Burrowing Owl Non-Breeding and Breeding Season Surveys Report

Dogwood Geothermal Energy Project

Prepared for ORMAT (dba OrHeber 3 LLC)

March 5, 2025

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Table of Contents

List of Tables

List of Figures

SECTION 1 Introduction

The OrHeber 3 (OH), LLC, Heber Field Company, LLC (HFC), and the Second Imperial Geothermal Company (collectively, Applicants, subsidiaries of Ormat Technologies, Inc. [ORMAT]), are proposing to develop a new 25-megawatt (MW; net generation) geothermal energy facility (hereinafter, Dogwood Project), a 7-MW parasitic solar facility to support the Dogwood Project, a 15-MW solar facility to support the existing Heber 2 facility, one new injection well, and three new geothermal production wells in southern Imperial County, California. Collectively, the new geothermal and solar facilities and their components are referred to as the "proposed project" or "Project".

The Project Site is part of the year-round range of the western burrowing owl (*Athene cunicularia hypugaea*) and suitable habitat for the species was identified during the Biological Reconnaissance Survey for the Project conducted in February 2023; therefore, focused surveys for burrowing owl were conducted in coordination with California Department of Fish and Wildlife (CDFW) and following the methods provided in the 2012 Staff Report on Burrowing Owl Mitigation (CDFG 2012).

Catalyst Environmental Solutions (Catalyst) biologists performed two burrowing owl surveys, a non-breeding season survey in January 2025 and a breeding season survey in February 2025 for the Project. These surveys were conducted per CDFW guidance because suitable habitat and burrowing owl presence was identified during reconnaissance-level biological surveys which included a survey protocol specific to burrowing owl conducted by Catalyst in the Spring of 2023. This report was prepared to present the findings of the non-breeding and breeding season burrowing owl surveys conducted in 2025 which followed the survey methods of CDFW's Staff Report on Burrowing Owl Mitigation (CDFG 2012)[1].

On October 10, 2024, the California Fish and Game Commission (Commission) approved naming the western burrowing owl as a candidate for potential listing as a protected species under the California Endangered Species Act (CESA). Prior to October 2024, burrowing owl was designated as a Species of Special Concern in California. The Commission provided public notice that burrowing owl is now a candidate species under CESA and as such, receives the same legal protection afforded to an endangered or threatened species. It is also legally protected under the federal Migratory Bird Treaty Act and California Fish and Game Codes 3503, 3503.5, and 3513 (Native Bird Protection). CDFW has initiated a status review for burrowing owl and a final listing decision is expected in late 2025 or early 2026. CDFW is expected to publish a "Report to the Fish and Game Commission California Endangered Species Act Status Review of Western Burrowing Owl (*Athene cunicularia hypugaea*)" in late 2025, at which time the Commission will make a final determination on whether to list western burrowing owl as threatened or endangered under CESA.

To determine the presence or potential absence of burrowing owls and their habitat within the Project site, two surveys were performed. In California, the breeding season for the burrowing owl is typically between February 1 and August 31 (CDFG 2012, Appendix A). The peak of the breeding season occurs

[1] CDFW's Staff Report on Burrowing Owl Mitigation recommends four surveys be completed during the breeding season. However, due to direct guidance received from CDFW staff for this Project, only one breeding season survey was required.

between April 15 and July 15. The remainder of the year (September 1 through January 31) constitutes the non-breeding season where burrowing owls may still be present within their year-round range.

In coordination with CDFW, Catalyst biologists conducted a non-breeding season burrowing owl survey on January 28-30, 2025 and a breeding season burrowing owl survey on February 18-20, 2025. The results of the surveys are reported herein.

1.1 Project Location and Description

The proposed Project is located on approximately 190 acres of private land owned by ORMAT in southern Imperial County (Figure 1). The proposed project is situated in Township 17 South, Range 14 East of the U.S. Geographical Survey (USGS) Heber 7.5-minute topographic quadrangle. A geothermal power plant with new pipelines and an injection well would be built within the existing Heber 2 Geothermal Energy Complex (HGEC) fence line. The proposed new geothermal facility is referred to as the "Dogwood Project" in this report. Two supplemental solar photovoltaic fields (herein referred to as "solar energy facilities"), substation, and gen-tie line with connection to Dogwood and the existing Heber 2 geothermal plant would be built in and outside of HGEC. The proposed facility footprints are shown in Figure 2. A 500-foot buffer around the footprint was included to form the survey area for burrowing owls per CDFG recommended survey methods (2012).

The 25-megawatt geothermal power plant will occur within the existing HGEC footprint located at 855 Dogwood Road, Heber, CA. The proposed Dogwood geothermal energy facilities would be located within the existing fence line that accommodates existing ORMAT facilities. The geothermal plant site is north of Jasper Road and west of Dogwood Road. The proposed geothermal development site is currently maintained as a materials storage area. Surrounding land uses in the Project vicinity are dominated by agricultural cultivation with solar facilities directly west, a construction/aggregates company to the south, and geothermal well pads and pipelines present throughout the local vicinity.

The accompanying solar photovoltaic fields (7 MW and 15 MW) are located south of East Willoughby Road and east of Dogwood Road on approximately 150 acres. The solar energy facilities will be constructed in an area that is currently used for agricultural crops (alfalfa). One new geothermal injection well will be used for the Project located in the HGEC. Three new production wells will be developed, two in the solar field and one directly east of the HGEC in an agricultural field.

Interstate 8 (I-8; Kumeyaay Highway), located approximately 4.5 miles directly north, provides primary highway access to the Project site. Dogwood Road stems off of I-8 and provides immediate site access. From the south, Willoughby Road runs west-east approximately 1,700 feet from the site and connects to Dogwood Road, providing immediate site access.

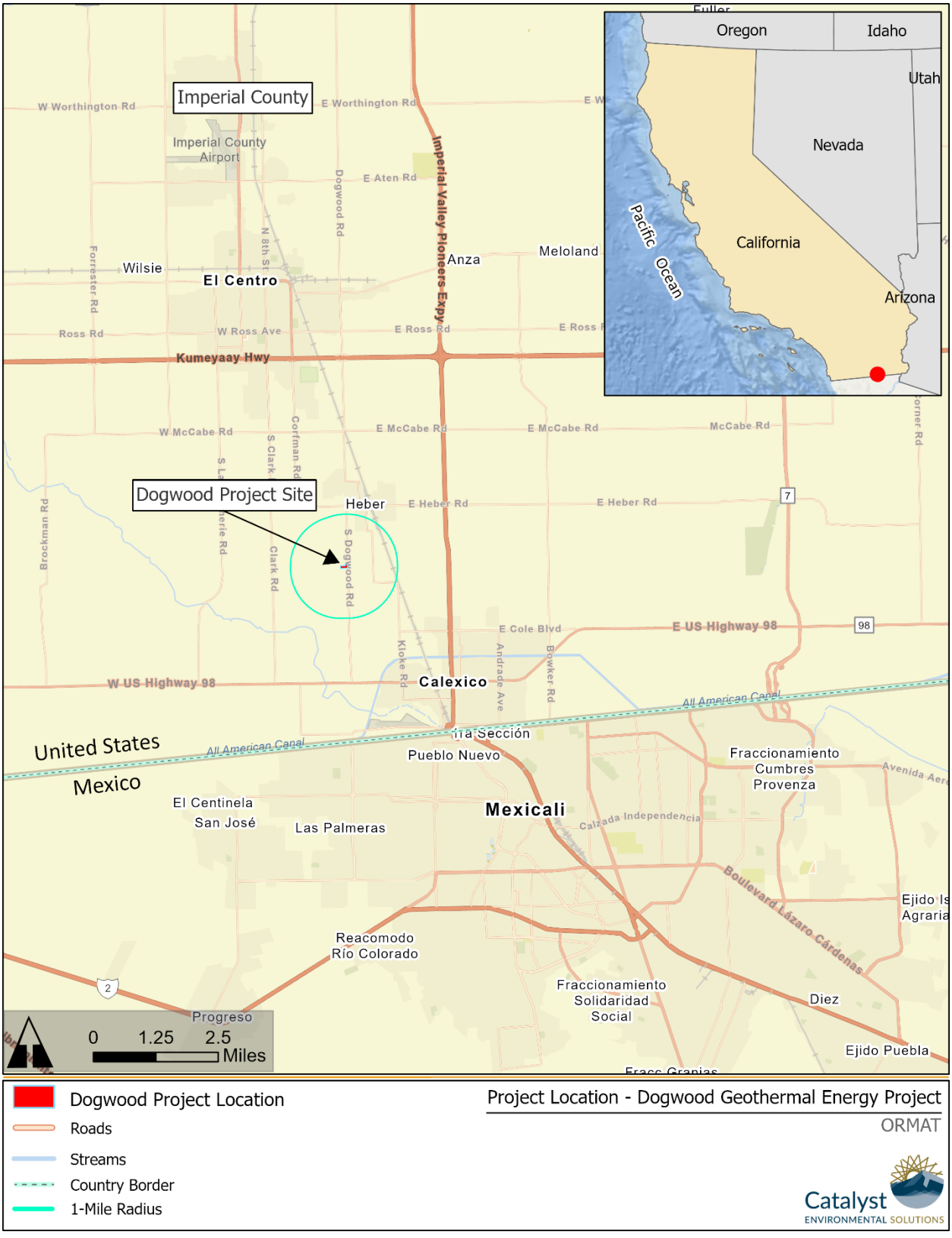

Figure 1. Regional Location Map

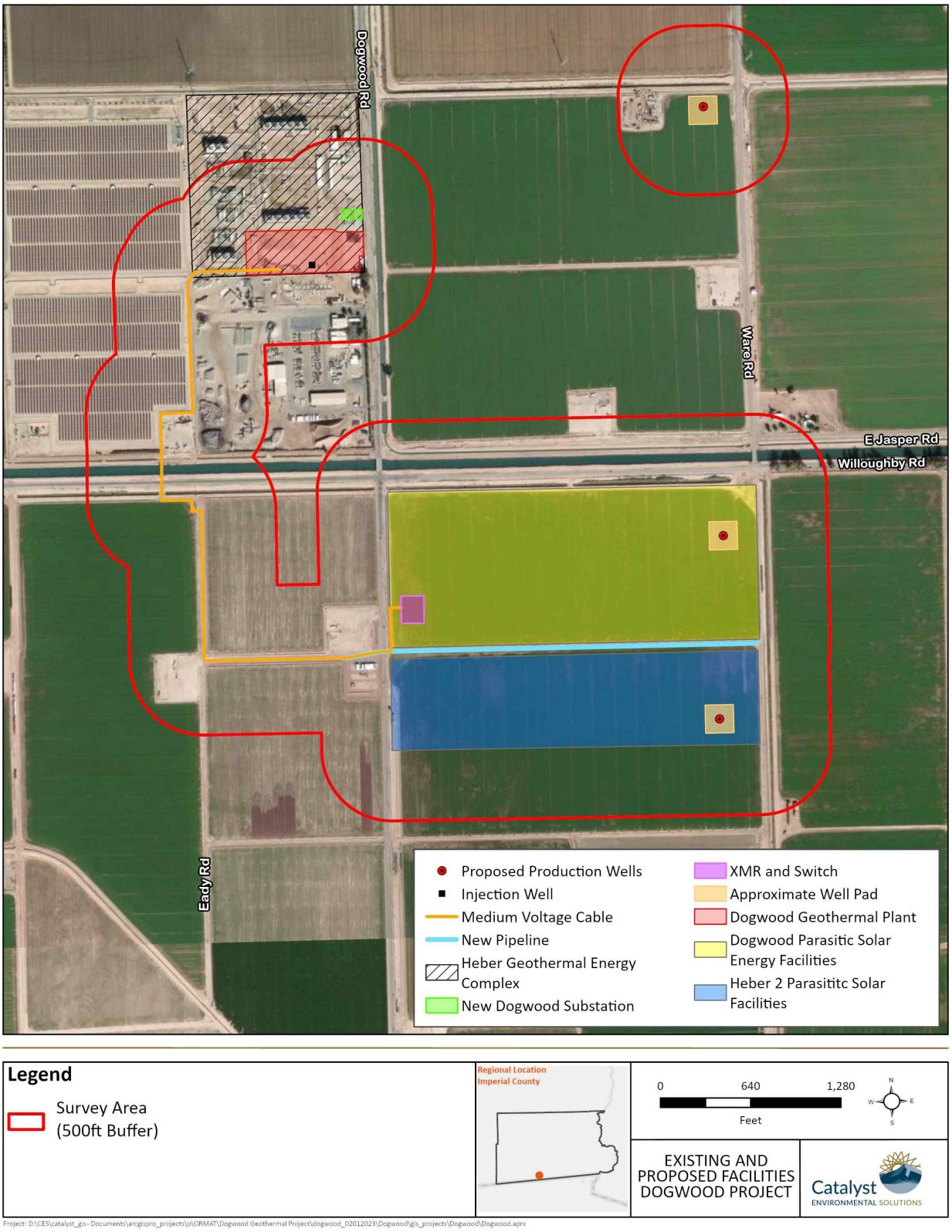

Figure 2. Existing Facilities and Proposed Dogwood Geothermal and Solar Facilities

SECTION 2

Field Methods

2.1 Non-breeding Season Survey Methods (January 28-30, 2025)

A non-breeding season survey was completed on January 28-30, 2025. Surveys were completed by three Catalyst biologists: Hannah Donaghe, MS; Adrian Gonzalez, MS; and Olivia Hogan, BS. Prior to performing surveys, Ms. Donaghe submitted a resume to Lily Mu, a Senior Environmental Scientist with Region 6 of the California Department of Fish and Wildlife (CDFW) in order to receive authorization to complete the surveys. Ms. Mu replied in an email on January 8, 2025, that Ms. Donaghe was approved to complete focused burrowing owl surveys. Ms. Donaghe planned and led the focused burrowing owl surveys, with support from two Catalyst biologists.

Survey methods were consistent with CDFW's Staff Report on Burrowing Owl Mitigation (CDFG 2012). Catalyst also established pre-determined vantage points from which to observe the Project Site with a spotting scope, ensuring maximum visual Project Area coverage. Surveys were completed during peak detection periods. If weather conditions were favorable, surveys were extended slightly outside these peak detection periods. Peak detection period survey windows for the week of surveys were approximately 06:15 am to 10:00 am (morning window) and 3:00 pm to 5:40 pm (afternoon window). A 500-foot survey area buffer was applied to the project footprint.

At each vantage point, all three biologists started by scanning with binoculars in all directions looking for burrowing owls. One biologist set up a spotting scope and used binoculars to observe the survey area from the identified vantage point for approximately an hour. During this time, the two other biologists walked transects along all the berms located adjacent to access roads and canals within the survey area in the vicinity of the vantage point. Biologists stopped periodically to scan the surrounding areas and area in front of them to reduce the potential to flush out any burrowing owls during the survey. Any burrows with openings larger than approximately 4 inches in diameter were mapped and biologists noted any owl sign at the entrance of observed burrows. The approximate location of observed burrowing owls was mapped as well. Data collection was completed in ArcGIS Field Maps.

A Kestrel 3000 weather meter was used to collect temperature and average wind speed data.

2.2 Breeding Season Survey Methods (February 18-20, 2025)

A breeding season survey was completed on February 18-20, 2025. Surveys were completed by three Catalyst biologists: Hannah Donaghe, Adrian Gonzalez, and Olivia Hogan. Ms. Donaghe, previously approved by CDFW staff, planned and led the focused burrowing owl surveys, with support from two Catalyst biologists.

Survey methods were consistent with CDFW's Staff Report on Burrowing Owl Mitigation (CDFG 2012). Peak detection period survey windows for the week of surveys, were approximately 05:55 am to 10:00 am (morning window) and 3:30 pm to 5:55 pm (afternoon window). A 500-foot survey area buffer was applied to the project footprint.

Methods were the same as during the non-breeding season survey. At each vantage point, all three biologists started by scanning with binoculars in all directions looking for burrowing owls. One biologist set up a spotting scope and used binoculars to observe the survey area from the identified vantage point for approximately an hour. During this time, the two other biologists walked transects along all the berms located adjacent to access roads and canals within the survey area in the vicinity of the vantage point. Biologists stopped periodically to scan the surrounding areas and area in front of them to reduce the potential to flush out any burrowing owls during the survey. Any burrows with sign observed near the entrance were mapped. Additionally, any new burrows observed since the previous survey, larger than approximately 4 inches in diameter were mapped. The approximate location of observed burrowing owls was mapped. Data collection was completed in ArcGIS Field Maps.

A Kestrel 3000 weather meter was used to collect temperature and average wind speed data.

SECTION 3

Results

3.1 Non-Breeding Season Survey Conditions

All recorded weather conditions are provided in Table 1.

Table 1: January 2025 Burrowing Owl Survey Times and Weather Conditions during Peak Detection Periods

Date	Survey Times	Temperature (°F)		Average Cloud Cover	Average Wind Speed (mph)		Area Surveyed
		Start	End		Start	End	
1/28/25	1500-1730	69.4	57.6	Partially cloudy, 10-30%	2.8	1.2	Vantage points D4, D3
1/29/25	0625-1015	50.6	65.4	Sparse cloud cover, 2-5%	0.0	2.1	Vantage points D5, D6, D7, and walked along berms in survey area west of Dogwood Rd. down to southern extent of survey area
1/29/25	1455-1718	70.7	65.1	Clear, 0%	1.3	2.2	Vantage point D2
1/30/25	0625-0950	47.2	62.6	Clear, 0%	0.0	0.7	Vantage point D1
1/30/25	1502-1713	71.9	62.2	Clear, 0%	0.9	4.2	Vantage point D8, walked area north of Dogwood geothermal plant west of Dogwood Rd.

3.2 Non-Breeding Season Survey Results

A total of five **(5) burrowing owls** were observed within the survey area during the non-breeding season survey for the Project. Burrowing owls were generally observed at the entrances of burrows located along the berms that line the many canals/ditches, at perch sites or standing near canals/ditches or berms, and access roads which are located throughout the survey area (Figure 3). Three of the burrowing owls were observed along berms that run through the proposed solar field site. One individual was observed near the existing well pad east of Ware Road near the northern extent of the survey area, and one individual was observed along a berm adjacent to alfalfa fields near the existing well pad by vantage point D6.

A total of 17 burrowing owls, including several pairs at burrow entrances, were observed outside the survey area but within the general vicinity. Most of these burrowing owls were observed south of the survey area with one individual observed just north of the survey area north of vantage point D9. Sixteen burrowing owls were observed south of the survey area along the berms adjacent to various canals lining alfalfa fields; which included two pairs and one individual observed at their respective burrow entrances located along Beech Lateral 2 south of the survey area; three pairs and three

individuals observed at burrow entrances along berms in the vicinity of E. Cole Boulevard; and five individuals observed along berms lining alfalfa fields south of the survey area with one of these individuals observed just south of the survey area at the edge of the alfalfa field at a perch location adjacent to an access road.

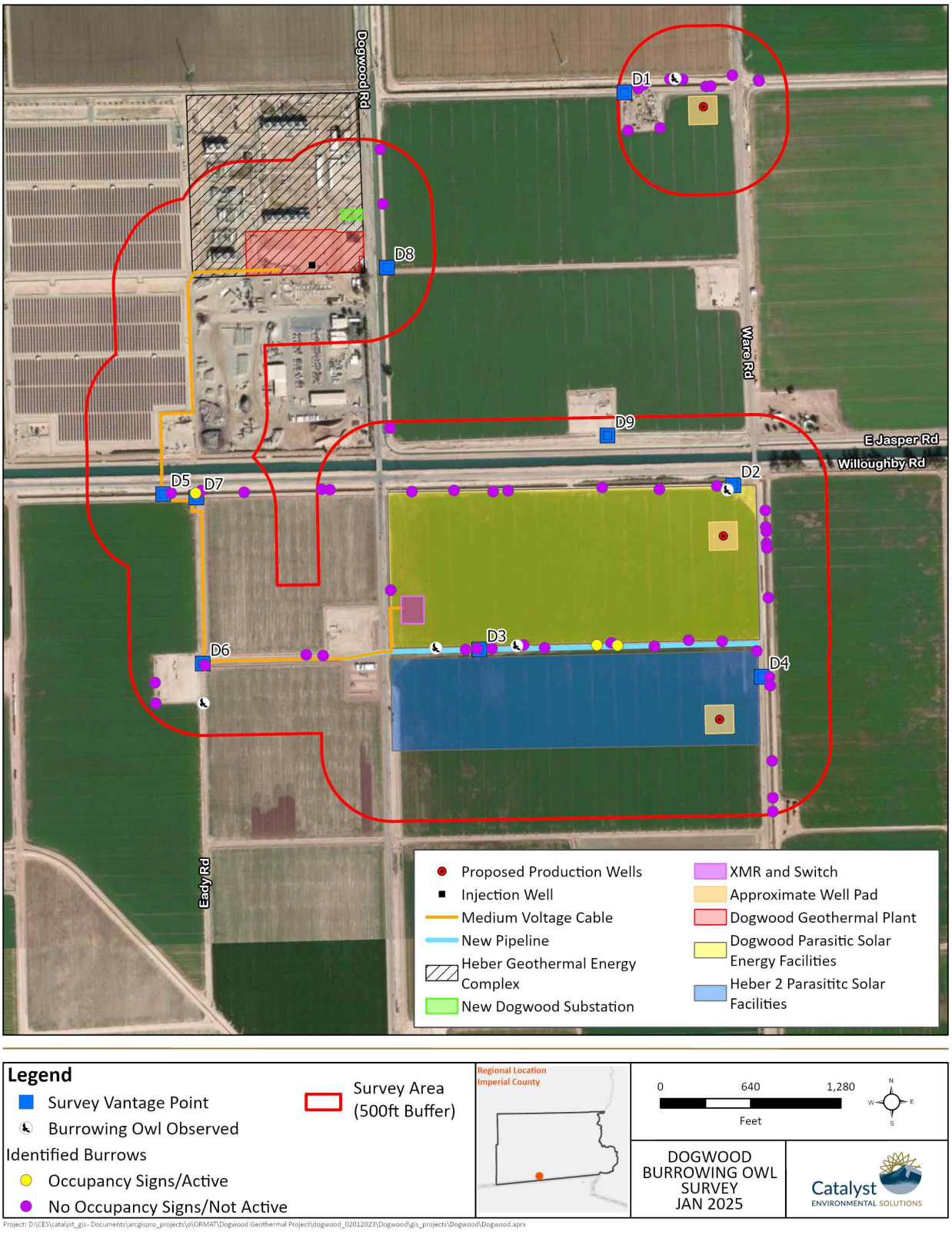

Figure 3. Results of January burrowing owl non-breeding season survey conducted January 28-30, 2025.

3.3 Breeding Season Survey Conditions

All recorded weather conditions are provided in Table 2.

Table 2: February 2025 Burrowing Owl Survey Times and Weather Conditions during Peak Detection Periods

Date	Survey Times	Temperature (°F)		Average Cloud Cover	Average Wind Speed (mph)		Area Surveyed
		Start	End		Start	End	
2/18/25	1515-1745	78.1	68.1	Partially cloudy, 15-20%	2.6	1.6	Vantage points D4, D3
2/19/25	0556-1020	52.3	75.3	Sparse cloud cover, 2-5%	0.7	2.3	Vantage points D5, D6, D7, and walked along berms in survey area west of Dogwood Rd. toward southern extent of survey area
2/19/25	1525-1740	80.3	74.6	Clear, 0%	0.9	1.5	Vantage point D2
2/20/25	0600-0959	53.6	73.6	Partially cloudy, 20%	0.7	1.6	Vantage point D1, walked along canal north of Heber 1 geothermal plant and east of railroad tracks
2/20/25	1516-1740	79.4	72.2	Partially cloudy, 15%	1.5	1.1	Vantage point D8, walked along canal north of Dogwood geothermal plant west of Dogwood Rd.

3.4 Breeding Season Survey Results

A total of **eight (8) burrowing owls** were observed during breeding season surveys. Burrowing owls were generally observed at the entrances of burrows located along the berms that line the many canals/ditches, at perch sites or standing near canals/ditches or berms, and access roads which are located throughout the survey area (Figure 4). Five of the burrowing owls were observed along berms that run through the proposed solar field site, and three individuals were observed near the western extent of the survey area near an existing well pad and just south of Beech Drain along the access road between the canal and alfalfa field.

A total of 16 burrowing owls, including several pairs at burrow entrances, were observed outside the survey area but within the general vicinity, most of which were observed south of the survey area. One individual was observed just south of the survey area near vantage point D6. Six burrowing owls were observed south of the survey area along the berms adjacent to canals south of vantage point D4; two pairs and two individuals were observed at their respective burrow entrances located along Beech Lateral 2 south of the survey area. Seven burrowing owls were observed at burrows along berms in the

vicinity of E. Cole Boulevard; three pairs and one individual owl were observed. Two individuals were observed along berms at the edges of alfalfa fields south of the survey area.

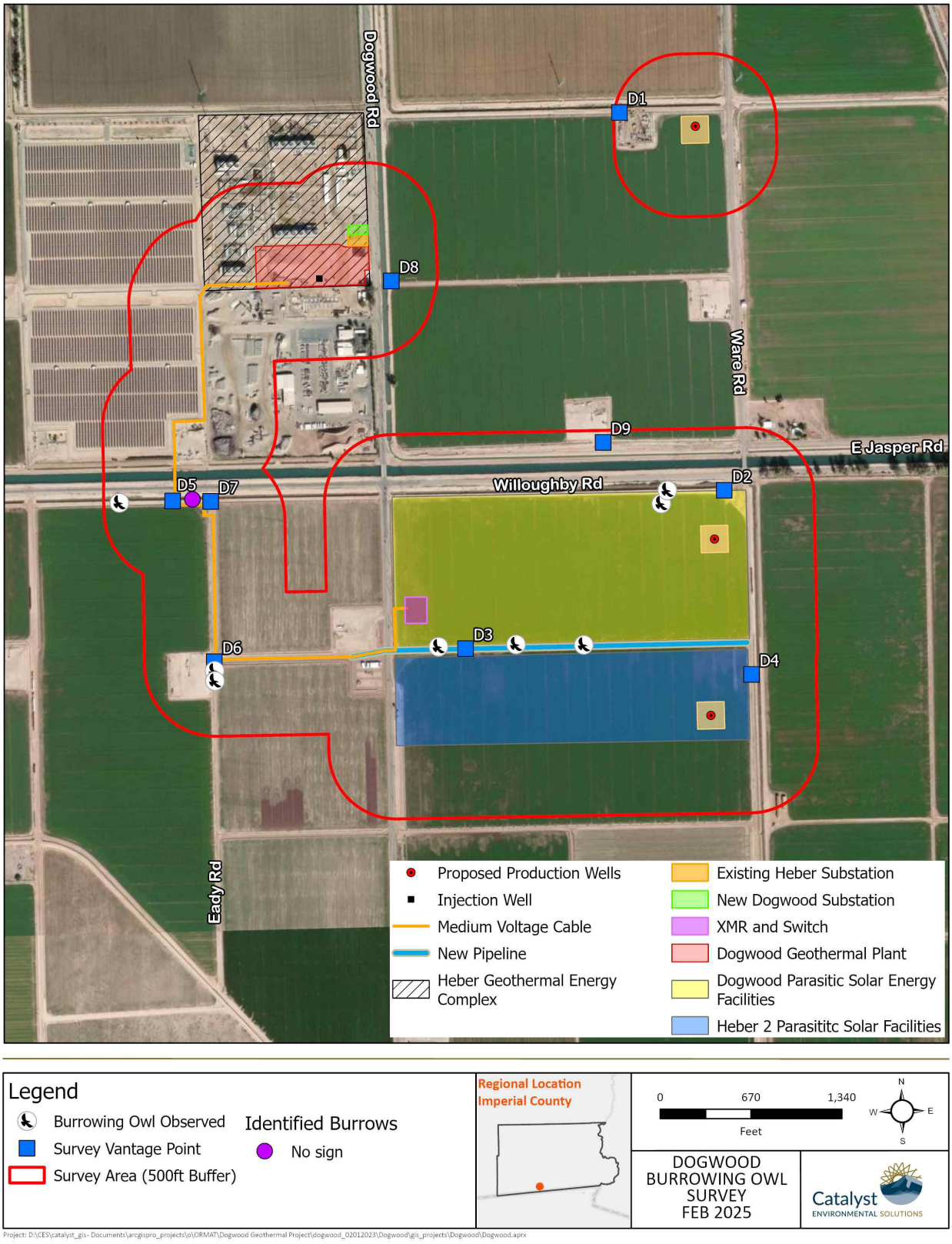

Figure 4. Results of February burrowing owl breeding season survey conducted February 18-20, 2025. Owls were detected everywhere except for the northern survey area near the proposed well.

SECTION 4 Discussion

Catalyst biologists observed five (5) burrowing owls during the non-breeding season and eight (8) burrowing owls during the breeding season survey, within the survey area. The breeding season survey was conducted in mid-February, which is relatively early in the breeding season. Peak breeding season is between April 15 and July 15 as described previously. While the survey was conducted early in the season, the total number of burrowing owls increased between the non-breeding season and breeding season site visits. No breeding pairs of owls were observed within the survey area for the Project; however, several pairs of burrowing owls were observed nearby but outside of the survey area. Within the Project survey area, most of the burrowing owls observed were resting in or next to their burrows. A few owls were seen flying into and out of the fields from the canals and ditches, likely foraging or were potentially flushed away from burrows due to the presence of biologists surveying along the access roads and berms. None of the burrowing owls observed during the survey were visibly marked or banded; therefore, no records of these individuals are available, and their sex is unknown.

Three burrowing owl predators were present on the Project Site during the non-breeding and breeding season surveys, including northern harrier (*Circus hudsonius*), coyote (*Canis latrans*), and feral domestic cats (*Felis catus*). Catalyst biologists documented northern harriers hunting the alfalfa fields during several survey site visits and saw one coyote during one morning survey (2/19/25) roaming through alfalfa fields west and east of Dogwood Road and south of Willoughby Road. Signs of coyote (footprints and scat) were also ubiquitous. Other predators are highly likely to be present in the area as well, including red-tailed hawk (*Buteo jamaicensis*), American crow (*Corvus brachyrhynchos*), and raccoons (*Procyon lotor*). These species are predators of burrowing owls and were observed during the February 2023 Biological Reconnaissance Survey. Other predators that could be present on the Project Site but have not been observed include other species of hawks and falcons, snakes, and American badger (*Taxidea taxus*).

SECTION 5 References

California Department of Fish and Game (CDFG). 2012. Staff Report on Burrowing Owl Mitigation. State of California Natural Resources Agency. 34 pp.

Appendix A Photo Log

Photo 1. Access road north of alfalfa fields, where proposed solar site would be located, and south of Beech Drain. Two burrowing owls observed in this area during the breeding season survey, one near a burrow within a small berm running through the alfalfa field and one near the edge of the access road and the berm just south of Beech Drain (shown in photos 2 and 3 below). Photo taken from vantage point D2, looking west along access road (2/19/25).

Photo 2 (left). Occupied burrow along small berm running through alfalfa field in the vicinity of vantage point D2 (2/19/25).
Photo 3 (right). Burrowing owl observed at burrow located near top of berm between the access road and Beech Drain, located north of the proposed solar field site. Photo taken from vantage point D2 using spotting scope, looking west (2/19/25).

Photo 4. Berm located between concrete v-ditch and access road located between alfalfa fields within proposed solar site, looking east. Three burrowing owls were observed along this berm area during the breeding season survey (see Photo 5) (2/18/25).

Photo 5. One of the burrowing owls observed along the berm adjacent to concrete-lined v-ditch and access road running through alfalfa fields (2/18/25). Several large burrows were observed along this berm.

Photo 6. Berm adjacent to concrete-lined v-ditch and alfalfa field with several burrowing owl observations at burrow entrances during the breeding season survey (see Photos 7 & 8). Photo taken from vantage point D6, looking south along berm (2/19/25).

Photos 7 & 8. Burrowing owls observed near entrances to burrows located along berm adjacent to concrete-lined v-ditch and alfalfa field. Photos taken from spotting scope set up at vantage point D6. Observations made during breeding season survey (2/19/25).

Photo 9. One burrowing owl observed during breeding season survey at a burrow entrance located along the berm between the access road and canal. Photo taken from vantage point D5, looking west (2/19/25).

Photo 10. One burrowing owl observed during the non-breeding season survey, near the burrow along berm located along berm north of the canal and access road adjacent to the alfalfa field. Photo taken from vantage point D1, near the existing well pad, looking northeast across canal toward alfalfa fields (1/30/25).

Photos 11 & 12: Example of a perch site being used by a burrowing owl, observed perched on a hay bale located between alfalfa field and access road, immediately south of the survey area for the proposed solar facilities site. Observation was made during the non-breeding season survey (1/28/25).

Appendix B Surveyor Qualifications

Hannah Donaghe, MS

Master of Science, Earth Systems, Stanford University, 2012

Bachelor of Science, Earth Systems, Stanford University, 2011

Ms. Donaghe is a qualified biologist approved by CDFW to conduct and lead burrowing owl surveys. Ms. Donaghe is a biologist with 12 years of experience working in environmental consulting to support clients with environmental monitoring/planning and compliance. She has an interdisciplinary background in environmental and biological sciences, with a focus in marine ecosystems.

Ms. Donaghe holds a Federal Section 10(a)(1)(A) Recovery Permit for tidewater goby (*Eucyclogobius newberryi*) and California red-legged frog (*Rana draytonii*) and a state Scientific Collecting Permit. She is skilled in the following: sensitive species surveys, biological and environmental monitoring, aquatic studies in support of hydroelectric projects, nesting bird surveys, writing technical reports, California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) documentation, and permitting. She has assisted clients with compliance under the Endangered Species Act, assessed impacts of development and other projects on listed species and their habitat, and developed Environmental Assessments and Biological Assessments.

Ms. Donaghe supports clients in meeting environmental regulatory requirements, identifies and solves issues proactively to maintain work schedules/budgets, and coordinates effectively with clients and regulatory agencies. She has extensive experience working with contractors to protect biological resources by ensuring permit and mitigation measure compliance for construction projects throughout Santa Barbara County. She is also skilled at performing sensitive species surveys/monitoring for the following: tidewater goby, California red-legged frog, western snowy plover (C*haradrius nivosus nivosus*), California least tern (*Sterna antillarum browni*), western burrowing owl (*Athene cunicularia hypugaea*), California tiger salamander (*Ambystoma californiense*), salmonids, and nesting birds. Ms. Donaghe has project management experience and has led various field efforts and environmental monitoring teams. She has experience with data analysis and developing technical reports in support of permit requirements.

Adrian Gonzalez, MS

Bachelor of Science, Fish and Wildlife Sciences, Oregon State University, 2013

Master of Science, Environmental Science, California State University, Monterey Bay, 2022 Ms.

Mr. Gonzalez serves as a Staff Scientist for Catalyst Environmental Solutions, bringing a decade of experience working in biological resources, permitting, and geospatial analysis. His technical background is in fisheries, geospatial analysis, environmental science, and applied ecology. His primary area of practice is geospatial analysis and environmental compliance for biological assessments, critical issues analyses, and energy and infrastructure projects. Mr. Gonzalez has assisted on Federal Biological

Assessments and Environmental Impact Statements, Washington State Environmental Policy Act Environmental Impact Reports, floating offshore wind development, the siting of geothermal energy facilities, lead critical issues analyst, and California Environmental Quality Act Initial Studies and Environmental Impact Reports.

Mr. Gonzalez works closely with staff biologists and manages field data collection and curation using his technical background in geospatial data collection. He participates in field survey monitoring efforts for a variety of species using his four years of fisheries and habitat inventory experience gained while working for the Oregon Department of Fish and Wildlife and the U.S. Fish and Wildlife Service. He has experience with data analysis, coding for biological data, and geospatial data visualizations.

Olivia Hogan

Bachelor of Science, Sustainable Environmental Design, University of California, Davis, 2022

Ms. Hogan is an environmental planner with two years of experience in biological fieldwork and permitting requirements. She has participated in tidewater goby rescue and relocation efforts in Santa Barbara County, working under a permitted biologist. Additionally, she has conducted vegetation surveys/mapping at dry reservoirs, biological monitoring data analysis and recommendations for hydrologic issues related to cyanobacteria, and air quality monitoring related to point-source emission analysis, throughout Southern California. Ms. Hogan also has experience preparing critical issues analyses, which include analyzing potential impacts on biological resources, including special status species.

Ms. Hogan brings experience as an environmental planner under both state (CEQA) and federal (NEPA) jurisdictions and permitting requirements. This work includes biological assessment work, renewable energy development regulatory analysis, and compiling species lists based on IPaC and CNDDB database queries for a broad range of projects in California and the Pacific Northwest.