2024 BURROWING OWL MANAGEMENT AT THE SAN JOSÉ-SANTA CLARA REGIONAL WASTEWATER FACILITY BUFFERLANDS CONSERVATION EASEMENT

SUMMARY REPORT
YEAR 8

Prepared for:
Santa Clara Valley Habitat Agency

Prepared by:
Talon Ecological Research Group under contract with Santa Clara Valley Audubon Society

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SANTA CLARA VALLEY HABITAT AGENCY

TALON ECOLOGICAL RESEARCH GROUP

SCVBA Santa Clara Valley BIRD ALLIANCE

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We also thank the Talon team for their work on the Supplemental Feeding Project, the Juvenile Burrowing Owl Overwintering Project, and the Banding Study at this site.

Grassroots Ecology did a great job establishing native plants on site for the last couple of years, thank you!

Furthermore, we thank Kelly's Stump Removal Service, Inc. for supplying copious amounts of wood chips to suppress noxious weeds and for bobcat-operation aiding artificial burrow installation.

We also thank Long's Custom Disking Inc. for their ongoing vegetation management services.

Thanks to Ada Marquez, Professor at San José State University, for recruiting her students to volunteer at this site and help with invasive, non-native plant species removal.

Thank you all for continued funding and assistance in support of crucial burrowing owl management and research at the San José-Santa Clara Regional Wastewater Facility in Alviso.

INTRODUCTION

Since October 2016, we have monitored and managed a burrowing owl colony at the San José-Santa Clara Regional Wastewater Facility (RWF) in a portion of the "Bufferlands" that has been designated for burrowing owl conservation. In July 2023, the City of San José signed an agreement with the Santa Clara Valley Habitat Agency to put a conservation easement over the 201 acres of open grassland and enroll the area into the Habitat Agency's reserve system (Figure 1). This Reserve is located south and west of the RWF facility in Alviso, north of State Highway 237 and east of Disk Drive (Figure 1). Since 2021, Talon Ecological Research Group (Talon) has partnered with the Santa Clara Valley Audubon Society to conduct the work under a renewed 5-year contract (2021–2026). This report represents a summary of management activities we conducted during Year 8 (January–December 2024). We also provide descriptions of site conditions throughout the year and information for planned activities during Year 9 (January–December 2025).

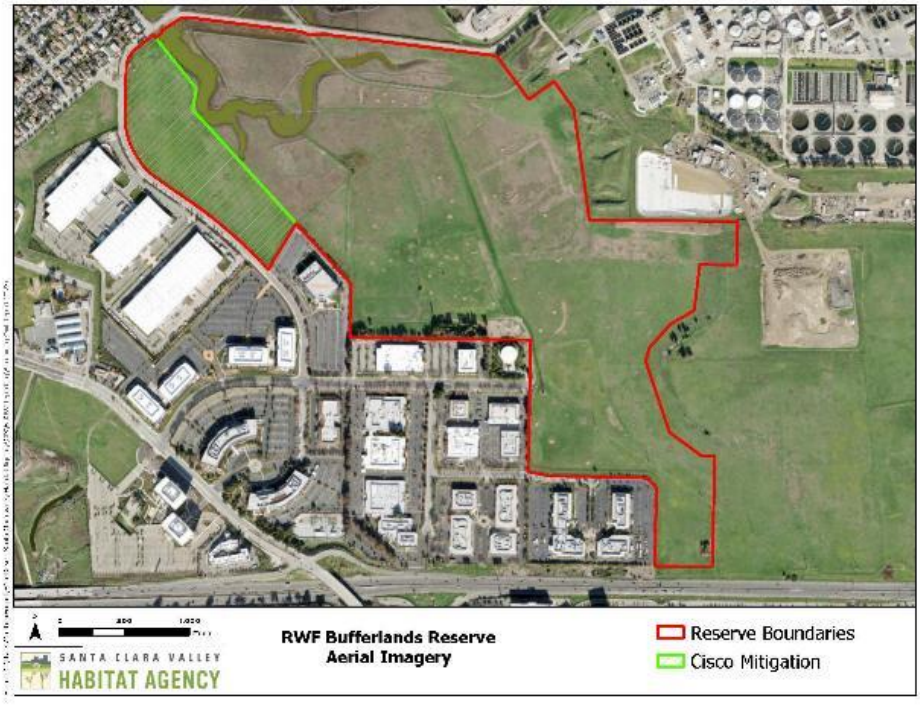

Figure 1. Burrowing owl management area at the San José/Santa Clara Regional Wastewater Facility (RWF) Bufferlands Conservation Easement outlined in red.

MANAGEMENT ACTIVITIES

This site includes regionally important breeding, foraging, and wintering habitat for burrowing owls. As during Year 1−7 of this work, we continued the following activities to enhance long-term viability of the burrowing owl colony within the 201-acre management area:

Monthly Surveys

Talon conducted monthly surveys for burrowing owls, usually starting at 7 am during the summer and 8 am during other times of the year. Surveyors included wildlife biologists Philip Higgins, Sandra Menzel, Ryan Phillips, and Grant Huber. We walked straight-line transects spaced approximately 15 to 20 meters apart, depending on vegetation height and visibility. We scanned all areas for burrowing owl presence and inspected ground squirrel burrows for signs of burrowing owl activity, such as whitewash, regurgitated pellets, feathers, prey remains, decoration, and bedding material. We recorded all burrowing owl observations, noting location, number of individuals, age and sex (if discernible), banding status, band number (if readable), behavior, and type of burrow used (artificial or natural). We also recorded locations of satellite burrows when owls flushed from their original burrows.

Motion-triggered Trail Cameras

In conjunction with an independent Burrowing Owl Banding Study conducted by Talon under contract with the Habitat Agency, motion-triggered trail cameras were installed at each active nest burrow. The resulting photographs (e.g., Figure 2) helped determine breeding phenology and provided crucial information for the banding effort. The images revealed from which burrow owlets had emerged, brood size, and approximate age of owlets. The images also aided in determining the banding status and identification of previously banded adults.

Figure 2. Motion-triggered trail cameras installed at nest burrows provided valuable information during the breeding season.

Juvenile Burrowing Owl Overwintering and Release

We soft-released eight breeding pairs and one single female at RWF as part of the Juvenile Burrowing Owl Overwintering Project in 2024. The Habitat Agency funded this independent project and Talon implemented the work. In March, we placed one pair each into separate hacking enclosures (Figures 3). These soft-released pairs produced a total of 38 offspring.

Figure 3. Construction of hacking enclosures for the soft-release of breeding pairs of burrowing owls as part of the Juvenile Burrowing Owl Overwintering Project.

Nest Burrow Surveys

During monthly surveys at the height of the breeding season (April–July), we conducted focused nest burrow surveys, observing each known nest burrow for approximately 20–30 minutes through a scope. We also opened accessible artificial nest chambers and checked for eggs and/or nestlings. We determined nesting phenology at each burrow, the minimum number of young per pair, and the banding status/band number of the adults. This year, we observed a total of 24 adults forming 11 pairs during the breeding season (Figure 4). Eight pairs were part of the Juvenile Burrowing Owl Overwintering Project as described above. Seven of the overwintered pairs successfully produced a total of 38 young. Three additional wild pair successfully produced 13 young. We observed the first young inside a nest chamber in May.

Figure 4. Burrowing owl nest burrow location (green dots) and soft-release enclosure (pink dots) locations in the burrowing owl management area of the Bufferlands at the San José-Santa Clara Regional Wastewater Facility in 2024.

Supplemental Feeding

In 2017, Talon initiated an independent Supplemental Feeding Study funded by the Habitat Agency for nesting burrowing owls at Shoreline Park and Moffett Field. In 2018, Talon included RWF in the study and fed six out of a total of nine pairs and their offspring at this site. Each year since 2019, Talon supplementally fed adults and their offspring at all active nest burrows at RWF. Detailed information on this work is contained in the 2024 Santa Clara Valley Habitat Plan Burrowing Owl Management Report (Talon Ecological Research Group, unpublished report January 2025).

Vegetation Management

Long's Custom Disking Inc. conducted a first mowing to a height of approximately 6 inches starting on 19 April 2024 (Figure 5) and continuing into May to complete the work. A second mowing was conducted in October 2024 (Figure 6). We met with the contractor prior to each mowing event to discuss areas of concern (exclusion areas) for burrowing owls and directed/monitored mowing around nest burrows/enclosures in April and May.

Figure 5. Area proposed for mowing in April 2024 outlined in red. Blue dots mark locations of hacking enclosures; purple triangles mark nest burrow locations of wild burrowing owls; outlined in yellow are areas of ponding to be avoided.

Figure 6. Area proposed for mowing in October 2024 outlined in red. Some areas were excluded from mowing for the protection of native plant species, including Congdon's tarplant.

Herbicides were applied on mounds and berms to control invasive weed species and grasses. Stinkweed, mustard, and pepperweed were especially pervasive in some areas this year. Pepperweed is a perennial plant species, and it reached the edge of an area containing mounds with artificial burrows and with burrows that have been occupied by burrowing owls in the past. Mowing does not control the spread of this species.

We frequently used trimmer mowers and weed trimmers to manage weedy vegetation on mounds and berms (Figure 7). We also used hand tools to remove smaller patches of weedy vegetation and cleared burrow entrances by hand pulling weeds.

Figure 7. Using trimmer mowers and weed trimmers to manage weedy vegetation on mounds and berms.

To contain the spread of yellow starthistle, we continued collaboration with a local tree removal company that delivered wood chips to the site free of charge. Kelly's Stump Removal, Inc. (https://www.kellysstumpremoval.com), based in Sunnyvale, delivered numerous loads of wood chips, and spread the piles with a bobcat (Figure 8) covering a large area that was previously overgrown with starthistle. This management technique has been very successful in reducing the spread of yellow starthistle in areas that we targeted.

We have detected an abundance of burrowing owl prey species, such as earwigs, beetles, Jerusalem crickets, and lizards inhabiting the area covered with wood chips. Burrowing owls have been observed foraging within this area, along with various songbirds, great egrets, and great blue herons. All these species appear to benefit from the microhabitat created by the wood chips.

Figure 8. Kelly's Stump Removal, Inc delivered numerous truckloads of mulch and spread the material with a bobcat covering a large area that was previously overgrown with yellow starthistle. (Photograph taken in November 2020)

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Vegetation Management Volunteer Engagement

We organized several volunteer workdays during Year 8 (Figure 9). Volunteers were students from San José State University. With the help of volunteers, we cleared vegetation from overgrown mounds and berms.

Figure 9. Volunteers helped remove invasive, non-native vegetation. (Photograph taken in September 2024)

Native Plant Areas

During Year 1 of this contract, we planted a small area with native plants along the fence line just north of the gate at Nortech Parkway. We continued watering and weeding established plants. Watering was challenging because there is no water source on site. We watered the plants solely by carrying water containers into the site. We continued to add plants and also seeded different species including three native grasses (purple needlegrass, California brome and red fescue), California poppies, hookers evening primrose, annual sunflower, slender sunflower, and Bolanders sunflower.

Starting in 2021, we collaborated with Grassroots Ecology (grassrootsecology.org) to establish additional native plant areas. They seeded/planted test plots with a wide variety of species and continued this work each year since. This planting area provides a diversity of low-growing native plants. While these low-growing plants do not provide perching opportunities for aerial predators of burrowing owls, they provide cover and food for prime burrowing owl prey species, including rodents and invertebrates. This project has been very successful, and we have observed a diversity of burrowing owl prey species within the newly established native plant areas. We have also observed egrets on numerous occasions foraging in this area and during nighttime burrowing owl banding session in 2023 and 2024, we observed a burrowing owl actively foraging inside this area.

Habitat Enhancement for Prey Population

At four locations, we stacked up 2−3 wood pallets and filled the hollow spaces with pinecones, leaf litter, bark, and twigs to create habitat for burrowing owl prey species. Additionally, we added about 10 small piles consisting of larger pieces of bark around the native plant area. We have observed numerous lizards and invertebrates under the pieces of bark.

Artificial Burrow Installation

In March 2024, we installed two artificial burrow complexes on existing larger berms. Each artificial burrow was installed by hand and consisted of an irrigation valve box for a nesting chamber and a 6-foot-long piece of 6-inch diameter irrigation pipe. Both of these new artificial burrows have been occupied since installation.

Bird Species Diversity – Other Sensitive Species

The RWF Bufferlands provide nesting habitat for other grassland bird species such as golden eagle (*Aquila chrysaetos*), white-tailed kite (*Elanus leucurus*), and American kestrel (*Falco sparverius*), as well as foraging habitat for northern harrier (*Circus cyaneus*) and loggerhead shrike (*Lanius ludovicianus*). Of these species, the harrier and shrike are California Species of Special Concern (CSSC) while the golden eagle and white-tailed kite are considered Fully Protected by the California Department of Fish and Wildlife. During the 2022 breeding season, we also observed tricolored blackbirds which is also a CSSC.

We did not observe golden eagle nesting activity in 2024. Each year during 2018−2023, a pair of golden eagles attempted to nest in a palm tree adjacent to the management area (Higgins and Menzel. 2023. Golden Eagles Nesting in an Urban Setting in a Canary Island Date Palm Tree, San José, California. *Journal of Raptor Research 57*: *114-115*). While the pair did not produce offspring in 2022 and 2023, they successfully fledged young 2019−2021. The palm tree is

located in the Bufferlands northeast of the Nortech gate, approximately 30 feet outside of the management area. Generally, palm trees are unusual substrates for golden eagle nests.

Other raptors that have successively reproduced on site include, red-tailed hawks (*Buteo jamaicensis*, American kestrel, and barn owls (*Tyto alba*).

RESULTS

Breeding Season Results

Data for this colony were collected opportunistically from 1996–2013 and then more consistently since 2014. The number of adult owls observed during the breeding season has fluctuated between a low of two adults in 2012 and a high of 35−37 adults in 2017 (Figure 10).

In 2024, ten of eleven pairs were successful and produced a total of 51 young (Table 1). Productivity was 4.6 young/pair which was higher than the average productivity of 3.6 young/pair (2015−2024) at this breeding site. We soft-released eight of these pairs and a single female as part of the Juvenile Overwintering Project in March. Seven of the eight pairs successfully produced 2−7 young each, for a total of 38 young.

In 2023, five pairs were successful and produced a total of 23 young (Table 1). Four of these pairs were released as part of the Juvenile Burrowing Owl Overwintering Project. Productivity was 4.6 young/pair which was higher than the average productivity of 3.5 young/pair (2015−2023) at this breeding site. In 2022, six pairs were successful and produced a total of 36 young (Table 1). Five of these pairs were released as part of the Juvenile Burrowing Owl Overwintering Project. In 2021, two of six pairs were successful and produced a total of nine young. Of the six pairs, three pairs were released as part of the Juvenile Overwintering project.

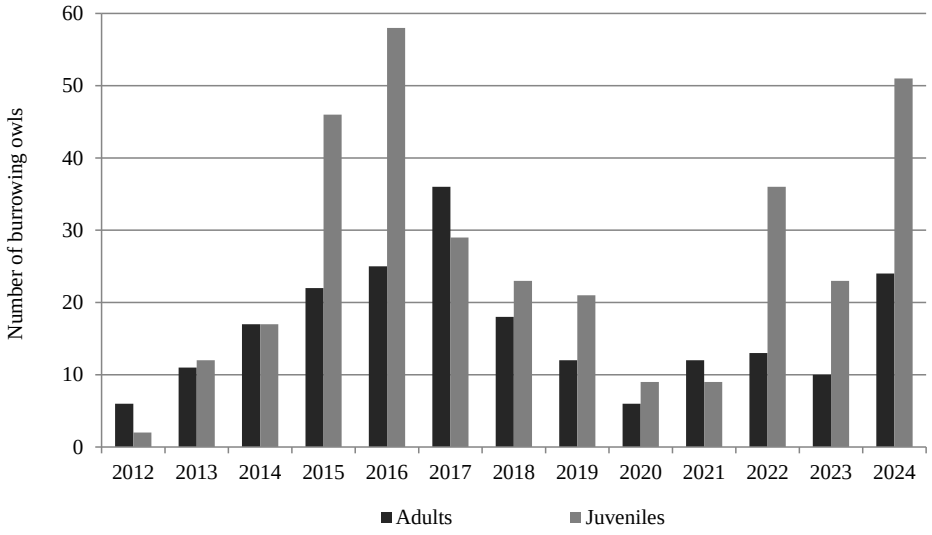

Figure 10. Annual counts of the number of nesting burrowing owls and their young in the burrowing owl management area of the Bufferlands at the San José-Santa Clara Regional Wastewater Facility (RWF), 2012–2024.

Table 1. Annual breeding burrowing owl population data, 2012–2024, for the burrowing owl management area of the Bufferlands at the San José-Santa Clara Regional Wastewater Facility (RWF). In parentheses are the number of adult owls released as part of the Juvenile Burrowing Owl Overwintering Project, 2020−2024.

Year	# Adults	# Pairs	# Successful pairs	Breeding success (%)	# Young	Avg. # young/ successful pair	Avg. # young/all pairs
2012	6	3	2	67	3	1.5	1
2013	10−12	5−6	4	80	12	3	2.4
2014	16−18	8−9	5	63	17	3.5	2.1
2015	22−23	10	9	90	46	5.1	4.6
2016	25−26	13	12	92	58	4.8	4.5
2017	35−37	17	9	53	29	3.2	1.7
2018	18	9	7	78	22	3.1	2.4
2019	12	5	4	80	21	5.3	4.2
2020	8 (3)	3	2	67	9	4.5	3.0
2021	12 (9)	6	2	33	9	4.5	1.5
2022	13 (11)	7	6	86	36	6	5.1
2023	10 (8)	5	5	100	23	4.6	4.6
2024	24 (17)	11	10	91	51	5.1	4.6

Monthly Survey Results

The number of owls we observed during monthly surveys fluctuated throughout the year. This natural variability was similar to that observed at adjacent colonies. An unusual difference in this colony compared to neighboring colonies is the decrease in the number of burrowing owls during winter. The number of burrowing owls at both Shoreline and Moffett Field increase during the winter (they usual peak during November−January) when migratory burrowing owls arrive on site. In contrast, the colony at RWF usually does not experience a major influx of migratory owls. The number of individuals typically decreases each winter, then increases again as the breeding season approaches (Figure 11). After a few years of very few owls on site each winter, we observed a consistent number of resident burrowing owls through fall and winter of 2024 (Figure 11), and we also observed several migrant burrowing owls. We surmise that the presence of burrowing owls was due to rigorous vegetation management, maintaining the vegetation around burrows short, and continuing supplemental feeding year-round for owls released as part of the Juvenile Overwintering Project.

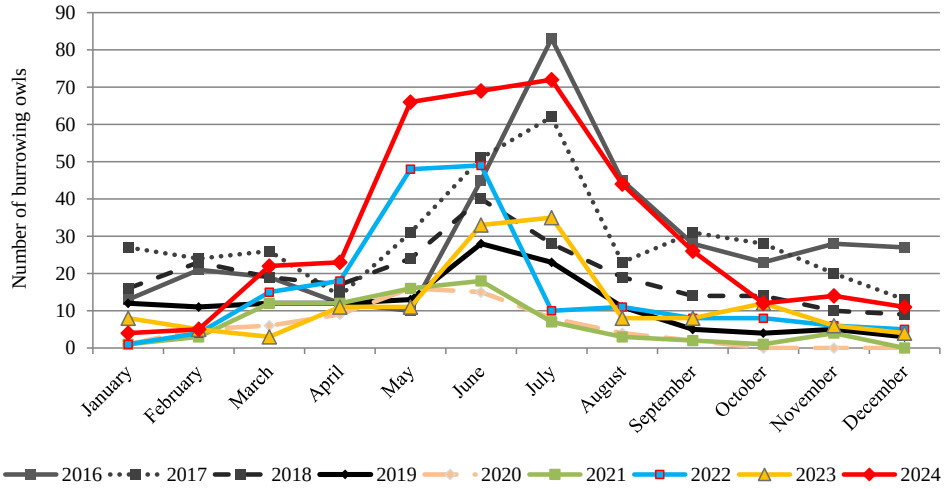

Figure 11. Counts of the total number of burrowing owls (adults and juveniles) observed each month at the San José-Santa Clara Regional Wastewater Facility Bufferlands management area, 2016–2024.

Burrowing Owl Fatalities

During Year 8, we found the remains of a total of eight burrowing owls throughout the year. While the cause of these fatalities was unknown, the majority was likely predated by a mammal based on feather extraction and markings on the quills. The remains of others appeared to have plucked feathers rather than sheared off feathers indicating potential raptor predation. We did not find intact carcasses, only feathers and some bones.

SITE CONDITIONS

Flooding

Similar to 2023, extensive flooding occurred in the first quarter of 2024. High precipitation amounts resulted in approximately 40−50% of the Reserve being flooded in February and March. Flooding reduced roosting, foraging, and breeding habitat for burrowing owls. We found some dead ground squirrels as a result of burrow inundation. Some of the artificial burrows for the soft-release of burrowing owl pairs as part of the Juvenile Overwintering Project were flooded early in the breeding season. We installed alternative above-ground burrows inside each of the enclosures.

Native Vegetation

As a result of the flooding in 2024, some native plant species thrived once the site dried up in late March. Native species that were abundant this year included *Dowingia* spp., a typical vernal pool species, (Figure 12), Congdon's tarplant, saltgrass, and alkali heath.

Figure 12. As a result of flooding in 2024, *Dowingia* spp. thrived in some areas in the bufferlands.

California Ground Squirrel Distribution and Abundance

Extensive flooding resulted in inundated California ground squirrel burrows from January until March 2024. Ground squirrels drowned and/or died of hypothermia. For the rest of the year, ground squirrels were patchily distributed throughout the management area, with large areas devoid of ground squirrel activity/burrows adjacent to areas where squirrels were abundant. Our general observation was that abundance was about the same as last year, although we did not conduct a formal assessment or count. Increasing abundance and density of ground squirrels through active management would be beneficial for burrowing owls in certain areas of the site. Ground squirrels usually experience higher mortality rates in the low-lying areas during wet years with higher survival rates in the upland areas. Installation of additional upland areas would help alleviate this problem; such upland areas would also be beneficial to burrowing owls.

Predator Abundance

We have observed a variety of burrowing owl predators in the management area, including red-tailed hawks, golden eagles, cats, striped skunks, and coyotes (Table 2). With increasing development around the management area, we are anticipating an increase in predation events, as described in the section *Surrounding Development* below. We observed up to three pairs of red-tailed hawks nesting at or within sight of the management area. Until last year, a pair of nesting golden eagles was on site for six years in a row.

Table 2. Predatory species of burrowing owls observed during monthly surveys, January−December 2024.

Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Golden eagle				1								
Red-tailed hawk	1	2	1	1	1	2	2	1	3		4	3
Barn owl										1		
Great-horned owl										1		
Cooper's hawk		1										
American crow		4									4	3
Common raven												4
Coyote	1							1	1	1		
Striped skunk	1	1							1			
Feral cat		1					1	1	1	4	1	3
Merlin		1										

Prey Abundance

The abundance of prey items for burrowing owls at this site is unknown. Castings show that owls mainly feed on invertebrates, including earwigs, grasshoppers, and beetles. Brush and rock piles were installed to provide microhabitats for prey species and some areas of the site were left un-mowed to provide suitable habitat for prey species that prefer taller vegetation. Areas around the slough are never mowed and the area along the eastern side of the site from the railway tracks to the overflow basin is also left unmowed. These unmowed areas provide ideal conditions for rodent species like California voles and western harvest mice. In addition, the new native plant areas will provide increasingly beneficial habitat for prey species as the plants get more and more established.

Surrounding Development and Anticoagulant Rodenticides

In 2017, open space west of the management area was developed. Large building complexes now stand west of Disk Drive adjacent to the Cisco site, as well as west of North First Street. Additional construction is proposed west of Coyote Creek at the former Cilker Orchard. These developments diminish adjacent burrowing owl foraging habitat. The tall buildings and light posts west of the Cisco site provide perches for raptors that prey on burrowing owls, such as red-tailed hawks and golden eagles, regularly observed at this location. Additionally, trees were planted along the buildings that offer additional perches for raptors. These developments may also attract mammalian predators including feral cats, raccoons, opossums, and rats. Furthermore, the destruction of the adjacent habitat pushes more predatory wildlife species, such as coyotes and large raptors, onto the Bufferlands. More species on this island of grassland habitat will thus compete for limited resources, including prey items such as small rodents.

Use of anticoagulant rodenticides in the neighboring urbanized areas is of concern to burrowing owl survival. We saw numerous bait boxes at buildings along Nortech Drive containing 0.005% Bromadiolone, a potent second-generation anticoagulant rodenticide, 4-hydroxycoumarin derivative and vitamin K antagonist, often called a "super-warfarin" for its added potency and tendency to accumulate in the liver of the poisoned organism. Such rodenticides can cause secondary poisoning. During the 2018 breeding season, two burrowing owl pairs closest to the new developments failed to produce fledglings. One female was predated by a red-tailed hawk at the nest burrow, the cause for the other pair's failure is unclear. In 2019, six nestlings were orphaned at the same nest location; the fate of their parents was unknown. Fortunately, we were able to capture all six orphans and transfer them to the Wildlife Care Center at the Peninsula Humane Society in Burlingame where they were cared for as part of the Juvenile Burrowing Owl Overwintering Project. The Cisco site has not been occupied by breeding burrowing owls in 2020−2024.

LAND USE AND OTHER DISTURBANCES

Damaged fencing along Highway 237

In April, we noticed damaged fencing along the highway, likely due to a vehicle accident. We informed City staff and the fence was repaired right away.

San Francisco Bay Bird Observatory site access

When we arrived at the Nortech gate on 15 May, we noticed an SFBBO truck on the side of the road and another vehicle parked behind it. We observed three people at the northern end of the site near the railway tracks. We were not notified that SFBBO staff would access the site and were concerned that, with the emergence of burrowing owl nestlings at that time, people walking through the site could flush owls from their burrows and increase the risk for predation. City staff informed SFBBO that they need to ask for permission before accessing the burrowing owl reserve to prevent disturbance. SFBBO staff were conducting seed collection which should require an escort from Talon if this activity needs to continue in the future.

Independence Day Fireworks

During our monthly survey of the Cisco site in July 2024, we found fireworks debris in several locations, most likely left over from July 4th celebrations. We observed two large areas where a grass fire burned the vegetation (Figure 13). One approximately 2-acre burn scar was at the Cisco site and another approximately 2-acre burn scar was north of the railroad tracks. While we have found fireworks debris and small burned patches most years after Independence Day, we have never seen large areas burnt before like this year.

Figure 13. Burn scar likely from grassfire caused by fireworks on Independence Day. Photograph taken on 6 July 2024.

Silicon Valley Power site access

When we conducted our monthly burrowing owl survey on 18 October, a staff member from Silicon Valley Power arrived at the Nortech gate. He wanted to conduct a survey of the electrical pylons, and we asked him to stay beneath the pylons as there were burrowing owls within 50 feet of two of the pylons. He said he was aware that burrowing owls were on site but was not informed of the exact locations. In the end he decided to cancel the site visit. He asked if we could provide maps of the owl locations on a regular basis and, going forward, Silicon Valley Power now receives the monthly survey report.

Planned LS Power substation

During our survey in August, we noticed that the large soil piles adjacent to the northwest section of the reserve had been mowed. This was the first time this area was mowed since we started regular surveys in 2016. After the mowing, we observed burrowing owls foraging and roosting in this area. The area has been scoped for the construction of a small substation and on a couple of occasions, we had to divert contractor access from the Nortech gate to the project site and redirect access through the wastewater facility instead.

The application materials for the LS Power Substation and Transmission Line Project are available online (https://ia.cpuc.ca.gov/environment/info/esa/psb/index.html). Start of construction is anticipated in 2026. Leaving the area unmowed prior to construction will decrease the likelihood of burrowing owls moving into this area.

Water leak

During November 2024, we noticed that an area with ponding water had expanded significantly and notified City staff. City staff investigated the source of the leak and found a recycled water pipe had broken. Water was shut off in December and the water receded. Repair of the pipe was scheduled for January 2025.

City Contractor site access

During the survey on 7 December 2024, contractors for the City were driving two dump trucks on top of the berm that is adjacent to the basin towards other large vehicles already on site (Figure 14). The vehicles drove approximately 40 feet from a burrowing owl that was standing at a burrow entrance and flushed the owl. The contractors were pruning trees/shrubs to the east of the burrowing owl reserve area and then driving through the site to dump the brush near the railroad tracks. We spoke with one of the workers and also notified City staff. City staff notified the contractors to refrain from driving through this area in the future. Big trucks could potentially collapse burrows and inadvertently kill burrowing owls inside the burrow. Also, flushing owls from their burrow increases the chances for predation.

Figure 14. In December 2024, contractors for the City drove through the burrowing owl reserve and conducted vegetation management along the fence line.

Draft EIR for 237 Industrial Center - File Nos. C15-054 and SP 16-053
The approximately 64.5-acre proposed project site west of Coyote Creek at the former Cilker Orchard is currently primarily fallow farmland with a few structures. According to the City of San José's website (https://www.sanJose ca.gov/your-government/departments/planning-building-code-enforcement/planning-division/environmental-planning/environmental-review/completed-eirs/237-industrial-center), the project includes two development options: "Option 1 proposes approximately 1.2 million square feet of light industrial development and Option 2 proposes a 436,880 square foot data center with a PG&E substation to provide the electrical needs for the data center on approximately 26.5 acres of the site and approximately 728,000 square feet of light industrial development."

The Draft EIR (https://www.sanJoseca.gov/home/showpublisheddocument?id=20857) shows on *Figure 2.0-4 Off-Site Utilities Improvements* (Figure 15) potential ground disturbance within the management area from the terminus of Nortech Parkway westward. This disturbance could have significant impacts to nesting and/or wintering burrowing owls.

In August 2022, Elena Antonakos, the Environmental Program Manager with Microsoft overseeing the mitigation and monitoring requirements of the Environmental Impact Report for this project requested coordination with their H.T. Harvey biologist. They were requesting to complete a preliminary burrowing owl habitat survey, wetland/Congdon tarplant delineation, and a salt marsh harvest mouse habitat survey that month. We accommodated their survey request.

On 15 September 2023, the U.S. Army Corps of Engineers asked for site access to verify the wetland delineation that H.T. Harvey performed for the utility installation. Talon provided access and escort to the wetland site thus avoiding disturbance to burrowing owls.

Figure 15. Off-Site Utilities Improvements as shown in Draft EIR for 237 Industrial Center (File Numbers C15-054 and SP 16-053) could significantly impact burrowing owls at the San José-Santa Clara Regional Wastewater Facility Bufferlands management area.

SURVEYS AT RWF EAST

On 22 August 2024, we conducted a survey of the eastern portion of the bufferlands and detected one burrowing owl (Figure 16). Vegetation was too tall and unsuitable for burrowing owls during the earlier part of the breeding season until mowing occurred in later July/August.

Tracking data of three burrowing owls outfitted with tracking units showed that one of the owls foraged and roosted extensively in the eastern portion of the bufferlands in August and September (Figure 17).

We plan on surveying the site in 2025 if and when the vegetation is suitable for burrowing owls.

Figure 16. Location of a burrowing owl detected during a survey of the eastern portion of the bufferlands on 22 August 2024.

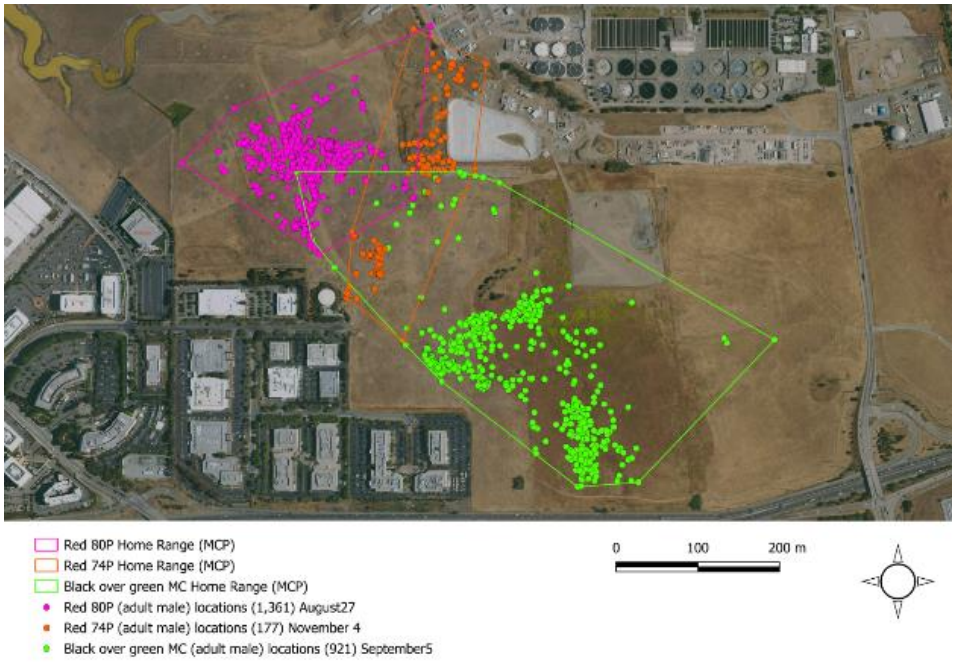

Figure 17. Home range (MCP) and GPS fixes of three tracked burrowing owls obtained with an Ecotone tracking unit in 2024.

PLANNED MANAGEMENT ACTIVITIES FOR YEAR 9

Vegetation Management

We will continue with vegetation management, including tractor mowing, weed whacking, hand pulling, mulching, and herbicide application.

Tractor Mowing

We will create maps outlining areas for mowing. Long's will mow the flat areas and larger berms at least twice during Year 9, once early in the breeding season (weather permitting in February/March 2025), and once later in the breeding season (May/June 2025).

Soil Mound Management

We will use various means to manage vegetation on the mounds. We will organize volunteer workdays to help us hand-pull weedy vegetation at unoccupied mounds. We will also conduct targeted vegetation management on our own. At occupied mounds, only biologists will either weed whack or hand pull vegetation as needed. After we pull or cut vegetation, we will ensure that burrow entrances are free of debris.

Herbicide Application

We will create a map outlining mounds, berms, and artificial burrow locations that are flush in the ground to be sprayed with herbicides. Weather-permitting, herbicide application will occur in February/March 2025. We are hoping for the assistance from SCVHA to control perennial pepperweed during 2025 to limit the spread of this highly invasive species.

Brush and Rock Piles

The addition of several more rock and brush piles would potentially enhance prey abundance on site (personal observation at other sites). The rock and brush piles should be placed along the fence line, as shown in Figure 18. These areas are not suitable for nesting burrowing owls due to the proximity to tall trees and fences that provide prime perching areas for avian predators. Instead, these areas would be ideal locations for enhancing the prey base of burrowing owls and creating a buffer between buildings and the managed grasslands.

Figure 18. Proposed locations of additional rock and brush piles.

Table 3. Summary and approximate timing of burrowing owl management priorities for Year 9 (January–December 2025).

Management task	Timing
Tractor mowing	1st mowing in February/March, 2nd mowing May/June (timing will be based on vegetative growth and site conditions)
Weed whacking/hand pulling vegetation on soil mounds	Prior to the 2025 burrowing owl breeding season and ongoing as necessary
Herbicide application	February/March 2025
Brush and rock pile installation	On-going/as material becomes available
Plant native vegetation islands	During rainy season

OTHER INDEPENDENT PROJECTS AT RWF

The projects listed below are all independent projects conducted at the RWF Bufferlands, funded by the Habitat Agency.

Juvenile Burrowing Owl Overwintering Project

As part of the Juvenile Burrowing Owl Overwintering Project, Talon installed eight hacking enclosures starting in September 2024 in preparation for the soft-release of burrowing owls in February/March 2025. All eight hacking enclosures are ready for the release of burrowing owls over the coming months.

Supplemental Feeding Project

In 2025, Talon will continue to supplementally feed all burrowing owls on site during the breeding season.

Banding Study

During the 2025 breeding season, Talon will continue the banding study which includes identifying previously banded adults, and banding juveniles and unbanded adult burrowing owls at this site.

Tracking Study

Starting in June 2024, we outfitted three burrowing owls with an Ecotone tracking unit and monitored their movements (Figure 16). We will continue this study in 2025 as this work will help reveal:

- Movement ecology of soft-released burrowing owl to discern additional conservation actions
- Define home range sizes, distance moved to forage
- Dispersal distance and site fidelity
- Survivorship
- Interactions with neighboring owls
- Identify any potential threats
- Determine best tracking techniques and types of transmitters

Pollinator/Prey Plants Project

Grassroots Ecology, under Talon's supervision, will maintain areas previously planted with native plants. The native plants are intended to provide cover and an additional food source to attract and increase the prey base for burrowing owls with special emphasis on rodents. Furthermore, the plants are intended to support native pollinator species.

OTHER SUGGESTIONS

Surveys at RWF East

We recommend continuing the surveys of the RWF Bufferlands adjacent to the east of the management area (Figure 1). Considering the proximity to the burrowing owl colony in the management area, regularly surveying these areas would enable us to monitor potential dispersal of owls nesting in, or fledging from, the management area. We may also detect migrating wintering owls. We suggest surveying these areas, if appropriate, at least two times per year;

once during the breeding season (April/May) and once during winter (November/December). If we detect burrowing owls in this area during the breeding season, we would like to get permission to install motion-triggered trail cameras for additional observation. We would have to access the area regularly to retrieve data memory cards. If breeding pairs are present, we also ask to be granted access for supplemental feeding without requiring an escort.

Inter-Agency Communication

We continue to be available to provide information regarding the protection of burrowing owls and other natural resources at the Bufferlands at any time. We can meet at the site or discuss existing or upcoming challenges on the phone. With the goal of increasing the protection of burrowing owls and their habitat, we should be included in Inter-Agency communications between the Habitat Agency, the City of San José, Santa Clara Department of Public Works, PG&E, and other agencies regarding any activities/disturbances within the management area. It is important that we can provide our expertise on how activities may affect burrowing owls.