in Appendix A). BNLL Survey Reporting Forms are included in Appendix B. Table 1 provides a summary of the survey effort.

Table 1. BNLL Survey, Dates, and Personnel

Date	Surveyor(s)	Time Start/End	Temp. (°F) Start/End	Wind Speed Start/End* Cloud Cover	BNLL (Yes/No)
April 24, 2020	T. Armstrong, Level I B. Ruiz, Level II T. Nho, Level I E. Ollinger, Level II S. Clark, Level II J. Yollucinas, Level I	10:01 a.m./ 12:43 p.m.	81.2°/87.5° air	2.5/3.5 mph < 5%	No
April 25, 2020	T. Armstrong, Level I M. Olinger, Level II E. Olinger, Level II B. Ruiz, Level II J. Yollucinas, Level I J. Butin, Level II	10:00 a.m./ 12:47 p.m.	79.2°/90.1° air	2.2/6.5 mph < 5%	No
April 26, 2020	T. Armstrong, Level I M. Olinger, Level II E. Olinger, Level II B. Ruiz, Level II J. Yollucinas, Level I J. Butin, Level II	9:06 a.m./ 11:52 a.m.	78.2°/86.4° air	1.1/0.5 mph < 20%	No
April 27, 2020	T. Armstrong, Level I B. Ruiz, Level II T. Nho, Level I E. Ollinger, Level II J. Butin, Level II J. Yollucinas, Level I	9:05 a.m./ 11:57 a.m.	78.1°/83.4° air	1.0/2.1 mph < 5%	No
May 2, 2020	T. Armstrong, Level I M. Olinger, Level II E. Olinger, Level II B. Ruiz, Level II J. Yollucinas, Level I T. Nhu, Level I	11:10 a.m./ 1:41 p.m.	80.1°/85.4° air	1.4/6.0 mph < 5%	No

Blunt-Nosed Leopard Lizard Survey Findings

Date	Surveyor(s)	Time Start/End	Temp. (°F) Start/End	Wind Speed Start/End* Cloud Cover	BNLL (Yes/No)
May 3, 2020	T. Armstrong, Level I M. Olinger, Level II E. Olinger, Level II B. Ruiz, Level II J. Yollucinas, Level I T. Nhu, Level I	11:15 a.m./ 1:52 p.m.	79.7°/88.3° air	2.4/2.7 mph < 20%	No
May 8, 2020	T. Armstrong, Level I M. Olinger, Level II E. Olinger, Level II B. Ruiz, Level II J. Yollucinas, Level I T. Nhu, Level I	8:01 a.m./ 10:47 a.m.	77.8°/92.5°	2.1/1.7 mph < 5%	No
May 9, 2020	T. Armstrong, Level I M. Olinger, Level II E. Olinger, Level II B. Ruiz, Level II A. Skokos, Level I T. Mason, Level I	8:02 a.m./ 10:49 a.m.	77.5°/86.9°	2.2/2.3 mph < 5%	No
May 29, 2020	T. Armstrong, Level I B. Ruiz, Level II E. Olinger, Level II E. Ollinger, Level II E. Gallanty, Level I T. Nhu, Level I	8:06 a.m./ 10:51 a.m.	79.8°/92.9°	2.2/2.1 mph < 30%	No
May 30, 2020	T. Armstrong, Level I M. Olinger, Level II E. Olinger, Level II B. Ruiz, Level II E. Gallanty, Level I T. Nhu, Level I	9:01 a.m./ 11:38 a.m.	77.7°/82.1°	2.8/3.2 mph < 25%	No
May 31, 2020	T. Armstrong, Level I M. Olinger, Level II E. Olinger, Level II B. Ruiz, Level II E. Gallanty, Level I T. Nhu, Level I	9:30 a.m./ 12:10 p.m.	78.2°/86.4°	2.2/3.8 mph < 30%	No

Blunt-Nosed Leopard Lizard Survey Findings

Date	Surveyor(s)	Time Start/End	Temp. (°F) Start/End	Wind Speed Start/End* Cloud Cover	BNLL (Yes/No)
June 5, 2020	T. Armstrong, Level I M. Olinger, Level II E. Olinger, Level II B. Ruiz, Level II E. Gallanty, Level I T. Mason, Level I	8:40 a.m./ 11:09 a.m.	77.8°/80.9°	5.9/3.2 mph < 80%	No
August 29, 2020	T. Armstrong, Level I M. Olinger, Level II E. Olinger, Level II B. Ruiz, Level II E. Gallanty, Level I T. Nhu, Level I	8:07 a.m./ 10:58 a.m.	78.4°/92.6°	1.4 mph/3.1 mph >10%	No
August 30, 2020	T. Armstrong, Level I M. Olinger, Level II E. Olinger, Level II B. Ruiz, Level II E. Gallanty, Level I T. Nhu, Level I	8:05 a.m./ 10:52 a.m.	77.9°/91.4°	1.0 mph/0.0 mph >5%	No
September 25, 2020	T. Armstrong, Level I M. Olinger, Level II E. Olinger, Level II B. Ruiz, Level II E. Gallanty, Level I K. Tabor, Level II	10:21 a.m./ 12:56 p.m.	77.1°/89.1°	3.1 mph/1.2 mph >5%	No
September 26, 2020	T. Armstrong, Level I M. Olinger, Level II E. Olinger, Level II B. Ruiz, Level II A. Phelan-Roberts, Level I K. Tabor, Level II	10:15 a.m./ 12:53 p.m.	78.9°/92.2°	5.5 mph/1.5 mph >5%	No
September 27, 2020	T. Armstrong, Level I M. Olinger, Level II E. Olinger, Level II B. Ruiz, Level II A. Phelan-Roberts, Level I K. Tabor, Level II	10:16 a.m./ 12:48 p.m.	79.5°/94.3°	1.5 mph/5.4 mph >10%	No

* mph = miles per hour

As shown in Table 1, BNLL were not observed during any of the protocol-level surveys conducted within the Action Area. Therefore, BNLL are not likely to occur in the Project's footprint (Appendix A).

Appendix A
BNLL Reference Locations and Photos

Figure A-1. BNLL Reference Protocol Survey Map

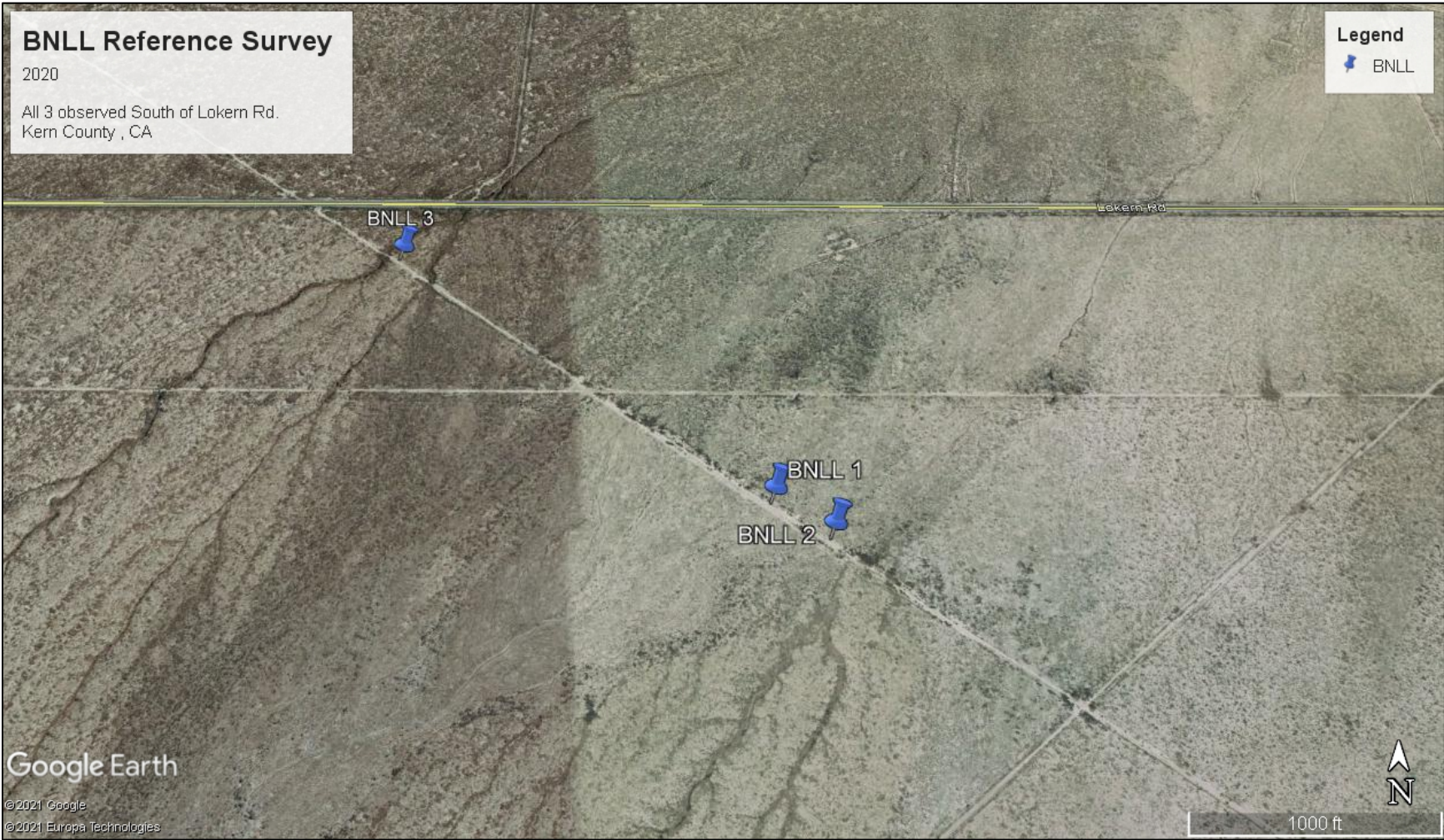


Photo A-1. BNLL Reference #1: Location: 35.392637, -119.584693, Elevation: 259 Feet



Photo A-2. BNLL Reference #2: Location: 35.392134, -119.583801, Elevation: 249 Feet



Photo A-3. BNLL Reference #3: Location: 35.396682, -119.591126, Elevation: 249 Feet



Appendix B
BNLL Survey Reporting Forms

Blunt-Nosed Leopard Lizard Survey Reporting Form

SURVEY DATE(S) (up to 5 days of surveys from a single site can be reported on this form):

April 24th 2020

Surveyor Lvl- 2 1 1
 Ben Ruiz, Tyler Armstrong, Thomas Nho,

SURVEYORS:

Eric Ollinger, 2 Sean Clark, 1 Joshua Yollucinas

SITE NAME [Please also attach or sketch a map on back]: James Rd. Ground Water Project

County: Kern **Landowner/Mgr:** Rosedale-Rio Bravo Water District

Quad Name: _____ **Elevation:** 330 Ft.

T 30S **R** 26E **¼ of Section** 21

UTM Zone (10,11): 11 **Datum:** WGS84 (NAD83, NAD27, WGS84, other)

Source (GPS, map & type, other): GPS **Point Accuracy** 3 meters

COORDINATES: 35°17'59.21"N 119°11'39.17"W

SURVEY RESULTS

DATE	START TIME	END TIME	START AIR TEMP	END AIR TEMP	# BNLL OBSERVED Adults/Hatchlings	PERSON-HOURS (# Surveyors) X (# Hours Walked)	APPROXIMATE DISTANCE COVERED (IN TENTHS OF A MILE)
4/24/20	1001	1243	81.2°	87.5°	0 / 0	16.5	4.8
					/		
					/		
					/		
					/		

TOTAL NUMBER OF OBSERVATIONS FOR THE THREE MOST COMMON LIZARD SPECIES ENCOUNTERED (combined numbers for all survey days):

Side-Blotched Lizard
 Species Uta stansburiana Number Observed: 98
 Western Whiptail
 Species Aspidoscelis tigris Number Observed: 5
 Species _____ Number Observed: _____

Reporting Form Pg 2

BNLL Survey Site Name: _____

HABITAT DESCRIPTION: General description of vegetation community, overall habitat

quality, surrounding land use, threats, etc: Atriplex, non-native annual grassland/
Disturbed by ATV operation and common illegal waste disposal site/
Surrounding land use - Agg.

**HABITAT DESCRIPTION: Estimation of Average Vegetative Cover on the Site
[circle the correct value]:**

% Shrub:	<input checked="" type="checkbox"/> 0-10%,	<input type="checkbox"/> 10-25%,	<input type="checkbox"/> 25-50%,	<input type="checkbox"/> 50-75%,	<input type="checkbox"/> >75%
% Forb:	<input checked="" type="checkbox"/> 0-10%,	<input type="checkbox"/> 10-25%,	<input type="checkbox"/> 25-50%,	<input type="checkbox"/> 50-75%,	<input type="checkbox"/> >75%
% Grass:	<input checked="" type="checkbox"/> 0-10%,	<input type="checkbox"/> 10-25%,	<input type="checkbox"/> 25-50%,	<input type="checkbox"/> 50-75%,	<input type="checkbox"/> >75%
% Bare Ground:	<input type="checkbox"/> 0-10%,	<input type="checkbox"/> 10-25%,	<input type="checkbox"/> 25-50%,	<input type="checkbox"/> 50-75%,	<input checked="" type="checkbox"/> >75%

NOTES ABOUT THE SURVEY/HABITAT/SPECIAL-STATUS SPECIES/ETC:

No BNLL were observed during this survey.

PLEASE RETURN THIS SURVEY REPORTING FORM TO THE APPROPRIATE CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE REGION AT THE FOLLOWING ADDRESS:

California Department of Fish and Wildlife
Central Region
ATTN: Habitat Conservation Planning Supervisor
1234 East Shaw Avenue
Fresno, CA 93710

OR

California Department of Fish and Wildlife
South Coast Region
ATTN: Habitat Conservation Planning Supervisor
3883 Ruffin Road
San Diego, CA 92123

*****ALL OBSERVATIONS OF BLUNT-NOSED LEOPARD LIZARDS AND OTHER SPECIAL STATUS SPECIES SHOULD BE PROMPTLY REPORTED TO THE CALIFORNIA NATURAL DIVERSITY DATABASE (CNDDDB). SUBMISSION OF THIS FORM DOES NOT ENTAIL REPORTING TO THE DATABASE, WHICH IS MAINTAINED BY THE BIOGEOGRAPHIC DATA BRANCH OF CDFW. PLEASE SEE THE SURVEY PROTOCOL FOR DIRECTIONS ON REPORTING TO CNDDDB.**

Blunt-Nosed Leopard Lizard Survey Reporting Form

SURVEY DATE(S) (up to 5 days of surveys from a single site can be reported on this form):

April 25 2020

Surveyor Lvl- 2 1 2
 Michelle Olinger, Tyler Armstrong, Eric Olinger,

SURVEYORS:

2 Ben Ruiz, 1 Joshua Yollucinas, 2 Jonathin Butin

SITE NAME [Please also attach or sketch a map on back]: James Rd. Ground Water Project

County: Kern **Landowner/Mgr:** Rosedale-Rio Bravo Water District

Quad Name: _____ **Elevation:** 330 Ft.

T 30S **R** 26E **¼ of Section** 21

UTM Zone (10,11): 11 **Datum:** WGS84 (NAD83, NAD27, WGS84, other)

Source (GPS, map & type, other): GPS **Point Accuracy** 3 meters

COORDINATES: 35°17'59.21"N 119°11'39.17"W

SURVEY RESULTS

DATE	START TIME	END TIME	START AIR TEMP	END AIR TEMP	# BNLL OBSERVED Adults/Hatchlings	PERSON-HOURS (# Surveyors) X (# Hours Walked)	APPROXIMATE DISTANCE COVERED (IN TENTHS OF A MILE)
4/25/20	1000	1247	79.2	90.1	0 / 0	13.5	4.6
					/		
					/		
					/		
					/		

TOTAL NUMBER OF OBSERVATIONS FOR THE THREE MOST COMMON LIZARD SPECIES ENCOUNTERED (combined numbers for all survey days):

	Side-Blotched Lizard	
Species	Uta stansburiana	Number Observed: 98
Species	Western Whiptail	
Species	Aspidoscelis tigris	Number Observed: 5
Species	_____	Number Observed: _____

Reporting Form Pg 2

BNLL Survey Site Name: _____

HABITAT DESCRIPTION: General description of vegetation community, overall habitat

quality, surrounding land use, threats, etc: Atriplex, non-native annual grassland/
Disturbed by ATV operation and common illegal waste disposal site/
Surrounding land use - Agg.

**HABITAT DESCRIPTION: Estimation of Average Vegetative Cover on the Site
[circle the correct value]:**

% Shrub:	<input checked="" type="checkbox"/> 0-10%,	10-25%,	25-50%,	50-75%,	>75%
% Forb:	<input checked="" type="checkbox"/> 0-10%,	10-25%,	25-50%,	50-75%,	>75%
% Grass:	<input checked="" type="checkbox"/> 0-10%,	10-25%,	25-50%,	50-75%,	>75%
% Bare Ground:	0-10%,	10-25%,	25-50%,	50-75%,	<input checked="" type="checkbox"/> >75%

NOTES ABOUT THE SURVEY/HABITAT/SPECIAL-STATUS SPECIES/ETC:

Cloud Cover - < 15% Wind Speed - < 6.5 mph

No BNLL were observed during this survey.

PLEASE RETURN THIS SURVEY REPORTING FORM TO THE APPROPRIATE CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE REGION AT THE FOLLOWING ADDRESS:

California Department of Fish and Wildlife
Central Region
ATTN: Habitat Conservation Planning Supervisor
1234 East Shaw Avenue
Fresno, CA 93710

OR

California Department of Fish and Wildlife
South Coast Region
ATTN: Habitat Conservation Planning Supervisor
3883 Ruffin Road
San Diego, CA 92123

*****ALL OBSERVATIONS OF BLUNT-NOSED LEOPARD LIZARDS AND OTHER SPECIAL STATUS SPECIES SHOULD BE PROMPTLY REPORTED TO THE CALIFORNIA NATURAL DIVERSITY DATABASE (CNDDDB). SUBMISSION OF THIS FORM DOES NOT ENTAIL REPORTING TO THE DATABASE, WHICH IS MAINTAINED BY THE BIOGEOGRAPHIC DATA BRANCH OF CDFW. PLEASE SEE THE SURVEY PROTOCOL FOR DIRECTIONS ON REPORTING TO CNDDDB.**

Blunt-Nosed Leopard Lizard Survey Reporting Form

SURVEY DATE(S) (up to 5 days of surveys from a single site can be reported on this form):

April 26 2020

Surveyor Lvl- 2 1 2
SURVEYORS: Michelle Olinger, Tyler Armstrong, Eric Olinger,

2 Ben Ruiz, 1 Joshua Yollucas, 2 Jonathin Butin

SITE NAME [Please also attach or sketch a map on back]: James Rd. Ground Water Project

County: Kern **Landowner/Mgr:** Rosedale-Rio Bravo Water District

Quad Name: _____ **Elevation:** 330 Ft.

T 30S **R** 26E **¼ of Section** 21

UTM Zone (10,11): 11 **Datum:** WGS84 (NAD83, NAD27, WGS84, other)

Source (GPS, map & type, other): GPS **Point Accuracy** 3 meters

COORDINATES: 35°17'59.21"N 119°11'39.17"W

SURVEY RESULTS

DATE	START TIME	END TIME	START AIR TEMP	END AIR TEMP	# BNLL OBSERVED Adults/Hatchlings	PERSON-HOURS (# Surveyors) X (# Hours Walked)	APPROXIMATE DISTANCE COVERED (IN TENTHS OF A MILE)
4/26/20	0906	1152	78.2	86.4	0 / 0	12 Hrs	4.6
					/		
					/		
					/		
					/		

TOTAL NUMBER OF OBSERVATIONS FOR THE THREE MOST COMMON LIZARD SPECIES ENCOUNTERED (combined numbers for all survey days):

Species <u>Side-Blotched Lizard</u> <u>Uta stansburiana</u>	Number Observed: <u>97</u>
Species <u>Western Whiptail</u> <u>Aspidoscelis tigris</u>	Number Observed: <u>9</u>
Species _____	Number Observed: _____

Reporting Form Pg 2

BNLL Survey Site Name: _____

HABITAT DESCRIPTION: General description of vegetation community, overall habitat

quality, surrounding land use, threats, etc: Atriplex, non-native annual grassland/
Disturbed by ATV operation and common illegal waste disposal site/
Surrounding land use - Agg.

**HABITAT DESCRIPTION: Estimation of Average Vegetative Cover on the Site
[circle the correct value]:**

% Shrub:	<input checked="" type="checkbox"/> 0-10%,	10-25%,	25-50%,	50-75%,	>75%
% Forb:	<input checked="" type="checkbox"/> 0-10%,	10-25%,	25-50%,	50-75%,	>75%
% Grass:	<input checked="" type="checkbox"/> 0-10%,	10-25%,	25-50%,	50-75%,	>75%
% Bare Ground:	0-10%,	10-25%,	25-50%,	50-75%,	<input checked="" type="checkbox"/> >75%

NOTES ABOUT THE SURVEY/HABITAT/SPECIAL-STATUS SPECIES/ETC:

Cloud Cover - < 20% Wind Speed - < 1.1 mph

No BNLL were observed during this survey.

**PLEASE RETURN THIS SURVEY REPORTING FORM TO THE APPROPRIATE
CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE REGION AT THE FOLLOWING
ADDRESS:**

California Department of Fish and Wildlife
Central Region
ATTN: Habitat Conservation Planning Supervisor
1234 East Shaw Avenue
Fresno, CA 93710

OR

California Department of Fish and Wildlife
South Coast Region
ATTN: Habitat Conservation Planning Supervisor
3883 Ruffin Road
San Diego, CA 92123

*****ALL OBSERVATIONS OF BLUNT-NOSED LEOPARD LIZARDS AND OTHER SPECIAL STATUS SPECIES
SHOULD BE PROMPTLY REPORTED TO THE CALIFORNIA NATURAL DIVERSITY DATABASE (CNDDDB).
SUBMISSION OF THIS FORM DOES NOT ENTAIL REPORTING TO THE DATABASE, WHICH IS
MAINTAINED BY THE BIOGEOGRAPHIC DATA BRANCH OF CDFW. PLEASE SEE THE SURVEY
PROTOCOL FOR DIRECTIONS ON REPORTING TO CNDDDB.**

Reporting Form Pg 2

BNLL Survey Site Name: _____

HABITAT DESCRIPTION: General description of vegetation community, overall habitat

quality, surrounding land use, threats, etc: Atriplex, non-native annual grassland/
Disturbed by ATV operation and common illegal waste disposal site/
Surrounding land use - Agg.

**HABITAT DESCRIPTION: Estimation of Average Vegetative Cover on the Site
[circle the correct value]:**

% Shrub:	<input checked="" type="checkbox"/> 0-10%,	10-25%,	25-50%,	50-75%,	>75%
% Forb:	<input checked="" type="checkbox"/> 0-10%,	10-25%,	25-50%,	50-75%,	>75%
% Grass:	<input checked="" type="checkbox"/> 0-10%,	10-25%,	25-50%,	50-75%,	>75%
% Bare Ground:	0-10%,	10-25%,	25-50%,	50-75%,	<input checked="" type="checkbox"/> >75%

NOTES ABOUT THE SURVEY/HABITAT/SPECIAL-STATUS SPECIES/ETC:

Cloud Cover - < 10% Wind Speed - < 2.1 mph

No BNLL were observed during this survey.

PLEASE RETURN THIS SURVEY REPORTING FORM TO THE APPROPRIATE CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE REGION AT THE FOLLOWING ADDRESS:

California Department of Fish and Wildlife
Central Region
ATTN: Habitat Conservation Planning Supervisor
1234 East Shaw Avenue
Fresno, CA 93710

OR

California Department of Fish and Wildlife
South Coast Region
ATTN: Habitat Conservation Planning Supervisor
3883 Ruffin Road
San Diego, CA 92123

*****ALL OBSERVATIONS OF BLUNT-NOSED LEOPARD LIZARDS AND OTHER SPECIAL STATUS SPECIES SHOULD BE PROMPTLY REPORTED TO THE CALIFORNIA NATURAL DIVERSITY DATABASE (CNDDDB). SUBMISSION OF THIS FORM DOES NOT ENTAIL REPORTING TO THE DATABASE, WHICH IS MAINTAINED BY THE BIOGEOGRAPHIC DATA BRANCH OF CDFW. PLEASE SEE THE SURVEY PROTOCOL FOR DIRECTIONS ON REPORTING TO CNDDDB.**

Blunt-Nosed Leopard Lizard Survey Reporting Form

SURVEY DATE(S) (up to 5 days of surveys from a single site can be reported on this form):

May 3rd, 4th & 8th 2020

Surveyor Lvl- 2 1 2
 Michelle Olinger, Tyler Armstrong, Eric Olinger,

SURVEYORS:

2 Ben Ruiz, 1 Joshua Yollucinas, 1 Thomas Nho

SITE NAME [Please also attach or sketch a map on back]: James Rd. Ground Water Project

County: Kern **Landowner/Mgr:** Rosedale-Rio Bravo Water District

Quad Name: _____ **Elevation:** 330 Ft.

T 30S **R** 26E **¼ of Section** 21

UTM Zone (10,11): 11 **Datum:** WGS84 (NAD83, NAD27, WGS84, other)

Source (GPS, map & type, other): GPS **Point Accuracy** 3 meters

COORDINATES: 35°17'59.21"N 119°11'39.17"W

SURVEY RESULTS

DATE	START TIME	END TIME	START AIR TEMP	END AIR TEMP	# BNLL OBSERVED Adults/Hatchlings	PERSON-HOURS (# Surveyors) X (# Hours Walked)	APPROXIMATE DISTANCE COVERED (IN TENTHS OF A MILE)
5/2/20	1110	1307	80.1°	85.4°	0 / 0	12	4.6
5/3/20	1115	1318	79.7°	88.3°	0 / 0	12	4.6
5/8/20	0801	1047	77.8°	92.5°	0 / 0	12	4.6
					/		
					/		

TOTAL NUMBER OF OBSERVATIONS FOR THE THREE MOST COMMON LIZARD SPECIES ENCOUNTERED (combined numbers for all survey days):

Species	Side-Blotched Lizard Uta stansburiana	Number Observed:	192
Species	Western Whiptail Aspidoscelis tigris	Number Observed:	12
Species	_____	Number Observed:	_____

Reporting Form Pg 2

BNLL Survey Site Name: _____

HABITAT DESCRIPTION: General description of vegetation community, overall habitat

quality, surrounding land use, threats, etc: Atriplex, non-native annual grassland/
Disturbed by ATV operation and common illegal waste disposal site/
Surrounding land use - Agg.

**HABITAT DESCRIPTION: Estimation of Average Vegetative Cover on the Site
[circle the correct value]:**

% Shrub:	<input checked="" type="checkbox"/> 0-10%,	10-25%,	25-50%,	50-75%,	>75%
% Forb:	<input checked="" type="checkbox"/> 0-10%,	10-25%,	25-50%,	50-75%,	>75%
% Grass:	<input checked="" type="checkbox"/> 0-10%,	10-25%,	25-50%,	50-75%,	>75%
% Bare Ground:	0-10%,	10-25%,	25-50%,	50-75%,	<input checked="" type="checkbox"/> >75%

NOTES ABOUT THE SURVEY/HABITAT/SPECIAL-STATUS SPECIES/ETC:

No BNLL were observed during this survey.

**PLEASE RETURN THIS SURVEY REPORTING FORM TO THE APPROPRIATE
CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE REGION AT THE FOLLOWING
ADDRESS:**

California Department of Fish and Wildlife
Central Region
ATTN: Habitat Conservation Planning Supervisor
1234 East Shaw Avenue
Fresno, CA 93710

OR

California Department of Fish and Wildlife
South Coast Region
ATTN: Habitat Conservation Planning Supervisor
3883 Ruffin Road
San Diego, CA 92123

*****ALL OBSERVATIONS OF BLUNT-NOSED LEOPARD LIZARDS AND OTHER SPECIAL STATUS SPECIES
SHOULD BE PROMPTLY REPORTED TO THE CALIFORNIA NATURAL DIVERSITY DATABASE (CNDDDB).
SUBMISSION OF THIS FORM DOES NOT ENTAIL REPORTING TO THE DATABASE, WHICH IS
MAINTAINED BY THE BIOGEOGRAPHIC DATA BRANCH OF CDFW. PLEASE SEE THE SURVEY
PROTOCOL FOR DIRECTIONS ON REPORTING TO CNDDDB.**

Blunt-Nosed Leopard Lizard Survey Reporting Form

SURVEY DATE(S) (up to 5 days of surveys from a single site can be reported on this form):

May 9th 2020

Surveyor Lvl- 2 1 2
 Michelle Olinger, Tyler Armstrong, Eric Olinger,

SURVEYORS:

2 Ben Ruiz, 1 Theodore Mason, 1 Alex Skokos

SITE NAME [Please also attach or sketch a map on back]: James Rd. Ground Water Project

County: Kern **Landowner/Mgr:** Rosedale-Rio Bravo Water District

Quad Name: _____ **Elevation:** 330 Ft.

T 30S **R** 26E **¼ of Section** 21

UTM Zone (10,11): 11 **Datum:** WGS84 (NAD83, NAD27, WGS84, other)

Source (GPS, map & type, other): GPS **Point Accuracy** 3 meters

COORDINATES: 35°17'59.21"N 119°11'39.17"W

SURVEY RESULTS

DATE	START TIME	END TIME	START AIR TEMP	END AIR TEMP	# BNLL OBSERVED Adults/Hatchlings	PERSON-HOURS (# Surveyors) X (# Hours Walked)	APPROXIMATE DISTANCE COVERED (IN TENTHS OF A MILE)
5/9/20	0802	1049	77.5°	86.9°	0 / 0	15	4.6
					/		
					/		
					/		
					/		

TOTAL NUMBER OF OBSERVATIONS FOR THE THREE MOST COMMON LIZARD SPECIES ENCOUNTERED (combined numbers for all survey days):

Species	Side-Blotched Lizard Uta stansburiana	Number Observed: 56
Species	Western Whiptail Aspidoscelis tigris	Number Observed: 2
Species	_____	Number Observed: _____

Reporting Form Pg 2

BNLL Survey Site Name: _____

HABITAT DESCRIPTION: General description of vegetation community, overall habitat

quality, surrounding land use, threats, etc: Atriplex, non-native annual grassland/

Disturbed by ATV operation and common illegal waste disposal site/

Surrounding land use - Agg.

**HABITAT DESCRIPTION: Estimation of Average Vegetative Cover on the Site
[circle the correct value]:**

% Shrub:	<input checked="" type="checkbox"/> 0-10%,	10-25%,	25-50%,	50-75%,	>75%
% Forb:	<input checked="" type="checkbox"/> 0-10%,	10-25%,	25-50%,	50-75%,	>75%
% Grass:	<input checked="" type="checkbox"/> 0-10%,	10-25%,	25-50%,	50-75%,	>75%
% Bare Ground:	0-10%,	10-25%,	25-50%,	50-75%,	<input checked="" type="checkbox"/> >75%

NOTES ABOUT THE SURVEY/HABITAT/SPECIAL-STATUS SPECIES/ETC:

No BNLL were observed during this survey.

PLEASE RETURN THIS SURVEY REPORTING FORM TO THE APPROPRIATE CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE REGION AT THE FOLLOWING ADDRESS:

California Department of Fish and Wildlife
Central Region
ATTN: Habitat Conservation Planning Supervisor
1234 East Shaw Avenue
Fresno, CA 93710

OR

California Department of Fish and Wildlife
South Coast Region
ATTN: Habitat Conservation Planning Supervisor
3883 Ruffin Road
San Diego, CA 92123

*****ALL OBSERVATIONS OF BLUNT-NOSED LEOPARD LIZARDS AND OTHER SPECIAL STATUS SPECIES SHOULD BE PROMPTLY REPORTED TO THE CALIFORNIA NATURAL DIVERSITY DATABASE (CNDDDB). SUBMISSION OF THIS FORM DOES NOT ENTAIL REPORTING TO THE DATABASE, WHICH IS MAINTAINED BY THE BIOGEOGRAPHIC DATA BRANCH OF CDFW. PLEASE SEE THE SURVEY PROTOCOL FOR DIRECTIONS ON REPORTING TO CNDDDB.**

Reporting Form Pg 2

BNLL Survey Site Name: _____

HABITAT DESCRIPTION: General description of vegetation community, overall habitat

quality, surrounding land use, threats, etc: Atriplex, non-native annual grassland/
Disturbed by ATV operation and common illegal waste disposal site/
Surrounding land use - Agg.

**HABITAT DESCRIPTION: Estimation of Average Vegetative Cover on the Site
[circle the correct value]:**

% Shrub:	<input checked="" type="checkbox"/> 0-10%,	10-25%,	25-50%,	50-75%,	>75%
% Forb:	<input checked="" type="checkbox"/> 0-10%,	10-25%,	25-50%,	50-75%,	>75%
% Grass:	<input checked="" type="checkbox"/> 0-10%,	10-25%,	25-50%,	50-75%,	>75%
% Bare Ground:	0-10%,	10-25%,	25-50%,	50-75%,	<input checked="" type="checkbox"/> >75%

NOTES ABOUT THE SURVEY/HABITAT/SPECIAL-STATUS SPECIES/ETC:

No BNLL were observed during this survey.

PLEASE RETURN THIS SURVEY REPORTING FORM TO THE APPROPRIATE CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE REGION AT THE FOLLOWING ADDRESS:

California Department of Fish and Wildlife
Central Region
ATTN: Habitat Conservation Planning Supervisor
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Fresno, CA 93710

OR

California Department of Fish and Wildlife
South Coast Region
ATTN: Habitat Conservation Planning Supervisor
3883 Ruffin Road
San Diego, CA 92123

*****ALL OBSERVATIONS OF BLUNT-NOSED LEOPARD LIZARDS AND OTHER SPECIAL STATUS SPECIES SHOULD BE PROMPTLY REPORTED TO THE CALIFORNIA NATURAL DIVERSITY DATABASE (CNDDDB). SUBMISSION OF THIS FORM DOES NOT ENTAIL REPORTING TO THE DATABASE, WHICH IS MAINTAINED BY THE BIOGEOGRAPHIC DATA BRANCH OF CDFW. PLEASE SEE THE SURVEY PROTOCOL FOR DIRECTIONS ON REPORTING TO CNDDDB.**

Blunt-Nosed Leopard Lizard Survey Reporting Form

SURVEY DATE(S) (up to 5 days of surveys from a single site can be reported on this form):

May 30th & 31st 2020

Surveyor Lvl- 2 1 2
SURVEYORS: Michelle Olinger, Tyler Armstrong, Eric Olinger,

2 Ben Ruiz, 1 Ellen Gallanty, 1 Thomas Nhu

SITE NAME [Please also attach or sketch a map on back]: James Rd. Ground Water Project

County: Kern **Landowner/Mgr:** Rosedale-Rio Bravo Water District

Quad Name: _____ **Elevation:** 330 Ft.

T 30S **R** 26E **¼ of Section** 21

UTM Zone (10,11): 11 **Datum:** WGS84 (NAD83, NAD27, WGS84, other)

Source (GPS, map & type, other): GPS **Point Accuracy** 3 meters

COORDINATES: 35°17'59.21"N 119°11'39.17"W

SURVEY RESULTS

DATE	START TIME	END TIME	START AIR TEMP	END AIR TEMP	# BNLL OBSERVED Adults/Hatchlings	PERSON-HOURS (# Surveyors) X (# Hours Walked)	APPROXIMATE DISTANCE COVERED (IN TENTHS OF A MILE)
5/30/20	0901	1138	77.7°	82.1°	0 / 0	12	4.6
5/31/20	0930	1210	78.2°	86.4°	0 / 0	13	4.6
					/		
					/		
					/		

TOTAL NUMBER OF OBSERVATIONS FOR THE THREE MOST COMMON LIZARD SPECIES ENCOUNTERED (combined numbers for all survey days):

Species	<u>Side-Blotched Lizard Uta stansburiana</u>	Number Observed:	<u>110</u>
Species	<u>Western Whiptail Aspidoscelis tigris</u>	Number Observed:	<u>10</u>
Species	_____	Number Observed:	_____

Reporting Form Pg 2

BNLL Survey Site Name: _____

HABITAT DESCRIPTION: General description of vegetation community, overall habitat

quality, surrounding land use, threats, etc: Atriplex, non-native annual grassland/
Disturbed by ATV operation and common illegal waste disposal site/
Surrounding land use - Agg.

**HABITAT DESCRIPTION: Estimation of Average Vegetative Cover on the Site
[circle the correct value]:**

% Shrub:	<input checked="" type="checkbox"/> 0-10%,	10-25%,	25-50%,	50-75%,	>75%
% Forb:	<input checked="" type="checkbox"/> 0-10%,	10-25%,	25-50%,	50-75%,	>75%
% Grass:	<input checked="" type="checkbox"/> 0-10%,	10-25%,	25-50%,	50-75%,	>75%
% Bare Ground:	0-10%,	10-25%,	25-50%,	50-75%,	<input checked="" type="checkbox"/> >75%

NOTES ABOUT THE SURVEY/HABITAT/SPECIAL-STATUS SPECIES/ETC:

No BNLL were observed during this survey.

**PLEASE RETURN THIS SURVEY REPORTING FORM TO THE APPROPRIATE
CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE REGION AT THE FOLLOWING
ADDRESS:**

California Department of Fish and Wildlife
Central Region
ATTN: Habitat Conservation Planning Supervisor
1234 East Shaw Avenue
Fresno, CA 93710

OR

California Department of Fish and Wildlife
South Coast Region
ATTN: Habitat Conservation Planning Supervisor
3883 Ruffin Road
San Diego, CA 92123

*****ALL OBSERVATIONS OF BLUNT-NOSED LEOPARD LIZARDS AND OTHER SPECIAL STATUS SPECIES
SHOULD BE PROMPTLY REPORTED TO THE CALIFORNIA NATURAL DIVERSITY DATABASE (CNDDDB).
SUBMISSION OF THIS FORM DOES NOT ENTAIL REPORTING TO THE DATABASE, WHICH IS
MAINTAINED BY THE BIOGEOGRAPHIC DATA BRANCH OF CDFW. PLEASE SEE THE SURVEY
PROTOCOL FOR DIRECTIONS ON REPORTING TO CNDDDB.**

Blunt-Nosed Leopard Lizard Survey Reporting Form

SURVEY DATE(S) (up to 5 days of surveys from a single site can be reported on this form):

June 5th 2020

Surveyor Lvl- 2 1 2
SURVEYORS: Michelle Olinger, Tyler Armstrong, Eric Olinger,

2 Ben Ruiz, 1 Ellen Gallanty, 1 Theodore Mason

SITE NAME [Please also attach or sketch a map on back]: James Rd. Ground Water Project

County: Kern **Landowner/Mgr:** Rosedale-Rio Bravo Water District

Quad Name: _____ **Elevation:** 330 Ft.

T 30S **R** 26E **¼ of Section** 21

UTM Zone (10,11): 11 **Datum:** WGS84 (NAD83, NAD27, WGS84, other)

Source (GPS, map & type, other): GPS **Point Accuracy** 3 meters

COORDINATES: 35°17'59.21"N 119°11'39.17"W

SURVEY RESULTS

DATE	START TIME	END TIME	START AIR TEMP	END AIR TEMP	# BNLL OBSERVED Adults/Hatchlings	PERSON-HOURS (# Surveyors) X (# Hours Walked)	APPROXIMATE DISTANCE COVERED (IN TENTHS OF A MILE)
6/5/20	0840	1109	77.8°	78.2°	0 / 0	12	4.6
					/		
					/		
					/		
					/		

TOTAL NUMBER OF OBSERVATIONS FOR THE THREE MOST COMMON LIZARD SPECIES ENCOUNTERED (combined numbers for all survey days):

Species	<u>Side-Blotched Lizard Uta stansburiana</u>	Number Observed: <u>32</u>
Species	<u>Western Whiptail Aspidoscelis tigris</u>	Number Observed: <u>0</u>
Species	_____	Number Observed: _____

Reporting Form Pg 2

BNLL Survey Site Name: _____

HABITAT DESCRIPTION: General description of vegetation community, overall habitat quality, surrounding land use, threats, etc: Atriplex, non-native annual grassland/

Surrounding land use - Agg.

HABITAT DESCRIPTION: Estimation of Average Vegetative Cover on the Site [circle the correct value]:

% Shrub:	<input checked="" type="checkbox"/> 0-10%,	10-25%,	25-50%,	50-75%,	>75%
% Forb:	<input checked="" type="checkbox"/> 0-10%,	10-25%,	25-50%,	50-75%,	>75%
% Grass:	<input checked="" type="checkbox"/> 0-10%,	10-25%,	25-50%,	50-75%,	>75%
% Bare Ground:	0-10%,	10-25%,	25-50%,	50-75%,	<input checked="" type="checkbox"/> >75%

NOTES ABOUT THE SURVEY/HABITAT/SPECIAL-STATUS SPECIES/ETC:

No BNLL were observed during this survey.

PLEASE RETURN THIS SURVEY REPORTING FORM TO THE APPROPRIATE CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE REGION AT THE FOLLOWING ADDRESS:

California Department of Fish and Wildlife
Central Region
ATTN: Habitat Conservation Planning Supervisor
1234 East Shaw Avenue
Fresno, CA 93710

OR

California Department of Fish and Wildlife
South Coast Region
ATTN: Habitat Conservation Planning Supervisor
3883 Ruffin Road
San Diego, CA 92123

*****ALL OBSERVATIONS OF BLUNT-NOSED LEOPARD LIZARDS AND OTHER SPECIAL STATUS SPECIES SHOULD BE PROMPTLY REPORTED TO THE CALIFORNIA NATURAL DIVERSITY DATABASE (CNDDDB). SUBMISSION OF THIS FORM DOES NOT ENTAIL REPORTING TO THE DATABASE, WHICH IS MAINTAINED BY THE BIOGEOGRAPHIC DATA BRANCH OF CDFW. PLEASE SEE THE SURVEY PROTOCOL FOR DIRECTIONS ON REPORTING TO CNDDDB.**

Blunt-Nosed Leopard Lizard Survey Reporting Form

SURVEY DATE(S) (up to 5 days of surveys from a single site can be reported on this form):

August 29th 2020

Surveyor Lvl- 2 1 2
SURVEYORS: Michelle Olinger, Tyler Armstrong, Eric Olinger,

2 Ben Ruiz, 1 Ellen Gallanty, 1 Thomas Nhu

SITE NAME [Please also attach or sketch a map on back]: James Rd. Ground Water Project

County: Kern **Landowner/Mgr:** Rosedale-Rio Bravo Water District

Quad Name: _____ **Elevation:** 330 Ft.

T 30S **R** 26E **¼ of Section** 21

UTM Zone (10,11): 11 **Datum:** WGS84 (NAD83, NAD27, WGS84, other)

Source (GPS, map & type, other): GPS **Point Accuracy** 3 meters

COORDINATES: 35°17'59.21"N 119°11'39.17"W

SURVEY RESULTS

DATE	START TIME	END TIME	START AIR TEMP	END AIR TEMP	# BNLL OBSERVED Adults/Hatchlings	PERSON-HOURS (# Surveyors) X (# Hours Walked)	APPROXIMATE DISTANCE COVERED (IN TENTHS OF A MILE)
8/29/20	0807	1016	78.4°	92.6°	0 / 0	12	4.6
8/30/20	0805	1011	77.9°	91.4°	0 / 0	12	4.6
					/		
					/		
					/		

TOTAL NUMBER OF OBSERVATIONS FOR THE THREE MOST COMMON LIZARD SPECIES ENCOUNTERED (combined numbers for all survey days):

Species	<u>Side-Blotched Lizard Uta stansburiana</u>	Number Observed:	<u>234</u>
Species	<u>Western Whiptail Aspidoscelis tigris</u>	Number Observed:	<u>37</u>
Species	_____	Number Observed:	_____

Reporting Form Pg 2

BNLL Survey Site Name: _____

HABITAT DESCRIPTION: General description of vegetation community, overall habitat

quality, surrounding land use, threats, etc: Atriplex, non-native annual grassland/
Disturbed by ATV operation and common illegal waste disposal site/
Surrounding land use - Agg.

**HABITAT DESCRIPTION: Estimation of Average Vegetative Cover on the Site
[circle the correct value]:**

% Shrub:	<input checked="" type="checkbox"/> 0-10%,	10-25%,	25-50%,	50-75%,	>75%
% Forb:	<input checked="" type="checkbox"/> 0-10%,	10-25%,	25-50%,	50-75%,	>75%
% Grass:	<input checked="" type="checkbox"/> 0-10%,	10-25%,	25-50%,	50-75%,	>75%
% Bare Ground:	0-10%,	10-25%,	25-50%,	50-75%,	<input checked="" type="checkbox"/> >75%

NOTES ABOUT THE SURVEY/HABITAT/SPECIAL-STATUS SPECIES/ETC:

No BNLL were observed during this survey.

PLEASE RETURN THIS SURVEY REPORTING FORM TO THE APPROPRIATE CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE REGION AT THE FOLLOWING ADDRESS:

California Department of Fish and Wildlife
Central Region
ATTN: Habitat Conservation Planning Supervisor
1234 East Shaw Avenue
Fresno, CA 93710

OR

California Department of Fish and Wildlife
South Coast Region
ATTN: Habitat Conservation Planning Supervisor
3883 Ruffin Road
San Diego, CA 92123

*****ALL OBSERVATIONS OF BLUNT-NOSED LEOPARD LIZARDS AND OTHER SPECIAL STATUS SPECIES SHOULD BE PROMPTLY REPORTED TO THE CALIFORNIA NATURAL DIVERSITY DATABASE (CNDDDB). SUBMISSION OF THIS FORM DOES NOT ENTAIL REPORTING TO THE DATABASE, WHICH IS MAINTAINED BY THE BIOGEOGRAPHIC DATA BRANCH OF CDFW. PLEASE SEE THE SURVEY PROTOCOL FOR DIRECTIONS ON REPORTING TO CNDDDB.**

Blunt-Nosed Leopard Lizard Survey Reporting Form

SURVEY DATE(S) (up to 5 days of surveys from a single site can be reported on this form):

September 25th 2020

Surveyor Lvl- 2 1 2
SURVEYORS: Michelle Olinger, Tyler Armstrong, Eric Olinger,

2 Ben Ruiz, 1 Ellen Gallanty, 2 Kyle Tabor

SITE NAME [Please also attach or sketch a map on back]: James Rd. Ground Water Project

County: Kern **Landowner/Mgr:** Rosedale-Rio Bravo Water District

Quad Name: _____ **Elevation:** 330 Ft.

T 30S **R** 26E **¼ of Section** 21

UTM Zone (10,11): 11 **Datum:** WGS84 (NAD83, NAD27, WGS84, other)

Source (GPS, map & type, other): GPS **Point Accuracy** 3 meters

COORDINATES: 35°17'59.21"N 119°11'39.17"W

SURVEY RESULTS

DATE	START TIME	END TIME	START AIR TEMP	END AIR TEMP	# BNLL OBSERVED Adults/Hatchlings	PERSON-HOURS (# Surveyors) X (# Hours Walked)	APPROXIMATE DISTANCE COVERED (IN TENTHS OF A MILE)
9/25/20	1021	1256	77.1°	89.1°	0 / 0	12	4.6
					/		
					/		
					/		
					/		

TOTAL NUMBER OF OBSERVATIONS FOR THE THREE MOST COMMON LIZARD SPECIES ENCOUNTERED (combined numbers for all survey days):

Species	<u>Side-Blotched Lizard Uta stansburiana</u>	Number Observed:	<u>131</u>
Species	<u>Western Whiptail Aspidoscelis tigris</u>	Number Observed:	<u>13</u>
Species	_____	Number Observed:	_____

Reporting Form Pg 2

BNLL Survey Site Name: _____

HABITAT DESCRIPTION: General description of vegetation community, overall habitat

quality, surrounding land use, threats, etc: Atriplex, non-native annual grassland/
Disturbed by ATV operation and common illegal waste disposal site/
Surrounding land use - Agg.

**HABITAT DESCRIPTION: Estimation of Average Vegetative Cover on the Site
[circle the correct value]:**

% Shrub:	<input checked="" type="checkbox"/> 0-10%,	10-25%,	25-50%,	50-75%,	>75%
% Forb:	<input checked="" type="checkbox"/> 0-10%,	10-25%,	25-50%,	50-75%,	>75%
% Grass:	<input checked="" type="checkbox"/> 0-10%,	10-25%,	25-50%,	50-75%,	>75%
% Bare Ground:	0-10%,	10-25%,	25-50%,	50-75%,	<input checked="" type="checkbox"/> >75%

NOTES ABOUT THE SURVEY/HABITAT/SPECIAL-STATUS SPECIES/ETC:

No BNLL were observed during this survey.

**PLEASE RETURN THIS SURVEY REPORTING FORM TO THE APPROPRIATE
CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE REGION AT THE FOLLOWING
ADDRESS:**

California Department of Fish and Wildlife
Central Region
ATTN: Habitat Conservation Planning Supervisor
1234 East Shaw Avenue
Fresno, CA 93710

OR

California Department of Fish and Wildlife
South Coast Region
ATTN: Habitat Conservation Planning Supervisor
3883 Ruffin Road
San Diego, CA 92123

*****ALL OBSERVATIONS OF BLUNT-NOSED LEOPARD LIZARDS AND OTHER SPECIAL STATUS SPECIES
SHOULD BE PROMPTLY REPORTED TO THE CALIFORNIA NATURAL DIVERSITY DATABASE (CNDDDB).
SUBMISSION OF THIS FORM DOES NOT ENTAIL REPORTING TO THE DATABASE, WHICH IS
MAINTAINED BY THE BIOGEOGRAPHIC DATA BRANCH OF CDFW. PLEASE SEE THE SURVEY
PROTOCOL FOR DIRECTIONS ON REPORTING TO CNDDDB.**

Blunt-Nosed Leopard Lizard Survey Reporting Form

SURVEY DATE(S) (up to 5 days of surveys from a single site can be reported on this form):

September 26th & 27th 2020

Surveyor Lvl-

2

1

2

SURVEYORS: Michelle Olinger, Tyler Armstrong, Eric Olinger,

2 Ben Ruiz, 1 Allesandra Phelan-Roberts, 2 Kyle Tabor

SITE NAME [Please also attach or sketch a map on back]: James Rd. Ground Water Project

County: Kern

Landowner/Mgr: Rosedale-Rio Bravo Water District

Quad Name: _____ **Elevation:** 330 Ft.

T 30S **R** 26E **¼ of Section** 21

UTM Zone (10,11): 11 **Datum:** WGS84 (NAD83, NAD27, WGS84, other)

Source (GPS, map & type, other): GPS **Point Accuracy** 3 meters

COORDINATES: 35°17'59.21"N 119°11'39.17"W

SURVEY RESULTS

DATE	START TIME	END TIME	START AIR TEMP	END AIR TEMP	# BNLL OBSERVED Adults/Hatchlings	PERSON-HOURS (# Surveyors) X (# Hours Walked)	APPROXIMATE DISTANCE COVERED (IN TENTHS OF A MILE)
9/26/20	1015	1253	78.9°	92.2°	0 / 0	12	4.6
9/27/20	1016	1248	79.5°	94.3°	0 / 0	12	4.6
					/		
					/		
					/		

TOTAL NUMBER OF OBSERVATIONS FOR THE THREE MOST COMMON LIZARD SPECIES ENCOUNTERED (combined numbers for all survey days):

Species	<u>Side-Blotched Lizard</u> <u>Uta stansburiana</u>	Number Observed:	<u>206</u>
Species	<u>Western Whiptail</u> <u>Aspidoscelis tigris</u>	Number Observed:	<u>24</u>
Species	_____	Number Observed:	_____

Reporting Form Pg 2

BNLL Survey Site Name: _____

HABITAT DESCRIPTION: General description of vegetation community, overall habitat

quality, surrounding land use, threats, etc: Atriplex, non-native annual grassland/
Disturbed by ATV operation and common illegal waste disposal site/
Surrounding land use - Agg.

**HABITAT DESCRIPTION: Estimation of Average Vegetative Cover on the Site
[circle the correct value]:**

% Shrub:	<input checked="" type="checkbox"/> 0-10%,	10-25%,	25-50%,	50-75%,	>75%
% Forb:	<input checked="" type="checkbox"/> 0-10%,	10-25%,	25-50%,	50-75%,	>75%
% Grass:	<input checked="" type="checkbox"/> 0-10%,	10-25%,	25-50%,	50-75%,	>75%
% Bare Ground:	0-10%,	10-25%,	25-50%,	50-75%,	<input checked="" type="checkbox"/> >75%

NOTES ABOUT THE SURVEY/HABITAT/SPECIAL-STATUS SPECIES/ETC:

No BNLL were observed during this survey.

**PLEASE RETURN THIS SURVEY REPORTING FORM TO THE APPROPRIATE
CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE REGION AT THE FOLLOWING
ADDRESS:**

California Department of Fish and Wildlife
Central Region
ATTN: Habitat Conservation Planning Supervisor
1234 East Shaw Avenue
Fresno, CA 93710

OR

California Department of Fish and Wildlife
South Coast Region
ATTN: Habitat Conservation Planning Supervisor
3883 Ruffin Road
San Diego, CA 92123

*****ALL OBSERVATIONS OF BLUNT-NOSED LEOPARD LIZARDS AND OTHER SPECIAL STATUS SPECIES
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SUBMISSION OF THIS FORM DOES NOT ENTAIL REPORTING TO THE DATABASE, WHICH IS
MAINTAINED BY THE BIOGEOGRAPHIC DATA BRANCH OF CDFW. PLEASE SEE THE SURVEY
PROTOCOL FOR DIRECTIONS ON REPORTING TO CNDDDB.**

APPENDIX F

Swainson's Hawk Survey Report

Swainson's Hawk Survey Report for
the McAllister Ranch Groundwater
Banking Project, Bakersfield,
Kern County, California

MAY 2021

PREPARED FOR

Buena Vista Water Storage District (BVWSD)

Rosedale-Rio Bravo Water Storage District (RRBWSD)

PREPARED BY

SWCA Environmental Consultants

**SWAINSON'S HAWK SURVEY REPORT FOR THE
MCALLISTER RANCH GROUNDWATER BANKING PROJECT,
BAKERSFIELD, KERN COUNTY, CALIFORNIA**

Prepared for

Rosedale-Rio Bravo Water Storage District
849 Allen Road
Bakersfield, CA 93314
Attn: Dan Bartel, Assistant Manager/Engineer

Prepared by

Geoff Hoetker, M.S.

SWCA Environmental Consultants
1422 Monterey Street, Suite C200
San Luis Obispo, CA 93401
(805) 543-7095
www.swca.com

SWCA Project No. 59498

May 2021

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Abbreviations and Acronyms

AF	acre-feet
APN	Assessor's Parcel Number
BVWSD	Buena Vista Water Storage District
BSA	Biological Study Area
CESA	California Endangered Species Act
CNDDDB	California Natural Diversity Database
CRC	California Resources Corporation
Districts	Buena Vista Water Storage District and Rosedale-Rio Bravo Water Storage District
EIR	Environmental Impact Report
MDM	Mount Diablo Meridian
M&I	municipal and industrial
proposed project	McAllister Ranch Groundwater Banking Project
RRBWSD	Rosedale-Rio Bravo Water Storage District
SWCA	SWCA Environmental Consultants
SWHA	Swainson's hawk
USGS	U.S. Geological Survey

1 PROJECT DESCRIPTION AND LOCATION

1.1 Project Description

SWCA Environmental Consultants (SWCA) has prepared this Swainson's Hawk Survey Report for the McAllister Ranch Groundwater Banking Project (proposed project), which consists of construction and operation of a water banking project on approximately 2,070 acres of undeveloped real property located north of Panama Lane and west of South Allen Road, in Bakersfield, Kern County, California. Water supplies available to Buena Vista Water Storage District (BVWSD) (the proposed project applicant) and Rosedale-Rio Bravo Water Storage District (RRBWSD) (jointly described as the Districts in the draft Environmental Impact Report [EIR]) would be diverted from the Kern River, recharged, and stored at the project site, and would later be recovered for irrigation and municipal and industrial (M&I) uses when needed. The proposed project would include constructing several shallow percolation ponds to facilitate the recharge activities and other features to enable the storage and transport of water. At full buildout, up to approximately 200,000 acre-feet (AF) of water could be diverted and recharged in the groundwater basin in any one year. The maximum recovery of stored water in a single year would be approximately 56,000 AF.

1.2 Project Location

The project site, known locally as McAllister Ranch, is located in the city of Bakersfield, north of Panama Lane and west of South Allen Road (Figures 1 and 2). The project site is bound by the Stevens, California U.S. Geological Survey (USGS) 7.5-minute quadrangle within Sections 16, 21, 22, and 23, Township 30 South, Range 26 East, Mount Diablo Meridian (MDM) The property is located on the Kern River alluvial fan, which is well suited for groundwater banking operations. The site was formerly a planned residential development that was in the early stages of construction. Due to the downturn in the real estate market, development was discontinued, and the property was sold in a bankruptcy proceeding. The Districts jointly purchased the property in 2011.

The McAllister Ranch property is located in the western area of Bakersfield and encompasses approximately 2,070 acres. The property has been disturbed and continues to be disturbed; most of the site had been used for agricultural purposes before it was extensively graded for development. Additionally, the property contains several active and abandoned oil wells and several reserved drill islands. The drill islands are areas zoned for drilling (by others) for the purpose of extracting subsurface oil or gas resources, the rights to which are owned by the California Resources Corporation (CRC).

The Assessor's Parcel Numbers (APNs) for the site include: 537-010-40, 537-010-42, 537-010-47, 537-010-50, 537-010-54, 537-010-56, 537-010-59, 537-030-07, 537-030-08, 537-030-09, 537-030-10, 537-030-14, 537-030-15, 537-030-16, 537-030-17, 537-030-18, 537-030-19, 537-030-20, 537-030-21, 537-030-22, 537-030-23, 537-030-24, 537-030-25, 537-030-26, 537-030-27, 537-030-28, 537-030-29, 537-030-30, 537-030-31, 537-030-32, 537-030-33, 537-030-34, 537-030-35, 537-030-36, and 537-030-37.

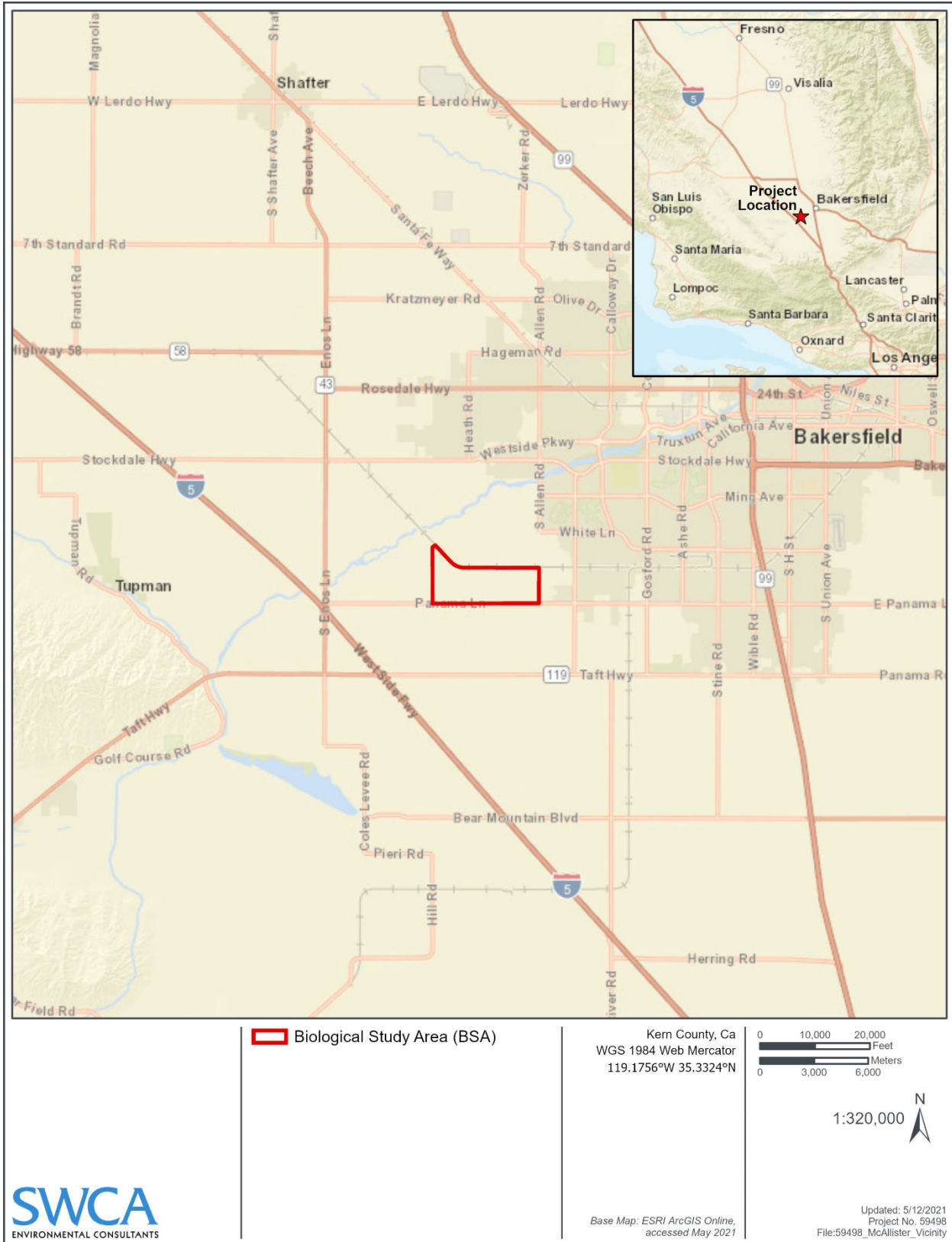


Figure 1. Project vicinity map.



Figure 2. Project location map.

1.3 Survey Protocol and Previous Surveys

1.3.1 Survey Protocol

This report summarizes results of recent protocol surveys for Swainson's hawk (SWHA) (*Buteo swainsonii*), which is a state threatened species protected by the California Endangered Species Act (CESA). The proposed project is within the range of the SWHA. Protocol SWHA surveys were completed within the project site and a 0.5-mile radius following the *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (Swainson's Hawk Technical Advisory Committee 2000). Per the protocol, the SWHA survey effort is separated into five survey periods: Period I (January to March 20; recommended optional), Period II (March 20 to April 5), Period III (April 5 to April 20), Period IV (April 21 to June 10), and Period V (June 10 to July 30; post-fledging). Protocol SWHA surveys were conducted by BPR Consulting; SWHA survey data forms are included in Appendix A.

1.3.2 Previous Surveys

There are five SWHA nesting records reported in the California Natural Diversity Database (CNDDDB) within a 5-mile radius of the project site; the nearest record is from 2016 along the Kern River at a location approximately 1.2 miles west of the northwestern area of the proposed project site (CNDDDB 2021).

Protocol SWHA surveys were previously conducted for the project in 2013 (Live Oak Associates 2013). During the Period II surveys, three nesting SWHA pairs were observed within the survey area. One nesting pair was observed at the pump house and bike trail along the Kern River Bike Path. During the protocol surveys, SWHAs were observed pairing (mate selection) during nest construction; however, no chicks were observed later in the nesting period. Live Oak Associates reported that all three nests resulted in failure, possibly due to great horned owls (*Bubo virginianus*) with young that were already nesting in close proximity to the SWHA nests. While the exact cause of the nest failures was unknown, another potential contributing factor was the delayed arrival of the SWHA later in the breeding season.

2 METHODS

Protocol survey methods followed *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (Swainson's Hawk Technical Advisory Committee 2000). Protocol SWHA surveys were conducted by BPR Consulting Senior Biologist Ben Ruiz. Surveys were conducted while driving, walking within suitable habitat, and using binoculars within a 0.5-mile radius of the project site/Biological Study Area (BSA). Bird species observed were noted on standardized data forms (see Appendix A), and any observed nest locations were recorded using the Global Positioning System (GPS) (Figure 3).

3 RESULTS

3.1 Period I

No surveys were conducted during the optional Period I (January to March 20).

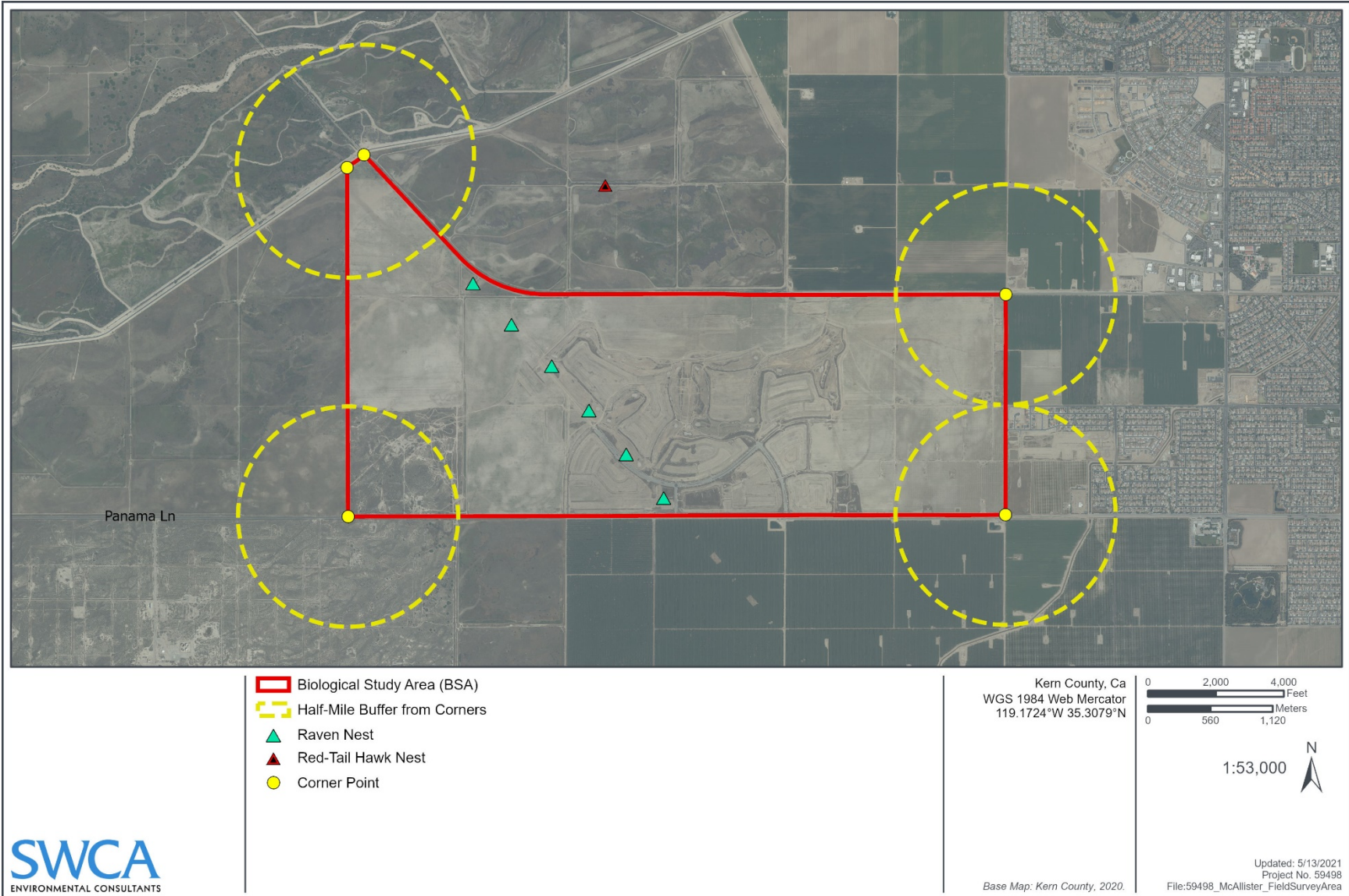


Figure 3. Nest locations within 0.5 mile of the project site.

3.2 Period II

During Period II, a survey was conducted on April 4, 2020; species observed during the Period II survey included red-tailed hawk (*Buteo jamaicensis*), killdeer (*Charadrius vociferus*), mourning dove (*Zenaida macroura*), western kingbird (*Tyrannus verticalis*), common raven (*Corvus corax*), California horned lark (*Eremophila alpestris actia*), northern mockingbird (*Mimus polyglottos*), American kestrel (*Falco sparverius*), great egret (*Ardea alba*), house finch (*Haemorhous mexicanus*), California/valley quail (*Callipepla californica*), and greater roadrunner (*Geococcyx californianus*). One active red-tailed hawk nest and several common raven nests were observed on transmission line poles within the survey radius. No SWHA were observed.

3.3 Period III

During Period III, a survey was conducted on April 18, 2020; species observed during the Period III survey included common raven, mourning dove, house finch, greater roadrunner, American kestrel, killdeer, great egret, northern mockingbird, and great blue heron (*Ardea herodias*). No additional nests were observed during Period III beyond those originally observed during Period II. No SWHA were observed.

3.4 Period IV

During Period IV, while initiating surveys is typically not recommended during this period, additional surveys were conducted to determine if late-season initiation of SWHA nesting in the vicinity of the project site was occurring. Period IV surveys were conducted on April 24 and May 3, 8, 9, 10, and 23, 2020; species observed during the Period IV surveys included barn owl (*Tyto alba*), northern mockingbird, American kestrel, common raven, California horned lark, killdeer, mourning dove, red-tailed hawk, western kingbird, great blue heron, greater roadrunner, house finch, great egret, red-shouldered hawk (*Buteo lineatus*), and California/valley quail. No additional nests were observed during Period IV beyond those originally observed during Period II. No SWHA were observed.

3.5 Period V

During Period V (post-fledging), one survey was conducted on July 2, 2020; species observed during the Period V survey included mourning dove, California horned lark, common raven, western kingbird, greater roadrunner, great egret, northern mockingbird, and American kestrel. No additional nests were observed during Period V beyond those originally observed during Period II. No SWHA were observed.

4 CONCLUSION

Six common raven nests and one red-tailed hawk nest were observed (see Figure 3), but no SWHA nests were observed within the survey area. The cumulative survey effort resulted in no observations of SWHA within the survey radius and the species was determined to not currently nest in or within 0.5 mile of the project site.

5 REFERENCES

California Natural Diversity Data Base (CNDDDB). 2021. Rarefind data output for Stevens, California 7.5-minute topographic quadrangle and eight surrounding quadrangles. Accessed May 5, 2021.

Live Oak Associates. 2013. *James Groundwater Storage Project Swainson's Hawk Survey Period II; Bakersfield, Kern County, California*. Prepared for Rosedale-Rio Bravo Water Storage District. August 8.

Swainson's Hawk Technical Advisory Committee. 2000. *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley*. May 31. Available at: <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=83990&inline>. Accessed throughout 2020 and 2021.

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APPENDIX A

Swainson's Hawk Nest Survey Data Forms

SWAINSON'S HAWK (BUTEO SWAINSONI) NEST SURVEYS

DATE 4-4-20 WEATHER 60°F Sunny Wind 3 ACH SURVEYOR(S) Ben Ruiz

START TIME 6:35 AM END TIME 10:45 AM

Time	Species	ID#	Activity/Behavior	Tree Type	Lat/Long/UTM	Distance & Direction
7:15 AM	RTHA	/	nest	N/A	35°19'49.0" N 119°10'41.33" W	0.48 miles North
7:21 AM	Killdeer	/	walking	N/A	/	on project site
8:30 AM	Mourning Dove	/	Flying	N/A	/	on project site
8:35 AM	Kingbird	/	sitting on the fence	N/A	/	on project site
8:41 AM	Raven	/	nest on all transmission poles in project site	N/A	see map for lat/long	on project site
8:55 AM	Horned Lark	/	Flying	N/A	/	on project site

SPECIES – Swainson's hawk (SWHA), red-tailed hawk (RTHA), red-shouldered hawk (RSHA), great horned owl (GHOW), turkey vulture (TUVU), other (include acronym), unknown (UNK)

SWAINSON'S HAWK (BUTEO SWAINSONI) NEST SURVEYS

DATE 4-4-20 WEATHER 69°F
wind 6 mph
Sunny and Clear SURVEYOR(S) Ben Ruiz

START TIME 3:04 PM END TIME 7:00 PM

Time	Species	ID#	Activity/Behavior	Tree Type	Lat/Long/UTM	Distance & Direction
3:15 PM	Mocking Bird	/	Flying	N/A	/	on project site
3:22 PM	Mourning Dove	/	Flying	N/A	/	on project site
3:41 PM	Kestrel	-	sitting on fence post	N/A	/	on project site
4:04 PM	Raven	/	Flying	N/A	/	on project site
4:40 PM	Great white Egret	/	sitting in field	N/A	/	on project site
4:49 PM	House Finch	-	Flying	N/A	/	on project site
5:36 PM	Mocking Bird	/	Flying	N/A	/	on project site
6:24 PM	Red Tail RTHA	-	Flying	N/A	more than 1/2 mile away	on project site
6:27 PM	Valley Quail	-	walking	N/A	/	on project site
6:33 PM	Road Runner	-	walking	N/A	/	on project site

SPECIES – Swainson's hawk (SWHA), red-tailed hawk (RTHA), red-shouldered hawk (RSHA), great horned owl (GHOW), turkey vulture (TUVU), other (include acronym), unknown (UNK)

SWAINSON'S HAWK (BUTEO SWAINSONI) NEST SURVEYS

53°F
Wind 6 MPH

DATE 2-18-20 WEATHER Most cloudy and cool SURVEYOR(S) BEN RAIZ

START TIME 6:23 AM END TIME 10:30 AM

Time	Species	ID#	Activity/Behavior	Tree Type	Lat/Long/UTM	Distance & Direction
6:40 AM	Raven	/	Flying in project Area and Nesting	N/A	see map	/
7:01 AM	Mourning Dove	/	Flying in project site	N/A	/	/
7:12 AM	House Finch	/	sitting under shrub on project site	N/A	/	/
8:47 AM	Red Runner	-	Running in project location	N/A	/	/
8:50 AM	Kestrel	/	Flying in project site	N/A	/	-
9:08 AM	killdeer	-	sitting in project site	N/A	/	/
9:21 AM	Great White Egret	-	sitting in project site	N/A	/	/
9:35 AM	Mocking Bird	-	Flying through site	N/A	/	/
10:00 AM	Great-Blk. Heron	-	site west of the site about 3/4 miles	N/A	/	/

SPECIES – Swainson's hawk (SWHA), red-tailed hawk (RTHA), red-shouldered hawk (RSHA), great horned owl (GHOW), turkey vulture (TUVU), other (include acronym), unknown (UNK)

SWAINSON'S HAWK (BUTEO SWAINSONI) NEST SURVEYS

Wind 2 mph

55°F

DATE April 18, 2020 WEATHER cloudy and cold SURVEYOR(S) Ben Ruiz

START TIME 3:12 PM END TIME 7:21 PM

Time	Species	ID#	Activity/Behavior	Tree Type	Lat/Long/UTM	Distance & Direction
3:47 PM	Horned Lark	/	sitting in project Area	N/A	/	/
4:06 PM	Raven	/	Flying through site	N/A	/	/
4:21 PM	rocking bird	/	sitting on fence post on the site	N/A	/	/
5:49 PM	Kris bird	/	Flying in project site	N/A	/	/
6:23 PM	RTHA	/	sitting on power pole 1 mile away	N/A	/	/

SPECIES – Swainson's hawk (SWHA), red-tailed hawk (RTHA), red-shouldered hawk (RSHA), great horned owl (GHOW), turkey vulture (TUVU), other (include acronym), unknown (UNK)

SWAINSON'S HAWK (BUTEO SWAINSONI) NEST SURVEYS

DATE April 24, 2020 WEATHER 77°F
wind 2 mph
Sunny and hot SURVEYOR(S) REN Ruiz
START TIME 6:10 AM END TIME 10:00 AM

Time	Species	ID#	Activity/Behavior	Tree Type	Lat/Long/UTM	Distance & Direction
6:15 AM	Barn owl	/	sitting outside of project Area on the canal	N/A	/	1/2 mile North west
6:25 AM	Mocking bird	/	Flying in project Area	N/A	/	/
6:43 AM	Kestrel	/	Flying in project Area	N/A	/	/
7:04 AM	Raven	/	Flying in project Area	N/A	/	/
7:09 AM	Horned Lark	/	Sitting in project Area	N/A	/	/
7:17 AM	Killdeer	/	sitting in project Area	N/A	/	/
7:25 AM	Mourning Dove	/	Flying in project Area	N/A	/	/
8:13 AM	RTHA	/	nest outside project Area	Cotton wood	35° 19' 12.25" N 119° 42' 28.1" W	0.54 miles North
8:55 AM	King bird	/	Flying in project Area	N/A	/	/
9:08 AM	Great blue Heron	/	sitting outside project Area 1/2 mile	N/A	/	/
9:19 AM	Road Runner	/	Running in project Area	N/A	/	/
9:31 AM	House Finch	/	Flying in project Area	N/A	/	/

SPECIES – Swainson's hawk (SWHA), red-tailed hawk (RTHA), red-shouldered hawk (RSHA), great horned owl (GHOW), turkey vulture (TUVU), other (include acronym), unknown (UNK)

SWAINSON'S HAWK (BUTEO SWAINSONI) NEST SURVEYS

DATE April 24, 2020 WEATHER Wind 0.5
91°F
Sunny and Hot SURVEYOR(S) Ben Ruiz

START TIME 3:30 PM END TIME 7:30 PM

Time	Species	ID#	Activity/Behavior	Tree Type	Lat/Long/UTM	Distance & Direction
3:38 PM	Great white Egret	/	Sitting in project site	N/A	—	✓
3:46 PM	Kestrel	/	Flying in project site	N/A	—	/
4:01 PM	Raven	/	Flying and nesting in project site	N/A	—	/
4:05 PM	Killdeer	/	walks in project site	N/A	—	/
4:22 PM	Mourning Dove	/	Flying in project site	N/A	—	/
4:48 PM	House Finch	/	Flying in project site	N/A	—	/
5:03 PM	King bird	/	sitting on fence in project site	N/A	—	/
5:20 PM	Horned Lark	/	sitting in project site	N/A	—	/
5:24 PM	Mourning Bird	/	Flying in project site	N/A	—	/
		/		N/A	—	/
		/		N/A	—	/
		/		N/A	—	/

SPECIES – Swainson's hawk (SWHA), red-tailed hawk (RTHA), red-shouldered hawk (RSHA), great horned owl (GHOW), turkey vulture (TUVU), other (include acronym), unknown (UNK)

BURROWING OWL (ATHENE CUNICULARIA) NESTING & WINTERING SEASON SURVEYS

wind 2.8 MPH
Sunny and clear

DATE May 3, 2020 WEATHER 85°F

SURVEYOR(S) Ben Ruiz - Tyler Armstrong -

START TIME 6:50 AM END TIME 3:05 PM

Drew Wallace - Eric Oleson - Archelle Oleson

Thomas Aho - Josh Yellucinas

Time	Species	ID#	Activity/Behavior	Burrow Type	Lat/Long/UTM	Distance & Direction
7:11 AM	Robin	/	Flying	N/A	/	In project site
7:14 AM	Mourning Dove	/	Flying	N/A	/	In project site
8:22 AM	Great Blue Heron	/	walking	N/A	/	In project site
8:41 AM	Horned Lark	/	walking	N/A	/	In project site
9:02 AM	Mockingbird	/	Flying	N/A	/	In project site
9:12 AM	Kingbird	/	Flying	N/A	/	In project site
9:49 AM	Kestrel	/	Flying	N/A	/	In project site
10:58 AM	Killdeer	/	walking	N/A	/	In project site

SWAINSON'S HAWK (BUTEO SWAINSONI) NEST SURVEYS

Sunny and hot
Wind 5 mph

DATE May 10, 2020 WEATHER 91°F SURVEYOR(S) BEN Ruiz

START TIME 5:58 AM END TIME 10:02 AM

Time	Species	ID#	Activity/Behavior	Tree Type	Lat/Long/UTM	Distance & Direction
6:13 AM	RTHA	/	Flying 1 mile west of the site	N/A	/	1 mile west
6:22 AM	Mourning Dove	/	Flying in project site	N/A	/	On project site
7:41 AM	kestrel	/	Flying in project site	N/A	/	on project site
7:55 AM	Raven	/	Flying in site	N/A	/	on project site
8:01 AM	Horned Lark	/	walking in project site	N/A	-	on project site
8:16 AM	RSHA	/	flying out of project site	N/A	/	1/2 out of project site
9:28 AM	House finch	/	Flying in project site	N/A	/	on project site.
9:41 AM	Red Wren	/	walking in site	N/A	/	on project site

SPECIES – Swainson's hawk (SWHA), red-tailed hawk (RTHA), red-shouldered hawk (RSHA), great horned owl (GHOW), turkey vulture (TUVU), other (include acronym), unknown (UNK)

SWAINSON'S HAWK (BUTEO SWAINSONI) NEST SURVEYS

DATE May 10, 2020 WEATHER 93°F
Wind 7 MPH
Sunny and clear SURVEYOR(S) BEN R42

START TIME 3:30 pm END TIME 7:30 pm

Time	Species	ID#	Activity/Behavior	Tree Type	Lat/Long/UTM	Distance & Direction
3:35 pm	House Finch	/	Flying	N/A	/	In project site
4:04 pm	Horned Lark	/	walking	N/A	/	In project site
4:06 pm	Red Runner	/	walking	N/A	/	In project site
5:10 pm	Vally Quail	/	walking	N/A	/	In project site
5:36 pm	Mourning Dove	/	Flying	N/A	/	In project site
5:51 pm	Kestrel	/	Flying	N/A	/	In project site
6:47 pm	Great White Egret	/	walking	N/A	/	In project site
6:57 pm	Killdeer	/	walking	N/A	/	In project site
7:01 pm	Kingbird	/	Flying	N/A	/	In project site

SPECIES – Swainson's hawk (SWHA), red-tailed hawk (RTHA), red-shouldered hawk (RSHA), great horned owl (GHOW), turkey vulture (TUVU), other (include acronym), unknown (UNK)

SWAINSON'S HAWK (*BUTEO SWAINSONI*) NEST SURVEYS

Temp - 92°F
wind - 2.9 MPH

DATE May 23, 2020 WEATHER Sunny and Hot SURVEYOR(S) Ben Rusz

START TIME 5:50 AM END TIME 9:55 AM

Time	Species	ID#	Activity/Behavior	Tree Type	Lat/Long/UTM	Distance & Direction
5:58 AM	Raven	/	Flying in project site	N/A	/	In project site
6:10 AM	Morning Dove	/	Flying in project site	N/A	/	In project site
6:18 AM	Horned Lark	/	walking in project site	N/A	/	In project site
7:40 AM	Killdeer	/	walking in project site	N/A	/	In project site
7:57 AM	Kingbird	/	Flying outside project site	N/A	/	out of project site 1/2 mile
8:12 AM	Great White Egret	/	standing in project site	N/A	/	in project site
8:31 AM	Road Runner	/	Running in project site	N/A	/	In project site
9:40 AM	Valley Quail	/	walking in project site	N/A	/	In project site

SPECIES - Swainson's hawk (SWHA), red-tailed hawk (RTHA), red-shouldered hawk (RSHA), great horned owl (GHOW), turkey vulture (TUVU), other (include acronym), unknown (UNK)

SWAINSON'S HAWK (*BUTEO SWAINSONI*) NEST SURVEYS

Temp - 93°F
Wind - 3.7 MPH

DATE 5-23-2020 WEATHER Sunny and Clear SURVEYOR(S) Ben Ruiz

START TIME 3:58 PM END TIME 7:58 PM

Time	Species	ID#	Activity/Behavior	Tree Type	Lat/Long/UTM	Distance & Direction
4:03 PM	Morning Dove	/	Flying	N/A	/	on project site
4:21 PM	RTHA	/	Flying	N/A	/	Flying 1 mile and 1/2 west of project site
5:09 PM	Raven	/	Flying	N/A	/	on project site
5:16 PM	Vally Quail	/	walking	N/A	/	on project site
5:39 PM	Great Blue Heron	/	walking	N/A	/	out side of project site
6:12 PM	Horned Lark	/	standing	N/A	/	on project site
6:43 PM	King bird	/	Flying	N/A	/	on project site
6:56 PM	House Finch	/	Flying	N/A	/	on project site
7:01 PM	Great White Egret	/	standing	N/A	/	on project site
7:49 PM	Mocking Bird	/	Flying	N/A	/	on project site
7:50 PM	Kestrel	/	Flying	N/A	/	on project site

SPECIES – Swainson's hawk (SWHA), red-tailed hawk (RTHA), red-shouldered hawk (RSHA), great horned owl (GHOW), turkey vulture (TUVU), other (include acronym), unknown (UNK)

SWAINSON'S HAWK (*BUTEO SWAINSONI*) NEST SURVEYS

Wind 1.0 mph
 Hot 97°F

DATE July 2, 2020 WEATHER Sunny and clear SURVEYOR(S) BEN Ruiz

START TIME 5:55 AM END TIME 10:00 PM

Time	Species	ID#	Activity/Behavior	Tree Type	Lat/Long/UTM	Distance & Direction
6:01 AM	Mourning Dove	/	Flying	N/A	/	on project site
6:04 AM	Horned Lark	/	sitting in flock on ground	N/A	/	on project site
6:12 AM	Raven	/	Flying	N/A	/	on project site
7:01 AM	Kingbird	/	Flying	N/A	/	on project site
7:19 AM	Road Runner	/	Running	N/A	/	on project site
7:49 AM	Great White Egret	/	sitting	N/A	/	off project site
8:09 AM	Mocking Bird	/	sitting on fence	N/A	/	on project site
8:11 AM	Kestrel	/	Flying	N/A	/	on project site

SPECIES – Swainson's hawk (SWHA), red-tailed hawk (RTHA), red-shouldered hawk (RSHA), great horned owl (GHOW), turkey vulture (TUVU), other (include acronym), unknown (UNK)

SWAINSON'S HAWK (BUTEO SWAINSONI) NEST SURVEYS

Wind 2.5 MPH
Temp 100°F

DATE 7-2-2020 WEATHER Sunny and Hot SURVEYOR(S) BEN RUIZ

START TIME 4:00 PM END TIME 8:10 PM

Time	Species	ID#	Activity/Behavior	Tree Type	Lat/Long/UTM	Distance & Direction
4:08 PM	Vallier Quail	/	Running	N/A	/	on project site
4:31 PM	Mourning Dove	/	Flying	N/A	/	on project site
4:44 PM	Great White Egret	/	sitting	N/A	/	off project site
5:06 PM	Mourning Dove	/	Flying	N/A	/	on project site
5:11 PM	House Finch	/	Flying	N/A	/	on project site
5:58 PM	Killdeer	/	sitting	N/A	/	on project site
6:07 PM	Road Runner	/	Running	N/A	/	on project site
6:24 PM	Great Blue Heron	/	sitting	N/A	/	off project site
6:26 PM	Raven	/	sitting on Power Line	N/A	/	on project site
6:57 PM	Horned Lark	/	sitting on ground	N/A	/	on project site
7:23 PM	Kingbird	/	Flying	N/A	/	on project site
7:27 PM	Kestrel	/	Flying	N/A	/	on project site

SPECIES – Swainson's hawk (SWHA), red-tailed hawk (RTHA), red-shouldered hawk (RSHA), great horned owl (GHOW), turkey vulture (TUVU), other (include acronym), unknown (UNK)

APPENDIX G

Burrowing Owl Survey Report

Burrowing Owl Survey Report for the
McAllister Ranch Groundwater
Banking Project, Bakersfield,
Kern County, California

MAY 2021

PREPARED FOR

Buena Vista Water Storage District (BVWSD)

Rosedale-Rio Bravo Water Storage District (RRBWSD)

PREPARED BY

SWCA Environmental Consultants

**BURROWING OWL SURVEY REPORT FOR THE
MCALLISTER RANCH GROUNDWATER BANKING PROJECT,
BAKERSFIELD, KERN COUNTY, CALIFORNIA**

Prepared for

Rosedale-Rio Bravo Water Storage District
849 Allen Road
Bakersfield, CA 93314
Attn: Dan Bartel, Assistant Manager/Engineer

Prepared by

Geoff Hoetker, M.S.

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SWCA Project No. 59498

May 2021

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Abbreviations and Acronyms

AF	acre-feet
APN	Assessor's Parcel Number
BVWSD	Buena Vista Water Storage District
BSA	Biological Study Area
BUOW	burrowing owl
CDFW	California Department of Fish and Wildlife
City	City of Bakersfield
CNDDB	California Natural Diversity Database
CRC	California Resources Corporation
Districts	Buena Vista Water Storage District and Rosedale-Rio Bravo Water Storage District
EIR	Environmental Impact Report
°F	degrees Fahrenheit
KCWA	Kern County Water Agency
MDM	Mount Diablo Meridian
M&I	municipal and industrial
mph	miles per hour
proposed project	McAllister Ranch Groundwater Banking Project
RRBWS	Rosedale-Rio Bravo Water Storage District
SWCA	SWCA Environmental Consultants
SSC	California Species of Special Concern
USGS	U.S. Geological Survey

1 PHASE I: HABITAT ASSESSMENT

1.1 Project Description and Location

SWCA Environmental Consultants (SWCA) has prepared this Burrowing Owl Survey Report for the McAllister Ranch Groundwater Banking Project (proposed project), which consists of construction and operation of a water banking project on approximately 2,070 acres of undeveloped real property located north of Panama Lane and west of South Allen Road, in Bakersfield, Kern County, California. Water supplies available to Buena Vista Water Storage District (BVWSD) (the proposed project applicant) and Rosedale-Rio Bravo Water Storage District (RRBWSD) (jointly described as the Districts in the draft Environmental Impact Report [EIR]) would be diverted from the Kern River, recharged, and stored at the project site and would later be recovered for irrigation and municipal and industrial (M&I) uses when needed. The proposed project would include constructing several shallow percolation ponds to facilitate the recharge activities and other features to enable the storage and transport of water. At full buildout, up to approximately 200,000 acre-feet (AF) of water could be diverted and recharged in the groundwater basin in any 1 year. The maximum recovery of stored water in a single year would be approximately 56,000 AF.

The proposed project site, known locally as McAllister Ranch, is located in the city of Bakersfield, north of Panama Lane and west of South Allen Road (Figures 1 and 2). The project site is bound by the Stevens, California U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle within Sections 16, 21, 22, and 23, Township 30 South, Range 26 East, Mount Diablo Meridian (MDM) The property is located on the Kern River alluvial fan, which is well suited for groundwater banking operations. The site was formerly a planned residential development that was in the early stages of construction. Due to the downturn in the real estate market, development was discontinued, and the property was sold in a bankruptcy proceeding. The Districts jointly purchased the property in 2011.

The McAllister Ranch property is located in the western area of Bakersfield and encompasses approximately 2,070 acres. The property has been disturbed and continues to be disturbed; most of the site had been used for agricultural purposes before it was extensively graded for development. Additionally, the property contains several active and abandoned oil wells and several reserved drill islands. The drill islands are areas zoned for drilling (by others) for the purpose of extracting subsurface oil or gas resources, the rights to which are owned by the California Resources Corporation (CRC).

The Assessor's Parcel Numbers (APNs) for the site include: 537-010-40, 537-010-42, 537-010-47, 537-010-50, 537-010-54, 537-010-56, 537-010-59, 537-030-07, 537-030-08, 537-030-09, 537-030-10, 537-030-14, 537-030-15, 537-030-16, 537-030-17, 537-030-18, 537-030-19, 537-030-20, 537-030-21, 537-030-22, 537-030-23, 537-030-24, 537-030-25, 537-030-26, 537-030-27, 537-030-28, 537-030-29, 537-030-30, 537-030-31, 537-030-32, 537-030-33, 537-030-34, 537-030-35, 537-030-36, and 537-030-37.



Figure 1. Project vicinity map.



Figure 2. Project location map.

1.2 Habitat Assessment

This report summarizes results of protocol surveys for burrowing owl (BUOW) (*Athene cunicularia*), which is considered a California Species of Special Concern (SSC) by the California Department of Fish and Wildlife (CDFW). A habitat assessment and protocol surveys were conducted following the four-phase protocol of the *Burrowing Owl Survey Protocol and Mitigation Guidelines* (The California Burrowing Owl Consortium 1993). For Phase I, the presence of suitable BUOW habitat was assessed on the project site within the Area of Potential Impact (API) and a 500-foot (150-meter) buffer zone, which in total comprise the Biological Study Area (BSA). This assessment was conducted in spring 2020 by BPR Consulting Senior Biologist Ben Ruiz. Suitable BUOW habitat was determined to be present within the southwestern 160 acres of the BSA north of Panama Lane based on the presence of chenopod scrub habitat and small mammal burrows (Appendix A). The rest of the 2,070-acre project site was recently taken out of agricultural production within the last few years, is routinely disked/disturbed, and is considered marginal BUOW habitat (BPR Consulting 2020).

The project site is located just within the western extent of Bakersfield's corporate limits. Land uses surrounding the site include water banking operations owned by the Kern County Water Agency (KCWA), the City of Bakersfield (City), and Kern Water Bank to the north and west; CRC petroleum production operations to the southwest; agriculture and Kern Delta Water District water banking operations to the south; residential, commercial development, agricultural, and the Pioneer Project water bank to the east and northeast; and agriculture, CRC petroleum production, and open space to the north and northeast. Portions of the City's 2800-Acre Groundwater Recharge Facility and the Pioneer Banking Project are farther located north and west of the project site. These areas were not surveyed due to lack of legal access.

2 PHASE II: BURROW SURVEY

For Phase II, reconnaissance surveys for burrows and owls were conducted by BPR Consulting biologists on April 24, 25, and 26, 2020, coinciding with protocol surveys conducted for blunt-nosed leopard lizard (*Gambelia sila*). Weather conditions ranged from 78 to 90 degrees Fahrenheit (°F) with a wind speed of ≤ 7 miles per hour (mph), under sunny conditions. The biologists walked transects through suitable habitat within the BSA. Survey transects were spaced a maximum of 10 meters apart and allowed for 100% visual coverage of the surface. The total acreage of the BSA surveyed north of Panama Lane was approximately 160 acres.

Because small mammal burrows were numerous in grasslands within and near the API, a focus was placed on burrows suitable to accommodate BUOW. Burrows were examined to determine if they met adequate size criteria. Small mammal burrows were observed within the southwestern area of the BSA in chenopod scrub habitat but were too small to support BUOW. No BUOW or sign of BUOW were observed in the BSA during this initial reconnaissance survey.

Chenopod scrub on-site is dominated by allscale saltbush (*Atriplex polycarpa*) and big saltbush (*Atriplex lentiformis*) with occasional western honey mesquite (*Prosopis glandulosa* var. *torreyana*) shrubs. Other associated sub-shrubs in this habitat include Russian thistle/tumbleweed (*Salsola tragus*), bracted alkali goldenbush (*Isocoma acradenia* var. *bracteosa*), iodine bush (*Allenrolfea occidentalis*), and bush seepweed (*Suaeda nigra*). Other forbs observed on-site included small-flowered fiddleneck (*Amsinckia menziesii*), field sun cup (*Camissonia campestris* ssp. *campestris*), common tarweed (*Centromadia pungens* ssp. *pungens*), gilia (*Gilia* spp.), popcorn flower (*Plagiobothrys* spp.), redstem filaree (*Erodium cicutarium*), prickly lettuce (*Lactuca serriola*), goldfields (*Lasthenia* spp.), and peppergrass (*Lepidium* spp.). Grasses commonly observed during the surveys included rippgut brome (*Bromus diandrus*),

common wild oat (*Avena fatua*), foxtail barley (*Hordeum murinum*), schismus (*Schismus* spp.), and saltgrass (*Distichlis spicata*).

Wildlife species observed on-site included side-blotched lizard (*Uta stansburiana*), western whiptail (*Aspidoscelis tigris*), and bird species common to the region, such as American kestrel (*Falco sparverius*), common raven (*Corvus corax*), killdeer (*Charadrius vociferus*), red-tailed hawk (*Buteo jamaicensis*), western kingbird (*Tyrannus verticalis*), mourning dove (*Zenaida macroura*), and house finch (*Haemorhous mexicanus*).

There are no freshwater or other aquatic habitats located within 1 mile of the BSA. The Kern River is located approximately 1.8 miles north of the BSA.

According to the California Natural Diversity Database (CNDDDB), there are four regional occurrence records for BUOW within a 5-mile radius of the project site, with the nearest located in a field just south of Panama Lane and directly south of the BSA, where five adults and three juveniles were reported in 2006 (CNDDDB 2021).

3 PHASE III: BURROWING OWL SURVEYS, CENSUS, AND MAPPING

For Phase III, a series of four breeding/nesting season surveys were conducted on four separate dates from April 26 to May 9, 2020. A series of four wintering/non-breeding season surveys were conducted on four separate dates from December 9 to 21, 2020. Phase III survey dates, times, weather conditions, and results are presented in Table 1.

Surveys were conducted by BPR Consulting biologists experienced with conducting BUOW surveys (see data forms in Appendix B). Survey transects were walked throughout suitable habitat within the BSA with binoculars to optimize viewing opportunities.

Table 1. Phase III Survey Dates, Times, Weather Conditions, and Results

Date	Time	Weather Conditions	Results
Breeding/Nesting Season			
April 26, 2020	06:30AM–2:00PM	94°F; wind 1.5 mph; sunny, clear	No BUOW or sign of BUOW observed.
May 3, 2020	06:50AM–3:05PM	85°F; wind 2.8 mph; sunny, clear	No BUOW or sign of BUOW observed.
May 8, 2020	06:23AM–2:30PM	95°F; wind 1 mph; sunny, hot	No BUOW or sign of BUOW observed.
May 9, 2020	06:23AM–2:30PM	94°F; wind 1.5mph; sunny, clear	No BUOW or sign of BUOW observed.
Wintering Season			
December 9, 2020	06:59AM–3:30PM	42°F; wind 7.5 mph; cloudy and cool	No BUOW or sign of BUOW observed.
December 11, 2020	07:30AM–4:30PM	44°F; wind 3.5 mph; cloudy and cool	No BUOW or sign of BUOW observed.
December 15, 2020	07:10AM–4:09PM	40°F; wind 6.5 mph; sunny and cool	No BUOW or sign of BUOW observed.
December 21, 2020	06:55AM–4:10PM	39°F; wind 9.5 mph; cloudy and cool	No BUOW or sign of BUOW observed.

4 PHASE IV: RESOURCE SUMMARY

No BUOW were observed in or near the survey area and no BUOW sign was observed at any potential burrows during any of the breeding/nesting season or wintering season surveys. Ground squirrel burrow activity was observed to be minimal during the surveys.

5 REFERENCES

BPR Consulting. 2020. Personal communication between BPR Senior Biologist and SWCA Senior Biologist Geoff Hoetker on July 7, 2020.

California Natural Diversity Data Base (CNDDB). 2021. Rarefind data output for Stevens, California 7.5-minute quadrangle and eight surrounding quadrangles. Accessed May 5, 2021.

The California Burrowing Owl Consortium. 1993. *Burrowing Owl Survey Protocol and Mitigation Guidelines*. April. Available at: <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=83842&inline>. Accessed throughout 2020 and 2021.

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APPENDIX A

Photo Documentation



Photo A-3. Representative photo of chenopod scrub habitat in the southwestern 160 acres of the project site; this area supports suitable BUOW habitat (April 24, 2020).



Photo A-4. Representative photo of chenopod scrub habitat in the southwestern 160 acres of the project site (June 9, 2020).



Photo A-5. Representative photos of an area of the project site that is regularly disked and vegetated with weeds, such as Russian thistle; this area is routinely disturbed and supports marginal BUOW habitat (August 18, 2020).



Photo A-6. Representative photos of an area of the project site that is regularly disked and vegetated with weeds; this area is routinely disturbed and supports marginal BUOW habitat (August 18, 2020).

APPENDIX B

Burrowing Owl Survey Data Forms

BURROWING OWL (ATHENE CUNICULARIA) NESTING & WINTERING SEASON SURVEYS

wind 2.8 MPH
Sunny and clear

DATE May 3, 2020 WEATHER 85°F

SURVEYOR(S) Ben Ruiz - Tyler Armstrong -
Prodr Willco - Eric Olenko - Michelle Olenko
Thomas Aho - Josh Vallucas

START TIME 6:50 AM END TIME 3:05 PM

Time	Species	ID#	Activity/Behavior	Burrow Type	Lat/Long/UTM	Distance & Direction
7:11 AM	Robin	/	Flying	N/A	/	In project site
7:16 AM	Mourning Dove	/	Flying	N/A	/	In project site
8:22 AM	Great Blue Heron	/	walking	N/A	/	In project site
8:41 AM	Horned Lark	/	walking	N/A	/	In project site
9:02 AM	Mocking bird	/	Flying	N/A	/	In project site
9:12 AM	Kingbird	/	Flying	N/A	/	In project site
9:49 AM	Kestrel	/	Flying	N/A	/	In project site
10:58 AM	Killdeer	^{MR} /	walking	N/A	/	In project site

BURROWING OWL (ATHENE CUNICULARIA) NESTING & WINTERING SEASON SURVEYS

Sunny and very hot
wind 2 mph

DATE MAY 9, 2020 WEATHER 95°F SURVEYOR(S) BEA Ruiz, Tyler Armstrong, Drew Wallace, Michelle Oleson, Eric Oleson, Theodore Mason, Alex Stokes

Time	Species	ID#	Activity/Behavior	Burrow Type	Lat/Long/UTM	Distance & Direction
7:20 AM	House Finch	/	Flying	N/A	/	In project site
7:59 AM	Raven	/	Flying	N/A	/	In project site
8:25 AM	Kingbird	/	Flying	N/A	/	In project site
8:42 AM	Mourning Dove	/	Flying	N/A	/	In project site
9:48 AM	Kestrel	/	Flying	N/A	/	In project site
10:33 AM	Horned Lark	/	walks	N/A	/	In project site
11:54 AM	Great white Egret	/	walks	N/A	/	In project site

BURROWING OWL (ATHENE CUNICULARIA) NESTING & WINTERING SEASON SURVEYS

Temp 42°F
wind 7.5 MPH

DATE 12-9-20 WEATHER cloudy and cool SURVEYOR(S) BEN R4:2

START TIME 6:59 AM END TIME 3:30 PM

Time	Species	ID#	Activity/Behavior	Burrow Type	Lat/Long/UTM	Distance & Direction
7:23 AM	Mourning Dove	/	Flying	/	/	/
8:05 AM	Kestrel	/	Flying	/	/	/
11:02 AM	Raven	/	Flying	/	/	/
11:14 AM	Red Runner	/	Runs in project site	/	/	/
12:34 PM	House Finch	/	Flying	/	/	/
1:54 PM	Great White Egret	/	Standing in project site	/	/	/
3:15 PM	Eurasian Collared Dove	/	Flying	/	/	/

BURROWING OWL (ATHENE CUNICULARIA) NESTING & WINTERING SEASON SURVEYS

DATE 12-11-20 WEATHER ^{Temp 44°F} Cloudy and cool Wind 3.5 MPH SURVEYOR(S) BEN Ruiz

START TIME 7:30 AM END TIME 4:00 PM

Time	Species	ID#	Activity/Behavior	Burrow Type	Lat/Long/UTM	Distance & Direction
8:11 AM	Raven	/	Flying	/	/	/
8:41 AM	House Finch	/	Flying	/	/	/
9:27 AM	Mourning Dove	/	Flying	/	/	/
9:35 AM	Valley Quail	/	Running in project site	/	/	/
11:19 AM	Kestrel	/	Flying	/	/	/
11:41 AM	Road Runner	/	Running in project site	/	/	/
1:42 PM	Great white Egret	/	Standing in site	/	/	/
2:19 PM	Eurasian Collared Dove	/	Flying	/	/	/
3:55 PM	Mockingbird	/	Flying	/	/	/

APPENDIX H

Biological Reconnaissance Survey Report



BPR Environmental Consulting

11625 Jubilee Lane -- Bakersfield, California 93311 -- (661) 444-3239

Biological Reconnaissance Survey for McAllister Ranch Groundwater Banking Project, Rosedale-Rio Bravo Water Storage District, Kern County

Prepared by: Tyler Armstrong, BPR Consulting

Date: May 14, 2021

Prepared for: Geoff Hoetker, SWCA Environmental Consultants

Survey Background

On December 12 and 13, 2020, a 2-day site survey was conducted by Ben Ruiz, Eric Olinger, Michelle Olinger, and Tyler Armstrong on the McAllister Ranch Groundwater Banking Project, located in Kern County, for the purpose of conducting a biological reconnaissance survey. The survey area is an approximately 2,023-acre plot located directly north of Panama Lane and directly east of California State Route 33 (Figure 1). Surrounding lands include various agriculture and minor oil and gas operations. The study area is located at longitude 35°18'8.61"N and latitude 119°10'19.35"W. The survey area is intended to encompass the entirety of the project.

Survey Purpose and Methodology

The primary focus of the survey was the detection of the presence of potentially occurring sensitive biological resources and special-status species, primarily the San Joaquin kit fox (SJKF) (*Vulpes macrotis mutica*), Tipton kangaroo rat (TKR) (*Dipodomys nitratoides nitratoides*), and San Joaquin antelope squirrel (SJAS) (*Ammospermophilus nelson*). Primary focus of this survey is to visually identify SJKF dens and TKR and SJAS burrows.

The intent of this reconnaissance survey includes documenting site biological conditions and assessing the site for potential activity and presence of special-status species. A visual survey of the entire site was conducted by dividing the project in five different sections (Figure 2). Each section was completely covered in transects. All personnel walked in transects while meandering for complete visual coverage of each section.

The site survey was conducted during a time with high probability of visual detection of potentially occurring special-status species including signs (scat, tracks, potential dens, potential burrows, etc.) of current or previous presence in the vicinity of the site. Special-status species include those possessing formal conservation status by federal or state agencies as Threatened, Endangered, or Species of Special Concern.

Survey Results - Site Conditions

Table 1. Survey Weather Conditions

Date	Start Temp. F°	End Temp. F°	Cloud Cover	Wind Speed
12/12/2020	51.2°	58.6°	30%	3.9 mph
12/13/2020	54.9°	65.3°	15%	5.2 mph

No sensitive biological resources were detected, such as dens, burrows, scat, prey remains, and white-wash, during the survey. The site has been used primarily for agriculture and has the remnants of an abandoned golf course.

Vegetation at the site consists primarily of low-growing herbaceous plants, including five-hook bassia (*Bassia hyssopifolia*), brome grasses (*Bromus* spp.), tumbleweed (*Salsola tragus*), red-stemmed filaree (*Erodium cicutarium*), and Mediterranean grass (*Schismus arabicus*).

Evidence of wildlife within project area was limited to side-blotched lizard (*Uta stansburiana*), California ground squirrel (*Otospermophilus beecheyi*), common raven (*Corvus corax*), Brewer's blackbird (*Euphagus cyanocephalus*), house finch (*Haemorphous mexicanus*), common starling (*Sturnus vulgaris*), and mourning dove (*Zenaida macroura*). All of which are not species of concern.

No special-status plant species were observed. Agricultural conditions at the site have likely altered the pre-settlement conditions, including soil and other microhabitat components necessary for most native plant species.

In Sections 1–4 (see Figure 2), no direct sign of occupation by any special-status species was detected. No SJKF, TKR, or SJAS, or sign thereof, was detected in Sections 1–4. No scat, prey remains, track, dens, burrows, etc. were identified.

In Section 5, survey personnel identified 14 areas of potential TKR burrows (see Figure 3); however, no TKR sightings occurred during the entirety of the survey. No SJKF or SJAS sightings or signs of their presence were identified.

No SJKF or signs of their presence/dens were observed within the survey area.

Potential TKR burrows were identified within Section 5 (see Figure 3).

No SJAS or signs of their presence/burrows were observed within the survey area during the site visit.

Figure 1. Regional Location

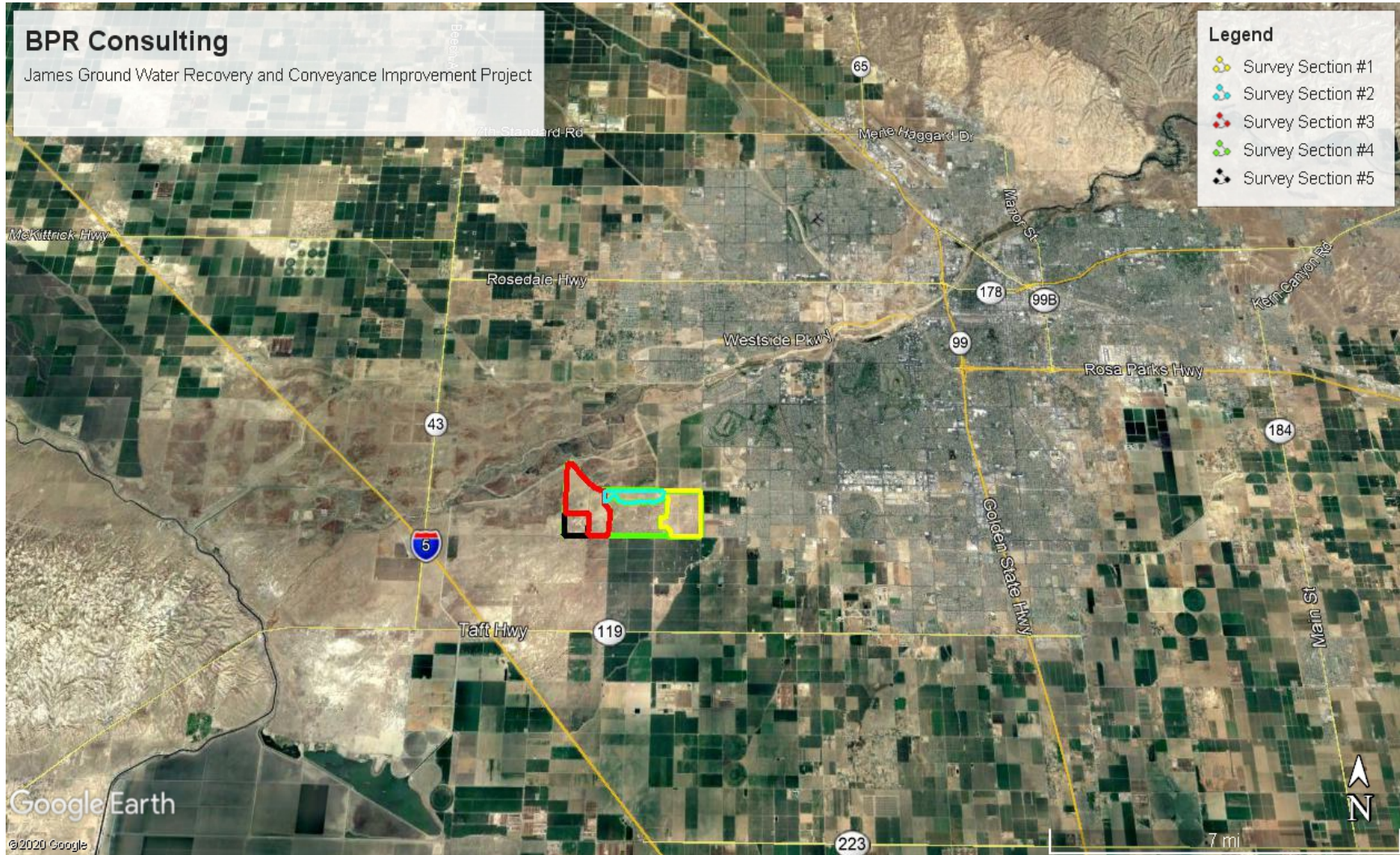


Figure 2. Survey Sections

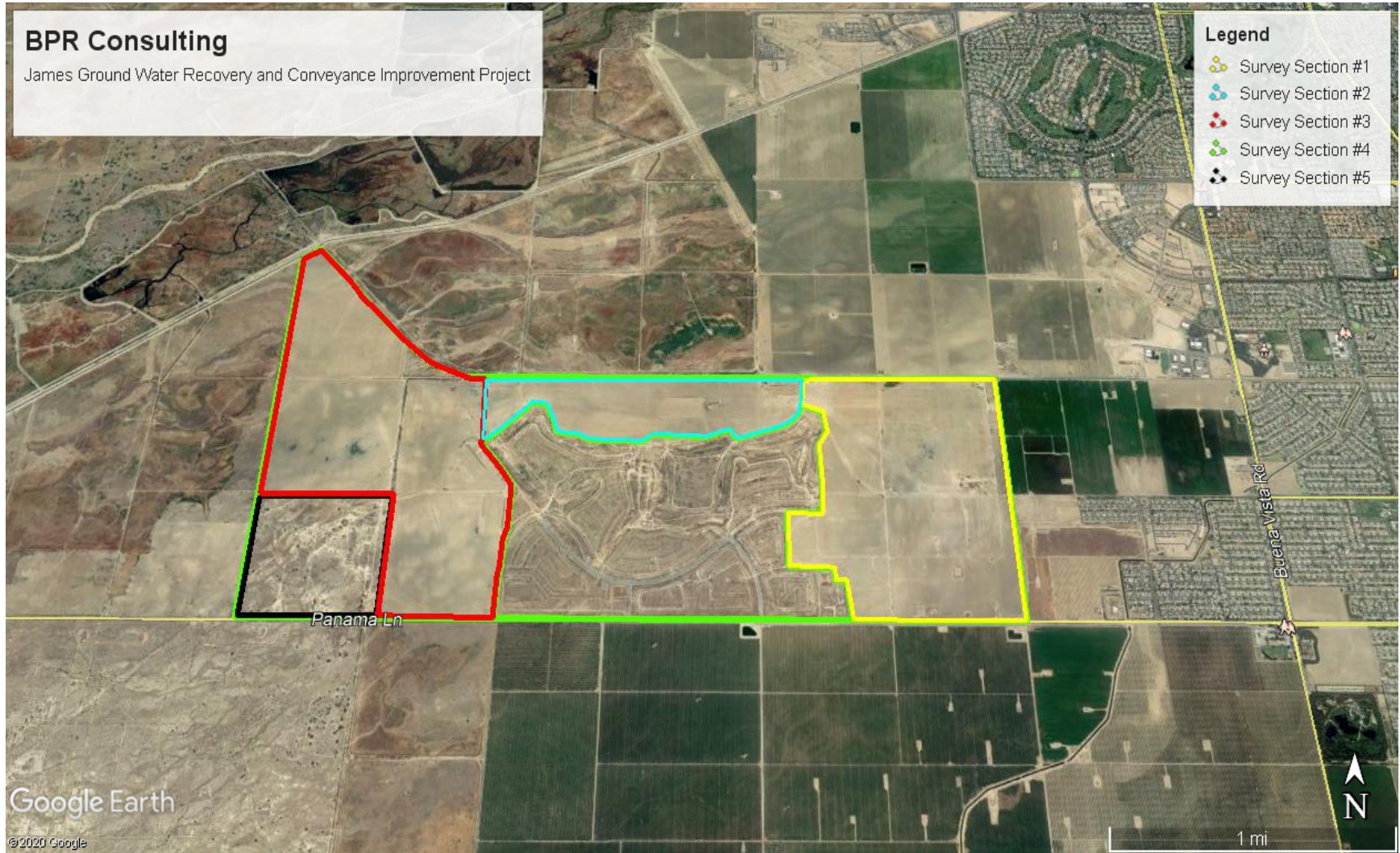
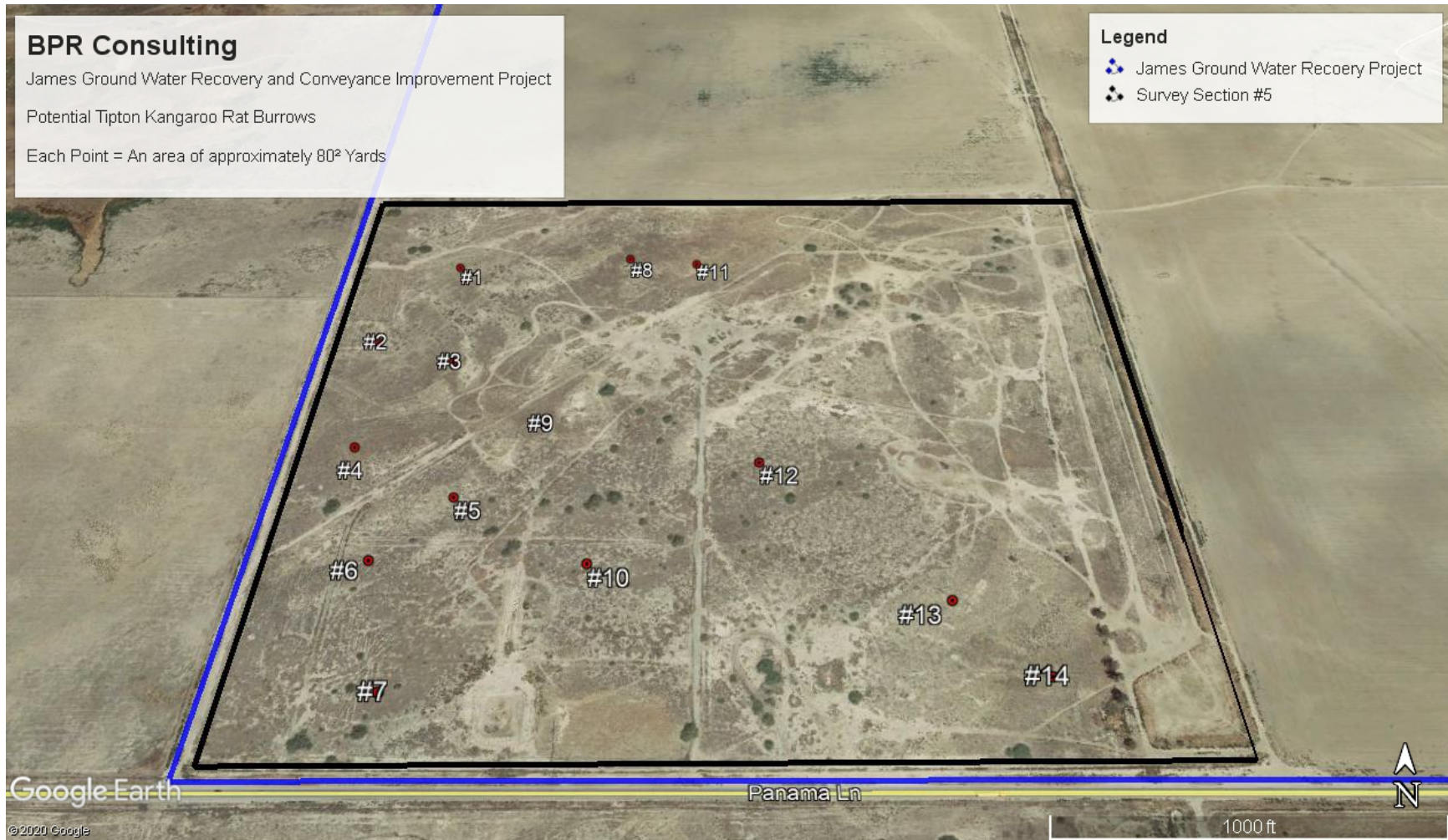


Figure 3. Survey Section 5 Possible TKR Burrows



ScientificName	CommonName	Family	Lifefrom	CRPR	CESA	FESA	BloomingP	Habitat	MicroHabit	ElevationLc	ElevationHigh_ft
Calochortus striatus	alkali mariposa-lily	Liliaceae	perennial bulbifer	1B.2	None	None	Apr-Jun	Chaparral, Chenopod scrub, Alkaline, L		70	5235
Delphinium recurvatum	recurved larkspur	Ranunculaceae	perennial herb	1B.2	None	None	Mar-Jun	Chenopod scrub, Alkaline		3	2590
Caulanthus californicus	California jewelflower	Brassicaceae	annual herb	1B.1	CE	FE	Feb-May	Chenopod scrub, Sandy		61	3280
Eremalche parryi ssp. kernensis	Kern mallow	Malvaceae	annual herb	1B.2	None	FE	Jan(Feb)Mar	Chenopod scrub, Clay (some)		70	4230
Monolopia congdonii	San Joaquin woollythreads	Asteraceae	annual herb	1B.2	None	FE	Feb-May	Chenopod scrub, Valley and		60	2625
Goodmania luteola	golden goodmania	Polygonaceae	annual herb	4.2	None	None	Apr-Aug	Meadows and seeps, Mojave		20	7220
Hordeum intercedens	vernal barley	Poaceae	annual herb	3.2	None	None	Mar-Jun	Coastal dunes, Coastal scrub		5	3280
Eriastrum hooveri	Hoover's eriastrum	Polemoniaceae	annual herb	4.2	None	FD	Mar-Jul	Chenopod scrub, Gravelly (s		50	3000
Astragalus hornii var. hornii	Horn's milk-vetch	Fabaceae	annual herb	1B.1	None	None	May-Oct	Meadows and seeps, Alkaline, Li		60	2790