Appendix E3
Burrowing Owl Report

BURROWING OWL SURVEY REPORT

Janus Solar Project
Colusa County, California

February 11, 2021

RWE Solar Development, LLC

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ACRONYMS/ABBREVIATIONS

BESS	battery energy storage system
BSA	biological study area
BUOW	burrowing owl
Cal-IPC	California Invasive Plant Council
CDFW	California Department of Fish and Wildlife
CNDDB	California Natural Diversity Database
Gen-tie	generator tie line
MCVII	Manual of California Vegetation, Second Edition
NRCS	National Resources Conservation Service
Project	Janus Solar Project
RWE	RWE Solar Development, LLC
Tetra Tech	Tetra Tech, Inc.
USDA	United States Department of Agriculture
USGS	United States Geological Survey

1.0 INTRODUCTION

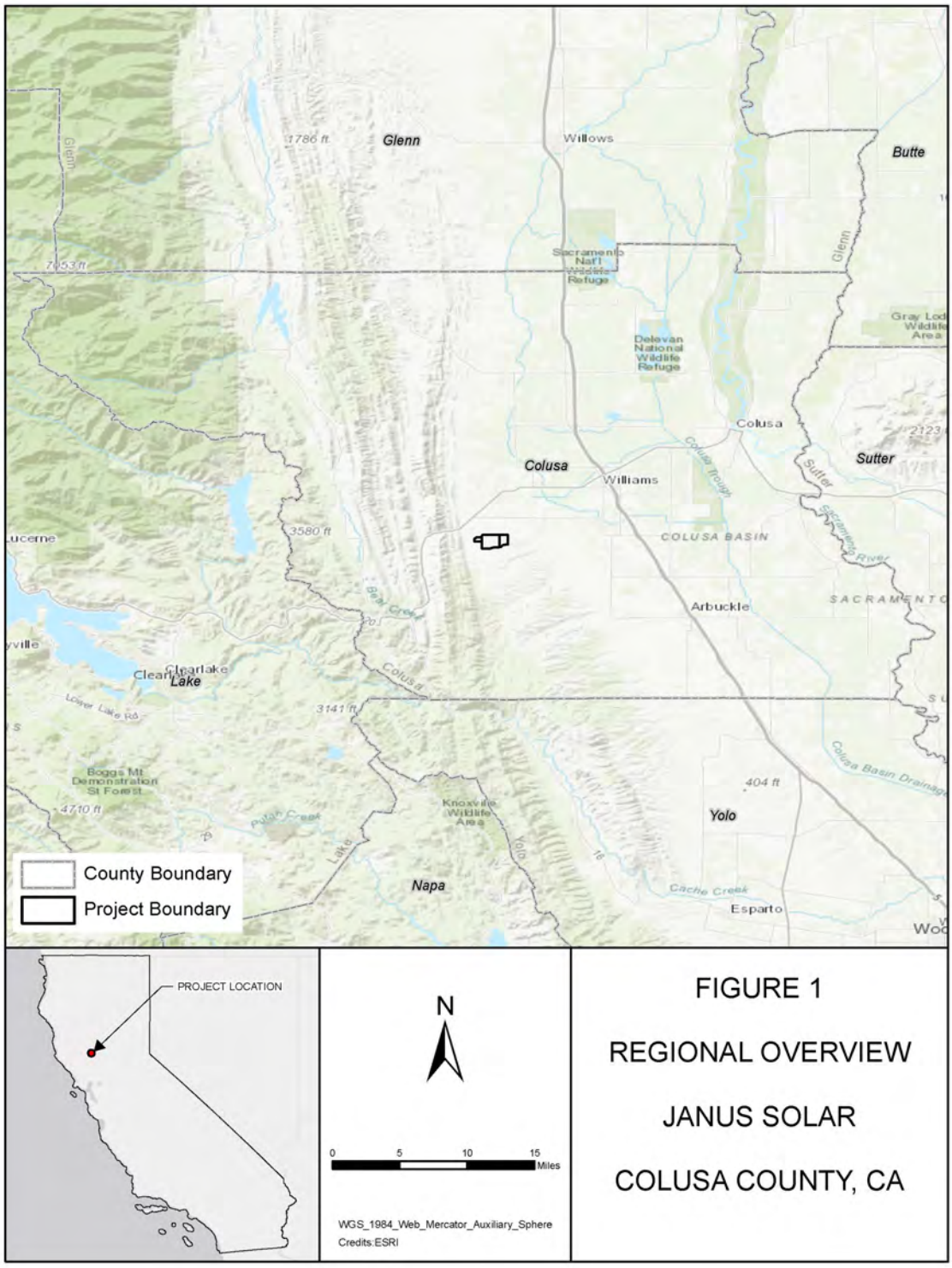
Tetra Tech, Inc. (Tetra Tech) prepared this Burrowing Owl Survey Report for the proposed Janus Solar Project (Project). RWE Solar Development, LLC (Project proponent - RWE) proposes to develop approximately 986 acres of land (Project site) on three parcels that total 1,023.9 acres located in Colusa County, California, for the development of a solar energy facility. This report has been prepared to document the burrowing owl (*Athene cunicularia*) survey methods, results, impact assessment, and recommendations, in accordance with the guidelines stated in the *Burrowing Owl Survey Protocol and Mitigation Guidelines,* and Appendices C and D in the *Staff Report on Burrowing Owl Mitigation* (The California Burrowing Owl Consortium 1993, California Department of Fish and Game 2012).

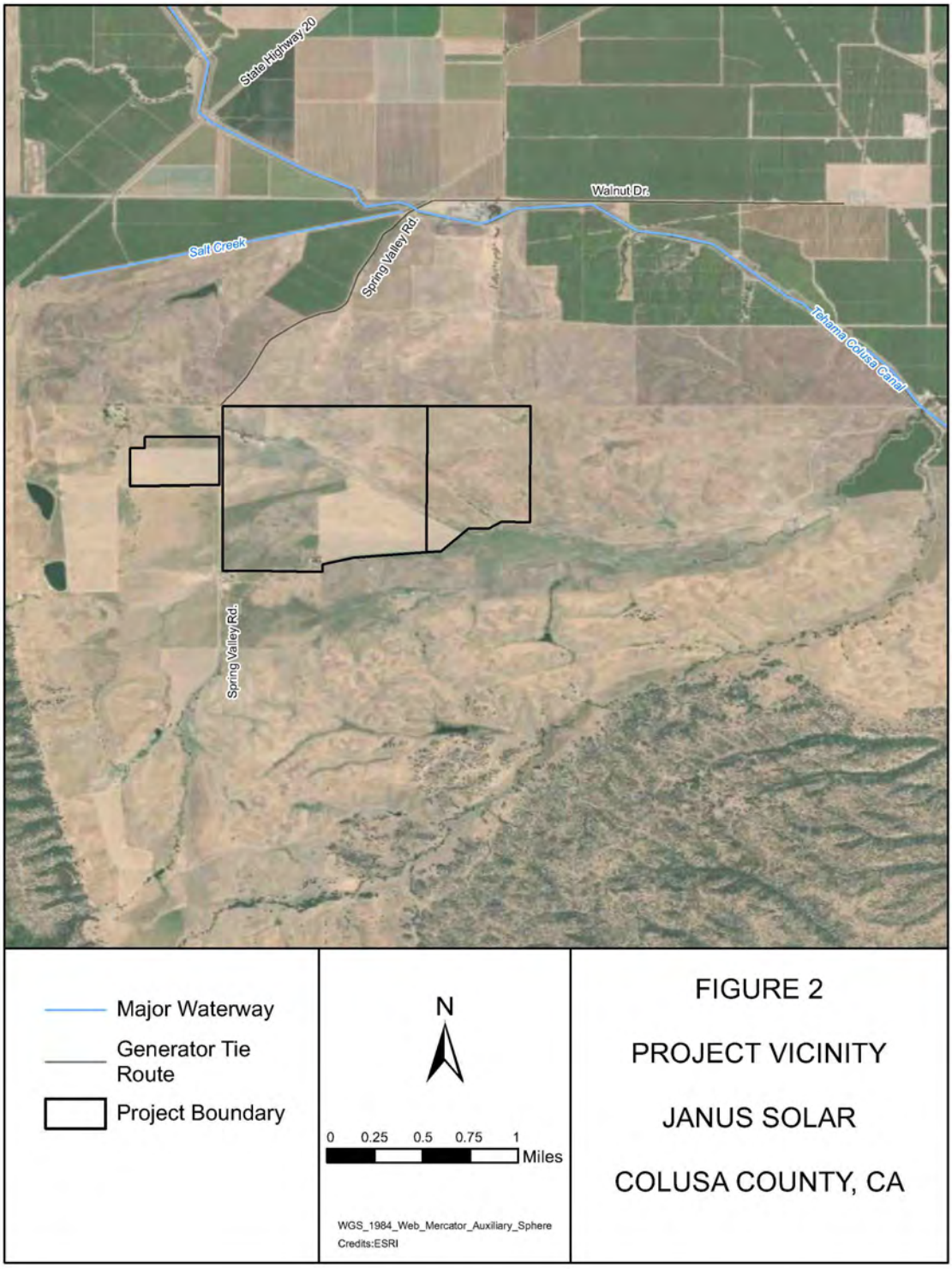
Burrowing owl (BUOW) use a variety of habitat types characterized by low-growing vegetation and the presence of burrows or burrow-like structures (surrogate burrows). BUOW may utilize a site for breeding, foraging, overwintering, or transient/migration stops; therefore, a site that is utilized by BUOW may only be occupied for a short duration of a year. Agricultural land can be considered suitable habitat for BUOW, dependent upon the presence of burrowing mammals or suitable surrogate burrows. Current threats to California's BUOW population include habitat loss/fragmentation, eradication/displacement of ground squirrels and other burrowing mammals, and various other human disturbances (The California Burrowing Owl Consortium 1993, California Department of Fish and Game 2012). BUOW are a California Department of Fish and Wildlife (CDFW) Species of Special Concern and a Bureau of Land Management Sensitive Species.

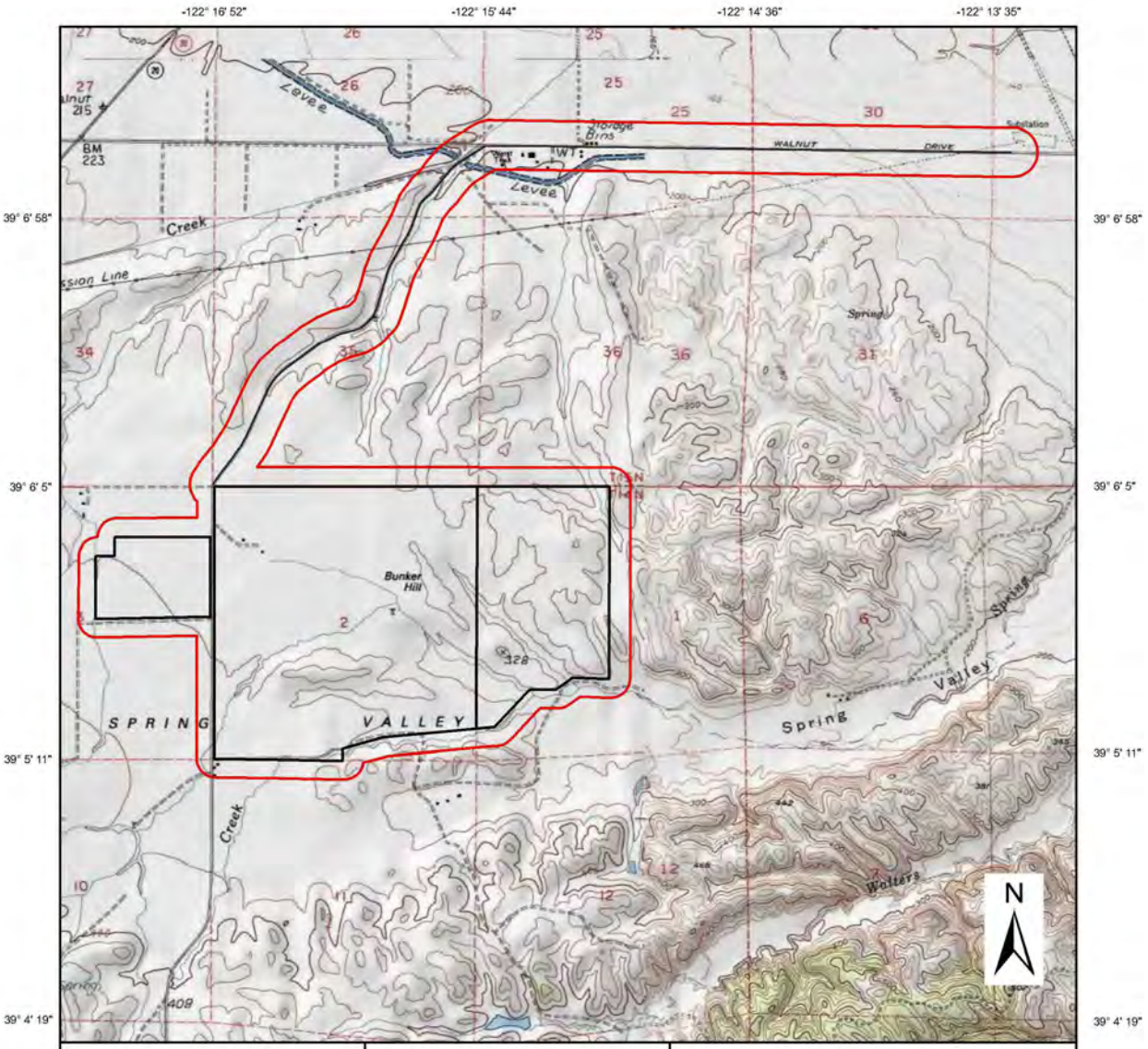
1.1 PROJECT SITE LOCATION

The Project site is located on private property within Colusa County, is primarily used for cattle grazing (Figure 1); the Project site has been under the same private ownership since 1984 and has been used as grazing lands for decades. From the Project site, the nearest community is Williams, approximately 7.5 miles to the northeast. The Project site includes three parcels with Assessor's Parcel Numbers 018-050-005-000, 018-050-006-000, and 018-050-013-000 which total 1,023.9 acres. The Project site excludes the Favero Retained Area (approximately 56 acres) but includes the Favero Corral Area (approximately 41 acres). The Project site also includes a generator tie line (gen-tie) that would connect to the Cortina Substation (Figure 2). The Cortina Substation is located on Walnut Drive, approximately 2 miles northeast of the site. The elevation ranges from about 44 to 101 meters (145 to 332 feet) above sea level.

The Project site is in the United States Geological Survey (USGS) Salt Canyon 7.5-Minute Topographic Quadrangle and the gen-tie extends into the western edge of the USGS Cortina Creek Quadrangle, within Townships 14N and 15N, Ranges 3W and 4W, Sections 1, 2, 3, 25, 26, 29, 30, and 35 (Figure 3). Spring Valley Road cuts through the western portion of the Project site from north to south and Baker Road borders the westernmost portion of the site. There are no access limitations to the Project site and one can reach the site from State Route 20, Walnut Drive, Spring Valley Road, and interior unpaved access routes. Most roadways in the Project vicinity are unimproved or paved without curb or sidewalk improvements. Interstate 5 is a major California freeway located approximately 9 miles east of the Project site.


Glenn
Willows
Butte
Sacramento Nat'l Wildlife Refuge
Delevan National Wildlife Refuge
Colusa
Williams
Sutter
COLUSA BASIN
Arbuckle
Clearlake Lake
Yolo
Napa
Esparto
Knoxville Wildlife Area
Boggs Mt Demonstration St Forest
County Boundary
Project Boundary
PROJECT LOCATION
N
0 5 10 15
Miles
WGS_1984_Web_Mercator_Auxiliary_Sphere
Credits:ESRI
FIGURE 1
REGIONAL OVERVIEW
JANUS SOLAR
COLUSA COUNTY, CA


State Highway 20
Walnut Dr.
Salt Creek
Spring Valley Rd.
Tehama Colusa Canal
Spring Valley Rd.
Major Waterway
Generator Tie Route
Project Boundary
N
0 0.25 0.5 0.75 1
Miles
WGS_1984_Web_Mercator_Auxiliary_Sphere
Credits:ESRI
FIGURE 2
PROJECT VICINITY
JANUS SOLAR
COLUSA COUNTY, CA



Leesville	Manor Slough	Williams
Wilbur Springs	Salt Canyon	Cortina Creek
Wilson Valley	Glascock Mountain	Rumsey

Gen Tie Route
Biological Study
Project Boundary

USGS 7.5 Salt Canyon Quad 24k T14N R04W Portions of Sections 1, 2, & 3. Williams Quad 24k T15N R03W Portion of Sections 29 & 30. Manor Slough Quad 24k T15N R04W Portions of Sections 25, 26, & 35.

FIGURE 3

USGS TOPOGRAPHIC MAP

JANUS SOLAR

COLUSA COUNTY, CA

0 0.25 0.5 0.75 1 Miles

WGS_1984_Web_Mercator_Auxiliary_Sphere

Credits: ESRI

1.2 PROJECT DESCRIPTION

The Project consists of constructing and operating a photovoltaic solar electricity generating facility, battery energy storage system (BESS), and associated infrastructure on privately-owned grazing and agricultural land. The Project would include the construction of:

- Gen-tie to Cortina substation;
- Project electrical substation;
- Project BESS;
- Solar panel arrays.

Project design details and components may be modified during finalization of the site plan. ***[Preparer's note:*** *construction start date and duration will be added.****]*** Project construction would occur between 7:00 a.m. and 10:00 p.m. in accordance with the Colusa County Noise Standards. A variety of equipment may be used during the construction phase, such as skid steers, water trucks, welder, pickup trucks, bulldozers, front end loaders, graders, roller compactors, trenchers, forklifts, pile drivers, backhoes, crane, and/or aerial lifts. ***[Preparer's note:*** *number of on-site personnel will be added.****]*** Construction would include site preparation, grading, preparing staging areas, and construction of the Project facilities. ***[Preparer's note:*** *operations start date will be added.****]*** A drafted site plan can be found in Appendix A, *Site Plan*; this site plan has not been finalized.

2.0 METHODS

This section describes the literature search and field methods used for the protocol BUOW habitat assessment, burrow survey, breeding season survey, and winter season survey in accordance with the *Burrowing Owl Survey Protocol and Mitigation Guidelines,* and Appendices C and D in the *Staff Report on Burrowing Owl Mitigation* (The California Burrowing Owl Consortium 1993, California Department of Fish and Game 2012).

2.1 HABITAT ASSESSMENT AND BURROW SURVEY

A literature and data review of pertinent background information for the Project site was completed prior to fieldwork, which included the *Janus Solar Project Habitat Characterization Report* (Tetra Tech 2020), CDFW California Natural Diversity Database (CNDDB) data (CDFW 2020), the USGS topographic maps, satellite and aerial imagery (Google Earth©), United States Department of Agriculture (USDA) National Resources Conservation Service (NRCS) soils data (USDA NRCS 2020), and the *Janus Solar Project – Foothill Agriculture Site Critical Issues Analysis Memo* (Stantec 2018). Topography describes the physical features of an area of land. The topographic features that were reviewed included natural landforms, aquatic features, developed lands, agricultural lands, undeveloped lands, and terrain.

According to the CNDDB, the closest BUOW occurrence record is approximately 2 miles east of the Project site (CDFW 2020). There are no previous records of BUOW occupying the Project site. The Project site is in the known distributional range of the BUOW, and most of the Project site contains vegetation communities with suitable habitat to potentially support BUOW. Accordingly, BUOW Phase II transects were surveyed in accordance with the *Burrowing Owl Survey Protocol and Mitigation Guidelines* (The California Burrowing Owl Consortium 1993).

The habitat assessment and Phase II transects were conducted from April 6, 2020 through April 9, 2020, by Tetra Tech biologists. Biologists ascertained existing site conditions, mapped vegetation communities in accordance with the *Manual of California Vegetation, Second Edition* (MCVII; Sawyer et al. 2009), and surveyed all BUOW suitable habitats within the Project site for potential burrows and burrow surrogates by walking 30-meter interval transects. Burrow transects were walked during optimal weather conditions (no heavy rain or fog) to allow for the greatest visibility possible. With this method, 100 percent visual coverage of BUOW suitable habitat within the Project site ground surface was achieved. In addition, a 150-meter (approximately 500-feet) buffer zone around the Project site, herein referred to as the biological study area (BSA), was surveyed for potential burrows and burrow surrogates using binoculars, due to access limitations; the westernmost portion of the 150-meter buffer was surveyed on foot because it has the same property owner as the Project site. The gen-tie route and associated BSA buffer area was surveyed from the existing Spring Valley Road and Walnut Drive using binoculars also, due to access limitations. A burrow/burrow surrogate was considered suitable for BUOW if it was equal or greater than 11 cm [4.3 inches] in diameter [height and width] and 150 cm [59 inches] in depth (Johnson et al. 2010). Potential surrogate burrows consisted of man-made structures such as pipes, culverts, debris piles, or other various openings that met the size criteria stated above. All potentially suitable burrows and burrow surrogates were mapped using a Collector mobile application paired with a sub-meter accuracy Global Positioning System device and documented on a Phase II BUOW datasheet. All BUOW survey datasheets are included in Appendix B. Any signs of use, including the presence of pellets, feathers, tracks, whitewash, burrow decoration materials, eggshell fragments, etc. were also documented.

2.2 PROTOCOL BREEDING SEASON SURVEYS

Three protocol level BUOW breeding season surveys were conducted on April 10, 2020, June 9-10, 2020, and July 8-9, 2020. Surveying on these days was in accordance with the survey protocol, which requires three surveys performed between April 15, 2020 and July 15, 2020, with at least one occurring after June 15, 2020. During these surveys, all potential burrows/burrow surrogates mapped during the Phase II burrow survey/habitat assessment were visited during the timeframe of two hours before sunset to one hour after sunset or from one hour before to two hours after sunrise. Burrows/burrow surrogates were observed using binoculars to maintain a minimum distance of 50 meters to minimize disturbance, should occupied burrows or BUOW individuals be present. Surveys were not conducted during heavy rain, high winds greater than 20 miles per hour, or dense fog. Any BUOW or sign, possible predators present, and any evidence of predation of owls were noted.

2.3 PROTOCOL WINTER SEASON SURVEY

As required by the survey protocol, a BUOW winter season survey was conducted at the Project site because BUOW were not observed during the breeding season surveys. The survey was conducted on January 20 and 21, 2021, in accordance with the required survey protocol dates (between December 1 and January 31). During this survey, all potential burrows/burrow surrogates previously mapped at the Project site were visited, once during the timeframe of two hours before sunset to one hour after sunset and once from one hour before to two hours after sunrise. The same methodology for breeding season surveys described above was performed during the winter season survey.

3.0 RESULTS

This section describes the results of the protocol BUOW habitat assessment, burrow survey, breeding season survey, and winter season survey.

3.1 HABITAT ASSESSMENT AND BURROW SURVEY

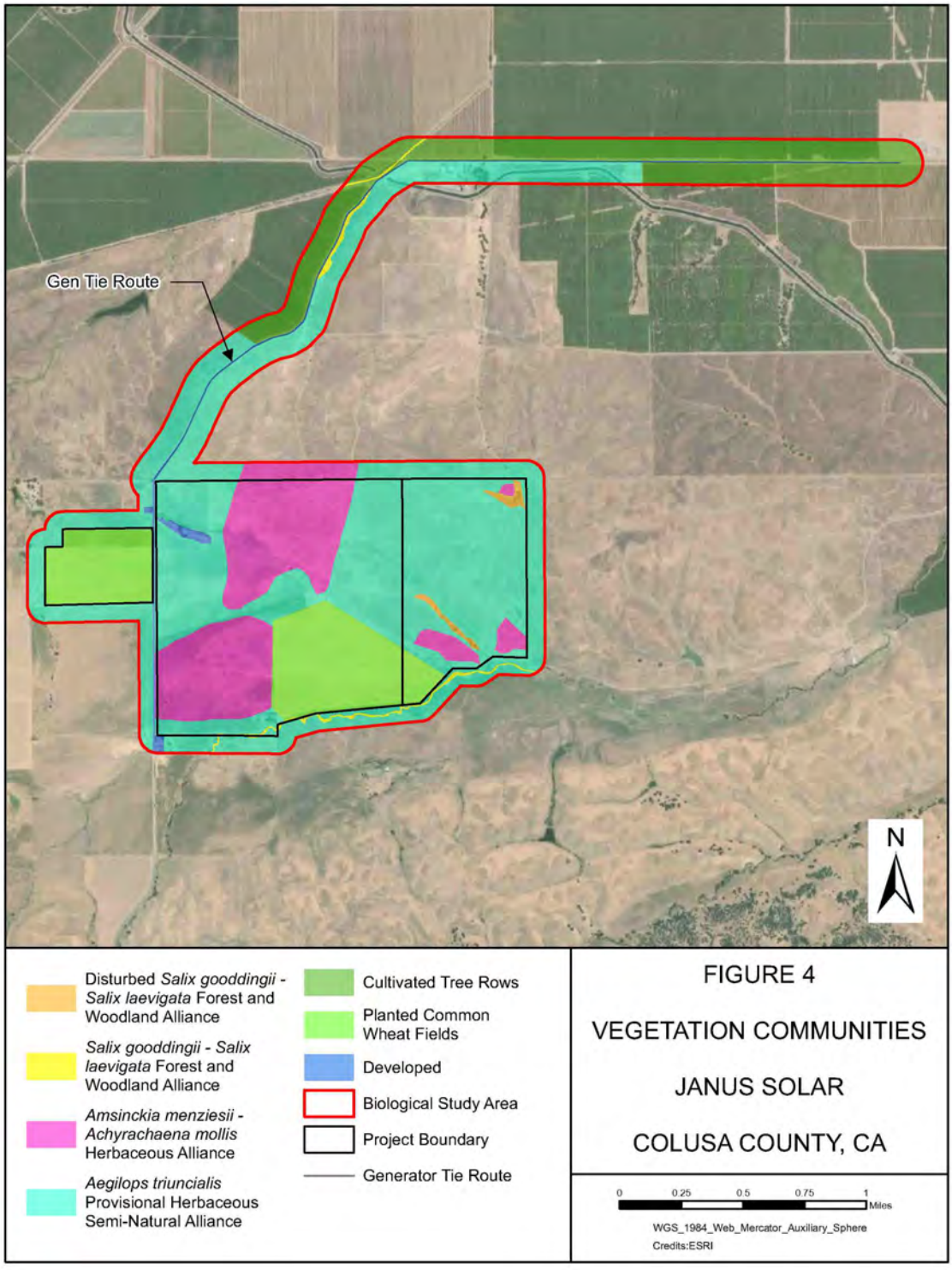
The Project site is in the known distributional range of the BUOW and most of the Project site contains vegetation communities with suitable habitat to potentially support BUOW. According to the USDA NRCS Web Soil Survey (2020), the Project site includes five types of soils. The soils are: Capay clay loam (approximately 30 percent of the site), Ayar clay (approximately 40 percent of the site), Corning clay (approximately 20 percent of the site), Corval loam (approximately 5 percent of the site) and Clear Lake clay (approximately 5 percent of the site). All vegetated areas of the Project site have previously been or are currently being used disked/tilled for grazing and/or cultivation of common wheat (*Triticum aestivum*). Vegetation communities within the Project site, gen-tie route, and associated BSA were mapped in accordance with the MCVII (Sawyer et al. 2009). Vegetation was mapped to the alliance level, which is defined by plant species composition and identified by the most dominant tree, shrub, or herb in the vegetation community. A best attempt was made to categorize vegetation communities according to Sawyer et al. 2009. However, in the case that membership rules/community definitions were not met, a new alliance was named according to a best fit for the dominant species observed, aligned to the MCVII structure. Table 1 summarizes the seven vegetation communities observed and their corresponding acreage. The reported acreage includes the 150-meter BSA. Results of the vegetation mapping are shown in Figure 4.

Table 1: Vegetation Communities

Vegetation Communities	Acres within BSA
Aegilops triuncialis Provisional Herbaceous Semi-Natural Alliance	885.4
Amsinckia menziesii - *Achyrachaena mollis* Herbaceous Alliance	286.0
Cultivated Tree Rows	247.1
Planted Common Wheat Fields	225.4
Developed	24.1
Salix gooddingii - *Salix laevigata* Forest and Woodland Alliance	14.2
Disturbed *Salix gooddingii* - *Salix laevigata* Forest and Woodland Alliance	9.0
Total	**1,691.2***

*Total acres include the Project site and 150-meter buffer.

Over 50 percent of the BSA consisted of non-native grasslands in the *Aegilops triuncialis* Provisional Herbaceous Semi-Natural Alliance. This alliance is considered a semi-natural alliance, which is defined as a vegetation community dominated by non-native plants that are naturalized (i.e., growing in the wild and reproducing) in California. In addition, nearly 30 percent of the BSA consisted of cultivated tree rows, planted common wheat fields, or developed areas, which do not provide suitable habitat for BUOW. The remainder of the BSA consisted of areas dominated by native forbs in the *Amsinckia menziesii* - *Achyrachaena mollis* Herbaceous Alliance, and small areas dominated by native willows (*Salix* spp.) in the *Salix gooddingii* - *Salix laevigata* Forest and Woodland Alliance.


Gen Tie Route
N
Disturbed *Salix gooddingii - Salix laevigata* Forest and Woodland Alliance
Salix gooddingii - Salix laevigata Forest and Woodland Alliance
Amsinckia menziesii - Achyrachaena mollis Herbaceous Alliance
Aegilops triuncialis Provisional Herbaceous Semi-Natural Alliance
Cultivated Tree Rows
Planted Common Wheat Fields
Developed
Biological Study Area
Project Boundary
Generator Tie Route
FIGURE 4
VEGETATION COMMUNITIES
JANUS SOLAR
COLUSA COUNTY, CA
0 0.25 0.5 0.75 1 Miles
WGS_1984_Web_Mercator_Auxiliary_Sphere
Credits:ESRI

***Aegilops triuncialis* Provisional Herbaceous Semi-Natural Alliance.** This non-native grassland community was the most common community throughout the Project site and was dominated by non-native barbed goat grass (*Aegilops triuncialis*) and non-native oat (*Avena* sp.). Other species that were common in this community were non-native yellow star thistle (*Centaurea solstitialis*) and native hayfield tarweed (*Hemizonia congesta*). Barbed goat grass and yellow star thistle are both rated high (i.e., highly invasive) by the California Invasive Plant Council (Cal-IPC; Cal-IPC 2020). Cal-IPC defines invasive plants as: plants that are not native to an environment, and once introduced, they establish, quickly reproduce and spread, and cause harm to the environment, economy, or human health (Cal-IPC 2020). All areas of this community on Project site were actively grazed by cattle.

***Amsinckia menziesii* - *Achyrachaena mollis* Herbaceous Alliance.** This native forb community was dominated by native common fiddleneck (*Amsinckia menziesii*) and native soft blow wives (*Achyrachaena mollis*). Other species found in this community were native miniature lupine (*Lupinus bicolor*), native purple owl's-clover (*Castilleja exserta*), Tejon cryptantha (*Cryptantha microstachys*), native vinegarweed (*Trichostema lanceolatum)*, non-native yellow star thistle, and non-native oat. Cover of native forbs in this community in April ranged from 50 percent in the northwestern portion of the Project site to 10-20 percent in the northeastern, southeastern, and southwestern portions of the site.

Cultivated Tree Rows. These areas consisted of cultivated almond (*Prunus dulcis*) tree rows.

Planted Common Wheat Fields. These areas consisted of densely planted common wheat for grain production. Soils within this community are actively disked/tilled.

Developed. These areas included houses, barns/storage sheds, paved and dirt roads, and non-native ornamental species such as eucalyptus (*Eucalyptus* sp.) and rosemary (*Rosmarinus officinalis)*.

***Salix gooddingii* - *Salix laevigata* Forest and Woodland Alliance.** This native riparian community was dominated by native Goodding's black willow (*Salix gooddingii*) and native red willow (*Salix laevigata*). Other species found in this community were native Fremont cottonwood (*Populus fremontii*), native northern California black walnut, and non-native edible fig (*Ficus carica*). This community primarily occurred outside of the Project site within the 150-meter buffer. Within the Project site, this community occurred in a drainage in the southernmost portion of the site, running along the site boundary. The drainage ranged from approximately 5 to 15 feet wide, a defined bed and bank was present throughout, and standing water and wet soils were observed. Wetland hydrology and hydrophytic vegetation were also present (Tetra Tech 2020).

Disturbed *Salix gooddingii* - *Salix laevigata* Forest and Woodland Alliance. This native riparian community was similar to the version above but was heavily disturbed by intensive cattle grazing. This community occurred in the northeast and southeast portions of the Project site and was dominated by sparse native Goodding's black willow and native red willow. Native Fremont cottonwood was also found in this community.

In the northeast portion of the Project site, this community contained muddy soils and the low point had standing water. Disturbed native willows, one mature native Fremont cottonwood, canary grass (*Phalaris* sp.), non-native bindweed (*Convolvulus arvensis*), and non-native goosefoot (*Chenopodium* sp.) were present in this area. Based on aerial imagery and NWI data, this area appeared to be fed by a drainage extending to the north. Wetland hydrology was present in this area and it has the potential to be a vernal pool (Tetra Tech 2020).

In the southeast portion of the Project site, plant species in this community included native willows and native Fremont cottonwood. While no standing water or mud was observed, based on the depth of cattle footprints in the area, it appeared that the ground is wet for part of the year. A defined bed and bank was not observed in this area. Based on aerial imagery and NWI data, this area appears to have historically

connected to other drainages to the north and south; however, due to intensive grazing of the Project site, this connection was not visible. Hydrophytic vegetation is likely present in this area (Tetra Tech 2020).

A total of 20 suitable burrows (B) and seven suitable potential burrow surrogates in the form of culverts (C), were mapped in the BSA during the burrow survey. Details on these potential burrows/burrow surrogates are included in Table 2 and locations are shown on Figure 5. Representative burrow/burrow surrogate photographs are included in Appendix C.

Table 2: Potential Burrows and Burrow Surrogates Identified during the Burrow Survey

Burrow/Burrow Surrogate Number*	Dimensions (inches)	Sign Observed	Burrow/Burrow Surrogate Location (Project site or buffer area)	Notes
B1	6 x 7	No	Buffer area	Exit hole noted.
B10	4.5 x 5	Yes – black feathers observed	Project site	None.
B15	5 x 5	Yes – whitewash observed	Buffer area	Whitewash observed during June survey.
B16	5 x 5	No	Buffer area	None.
B21	6 x 8	No	Buffer area	Burrow was no longer present during June/July surveys; appeared to have been tilled.
B22	7 x 10	No	Buffer area	Burrow was no longer present during June/July surveys; appeared to have been tilled.
B25	6 x 6	No	Project site	None.
B26	6 x 6	No	Project site	Colony of 3 adjacent burrows of similar size; active ground squirrel use.
B27	6 x 5	No	Project site	2 adjacent burrows of similar size, could be connected.
B28	5 x 6	No	Project site	None.
B29	5 x 5	Yes – whitewash observed on one burrow hole	Project site	Colony of 4 adjacent burrows of similar size; active ground squirrel use.
B30	6 x 5	No	Project site	Colony of 4 adjacent burrows of similar size; active ground squirrel use.
B31	5 x 5	No	Project site	Colony of 3 adjacent burrows of similar size; active ground squirrel use.
B32	5 x 5	No	Project site	2 adjacent burrows of similar size, could be connected; active ground squirrel use.
B33	4.5 x 5	No	Project site	Colony of 3 adjacent burrows of similar size; active ground squirrel use.

Burrow/Burrow Surrogate Number*	Dimensions (inches)	Sign Observed	Burrow/Burrow Surrogate Location (Project site or buffer area)	Notes
B34	5.5 x 5.5	Yes – whitewash observed	Project site	Exit hole noted.
B35	5 x 5	Yes – whitewash observed on one burrow hole	Project site	Colony of 3 adjacent burrows of similar size.
B36	unknown	No	Buffer area	Dimensions could not be measured due to location in buffer zone and access restrictions.
B37	4.5 x 5	No	Project site	Active ground squirrel use.
B38	4.5 x 5	No	Project site	Active ground squirrel use.
C2	24 x 24	Yes – whitewash observed	Project site	3 plastic pipes of same size; 2 do not run through to both sides.
C3	24 x 24	No	Project site	None.
C5	24 x 24	Yes – whitewash observed	Buffer area	None.
C6	24 x 24	No	Buffer area	None.
C7	24 x 24	No	Buffer area	None.
C8	24 x 24	No	Project site	None.
C9	12 x 12	No	Buffer area	None.

*Burrow/burrow surrogate numbers are not chronological due to data revisions that occurred during field surveys.

Of the 27 burrows/burrow surrogates documented on the Project site, sign was observed at 7 of them; further details are provided in Section 3.2. BUOW prefer areas with a high number of burrows/burrow network; this provides exit holes/alternate escape routes (The Cornell Lab 2019). It is less likely that BUOW would occupy a burrow network with active ground squirrel use.

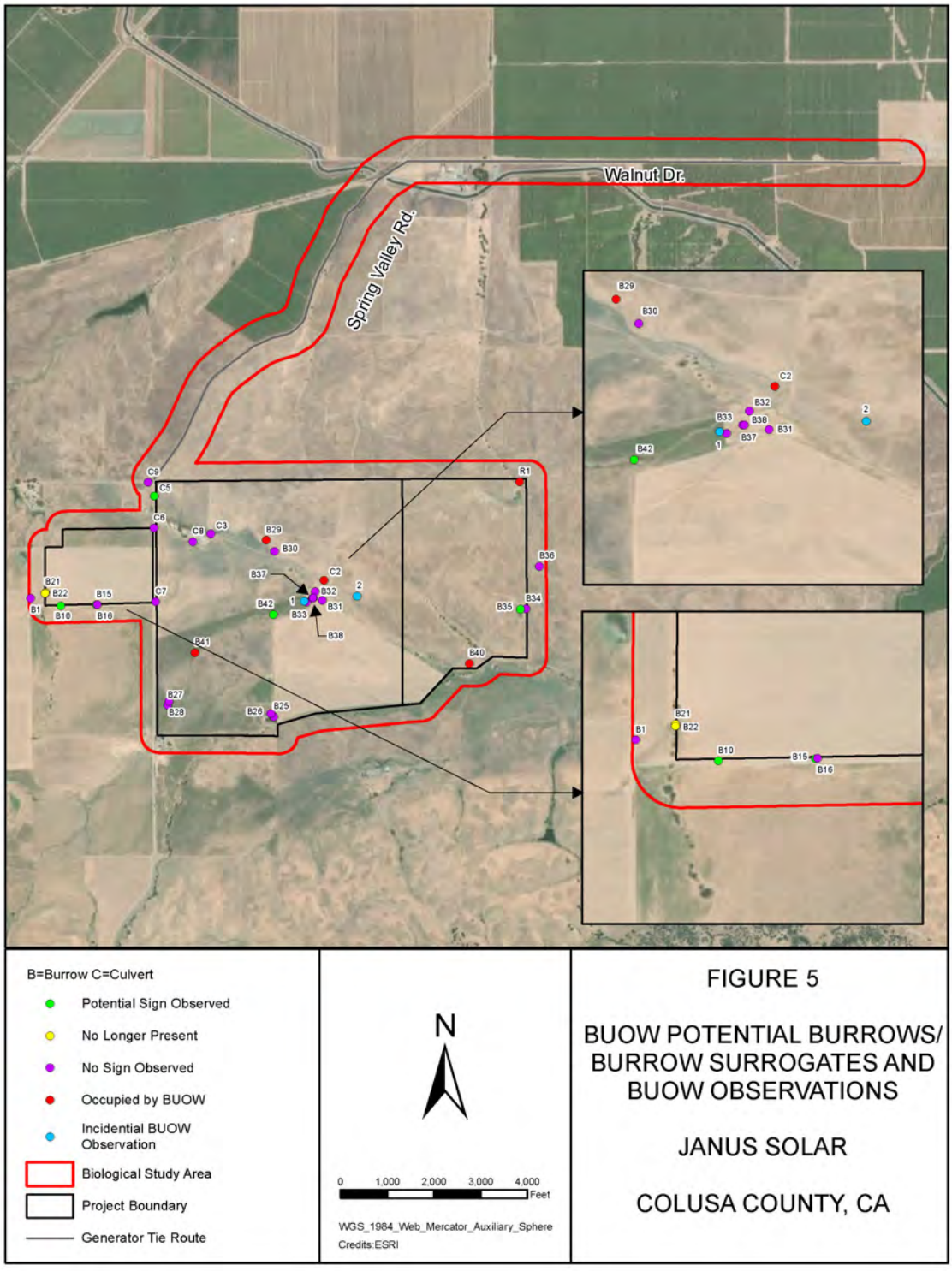

Walnut Dr.
Spring Valley Rd.
B=Burrow C=Culvert
Potential Sign Observed
No Longer Present
No Sign Observed
Occupied by BUOW
Incidental BUOW Observation
Biological Study Area
Project Boundary
Generator Tie Route
N
0 1,000 2,000 3,000 4,000
Feet
WGS_1984_Web_Mercator_Auxiliary_Sphere
Credits:ESRI
FIGURE 5
BUOW POTENTIAL BURROWS/ BURROW SURROGATES AND BUOW OBSERVATIONS
JANUS SOLAR
COLUSA COUNTY, CA

Table 3 lists other wildlife species observed on the Project site. Measures to protect special-status species are detailed in a separate Biological Survey Report for the Project site. Species including coyote (*Canis latrans*), domestic cat (*Felis catus*), great horned owl (*Bubo virginianus*), red-tailed hawk (*Buteo jamaicensis*), Swainson's hawk *(Buteo swainsoni*), northern harrier (*Circus hudsonius*), prairie falcon (*Falco mexicanus*), barn owl (*Tyto alba*), common raven (*Corvus corax*), and Pacific gophersnake *(Pituophis catenifer catenifer*) could potentially predate on BUOW if present. No evidence of predation of BUOW was observed.

Table 3: Wildlife Species Observed

Scientific Name	Common Name
Mammals	
Bos taurus[(1)(2)]	domestic cow
Canis latrans[(1)(2)]	coyote
Equus ferus caballus[(2)]	domestic horse
Felis catus[(2)]	domestic cat
Lepus sp.[(2)]	jackrabbit
Spermophilus sp.[(1)(2)]	ground squirrel
Birds	
Agelaius phoeniceus[(1)(2)]	red-winged blackbird
Athene cunicularia[(3)*]	burrowing owl
Branta canadensis[(2)]	Canada Goose
Bubo virginianus[(2)]	great horned owl
Buteo jamaicensis[(1)(2)]	red-tailed hawk
Buteo swainsoni[(2)**]	Swainson's hawk
Callipepla californica[(3)]	California quail
Cathartes aura[(1)(2)]	turkey vulture
Charadrius vociferus[(2)]	killdeer
Circus hudsonius[(1)(2)*]	northern harrier
Columba livia[(2)]	rock pigeon
Corvus corax[(2)]	common raven
Eremophila alpestris[(1)(2)]	horned lark
Euphagus cyanocephalus[(1)(2)]	Brewer's blackbird
Falco columbarius[(1)*]	merlin
Falco mexicanus[(2)*]	prairie falcon
Falco sparverius[(1)(2)]	American kestrel
Haemorhous mexicanus[(2)]	house finch
Lanius ludovicianus[(1)(2)*]	loggerhead shrike
Mimus polyglottos[(2)]	northern mockingbird
Molothrus ater[(1)(2)]	brown-headed cowbird
Passerculus sandwichensis[(1)(2)]	savannah sparrow
Pica sp.[(2)]	magpie
Plegadis chihi[(3)*]	white-faced ibis
Sayornis nigricans[(1)(2)]	black phoebe
Sayornis saya[(1)(2)]	Say's phoebe
Spinus psaltria[(2)]	lesser goldfinch
Streptopelia decaocto[(1)(2)]	Eurasian collared-dove
Sturnella neglecta[(1)(2)]	western meadowlark
Sturnus vulgaris[(2)]	European starling
Troglodytes aedon[(2)]	house wren

Scientific Name	Common Name
Tyrannus sp.(2)	kingbird
Tyto alba(2)	barn owl
Zenaida macroura(1)(2)	mourning dove
Zonotrichia leucophrys(1)(2)	white-crowned sparrow
Invertebrates	
Bombus sp.(2)***	bumble bee
Danaus plexippus(1)(2)	monarch
Erythemis sp.(2)	pondhawk
Hemipepsis or *Pepsis* sp.(2)	tarantula hawk
Mantodea(2)	mantis
Vanessa cardui(2)	painted lady
Reptiles and Amphibians	
Anaxyrus boreas halophilus(2)	California toad
Elgaria sp.(2)	alligator lizard
Pituophis catenifer catenifer(2)	Pacific gophersnake
Pseudacris sp.(2)	treefrog
Sceloporus occidentalis occidentalis(2)	northwestern fence lizard

Notes:

(1) Observed in 2019.

(2) Observed in 2020.

(3) Observed in 2021.

*CDFW Species of Special Concern or Watch List

**State Threatened species

***The State Candidate Endangered crotch bumble bee (*Bombus crotchii*) is not known to occur within 15 miles of the Project site (CDFW 2020). This species is unlikely to nest on the Project site because soils on the site are hard and heavily compacted by consistent active grazing or are routinely planted with dense common wheat. Minimal thatch in the form of dead non-native herbs was found during the surveys, but dead vegetation primarily occurred as standing dead plants. Moreover, while California burclover (*Medicago polymorpha*), a suitable floral resource for the crotch bumble bee, was found on the Project site, it was sparse and predominately occurred along existing roads. Therefore, the bumble bee observed was determined to be a common species.

3.2 PROTOCOL BREEDING SEASON SURVEYS

BUOW were not detected during any of the three protocol breeding season surveys. Signs of use noted at B29, B34, and B35 were initially observed during the Phase II burrow survey/April breeding season survey and remained present in the June and July breeding season surveys. Black feathers noted at B10 were only observed present during the Phase II and April breeding season survey. Whitewash noted at B15, C2, and C5 was initially observed during the June breeding season survey and remained present in the July breeding season survey. Potential sign in the form of black feather presence at B10, and in the form of whitewash at B15, B29, B34, B35, C2, and C5 was observed (Figure 5). Black feathers were likely not from BUOW, as the species most commonly has mottled brown and white feathers (The Cornell Lab 2019); however, these feathers potentially could have been from the prey of a BUOW. While BUOW are the most likely bird species to utilize burrows on the Project site, whitewash could have been from other bird species utilizing the site. The whitewash observed was primarily on the exterior of the burrow, or adjacent to it. The Project site had relatively flat topography with few trees/shrubs to that could be utilized as perching locations; various bird species were observed perching on fence lines throughout the site. For example, B15 and B34 are located right along a fence line, so whitewash observed could have been from any bird species perching on the fence line above. B35 had a very small amount of adjacent whitewash, appearing

to be 1 or 2 droppings, so was not a strong sign pointing towards burrow use; these adjacent droppings could have been from one landing occurrence of any bird species. Western meadowlark (*Sturnella neglecta*) and horned lark (*Eremophila alpestris*) were frequently observed on the ground, perching on small mounds of dirt. Of the seven burrows observed with potential signs of use, the moderate presence of whitewash around the burrow entrance at B29 was the most indicative of potential past use by BUOW. However, although whitewash was observed at B29 in April 2020, no additional whitewash was observed in July 2020, but active ground squirrel use was observed, which reduces the likelihood of BUOW using this burrow. Table 4 presents the results of the breeding season surveys. While BUOW were not observed during the Phase III protocol breeding season surveys, potential to occur on the Project site remains moderate (Tetra Tech 2020).

3.3 PROTOCOL WINTER SEASON SURVEY

Multiple BUOW individuals were observed during a cultural survey in November 2020 and during the protocol winter season survey in January 2021. During the cultural survey, two owls were observed in a pile of rip rap (R1), and one owl was observed at a new burrow complex consisting of approximately nine burrows (B40). The locations of R1 and B40 are shown in Figure 5. Feathers and whitewash were also observed at B40 during the cultural survey.

During the winter season survey, one owl was observed resting atop the rip rap at R1, one owl flushed from C2, one owl was observed resting at the entrance of B29, and one BUOW flushed from a new burrow within a drainage channel (B41). B41 was not approached to avoid disturbance of the BUOW. One BUOW was also incidentally observed in flight twice on the same day near B33 (Observation “1”), and one BUOW was observed east of B31 (Observation “2”). Another new burrow approximately 4 inches in diameter was also found in the drainage channel with pellets, feathers, and whitewash (B42). The locations of these new burrows, occupied burrows/burrow surrogates, and incidental BUOW observations are shown in Figure 5. Since BUOW have been determined present on the Project site, the known burrows/burrow surrogates were checked for BUOW at a distance during the survey but were not approached to document sign to avoid potential disturbance.

Table 4: BUOW Breeding Season Survey Results

Survey	Date	Start Time (am/pm)	End Time (am/pm)	Temperature (°F)	Wind Speed (mph)	Cloud Cover (%)	Potential Sign Observed	BUOW Observed	Biologists
1	4/10/2020	6:10 a.m.	8:45 a.m.	53-56	0-2	10-30	Whitewash observed at B29, B34, and B35. Black feathers observed at B10.	No	Daniel Berg, Monique O'Conner, Nikki Bottum
2	6/9/2020	5:25 a.m.	7:40 a.m.	62-72	1-4	0	Whitewash observed at B29, B35, and B15.	No	Sara Townsend, Monique O'Conner
2	6/10/2020	6:05 a.m.	7:25 a.m.	68-75	0-3	5	Whitewash observed at B34 and C2.	No	Sara Townsend, Monique O'Conner
2	6/10/2020	6:50 p.m.	7:10 p.m.	94-95	3-5	10	Whitewash observed at C5.	No	Sara Townsend, Monique O'Conner
3	7/8/2020	5:00 a.m.	7:30 a.m.	67-77	0-1	0	Whitewash observed at B29, B15, C2, and C5.	No	Daniel Berg, Monique O'Conner
3	7/9/2020	6:50 a.m.	7:23 a.m.	65-67	0-3	0	Whitewash observed at B34 and B35.	No	Daniel Berg, Monique O'Conner

Table 5: BUOW Winter Season Survey Results

Survey	Date	Start Time (am/pm)	End Time (am/pm)	Temperature (°F)	Wind Speed (mph)	Cloud Cover (%)	Potential Sign Observed*	BUOW Observed*	Biologists
1	1/20/2021	3:20 p.m.	5:50 p.m.	71-58	0-3	0-10	Pellets, feathers, and whitewash observed at B42.**	One owl at each location: R1, C2, B29, and B41. Two additional incidental observations.	Daniel Berg, Monique O'Conner
1	1/21/2021	3:55 p.m.	5:30 p.m.	59-56	0-7	90	Not applicable.**	No	Daniel Berg, Monique O'Conner

*Two owls were also observed at R1, and one owl and feathers and whitewash were observed at B40 during a cultural survey in November 2020.
**Known burrows/burrow surrogates were not approached to document sign to avoid potential disturbance.

4.0 DISCUSSION AND RECOMMENDATIONS

Multiple BUOW were found on the Project site during the protocol winter season survey in January 2021 and incidentally during a cultural survey in November 2020. Therefore, use of heavy machinery, and/or significant ground disturbance during construction activities has the potential to disturb BUOW, if present during these activities.

The results of the surveys have been used to develop recommendations for pre-construction surveys and avoidance and minimization measures. The recommendations within this report are preliminary and will be refined during the California Environmental Quality Act process as more details about the project design and schedule are determined. If burrows/burrow surrogates for BUOW can be avoided during the finalization of the project design, this could reduce the requirements. It is recommended that burrows/burrow surrogates within the BSA are avoided to the maximum extent possible during project design finalization and Project implementation.

BIO-1: A focused avoidance (pre-construction) survey for BUOW presence, including existing burrows/burrow surrogates and any new suitable burrows/surrogates that may have become available, shall be conducted according to CDFW guidelines by a qualified biologist prior to the use of heavy machinery and/or significant ground disturbance associated with construction activities. The survey shall be required within 14 days prior to the commencement of construction activities and shall occur within the Project site and a 150-meter buffer area around the Site, access permitting. The preconstruction survey would include visiting all potential burrows/burrow surrogates during the timeframe of two hours before sunset to one hour after sunset or from one hour before to two hours after sunrise, and would include protocol-level transects (i.e., 100 percent visual coverage) within the construction area and a 150-meter buffer around the area. If construction activity as defined above halts for a period of 7 days or more, the survey would need to be conducted again prior to the continuation of construction activities. If BUOW are detected within the Project site or within the 150-meter Project site buffer during the pre-construction survey, a Project-specific mitigation plan shall be prepared for CDFW review and approval and implemented to protect BUOW and their nest sites. The mitigation plan may include no work buffers or a passive relocation program if burrow avoidance is infeasible. As defined in the *Staff Report on Burrowing Owl Mitigation* (California Department of Fish and Game 2012), buffer size is dependent upon time of year and level of disturbance at the Project site. Depending on the level of disturbance, a smaller buffer may be established in consultation with CDFW. The BUOW survey can be conducted in conjunction with a nesting bird survey (required under the Migratory Bird Treaty Act), if timing is appropriate.

BIO-2: Any construction materials stored on the Project site or adjacent areas that could serve as a burrow surrogate for BUOW, such as sedentary above ground pipes or sedentary rip rap, shall be covered when not in use as to not attract BUOW to the Project site. The construction staff should check the construction materials daily to ensure they are sufficiently covered.

BIO-3: The results of the preconstruction surveys and any additional site visits/checks will be documented in a report and submitted to the relevant agencies, such as the County and CDFW.

5.0 LITERATURE CITED

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APPENDIX A SITE PLAN

CUP Site Plan Option 1

Colusa Co., CA

N

Feet
0 500 1,000 1,500 2,000 2,500

0 250 500 750
Meters

- Cortina Substation
- Gen-tie (40 Ft. Wide Transmission Easement; Opt. 1)
- Project Substation (Opt. 1)
- Project BESS (Opt. 1)
- Solar Panel Layout (Approx. 607 Ac)
- Favero's Cattle Ranch Operations
- Janus Solar Site
- Project Parcels (Approx. 1,018 Ac)
- Township
- Section

Date: April 15, 2020
Map Scale: 1:20,000
Projection: NAD 1983 UTM Zone 10N

RWE

APPENDIX B BUOW SURVEY DATASHEETS

Phase II Burrow Survey		
Mapped Burrow ID (take photo)	**Dimensions (height, width, depth)**	**Sign Observed (tracks, feathers, pellets, carcass, white wash, or other items, etc.)**
B1	6 x 7", >59"	no sign, exit hole observed
B10	4.5 x 5", >59"	small black feathers observed
B15	5 x 5", >59"	no sign
B16	5 x 5", >59"	no sign
B21	6 x 8", >59"	no sign
B22	7 x 10", >59"	no sign
B25	6 x 6", >59"	no sign
B26	6 x 6", >59"	no sign, 3 burrows of similar size, active ground squirrel use
B27	6 x 5", >59"	no sign, 2 burrows of similar size
B28	5 x 6", >59"	no sign
B29	5 x 5", >59"	4 burrows of similar size, whitewash observed on 1
B30	6 x 5", >59"	no sign, 4 burrows of similar size, active ground squirrel use
B31	5 x 5", >59"	no sign, 3 burrows of similar size
B32	5 x 5", >59"	no sign
B33	4.5 x 5", >59"	no sign, 3 burrows of similar size
B34	5.5 x 5.5", >59"	whitewash observed, exit hole observed
B35	5 x 5", >59"	tiny whitewash observed, 3 burrows of similar size
B36	in buffer, no access to take measurements	multiple holes in buffer
Comments		
4/6/20 - B1 through B26 found 4/7/20 - B27 through B28 found 4/8/20 - B29 through B33 found 4/9/20 - B34 through B36 found		

Burrowing Owl Survey Form

Date:	4/10/2020	Surveyor Names: Daniel Berg, Monique O'Conner	
Project/Site Name:	Janus Solar	Nikki Bottum	

Phase III Weather Data

	AM		PM	
Time (24 hr)	Start: 0610	End: 0845	Start:	End:
Temp (deg F)	Start: 52.7	End: 56	Start:	End:
Wind (mph)	Start: 1.5	End: 0	Start:	End:
% Cloud Cover	Start: 30	End: 10	Start:	End:
Precip (Yes/No)	Start: No	End: No	Start:	End:
Visibility (Good/Fair/Poor)	Start: Good	End: Good	Start:	End:

Phase III BUOW Survey

1. Surveyors must stay more than 50 meters (approx. 160 ft) away from any owls or occupied burrows.

2. Survey must occur two hours before sunset to one hour after sunset or from one hour before to two hours after sunrise.

3. DO NOT survey during heavy rain, high winds greater than 20 miles per hour, or dense fog.

Mapped BUOW ID (take photo)	# of Owls or Nesting Pairs (note nestlings, juveniles, adults, or unknown)	Behavior (feeding, resting, courtship, alarm, territorial defense, copulation)	Time observed (24 hr)	Comments (note associated Burrow ID)
B36	N/A	N/A	0610	N/A
B35	N/A	N/A	0630	N/A
B34	N/A	N/A	0630	N/A
B31	N/A	N/A	0650	N/A
B32	N/A	N/A	0650	N/A
B33	N/A	N/A	0650	N/A
B30	N/A	N/A	0710	N/A
B29	N/A	N/A	0710	N/A
B25	N/A	N/A	0740	N/A
B26	N/A	N/A	0740	N/A
B27	N/A	N/A	0800	N/A
B28	N/A	N/A	0800	N/A
B21	N/A	N/A	0840	N/A
B22	N/A	N/A	0840	N/A
B1	N/A	N/A	0840	N/A
B10	N/A	N/A	0840	N/A
B15	N/A	N/A	0840	N/A
B16	N/A	N/A	0840	N/A

Comments

No findings during Phase III, checked all suitable burrows.

Burrowing Owl Survey Form

Date: 6/9/20	Surveyor Names: Monique O'Conner, Sara Townsend
Project/Site Name: Janus Solar	

Phase III Weather Data

	AM		PM	
Time (24 hr)	Start: 0525	End: 0740	Start:	End:
Temp (deg F)	Start: 62°	End: 72°	Start:	End:
Wind (mph)	Start: 1mph	End: 1-4mph	Start:	End:
% Cloud Cover	Start: 0%	End: 0%	Start:	End:
Precip (Yes/No)	Start: No	End: No	Start:	End:
(Good/Fair/Poor)	Start: Good	End: Good	Start:	End:

Phase III BUOW Survey

1. Surveyors must stay more than 50 meters (approx. 160 ft) away from any owls or occupied burrows.
2. Survey must occur two hours before sunset to one hour after sunset or from one hour before to two hours after sunrise.
3. DO NOT survey during heavy rain, high winds greater than 20 miles per hour, or dense fog.

Mapped BUOW ID (take photo)	# of Owls or Nesting Pairs (note nestlings, juveniles, adults, or unknown)	Behavior (feeding, resting, courtship, alarm, territorial defense, copulation)	Time observed (24 hr)	Comments (note associated Burrow ID)
B15			0525	some white wash, but likely from wire
B16			0525	"
B10			0538	"
B1			0549	—
B21			0556	no longer present - got moved
B22			0556	no longer present - got moved
B28			0615	—
B27			0615	—
B25			0635	—
B26			0635	—
B29			0655	—
B30			0703	—
B31			0710	—
B32			0710	—
B33			0720	—
B37	New - ground squirrel		0720	—
B38	New - ground squirrel		0735	—
Culvert 2	New		0715	—

active ground squirrel use

Comments

Burrowing Owl Survey Form

Date: 6/10/20	Surveyor Names: Monique O'Conner, Sara Townsend
Project/Site Name: Janus Solar	

Phase III Weather Data

	AM		PM	
Time (24 hr)	Start: 0605	End: 0725	Start: 1850	End: 1910
Temp (deg F)	Start: 68°	End: 75°	Start: 95°	End: 94°
Wind (mph)	Start: 0 mph	End: 3 mph	Start: 5 mph	End: 3 mph
% Cloud Cover	Start: 5%	End: 5%	Start: 10%	End: 10%
Precip (Yes/No)	Start: No	End: No	Start: No	End: No
(Good/Fair/Poor)	Start: Good	End: Good	Start: Good	End: Good

Phase III BUOW Survey

1. **Surveyors must stay more than 50 meters (approx. 160 ft) away from any owls or occupied burrows.**
2. **Survey must occur two hours before sunset to one hour after sunset or from one hour before to two hours after sunrise.**
3. **DO NOT survey during heavy rain, high winds greater than 20 miles per hour, or dense fog.**

Mapped BUOW ID (take photo)	# of Owls or Nesting Pairs (note nestlings, juveniles, adults, or unknown)	Behavior (feeding, resting, courtship, alarm, territorial defense, copulation)	Time observed (24 hr)	Comments (note associated Burrow ID)
Culvert 6	—	—	0605	—
Culvert 7	—	—	0615	—
Culvert 8	—	—	0625	—
Culvert 3	—	—	0635	—
Culvert 2	—	—	0642	~~whitewash~~ observed
B36	—	—	0702	—
B34	—	—	0715	whitewash observed
B35	—	—	0715	—
Culvert 5	—	—	1850	whitewash observed near adjacent fence (perching of any bird)
Culvert 9	—	—	1900	—

Comments

Burrowing Owl Survey Form

Date:	7/8/2020	Surveyor Names: Daniel Berg, Monique O'Conner	
Project/Site Name:	Janus Solar		

Phase III Weather Data

	AM		PM	
Time (24 hr)	Start: 0500	End: 0730	Start:	End:
Temp (deg F)	Start: 67	End: 77	Start:	End:
Wind (mph)	Start: 0-1	End: 0-1	Start:	End:
% Cloud Cover	Start: 0	End: 0	Start:	End:
Precip (Yes/No)	Start: No	End: No	Start:	End:
Visibility (Good/Fair/Poor)	Start: Good	End: Good	Start:	End:

Phase III BUOW Survey

1. Surveyors must stay more than 50 meters (approx. 160 ft) away from any owls or occupied burrows.

2. Survey must occur two hours before sunset to one hour after sunset or from one hour before to two hours after sunrise.

3. DO NOT survey during heavy rain, high winds greater than 20 miles per hour, or dense fog.

Mapped BUOW ID (take photo)	# of Owls or Nesting Pairs (note nestlings, juveniles, adults, or unknown)	Behavior (feeding, resting, courtship, alarm, territorial defense, copulation)	Time observed (24 hr)	Comments (note associated Burrow ID)
C9	N/A	N/A	0500	N/A
C5	N/A	N/A	0500	N/A
C6	N/A	N/A	0500	N/A
C7	N/A	N/A	0530	N/A
B16	N/A	N/A	0530	N/A
B15	N/A	N/A	0530	N/A
B10	N/A	N/A	0530	N/A
B1	N/A	N/A	0550	N/A
C1	N/A	N/A	0615	N/A
B27	N/A	N/A	0615	N/A
B28	N/A	N/A	0635	N/A
B25	N/A	N/A	0635	N/A
B26	N/A	N/A	0635	N/A
C8	N/A	N/A	0650	N/A
C3	N/A	N/A	0650	N/A
B29	N/A	N/A	0650	ground squirrel activity
B30	N/A	N/A	0705	ground squirrel activity
C2	N/A	N/A	0705	N/A
B32	N/A	N/A	0705	N/A
B31	N/A	N/A	0715	N/A
B37	N/A	N/A	0715	N/A
B38	N/A	N/A	0715	N/A
B33	N/A	N/A	0715	N/A

Burrowing Owl Survey Form

Date:	7/9/2020	Surveyor Names: Daniel Berg, Monique O'Conner	
Project/Site Name:	Janus Solar		

Phase III Weather Data

	AM		PM	
Time (24 hr)	Start: 0650	End: 0723	Start:	End:
Temp (deg F)	Start: 65	End: 67	Start:	End:
Wind (mph)	Start: 0-3	End: 0-2	Start:	End:
% Cloud Cover	Start: 0	End: 0	Start:	End:
Precip (Yes/No)	Start: No	End: No	Start:	End:
Visibility (Good/Fair/Poor)	Start: Good	End: Good	Start:	End:

Phase III BUOW Survey

1. Surveyors must stay more than 50 meters (approx. 160 ft) away from any owls or occupied burrows.

2. Survey must occur two hours before sunset to one hour after sunset or from one hour before to two hours after sunrise.

3. DO NOT survey during heavy rain, high winds greater than 20 miles per hour, or dense fog.

Mapped BUOW ID (take photo)	# of Owls or Nesting Pairs (note nestlings, juveniles, adults, or unknown)	Behavior (feeding, resting, courtship, alarm, territorial defense, copulation)	Time observed (24 hr)	Comments (note associated Burrow ID)
B36	N/A	N/A	0703	N/A
B35	N/A	N/A	0715	N/A
B34	N/A	N/A	0715	N/A

Comments

No owls or new sign observed.

Burrowing Owl Survey Form

Date:	1/20/2021	Surveyor Names: Daniel Berg, Monique O'Conner	
Project/Site Name:	Janus Solar		

Phase III Weather Data

	AM		PM	
Time (24 hr)	Start:_____	End:_____	Start: 1520	End: 1750
Temp (deg F)	Start:_____	End:_____	Start: 71	End: 58
Wind (mph)	Start:_____	End:_____	Start: 1-3	End: 0-3
% Cloud Cover	Start:_____	End:_____	Start: 0	End: 10
Precip (Yes/No)	Start:_____	End:_____	Start: No	End: No
Visibility (Good/Fair/Poor)	Start:_____	End:_____	Start: Good	End: Good

Phase III BUOW Survey

1. Surveyors must stay more than 50 meters (approx. 160 ft) away from any owls or occupied burrows.

2. Survey must occur two hours before sunset to one hour after sunset or from one hour before to two hours after sunrise.

3. DO NOT survey during heavy rain, high winds greater than 20 miles per hour, or dense fog.

Mapped BUOW ID (take photo)	# of Owls or Nesting Pairs (note nestlings, juveniles, adults, or unknown)	Behavior (feeding, resting, courtship, alarm, territorial defense, copulation)	Time observed (24 hr)	Comments (note associated Burrow ID)
R1	1 owl	Resting on rock.	1545	N/A
B36	N/A	N/A	1600	N/A
B34	N/A	N/A	1610	N/A
B35	N/A	N/A	1610	N/A
B40	N/A	N/A	1630	N/A
B31	N/A	N/A	1655	N/A
B33	1 owl	In flight.	1704	Obs twice in same area.
B37	N/A	N/A	1721	N/A
B38	N/A	N/A	1713	N/A
B32	N/A	N/A	1716	N/A
C2	1 owl	Flushed.	1730	N/A
B30	N/A	N/A	1740	N/A
B29	1 owl	Resting at entrance.	1740	N/A
C3	N/A	N/A	1745	N/A
C8	N/A	N/A	1745	N/A

Comments

Additional owls incidentally observed during survey as mapped on Collector.

Burrowing Owl Survey Form

Date:	1/21/2021	Surveyor Names: Daniel Berg, Monique O'Conner	
Project/Site Name:	Janus Solar		

Phase III Weather Data

	AM		PM	
Time (24 hr)	Start:_____	End:_____	Start: 1555	End: 1730
Temp (deg F)	Start:_____	End:_____	Start: 59	End: 56
Wind (mph)	Start:_____	End:_____	Start: 0-7	End: 0-4
% Cloud Cover	Start:_____	End:_____	Start: 90	End: 90
Precip (Yes/No)	Start:_____	End:_____	Start: No	End: No
Visibility (Good/Fair/Poor)	Start:_____	End:_____	Start: Good	End: Good

Phase III BUOW Survey

1. Surveyors must stay more than 50 meters (approx. 160 ft) away from any owls or occupied burrows.

2. Survey must occur two hours before sunset to one hour after sunset or from one hour before to two hours after sunrise.

3. DO NOT survey during heavy rain, high winds greater than 20 miles per hour, or dense fog.

Mapped BUOW ID (take photo)	# of Owls or Nesting Pairs (note nestlings, juveniles, adults, or unknown)	Behavior (feeding, resting, courtship, alarm, territorial defense, copulation)	Time observed (24 hr)	Comments (note associated Burrow ID)
B25	N/A	N/A	1600	N/A
B26	N/A	N/A	1610	N/A
C1	N/A	N/A	1615	N/A
B27	N/A	N/A	1620	N/A
B28	N/A	N/A	1620	N/A
C7	N/A	N/A	1630	N/A
B15	N/A	N/A	1635	N/A
B16	N/A	N/A	1635	N/A
B10	N/A	N/A	1640	N/A
B1	N/A	N/A	1645	N/A
C6	N/A	N/A	1725	N/A
C5	N/A	N/A	1725	N/A
C9	N/A	N/A	1725	N/A

Comments

No owls observed during survey on 1/21/21.

APPENDIX C PHOTOGRAPHS

Photograph 1	
Notes: Burrow 1 during burrow survey.	

Photograph 2	
Notes: Burrow 10 during burrow survey.	

Photograph 3	
Notes: Burrow 21 during burrow survey.	

Photograph 4	
Notes: Burrow 22 during burrow survey.	

Photograph 5	
Notes: Burrow 25 during burrow survey.	

Photograph 6	
Notes: Burrow 29 during burrow survey. Whitewash observed (see arrows pointing to whitewash).	

Photograph 7	
Notes: Burrow 30 during burrow survey.	

Photograph 8	
Notes: Burrow 32 during burrow survey.	

Photograph 9	
Notes: Burrow 34 during burrow survey. Whitewash observed (see arrows pointing to whitewash).	

Photograph 10	
Notes: Burrow 36 during burrow survey (in buffer zone, photo taken from a distance). See arrow.	

Photograph 11	
Notes: Burrow 38 during burrow survey (see arrow). The *Aegilops triuncialis* Provisional Herbaceous Semi-Natural Alliance can be seen in the background.	

Photograph 12	
Notes: Culvert 2 during burrow survey.	

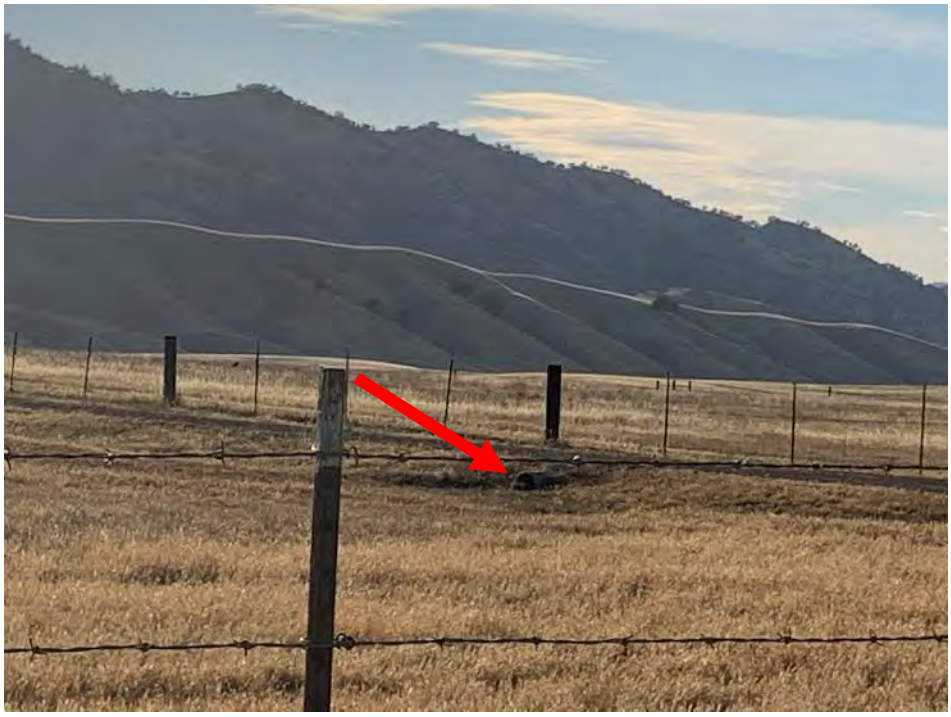
Photograph 13	
Notes: Culvert 3 during burrow survey.	

Photograph 14	
Notes: Culvert 5 during burrow survey. Whitewash observed (see arrow pointing to whitewash).	

Photograph 15	
Notes: Culvert 6 during burrow survey.	

Photograph 16	
Notes: Culvert 7 during burrow survey.	

Photograph 17	
Notes: Culvert 8 during burrow survey.	

Photograph 18	
Notes: Culvert 9 during burrow survey (see arrow).	

Photograph 19	
Notes: Representative photo of densely planted common wheat fields during burrow survey. Not suitable habitat for BUOW; Phase II transects were not walked in this community.	

Photograph 20	
Notes: Representative photo of the *Amsinckia menziesii - Achyrachaena mollis* Herbaceous Alliance during burrow survey.	

Photograph 21	
Notes: Burrow 42 found during winter season survey with whitewash, pellets, and feathers.	

Photograph 22	
Notes: Representative photo of pellet found outside burrow 42 during winter season survey.	

Photograph 23	
Notes: Burrow 40 complex during winter season survey. Arrows pointing to example burrow entrances.	

Photograph 24	
Notes: Burrowing owl observed at entrance of burrow 40 complex during cultural survey in November 2020.	

Photograph 25	
Notes: Two burrowing owls observed at entrance of rip rap 1 during cultural survey in November 2020.	