OTAY CROSSINGS COMMERCE PARK

APPENDIX F

BIOLOGICAL RESOURCES REPORTS

to the

DRAFT SUPPLEMENTAL
ENVIRONMENTAL IMPACT REPORT

EIR 93-19-006Q, TM 5405RPL[7]
SCH No. 2006041039

Lead Agency:

County of San Diego
Department of Planning and Land Use
5201 Ruffin Road, Suite B
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AUGUST 2011

OTAY CROSSINGS COMMERCE PARK

OFF-SITE QUINO CHECKERSPOT BUTTERFLY AND BURROWING OWL HABITAT ENHANCEMENT PLAN SPA 04-006, TM5405RPL4

May 11, 2010

Project Proponent :

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Otay Crossings Commerce Park
Off-site Quino Checkerspot Butterfly and Burrowing Owl Habitat Enhancement Plan

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LIST OF ABBREVIATIONS

AMSL	above mean sea level
Cal-IPC	California Invasive Plant Council
CDFG	California Department of Fish and Game
Corps	U.S. Army Corps of Engineers
County	County of San Diego
EOMSP	East Otay Mesa Specific Plan
HELIX	HELIX Environmental Planning, Inc.
MSCP	Multiple Species Conservation Program
OHV	off-highway vehicles
QCB	Quino checkerspot butterfly
SR	State Route
TM	Tentative Map
USFWS	U.S. Fish and Wildlife Service
UTM	Universal Transverse Mercator

1.0 INTRODUCTION

This report provides the compensatory mitigation plan for direct impacts to the Quino checkerspot butterfly (*Euphydryas editha quino*; QCB) and burrowing owl (*Athene cunicularia*) resulting from implementation of the Otay Crossings Commerce Park project (proposed project). The mitigation measures identified herein are based on those contained in the Otay Crossings Commerce Park Biological Technical Report (HELIX Environmental Planning, Inc. [HELIX] 2010a). The proposed mitigation is intended to meet the requirements of the Biological Opinion issued by the U.S. Fish and Wildlife Service (USFWS), as well as the County of San Diego's (County's) Resource Protection Ordinance and Biological Mitigation Ordinance. QCB and burrowing owl habitat enhancement would occur off site at Lonestar Ridge. Additionally, this effort will be coordinated with the vernal pool creation plan also being implemented on the Lonestar Ridge Biological Open Space to meet mitigation obligations for project-related impacts to road pools occupied by San Diego fairy shrimp (*Branchinecta sandiegonensis*) and Riverside fairy shrimp (*Streptocephalus woottoni*; HELIX 2010b).

Mitigation Summary

The 62-acre Lonestar Ridge Biological Open Space presents an excellent opportunity to function as a long-term burrowing owl receptor site and QCB habitat enhancement within a large contiguous block of open space east of State Route (SR) 125. The eastern 60 percent of the Biological Open Space has relatively low weed cover and needs minimal enhancement for owls and QCB. The western 40 percent has a much higher weed component and will be the focus of the enhancement efforts. The following enhancement efforts would be conducted within the 62-acre Biological Open Space/enhancement area:

- The western portion of the enhancement area will be weeded and de-thatched during the first year to reduce non-native grass and mustard (*Brassica* sp.) cover, benefiting both the QCB and burrowing owl. A controlled burn of the site will be considered as part of the weed eradication strategy.
- The entire 62-acre enhancement area will be seeded with native grasses and annuals in an attempt to overwhelm the non-native grasses with native species. Overseeding will occur 2 times to increase native grass cover (Seabloom et. al. 2003).
- The applicant will prepare a grading plan to develop a series of berms and mound topography for construction of artificial burrowing owl burrows.
- Natural rubble piles will be placed within the enhancement area to provide habitat for California ground squirrels (*Spermophilus beecheyi*).
- The applicant will develop a plan for the reintroduction of ground squirrels to provide for a naturally functioning system of owl occupation of abandoned ground squirrel burrows.

The results of these enhancement efforts will be a site with berm and mound topography ideally suited for long-term burrowing owl occupation, with a significant native grassland component, and a ground squirrel population that will provide natural burrows for the owls.

2.0 PROJECT DESCRIPTION

2.1 OTAY CROSSING COMMERCE PARK

2.1.1 Project Location

The 311.5-acre project site is located in the extreme southeastern portion of Otay Mesa within San Diego County (Figure 1). The property lies to the southeast of the intersection of Otay Mesa and Alta roads just north of the U.S./Mexico border. It occupies portions of Sections 31 and 32 within Township 18 South, Range 1 East of the U.S. Geological Survey 7.5-minute Otay Mesa quadrangle (Figure 2). The site is within the East Otay Mesa Specific Plan (EOMSP) area and contains areas designated in the County's Multiple Species Conservation Program (MSCP; County 1997) as Major Amendment Areas, Minor Amendment Areas, and Minor Amendment Areas Subject to Special Consideration.

2.1.2 Project Summary

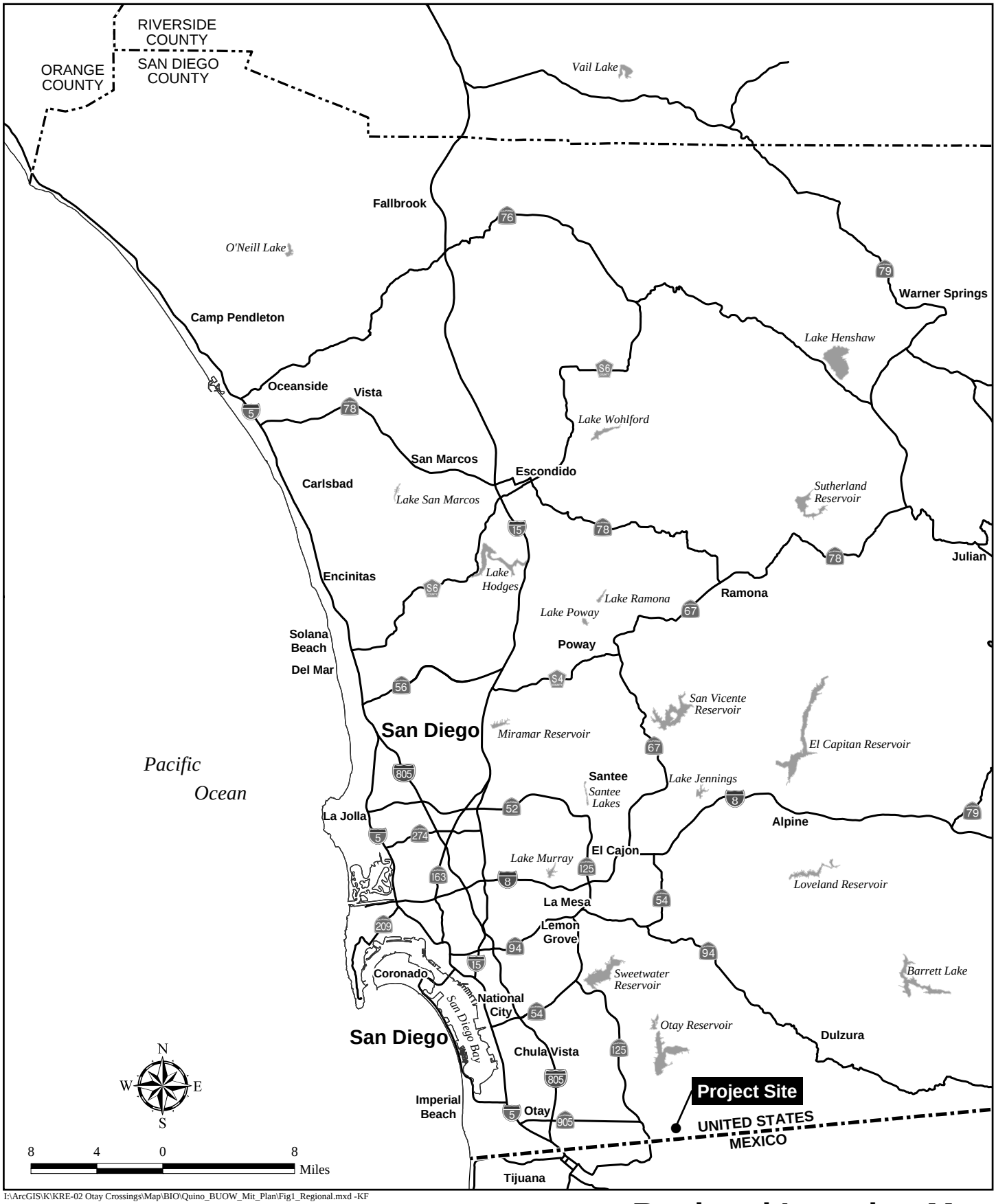
The proposed Otay Crossings Commerce Park project site is a Tentative Map (TM) and Preliminary Grading Plan (Tract 5405) for land designated for Mixed Industrial, Rural Residential, and State Route (i.e., SR 11) use in Subarea 2 of the EOMSP. The TM would subdivide the 311.5-acre project site into 56 industrial lots ranging in size from 0.9 net acres to 95.4 net acres. The future Right of Way for SR 11 and the new Port Of Entry (assumes the selected western alternative) has been tentatively mapped on 2 of the 56 proposed lots, covering approximately 120.0 acres of the site. In addition to proposed on-site development, off-site road improvements will be required along portions of Otay Mesa Road, Alta Road, and Airway Road, and off-site sewer facilities will be required along Alta Road, Siempre Viva Road and Enrico Fermi Drive. Approximately 47.4 acres of open space would be preserved along the southern and northeastern portions of the site.

The irregularly shaped project site consists of low rolling hills and mesas and includes several narrow drainages that convey flows to the south. Elevations on site range from approximately 480 feet above mean sea level (AMSL) at points along the southern boundary to approximately 700 feet AMSL in the site's northeastern corner. Soils in the northern/northwestern portion of the site are characterized by Diablo clay, while slopes in the southern/southwestern portion are characterized by Huerhuero loam (Bowman 1973). Several dirt roads cross the site and are regularly traveled by the U.S. Border Patrol.

Surrounding land uses include an auto auction lot on the northwestern boundary, industrial public uses to the west, and a mix of industrial, commercial, and residential uses across the U.S./Mexico border. The parcel to the north is currently being graded for development. Undeveloped lands extend to the east of the site into the foothills of the San Ysidro Mountains.

2.1.3 Vegetation Communities at the Otay Crossings Commerce Park

Nine vegetation communities found on the project site (Table 1).



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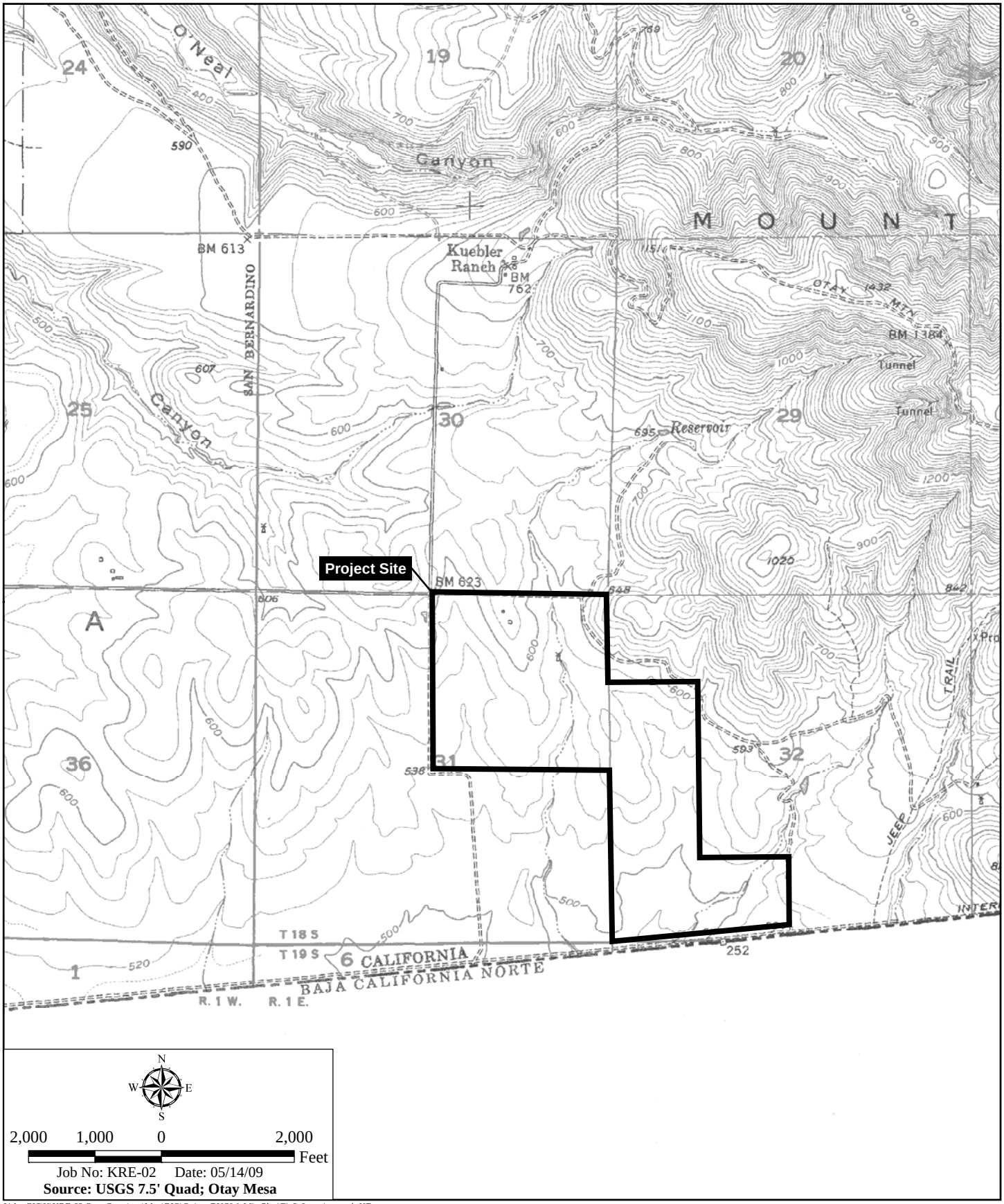
Regional Location Map

QUINO CHECKERSPOT BUTTERFLY AND BURROWING OWL MITIGATION PLAN FOR OTAY CROSSINGS COMMERCE PARK

Figure 1

HELIX



Job No: KRE-02 Date: 05/14/09

Source: USGS 7.5' Quad; Otay Mesa

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Project Location Map

QUINO CHECKERSPOT BUTTERFLY AND BURROWING OWL MITIGATION PLAN FOR OTAY CROSSINGS COMMERCE PARK

Figure 2

HELIX

Table 1 EXISTING VEGETATION COMMUNITIES		
VEGETATION COMMUNITY*	**ACREAGE†**	
	On-site	**Off-site‡**
WETLANDS		
Tamarisk scrub (63810)	0.97	0.00
Disturbed wetland (11300)	0.03	0.00
TIER I		
Native grassland (42100)	0.0	0.1
Tier II		
Diegan coastal sage scrub (including disturbed; 32500)	8.7	0.1
TIER III		
Non-native grassland (42200)	278.5	19.0
TIER IV		
Eucalyptus woodland (11100)	1.0	0.0
Agriculture (18000)	<0.1	0.7
Disturbed habitat (11300)	22.2	5.0
Developed (12000)	<0.1	5.7
TOTAL	**311.5**	**30.6**

*Vegetation codes are from Holland (1986) and Oberbauer (2008)

†All wetland areas are presented in acre(s) rounded to the nearest 0.01; upland areas are rounded to the nearest 0.1

‡Off-site acreages under Sewer Option A; Sewer Options B-1 and B-2 would each include an additional 4.4 acres of impacts.

A complete description of the on site vegetation communities can be found the Biological Resources Report for the Otay Crossing Commerce Park project (HELIX 2010a). A total of 98 plant species were observed on the project site during various biological surveys (Appendix A).

2.1.4 Wildlife

A total of 55 animal species, including 18 invertebrates, 1 amphibian, 4 reptiles, 29 birds, and 3 mammals, were observed on the project site during various biological surveys (Appendix B).

2.1.5 Sensitive Species

Seven (7) sensitive plant species were observed on the project site during rare plant surveys: Otay tarplant (*Deinandra conjugens*), California adolphia (*Adolphia californica*), San Diego barrel cactus (*Ferocactus viridescens*), San Diego marsh-elder (*Iva hayesiana*), variegated dudleya (*Dudleya variegata*), San Diego County viguiera (*Viguiera laciniata*), and small-flowered morning glory (*Convolvulus simulans*).

Eleven (11) sensitive animal species were observed/detected on site during various field surveys: San Diego fairy shrimp, Riverside fairy shrimp, QCB, western spadefoot (*Spea hammondii*), coastal western whiptail (*Cnemidophorus tigris multiscutatus*), burrowing owl, California horned lark (*Eremophila alpestris actia*), loggerhead shrike (*Lanius ludovicianus*), northern harrier (*Circus cyaneus*), grasshopper sparrow (*Ammodramus savannarum*), and white-tailed kite (*Elanus leucurus*).

2.1.6 Sensitive Resources Affected

On- and off-site project development would cause direct impacts to approximately 293.6 acres of upland vegetation communities, comprising approximately 0.1 acre of native grassland, 2.0 acres of Diegan coastal sage scrub (including 0.3 acre of disturbed), 263.3 acres of non-native grassland, 1.0 acre of eucalyptus woodland, 0.7 acre of agriculture, 20.8 acres of disturbed habitat, and 5.7 acres of developed land.

Impacts to U.S. Army Corps of Engineers (Corps) jurisdictional areas would total 0.20 acre, including 0.19 acre of non-wetland Waters of the U.S. on site and 0.01 acre of non-wetland Waters of the U.S. off site. Impacts to California Department of Fish and Game (CDFG) jurisdictional areas would total 0.97 acre, including on-site impacts to 0.73 acre of tamarisk scrub and 0.23 acre of streambed, and off-site impacts to 0.01 acre of streambed.

All Otay tarplant, variegated dudleya, and California adolphia in the project site are outside the limits of development and would not be directly impacted; however, 72 of the 193 (37 percent) of San Diego barrel cacti and all 138 of San Diego marsh-elder, both of which are County Group B species, would be impacted. Four of the 9 burrowing owl locations would be directly or indirectly impacted. Locations of 2 of the 3 QCB observed on site during 2001 focused surveys also occur within the impact footprint. Habitat occupied by Riverside fairy shrimp, San Diego fairy shrimp, western spadefoot, coastal western whiptail, California horned lark, loggerhead shrike, grasshopper sparrow, and northern harrier would also be impacted.

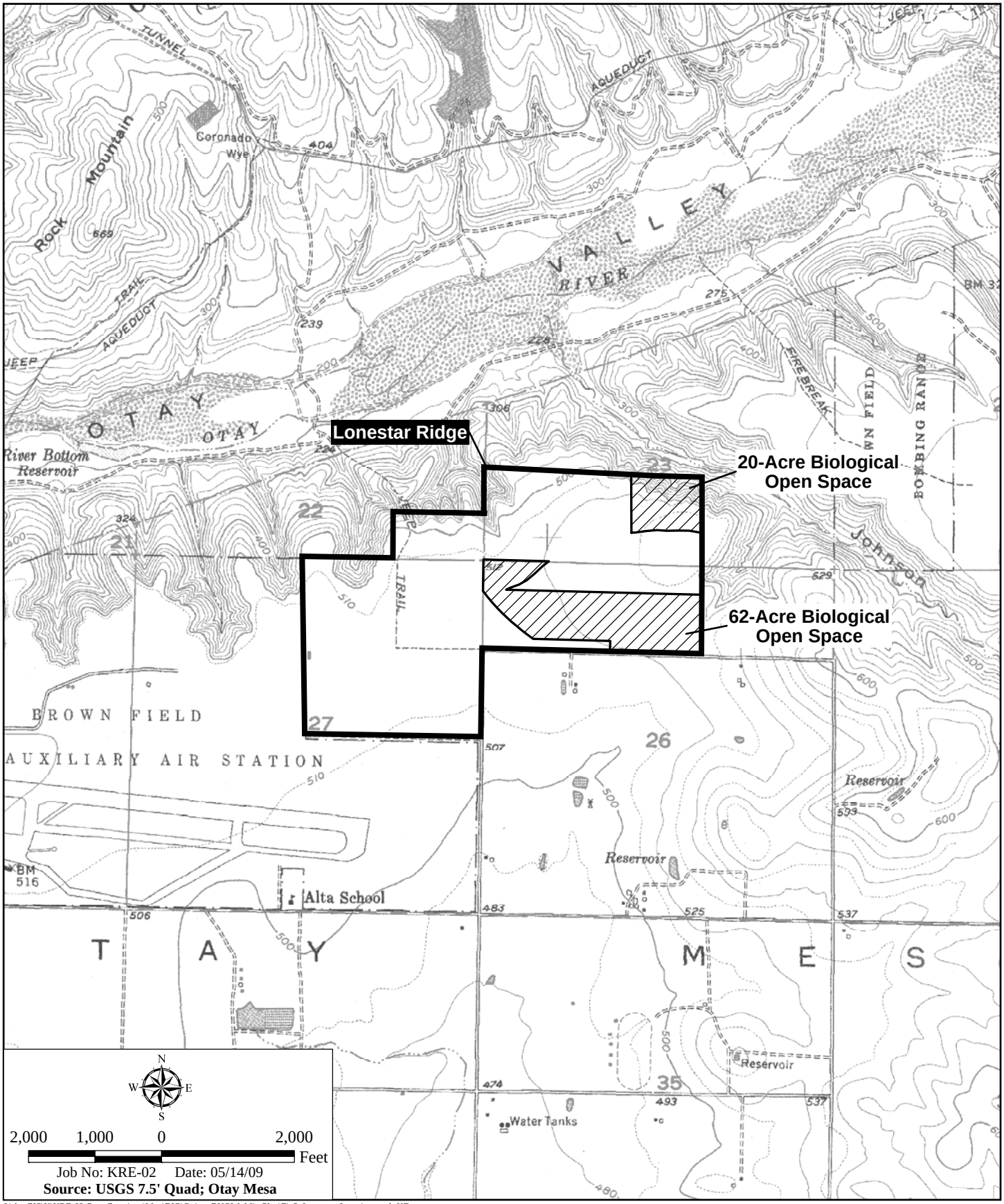
2.2 LONESTAR RIDGE MITIGATION SITE

2.2.1 Vegetation Communities

There are 0.06 acre of vernal pool and 61.9 acres of non-native grassland within the Lonestar Ridge Biological Open Space (Figure 3).

2.2.2 Lonestar Ridge Sensitive Resources

Sensitive resources Lonestar Ridge Biological Open Space include 67,000 variegated dudleya and 330,000 Otay tarplant, both of which represent one of the largest known populations for these species. Additionally, 1 QCB location, as well as 1 vernal pool with San Diego fairy shrimp, and 1 vernal pool with San Diego button-celery (*Eryngium aristulatum* var. *parishii*) would also be conserved (Figure 4). The site is bounded by existing conserved lands to the north and east (Figure 5).



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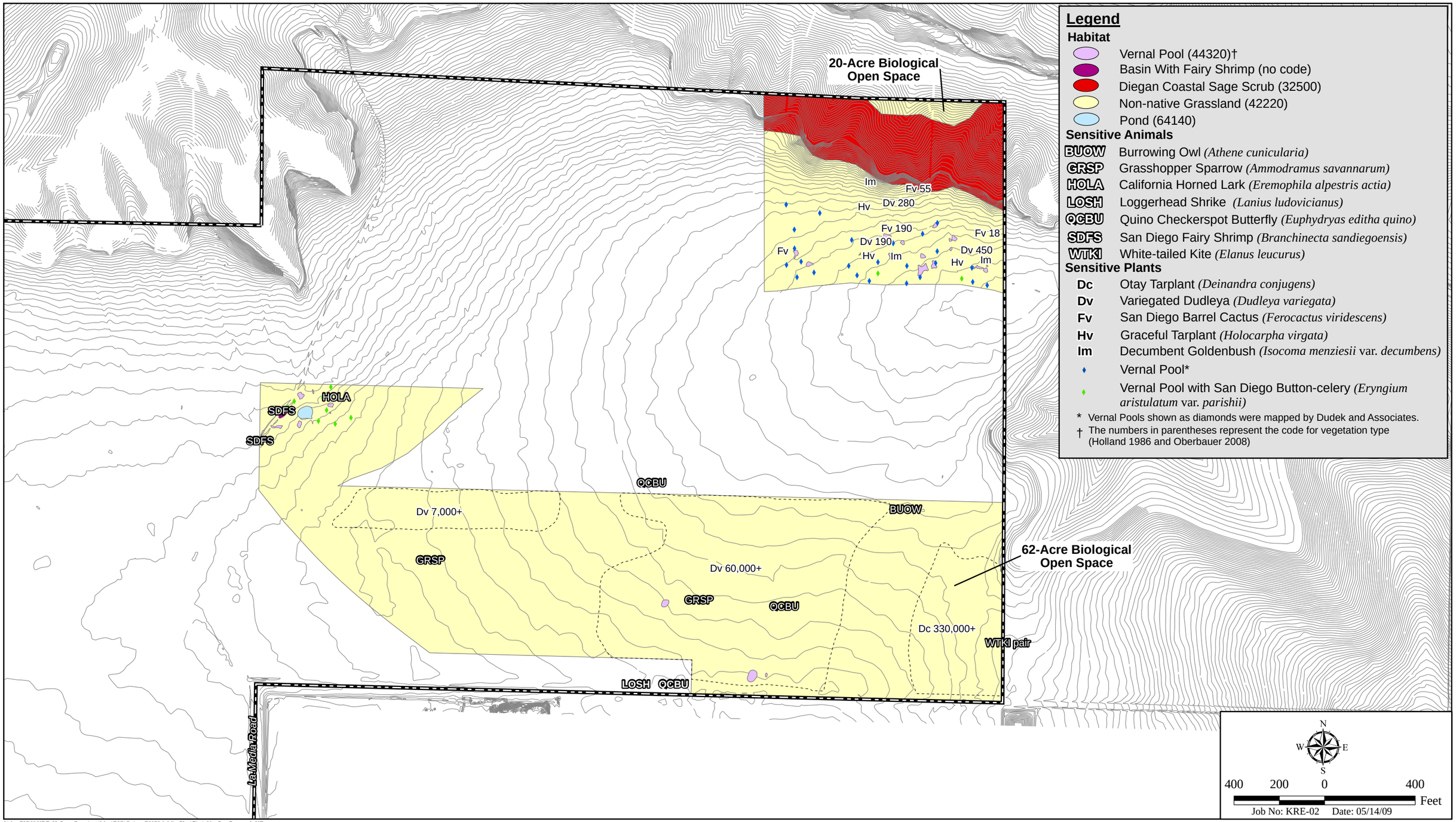
Lonestar Ridge Project Location Map

QUINO CHECKERSPOT BUTTERFLY AND BURROWING OWL MITIGATION PLAN FOR OTAY CROSSINGS COMMERCE PARK

HELIX

Figure 3



Legend

Habitat

- Vernal Pool (44320)†
- Basin With Fairy Shrimp (no code)
- Diegan Coastal Sage Scrub (32500)
- Non-native Grassland (42220)
- Pond (64140)

Sensitive Animals

- BUOW Burrowing Owl *(Athene cunicularia)*
- GRSP Grasshopper Sparrow *(Ammodramus savannarum)*
- HOLA California Horned Lark *(Eremophila alpestris actia)*
- LOSH Loggerhead Shrike *(Lanius ludovicianus)*
- QCBU Quino Checkerspot Butterfly *(Euphydryas editha quino)*
- SDFS San Diego Fairy Shrimp *(Branchinecta sandiegoensis)*
- WTKI White-tailed Kite *(Elanus leucurus)*

Sensitive Plants

- **Dc** Otay Tarplant *(Deinandra conjugens)*
- **Dv** Variegated Dudleya *(Dudleya variegata)*
- **Fv** San Diego Barrel Cactus *(Ferocactus viridescens)*
- **Hv** Graceful Tarplant *(Holocarpha virgata)*
- **Im** Decumbent Goldenbush *(Isocoma menziesii* var. *decumbens)*
- Vernal Pool*
- Vernal Pool with San Diego Button-celery *(Eryngium aristulatum* var. *parishii)*

* Vernal Pools shown as diamonds were mapped by Dudek and Associates.

† The numbers in parentheses represent the code for vegetation type (Holland 1986 and Oberbauer 2008)

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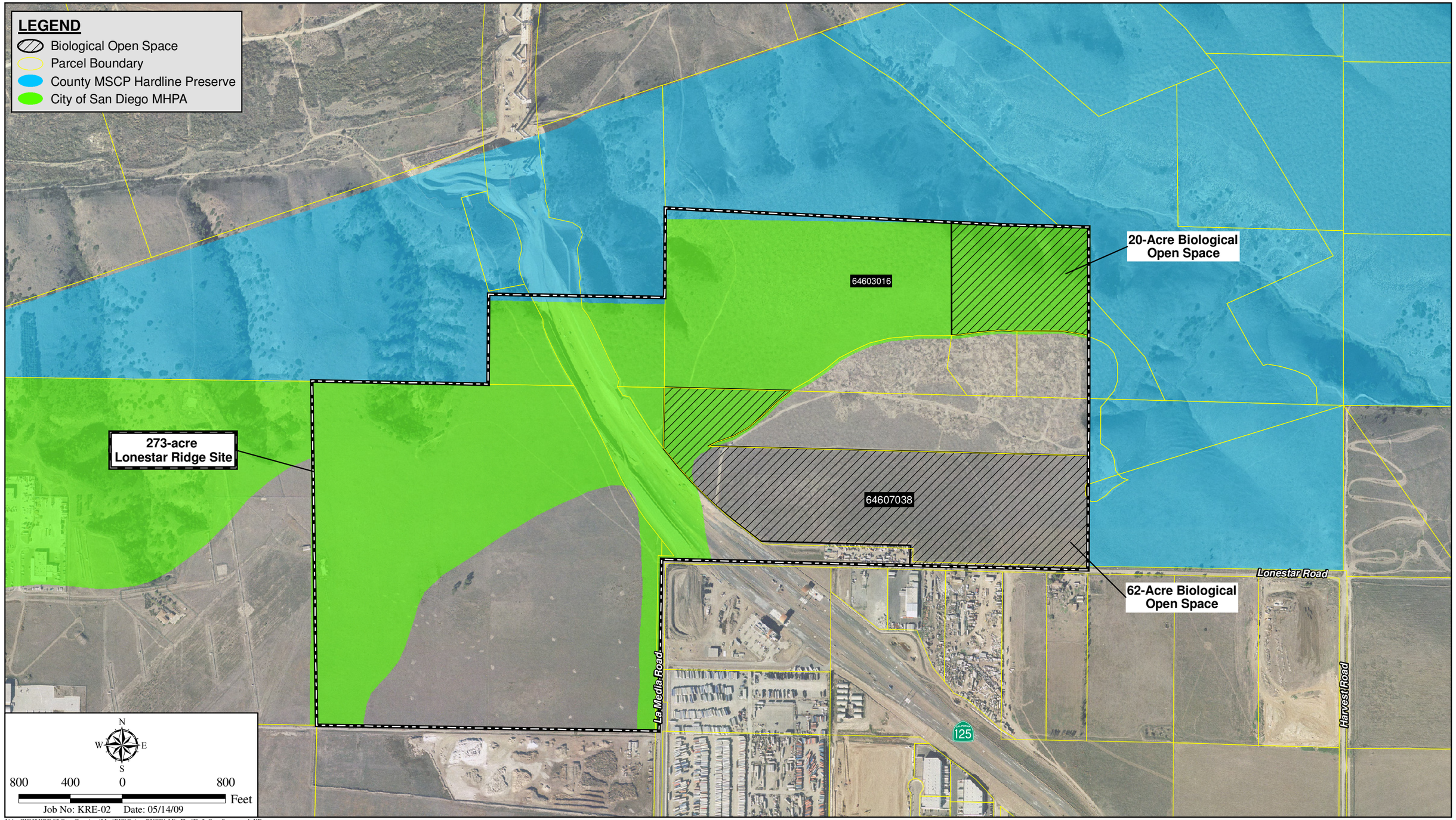
Vegetation and Sensitive Resources/Biological Open Space at Lonestar Ridge

QUINO CHECKERSPOT BUTTERFLY AND BURROWING OWL
MITIGATION PLAN FOR OTAY CROSSINGS COMMERCE PARK

Figure 4

HELIX



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Biological Open Space at Lonestar Ridge

QUINO CHECKERSPOT BUTTERFLY AND BURROWING OWL
MITIGATION PLAN FOR OTAY CROSSINGS COMMERCE PARK

Figure 5

HELIX

2.2.3 Goals of Compensatory Mitigation

The goal of the mitigation plan is to enhance existing non-native grassland with native bunch grass species, provide topographic features that will be conducive to long-term burrowing owl occupation, and develop a long-term strategy for maintenance of a ground squirrel population that will provide natural burrow opportunities for the owl.

2.3 RESPONSIBILITIES

2.3.1 Project Proponent

Kearny PCCP Otay 311, LLC would be responsible for financing the installation, maintenance, and monitoring of the mitigation effort. Contact information is provided below.

Kearny PCCP Otay 311, LLC
655 W. Broadway, Ste. 1600
San Diego, CA 92101
(619) 702-8130
Contact: John Bragg

2.3.2 County of San Diego/U.S. Fish and Wildlife Service/California Department of Fish and Game

As part of the monitoring program, annual reports prepared by the project biologist would be submitted to the County, USFWS and CDFG[1] for review. It is the Agencies prerogative to review these reports for completeness and to participate in annual site inspections, as well as determining the success of the mitigation effort.

2.3.3 Compensatory Mitigation Project Designer

A licensed landscape architect would prepare necessary construction documents, including grading and planting plans. A registered civil engineer would prepare plans for rough grading.

2.3.4 Installation Contractor

The installation contractor will have native habitat restoration experience, be under the direction of the restoration specialist, responsible for completion of grading, pre-planting weed control, seeding, and maintenance of the mitigation areas. The restoration specialist would educate the contractor(s) on the installation of native grassland plant species.

2.3.5 Restoration Specialist

Overall supervision of the installation, maintenance, and monitoring of the mitigation effort would be the responsibility of a restoration specialist, with native grassland restoration experience. Specifically, the restoration specialist will:

[1] These three entities hereafter are collectively referred to as the "Agencies."

- Document pre-construction conditions and habitat establishment progress by designating permanent photo locations;
- Attend preconstruction meeting with the installation contractor;
- Educate all participants with regard to mitigation goals and requirements;
- Directly oversee restoration activities such as seeding;
- Ensure that installation personnel understand the project requirements and limitations;
- Inspect perimeter fencing of the restoration site prior to the start of grading;
- Inspect plant and seed material prior to installation;
- Monitor the manner in which the plant and seed material is installed;
- Prepare a letter for submittal to the appropriate regulatory agencies (e.g., USFWS, CDFG and County) stating that the installation is complete;
- Provide the project proponent and contractor(s) with a brief report, including a written list of items in need of attention, following each monitoring visit; and
- Notify the contractor and project proponent if any requested remediation is not addressed.

2.3.6 Wildlife Biologist

The wildlife biologist will oversee all aspects of grading, burrow construction, and ground squirrel enhancement measures. The restoration specialist may also be the wildlife biologist if this individual also has experience in burrowing owl habitat enhancement/burrow construction. Specifically, the wildlife biologist will:

- Document pre-construction conditions and habitat establishment progress by designating permanent photo locations;
- Attend preconstruction meeting with the installation contractor;
- Educate all participants with regard to mitigation goals and requirements;
- Inspect perimeter fencing of the restoration site prior to the start of grading;
- Directly oversee restoration activities such as grading and burrow construction; and
- Prepare a letter for submittal to the appropriate regulatory agencies (e.g., USFWS, CDFG and County) stating that the installation is complete.

2.3.7 Maintenance Contractor

Following installation, the project proponent will hire a maintenance contractor for the 5-year monitoring period. The maintenance contractor and the installation contractor may be the same entity and the project proponent may change contractors at its discretion. The maintenance contractor will have experience in the maintenance of native plant habitat and will be educated as the difference between native plants and weeds. Service would include but not be limited to weed control, trash removal, fence repair, dead plant replacement, and re-seeding. All activities conducted would be seasonally appropriate and approved by the restoration specialist. The maintenance contractor would meet the restoration specialist at the site when requested and would perform all checklist items in a timely manner, as directed by the project proponent.

2.4 TYPES AND AREAS OF HABITAT TO BE RESTORED/ENHANCED

Approximately 5 acres of grassland habitat will be enhanced through dethatching and seeding with native species at Lonestar Ridge. The remaining 57 acres at Lonestar Ridge will be enhanced by native seeding. A total of 250 linear feet of berms will be created for owl habitat.

2.4.1 Time Lapse

Enhancement within the Lonestar Ridge Biological Open Space will occur concurrently with site grading of the Otay Crossings Commerce Park project.

2.4.2 Cost

Installation and materials for the habitat enhancement, including grading and maintenance as well as 5 years of maintenance and biological monitoring/reporting, are anticipated to cost approximately $300,000.

2.5 DESCRIPTION OF THE PROPOSED COMPENSATORY MITIGATION SITE

2.5.1 Site Selection

The western portion of the grassland enhancement area currently supports non-native grassland with a higher weed component than other portions of the Lonestar Ridge Biological Open Space. Enhancement of this area will benefit adjacent grassland areas to the east that are of much higher quality. The enhancement area will be part of several hundred acres of mesa top grassland habitat preserved as open space east of SR 125.

2.5.2 Location and Size of Compensatory Mitigation Site

The Lonestar Ridge Mitigation Site is located east of SR 125 and north of Lone Star Road. Habitat enhancement will occur within open space at approximately 32.580485 north latitude, -116.959886 west longitude, and Universal Transverse Mercator (UTM) 36 04 781 North/5 03 764 East (Figure 3).

2.5.3 Present and Proposed Uses

The site is currently undeveloped land that is being impacted by lack of access control from off-highway vehicles (OHV) activity and biological monitoring. This area would be placed in open space following mitigation plan implementation.

2.6 IMPLEMENTATION PLAN

2.6.1 Rationale for Expecting Implementation Success

The areas selected for grassland enhancement will be located in a fenced biological open space area that will preclude vehicular access. Existing grassland occurs within the open space, and with appropriate management, it is fully expected that these areas will be enhanced to provide higher functions and services for both the QCB and burrowing owl.

2.6.2 Financial Assurances

A revegetation agreement shall be signed and notarized by the project proponent and property owner following approval of this revegetation plan and accompanied by the required security as agreed upon by the County.

2.6.3 Installation Schedule

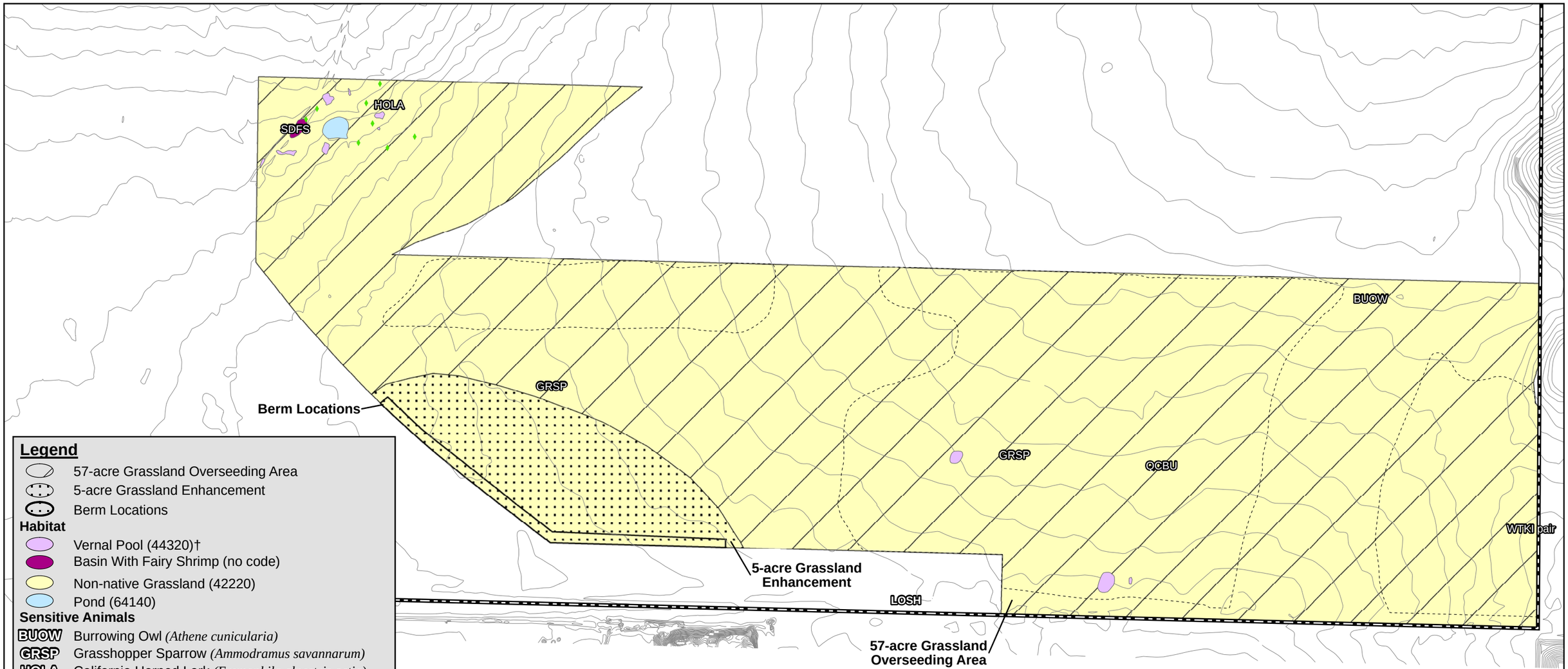
Implementation of the mitigation program is expected to begin in fall 2010, provided that weather and soil conditions are dry enough to conduct the restoration without causing irreparable damage to the surrounding habitat. The entire restoration is anticipated to be complete within 4 weeks of starting. The installation will be conducted concurrently with vernal pool creation plan also being implemented on the Lonestar Ridge Biological Open Space to meet mitigation obligations for project-related impacts to road pools occupied by San Diego fairy shrimp and Riverside fairy shrimp (HELIX 2010b).

2.6.4 Site Preparation

Initial activities would include delineating all restoration areas, weed and trash removal, and berm/mima mound grading. Grading of the site would start once the site has been cleared of all trash and debris. Because the QCB and burrowing mitigation will be conducted in conjunction with vernal pool creation (HELIX 2010b), most of the grading of the created pools would replicate the basin and mima mound topography typical of a vernal pool landscape (Figure 6). The berms for the owls nesting sites, however will be taller than typical mima mound topography. Berms will be constructed of soil more friable than the Stockpen soils found on the Lonestar Ridge Biological Open Space to maximize their potential use by California ground squirrels. Rock rubble piles will also be placed randomly within the enhancement area using native rock from the area. These rubble piles will provide potential receptor sites for the reintroduction of California ground squirrels.

The wildlife biologist/restoration biologist would mark all areas to be graded. Existing sensitive habitats and plants also would be marked as avoidance areas. An on-site meeting would be held with the restoration specialist and all installation personnel to identify sensitive areas and devise a strategy for avoidance prior to initiation of restoration activities. Sensitive areas to be avoided would be clearly marked with stakes and flagging. A staging area would be established outside of the restoration and enhancement areas. Grading shall be implemented using small rubber-tired loaders and tracked dozers with ripping tines and slope boards. All vehicles and construction equipment would be restricted to the staging areas when not required for restoration activities.

Prior to and during construction, a temporary orange construction fence would restrict access to the enhancement areas. A permanent fence would be constructed along the boundary of the southern portion of the open space, preventing OHV and pedestrian use of the preserve areas. Steel signs attached to the fence at regular intervals would provide notice in both English and Spanish that the area is an ecological preserve and that trespassing is prohibited.



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Quino Checkerspot Butterfly and Burrowing Owl Mitigation

QUINO CHECKERSPOT BUTTERFLY AND BURROWING OWL
MITIGATION PLAN FOR OTAY CROSSINGS COMMERCE PARK

Figure 6

HELIX

2.6.5 Planting Plan

Seeding will be conducted when grading is complete. QCB and burrowing owl habitat restoration will take place in all graded and re-contoured areas (excluding vernal pools) within the Lonestar vernal pool creation and enhancement areas, and in the on-site restoration area (Figure 6). These areas have been disturbed and may be further disturbed by restoration activities. The remaining 57 acres will be overseeded with native bunch grass species and dwarf plantain (*Plantago erecta*) only. This overseeding will occur in the first and second year of the effort. Restoration of QCB and burrowing owl (upland) habitat is critical to the overall success of the vernal pool mitigation plan (HELIX 2010b). Without vegetative cover to control erosion, the restored pools may fill with materials washed in from the adjacent upland areas.

Two treatments will be installed in the upland areas, including focused QCB habitat areas (Figure 6) and grassland/sage scrub (burrowing owl) habitat. The focused QCB habitat areas will be composed of QCB host and nectaring species, plus purple needlegrass (*Nassella pulchra*) plugs.

A seed mix of native grassland and coastal sage scrub plant species, including species used by QCB, from the project vicinity, will be applied in the 5 acres of upland areas proposed for dethatching and/or seeding for vernal pool restoration (Table 2). The amount of seed for each species is dependent upon the location of a suitable seed source in the project vicinity. It may be necessary to complement the collected seed with sources outside of the immediate project vicinity.

Table 2
UPLAND SEED MIX

Scientific Name	Common Name	Percent Purity	Percent Germination	Pounds Per Acre	Required for project*
Ambrosia chenopodifolia	San Diego bur sage	NA	NA	1.0	5.0
Amsinkia menziesii	rancher's fiddleneck	40	60	1.0	5.0
Antirrhinum coulterianum	Coulter's snapdragon	NA	NA	0.25	1.25
Artemisia californica	California sagebrush	15	60	1.0	5.0
Brodiaea terrestris ssp. *kernensis*	Mesa brodiaea	NA	NA	0.25	1.25
Calochortus splendens	splendid Mariposa lily	90	80	0.25	1.25
Castilleja exserta	purple owl's clover	50	50	1.5	
Cryptantha intermedia	Nievatas cryptantha	10	50	1.0	5.0
Dichelostemma capitatum	blue dicks	90	80	0.5	2.5
Deinandra fasciculata	fascicled tarweed	20	80	1.5	7.5
Eriogonum fasciculatum	California buckwheat	50	20	1.5	7.5
Eriophyllum confertiflorum	golden-yarrow	30	70	1.0	5.0

Table 2 (cont.) UPLAND SEED MIX					
Scientific Name	**Common Name**	**Percent Purity**	**Percent Germination**	**Pounds Per Acre**	**Required for project***
Grindellia comporum var. *bracteosa*	gumplant	20	60	0.25	1.25
Isomeris arborea	bladderpod	90	65	1.0	5.0
Lasthenia gracilis	goldfields	70	50	1.5	7.5
Nassella lepida	foothill needlegrass	90	60	2.0	10.0
Nassella pulchra	purple needlegrass	90	80	3.0	15.0
Opuntia littoralis	coast prickly-pear	90	40	1.5	7.5
Plagiobothrys acanthocarpus	Adobe popcornflower	NA	NA	0.5	2.5
Plagiobothrys fulvus	popcornflower	NA	NA	0.5	2.5
Plantago erecta	dot-seed plantain	90	80	3.0	15.0
Salvia columbariae	chia	90	60	1.0	5.0
Simmondsia chinensis	jojoba	90	70	1.5	7.5
Sisyrinchium bellum	blue-eyed-grass	95	75	1.0	5.0
Viguiera laciniata	San Diego sunflower	40	50	1.0	5.0
			TOTAL	**28.5**	**135.0***

*Based on 5 acres

The remaining 57 acres will be overseeded with the species identified in Table 3.

Table 3 GRASSLAND SEED MIX					
Scientific Name	**Common Name**	**Percent Purity**	**Percent Germination**	**Pounds Per Acre**	**Required for project***
Nassella lepida	foothill needlegrass	90	60	2.0	114.0
Nassella pulchra	purple needlegrass	90	80	10.0	570.0
Plantago erecta	dot-seed plantain	90	80	5.0	285.0
			TOTAL	**17.0**	**969.0**

*Based on 57 acres

2.6.6 Irrigation Plan

No irrigation is proposed.

2.6.7 Ground Squirrel Reintroduction

Upon completion of the grading and installation of the restoration effort on the Lonestar Ridge site, California ground squirrels will be introduced onto the site. The ground squirrels will be live-trapped from the Otay Crossings Commerce Park in areas proposed to be impacted by the project and relocated to Lonestar Ridge.

2.7 ESTABLISHMENT PERIOD MAINTENANCE

2.7.1 Maintenance Activities

A 5-year maintenance program is proposed to ensure the successful establishment and persistence of the QCB and burrowing owl habitat. The maintenance program will involve removal of trash, weed control, and any remedial measures deemed necessary for the success of the restoration program (e.g., re-seeding and re-planting). Maintenance activities will be directed by the restoration specialist.

Damage to plants and other facilities occurring as a result of unusual weather or vandalism will be repaired as directed by the restoration specialist. The cost of such repairs will be paid for as extra work. The contractor will be responsible for damage caused by the contractor's inadequate maintenance as determined by the restoration specialist.

It is the maintenance contractor's responsibility to keep all planted areas free of debris and to monitor plant material condition and health, weeding, and erosion control. The maintenance contractor also will be responsible for replacing any dead or terminally diseased plants at the direction of the restoration specialist. Fertilizer will only be applied in extraordinary circumstances and only at the written direction of the restoration specialist. No post-installation pruning is necessary unless otherwise directed by the restoration specialist.

Pests will be tolerated unless they pose a significant threat to project success. If deemed necessary, a licensed pest control adviser will make specific pest control recommendations. All applicable federal and state laws and regulations will be closely followed. The restoration specialist will be consulted on any pest control matters.

These maintenance guidelines are tailored to native plant establishment. Maintenance personnel will be informed of the habitat restoration program so that they understand the goals of the effort and the maintenance requirements. A professional with experience and knowledge in native habitat restoration maintenance will supervise all maintenance.

2.7.1.1 Non-native Plant Control

Particular emphasis will be placed on pro-active weed control within the 5-acre Lonestar Ridge restoration area. Weeding other than that noted in Section 2.7.1.3 below, will not be conducted on the 57-acre grassland overseeding area. There will be a very low tolerance for weed species other than non-native grasses within the restoration areas. Weed eradication will be conducted as

necessary to minimize competition that could prevent the establishment of native species. As weeds become evident, they should be removed by hand or controlled with the proper herbicides, applied by a licensed professional. The restoration specialist will oversee weed control by the maintenance contractor. Maintenance personnel will be trained to distinguish weed species from desirable native vegetation.

2.7.1.2 Invasive Plant Control

In addition to the general weed control effort described above, certain highly invasive plant species have been targeted for complete eradication within the restoration areas, including the 57 acre overseeding area: fennel (*Foeniculum vulgare*), pampas grass (*Cortaderia* sp.), giant reed (*Arundo donax*), artichoke thistle (*Cynara cardunculus*), and tamarisk (*Tamarix* sp.). These species are rated as either High or Moderate in the California Invasive Plant Inventory prepared by the California Invasive Plant Council (Cal-IPC 2006), which includes highly invasive pest plants that have been documented as aggressive invaders that displace natives and disrupt natural habitats. There will be no tolerance for these species within the restoration area. Additional species may be added to this list if found to be a threat to the long-term success of the restoration effort.

2.7.1.3 Other Pests

Insects, vertebrate pests, and diseases will be monitored. Generally speaking, a high threshold of tolerance will be permitted before control measures are considered. Only a licensed pest control adviser as required by law will make specific recommendations. All applicable federal and state laws and regulations will be closely followed. The restoration specialist will be consulted on any pest control matters.

2.7.1.4 Fertilization

Fertilizer will not be applied except in extraordinary circumstances and only at the written direction of the restoration specialist.

2.7.1.5 Pruning

No post-installation pruning is necessary unless otherwise directed by the restoration specialist.

2.7.1.6 Sensitive Species Issues

Maintenance activities will not include use of heavy equipment or vehicles and as such are not anticipated to have adverse effects on sensitive species. Nonetheless, all maintenance activities will be carried out under the direction of the restoration specialist, as necessary, in order to avoid any impacts to sensitive species.

2.7.2 Schedule

Maintenance will be conducted monthly during the establishment period.

2.8 MONITORING PLAN

2.8.1 Responsible Parties

Activities in this section that relate to the establishment of grassland and QCB habitat are the responsibility of the restoration specialist. Activities relating to the burrowing owls are the responsibility of the wildlife biologist.

2.8.2 Performance Standards for Target Dates and Success Criteria

The following standards will be used to determine the successful completion of the 5-year mitigation and monitoring program. Attainment of these standards indicates the mitigation areas are progressing toward the habitat functions and values specified for this plan. Methods used to measure these success criteria are described in the following text. The Agencies may terminate monitoring earlier than 5 years if success criteria are met and it is recommended by the restoration specialist in a year-end report. Likewise, if the restored areas fail to meet the Year 5 standards after the full monitoring term, a specific set of remedial measures (approved by the Agencies) would be implemented, and the monitoring and maintenance period would be extended until all Year 5 standards are met or as otherwise provided in this document. Only areas failing to meet the success standards would require additional work (i.e., not all of the areas originally restored).

2.8.2.1 Lonestar Ridge Restoration Areas

Technical monitoring will include both qualitative (visual assessment) and quantitative (transect data collection) sampling within the Lonestar Ridge restoration areas. This sampling will include assessments of cover (native and non-native) and lists of wildlife and plant species observed on site each year. In Years 1 and 2, monitoring will be qualitative in nature and be based on a visual and photographic survey of the restoration areas. In Years 3 through 5, quantitative transect monitoring will be conducted in the restoration areas. Success criteria milestones are provided below.

Species Richness

Species richness is the number of native species present in a given area. During the annual monitoring, species richness within the restoration areas will be determined by visual assessment only in Years 1 and 2. Species richness within the restoration areas will be determined within the belt and point intercept transects in Years 3 through 5. Annual success criteria for species richness for native species vary by year and habitat type (Table 4). If the species richness goal for a given year is not met, corrective measures (e.g., reseeding, planting, etc.) will be taken to ensure eventual achievement of the 5-year goal.

Table 4
SPECIES RICHNESS SUCCESS CRITERIA*†

HABITAT	YEAR 3	YEAR 4	YEAR 5
Upland Habitat	5	6	7

*No success criteria for Years 1 and 2

†Values are number of native species

Vegetative Cover

Native and non-native (weed) plant species cover will be measured to assess project success. Annual performance goals have been set to track the progress of the mitigation effort. No specific cover criteria have been established for Years 1 or 2. For Years 3, 4, and 5, the native species cover will vary by habitat and strata (Table 5). If the annual goals for native and non-native cover are not met, additional measures (e.g., reseeding, planting, weeding, etc.) will be taken as necessary to ensure final success.

Table 5
VEGETATIVE COVER SUCCESS CRITERIA (percent)

HABITAT/PARAMETER	YEAR 3	YEAR 4	YEAR 5
Grassland			
Total cover	30	40	50
Shrub cover	20	25	30
Herb cover	30	30	30
Invasive weed cover*	0	0	0

*Limited to Cal-IPC High or Moderate rated species. No criteria for non-native grasses

Non-native/Invasive Plant Cover

Weeds are typically a problem in habitat restoration projects, particularly at their outset. As the restoration takes hold, weed problems should decrease. Although weeds are expected to be a problem, focused maintenance efforts should reduce weed cover to an acceptable level. All Cal-IPC High- or Moderate-rated species will be included in the weed control effort. There will be no tolerance for these species within the restoration areas. At the end of the 5-year maintenance and monitoring period, the acceptable cover value will be zero. Additional species may be added to this list if found to be a threat to the long-term success of the restoration effort. Weeds will be controlled as specified in the maintenance monitoring section. At the end of the 5-year monitoring period, weed species (other than non-native grasses) shall account for no more than 10 percent of the grassland cover.

2.8.2.2 Lonestar Ridge Overseeding Area

The goal of the monitoring on the overseeding area will be to assess changes in native species cover resulting from the overseeding effort, rather than meeting any specific monitoring requirements. This information will provide valuable data for future grassland enhancement efforts on Otay Mesa.

2.8.2.3 QCB and Burrowing Owl

Specific occupation goals for the QCB and burrowing owl are not a requirement of this mitigation plan. Success criteria shall be deemed as being met for these species if the habitat goals outlined in Sections 2.8.1.1 and 2.8.1.2 above are accomplished. Species-specific surveys will be conducted, however, for both species as outlined below.

For the burrowing owl, the ground squirrel reintroduction program will be deemed successful, if at the end of the 5-year monitoring program, a minimum of 4 active ground squirrel burrow complexes occur within the Lonestar Ridge restoration area.

2.8.3 Target Functions and Values

Upon meeting success criteria, the QCB and burrowing owl restoration/enhancement areas will provide a minimum of 5 acres of potential habitat for these species, as well as other sensitive species. Additionally, the 57-acre grassland overseeding area will have a net functional lift in habitat values over the existing condition. Values would include supporting biological diversity by maintaining populations of rare species.

2.8.4 Monitoring Methods

2.8.4.1 On-site and Lonestar Ridge Restoration Areas

Monitoring would be carried out under the direction of the restoration specialist to assess the progress of the restoration effort and determine any appropriate remedial measures. Quantitative success criteria presented above would be used to measure mitigation success.

A total of 5 50-meter transects will be used to collect data for the technical monitoring within the Lonestar Ridge restoration area. The transects will be randomly located during the first quantitative sampling event (to occur in Year 3), and permanently marked with rebar to facilitate their use in subsequent years. Species data will be collected along each transect using the point intercept line transect sampling methods described in the California Native Plant Society's Field Sampling Protocol (Sawyer and Keeler-Wolf 1995). Species cover data will be collected by recording all of the species intercepted at each 0.5-meter interval along the length of each transect. Vegetation will be recorded separately for herb (0 to 0.6 meters), shrub (0.6 to 2 meters), and tree (greater than 2 meter) layers. Species richness data will be collected by noting all species occurring within 5 meters of each transect.

Wildlife usage of the restoration area will be monitored every May by walking 3 transects along the length of the restoration site and identifying all animals by sight, sign, or vocalization. The number of individuals and species detected shall be recorded.

Photo documentation points shall be established for the entire 62 acre preserve area, and photographs would be taken during the annual monitoring event. Representative photos would be provided in the annual monitoring report.

2.8.4.2 Lonestar Ridge Overseeding Area

The Lonestar Ridge overseeding area will be monitored using the same techniques outlined for the restoration areas. A total of 10 transects will be placed randomly in the overseeding area prior. Data will be collected in the spring prior to overseeding (anticipated to be 2010). Data will be collected in Years 3 and 5 of the initial overseeding effort.

2.8.4.3 QCB and Burrowing Owl

Burrowing owl assessments will be conducted during each annual assessment. The number of pairs using the site will be counted and included in the annual report. If it can be determined as part of the ongoing monitoring efforts throughout the year, number of successful breeding attempts and number of owls fledged will also be included in the annual report.

QCB surveys will be conducted in 2 of the last 3 years to assess if the site is occupied by the QCB. The 2 years of surveys will be at the discretion of the project biologist based on weather patterns for a given year to maximize detectability. Three (3) survey dates at the peak of the QCB flight season will be included for each of the 2 years.

Monthly inspections of the restoration and maintenance efforts would be performed during Year 1, every other month during Year 2, and every 3 months during the remainder of the monitoring period. As conditions warrant, additional site visits may be required during the initial installation/establishment period.

2.8.5 Monitoring Schedule

During the establishment period, the restoration specialist will monitor habitat establishment and maintenance activities conducted by the maintenance crews (Table 6).

Table 6
MAINTENANCE MONITORING SCHEDULE

PHASE	SCHEDULE
Installation	
Site preparation and installation	Daily
Post Installation	
Year 1	Monthly
Year 2	
December to May	Monthly
June to November	Twice: July and September
Years 3 to 5	Quarterly: March, June, September, and December

2.8.6 Monitoring Reports

Monitoring memos noting any issues with plant establishment, sediment control, etc., will be provided as necessary to the maintenance contractor and project proponent.

As part of the monitoring program, annual reports will be submitted to the Agencies on September 30th. These annual reports will evaluate the success of the mitigation effort to date, along with providing any recommendations for future work that may be deemed necessary. Each annual monitoring report would include data collected throughout the year in addition to the annual monitoring visit. To detect the overall trend of the site, the annual monitoring report would contain comparisons of the monitoring data for the years that data are collected. The Agencies shall be annually invited to view the mitigation site. Any significant issue or contingency that arises on the job site (e.g. fire or flooding) shall be reported in writing to the County within 2 weeks from the date of the incident. Accompanying the report shall be a plan for remediation, with an implementation schedule and a monitoring schedule.

2.9 COMPLETION OF COMPENSATORY MITIGATION

The permittee shall notify the Agencies of completion of the mitigation effort through submittal of a final (Year 5) monitoring report. After receipt of the final monitoring report, the Agencies may inspect the mitigation site to determine the success of the restoration effort. After evaluating the final report, the agencies shall determine if the restoration effort is acceptable.

2.10 CONTINGENCY MEASURES

2.10.1 Initiating Contingency Measures

If the Agencies determine upon receipt of any of the annual monitoring reports that the restoration effort is not meeting success standards for the project, the USFWS and County shall notify the project proponent in writing that the restoration effort may require augmentation for successful implementation. The project proponent shall then have 30 days to respond to the notification. During this period, the project proponent may discuss alternatives with the Agencies.

2.10.2 Alternative Locations for Contingency Compensatory Mitigation

Sufficient area for contingency restoration is present within the Lonestar Ridge Biologicl Open Space. If the success criteria are not being met, the Agencies will work together with the permittee(s) to reach an alternative mutually acceptable solution.

2.10.3 Funding

The permittee shall be responsible for all costs associated with any remedial measures.

3.0 REFERENCES

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APPENDIX A

PLANT SPECIES OBSERVED

Appendix A
PLANT SPECIES OBSERVED – OTAY CROSSINGS COMMERCE PARK

FAMILY	SCIENTIFIC NAME	COMMON NAME	HABITAT‡
DICOTS			
Aizoaceae	*Mesembryanthemum nodiflorum**	slender-leaved iceplant	DCSS-D
Amaranthaceae	*Amaranthus* sp.*	tumbleweed	NNG
Anacardiaceae	*Malosma laurina*	laurel sumac	DCSS, DCSS-D
Apiaceae	*Foeniculum vulgare**	fennel	DH, DW
Asteraceae	*Ambrosia psilostachya*	western ragweed	DW
	Artemisia californica	California sagebrush	DCSS, DCSS-D
	Baccharis pilularis	coyote brush	DCSS, DCSS-D, DH
	Baccharis sarothroides	broom baccharis	DCSS, DCSS-D
	*Centaurea melitensis**	star thistle	DH, NNG
	*Conyza canadensis**	horseweed	DH
	*Cynara cardunculus**	cardoon	NNG
	Deinandra conjugens†	Otay tarplant	NNG
	Deinandra fasciculata	fascicled tarplant	DCSS, DCSS-D, NNG
	Filago californica	California filago	NNG
	*Gazania linearis**	gazania	DCSS-D, NNG
	Gnaphalium californicum	California everlasting	DCSS, DCSS-D, NNG
	Grindelia camporum var. *bracteosum*	gum plant	NNG
	*Hedypnois cretica**	Crete hedypnois	NNG
	Helianthus annuus	western sunflower	DCSS, DCSS-D, NNG
	*Hypochaeris glabra**	smooth cat's-ear	NNG
	Isocoma menziesii var. *menziesii*	San Diego goldenbush	DCSS, DCSS-D, NNG
	Iva hayesiana†	San Diego marsh-elder	NNG
	*Lactuca serriola**	wild lettuce	DW
	Lessingia filaginifolia var. *filaginifolia*	California-aster	DCSS-D, NNG
	Osmadenia tenella	osmadenia	NNG
	*Sonchus oleraceus**	common sow thistle	DH, NNG
	Stylocline gnaphaloides	everlasting nest straw	NNG
	Viguiera laciniata†	San Diego County viguiera	DCSS, DCSS-D, NNG
	*Xanthium strumarium**	cocklebur	DW
Boraginaceae	*Cryptantha* sp.	cryptantha	DCSS, DCSS-D
	Plagiobothrys sp.	popcorn flower	DCSS-D, NNG
Brassicaceae	*Brassica nigra**	black mustard	DH, NNG
	Lepidium sp.*	peppergrass	NNG
	Lepidium latifolium	peppergrass	NNG
Cactaceae	*Ferocactus viridescens*†	San Diego barrel cactus	DCSS, DCSS-D, NNG
	Opuntia littoralis	coastal prickly pear	DCSS, DCSS-D
Capparaceae	*Isomeris arborea*	bladderpod	DCSS, DCSS-D

Appendix A (cont.)
PLANT SPECIES OBSERVED – OTAY CROSSINGS COMMERCE PARK

FAMILY	SCIENTIFIC NAME	COMMON NAME	HABITAT‡
DICOTS (cont.)			
Caryophyllaceae	*Silene gallica**	common catchfly	DCSS-D, NNG
	*Spergularia bocconii**	sand-spurry	NNG
	Spergularia sp.*	sand-spurry	NNG
Chenopodiaceae	*Atriplex semibaccata**	Australian saltbush	NNG
	Chenopodium sp.*	pigweed	DH, DW, NNG
	Salicornia bigelovii	dwarf glasswort	DW
	*Salsola tragus**	Russian thistle	DH, NNG
Convolvulaceae	*Calystegia macrostegia* ssp. *arida*	finger-leaf morning-glory	DCSS, DCSS-D
	*Convolvulus arvensis**	bindweed	NNG
	Convolvulus simulans†	small-flowered morning glory	NNG
	Crassula connata	pygmy-weed	NNG
Crassulaceae	*Dudleya variegata*†	variegated dudleya	NNG
Euphorbiaceae	*Eremocarpus setigerus*	dove weed	DH, NNG
Fabaceae	*Lotus scoparius* var. *scoparius*	coastal deerweed	DCSS, DCSS-D
	Medicago polymorpha	bur-clover	NNG
	*Medicago sativa**	alfalfa	NNG
Gentianaceae	*Centaurium venustum*	canchalagua	DCSS, DCSS-D
Geraniaceae	*Erodium cicutarium**	red-stem filaree	DH, NNG
	*Erodium moschatum**	green-stem filaree	DH, NNG
Lamiaceae	*Trichostema lanceolatum*	vinegar weed	DCSS, DCSS-D
Malvaceae	*Malva parviflora**	cheeseweed	DH, NNG
Nyctaginaceae	*Mirabilis californica*	wishbone bush	DCSS-D, NNG
Oxalidaceae	*Oxalis pes-caprae**	Bermuda-buttercup	NNG
Plantaginaceae	*Plantago erecta*	dwarf plantain	DCSS-D, NNG
Polygonaceae	*Eriogonum fasciculatum* ssp. *fasciculatum*	California buckwheat	DCSS, DCSS-D, NNG
	Linanthus dianthiflorus	ground pink	DCSS, DCSS-D
	Polygonum sp.	knotweed	DH, NNG
	*Rumex crispus**	curly dock	DW, TS
Portulacaceae	*Calandrinia ciliata*	red maids	DCSS, DCSS-D, NNG
Primulaceae	*Anagallis arvensis**	scarlet pimpernel	NNG
	Dodecatheon clevelandii ssp. *clevelandii*	shooting star	DCSS-D, NNG
Rhamnaceae	*Adolphia californica*†	California adolphia	DCSS
Rubiaceae	*Galium* sp.	bedstraw	DCSS-D
Tamaricaceae	*Tamarix* sp.*	tamarisk	TS
Verbenaceae	*Verbena* sp.	verbena	NNG

Appendix A (cont.)
PLANT SPECIES OBSERVED – OTAY CROSSINGS COMMERCE PARK

FAMILY	SCIENTIFIC NAME	COMMON NAME	HABITAT‡
MONOCOTS			
Iridaceae	*Sisyrinchium bellum*	blue-eyed grass	NNG
Juncaceae	*Juncus bufonius*	toad rush	NNG
Liliaceae	*Bloomeria crocea* var. *crocea*	golden star	DCSS-D, NNG
	Brodiaea jolonensis	mesa brodiaea	DCSS-D, NNG
	Chlorogalum pomeridianum	soap plant	DCSS
	Dichelostemma capitatum	blue dicks	DCSS, DCSS-D, NNG
	Zigadenus fremontii	star-lily	NNG
Poaceae	*Avena barbata**	slender wild oat	DCSS, DCSS-D, DH, NNG
	*Avena fatua**	wild oat	DCSS-D, DH, NNG
	*Bromus diandrus**	common ripgut grass	DCSS, DCSS-D, NNG, DH
	*Bromus hordeaceus**	soft chess	NNG
	Bromus madritensis ssp. *rubens**	foxtail chess	DCSS, DCSS-D, NNG, DH
	*Gastridium ventricosum**	nit grass	NNG
	Hordeum marinum ssp. *gussoneanum**	Mediterranean barley	DH, NNG
	Hordeum sp.	barley	NNG
	*Lamarckia aurea**	goldentop	DH
	*Lolium multiflorum**	Italian ryegrass	NNG
	Lolium sp.*	ryegrass	NNG, DH
	Nassella pulchra	purple needlegrass	NNG
	Nassella sp.	needlegrass	NNG
	Phalaris sp.*	canary grass	DW
	*Polypogon monspeliensis**	annual beard grass	DW, DH, NNG
	*Schismus barbatus**	Mediterranean grass	DH, NNG
	*Vulpia myuros**	fescue	DCSS, DCSS-D, DH, NNG
Typhaceae	*Typha* sp.	cattail	DW, TS
PTERIDOPHYTES			
Selaginellaceae	*Selaginella cinerascens*	ashy spike-moss	DCSS

*Non-native species
†Sensitive species
‡Habitat acronyms: DCSS=Diegan coastal sage scrub, DCSS-D=disturbed Diegan coastal sage scrub, DH=disturbed habitat, DW=disturbed wetland, NNG=non-native grassland, TS=tamarisk shrub

APPENDIX B

ANIMAL SPECIES OBSERVED

Appendix B
ANIMAL SPECIES OBSERVED – OTAY CROSSINGS COMMERCE PARK

SCIENTIFIC NAME	COMMON NAME
INVERTEBRATES	
Anthocharis sara	Sara orangetip
Apodemia mormo virgulti	Behr's metalmark
Branchinecta sandiegonensis†	San Diego fairy shrimp
Brephidium exilis	western pygmy blue
Coenonympha californica	common California ringlet
Erynnis funeralis	funereal duskywing
Euphydryas editha quino†	Quino checkerspot butterfly
Glaucopsyche lygdamus australis	southern blue
Junonia coenia	buckeye
Papilio eurymedon	pale swallowtail
Papilio zelicaon	Anise swallowtail
Pieris rapae	cabbage butterfly
Plebejus acmon	Acmon blue
Pontia protodice	common white
Pyrgus albescens	common checkered skipper
Streptocephalus woottoni†	Riverside fairy shrimp
Vanessa annabella	west coast lady
Vanessa cardui	painted lady
VERTEBRATES	
Amphibian	
Spea hammondii†	western spadefoot
Reptiles	
Cnemidophorus hyperythrus beldingi	orange throated whiptail
Cnemidophorus tigris multiscutatus†	coastal western whiptail
Sceloporus occidentalis	western fence lizard
Thamnophis hammondii	two-striped garter snake
Birds	
Agelaius phoenceus	red-wing blackbird
Ammodramus savannarum†	grasshopper sparrow
Athene cunicularia†	burrowing owl
Buteo jamaicensis	red-tailed hawk
Carduelis psaltria	lesser goldfinch
Carduelis tristis	American goldfinch

Appendix B (cont.)
ANIMAL SPECIES OBSERVED – OTAY CROSSINGS COMMERCE PARK

SCIENTIFIC NAME	COMMON NAME
VERTEBRATES (cont.)	
Birds (cont.)	
Carpodacus mexicanus	house finch
Charadrius vociferus	killdeer
Chordeiles acutipennis	lesser nighthawk
Circus cyaneus†	northern harrier
Corvus brachyrhynchos	American crow
Corvus corax	common raven
Elanus leucurus†	white-tailed kite
Eremophila alpestris actia†	California horned lark
Falco sparverius	American kestrel
Hirundo pyrrhonota	cliff swallow
Icterus bullockii	Bullock's oriole
Lanius ludovicianus†	loggerhead shrike
Mimus polyglottos	northern mockingbird
Passer domesiticus	house sparrow
Passerina caerulea	blue grosbeak
Pipilo crissalis	California towhee
Sayornis nigricans	black phoebe
Sturnella neglecta	western meadowlark
Sturnus vulgaris	European starling
Tyrannus verticalis	western kingbird
Tyrannus vociferans	Cassin's kingbird
Zenaida macroura	mourning dove
Zonotrichia leucophyrys	white-crowned sparrow
Mammals	
Spermophilus beecheyi	California ground squirrel
Sylvilagus audubonii	desert cottontail
Thomomys bottae	Botta's pocket gopher

†Sensitive species

APPENDIX A

PLANT SPECIES OBSERVED

Appendix A
PLANT SPECIES OBSERVED – OTAY CROSSINGS COMMERCE PARK

FAMILY	SCIENTIFIC NAME	COMMON NAME	HABITAT‡
DICOTS			
Aizoaceae	*Mesembryanthemum nodiflorum**	slender-leaved iceplant	DCSS-D
Amaranthaceae	*Amaranthus* sp.*	tumbleweed	NNG
Anacardiaceae	*Malosma laurina*	laurel sumac	DCSS, DCSS-D
Apiaceae	*Foeniculum vulgare**	fennel	DH, DW
Asteraceae	*Ambrosia psilostachya*	western ragweed	DW
	Artemisia californica	California sagebrush	DCSS, DCSS-D
	Baccharis pilularis	coyote brush	DCSS, DCSS-D, DH
	Baccharis sarothroides	broom baccharis	DCSS, DCSS-D
	*Centaurea melitensis**	star thistle	DH, NNG
	*Conyza canadensis**	horseweed	DH
	*Cynara cardunculus**	cardoon	NNG
	Deinandra conjugens†	Otay tarplant	NNG
	Deinandra fasciculata	fascicled tarplant	DCSS, DCSS-D, NNG
	Filago californica	California filago	NNG
	*Gazania linearis**	gazania	DCSS-D, NNG
	Gnaphalium californicum	California everlasting	DCSS, DCSS-D, NNG
	Grindelia camporum var. *bracteosum*	gum plant	NNG
	*Hedypnois cretica**	Crete hedypnois	NNG
	Helianthus annuus	western sunflower	DCSS, DCSS-D, NNG
	*Hypochaeris glabra**	smooth cat's-ear	NNG
	Isocoma menziesii var. *menziesii*	San Diego goldenbush	DCSS, DCSS-D, NNG
	Iva hayesiana†	San Diego marsh-elder	NNG
	*Lactuca serriola**	wild lettuce	DW
	Lessingia filaginifolia var. *filaginifolia*	California-aster	DCSS-D, NNG
	Osmadenia tenella	osmadenia	NNG
	*Sonchus oleraceus**	common sow thistle	DH, NNG
	Stylocline gnaphaloides	everlasting nest straw	NNG
	Viguiera laciniata†	San Diego County viguiera	DCSS, DCSS-D, NNG
	*Xanthium strumarium**	cocklebur	DW
Boraginaceae	*Cryptantha* sp.	cryptantha	DCSS, DCSS-D
	Plagiobothrys sp.	popcorn flower	DCSS-D, NNG
Brassicaceae	*Brassica nigra**	black mustard	DH, NNG
	Lepidium sp.*	peppergrass	NNG
	Lepidium latifolium	peppergrass	NNG
Cactaceae	*Ferocactus viridescens*†	San Diego barrel cactus	DCSS, DCSS-D, NNG
	Opuntia littoralis	coastal prickly pear	DCSS, DCSS-D
Capparaceae	*Isomeris arborea*	bladderpod	DCSS, DCSS-D

Appendix A (cont.)
PLANT SPECIES OBSERVED – OTAY CROSSINGS COMMERCE PARK

FAMILY	SCIENTIFIC NAME	COMMON NAME	HABITAT‡
DICOTS (cont.)			
Caryophyllaceae	*Silene gallica**	common catchfly	DCSS-D, NNG
	*Spergularia bocconii**	sand-spurry	NNG
	Spergularia sp.*	sand-spurry	NNG
Chenopodiaceae	*Atriplex semibaccata**	Australian saltbush	NNG
	Chenopodium sp.*	pigweed	DH, DW, NNG
	Salicornia bigelovii	dwarf glasswort	DW
	*Salsola tragus**	Russian thistle	DH, NNG
Convolvulaceae	*Calystegia macrostegia* ssp. *arida*	finger-leaf morning-glory	DCSS, DCSS-D
	*Convolvulus arvensis**	bindweed	NNG
	Convolvulus simulans†	small-flowered morning glory	NNG
	Crassula connata	pygmy-weed	NNG
Crassulaceae	*Dudleya variegata*†	variegated dudleya	NNG
Euphorbiaceae	*Eremocarpus setigerus*	dove weed	DH, NNG
Fabaceae	*Lotus scoparius* var. *scoparius*	coastal deerweed	DCSS, DCSS-D
	Medicago polymorpha	bur-clover	NNG
	*Medicago sativa**	alfalfa	NNG
Gentianaceae	*Centaurium venustum*	canchalagua	DCSS, DCSS-D
Geraniaceae	*Erodium cicutarium**	red-stem filaree	DH, NNG
	*Erodium moschatum**	green-stem filaree	DH, NNG
Lamiaceae	*Trichostema lanceolatum*	vinegar weed	DCSS, DCSS-D
Malvaceae	*Malva parviflora**	cheeseweed	DH, NNG
Nyctaginaceae	*Mirabilis californica*	wishbone bush	DCSS-D, NNG
Oxalidaceae	*Oxalis pes-caprae**	Bermuda-buttercup	NNG
Plantaginaceae	*Plantago erecta*	dwarf plantain	DCSS-D, NNG
Polygonaceae	*Eriogonum fasciculatum* ssp. *fasciculatum*	California buckwheat	DCSS, DCSS-D, NNG
	Linanthus dianthiflorus	ground pink	DCSS, DCSS-D
	Polygonum sp.	knotweed	DH, NNG
	*Rumex crispus**	curly dock	DW, TS
Portulacaceae	*Calandrinia ciliata*	red maids	DCSS, DCSS-D, NNG
Primulaceae	*Anagallis arvensis**	scarlet pimpernel	NNG
	Dodecatheon clevelandii ssp. *clevelandii*	shooting star	DCSS-D, NNG
Rhamnaceae	*Adolphia californica*†	California adolphia	DCSS
Rubiaceae	*Galium* sp.	bedstraw	DCSS-D
Tamaricaceae	*Tamarix* sp.*	tamarisk	TS
Verbenaceae	*Verbena* sp.	verbena	NNG

Appendix A (cont.)
PLANT SPECIES OBSERVED – OTAY CROSSINGS COMMERCE PARK

FAMILY	SCIENTIFIC NAME	COMMON NAME	HABITAT‡
MONOCOTS			
Iridaceae	*Sisyrinchium bellum*	blue-eyed grass	NNG
Juncaceae	*Juncus bufonius*	toad rush	NNG
Liliaceae	*Bloomeria crocea* var. *crocea*	golden star	DCSS-D, NNG
	Brodiaea jolonensis	mesa brodiaea	DCSS-D, NNG
	Chlorogalum pomeridianum	soap plant	DCSS
	Dichelostemma capitatum	blue dicks	DCSS, DCSS-D, NNG
	Zigadenus fremontii	star-lily	NNG
Poaceae	*Avena barbata**	slender wild oat	DCSS, DCSS-D, DH, NNG
	*Avena fatua**	wild oat	DCSS-D, DH, NNG
	*Bromus diandrus**	common ripgut grass	DCSS, DCSS-D, NNG, DH
	*Bromus hordeaceus**	soft chess	NNG
	Bromus madritensis ssp. *rubens**	foxtail chess	DCSS, DCSS-D, NNG, DH
	*Gastridium ventricosum**	nit grass	NNG
	Hordeum marinum ssp. *gussoneanum**	Mediterranean barley	DH, NNG
	Hordeum sp.	barley	NNG
	*Lamarckia aurea**	goldentop	DH
	*Lolium multiflorum**	Italian ryegrass	NNG
	Lolium sp.*	ryegrass	NNG, DH
	Nassella pulchra	purple needlegrass	NNG
	Nassella sp.	needlegrass	NNG
	Phalaris sp.*	canary grass	DW
	*Polypogon monspeliensis**	annual beard grass	DW, DH, NNG
	*Schismus barbatus**	Mediterranean grass	DH, NNG
	*Vulpia myuros**	fescue	DCSS, DCSS-D, DH, NNG
Typhaceae	*Typha* sp.	cattail	DW, TS
PTERIDOPHYTES			
Selaginellaceae	*Selaginella cinerascens*	ashy spike-moss	DCSS

*Non-native species
†Sensitive species
‡Habitat acronyms: DCSS=Diegan coastal sage scrub, DCSS-D=disturbed Diegan coastal sage scrub, DH=disturbed habitat, DW=disturbed wetland, NNG=non-native grassland, TS=tamarisk shrub

APPENDIX B

ANIMAL SPECIES OBSERVED

Appendix B
ANIMAL SPECIES OBSERVED – OTAY CROSSINGS COMMERCE PARK

SCIENTIFIC NAME	COMMON NAME
INVERTEBRATES	
Anthocharis sara	Sara orangetip
Apodemia mormo virgulti	Behr's metalmark
Branchinecta sandiegonensis†	San Diego fairy shrimp
Brephidium exilis	western pygmy blue
Coenonympha californica	common California ringlet
Erynnis funeralis	funereal duskywing
Euphydryas editha quino†	Quino checkerspot butterfly
Glaucopsyche lygdamus australis	southern blue
Junonia coenia	buckeye
Papilio eurymedon	pale swallowtail
Papilio zelicaon	Anise swallowtail
Pieris rapae	cabbage butterfly
Plebejus acmon	Acmon blue
Pontia protodice	common white
Pyrgus albescens	common checkered skipper
Streptocephalus woottoni†	Riverside fairy shrimp
Vanessa annabella	west coast lady
Vanessa cardui	painted lady
VERTEBRATES	
Amphibian	
Spea hammondii†	western spadefoot
Reptiles	
Cnemidophorus hyperythrus beldingi	orange throated whiptail
Cnemidophorus tigris multiscutatus†	coastal western whiptail
Sceloporus occidentalis	western fence lizard
Thamnophis hammondii	two-striped garter snake
Birds	
Agelaius phoenceus	red-wing blackbird
Ammodramus savannarum†	grasshopper sparrow
Athene cunicularia†	burrowing owl
Buteo jamaicensis	red-tailed hawk
Carduelis psaltria	lesser goldfinch
Carduelis tristis	American goldfinch

Appendix B (cont.)
ANIMAL SPECIES OBSERVED – OTAY CROSSINGS COMMERCE PARK

SCIENTIFIC NAME	COMMON NAME
VERTEBRATES (cont.)	
Birds (cont.)	
Carpodacus mexicanus	house finch
Charadrius vociferus	killdeer
Chordeiles acutipennis	lesser nighthawk
Circus cyaneus†	northern harrier
Corvus brachyrhynchos	American crow
Corvus corax	common raven
Elanus leucurus†	white-tailed kite
Eremophila alpestris actia†	California horned lark
Falco sparverius	American kestrel
Hirundo pyrrhonota	cliff swallow
Icterus bullockii	Bullock's oriole
Lanius ludovicianus†	loggerhead shrike
Mimus polyglottos	northern mockingbird
Passer domesiticus	house sparrow
Passerina caerulea	blue grosbeak
Pipilo crissalis	California towhee
Sayornis nigricans	black phoebe
Sturnella neglecta	western meadowlark
Sturnus vulgaris	European starling
Tyrannus verticalis	western kingbird
Tyrannus vociferans	Cassin's kingbird
Zenaida macroura	mourning dove
Zonotrichia leucophyrys	white-crowned sparrow
Mammals	
Spermophilus beecheyi	California ground squirrel
Sylvilagus audubonii	desert cottontail
Thomomys bottae	Botta's pocket gopher

†Sensitive species