Burrowing Owl Mitigation Monitoring Year 4 Annual Report

LEGACY AMERICA CENTER OPEN SPACE PRESERVE
SAN JOSE, SANTA CLARA COUNTY
CALIFORNIA

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1.0 INTRODUCTION

In 2002, Legacy Partners constructed a Western Burrowing Owl (*Athene cunicularia hypugea*) mitigation habitat site on the Legacy Terrace Development Open Space Preserve, also known as the America Center. The project site is located west of the intersection of Gold Street and Channel Drive in the Alviso District of the City of San Jose, Santa Clara County, California (Figure 1). San Tomas Aquino Creek is approximately 200 feet south of the burrowing owl mitigation site, and a service road lies between the mitigation site and the San Francisco Bay salt ponds to the north.

The burrowing owl mitigation habitat consists of 25.3 acres of open space preserve managed as foraging habitat, and includes 6.5 acres of potential burrowing owl breeding habitat. Four sets of artificial burrows were constructed within the constructed breeding habitat. Each set is comprised of six individual burrows. A total of 24 artificial burrows are present within the burrowing owl breeding habitat.

2.0 METHODS

According to the *Draft Burrowing Owl Habitat Management Plan*, prepared by H.T. Harvey & Associates in July 2000, nesting habitat for burrowing owls must be monitored by a qualified biologist 3 to 4 times annually; minimally, once during the non-nesting season (September through January), and three times during the nesting season, preferably once at the beginning of the season (March-April), once at the height of the season (May-June), and once at the end of the season (July-August). All artificial burrows must be maintained on an annual basis prior to the start of the nesting season in February. An annual report is submitted to the City of San Jose at the end of each year.

Monitoring events consist of performing reconnaissance level surveys to determine the presence or absence of burrowing owls. Prior to each site visit, a search of the California Department of Fish and Game Natural Diversity Database (CNDDB) is conducted to determine if burrowing owls have been reported to have occurred within or adjacent to the burrowing owl mitigation habitat. During each site visit, the burrowing owl breeding habitat is initially observed from a distance with the aid of a spotting scope or binoculars. The site is then traversed on foot and observations are made around the artificial burrows for signs of potential use, such as owl pellets, owl feathers, prey remains, eggshell fragments, and/or excrement. Observations are also made for signs indicating owl absence such as spider webs and debris inside of the entrances of the burrows.

Maintenance is conducted on an annual basis in February. Each burrow is inspected, and burrows requiring cleaning or clearing are excavated, cleaned, and reinstalled. Vegetation surrounding the burrows is maintained throughout the year to have a height no greater than five inches. Minor repairs, such as replacing and re-labeling posts and clearing surface debris, are performed throughout the year during monitoring events.

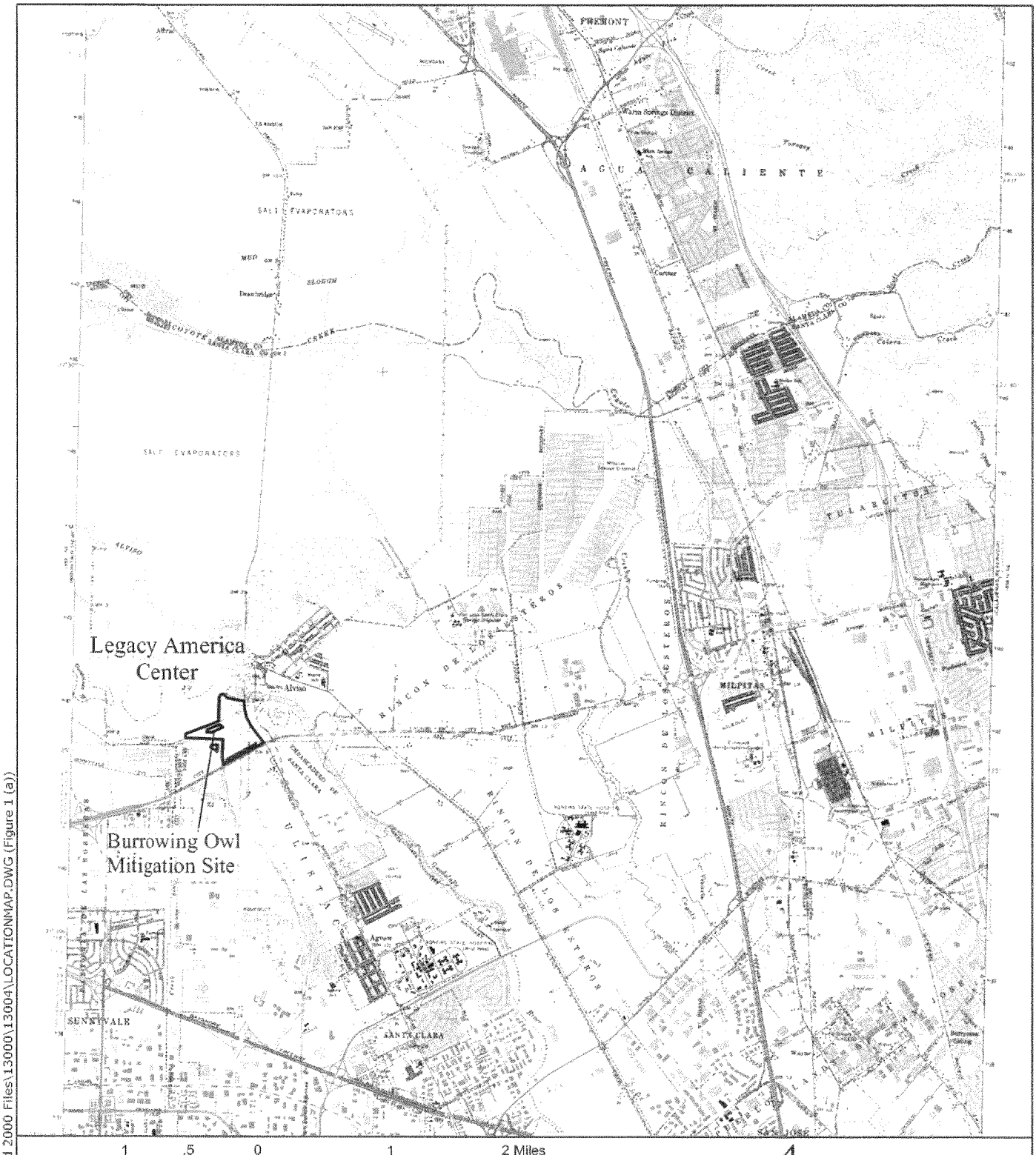

Figure 1

Legacy America Center
Site Location Map
San Jose, Santa Clara County, CA

Directions: Highway 237, north of Great America Pkwy Exit.
Basemap: USGS DRG Milpitas Quad

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Jan 26, 2006 - 4:32pm L:\Acad 2000 Files\13000\13004\LOCATIONMAP.DWG (Figure 1 (a))

3.0 RESULTS AND DISCUSSION

Burrowing owl monitoring was performed by WRA wildlife biologists David Cowell or Spencer Badet on June 16, July 26, and October 25 in 2005 (Appendix A). No burrowing owls were observed within or adjacent to the owl breeding habitat during the 2005 monitoring efforts. Excrement found on the posts outside many of the holes is likely attributable to common grassland songbirds, such as western meadowlark (*Sturnella neglecta*) and Say's phoebe (*Sayornis saya*), witnessed perched on the posts during site visits. Many of the burrow entrances exhibited signs that they were not in use by owls, such as spider webs, debris, and terrestrial snails. Searches of the CNDDB prior to each site visit indicated that no burrowing owls have been reported to occur within proximity to the project area in 2005.

On February 10, 2005, maintenance was performed on the artificial burrows by WRA biologists David Cowell, Justin Davilla, and Justin Semion. Burrows were cleared of vegetation and eroding soil. According to comments provided by H.T. Harvey & Associates in 2002, the burrows were constructed using larger than optimal diameter tubing for the entrances. In a continuing effort to upgrade the burrows to these new standards, seven artificial burrows were completely excavated using hand instruments, cleaned, and fitted with new entry tubes of smaller diameter, flexible, corrugated drain tubing. The entry tubes are typically about three feet in length, and care was taken in installing the new tubes to ensure that the entryway protrudes slightly above ground level. This measure, which was not done with the original entry tubes, may make the artificial burrows more attractive to burrowing owls. It may also prevent the ongoing problem of excessive soil buildup in the burrows after rainwater carries runoff into the nesting chamber.

Light maintenance was performed throughout the year during monitoring visits. On June 16, 2005, vegetation taller than five inches was cleared in a four to five foot radius around the entrance of each burrow. Fallen and broken wooden posts were replaced and re-labeled. Cobwebs and debris were removed from the entrance of each hole. During the site visit performed on July 26, 2005, burrows #7 and #22 were excavated to determine the extent that the burrows had filled with soil in the past year. Burrow #7 was found to be entirely filled and unsuitable for habitation by burrowing owls. The soil filling burrow #7 was removed and both burrows were reassembled with new, smaller diameter entry tubing. On October 25, 2005, care was taken to remove enough soil from around the burrow entrances to discourage the entry of rainwater and runoff. This may serve as a temporary solution, pending full excavation and replacement of entry tubes.

4.0 CONCLUSION AND RECOMMENDATIONS

According to comments provided by H.T. Harvey & Associates in 2002, the burrows were constructed with the burrow entrances located lower than surrounding topography, allowing eroding soils to obstruct the entrances. Excavation has indeed revealed a trend of soil washing into and filling the artificial burrows. It is recommended that work continue to eventually excavate each of the burrows manually, with the primary purpose of removing soil buildup and the secondary purpose of replacing the original entry tubes with smaller diameter corrugated tubing. Studies show that burrowing owls select for four-inch diameter burrow entrances, and these smaller diameter entrances reduce the likelihood of predation by mammals (Smith and Belthoff 2001). Burrowing owls also prefer entrances higher than surrounding topography for visual security in observing for predators. This upgrading work shall continue in February 2006 in preparation for the breeding season, and if necessary, shall continue during monitoring visits

where allowed by the budget. To date, nine of the 24 burrows have been both cleaned and retrofitted with new entry tubing, and these nine should require much less ongoing maintenance.

Continued monitoring and light maintenance will occur as scheduled in 2006 as outlined in the management plan. Adherence to the recommendations listed above may increase the potential for burrowing owls to occur in the mitigation area.

5.0 REFERENCES

California Burrowing Owl Consortium. 1993. Burrowing Owl Survey Protocols and Mitigation Guidelines. Sacramento, California.

California Department of Fish and Game. 2005. Natural Diversity Database, Wildlife and Habitat Data Analysis Branch. Sacramento.

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Small, A. 1994. California Birds: Their Status and Distribution. Ibis Publishing Company. Vista, California.

Smith, B.W. and J.R. Belthoff. 2001. Effects of nest dimension on the use of artificial burrow systems by burrowing owls. *Journal of Wildlife Management* 65:318-326

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APPENDIX A

FIELD NOTES

Field Notes
David Cowell
Wetlands Research Associates

LEGACY PROJECT, BURROWING OWL BURROW MONITORING
13004
February 10, 2005

Purpose: Monitor and repair BUOW burrows

Weather: Clear, sunny, mild, ~55F, calm

Participants: David Cowell, Justin Davilla, and Justin Semion

Methods: Limited burrows were entirely excavated by hand using sharp shooters and shovels. Severely eroded burrows were cleared of dirt and rebuilt. Excavated burrows were retrofitted with narrow diameter drainage tubing the entire length from the entrance to the nesting cavity. Additional minor repairs performed as needed (i.e. replaced perching stakes, cleared vegetation, etc.)

Results: Excavated and repaired burrows #1,2,3,4,5,6,and 23. Holes # 10 and 24 need new stakes installed.

Other Wildlife Observed
RTHA
TUVU
AMKE
MODO
NOMO
WEME

California jack rabbit

Field Notes
David Cowell
Wetlands Research Associates

LEGACY PROJECT, BURROWING OWL BURROW MONITORING
13004
June 16, 2005

Purpose: Monitor and repair BUOW burrows

Weather: cloudy, 62 degrees

Participants: David Cowell

Methods: Observed burrows for signs of nesting burrowing owls, thinned surrounding vegetation with a weed-whacker, cleared debris from entrance holes, and replaced broken stakes outside of holes.

Results: No signs of nesting burrowing owls were observed. All entrance holes were cleared of debris and surrounding vegetation and broken stakes were replaced.

Other Wildlife Observed
RTHA
TUVU
AMKE
MODO
AMGO

California jack rabbit

Field Notes
Spencer Badet
WRA

LEGACY PROJECT, BURROWING OWL ARTIFICIAL BURROW MONITORING
13004
July 26, 2005

Purpose: Monitor and repair BUOW burrows

Weather: Clear, sunny, ~90F, slight breeze

Participants: David Cowell and Spencer Badet

Methods: Burrows were surveyed for owl signs. Entrances were cleared of dirt and vegetation. Two burrows were entirely excavated by hand using sharp shooters and shovels. Excavated burrows were retrofitted with 3" drainage tubing the entire length from the entrance to the nesting cavity. Additional minor repairs were performed as needed (i.e. replacing or stabilizing perching stakes, clearing vegetation, etc.).

Results: Burrows number 7 and 22 were excavated by hand, as they appeared to be the most in need of maintenance. Dirt in #7 had built up above the level of the entry pipe so that no owls could get into the box. #22 was still in decent condition. Both burrows had the original 4-5" smooth PVC pipe for an entrance with a ~1' section of smaller corrugated tubing stuffed into the top. In both burrows, the PVC tube and corrugated sections were removed and replaced by a solid piece of smaller corrugated drainage tube approximately 3' long (the entire length from the entrance to the nesting cavity).

Other Wildlife Observed
RTHA
AMKE
CLSW
WEGU

California jack rabbit
Black widow
Garden snails

Plant Species Observed
Dominants:
Brassica nigra
Picris echiodes
Rumex crispus
Hemizonia spp.

Field Notes
Spencer Badet
WRA

LEGACY PROJECT, BURROWING OWL ARTIFICIAL BURROW MONITORING
13004
October 25, 2005

Purpose: Monitor and repair BUOW burrows

Weather: Clear, partly cloudy, ~65F, slight breeze

Participants: Spencer Badet

Methods: A cautious survey was done before approaching site, and surroundings were surveyed throughout visit. Burrows were checked for owl sign, then cleared of dead vegetable matter by hand and using a sharp shooter. Burrows that had their openings below ground level or pointing uphill (the majority of them) were cleared of earth somewhat with the sharp shooter so that the openings are less obstructed and less likely to receive washed-in soil during the rainy season.

Results: No owls or owl signs were observed. All burrows appear to be unused, and many openings were overgrown. Each burrow was cleared by hand and using a sharp shooter. Burrows that need to have the original wide PVC tubing replaced by smaller corrugated drain hose were noted: # 1, 9-21, 24. Some of these burrows will be fixed during the February visit. A red-tailed hawk has consistently been observed on a nearby transmission tower and patrolling the area; this may discourage owls.

Other Wildlife Observed
RTHA
WEGU
WCSP
BNST

Garden snails

Plant Species Observed
Dominants:
Brassica nigra
Hemizonia spp.
Baccharis pilularis

APPENDIX B

PROJECT AREA PHOTOGRAPHS

Appendix B. Representative Site Photographs
Top: The mitigation area, looking northeast. Bottom: The western end of the mitigation area.

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Appendix B. Representative Site Photographs
Top: Excavation of burrow #7 on July 26, 2005. Soil had built up to the point where owls would not have been able to enter the box. Bottom: Burrow #7 after maintenance, retrofitted with new entry tube.

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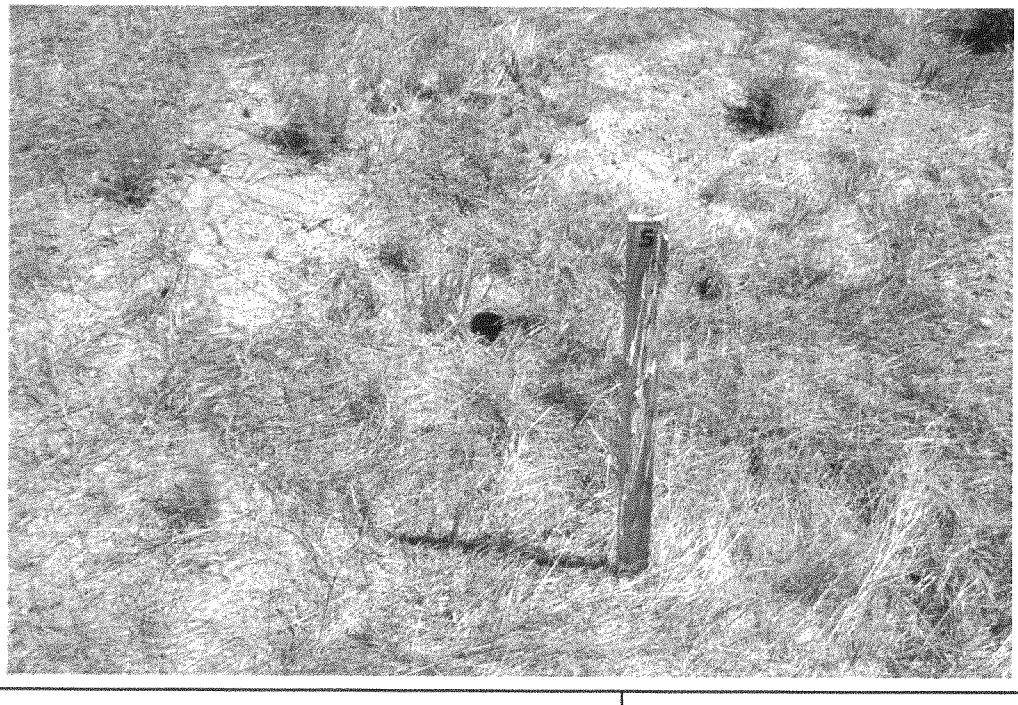

Appendix B. Representative Site Photographs
Top: Example of minor excavation performed on multiple burrows to discourage entry of water and soil, October 25, 2005. Bottom: Whitewash on a perch in front of an unused burrow. This is common at the site.

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