2022 SAN JOSÉ-SANTA CLARA REGIONAL WASTEWATER FACILITY BUFFERLANDS BURROWING OWL MANAGEMENT

SUMMARY REPORT
YEAR 6

Prepared for:
Santa Clara Valley Habitat Agency

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Talon Ecological Research Group and Santa Clara Valley Audubon Society

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SANTA CLARA VALLEY HABITAT AGENCY

SCVAS Santa Clara Valley Audubon Society

TALON ECOLOGICAL RESEARCH GROUP

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Thanks to the staff at Santa Clara Valley Audubon Society (SCVAS) for continued collaboration on this project. Special thanks to April Austin at SCVAS for always getting us paid on time.

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 in several areas on site for the last couple of year, 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, as well as Long's Custom Disking Inc. for their ongoing vegetation management services.

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 the burrowing owl colony at the San José-Santa Clara Regional Wastewater Facility (RWF) in a portion of the "Bufferlands," an area south and west of the RWF facility (Figure 1). The management area is officially designated for burrowing owl conservation and encompasses approximately 201 acres of open grassland in Alviso, north of State Highway 237 and east of Disk Drive (Figure 1). Since 2021, Talon Ecological Research Group (Talon) has partnered with SCVAS to conduct the work under a renewed 5-year contract (2021–2026). This report represents a summary of management activities we conducted during Year 6 (January–December 2022). We also provide descriptions of site conditions throughout the year and information for planned activities during Year 7 (January–December 2023).

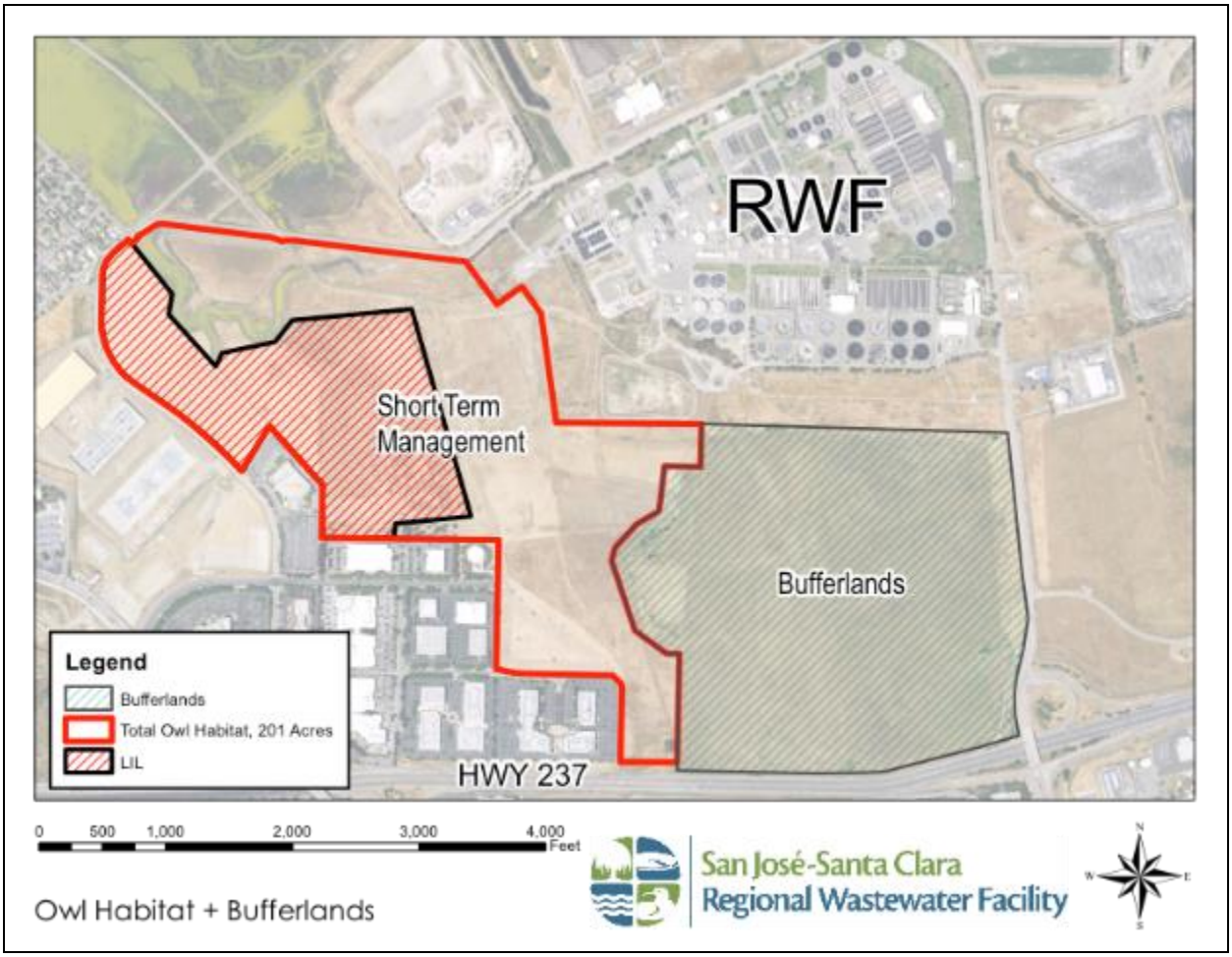

Figure 1. Burrowing owl management area at the San José-Santa Clara Regional Wastewater Facility (RWF) outlined in red. The remainder of the "Bufferlands" to the east is not managed for burrowing owls, but is surveyed at least twice a year. LIL = land in lieu. A portion of the area may be enrolled into the SCVHA reserve system in lieu of paying development fees.

MANAGEMENT ACTIVITIES

This site includes regionally important nesting, foraging, and wintering habitat for burrowing owls. As during Year 1−5 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

We 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, Grant Huber, and occasionally Andrew Bradshaw. 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

One single female and five breeding pairs were soft-released at RWF as part of the Juvenile Burrowing Owl Overwintering Project in 2022. The Habitat Agency funded this independent project and Talon implemented the work.

Prior to the soft-release of overwintered burrowing owls, we measured the temperature and moisture levels inside two of the artificial nest chambers in Enclosure 3 and 5. We installed a small thermometer/hygrometer unit inside the nest chamber of Enclosure 3 that had soil covering the top of the nest chamber and Enclosure 5 that had insulation board with an R-13 insulation factor on top of the nest chamber. We retrieved data remotely using a phone application. We compared temperature and moisture levels in both nest chambers for a two-week period and found that there was not a significant difference in temperature fluctuations; however, the nest chamber with the soil cover had almost twice as much moisture as the insulation board cover. In response, we removed any soil from the top of the nest chambers and replaced it with the insulation board at each nest chamber.

On 11 February, we soft-released one single female into a hacking enclosure (Figures 3). She remained in the enclosure until February 25 and was fed two mice each day. Upon removal of the enclosure, this female did not remain on site for the breeding season.

We released five pairs of burrowing owls into hacking enclosures as part of the Juvenile Overwintering Project. On 3 March, we placed five males into separate hacking enclosures (Figures 3−4). We added one female into each enclosure on 5 March. All five soft-released pairs produced offspring.

Figure 3. Construction of hacking enclosures for the soft-release of one single female and five pairs of burrowing owls as part of the Juvenile Burrowing Owl Overwintering Project in spring of 2022.

Figure 4. A pair of burrowing owls inside a hacking enclosure during soft-release as part of the Juvenile Overwintering Project in March 2022.

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 13 adults forming six pairs during the breeding season (Figure 5). All six pairs successfully produced a total of 36 young. We observed the first young inside a nest chamber in April.

Five pairs were part of the Juvenile Burrowing Owl Overwintering Project as described above. One additional pair successfully fledged seven young at nest burrow #88. We also observed one single female at nest burrow #92. The male from #88 was frequently observed at burrow #92 and we assume that he mated with this single female. She laid 10 eggs and when we candled the eggs, we determined that eight of the 10 eggs were fertile. Unfortunately, this female abandoned the eggs in June and they were no longer viable.

Figure 5. Burrowing owl nest burrow and soft-release enclosure (E1−E5) locations in the burrowing owl management area of the Bufferlands at the San José-Santa Clara Regional Wastewater Facility, 2022.

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 2022 Annual Burrowing Owl Report (Talon Ecological Research Group, unpublished report December 2022).

Call-Broadcast Sound Systems

In early 2020, Talon received funding from the Habitat Agency and from private donors to purchase two custom-built call-broadcast sound systems from MurreMaid (http://www.murremaid.com). The purpose of these solar-powered units is to automatically broadcast burrowing owl calls at certain time intervals to provide a "social attraction" cue thought to attract or retain burrowing owls at particular locations. These units have been successfully used by the San Diego Zoo Institute for Conservation Research (https://institute.sandiegozoo.org/species/burrowing-owl) to help retain relocated burrowing owls at their new location. These sound systems have also been used by researchers seeking to attract colonial tern species to sites in the South Bay Salt Pond Restoration Project (Hartman, et al. 2019). We used the units during the soft-release of the owls from the Juvenile Overwintering Project, enticing these owls to stay on site. We deployed the units each year during soft-releases of overwintered owls (Figure 8 and 9).

Vegetation Management

Long's Custom Disking Inc. applied herbicide (Polaris) on ~28 mounds and two long berms/sloped area (Figure 6 and 7) in January 2022. Long's also conducted a first mowing to a height of approximately 6 inches starting on 22 February 2022 (Figure 8). This task took approximately three days to complete. A second mowing was conducted starting on 9 May 2022 (Figure 9). We met with the contractor prior to each mowing/spraying event to discuss areas of concern (exclusion areas) for burrowing owls and directed/monitored mowing around nest burrows in May.

Spraying herbicides on mounds and berms (Figure 6 and 7) to control invasive weed species and grasses helped enormously throughout the 2022 breeding season. Even some of the mounds that were treated with herbicide the last two years were less overgrown throughout this breeding season, whereas weed-whacked or hand-pulled mounds needed ongoing management.

Stinkweed, mustard (Figure 6), and pepperweed were especially pervasive in some areas this year. These plant species thrived throughout the dry season. 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.

Figure 6. Non-native mustard was especially pervasive in 2022. Herbicide was applied in January.

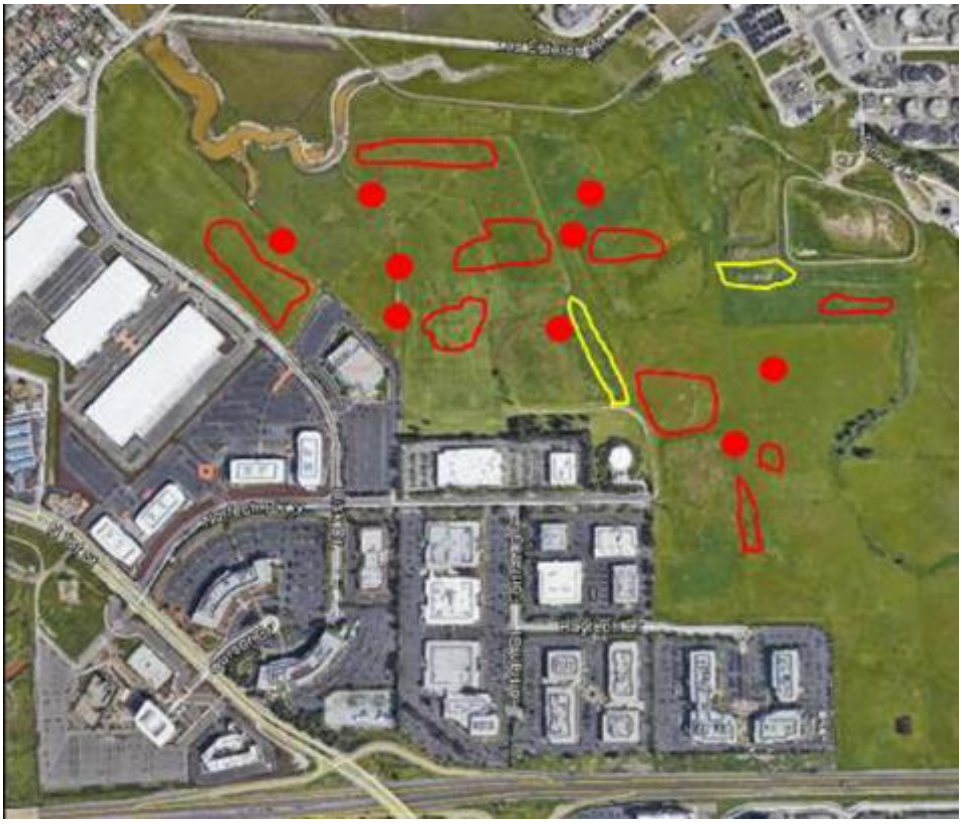

Figure 7. Areas where herbicide was applied in January 2022. Red outlines include multiple mounds, red dots mark new artificial burrow complexes, and yellow outlines indicate a berm or sloped area.

Figure 8. Area mowed in February 2022 outlined in red. Blue dots mark enclosure locations and the purple triangle indicates location of a call broadcast system.

Figure 9. Area mowed in May 2022 outlined in red. Blue dots mark enclosure locations and red dots indicate active nest burrows. The purple triangle marks the location of call broadcast system.

Yellow Starthistle Suppression

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 10) covering a large area that was previously overgrown with starthistle.

Figure 10. 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)

Vegetation Management Volunteer Engagement

We organized five volunteer workdays during Year 6 (Figure 11). Dates were as follows: 19 February, 19 March, 20 April, 21 October, and 17 November. We also conducted targeted vegetation management throughout the growing season without volunteers.

Figure 11. Volunteers helped removing invasive, non-native vegetation.
(Photograph taken on 21 October 2022)

Palm Tree Removal

On 14 January 2022, we contracted with Kelly's Stump Removal, Inc to remove three non-native palm trees north of Nortech Parkway (Figure 12). These trees provided prime perches for raptors that may prey on burrowing owls. Burrowing owls have used burrows adjacent to one of the trees.

Figure 12. Palm trees removed on 14 January 2022 outlined in orange.

Fence post removal

In February 2018, with the help of volunteers, we removed a section of a 6-foot tall chain link fence running between the RWF bufferlands and the Cisco mitigation site; this fence is within the management area and is not an external fence line. The fence posts were finally removed on 14 January 2022. Kelly's Stump Removal, Inc used a bobcat to remove the posts. We removed the fence for two reasons: a) reducing disturbance to nesting burrowing owls near the narrow existing opening in the fence line, and b) eliminating an obstacle for mowing tall vegetation along the fence line.

Previously, only one narrow opening existed at the southern end of this fence line, limiting access for foot traffic, a mower, and other vehicles. Until 2019, active nest burrows were located near the opening and removal of the fence would now allow foot and/or vehicular traffic to give occupied burrows a wider berth and thus avoid disturbance. With the fence posts now removed, a mower can mow the vegetation along this line. Previously, tall mustard on both sides of the fence created a barrier between the two management areas. This barrier provided ideal habitat for predators to hide in and/or move along, and prevented burrowing owls from easily and safely moving between the two areas.

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.

In early 2021, we collaborated with Grassroots Ecology (grassrootsecology.org) to establish additional native plant areas. During spring they seeded/planted test plots in three areas with a wide variety of species (Figure 13). They continued this work throughout 2022.

Figure 13. Installation of three planting areas by Grassroots Ecology in spring of 2021 and continued maintenance in 2022.

Habitat Enhancement for Prey Population

We added about 15 small piles consisting of larger pieces of bark around the native plant area to provide habitat for burrowing owl prey species. We have observed numerous lizards under the pieces of bark.

Artificial Burrow Installation

We installed four artificial burrow complexes prior to the 2022 breeding season in November 2021 to accommodate soft-release of burrowing owls as part of the Juvenile Overwintering Project. Each complex contained two separate burrows constructed of an irrigation valve box for a nesting chamber and a 6-foot-long piece of 6-inch diameter irrigation pipe. We cut a slot along the entire bottom of the pipe to permit burrowing owls to walk on the ground and not the pipe to access the nesting chamber. Kelly's Stump Removal, Inc. excavated the holes with a bobcat and assisted with backfilling.

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. Other CSSC species observed at RWF during the 2022 breeding season include tricolored blackbirds.

For a fifth year in a row, a pair of golden eagles nested in a palm tree adjacent to the management area. This year the pair did not produce offspring. 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.

POPULATION TRENDS

Breeding Season

Data for this population 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 14). 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. Productivity was six young/pair which was higher than the average productivity of 3.4 young/pair (2015−2022) at this breeding site. We also observed one single female at nest burrow #92. The male from #88 was frequently observed at burrow #92 and we assume that he mated with this single female. She laid 10 eggs and when we candled the eggs, we determined that eight of the 10 eggs were fertile. Unfortunately, this female abandoned the eggs and they were no longer viable.

In 2021, two of six pairs were successful and produced a total of nine young. Productivity was 1.5 young/pair. Of the six pairs, three pairs were released as part of the Juvenile Overwintering project. Additionally, three single males were released, two of which remained on site and paired up with females. One of the two pairs that reproduced successfully in 2021 was comprised of a female that was released at RWF as part of the Juvenile Overwintering Project in 2020, while the male hatched at RWF in 2019.

In 2020, three female burrowing owls were released at RWF as part of the Juvenile Overwintering Project in February 2020. 2021 and 2020, were the least productive years, with nine young each year since consistent data collection began in 2014. In 2019, four of five pairs were successful and produced a total of 21 young. In 2018, nine pairs were observed, seven of which were successful, and produced a total of 22 young (Santa Clara Valley Audubon Society 2018−2021).

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 populations 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 does not appear to experience this influx of migratory owls. The population actually decreases each winter, then increases again as the breeding season approaches (Figure 15).

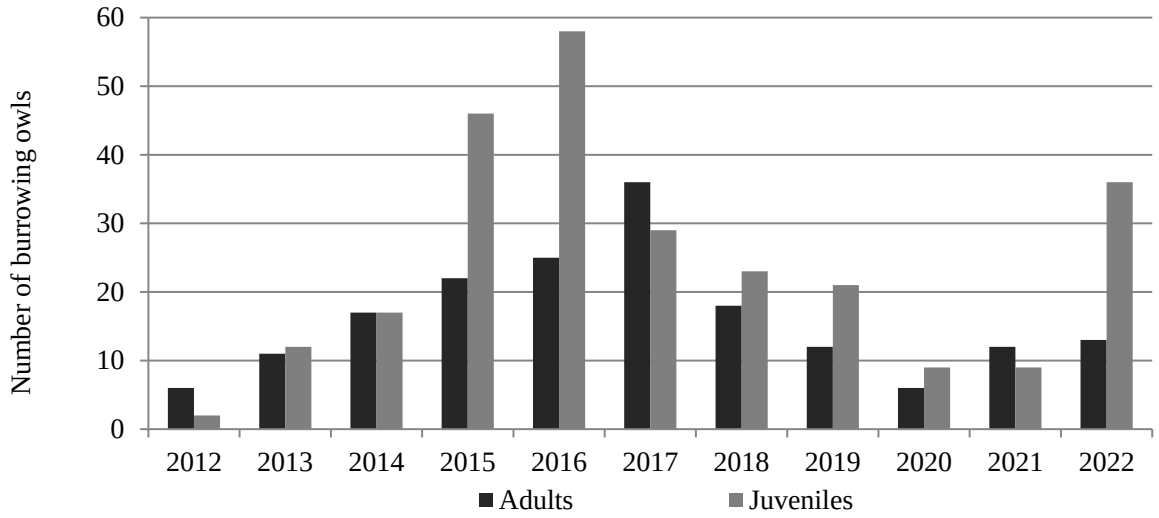

Figure 14. Annual counts of the number of nesting burrowing owls and their young in the burrowing owl management area of the Bufferlands at the San José-Santa Clara Regional Wastewater Facility (RWF), 2012–2022.

Table 1. Annual breeding burrowing owl population data, 2012–2022, for the burrowing owl management area of the Bufferlands at the San José-Santa Clara Regional Wastewater Facility (RWF).

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	2	67	9	4.5	3.0
2021	12**	6	2	33	9	4.5	1.5
2022	13***	7	6	86	36	6	5.1

*Three single females released as part of the Juvenile Burrowing Owl Overwintering Project.
**Three single males and three pairs released as part of the Juvenile Burrowing Owl Overwintering Project.
***One single female and five pairs released as part of the Juvenile Burrowing Owl Overwintering Project.

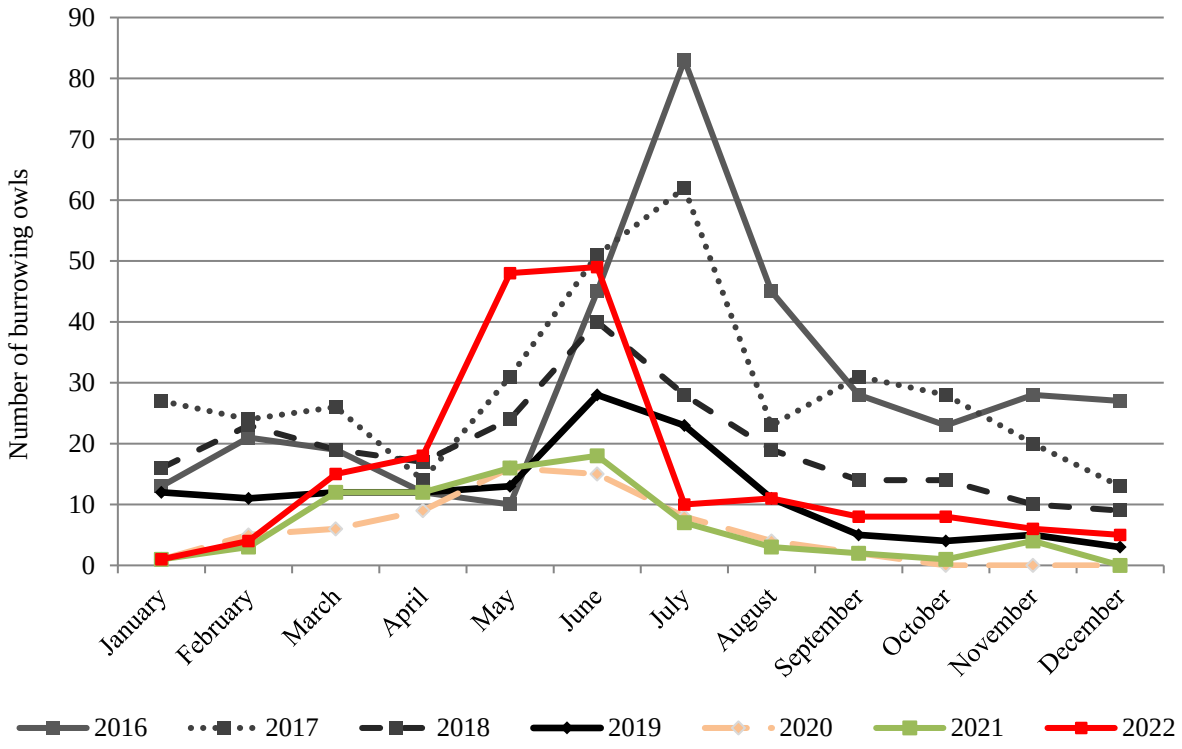

Figure 15. Counts of the total number of burrowing owls (adults and juveniles) observed each month at the San José-Santa Clara Regional Wastewater Facility Bufferlands management area, 2016–2022.

Burrowing Owl Fatalities

During Year 6, mortality rates were lower than those observed in 2021. We detected one feather pile during our monthly survey in October. Cause of this burrowing owl fatality was unknown. Feathers appeared to be plucked rather than sheared off indicating potential raptor predation.

SITE CONDITIONS

California Ground Squirrel Distribution and Abundance

California 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.

Predator Abundance

We have observed a variety of burrowing owl predators in the management area, including red-tailed hawks, golden eagles, peregrine falcons, cats, 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 have observed a pair of nesting golden eagles on site for the last six years. This year we also detected three red-tailed hawk nests on or near the site: one pair was nesting near Zanker Road, a second nest was located within the facility on an electrical pole, and a third nest was located in a eucalyptus tree in the management area.

Table 2. Predatory species of burrowing owls observed during monthly surveys, January−December 2022.

Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Golden eagle	1	1	2	2	1	1	1	1	1	2	2	1
Red-tailed hawk	1	4	2	5	3	4	3	6	3	2	1	2
Peregrine falcon		1										
Cooper's hawk									1	1		
American crow			6	4							8	2
Common raven		2	2	3	1					2	2	
Coyote		1	1	1				2	1	1		2
Striped skunk								1				
Feral cat							1		1	1	1	1
California raccoon										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.

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 2020−2022.

LAND USE AND OTHER DISTURBANCES

Headwaters Project

Starting in 2021, soil from the Headwaters Project site has been deposited in an approximately 15-acre area just east of the management area diminishing burrowing owl breeding, roosting, and foraging habitat (Figure 16). Numerous ground squirrel burrows were covered with soil. Vehicles were frequently moving back and forth on the soil pile which created potential disturbance throughout the last two years. By November 2022, part of the disturbed area was hydroseeded. By then, a smaller area was still used for soil storage.

This soil pile provides perching opportunities for burrowing owl predators and was created less than 500 ft from an active golden eagle nest. The disturbance may have contributed to nest failure during the last two years. Although we observed the pair throughout the breeding season, we did not observe any eaglets.

Figure 16. Soil deposit area (~15 acres) for the Headwaters Project outlined in green.

Vandalism/Theft

In January 2022, we noticed that three wildlife motion detection cameras were stolen from the site, one was located at an active burrowing owl burrow, the other two cameras were located at the Grassroots Ecology planting areas. One of the faucets from the Grassroots Ecology water tanks was broken off. We also found a beer can and food packaging at a newly installed artificial burrow complex.

In February, we detected a big hole in the perimeter fence along Highway 237. City staff fixed the fence.

While conducting our monthly burrowing owl survey on July 15, we noticed the following:
1. Six of our wildlife monitoring cameras were stolen from nest burrows; only one of our cameras was left in place.
2. We found several heavy-duty electrical cords and rubber tubing at a couple of locations. Some of the electrical cords had the plugs and receptacles removed.
3. We also found a wheelbarrow near the gate at the railway tracks and noticed that the gravel under the gates had been altered so a person could squeeze under the gate. Maybe someone was using the wheelbarrow to move items from the facility over to the gate.

During our survey in August, we found some additional electrical cords and an electrical tool. The wheelbarrow by the gate was turned upside down and we found a reflective work vest adjacent to the wheelbarrow (the vest had the company name “Real Pack” printed on it).

In November, we detected a hole in the perimeter fence just south of the Nortech gate. During our survey, we found approximately eight plastic bags that likely contained lunch throughout the site. Each bag was surrounded by multiple napkins and food wrappers. City staff fixed the fence.

In December, we noticed a hand truck and an extra-large canvas bag along the fence line on the berm adjacent to the stormwater basin.

Independence Day Fireworks

During our monthly survey of the Cisco site on 15 July 2022, we found fireworks debris in several locations, most likely left over from July 4th celebrations. The amount of garbage was less than in previous years.

After 4 July 2017 and 2018, we found a lot of fireworks debris and alcohol bottles within the Cisco site near the homes on Grand Boulevard. Both years, the fence had been cut for access to the site. To prevent/reduce similar incidences in 2019, we asked for assistance. In early July 2019, Cathy Correia spoke with the San Jose Police Department captain of this area and informed him of activities on 4 July in previous years. He was aware of the illegal firework show in the neighborhood and suggested contacting him on the 4th to request patrolling the area. Although he could not assign officers specifically to the area, he mentioned that U.S. Fish and Wildlife Service (USFW) would likely have a ranger stationed on the road outside of the Don Edwards Education Center with a small fire truck. During our survey the day after Independence Day in 2019−2021, we were pleased to find that the fence had not been breached and we found very little debris. However, each year we detected small burnt areas from grass fires within the Cisco site; likely a result of fireworks.

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.sanJoseca.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 17) 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.

Figure 17. 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 26 April and 17 November 2022, we surveyed the area to the east of the burrowing owl management area within the Bufferlands/RWF facility (Figure 18). We detected wintering owls in these areas in previous years and breeding burrowing owls have been observed in the overflow basin and along Zanker Road in the past as well. Dispersal of owls nesting in, or fledging from, the management area to areas adjacent to the east is probable.

During our survey on 26 April 202, we detected no burrowing owls. On 17 November 2022, we observed one burrowing owl and two nearby burrows with sign of recent use (Figure 18).

Figure 18. Observation during a survey for burrowing owls in the area to the east of the burrowing owl management area within the Bufferlands/RWF facility on 17 November 2022.

PLANNED MANAGEMENT ACTIVITIES FOR YEAR 7

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 twice during Year 7, once early in the breeding season (weather permitting in February/March 2023), and once later in the breeding season (May/June 2023).

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 once or twice a month. 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, spraying will occur in January 2023. We are hoping for the assistance from SCVHA to control perennial pepperweed during 2023 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 19. 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 19. Proposed locations of additional rock and brush piles.

Table 3. Summary and approximate timing of burrowing owl management priorities for Year 7 (January–December 2023).

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 2023 burrowing owl breeding season and ongoing as necessary
Herbicide application	January 2023
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 will install five additional artificial burrow complexes flush in the ground on existing raised areas in the center of the management area in 2023. These artificial burrows will be used for the soft-release of burrowing owls in February/March 2023.

Supplemental Feeding Project

In 2023, Talon will continue to supplementally feed all burrowing owls on site during the breeding season.

Banding Study

During the 2023 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.

Call-Broadcast Sound Systems

We will deploy the call-broadcast system again during soft-releases of overwintered owls in 2023.

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 population 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 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.