David Magney Environmental Consulting

BIOTA OF LYONS CANYON RANCH, NEWHALL, CALIFORNIA

Prepared for:

COUNTY OF LOS ANGELES REGIONAL PLANNING

On Behalf of:

D.R. HORTON

DMEC Mission Statement:

To provide quality environmental consulting services with integrity that protect and enhance the human and natural environment.

June 2006

DMEC

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Lyons Canyon Ranch,
Newhall, California, California

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SECTION 1. PROJECT DESCRIPTION

LOCATION

Lyons Canyon Ranch is an undeveloped approximately 235.50-acre property located just west of the Golden State Freeway (I-5) and The Old Road that serves as a frontage road paralleling the freeway north of Calgrove Boulevard. The Golden State Freeway provides regional access from the site via on- and off-ramps at Calgrove Boulevard. The project site is located in Los Angeles County, within Lyon Canyon, along Lyon Avenue, and adjacent to the current limits of incorporation of the City of Santa Clarita (in the general area of the Pico Canyon/Newhall community). Lyons Canyon Ranch is within the Oat Mountain, California USGS Quadrangle (Refer to the Oversized Maps at the end of this report for the Color USGS Oat Mountain Quad Sheet.) The Stevenson Ranch development in unincorporated Los Angeles County is to the north while Towsley Canyon is immediately to the south. Figure 1, General Location Map of the Lyons Canyon Ranch Project Site, and Figure 2, Lyons Canyon Ranch Project Site on Aerial Photograph Base, show the general location of the project within Los Angeles County and a general aerial view (date of aerial is 23 March 2003) of the project site boundaries, respectively.

Portions of the Lyons Canyon Ranch property are located within two Los Angeles County Significant Environmental Areas (SEAs), Santa Susana Mountains and Lyon Canyon (SEA Nos. 20 and 63, respectively), which have been established to protect biological resources within the County. Development within or adjacent to an SEA requires specific procedures and reporting before considering any development. The Los Angeles County Significant Ecological Areas Technical Advisory Committee (SEATAC), established by the Board of Supervisors, reviews all projects within or adjacent to SEAs for consistency with County resource protection policies.

PROPOSED PROJECT

The Lyons Canyon Ranch project grading limits contain approximately 104.90 acres of the 235-acre property. The project includes the development of 112 lots composed of 96 detached single-family lots, 1 condominium lot proposed for development with 90 senior condominium units, 4 open space lots, 5 debris/detention basin lots, 129.5 acres of parks and undeveloped natural areas, and 1 1.26-acre fire station lot. The single-family detached units, and attached senior condominium uses are characterized by a lot orientation with a gross target density of 0.82 single-family dwelling units per acre. The project site will be mass-graded in one phase, with a total grading volume of 3.8 million cubic yards, which will be balanced on-site. Grading of the project site is anticipated to take approximately 24 months to complete. Table 1, Lyons Canyon Ranch Land Use Summary, provides a summary breakdown of the proposed uses in terms of acreage, the number and type of dwelling units, and parks/open space area associated with implementation of Lyons Canyon Ranch. (Refer to the Oversized Maps at the end of this report for the Lyons Canyon Ranch Site Plans.)

Figure 1. General Location Map of the Lyons Canyon Ranch Project Site

Figure 2. Lyons Canyon Ranch Project Site on Aerial Photograph Base

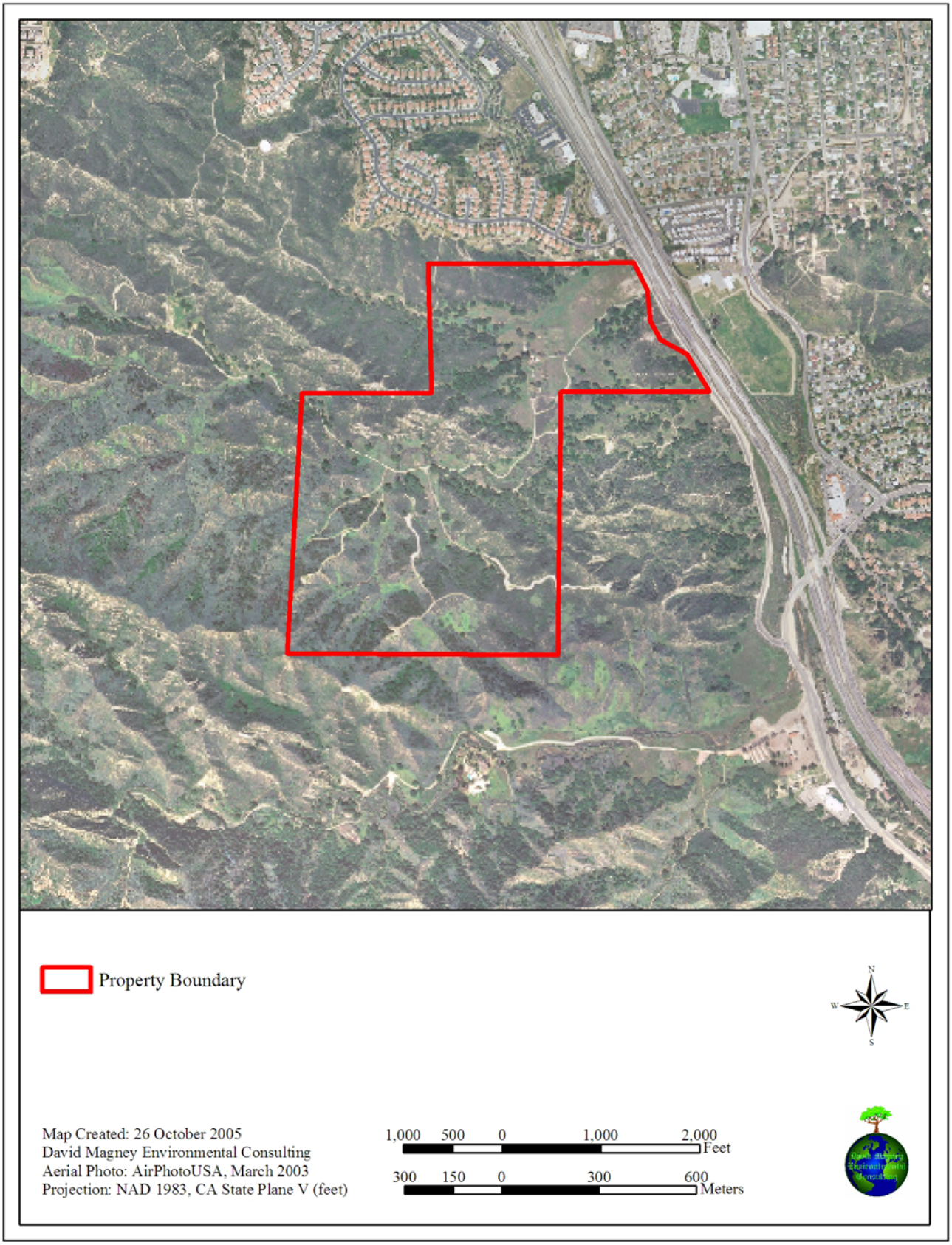


Table 1. Lyons Canyon Ranch Land Use Summary

Development Phase	Land Use	Gross Acres	Number of Lots	Dwelling Units
Residential				
1	Single-Family Residential	46.9	93	93
2	Senior Condominiums	9.26	1	93
	Total Residential:	**56.16**	**94**	**186**
Parks and Open Space				
1	Open Space Lot	6.13	1	-
1	Open Space Lot	33.97	1	-
1	Open Space Lot	10.22	1	-
1	Open Space Lot	39.66	1	-
1	Open Space Lot	38.89	1	-
	Total Open Space Lots:	**128.87**	**5**	**-**
	Total Park Lots:	**1.39**	**1**	**-**
Basin Lots				
1	Basin Lot	12.03	1	-
1	Basin Lot	5.86	1	-
1	Basin Lot	1.95	1	-
1	Basin Lot	1.50	1	-
1	Basin Lot	3.64	1	-
1	Basin Lot	1.53	1	-
	Total Basins:	**26.51**	**6**	**-**
Fire Station		2.05	1	-
	Subtotal:	**214.98**	**107**	**186**
Other Disturbed Open Space Areas		9.78	-	-
Streets		10.04	-	-
	Grand Total:	**234.8**	**107**	**186**

PERMITS REQUIRED

The project applicant is requesting approval of the following entitlement applications, which govern the development activities on the project site as described above:

- **Tentative Tract Map.** Approval of Tentative Tract Map is required to subdivide site into 112 lots.
- **Conditional Use Permit.** A Conditional Use Permit (CUP) is required for development within hillside management areas and the County's designated Significant Ecological Areas (SEAs). The Conditional Use Permit also includes the density bonus request pursuant to County Code Section 22.56.202. Under the County's Zoning Code, a project can request a density bonus of up to 50% provided that at least 50% of the dwelling units requested as part of the density bonus for the development are provided for income-qualifying residents or senior citizens. The Lyons Canyon Ranch project is requesting a 46% density bonus (60 units) and proposes to designate 90 units of the total density as senior housing.
- **Oak Tree Permit.** An Oak Tree Permit is required for the project pursuant to County Code Sections 22.56.2020, 22.56.2070, and 22.56.2180. A total of 1,863 oak trees are located on or within 50 feet of the subject site. The proposed project would require the removal of 179 oak trees and encroachment into the dripline of 75 oak trees.
- **Wetlands Permit:** Wetlands are important habitats that require permits from at least three agencies before they can be modified, depending on the regulations of the regulatory agency, including the U.S. Army Corps of Engineers (Corps), California Department of Fish and Game (CDFG), and Los Angeles Regional Water Quality Control Board. Lyon Canyon Creek contains Palustrine wetland habitats onsite, which constrains development in the central portion of the project site.
- **Streambed Alteration Permit:** A Streambed Alteration Agreement will need to be obtained from CDFG to modify existing wetland riparian habitats under CDFG jurisdiction.

SUMMARY OF SIGNIFICANT IMPACTS

The Lyons Canyon Ranch project grading limits contain approximately 104.90 acres of the 235-acre property. Of the 104.90 acres to be graded, approximately 99.73 acres of natural vegetation would be lost as a result of the project. The biological resources onsite may be directly and/or indirectly impacted by several general factors or mechanisms due to development of Lyons Canyon Ranch. Impact factors include, but are not limited to the following:

- Soil integrity degradation (i.e. increased erosion, soil compaction, sedimentation, and turbidity);
- Noise and air pollution;
- Vegetation damage, including sensitive/rare habitats;
- Loss of portions of an SEA onsite;
- Cumulative loss of natural open areas;
- A temporary decrease in or alteration of habitat (quality) for plants and wildlife that might otherwise become established or frequent the area's habitats; and
- The potential for temporary or permanent damage or loss to wildlife and plant species, including special-status species.

More specifically, Table 2, Summary of the Lyons Canyon Ranch Project Significant Impacts, provides a list of all identified direct and indirect potentially significant, significant, and cumulatively significant impacts that would result from the implementation of the Lyons Canyon Ranch development. (See also Appendix A, Initial Study Questionnaire.)

Table 23, Cumulative Projects List (City of Santa Clarita) (page 135), and Table 24, Cumulative Projects List (Unincorporated Area of Los Angeles County) (page 136), in the Cumulative Impacts to Biological Resources and SEA Integrity section below, identify related projects and other possible developments in the area that are determined as having the potential to interact with the proposed project to the extent that a significant cumulative effect may occur. The resulting related projects include primarily only those determined to be at least indirectly capable of interacting with the proposed project.

Table 2. Summary of the Lyons Canyon Ranch Project Significant Impacts

Impact	Level of Significance Before Mitigation
IMPACTS TO TREES AND SENSITIVE WOODLAND HABITAT	
Loss of Southern California Black Walnut Woodland	Significant
Loss of Oak Trees, Coast Live Oak Woodland, and Coast Live Oak Riparian Woodland	Significant
IMPACTS TO BIOLOGICAL LIFE HISTORY	
Direct Impacts to Special-Status Plant Species	
Loss of Special-status *Calochortus* Species Known Onsite	Significant
Loss of *Calystegia peirsonii* (Peirson's Morning-glory) Plants Onsite	Significant
Loss of *Juglans californica* var. *californica* (Southern California Black Walnut) Plants Known Onsite	Significant
Loss of *Ambrosia confertiflora* (Weakleaf Burweed) Plants Known Onsite	Significant

Impact	Level of Significance Before Mitigation
Loss of *Ericameria ericoides* ssp. *ericoides* (Mock Heather) Plants Known Onsite	Significant
Loss of *Navarretia hamata* ssp. *hamata* (Skunk Navarretia) Plants Onsite	Significant
Loss of Rare Plants Potentially Occurring Onsite	Potentially Significant
Indirect Impacts to Special-Status Plant Species	
Impacts of Increased Dust/Urban Pollutants on Special-Status Plant Species	Potentially Significant.
Impacts of Invasive Exotic Plant Species Introduction into Natural Plant Communities	Potentially Significant
Impacts to General Wildlife Species	
Loss of/Disturbance to Aquatic/Semi-aquatic Wildlife During Construction	Potentially Significant
Loss of and Disturbance to Amphibian Wildlife During Construction	Potentially Significant
Loss of and Disturbance to Reptile Wildlife During Construction	Potentially Significant
Loss of and Disturbance to Breeding and Nesting Birds During Construction	Potentially Significant
Loss of and Disturbance to Mammal Wildlife During Construction	Potentially Significant
Direct Impacts to Special-Status Wildlife Species	
Loss of Cooper's Hawk (*Accipiter cooperii*) and Foraging & Nesting Habitat	Significant
Loss of Oak Titmouse (*Baeolophus inornatus*) Foraging & Nesting Habitat	Significant
Loss of Nuttall's Woodpecker (*Picoides nuttallii*) Foraging & Nesting Habitat	Significant
Loss of Barn Owl (*Tyto alba*) Foraging and Nesting Habitat	Significant (for impacted nests only)
Loss of San Diego Desert Woodrat (*Neotoma lepida intermedia*) & Habitat	Significant
Loss of Special-Status Reptiles Potentially Present	Potentially Significant
Loss of Special-Status Bird Species Potentially Present	Potentially Significant
Disturbance to Mountain Lion (*Puma concolor*) and Loss of Habitat	Potentially Significant
Disturbance to Ring-tailed Cat (*Bassariscus astutus*) and Loss of Habitat	Potentially Significant
Disturbance to Western Mastiff Bat (*Eumops perotis californicus*) and Loss of Habitat	Potentially Significant
Indirect Impacts to Special-Status Wildlife Species	
Impacts Related to Noise	Potentially Significant
Impacts Related to Human Activity	Potentially Significant
Impacts Related to Night Lighting	Potentially Significant
IMPACTS TO NATURAL VEGETATION, INCLUDING SENSITIVE HABITATS	
Loss of Grassland Habitat	Significant
Loss of Lichen-Rock Outcrop Habitat	Potentially Significant
Loss of Coastal Sage Scrub	Significant
Loss of Chaparral Habitat	Significant
Loss of Southern California Black Walnut Woodland	Significant
Loss of Coast Live Oak Woodland & Coast Live Oak Riparian Woodland	Significant
Loss of Valley Oak Woodland	Significant
Loss of Sensitive Wetland Plant Communities	Significant

Impact	Level of Significance Before Mitigation
Loss of Wildlife Foraging and Cover Habitats	Significant
IMPACTS OF FUEL MODIFICATION	Potentially Significant
IMPACTS FROM LANDSCAPING	Potentially Significant
IMPACTS TO SEA INTEGRITY	Potentially Significant
IMPACTS TO NATURAL OPEN AREA	Significant
LOSS OF WILDLIFE TRAVEL ROUTES ONSITE	Significant
INTERFERENCE WITH WILDLIFE CORRIDORS WITHIN LYON CANYON	Significant
CUMULATIVE IMPACTS	
Cumulative Impacts to Biological Life History	
Cumulative Impacts to Oak Trees, Coast Live Oak Woodland, Coast Live Oak Riparian Woodland, and Valley Oak Woodland	Cumulatively Significant and Unavoidable
Cumulative Impacts to Special-Status Plant Species Known Onsite	Cumulatively Less Than Significant
Cumulative Impacts to Rare Plants Potentially Occurring Onsite	Cumulatively Potentially Significant
Cumulative Impacts to Aquatic/Semi-Aquatic Wildlife	Cumulatively Less Than Significant
Cumulative Impacts to Amphibian Wildlife	Cumulatively Potentially Significant
Cumulative Impacts to Reptile Wildlife	Cumulatively Less Than Significant
Cumulative Impacts to Breeding and Nesting Birds	Cumulatively Potentially Significant
Cumulative Impacts to Mammal Wildlife	Cumulatively Less Than Significant
Cumulative Impacts to Cooper's Hawk (*Accipiter cooperii*) and Foraging and Nesting Habitat	Cumulatively Significant and Unavoidable
Cumulative Impacts to Oak Titmouse (*Baeolophus inornatus*) and Foraging and Nesting Habitat	Cumulatively Significant and Unavoidable
Cumulative Impacts to Nuttall's Woodpecker (*Picoides Nuttallii*) and Foraging and Nesting Habitat	Cumulatively Significant and Unavoidable
Cumulative Impacts to Barn Owl (*Tyto alba*) and Nesting Habitat	Cumulatively Less Than Significant
Cumulative Impacts to San Diego Desert Woodrat (*Neotoma lepida intermedia*) and Habitat	Cumulatively Significant and Unavoidable
Cumulative Impacts to Special-Status Reptiles Potentially Present	Cumulatively Potentially Significant and Unavoidable
Cumulative Impacts to Special-Status Bird Species Potentially Present	Cumulatively Potentially Significant and Unavoidable
Cumulative Impacts to Mountain Lion (*Puma concolor*) and Habitat	Cumulatively Significant and Unavoidable
Cumulative Impacts to Ring-tailed Cat (*Bassariscus astutus*) and Habitat	Cumulatively Significant and

Impact	Level of Significance Before Mitigation
	Unavoidable
Cumulative Impacts to Western Mastiff Bat (*Eumops perotis californicus*) and Habitat	Cumulatively Significant and Unavoidable
Cumulative Impacts to Natural Vegetation, Including Sensitive Habitats	
Cumulative Impacts to Grassland Habitat	Cumulatively Significant and Unavoidable
Cumulative Impacts to Lichen-Rock Outcrop Habitat	Cumulatively Significant and Unavoidable
Cumulative Impacts to Coastal Sage Scrub Habitat	Cumulatively Significant and Unavoidable
Cumulative Impacts to Chaparral Habitat	Cumulatively Significant and Unavoidable
Cumulative Impacts to Coast Live Oak Woodland and Coast Live Oak Riparian Woodland Habitats	Cumulatively Significant and Unavoidable
Cumulative Impacts to Valley Oak Habitat	Cumulatively Significant and Unavoidable
Cumulative Impacts to Wetland Habitats and Plant Communities	Cumulatively Significant and Unavoidable
Cumulative Impacts to Wildlife Foraging and Cover Habitats	Cumulatively Significant and Unavoidable
Cumulative Impacts of Fuel Modification	Cumulatively Significant and Unavoidable
Cumulative Impacts to SEA Integrity	Cumulatively Less Than Significant
Cumulative Impacts to Natural Open Areas	Cumulatively Significant and Unavoidable
Cumulative Impacts to Wildlife Travel Routes Onsite	Cumulatively Significant and Unavoidable

Each of these impacts to the biological resources onsite that may result from the Lyons Canyon Ranch project contribute to the cumulative adverse effects of impacts to the total biological resources in the general region (Santa Clarita Valley region of Los Angeles County). Mitigation and/or monitoring measures are recommended to prevent and reduce significant impacts to less-than-significant levels where feasible.

Each of these identified impacts to the biological resources onsite (listed above in Table 2) are discussed further in Section 5, Project Impacts. Impacts are assessed for direct, indirect, and cumulative resource losses for the known and expected botanical and faunal resources onsite. Mitigation measures are recommended for any significant adverse impacts resulting from the subject project in Section 6, Mitigation Measures.

SECTION 2. SETTING

SITE CHARACTERISTICS

This subsection presents a summary of the project description included in the Notice of Preparation (NOP), and this section discusses the project site watershed, geology, soils, habitats, species anticipated onsite, and project site flora and fauna population estimates. Appendix B, Photograph Key Map of Lyons Canyon Ranch and Surrounding Area with Photographs, provides representative photographs and their location onsite to illustrate general project site characteristics.

Summary of Project Description

This subsection is a summary of the NOP for the Lyons Canyon Ranch project, which was submitted to comply with Section 15082 of the *State CEQA Guidelines*.

Background, Location, and Setting

The Lyons Canyon Ranch project was originally submitted to the City of Santa Clarita for review and possible annexation in 2002. Pursuant to the provision of Section 15082 of the *State CEQA Guidelines*, the City of Santa Clarita first circulated a NOP in March 2003. Due to a change in the project description, another NOP was circulated for a 30-day period commencing 15 December 2003 and ending 14 January 2004 (State Clearinghouse No. 2003031086). Subsequently, the project was withdrawn from the City of Santa Clarita in May 2005. The applicant revised the project design and filed entitlement applications with the County of Los Angeles in June 2005. This NOP reflects changes in the project currently proposed to the County.

The Lyons Canyon Ranch project site encompasses approximately 235 acres of land located in unincorporated Los Angeles County. Lyons Canyon Ranch is adjacent to The Old Road, immediately west of Interstate 5, just south of Sagecrest Circle, and north of Calgrove Road near Towsley Canyon Park. The project site is bounded to the north by residential uses on Sagecrest Circle and the Stevenson Ranch opposite of Sagecrest Circle; to the south by Towsley Canyon Park and vacant land; to the east by The Old Road, Interstate 5, and residential uses; and on the west by vacant land and open space.

Two natural features dominate the project site: oak trees and steep, rugged ridges trending generally east-west. Approximately 1,863 oak trees have been inventoried on or within 50 feet of the project site. Of these, 1,409 are covered under the Los Angeles County Oak Tree Ordinance. Of the 1,409, approximately 82 are Heritage Oaks as defined by the County of Los Angeles. Site topography is defined by primary and secondary ridgelines, which are visually prominent, as well as watercourses and associated riparian vegetation in the canyons.

The project site is currently located within unincorporated Los Angeles County, and is designated as Non-Urban 2 (N2) and Hillside Management (HM) in the Santa Clarita Valley Areawide General Plan, and Non-urban (R) and Significant Ecological Area (SEA) in the County General Plan. The subject property is zoned as Heavy Agricultural (A-2-2/A-2-1).

Project Characteristics

The project site is currently located within unincorporated Los Angeles County, and is designated as Non-Urban 2 (N2), Hillside Mountainous (HM), and Hillside Mountainous-Significant Ecological Area (HM-SEA) in the County General Plan. The subject property is zoned Agricultural (A-2-2) and Commercial (C-3).

The project includes the development of 107 lots comprised of 93 single-family residential lots, 1 condominium lot proposed for development with 93 senior condominium units, five (5) open space lots, six (6) debris/detention basin lots, one (1) park lot, and one (1) fire station lot. The single-family detached units, and attached senior condominium uses are characterized by a lot orientation with a gross target density of 0.79 single-family dwelling units per acre. The Lyons Canyon Ranch project intends to create a residential neighborhood with single-family detached and senior condominium units. The overall average lot size for the single-family residential lots is 21,048 square feet. The 93 senior condominium units are proposed on a 9.26-acre lot. (Refer to the Oversized Maps at the end of this report for the Lyons Canyon Ranch Site Plans.)

Residential Uses: The areas designated for residential development are clustered in three locations. Seventy-one (71) lots in the southwestern portion of the site are planned for large single-family homes. The primary access to this residential enclave is provided by "A" Street from The Old Road. A 1.39-acre Park Lot is also proposed at the intersections of "B"/"D" Streets and "C"/"D" Streets within this area of residential uses. Two small areas designated for detached single-family and detached senior housing are located on "E" and "F" Streets in the community's northern region. Fifteen (15) lots are planned for detached single-family residences and are located along "F" Street, which connects to The Old Road. Seven (7) lots are planned for detached housing units located on "E" Street. The senior housing condominium component is located in the project's northeastern region. The 9.26-acre condominium lot lies on the northern side of "A" Street, which serves as the community's main entrance from The Old Road.

Circulation and Access: The circulation system for Lyons Canyon Ranch consists of a number of local roadway types including highways (Interstate 5), collector streets, and local streets. Two primary entrances to the community are proposed from The Old Road separated by approximately 1,200 feet. Regional access to the project site will be provided via Interstate 5, which runs north south just east of the project site. On- and off-ramps in both directions are located at Calgrove Boulevard.

Trails: Lyons Canyon Ranch incorporates a trail system as part of its mobility and recreation components. Regional trails are located on the south and northwest sides of the project site. These trails are part of the Towsley Canyon Park and a larger informal regional trail system, which currently crosses the project site.

Parks and Open Space: The project proposes to dedicate 128.87 acres of undisturbed open space in perpetuity via an appropriate legal instrument. The undisturbed natural areas will provide a natural setting for the neighborhoods and will preserve the majority of onsite oak trees, riparian areas, and significant ridgelines. An additional 36.29 acres will remain as disturbed open space (i.e. graded cut and fill-slope areas, detention/debris basin lots, and onsite trails). The total disturbed/undisturbed open space areas will total 165.16 acres (70.3%). A 1.39-acre active park is also proposed in the southwest portion of the project.

Grading Concept: The project site will be mass-graded in one phase, with a total grading volume of 3.8 million cubic yards, which will be balanced onsite. Grading of the project site is anticipated to take approximately 24 months to complete. The intent of the grading design is to provide development sites while maintaining the hillside character of the site. The grading plan reflects

incorporation of lot terracing (stepping down in elevation parallel to hillside contours) and "landform" grading (gives graded areas a more natural appearance). The plan also incorporates those provisions of the *Los Angeles County Hillside Design Guidelines* that are applicable to the project.

Utilities: The project site is located within the service area of the Castaic Lake Water Agency (CLWA). Valencia Water Company (VWC) provides the nearest water service to the north, while Newhall County Water District (NCWD) provides water service to the south. The project will need to be annexed into County Sanitation District No. 32. The Southern California Edison Company (SCE) will service the project site. Natural gas service will be provided to the project site by Southern California Gas Company (SCGC), and telephone service by SBC-Pacific Bell.

Stormwater and Drainage: The project site is located within the Santa Clara River basin. Storm flows from the proposed development will follow the existing drainage patterns. Runoff will be collected into improved drainage systems fitted with water quality filters or deflection devices. Project drainage improvements will conform to the project's Standard Urban Stormwater Mitigation Plan (SUSMP) and Drainage Concept Plan) and the LACDPW Flood Control Division will accept maintenance authority over the project's storm drain facilities where constructed to the County's standards.

Public Services: A new fire station site is proposed to be dedicated to the Los Angeles County Fire Department in the northeast corner of the development boundary. This facility will be built by the Los Angeles County Fire Department. It will consist of a building approximately 8,000 square feet, on 2.05 acres. The project residents will generate revenue in the form of property taxes and fees, etc., which will be available to the County and other agencies to fund public services to the site. Capital improvements, in the form of roadway and drainage improvements, will also be constructed as part of the project or provided directly through various forms of development fees, including, but not limited to, fire facilities fees, wastewater connection fees, library fees, water connection fees, bridge and thoroughfare fees, and school fees.

Project Design and Environmental Considerations

The design of the project was influenced by both onsite and offsite considerations, including site characteristics/visual context and surrounding land uses. Three natural features dominate the project site: oak trees, a central stream/wetland, and hillside areas.

A total of 1,405 oak trees are present on the project site. Site topography is defined by primary and secondary ridgelines, which are visually prominent, as well as onsite watercourses and associated riparian vegetation in the canyons. Development areas have been sited to minimize impacts to the natural features and/or incorporate them into the neighborhood design as recreational amenities and natural areas.

The design of building areas and major circulation routes intend to minimize impacts to oak tree areas grading on or near onsite ridgelines. The residential development areas have been located behind primary ridgelines. The majority of steep slope areas onsite are preserved natural habitat areas. Preservation of these areas also provides view opportunities for many of the proposed home sites at higher elevations and result in project screening from sensitive view corridors. The onsite riparian/watercourse areas have been preserved in their natural state in some locations or incorporated into passive recreational features (such as trails) that are intended to provide opportunities for habitat enhancement and mitigation.

SEA Boundaries

The Lyons Canyon Ranch property contains two Los Angeles County designated SEAs: 20 (Santa Susana Mountains) and 63 (Lyon Canyon), as illustrated on Figure 3, SEAs in the Vicinity of Lyons Canyon Ranch.

Santa Susana Mountains SEA 20 is approximately 18,410.5 acres total. Approximately 17.54 acres of SEA 20 exist onsite in the southernmost portion of the Lyons Canyon Ranch property.

Lyon Canyon SEA 63 is approximately 174.45 acres total. Approximately 58.48 acres of SEA 63 exist onsite. SEA 63 includes the middle portion of the creek with the eastern end of the SEA in the center of the Lyons Canyon Ranch property, extending westward beyond the project site boundary. This SEA was designated for its Chamise chaparral, riparian, and oak woodland habitats along Lyon Canyon Creek.

Watershed Description

Lyon Canyon Creek, a seasonal watercourse located in the center of the project site, is the primary drainage and watershed within the project site, draining eastward. An unnamed seasonal drainage that drains into Towsley Canyon along the south side of the project site drains a small portion of the site. Upon exiting the site, watercourses become channelized as they flow southeast underneath I-5. Both streams are tributaries of the South Fork Santa Clara River. Figure 4, Watersheds in the Vicinity of Lyons Canyon Ranch, illustrates the boundaries of each major subwatershed within the vicinity of the Lyons Canyon Ranch project site.

Most of the drainages within the Lyon Canyon watershed are ephemeral in nature. The primary drainage on the project site is the Lyon Canyon Creek watershed. This watershed drains 911 acres, of which 203 acres are located on the project site. The project site also has small portions of two adjacent watersheds: 23 acres of Towsley Canyon watershed to the south, and 8 acres of Gavin Canyon watershed to the east.

Figure 3. SEAs in the Vicinity of Lyons Canyon Ranch

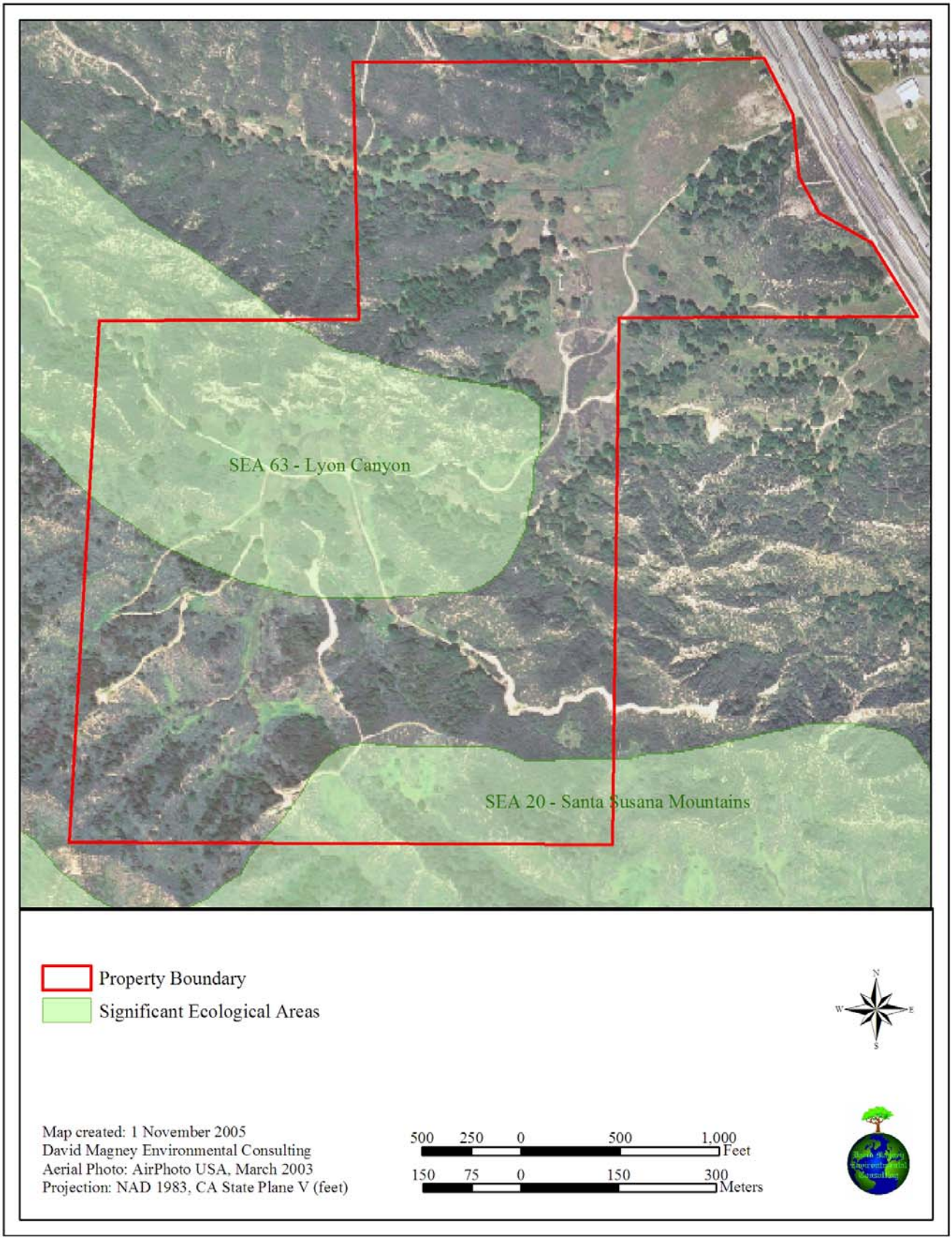
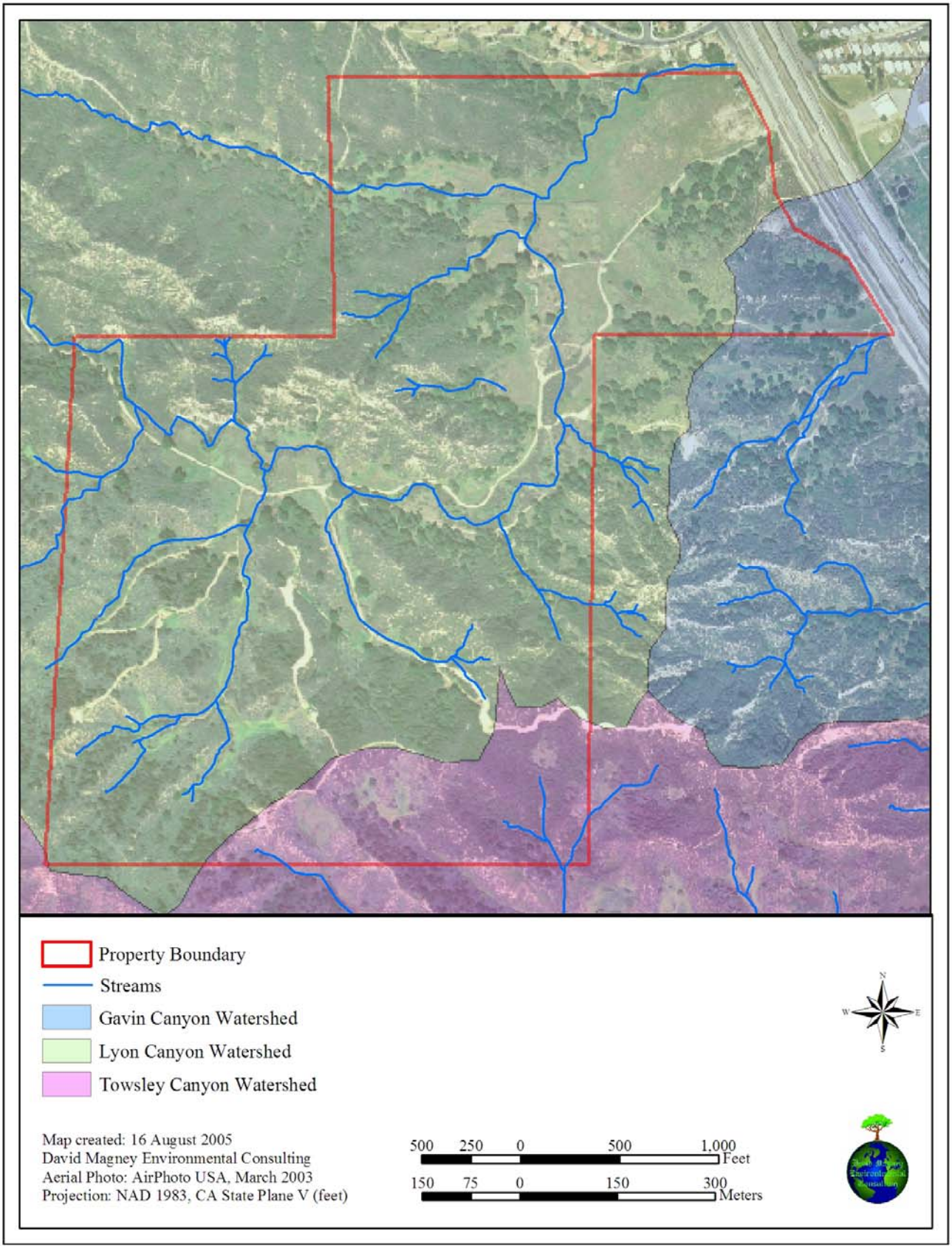


Figure 4. Watersheds in the Vicinity of Lyons Canyon Ranch



Geology

Bedrock exposed within the southern portion of the project site consists of steep, north dipping beds of interbedded, marine claystone, siltstone, and sandstone assigned to the Miocene age Pico Formation. Bedrock in the northern two-thirds of the project site consists of upper Pliocene-lower Pleistocene age, nonmarine mudstone, conglomerate, and sandstone of the Saugus Formation (Sunshine Ranch member). Figure 5, Lyons Canyon Ranch Geology, shows the general geology of the project site, and Figure 6, Significant Ridgelines in the Vicinity of Lyons Canyon Ranch illustrates the important ridgelines in the project area.

Surficial soils within the property are represented by artificial (man-made) fill, colluvium, rock fall debris, and alluvium. The project site is located on the Saugus Formation, which is exposed along The Old Road. At the intersection of the I-5 with the Antelope Valley Freeway (State Route [SR] 14), the area contains surficial deposits of Quaternary Alluvium, deposits of the terrestrial Plio-Pleistocene Saugus Formation, and rocks of the marine Late Miocene Towsley Formation (San Fernando and Oat Mountain quadrangles).

The east side of I-5 south of the intersection with SR 14 produced specimens of fossil baleen whale, *Mysticeti*. The Towsley Formation also yielded fossils of extinct large terrestrial mammals. On SR 14 north from the intersection with the I-5, exposures of the marine Pliocene Pico Formation and a small exposure of the marine Late Miocene Towsley Formation exist, but deposits in this area mostly consist of the terrestrial Plio-Pleistocene Saugus Formation. In addition, there is typical surficial Quaternary Alluvium in the valleys and canyons, especially in the Newhall Creek area. (San Bernardino County Museum 2004.)

North of the I-5 split with SR 14, there are exposures of the marine Pliocene Towsley Formation, the marine Pliocene Pico Formation, and the marine and terrestrial Pliocene and Pleistocene Saugus Formation. In the valleys and canyons, especially in Gavin Canyon, there are typical surficial deposits of Quaternary Alluvium. The closest localities in the Saugus Formation are on the west side of I-5 just north of the mouth of Towsley Canyon. A suite of marine fossils of sharks and fishes, including eagle ray (*Myliobatis*), guitar fish (*Rhinobatos*), bull shark (*Carcharhinus*), basking shark (*Cetorhinus*), and sheepshead (*Semicossyphus*), were recovered from this area. These fossil beds extend into the Lyons Canyon Ranch project site to the west. (San Bernardino County Museum 2004.)

Figure 5. Lyons Canyon Ranch Geology

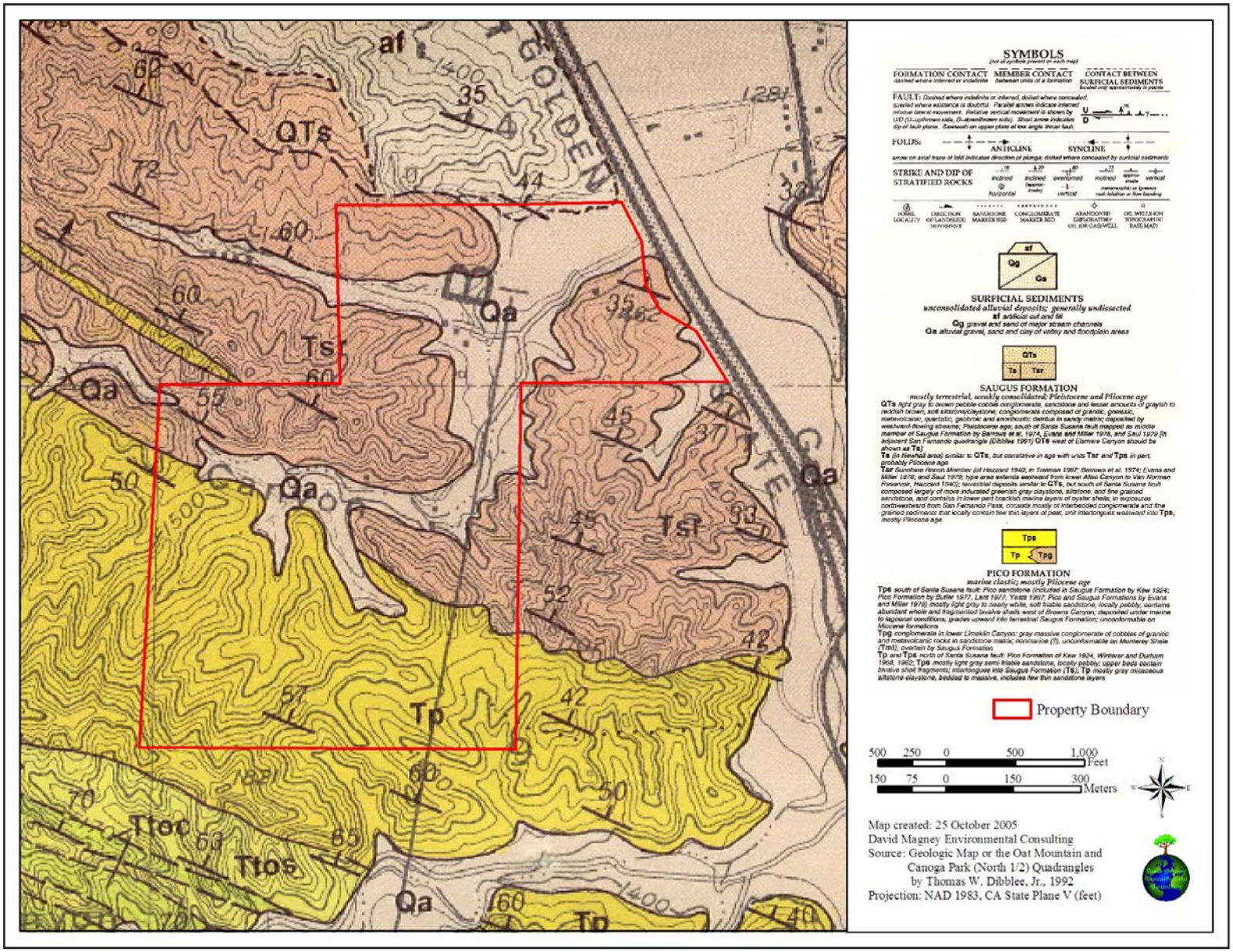
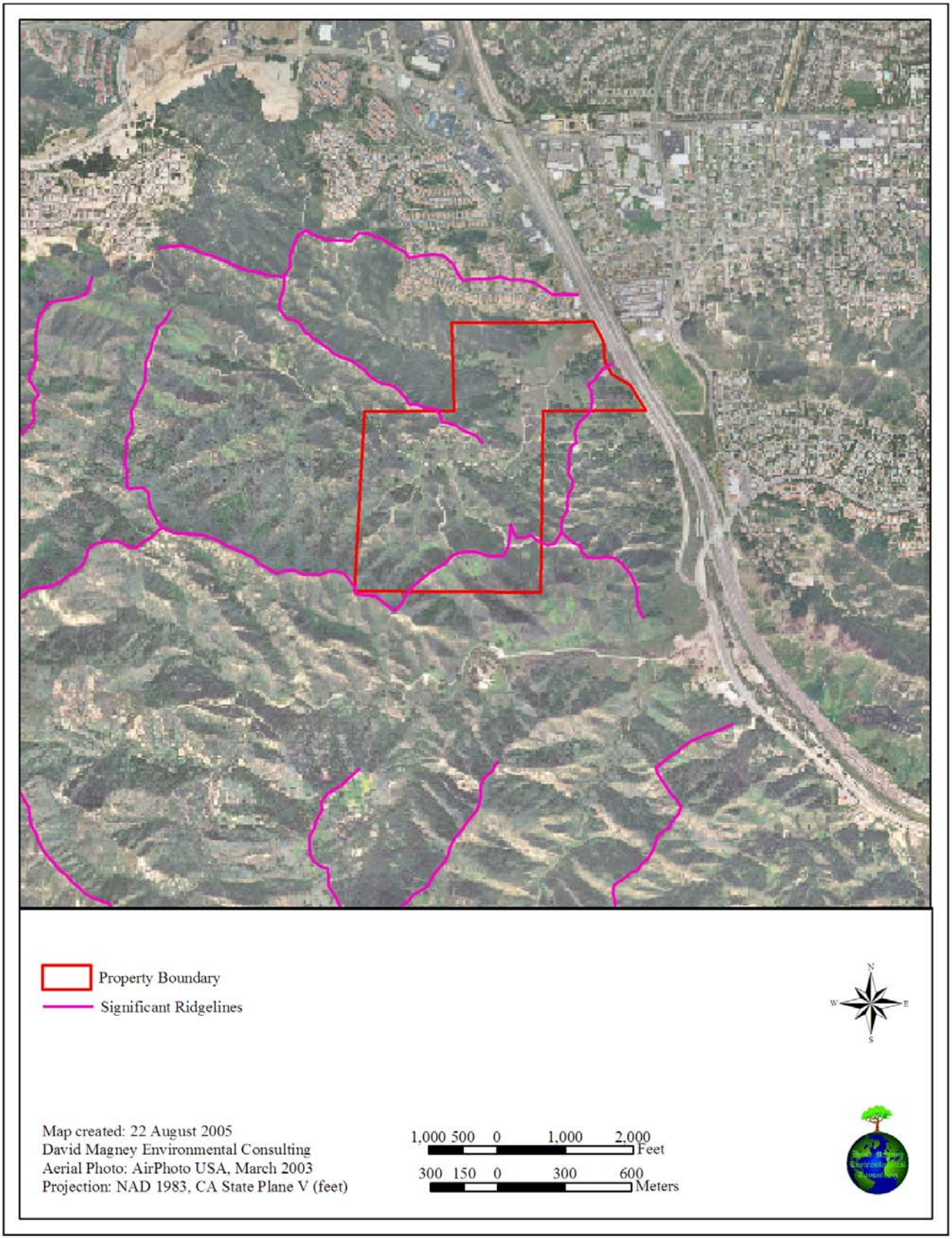


Figure 6. Significant Ridgelines in the Vicinity of Lyons Canyon Ranch



Mapped Soil Units

The Soil Conservation Service (SCS) *Soil Survey for the Antelope Valley Area, California* (Woodruff et al. 1970) indicates that the mapped soil units, in the vicinity of the wetland delineation at the Lyons Canyon Ranch project site, include Castaic Series, Hanford Series, and Yolo Series. These soil types are confirmed mapped soil units for several plots of the wetland delineation survey area, and are described according to Woodruff et al. (1970) in the following subsections. The primary mapped soils of these series that occur onsite include Castaic-Balcom Silty Clay Loams, Castaic and Saugus Soils, Hanford Sandy Loam, Saugus Loam, and Yolo Loams. These soils are mapped in Figure 7, Mapped Soil Units of Lyons Canyon Ranch. Riverwash is a nonsoil that was also observed/found at several wetland delineation data points onsite, and is described below as well.

Castaic Series

The Castaic Series consists of well-drained soils that formed in material from soft shale and sandstone. These slopes are on uplands, and slopes range from 2 to 65 percent. The vegetation is mainly grasses and forbs; however, *Nassella* spp. is scattered in patches and scrub species grow in patches on north slopes. Elevations range from 1,250 to 1,500 feet. Castaic soils are associated with Balcom and Saugus soils. The Castaic Series soil units mapped at the Lyons Canyon Ranch project site are Castaic-Balcom Silty Clay Loams, 30 to 50 percent slopes, eroded (CmF2); and Castaic and Saugus Soils, 30 to 65 percent slopes, severely eroded (CnG3).

CmF2 is in the southwestern part of the soil survey area near Castaic Junction. This complex is 60 percent Castaic silty clay loam and 40 percent Balcom silty clay loam. A CmF2 typical profile is described as an example of the Castaic Series soil units, where the surface layer is pale-brown (10YR 6/3, or dark brown 10YR 4/3 moist) silty clay loam to about nine inches thick. Below is yellowish-brown (10YR 5/4, or dark yellowish-brown 10YR 4/4 moist) silty clay loam from approximately 9 to 26 inches deep, underlain by yellowish-brown (10YR 5/4) soft shale and sandstone at a depth of about 26 inches.

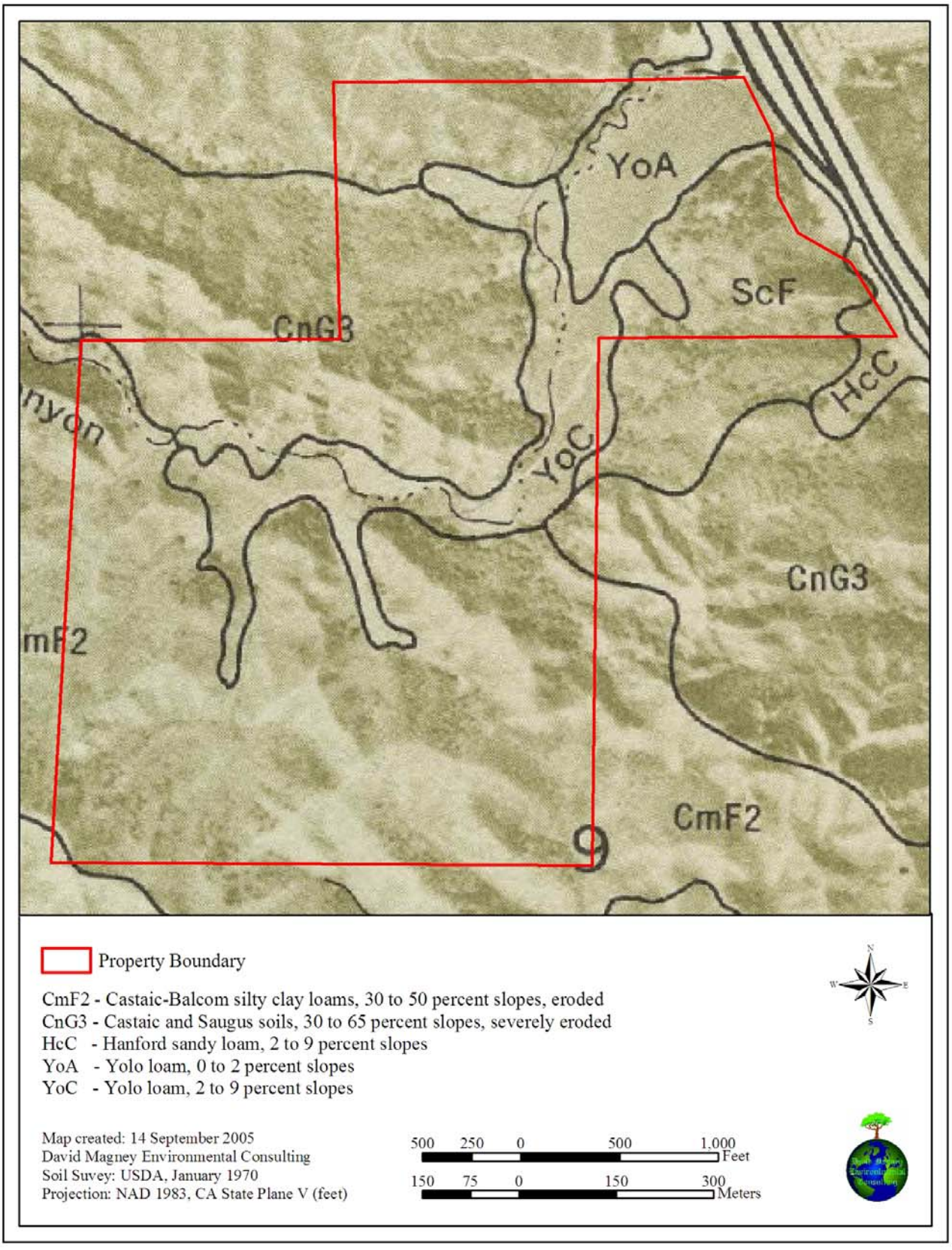
CnG3 is an undifferentiated group of soils that is 35 percent Castaic silty clay loam and 30 percent Saugus loam. Included are exposed areas of soft shale and conglomerate making up as much as ten percent, and areas of Balcom silty clay loam making up as much as 25 percent. Areas of CnG3 are cut by many intermittent, very deep drainage channels with narrow V-shaped valleys. Soil slipping is common, and geologic erosion is active.

Yolo Series

The Yolo Series soils are well-drained soils that have formed in sedimentary alluvial fans. Slopes are zero to nine percent, grasses and oaks make up the vegetation, and elevations range from 1,175 to 1,200 feet. The Yolo Series mapped soil units at Lyons Canyon Ranch include Yolo Loam, 0 to 2 percent slopes (YoA); and Yolo Loam, 2 to 9 percent slopes (YoC).

YoA is on alluvial fans near Newhall and Saugus. A YoA typical profile is described as an example of the Yolo Series soil units (0.4 mile east of I-5 and Lyon Canyon Road), where the surface layer is grayish-brown (10YR 5/2, or very dark grayish-brown 10YR 3/2 moist) loam to about six inches thick. Below is grayish-brown (10YR 5/2, or very dark grayish-brown 10YR 3/2 moist) loam from approximately 6 to 18 inches deep, underlain by yellowish-brown (10YR 6/4, or yellowish-brown 10YR 5/4 moist) loam at a depth of about 36 inches. Permeability is moderate, fertility is high, runoff is very slow, and the hazard of erosion is none to slight.

Figure 7. Mapped Soil Units of Lyons Canyon Ranch



YoC is on fairly narrow alluvial fans near Newhall and Saugus. Slopes range from two to six percent in most places. Runoff is slight to moderate, and the hazard of erosion is slow to medium. Included in YoC are areas at the upper alluvial fan edges with slopes of 10 to 12 percent. Also included are small areas with a surface layer of sandy loam or pebbles and stones.

Hanford Series

The Hanford Series soils are well-drained or somewhat excessively drained soils that have formed in granitic alluvium, on alluvial fans. Slopes are 2 to 15 percent, and grasses and forbs comprise the vegetation, with scattered California Juniper (*Juniperus californica*) shrubs. Elevations range from 2,600 to 3,500 feet. The sole Hanford Series mapped soil unit at the Lyons Canyon Ranch project site is Hanford Sandy Loam, 2 to 9 percent slopes (HcC).

HcC occurs on alluvial fans near Fairmont. In most places, slopes range from 2 to 6 percent; other included small areas are on fans where slopes range from 10 to 12 percent. Runoff is slow to medium on this soil, and erosion hazard is slight to moderate, including small areas where rill and sheet erosion are moderate. Available water holding capacity is 6.0 to 7.5 inches, and fertility is moderate.

Saugus Series

The Saugus Series soils are well drained upland soils. They formed on weakly consolidated sediment that contained pebbles and cobblestones in some places. Slopes range from 15 to 50 percent. Vegetation consists of dense stands of Chamise (*Adenostoma fasciculatum*) and Our Lord's Candle (*Hesperoyucca whipplei*) that have an understory of annual grasses, forbs, and remnant stands of perennial grasses. Elevations range from 1,300 to 2,250 feet. In a typical profile, the surface layer is grayish-brown loam about 15 inches thick. Below is grayish-brown loam underlain by weakly consolidated sediment at a depth of 42 inches.

Saugus soils are associated with Balcom, Castaic, and Gazos soils. The Saugus Series mapped soil unit at the Lyons Canyon Ranch project site is Castaic and Saugus Loam, 30 to 65 percent slopes, severely eroded (CnG3). See Castaic Series above for further description of this soil association.

Riverwash

Riverwash generally occurs within the bed of intermittent streams, and consists of highly stratified, water-deposited layers of stony and gravelly sand that contain relatively small amounts of silt and clay. It is characterized as having high permeability, and is present as the result of frequent and regular fluvial processes. Riverwash is frequently inundated during high water flow immediately following storms, during which fresh deposits of alluvium are laid down and removed as the result of streambank erosion. Riverwash is subject to frequent disturbance, such as scouring and deposition, and the development and establishment of riparian vegetation is severely limited. It is considered hydric by the Natural Resources Conservation Service. (Woodruff et al. 1970, Edwards et al. 1970.)

Habitat Descriptions

Three general vegetation types currently exist in the immediate vicinity of the Lyons Canyon Ranch project site, including riparian, upland, and barren/disturbed. These vegetation types include several habitats and plant communities (or alliances) that make up the landscape of Lyons Canyon Ranch. Table 3, Classification and Area of Lyons Canyon Ranch Vegetation

Alliances lists the alliances (or plant communities based on Sawyer and Keeler-Wolf 1995) observed onsite and provides the acreages for each. In addition to Sawyer and Keeler-Wolf, the wetland habitat classifications are also cross-referenced with the USFWS (Cowardin et al. 1979) classification system.

The riparian habitats include the plant communities associated with jurisdictional waters of the U.S. These habitat types were determined within the project site based on field surveys and observations, the wetland delineation results, and aerial photographs.

Descriptions of each habitat and alliance are provided in the following subsections. Figure 8, Vegetation Observed and Classified at Lyons Canyon Ranch, shows general habitats and their respective plant communities mapped onsite.

The project site is approximately 235.50 acres. Of that, approximately 226.79 acres is occupied by natural vegetation, and approximately 8.71 acres is disturbed.

Riparian Habitat

Riparian habitats in Lyon Canyon Creek can be characterized as performing various hydrologic, geomorphologic, biogeochemical, and plant and wildlife habitat functions. The performance of these functions is largely dependent upon the maintenance of natural channel morphology and native plant communities. The riparian scrub and woodland habitats onsite are used as nesting and foraging habitat for several species of birds, and as cover and foraging habitat for small and large mammals, some of which may use the site as a movement corridor. Habitat function is increased by the presence of adjacent natural upland habitats, which together create high species richness and structural diversity onsite. The riparian habitat onsite includes *Salix lasiolepis* Alliance, *Salix laevigata* Alliance, *Quercus agrifolia* Riparian Alliance, *Baccharis salicifolia* Alliance, *Baccharis salicifolia-Sambucus mexicana* Alliance, and *Distichlis spicata* Alliance.

RIPARIAN WOODLAND

Riparian Woodland habitat is characterized by woody vegetation that is six meters (19 feet) tall or taller. The dominant trees are generally winter-deciduous (as for the willow woodlands), but may also be evergreen trees (as with Coast Live Oak). This habitat possesses an overstory of trees, an understory of young trees and shrubs, and an herbaceous layer. (Cowardin et al. 1979.) Riparian Woodland occupies approximately 2.46 acres of the project site.

Salix lasiolepis Alliance (Arroyo Willow Woodland)

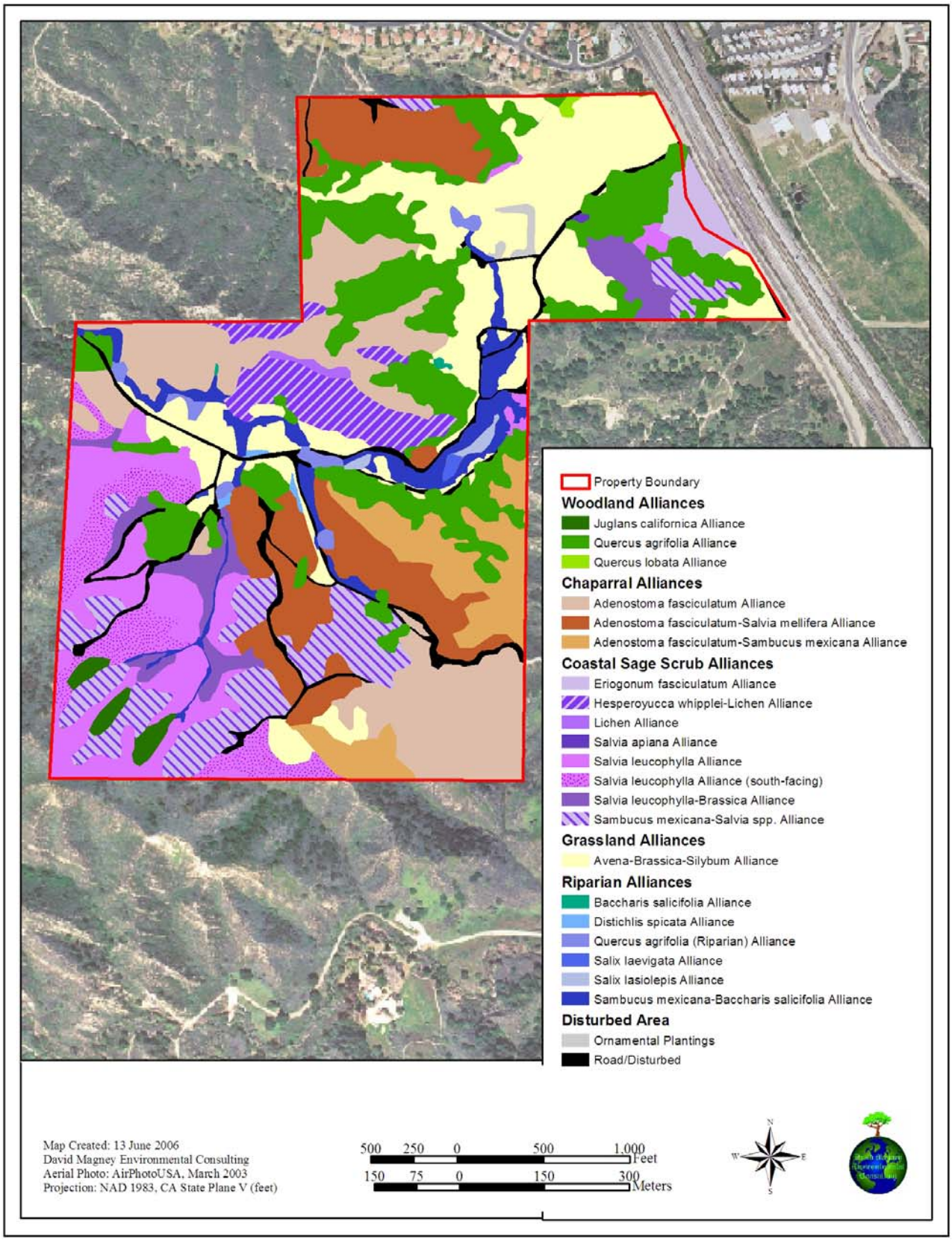
Salix lasiolepis Alliance (Arroyo Willow Woodland) is dominated by *Salix lasiolepis* (Arroyo Willow), with *Baccharis salicifolia* as an important contributor. *Salix lasiolepis* is a winter-deciduous shrub or small tree with shiny dark green (upper surface) and grayish (lower surface) oblanceolate leaves. *Salix lasiolepis* is listed with a wetland indicator status of FACW (a Facultative Wetland species that almost always occurs in wetlands [Reed 1988]). *Salix lasiolepis* Alliance occurs in seasonally flooded or saturated freshwater wetland habitats, such as floodplains and low-gradient depositions along rivers and streams, and is abundant in marshes, meadows, and springs, at elevations below 1,800 meters. This woodland community forms an intermittent to open canopy less than 10 meters tall, growing over a patchy shrub layer of predominantly *Baccharis salicifolia* and variable ground layer. (Sawyer and Keeler-Wolf 1995.)

Salix lasiolepis Alliance occurs centrally, along Lyons Ranch Road and along Lyon Canyon Creek, which bisect the project site. Associate species of *Salix lasiolepis* Alliance onsite include *Artemisia douglasiana* (Mugwort), *Quercus agrifolia* (Coast Live Oak), *Salix laevigata* (Red Willow), and *Sambucus mexicana*. *Salix lasiolepis* Alliance occupies approximately 0.57 acre onsite.

Table 3. Classification and Area of Lyons Canyon Ranch Vegetation Alliances

Alliance	Acres
Riparian Habitat (~ 12 acres)	
Woodland (2.46 acres)	
Salix laevigata Alliance	0.24
Salix lasiolepis Alliance	0.57
Quercus agrifolia [Riparian] Alliance	1.65
Scrub (9.15 acres)	
Baccharis salicifolia Alliance	0.14
Sambucus mexicana-Baccharis salicifolia Alliance	9.01
Herbaceous (0.34 acre)	
Distichlis spicata Alliance	0.34
Upland Habitat (~ 215 acres)	
Woodland (40.54 acres)	
Juglans californica Alliance	1.89
Quercus agrifolia Alliance	38.42
Quercus lobata Alliance	0.23
Chaparral (69.33 acres)	
Adenostoma fasciculatum Alliance	31.78
Adenostoma fasciculatum-Salvia mellifera Alliance	24.98
Adenostoma fasciculatum-Sambucus mexicana Alliance	12.65
Coastal Sage Scrub (57.43 acres)	
Eriogonum fasciculatum Alliance	3.20
Salvia apiana Alliance	0.08
Salvia leucophylla Alliance	18.36
Salvia leucophylla Alliance (south-facing)	10.22
Salvia leucophylla-Brassica Alliance	7.61
Sambucus mexicana-Salvia leucophylla Alliance	17.96
Lichen Rock Outcrop (9.50 acres)	
Lichen Alliance	0.57
Hesperoyucca whipplei-Lichen Alliance	8.93
Grassland (37.96 acres)	
Avena-Brassica-Silybum Alliance (Ruderal)	37.96
TOTAL NATURAL VEGETATION EXISTING ONSITE:	**226.79**
Disturbed Area (8.71 acres)	
Ornamental Plantings	0.70
Road/Disturbed	8.01
TOTAL ACREAGE:	**235.50**

Figure 8. Vegetation Observed and Classified at Lyons Canyon Ranch



Salix laevigata Alliance (Red Willow Woodland)

Salix laevigata Alliance (Red Willow Woodland) is dominated by *Salix laevigata.* *Salix laevigata* is a winter-deciduous shrub or small tree with bright green (upper surface) lanceolate leaves. *Salix laevigata* is listed with a wetland indicator status of FACW (Reed 1988). *Salix laevigata* Alliance occurs in seasonally flooded or saturated freshwater wetland habitats, such as ditches, floodplains, lake edges, and low-gradient depositions along rivers and streams, at elevations below 1,700 meters. (Sawyer and Keeler-Wolf 1995.)

A small dense *Salix laevigata* stand was observed onsite within the lower reach of Lyon Canyon Creek. Scattered trees of *Salix laevigata* were observed about the project site, especially as an associate to *Salix lasiolepis* Alliance. The associate species observed contributing to *Salix laevigata* Alliance onsite include *Baccharis salicifolia, Distichlis spicata, Hirschfeldia incana*, *Sambucus mexicana*, and *Populus fremontii* ssp. *fremontii* (Fremont Cottonwood). *Salix laevigata* Alliance occupies approximately 0.24 acre of the project site.

Quercus agrifolia (Riparian) Alliance (Coast Live Oak Riparian Woodland)

Quercus agrifolia (Riparian) Alliance (Coast Live Oak Riparian Woodland) is dominated by *Quercus agrifolia* var. *agrifolia* (Coast Live Oak), which is a broad-leaved, evergreen, wide-topped tree with furrowed, dark gray bark and spine-toothed, convex, dark green leaves. *Q. agrifolia* is the most widely distributed species of the evergreen oaks, and it is capable of achieving large size and old age (Zedler et al. 1997). *Quercus agrifolia* (Riparian) Alliance occurs predominantly on steep slopes and on raised stream banks and terraces at elevations below 1,200 meters. It forms a continuous to open 30-meter-tall canopy, growing over an understory of occasional shrubs and an herbaceous ground layer. *Quercus agrifolia* (Riparian) Alliance requires sandstone or shale-derived soils. (Sawyer & Keeler-Wolf 1995.)

Quercus agrifolia (Riparian) Alliance occurs in the valleys between the steep hills on the project site. *Quercus agrifolia* Alliance was observed and classified as two different plant communities at the Lyons Canyon Ranch project site:

(1) *Quercus agrifolia* (Riparian) Alliance in which *Q. agrifolia* is growing along and contributing to the riparian corridor as an intermittent canopy with a sparse ecotonal understory of riparian and Coastal Sage Scrub plant species (an example of Coast Live Oak Riparian Woodland is located in the vicinity of oak tree tag number 1627).

(2) *Quercus agrifolia* (Upland) Alliance (the most common oak woodland) in which *Q. agrifolia* forms a closed to intermittent canopy with a sparse to intermittent understory of Coastal Sage Scrub species. The canopy cover varies in density from dense (closed) to widely spaced to the point that it could be considered savannah (a few trees per acre). (This plant community is discussed below in the Upland Habitat Subsection.)

Associate canopy contributors include *Juglans californica* var. *californica* and *Sambucus mexicana*. *Quercus lobata* (Valley Oak) was also observed onsite as a scattered associate species to the *Quercus agrifolia* (Riparian) Alliance plant communities, especially in the lower elevational areas of the project site. The understory is variable, including many of those associate shrub species listed above under Coastal Sage Scrub. *Quercus agrifolia* (Riparian) Alliance occupies approximately 1.65 acres of the project site.

RIPARIAN SCRUB

Riparian Scrub habitat is dominated by woody plants less than six meters (19 feet) tall. Contributing plants include true shrubs that are typically small or stunted due to environmental conditions. Riparian Scrub habitats may represent a successional stage leading to riparian woodland habitats, or may be relatively stable communities. (Cowardin et al. 1979.) The two Riparian Scrub habitats observed onsite are described below as *Baccharis salicifolia* Alliance (Mulefat Scrub) and *Sambucus mexicana-Baccharis salicifolia* Alliance (Mexican Elderberry-Mulefat Scrub). Riparian Scrub occupies approximately 9.15 acres of the project site.

Baccharis salicifolia Alliance (Mulefat Scrub)

Baccharis salicifolia Alliance (Mulefat Scrub) is dominated by *Baccharis salicifolia* (Mulefat), a native shrub or small tree that is found at elevations below 1,250 meters (Hickman 1993). The National Inventory of Wetland Plants (Reed 1988) lists *Baccharis salicifolia* with a wetland indicator status of FACW.

Baccharis salicifolia Alliance forms a continuous scrub canopy of less than four meters (12 feet) tall growing over a sparse ground layer. This plant community requires seasonally flooded or saturated, freshwater, wetland habitats, such as canyon bottoms, irrigation ditches, and moist streamsides or channels. *Baccharis salicifolia* often occurs in pure stands or may mix, at a fine scale, with other wetland series. *Baccharis salicifolia* often forms ecotonal transitions between riparian and upland scrub communities. (Sawyer and Keeler-Wolf 1995.)

Baccharis salicifolia Alliance occurs centrally, along Lyons Ranch Road and along Lyon Canyon Creek, which bisect the project site. Often, *Baccharis salicifolia* Alliance is significantly influenced by *Sambucus mexicana* (Mexican Elderberry) as a major contributor to the shrub canopy. In addition to *Sambucus mexicana*, other scattered associate species to *Baccharis salicifolia* Alliance include: *Amsinckia menziesii* (Common Fiddleneck), *Anagallis arvensis* (Scarlet Pimpernel), *Artemisia douglasiana* (Mugwort), *Baccharis pilularis* (Coyote Brush), *Conium maculatum* (Poison Hemlock), *Erodium cicutarium* (Redstem Filaree), *Eucrypta chrysanthemifolia* var. *chrysanthemifolia* (Common Eucrypta), *Heliotropium curassavicum*, *Hirschfeldia incana* (Summer Mustard), *Leymus condensatus* (Giant Wildrye), *Marah macrocarpus* var. *macrocarpus* (Big-fruited Man-root), and *Nicotiana glauca* (Tree Tobacco). *Baccharis salicifolia* Alliance occupies approximately 0.14 acre of the project site.

Sambucus mexicana-Baccharis salicifolia Alliance (Mexican Elderberry-Mulefat Scrub)

Sambucus mexicana-Baccharis salicifolia Alliance (Mexican Elderberry-Mulefat Scrub) is co-dominated by *Sambucus mexicana* (Mexican Elderberry) and *Baccharis salicifolia*. *Sambucus mexicana* is a common large shrub that produces cream-colored flowers and bluish-black berries. This species is commonly found growing along streams at elevations below 3,000 meters (Hickman 1993). *Sambucus mexicana* is listed with a wetland indicator status of FAC, or a Facultative species that is equally likely to occur in wetlands as in non-wetlands (Reed 1988). (*Baccharis salicifolia* is described above.)

Sambucus mexicana-Baccharis salicifolia Alliance typically forms an intermittent shrub canopy over various riparian scrub shrubs and a grassy ground layer. This series occurs in intermittently flooded or seasonally saturated soils of freshwater wetlands, such as stream banks, floodplains, and open riparian forests at elevations below 300 meters. *S. mexicana* is also common in many series, often as a small emergent tree over Coastal Sage Scrub, chaparral communities, and as an understory to woodlands. (Sawyer and Keeler-Wolf 1995.)

Baccharis salicifolia was often a co-dominant to *Sambucus mexicana* in several areas; however, other scattered associate species observed growing with this alliance include most of those listed above for *Baccharis salicifolia* Alliance. *Distichlis spicata* and *Salix* spp. (Arroyo Willow and Red Willow) were also observed frequently growing as associates in stands of *Sambucus mexicana-Baccharis salicifolia* Alliance. *Sambucus mexicana-Baccharis salicifolia* Alliance occupies approximately 9.01 acres of the project site.

RIPARIAN HERBACEOUS

Riparian Herbaceous habitat is characterized by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. This habitat usually consists of persistent plant species that normally remain standing at least until the beginning of the next growing season (Cowardin et al. 1979). The Riparian Herbaceous habitat observed onsite is described below as *Distichlis spicata* Alliance (Saltgrass Wet Meadow). Riparian Herbaceous occupies approximately 0.34 acre of the project site.

Distichlis spicata Alliance (Saltgrass Wet Meadow)

Distichlis spicata Alliance (Saltgrass Wet Meadow) is a plant community dominated by the hydrophytic perennial grass *Distichlis spicata* (Saltgrass). The National Inventory of Wetland Plants (Reed 1988) lists *Distichlis spicata* with a wetland indicator status of FACW (Reed 1988). This species occurs predominantly in saltmarshes and in moist alkaline or saline areas at elevations below 1,000 meters (Hickman 1993). Typically, *Distichlis spicata* Alliance includes groundlayer contributions of annual grasses and herb species. This plant community forms a low, dense, often matted ground layer on permanently moist soils, and tolerates haline to saline water chemistry. This plant community occupies the transitional landscape between upland grassland habitats to wetter riparian conditions, and has the potential for higher species richness compared to other adjacent upland plant communities (Sawyer and Keeler-Wolf 1995).

Associate species observed onsite within the herbaceous layer of *Distichlis spicata* Alliance include: *Ambrosia* spp. (Ragweed), *Atriplex semibaccata* (Australian Saltbush), *Avena barbata* (Slender Wild Oats), *Bromus* spp. (Brome grasses), *Claytonia parviflora* (Small-flowered Miner's Lettuce), *Heliotropium curassavicum* (Alkali Heliotrope), *Juncus balticus* (Baltic Rush), *Medicago polymorpha* (Common Burclover), *Melilotus indica* (Sourclover), *Polygonum arenastrum* (Common Knotweed), *Polypogon monspeliensis* (Rabbitsfoot Grass), *Rumex crispus* (Curly Dock), *Silybum marianum* (Milk Thistle), and *Verbena lasiostachys* (Western Verbena). *Distichlis spicata* Alliance occupies approximately 0.34 acre of the project site.

Upland Habitat

The upland habitats observed at the Lyons Canyon Ranch site include Woodland (*Juglans californica* Alliance, *Quercus agrifolia* Alliance, and *Quercus lobata* Alliance); Chaparral (three *Adenostoma fasciculatum* Alliances); Coastal Sage Scrub (*Eriogonum fasciculatum* Alliance, *Salvia apiana* Alliance, three *Salvia leucophylla* Alliances, *Sambucus mexicana-Salvia* spp. Alliance, *Hesperoyucca whipplei*-Lichen Alliance, and Lichen Alliance); and Grassland (*Avena-Brassica-Silybum* Alliance).

WOODLAND

Woodland describes a vegetation type dominated by woody trees and tall shrub species, forming an intermittent canopy over a variety of low shrubs and a variable grassy ground layer. Some woodlands may not consist of any shrub canopy, and may only form a canopy over annual or perennial grasslands. The understory of woodlands is directly related to the density of the woodland and the cover of its canopy. Typically, if a woodland is dense, then the understory species are few, and this is a result of shading by the woodland canopy. The woodland plant communities observed at Lyons Canyon Ranch include *Juglans californica* Alliance (California Walnut Woodland), *Quercus agrifolia* Alliance (Coast Live Oak Woodland), and *Quercus lobata* Alliance (Valley Oak Woodland), which are discussed below. Woodland occupies approximately 40.54 acres of the project site.

Juglans californica var. *californica* Alliance (California Walnut Woodland)

Juglans californica Alliance (California Walnut Woodland) is dominated by *Juglans californica* var. *californica* (Southern California Black Walnut), a broad-leaved winter-deciduous, monoecious tree. This walnut species is listed with a wetland indicator status of FAC (Reed 1988). *Juglans californica* Alliance forms an open to closed canopy (less than 10 meters tall) growing over a common or infrequent shrub stratum and a sparse or grassy ground layer. This habitat requires deep, shale-derived, intermittently flooded/saturated soils of freshwater riparian corridors, floodplains, incised canyons, seeps, and stream or riverbanks at elevations between 150 and 900 meters. (Sawyer and Keeler-Wolf 1995.)

Juglans californica is an uncommon California endemic species, ranging from coastal southern California from Santa Barbara County to Los Angeles County. *J. californica* is a CNPS List 4 (limited distribution) and has a CNPS R-E-D (Rare-Endangerment-Distribution) Code of 1-2-3 ([1] Rare, but low potential for extinction-[2] Endangered in a portion of its range-[3] Endemic to California) (CNPS 2001). *Juglans californica* Alliance is a much fragmented, declining natural community, and it is threatened by urbanization and grazing, which inhibit natural reproduction.

Juglans californica Alliance occurs in the southwestern portion of the project site. *Juglans californica* Alliance was observed as an open canopy consisting of several large, mature trees growing over an understory of associate shrubs and herbs including *Artemisia californica, Brickellia californica*, *Dichelostemma capitatum* (Blue Dicks), *Hazardia squarrosa, Leymus condensatus, Lupinus succulentus*, *Marah macrocarpus, Salvia leucophylla,* and *S. mellifera.* Emergent *Quercus agrifolia* were also observed contributing to the walnut canopy. *Juglans californica* Alliance occupies approximately 1.89 acres of the project site.

Quercus agrifolia (Upland) Alliance (Coast Live Oak Woodland)

Quercus agrifolia (Upland) Alliance (Coast Live Oak Woodland) is described above in the Riparian Woodland subsection. As stated above, *Quercus agrifolia* (Upland) Alliance occurs in the valleys between the steep hills on the project site. *Quercus agrifolia* (Upland) Alliance was observed and classified as two different plant communities at the Lyons Canyon Ranch project site. The upland alliance of this plant community is similar to the description above for Coast Live Oak Riparian Woodland; however, this upland type is not associated with streams and riparian corridors. *Quercus agrifolia* (Upland) Alliance occupies approximately 38.42 acres of the project site.

Quercus lobata Alliance (Valley Oak Woodland)

Quercus lobata Alliance (Valley Oak Woodland) is dominated by *Quercus lobata* (Valley Oak), which is a tall deciduous tree with light grayish bark and deeply lobed leaves. This uncommon oak species is found in slopes, valleys, and savannahs at elevations below 1,700 meters. The National Inventory of Wetland Plants (Reed 1988) lists *Quercus lobata* with a wetland indicator status of FAC* (tentatively, a Facultative species that is equally likely to occur in wetlands as in nonwetlands [Reed 1988]).

Quercus lobata Alliance forms a less than 30-meters tall open woodlands canopy with occasional shrubs below with a grassy groundlayer. This plant community requires intermittently flooded soils, and occurs in floodplains, valley bottoms, gentle slopes, and summit valleys.

Quercus lobata Alliance was observed in one small location onsite, near the entry in the northeastern portion of the project site. *Quercus agrifolia* was observed as an emergent tree associate to *Quercus lobata*, and the understory consists of primarily *Avena-Brassica-Silybum* Alliance (Ruderal Grassland Alliance), which is described below. *Quercus lobata* Alliance occupies approximately 0.23 acre of the project site.

CHAPARRAL

Chaparral is a type of shrubland that is dominated by evergreen shrubs with small, thick, leathery, dark green, sclerophyllous leaves. The shrubs of chaparral are relatively tall and dense, and are adapted to periodic wildfires by stump sprouting or by germination from a dormant seed bank. These evergreen shrubs are also adapted to drought by deep extensive root systems, while their small thick leaf structure prevents permanent damage from moisture loss (Zedler et al. 1997). Many typical Coastal Sage Scrub species also grow intermixed as associates with chaparral species. Chaparral typically occurs on moderate to steep south-facing slopes with dry, rocky, shallow soils, becoming more abundant with higher elevations where temperatures are lower and moisture supplies are more ample. The chaparral plant communities observed onsite include three *Adenostoma fasciculatum* Alliances (Chamise Chaparral). Chaparral occupies approximately 69.33 acres of the project site.

Adenostoma fasciculatum Alliance (Chamise Chaparral)

Adenostoma fasciculatum Alliance (Chamise Chaparral) is dominated by the evergreen shrub, *Adenostoma fasciculatum* (Chamise), which is the most abundant species in the non-desert shrublands of California. This species is a burled and many-branched shrub that has gray-brown trunk bark, clustered small linear leaves, and tiny white flowers. It is adapted to California's Mediterranean climate by a dual root system that has both deep and shallow roots. *Adenostoma fasciculatum* individuals recover from fire by both resprouting and seedling recruitment. (Zedler et al. 1997.)

Adenostoma fasciculatum Alliance forms an intermittent to continuous canopy less than three meters tall, growing over a sparse herbaceous layer, especially in older stands. *Adenostoma fasciculatum* is usually associated with all slope aspects, but is commonly found on the drier south- and west-facing slopes and ridges, growing in very shallow soils (mafic-derived). To be classified as *Adenostoma fasciculatum* Alliance, the stand must have at least 60% cover by *A. fasciculatum*. (Sawyer and Keeler-Wolf 1995.)

The shrub canopy associate species observed as important contributors to *Adenostoma fasciculatum* Alliance include: *Arctostaphylos glauca* (Bigberry Manzanita), *Eriodictyon*

crassifolium var. *nigrescens* (Thickleaf Yerba Santa), *Eriogonum fasciculatum* var. *polifolium*, *Hesperoyucca whipplei, Heteromeles arbutifolia* (Toyon), *Lotus scoparius* var. *scoparius* (Deerweed), *Malacothamnus fasciculatus* (Chaparral bush mallow), *Malosma laurina* (Laurelleaf Sumac), *Quercus berberidifolia* (Scrub Oak), *Quercus john-tuckeri* (Tucker Oak), *Rhamnus ilicifolia* (Hollyleaf Redberry), *Rhus ovata*, *Sambucus mexicana, Salvia leucophylla*, and *S. mellifera*. Several understory herbs listed below for Coastal Sage Scrub are expected as associates in Chaparral plant communities onsite. *Adenostoma fasciculatum* Alliance occupies approximately 31.78 acres of the project site.

***Adenostoma fasciculatum-Salvia mellifera* Alliance (Chamise-Black Sage Chaparral)**
Adenostoma fasciculatum-Salvia mellifera Alliance is similar to *Adenostoma fasciculatum* Alliance, except that the stand is co-dominated by *Adenostoma fasciculatum* and *Salvia mellifera*. More specifically, this alliance consists of *Adenostoma fasciculatum* cover between 60 and 30% and *Salvia mellifera* cover between 30 and 60%. This plant community occurs on south-facing slopes in shallow rocky soils. (Sawyer and Keeler-Wolf 1995.) *Adenostoma fasciculatum-Salvia mellifera* Alliance occupies approximately 24.98 acres of the project site.

***Adenostoma fasciculatum-Sambucus mexicana* Alliance**
(Chamise-Mexican Elderberry Chaparral)
Adenostoma fasciculatum-Sambucus mexicana Alliance is also similar to *Adenostoma fasciculatum* Alliance, except this plant community is co-dominated by *Adenostoma fasciculatum* and *Sambucus mexicana*, or *A. fasciculatum* cover is between 60 and 30% and *S. mexicana* cover is between 30 and 60%. This alliance grows on the moister slopes (north-facing) in less rocky soils. Associate species are similar to those listed above for *Adenostoma fasciculatum* Alliance. *Adenostoma fasciculatum-Sambucus mexicana* Alliance occupies approximately 12.65 acres of the project site.

COASTAL SAGE SCRUB

Coastal Sage Scrub is a shrubland dominated by facultative drought-deciduous, low-growing, soft-leaved, and grayish-green (malacophyllus) shrubs and subshrubs. Coastal Sage Scrub plant series typically exhibit a patchy distribution, often in close association with areas inhabited by chaparral habitats. At one time, the Santa Clarita Valley area supported the region's most extensive development of sage and sagebrush scrub plant communities prior to urbanization. Coastal Sage Scrub is a community at risk, with approximately 90 percent already lost to development (urban and agriculture); very little Coastal Sage Scrub has been protected by any legal mechanisms, such as enforceable conservation easements (Davis et al. 1985). (Boyd 1999.)

Due to stand variations, Coastal Sage Scrub is often considered part of a collection of species-specific plant series (Sawyer and Keeler-Wolf 1995). The five most common scrub series described for Santa Clarita Valley include: *Artemisia californica* Alliance (California Sagebrush Scrub), *Salvia mellifera* Alliance (Black Sage Scrub), *Salvia leucophylla* Alliance (Purple Sage Scrub), *Salvia apiana* Alliance (White Sage Scrub), and Mixed Sage Alliance (Boyd 1999).

Coastal Sage Scrub generally occurs on rolling hills of the lower areas on the project site and transitions into chaparral where hills become steep. The majority of Coastal Sage Scrub on the project site occurs along the western border, the southeastern border, and on a road cut along The Old Road. The plant communities observed contributing to the Coastal Sage Scrub habitats at Lyons Canyon Ranch include *Eriogonum fasciculatum* Alliance (California Buckwheat Scrub), *Sambucus mexicana-Salvia leucophylla* Alliance (Mexican Elderberry-Purple Sage Scrub),

Salvia leucophylla Alliance (Purple Sage Scrub), *Salvia apiana* Alliance (White Sage Scrub), and *Hesperoyucca whipplei* Alliance (Our Lord's Candle Sandstone Cliff). These plant communities are described in the following paragraphs. Coastal Sage Scrub occupies approximately 57.43 acres of the project site.

***Eriogonum fasciculatum* Alliance (California Buckwheat Scrub)**

Eriogonum fasciculatum Alliance (California Buckwheat Scrub) is dominated by *Eriogonum fasciculatum* var. *fasciculatum*, a perennial shrub with fascicled tomentose (lower surface) leaves and small clustered white to pinkish flowers. *E. fasciculatum* commonly occurs on dry slopes, washes, and canyons that are scattered throughout foothills and mountains, and this shrub is likely to be seral to other plant communities. It is most often found on slopes that have been disturbed within the last ten years. *E. fasciculatum* Alliance forms a shrub canopy less than one meter tall, and forms an intermittent canopy over a variable or grassy ground layer. This scrub type prefers shallow and rocky soils at elevations between sea level and 1,200 meters (Sawyer and Keeler-Wolf 1995).

One patch of *Eriogonum fasciculatum* Alliance, along The Old Road and just south of Lyons Ranch Road, is a monotypic stand of *Eriogonum fasciculatum* var. *fasciculatum* (California Buckwheat). This particular patch of *Eriogonum fasciculatum* Alliance most likely originated from seed, following construction of The Old Road. Some associate species to this plant community include *Artemisia tridentata* ssp. *tridentata* (Great Basin Sagebrush), *Ericameria ericoides* ssp. *ericoides* (Mock Heather), and *Hazardia squarrosa* (Sawtooth Goldenbush). *Eriogonum fasciculatum* Alliance occupies approximately 3.20 acres of the project site.

***Sambucus mexicana-Salvia leucophylla* Alliance (Mexican Elderberry-Purple Sage Scrub)**

The *Sambucus mexicana-Salvia leucophylla* Alliance (Mexican Elderberry-Purple Sage Scrub) observed onsite is co-dominated by *Sambucus mexicana* (Mexican Elderberry) and *Salvia leucophylla* (Purple Sage). *Sambucus mexicana* is a common large shrub that produces umbels of cream-colored flowers and bluish-black berries. This species is commonly found growing along streams or in floodplains at elevations below 3,000 meters (Hickman 1993). *Sambucus mexicana* is listed with a wetland indicator status of FAC, or a Facultative species that is equally likely to occur in wetlands as in non-wetlands (Reed 1988). *Salvia leucophylla* is a drought-deciduous, aromatic, shrub with puckered leaves with small rounded teeth on the leaf margins, and rose-lavender flowers. This species prefers dry open hills at elevations of 50 to 800 meters (Hickman 1993).

Sambucus mexicana-Salvia leucophylla Alliance forms an intermittent variable shrub canopy, of less than 8 meters tall. Typically, the *Sambucus mexicana* appears as a small tree growing over the *Salvia leucophylla*. This alliance occurs in intermittently flooded floodplains, as well as on steeper north-facing slopes, in colluvial-derived or rocky soils. (Sawyer and Keeler-Wolf 1995.)

Sambucus mexicana-Salvia leucophylla Alliance includes important shrub layer associates such as: *Baccharis pilularis*, *Brickellia californica* (California Brickellbush), *Cucurbita foetidissima* (Coyote Melon), *Encelia californica* (California Bush Sunflower), *Eriodictyon crassifolium* var. *nigrescens* (Thickleaf Yerba Santa), *Leymus condensatus* (Giant Wildrye), *Malacothamnus fasciculatus* (Chaparral Bush Mallow), *Marah macrocarpus* var. *macrocarpus* (Large-fruited Man-root), *Mimulus longiflorus* (Sticky Bush Monkeyflower), *Nassella pulchra* (Purple Needlegrass), *Rhus ovata* (Sugar Bush), *Salvia mellifera* (Black Sage), and *Solanum douglasii* (Douglas Nightshade). *Sambucus mexicana-Salvia leucophylla* Alliance occupies approximately 17.96 acres of the project site.

Salvia apiana Alliance (White Sage Scrub)

Salvia apiana Alliance (White Sage Scrub) is dominated by *Salvia apiana* (White Sage), which is a drought-deciduous, very aromatic shrub, with white-gray leaves and whitish flowers in a long tomentose panicle extending well above the leaves (Hickman 1993). *Salvia apiana* Alliance exists when *S. apiana* is the sole, dominant, or important shrub growing with *Artemisia californica* in the canopy. This alliance forms a continuous or intermittent canopy over a variable ground layer. *Salvia apiana* Alliance grows on dry slopes, or in rarely flooded, low-gradient deposits along streams. It requires shallow soils, and occurs at elevations between sea level and 1,600 meters. (Sawyer and Keeler-Wolf 1995.)

Important shrub canopy contributors observed onsite include *Artemisia californica*, *Heterotheca sessiliflora* ssp. *echioides* (Hairy Golden Aster), *Malosma laurina* (Laurelleaf Sumac), and *Sambucus mexicana*. Other herbaceous associate species observed growing below the low shrub canopy include *Avena barbata* (Slender Wild Oat), *Hirschfeldia incana*, and *Nassella pulchra*. Emergent *Quercus agrifolia* and *Q. lobata* (Valley Oak) trees were also present. *Salvia apiana* Alliance occupies approximately 0.08 acre of the project site.

Salvia leucophylla Alliance (Purple Sage Scrub)

Salvia leucophylla Alliance (Purple Sage Scrub) is dominated by *Salvia leucophylla* (Purple Sage), and is often an important shrub with *Artemisia californica* (California Sagebrush). *Salvia leucophylla* typically forms a continuous to intermittent canopy over a variable ground layer. *Salvia leucophylla* Alliance grows on steeper north-facing slopes in colluvial-derived, rocky soils. It is considered part of the Coastal Sage Scrub series collection, and *Salvia leucophylla* stands typically create mosaics with *Quercus agrifolia* Alliance and *Juglans californica* Alliance.

Salvia leucophylla Alliance was observed as an important component of Coastal Sage Scrub within the study area. Several associate native species contribute to the canopy of *Salvia leucophylla* Alliance onsite, including: *Artemisia californica*, *Baccharis pilularis, Ceanothus crassifolius* (Snowball Ceanothus), *Emmenanthe penduliflora* (Whispering Bells), *Encelia californica* (California Bush Sunflower), *Eriogonum fasciculatum* var. *polifolium* (Hoary California Buckwheat), *Hesperoyucca whipplei* (Our Lord's Candle), *Keckiella cordifolia* (Heart-leaved Bush Penstemon), *Lotus scoparius* (Deerweed), *Malacothamnus fasciculatus* (Chaparral Bush Mallow), *Nassella pulchra*, *Paeonia californica* (California Peony), *Rhus ovata* (Sugar Bush), *Ribes malvaceum* (Chaparral Currant), *Salvia mellifera, Toxicodendron diversilobum* (Western Poison Oak), and *Trichostema lanceolatum* (Vinegar Weed).

Three *Salvia leucophylla* Alliances are mapped on Figure 8, including the *Salvia leucophylla* Alliance described in the above paragraph, as well as *Salvia leucophylla* Alliance (South-facing) and *Salvia leucophylla-Brassica* Alliance (Purple Sage-Mustard Scrub). *Salvia leucophylla* Alliance occupies approximately 18.36 acres of the project site.

Salvia leucophylla Alliance (South-facing) (Purple Sage South-facing Slopes)

The *Salvia leucophylla* Alliance (South-facing) plant community is very similar to the typical *Salvia leucophylla* Alliance; however, this type forms a significantly more open canopy with lower species richness. The south-facing slopes create drier and harsher conditions, which result- in a more scattered arrangement of plants. *Salvia leucophylla* Alliance (south-facing) occupies approximately 10.22 acres of the project site.

***Salvia leucophylla-Brassica* Alliance (Purple Sage-Mustard Scrub)**
Salvia leucophylla-Brassica Alliance (Purple Sage-Mustard Scrub) is similar to the typical *Salvia leucophylla* Alliance onsite except that this plant community is significantly influenced by invasive introduced plant species (primarily *Avena barbata*, *Brassica nigra*, and *Silybum marianum*), which also results in a more scattered arrangement of the *Salvia leucophylla* individuals. *Salvia leucophylla-Brassica* Alliance occupies approximately 7.61 acres of the project site.

LICHEN ROCK OUTCROP

Lichen Rock Outcrop consists of exposed parent material, in the form of large and moderately sized boulders and exposed bedrock, on which is generally a lack of soil. The hard surfaces of the boulders and rock outcrops provide substrate to nonvascular plants, such as lichens and bryophytes (mosses and liverworts). The large and small sandstone or granite boulders and exposed bedrock of the rock outcroppings are covered, or partially covered, with few other plant species except for a diverse population of crustose (crust-like) and foliose (leaf-like) lichens. Lichen Rock Outcrop occupies approximately 9.50 acres of the project site.

Lichen Alliance

Lichens are pioneer plants that are adapted to sterile substrates and help the decomposition process. Lichens can also add considerable color to the substrate, from bright chartreuses, oranges and reds, to subtle shades of gray, white, yellow, brown, and green. The lichen flora of these boulders is distributed on each boulder according to aspect, light intensity, and moisture availability, all of which are related. Certain species of lichens are usually found only on the most exposed, south-facing surfaces, requiring direct sunlight, while others are typically found on protected, north-facing aspects with little or no direct sunlight. Lichen Alliance occupies approximately 0.57 acres of the project site.

***Hesperoyucca whipplei*-Lichen Alliance (Our Lord's Candle-Lichen Sandstone Cliff)**
Hesperoyucca whipplei-Lichen Alliance (Our Lord's Candle-Lichen Sandstone Cliff) is dominated by *Hesperoyucca whipplei* (Our Lord's Candle), a native scrub species that dies after it flowers (if it has not previously branches out at the base). This plant community includes a significant contribution by lichen-covered rock outcrops as well.

Our Lord's Candle generally forms one long inflorescence, exerting from a dense basal rosette of flat, pointed, gray-green, long leaves; and it has spheric, white flowers with purple tips. *Hesperoyucca whipplei* is common in chaparral and coastal or desert scrub communities, at elevations below 2,500 meters (Hickman 1993). Typically *Hesperoyucca whipplei* is an important contributor to alliances such as *Salvia apiana* Alliance, *Salvia leucophylla* Alliance, or *Eriogonum fasciculatum* Alliance onsite; however, this species forms *Hesperoyucca whipplei* Alliance on the cliff faces of the southeastern and western portions of the project site. This plant community supports sparse habitat on the dry, crumbling soil. *Chorizanthe staticoides* (Turkish Rugging) is the associate species observed growing with the scattered *Hesperoyucca whipplei* plants, which function as shrubs. *Hesperoyucca whipplei*-Lichen Alliance occupies approximately 0.57 acres of the project site.

GRASSLAND

Grassland consists of low herbaceous vegetation that is dominated by introduced annual grasses, or less often by native perennial grasses, with herbaceous associates including either native

wildflowers or invasive ruderal species. Grasslands generally grow in well-developed soils on gentle slopes and flats. For example, grassland covers the fine textured soils of coastal terraces, as well as the deeper soils of rolling hills at higher elevations. Areas dominated by grasses would most likely revert to shrublands or even woodlands if burning and disturbance frequencies were reduced. (Zedler et al. 1997.)

Grassland occupies approximately 37.96 acres of the project site.

The predominant grassland plant community observed at Lyons Canyon Ranch is *Avena-Brassica-Silybum* Alliance (Ruderal Grassland), which is dominated by nonnative and often invasive annual and perennial grass and forb species. Prior to the wildfire onsite, *Nassella pulchra* Alliance (Perennial Grassland) was expected in scattered patches onsite, and California Annual Grassland Alliance was expected to be more predominant than Ruderal Grassland onsite. Perennial Grassland is predominantly native and is dominated by native perennial bunchgrass species and native forbs, while California Annual Grassland, although dominated by introduced annual grass species, includes a large component of native wildflowers and native grasses. *Nassella pulchra* Alliance and California Annual Grassland have likely been reduced to Ruderal Grassland since the more competitive introduced species have taken advantage of the project site disturbances. Since *Avena-Brassica-Silybum* Alliance is currently the most predominant grassland onsite, this alliance is discussed in further detail below and is mapped in Figure 8 (above).

***Avena-Brassica-Silybum* Alliance (Ruderal Grassland)**

Avena-Brassica-Silybum Alliance (Ruderal Grassland Alliance) is predominated by *Avena* spp. (Wild Oats), *Brassica* spp. (or *Brassica nigra* [Black Mustard] and *Hirschfeldia incana* [Summer mustard]), and *Silybum marianum* (Milk Thistle). This alliance is typically in early successional stages resulting from severe disturbance by natural or human causes, and/or is due to recurrent disturbance. These areas are dominated by pioneering herbaceous plants that readily colonize disturbed ground. The ability of exotic species to invade disturbed areas arises from their relationship to old-world ancestors that have co-existed with humans for millennia, and thus are more adapted to exploit disturbed land. Ruderal communities are typically a threat to regional biodiversity since they continually distribute nonnative propagules into native plant communities. These exotic species can colonize natural disturbances, such as burns, and typically can successfully compete with the more desirable natives. (Zedler et al. 1997.)

Ruderal Grassland is found on most level areas and overgrown roads on the project site. This plant community is located throughout the project site, and along Lyons Ranch Road and other side roads. Many of the same grass species of California Annual Grassland - including *Avena* spp. (wild oats), *Bromus* spp. (bromes), *Hordeum* spp. (barley), and *Vulpia* spp. (fescues)- are often abundant in Ruderal Grassland; however, Ruderal Grassland is predominated by introduced and often invasive plant species. In addition to the typical introduced annual grass species, the predominant invasive plant species observed throughout the project site is *Silybum marianum* (Milk Thistle). Other invasive associate species observed include *Amaranthus albus* (Tumbleweed), *Brassica nigra* (Black Mustard), *Carduus pycnocephalus* (Italian Thistle), *Centaurea melitensis* (Tocalote), *Chenopodium album* (Lambsquarters), *Circium vulgare* (Bull Thistle), *Erodium* spp. (filarees), *Foeniculum vulgare* (Sweet Fennel), *Hirschfeldia incana*, *Lactuca serriola* (Prickly Wild Lettuce), *Malva parviflora* (Cheeseweed), *Medicago polymorpha* (Bur-clover), *Picris echioides* (Bristly Ox-tongue), and *Sonchus* spp. (sow-thistles). *Avena-Brassica-Silybum* Alliance occupies approximately 37.96 acres of the project site.

Disturbed Area

Disturbed Areas are often not vegetated due to development or disturbance, or may be planted areas onsite. Disturbed Area include the Road/Disturbed areas of the project site (including the pump station on the southern edge of the site, a dirt road on the western edge, and paved roads on the southern and eastern boundary), and Ornamental Plantings, which are areas that have been planted with introduced, often exotic or invasive plant species. These cover types are discussed below. Disturbed Area occupies approximately 8.71 acres of the project site.

ROAD/DISTURBED

Road/Disturbed describes land or habitat that has been negatively altered, either by human activities (for building and road development purposes) or by natural causes (fires). As a result, this altered land is generally initially bare ground until either development occurs or natural succession begins. Habitat succession is a slow process of reestablishing original plant communities, but successional habitats are readily invaded by ruderal grass and forb species.

Disturbed areas on the project site are primarily existing dirt roads. Limited vegetation occurs in this land cover type and tends to be weedy. These plant species include invasive species such as *Centaurea melitensis, Silybum marianum*, and *Hirschfeldia incana*. Road/Disturbed occupies approximately 8.01 acres of the project site.

ORNAMENTAL

Ornamental vegetation occurs on the southeastern corner of the project site. This vegetation type includes landscaped areas with planted species such as *Pinus* spp. (pines). Other ornamental species observed onsite include *Ailanthus altissima* (Tree-of-heaven), *Cupressus* sp. (cypress), *Magnolia* sp. (Magnolia), and *Vinca major* (Periwinkle). Ornamental occupies approximately 0.70 acre of the project site.

Species Anticipated Onsite

A total of 325 plant species was observed at the Lyons Canyon Ranch project site, and 90 wildlife species were observed onsite. Twenty-seven (27) special-status plant species are reported in the vicinity of the project site. Of those 27 species, 8 special-status plant species were observed onsite.

Ninety (90) wildlife species were observed onsite, while at least 70 other vertebrate wildlife species are expected onsite. Fifty-one (51) special-status wildlife species are reported in the vicinity of the project site. Of those 51 species, 3 special-status wildlife species (including a raptor nest) were observed onsite. For all plant and wildlife species observed and anticipated at the Lyons Canyon Ranch project site, refer to Section 3, General Biota Survey; Section 4, Special-Status Biological Resources; Appendix C, Plant Species Observed at Lyons Canyon Ranch; and Appendix D, Wildlife Species Observed and Expected at Lyons Canyon Ranch.

Project Site Flora and Fauna Population Estimates

No specific population estimates were made by BonTerra Consulting[1] or DMEC as part of their assessments. However, DMEC documented the relative percent cover of plants occurring at each of the wetland delineation sample plots, focusing on dominant species at each plot. The relative percent cover of the species observed at each plot aids in the estimation of the abundance of all plant species onsite; however, nearly all the vegetation had been burned prior to these surveys. Since most vegetation was cleared by the fire, DMEC can only estimate the abundance of plant species onsite.

Approximately 325 plant species were observed onsite (which included the parcel to the southeast of the Lyons Canyon Ranch parcels). Of those 325, approximately 77 taxa observed are considered *common* species within the boundary of the Lyons Canyon Ranch project site. These common taxa are dominant or important contributor species of the habitats onsite, with an estimated 1,000 individuals or more existing onsite. Approximately 183 plant taxa observed are considered *uncommon* species onsite, which are associate species to the habitats onsite, with estimated populations of 100 to less than 1,000 individuals onsite. The remaining approximate 65 plant taxa are considered *scarce* on the project site, since these taxa are estimated to have fewer than 100 individuals. Appendix C, Plant Species Observed at Lyons Canyon Ranch, estimates abundance for each plant species.

DMEC counted individual wildlife species as they were observed onsite, and DMEC conducted small mammal trapping onsite. (No quantitative data were gathered by BonTerra Consulting on wildlife species to determine population sizes present onsite.) Based on the general occurrences observed during the general surveys, the amount and type of habitats present onsite, and the results of the small mammal trapping, a general estimated abundance for each wildlife species observed has been made. These estimates are provided partially in the following subsection, as well as in Appendix D, which lists the estimated abundance (scarce, uncommon, or common) for each wildlife species observed.

Three mammal species were caught onsite, including California Pocket Mouse, Deer Mouse, and Western Harvest Mouse. One special-status species was detected during the trapping sessions, San Diego Desert Woodrat (nest). A total of 349 trap nights were established, with a total of 128 captures (~37% success). Six individuals were recaptured. Each consecutive trapping session resulted in a higher success rate. Based on the number of individuals trapped for each species (refer to Table 6, Small Mammal Trapping at Lyons Canyon Ranch), DMEC estimates that the general abundance for these species is as follows: San Diego Desert Woodrat onsite is *scarce* in that less than 100 individuals are expected onsite; and California Pocket Mouse, Deer Mouse, and Western Harvest Mouse onsite are *common* in that more than 1,000 individuals are expected onsite.

[1] Scott White of White & Leatherman Consulting provided DMEC with abundance estimates, which were incorporated into Appendix C.

CHARACTERISTICS OF THE SURROUNDING AREA

This section discusses the existing land uses, open space reserves, and biological resources surrounding the Lyons Canyon Ranch project site. The biological resources surrounding the project site are discussed in terms of Lyons Canyon Ranch in relation to the general surrounding vegetation types, biotic mosaic, estimated species population sizes in the range, and the overall biological value of the area. Figure 9, Lyons Canyon Ranch Regional Context Map, illustrates these landscape components of the surrounding area and their relation to the project site. Understanding the relationships between the project site and the surrounding environment is significant in understanding connectivity and fragmentation of habitats and wildlife resources, migration corridors, and gene pools. Appendix B, Photograph Key Map of Lyons Canyon Ranch and Surrounding Area with Photographs, provides representative photographs and their location to illustrate the general characteristics of the surrounding area. (Refer also to the Oversized Maps at the end of this report for the Color USGS Oat Mountain Quad Sheet.)

Existing Land Uses

The general condition of the Lyons Canyon Ranch project site is influenced by several factors. Although the approximate 235-acre project site is predominantly undeveloped open space, with no currently active land uses, the project site has been influenced greatly by humans for many years. Historically, the property was used as an outdoor set for filmmaking, and site is transected by numerous dirt roads, which were created for the various film productions. The project site is scattered with film props and portions of the property (lower elevations) have been graded for filming purposes as well. Additionally, the project site includes fencing and an abandoned water tank, water wells, and irrigation lines. Other utility structures, such as Southern California Edison electrical distribution lines, are adjacent to or traverse portions of the site.

Additional commercial uses in adjacent areas, such as restaurants, gas stations, grocery stores, and local shops, are located nearby, approximately a half-mile north of the site near the Lyon Avenue/I-5 interchange. Figure 10, Surrounding Land Uses and Their Effect on Adjacent Watersheds, illustrates the current land uses in the vicinity of Lyons Canyon Ranch, and their influences on the surrounding and immediate watersheds.

Figure 9. Lyons Canyon Ranch Regional Context Map

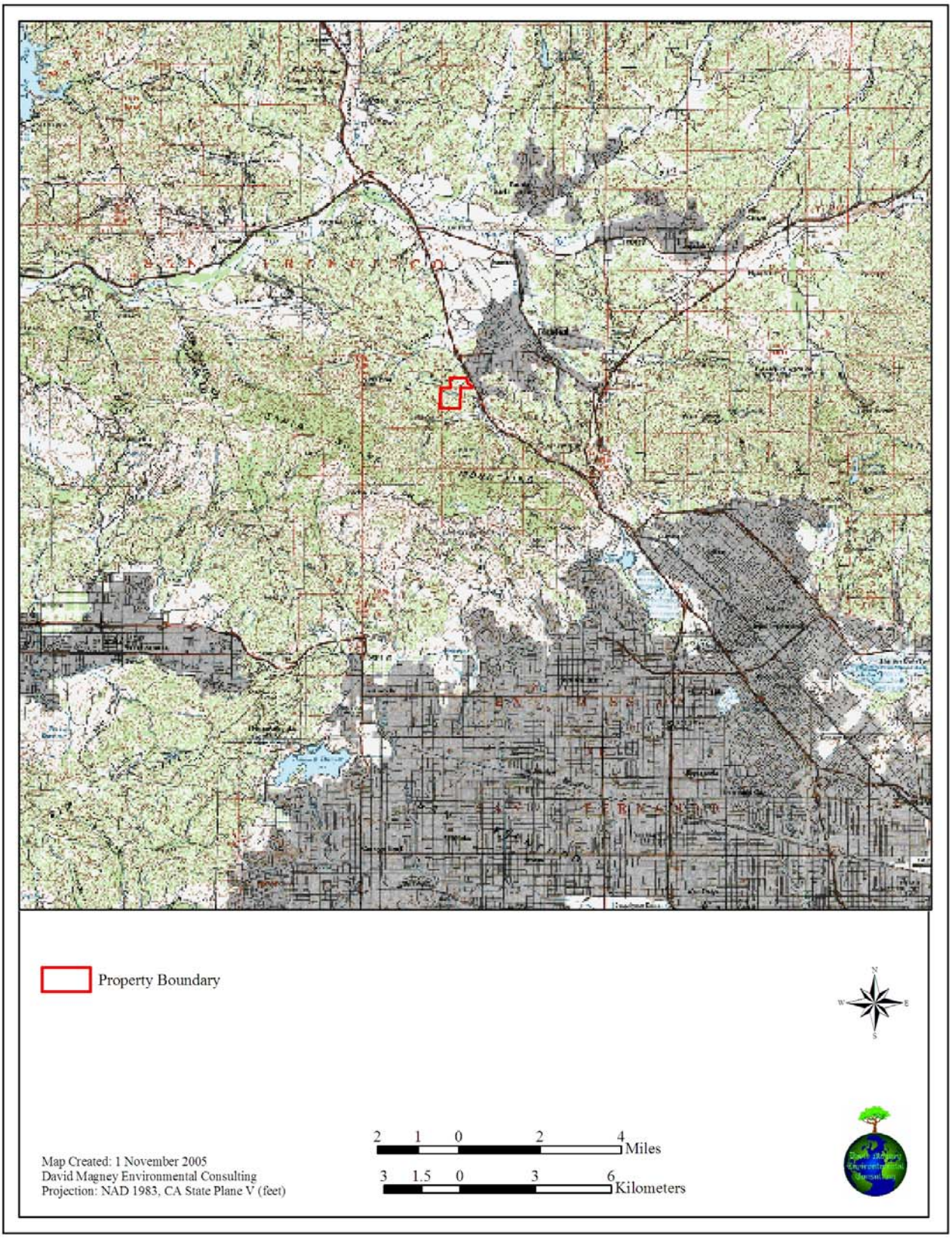
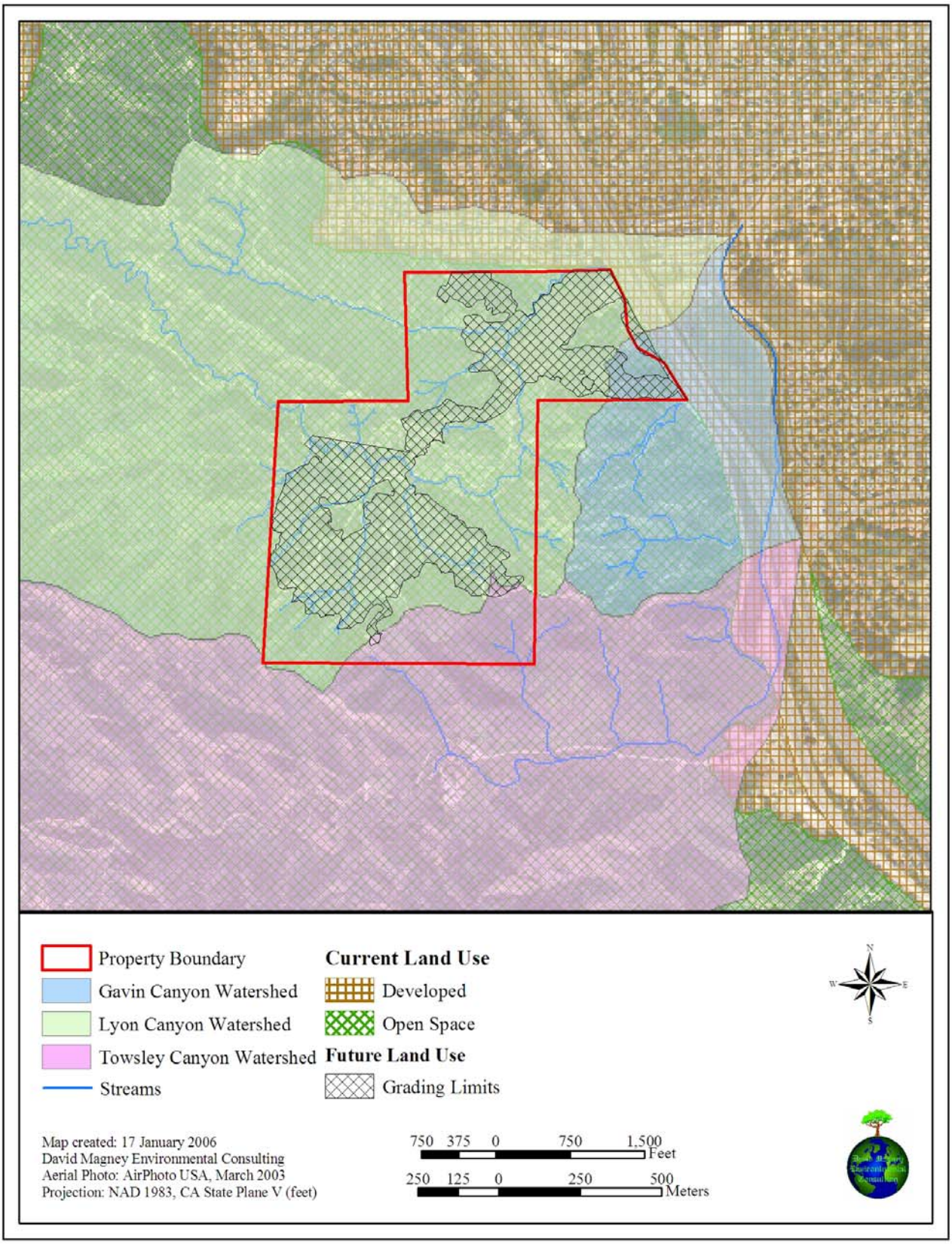


Figure 10. Surrounding Land Uses and Their Effect on Adjacent Watersheds



Open Space Reserves

Ed Davis Park in Towsley Canyon (otherwise known as Towsley Canyon Park) is a subset of the Santa Clarita Woodlands Park, and is an open space reserve located immediately to the south of Lyons Canyon Ranch. Other than Ed Davis Park, Lyon Canyon contains the majority of the open space in the vicinity, including SEAs, as illustrated on Figure 11, Existing Land Uses, Including Open Space Reserves, in Areas Surrounding Lyons Canyon Ranch.

The County of Los Angeles designates two SEAs in the area: Lyon Canyon SEA (SEA No. 63), and Santa Susana Mountains SEA (SEA No. 20), portions of each are located within the project boundaries. These SEAs are areas that the County of Los Angeles has designated as ecologically fragile or important land, and water areas that are valuable as plant or animal communities. The oak woodland, found in the southern portion of the Lyon Canyon SEA, contains both *Quercus agrifolia* and *Quercus lobata* (Valley Oak) trees. The northern portion of the SEA contains the Chamise Chaparral community consisting of *Rhus ovata* (Sugarbush), *Ceanothus crassifolius* (Snowball Ceanothus), *Salvia mellifera*, *Baccharis salicifolia*, and *Adenostoma fasciculatum*, which is the dominant shrub.

Surrounding Vegetation

The uses surrounding the project site are I-5 on the east, Ed Davis Park in Towsley Canyon to the south, vacant land to the west, residential uses on Sagecrest Circle and the Stevenson Ranch development, opposite of Sagecrest Circle, to the north. Due to the I-5 and the Stevenson Ranch development there is no vegetation bordering the project site to the east or to the north, respectively. South of the project site lies Ed Davis Park in Towsley Canyon, containing habitat similar to that found onsite, including the following: Riparian Scrub/Woodland, California Annual Grassland, Coastal Sage Scrub, Chaparral, and Coast Live Oak Woodland. The undeveloped land to the west of the project site contains similar general vegetation types, with fewer oaks than encountered on the project site, and less riparian habitat, concentrated in narrow corridors.

These general vegetation types are mapped below in Figure 12, Vegetation in Areas Surrounding Lyons Canyon Ranch. Figure 12 shows vegetation at least 0.5-mile area surrounding the project site boundary (illustrating the vegetation occurring beyond as well), which equals approximately 1,421 acres of vegetation (only within the 0.5-mile area). Table 4, Lyons Canyon Ranch Surrounding Vegetation Alliance Acreage Totals, provides acreage totals for the vegetation alliances in the area within a 0.5-mile radius surrounding the project site. These habitats were delineated using aerial photography interpretation.

Note: The mapping depicted in Figure 12 was not performed at the same level of detail as vegetation mapping performed for the project site.

Figure 11. Existing Land Uses, Including Open Space Reserves, in Areas Surrounding Lyons Canyon Ranch

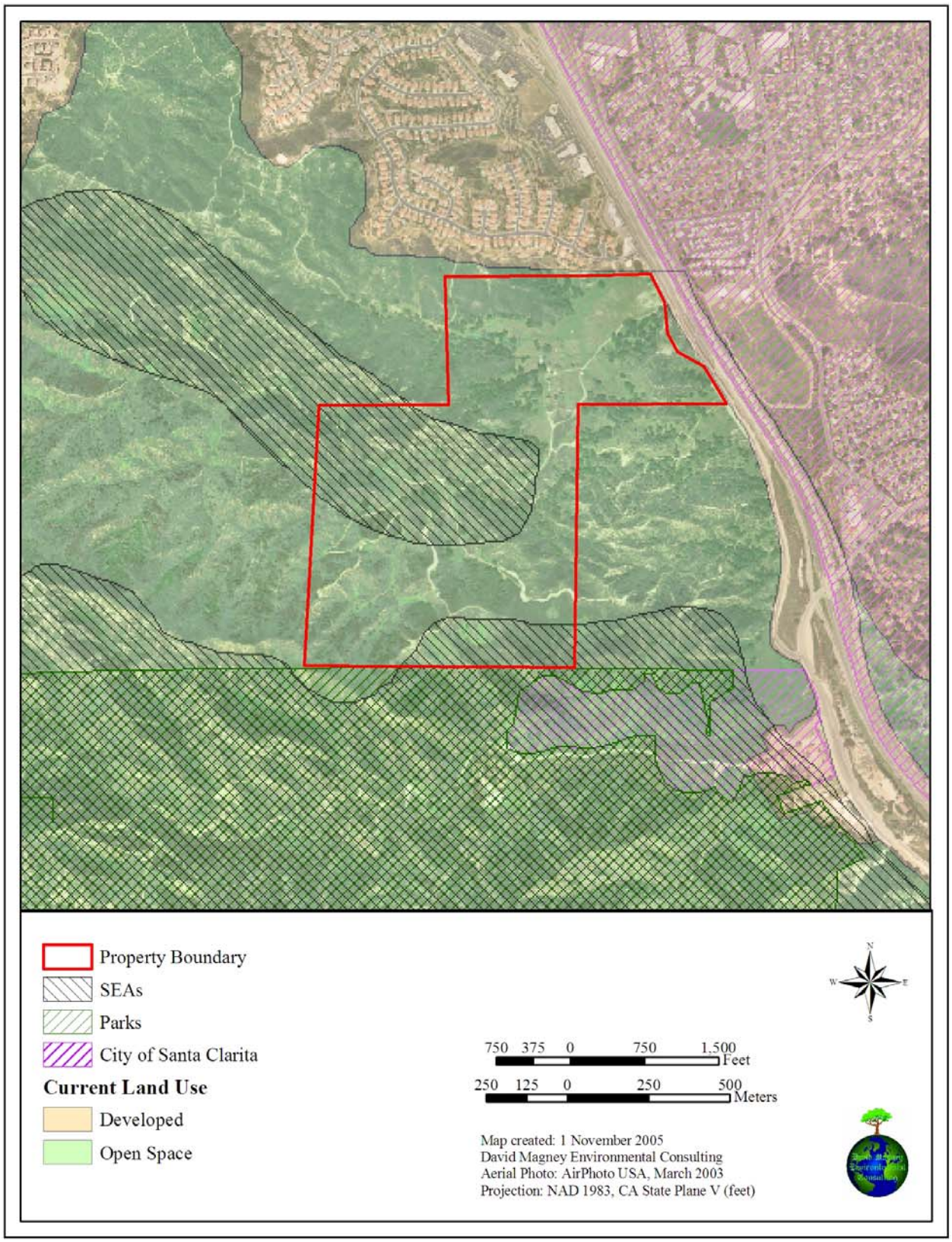


Figure 12. Vegetation in Areas Surrounding Lyons Canyon Ranch

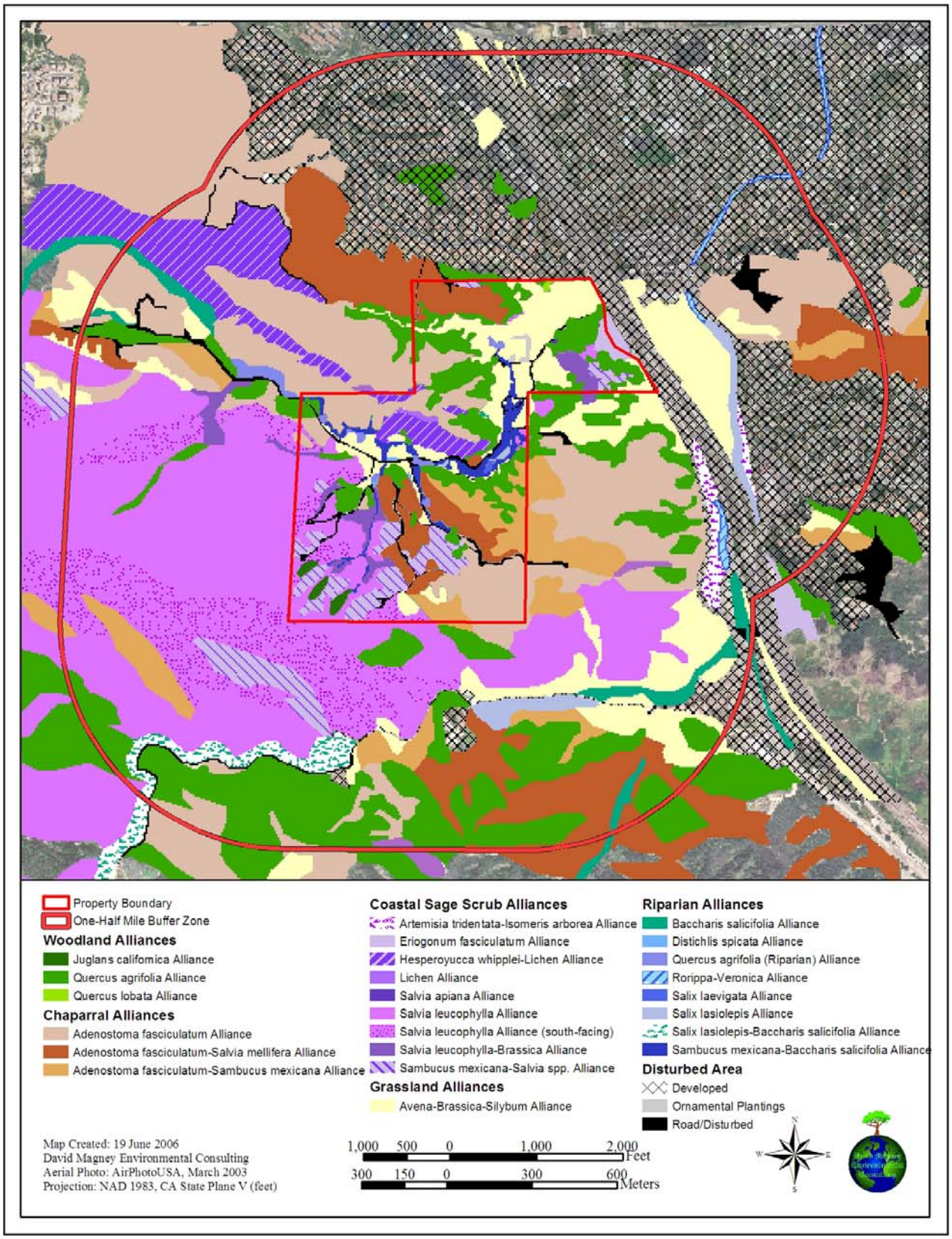


Table 4. Lyons Canyon Ranch Surrounding Vegetation Alliance Acreage Totals

Alliance	Acres
Wetland	
Quercus agrifolia (Riparian) Alliance	2.43
Salix lasiolepis-Baccharis salicifolia Alliance	12.88
Salix lasiolepis Alliance	11.21
Baccharis salicifolia Alliance	14.68
Rorippa-Veronica Alliance	3.33
Woodland	
Quercus agrifolia Alliance	157.64
Chaparral	
Adenostoma fasciculatum Alliance	171.5
Adenostoma fasciculatum-Salvia mellifera Alliance	89.84
Adenostoma fasciculatum-Sambucus mexicana Alliance	52.32
Coastal Sage Scrub	
Eriogonum fasciculatum Alliance	2.6
Sambucus mexicana-Salvia spp. Alliance	12.22
Artemisia tridentata-Isomeris arborea Alliance	7.31
Hesperoyucca whipplei-Lichen Alliance	35.77
Salvia leucophylla Alliance	204.59
Salvia leucophylla Alliance (south-facing)	91.69
Salvia leucophylla-Brassica Alliance	4.53
Lichen Alliance	2.98
Grassland	
Avena-Brassica-Silybum Alliance	87.59
Human-Influenced	
Developed	444.31
Dirt Road/Disturbed	11.84
Total Acreage[2]:	**1,421.21**

Flora and Fauna Population Estimates in the Range

Wildlife within the Santa Clarita Valley-Santa Susana Mountains is extremely diverse with a special abundance in undeveloped high quality habitats. The river channels and open upland areas are ideal habitat for movement and foraging by wildlife species. The nearby Angeles National Forest also offers habitat and movement corridors for larger species. Native mammal diversity is extensive and abundant. Among others, bats, rodents, rabbits, weasels, American Badger, skunks, Raccoon, fox, Bobcat, Black Bear, and Coyote are known to primarily inhabit canyon areas scattered throughout the region.

[2] Total acreage of habitats surrounding the project site includes only the area within 0.5 mile of the property.

Bird diversity within the region is related to habitat opportunities for resident, migrant, and seasonal species that occupy the area. Numerous raptors, sparrows, quail, hummingbirds, swallow, larks, and owls, along with Federal and State special-status species such as Southwestern Willow Flycatcher (*Empidonax traillii extimus*) and Least Bell's Vireo (*Vireo bellii pusillus*) occupy habitat within the region, primarily along the Santa Clara River. Amphibians and reptiles are abundant and relatively diverse within certain segments of the region. Snakes, toads, frogs, lizards, and salamanders, although habitat specific, are primarily found along the Santa Clara River as well as other creek areas. The Unarmored Threespine Stickleback (*Gasterosteus aculeatus williamsoni*) is an important member of the aquatic community. The California Red-legged Frog (*Rana aurora draytonii*) has also been identified in San Francisquito Canyon several miles north of the Lyons Canyon Ranch project site. (City of Santa Clarita and County of Los Angeles 2001.)

Project Site Relationship with Surrounding Biotic Mosaic

The project site provides habitat similar to that in the undeveloped land to the west and south (Towsley Canyon), including riparian scrub/woodland, California Annual Grassland, Coastal Sage Scrub, chaparral, and Coast Live Oak Woodland. The steep slopes and ridges combined with the canyon lowlands provide a diversity of habitats locally.

The project site contains more oaks and more riparian habitat than the natural areas surrounding it. However, the surrounding area has some communities with little to no representation at the project site, including: *Pseudotsuga macrocarpa-Quercus chrysolepis* Alliance (Bigcone Spruce-Canyon Oak Forest), *Juniperus californica* Alliance (California Juniper Woodland), *Pinus monophylla* Alliance (Pinyon-Juniper Woodland), *Platanus racemosa-Alnus rhombifolia* Alliance (Southern Sycamore-Alder Woodland), *Salix lasiolepis* Alliance (Southern Willow Scrub), vernal pools, and *Lepidospartum squamatum* Alliance (Riversidian Alluvial Fan Sage Scrub). Most of these other habitats are more than a half-mile from the project site (Figure 12). This increase in habitat diversity reflects an increase in elevation as well as an increase in community diversity of the surrounding area, versus the project area. The land to the north and east of the project site is developed and provides little to no habitat.

The surrounding area provides relatively significant suitable connective habitats for species with large home ranges, such as Mountain Lion and Black Bear. California Red-legged Frog is known to occur in San Francisquito Creek, and the Unarmored Threespine Stickleback and Southern Steelhead are present in the Santa Clara River, none of which has been observed at the project site because suitable habitat is not present. Southwestern Willow Flycatcher (*Empidonax traillii extimus*) and Least Bell's Vireo (*Vireo bellii pusillus*) occupy habitat within the surrounding area. Southwestern Willow Flycatcher typically occupy habitat near Castaic Creek just west of Interstate-5 (a few miles north of the project site), while the Least Bell's Vireo is found in local riparian habitats. (City of Santa Clarita and County of Los Angeles 2001.) Neither of these special status birds has been observed at the project site and suitable habitat is not present onsite.

Overall Biological Value of the Santa Clarita Area

The Santa Clarita Valley area is 377,637 acres, of which 50% is open space (191,823 acres). Approximately 36% of the total acreage is vacant land, which is not committed for permanent open space. Developed land composes about 12% of the total acreage, and 58% of this 12% is residential. (City of Santa Clarita and County of Los Angeles 2001.)

Predominant vegetation types where these communities are found include coastal and transitional scrub, and chaparral. Other vegetation types in the region include Bigcone Spruce-Canyon Live Oak Forest, Coast Live Oak Riparian Woodland, Juniper Woodland, Pinyon-Juniper Woodland, Southern Sycamore Alder Woodland, Southern Willow Scrub, freshwater marsh, vernal pools, Coastal Sage Scrub, Chaparral, Alluvial Fan Sage Scrub, and native and nonnative grassland.

Sensitive terrestrial communities in the Valley include Southern Coast Live Oak Woodland; Valley Oak Woodland; Southern Mixed Riparian; Southern Riparian Scrub; Riversidian Sage Scrub; Mainland Cherry Desert; Walnut Woodland; Sycamore Alder Riparian Woodland; Southern Cottonwood-Willow Riparian Forests; and Southern Willow Scrub. Vernal pools have been identified on Cruzan Mesa, Plum Canyon, and Fair Oaks Ranch. These are significant sensitive resources within the Valley. (City of Santa Clarita and County of Los Angeles 2001.)

A number of sensitive bird species, including the federally endangered Least Bell's Vireo and Southwestern Willow Flycatcher, depends on nesting and foraging habitat provided by vegetation communities found within the region. Other sensitive species within the region potentially include at least eighteen plants, two fish, an amphibian, seven reptiles, twenty-five birds, seven mammals, and an invertebrate species. CDFG identifies all listed sensitive species and their habitats on its website (www.dfg.ca.gov) (CDFG 2005). Important habitats and biological resource areas within the region include the following:

- Land within the Angeles and Los Padres National Forests, including wildlife corridors between the Santa Susana Mountains and the San Gabriel Mountains;
- Canyon areas, including Whitney, Elsmere, Wiley, East, Towsley, Rice, San Francisquito, Agua Dulce, and Soledad, which provide important habitats (water, food, shelter, and movement corridors);
- Land between SR-14 and Sand Canyon Road provides critical habitat for the Arroyo Toad;
- State-listed endangered and threatened plant and wildlife species associated with riparian woodlands in the Santa Clara River, which supports riparian woodland providing habitat for state and federally listed species;
- Open water habitats provided by Castaic Lake, Castaic Lagoon, and isolated locations along the Santa Clara River;
- Habitat for federally listed endangered, threatened, or rare plant and animal species associated with the riparian woodlands in the Santa Clara River; and
- Oak, sycamore, cottonwood, and willow trees located within the City of Santa Clarita and along the Santa Clara River. (City of Santa Clarita and County of Los Angeles 2001.)

Although the overall biological value of the area is high, a number of factors have contributed to the reduction in species diversity within the region. Those contributing factors include:

- Nighttime lighting on wildlife associated with increased development;
- Development encroaching upon wildlife corridors and SEA areas;
- Impacts on wildlife movement and reproductive capabilities;
- Lack of current mitigation banks within the region leading to a net loss of habitat within the region;
- Lack of a local land swap program precluding the conservation of large areas of open space in return for tax credits; and
- Habitat fragmentation reduces species diversity, corridors, and larger animal migration. (City of Santa Clarita and County of Los Angeles 2001.)

The Santa Clara River Enhancement and Management Plan Study (SCREMP) identified several key wildlife movement corridors within the Santa Clarita Valley. These corridors are generally located in undisturbed canyon and Riverine stream habitat areas. The preservation of these areas is essential for maintaining the wildlife diversity within the Planning Area. The Santa Monica Mountains Conservancy (SMMC) and the Mountain Recreation and Conservation Authority have also identified wildlife corridors in the region. These corridors include Elsmere Canyon, Towsley Canyon, Weldon/Bee Canyon and crossings along SR14 near Whitney Canyon and crossings between Canyon Country and Sulphur Springs. Elsmere Canyon is an integral part of the Rim of the Valley Trail Corridor and Wildlife Corridor, linking the Santa Clarita Woodlands, Whitney, and Placerita Canyons. The Rim of the Valley Trail Corridor traverses the Santa Monica, Santa Susana, and San Gabriel Mountains. As mitigation to a major transportation project, the San Gabriel/Santa Susana Wildlife Corridor and Open Space Acquisition Project identified key wildlife linkage corridors within the mountainous areas that lay along the high occupancy vehicle lanes proposed along SR14 between San Fernando Road and Sand Canyon Road. The corridors include the Whitney Canyon Movement Route and the highway underpass known as the Los Pinetos undercrossing. These corridors link significant Coastal Sage Scrub, oak woodland, and riparian woodland/scrub habitats. (City of Santa Clarita and County of Los Angeles 2001.)

SECTION 3. GENERAL BIOTA SURVEY

The purpose of this section is to define the methods used to survey the Lyons Canyon Ranch project site, and to identify the resulting existing biological resources onsite, within the SEAs, and in the immediate vicinity. This section describes the biological character of the project area in terms of the project site flora, wildlife, and wildlife habitats.

SURVEY DATES

A delineation of jurisdictional waters and riparian habitats was performed by DMEC (2004a). DMEC biologists David Magney, Cher Batchelor, and Kenneth Niessen, with assistance from Daniel Brenner, performed a delineation of jurisdictional waters and wetlands on:

Wetland Delineation Transects	Survey Date
A through E	10 December 2003
F through H	17 December 2003
I through P	19 December 2003
Q through U	21 January 2004
V through BG	23 January 2004
BH through BS	30 January 2004
BS through CD	23 February 2004
Wetland Delineation Verification	20 May 2004

Oak tree surveys were performed by three separate arborists (Trees, Etc., L. Newman Design Group, and Land Design Consultants), and the resulting data from those surveys were compiled and analyzed by DMEC. During the wetland delineation and oak tree assessment field surveys, DMEC biologists collected floristic, habitat, and wildlife resource data within the boundaries of the project site. All plants and wildlife species observed were recorded, as well as any special-status species that may have been observed or detected onsite. DMEC conducted a supplemental project site survey on 26 July 2005, during which biological resources data were collected as well.

General surveys for fish, amphibians, reptiles, birds, and mammals were conducted by DMEC during the wetland delineation and oak tree assessment dates listed above, and by BonTerra Consulting on 28 and 29 May 2003, and 30 March 2004. During the surveys, the project site was evaluated for its potential to support those special-status wildlife species that are known or are expected to occur in the region. In addition, all wildlife species observed or detected onsite were documented.

No focused surveys for wildlife were performed by BonTerra Consulting in the Spring of 2004 due to the Simi Fire. BonTerra Consulting Senior Scientist Mike Robson visited the project site on 30 March 2004 to verify wildlife habitat conditions following the Simi Fire. Little to no habitat for special-status wildlife species remained on the project site during the Spring of 2004 (BonTerra Consulting 2004). DMEC conducted small mammal trapping onsite in late-September through early October 2005. The methods and results of the trapping efforts are discussed in the following subsections, Survey Methods and Biota Survey Results.

During the wetland delineation and oak tree assessment field surveys, DMEC biologists collected floristic, habitat, and wildlife resource data within the boundaries of the project site. All plant and wildlife species observed were recorded, as well as any special-status species that may have been observed or detected onsite.

PERSONNEL INVOLVED

DMEC biologists performed a delineation of jurisdictional waters and wetlands onsite, recorded biological resources data onsite, and compiled general oak tree population data on the above listed dates, as well as on 20 January 2004. DMEC also conducted a separate biological survey on 26 July 2005.

General plant surveys were also conducted by BonTerra Consulting Ecologist Weena Sangkatavat and Consulting Biologist Mike Couffer on 13, 28, and 29 May 2003. Initial focused plant surveys were conducted by Jacqueline Bowland Worden and Trisha Munro of Bowland & Associates on 3, 4, 5 June and 30 July 2003. Since the Simi Fire burned the entire project site in October 2003, Pam DeVries of BonTerra Consulting and Scott White of White & Leatherman Consulting repeated focused plant surveys on 18 May and 14 June 2004.

General surveys for fish, amphibians, reptiles, birds, and mammals were conducted by DMEC during the wetland delineation and oak tree assessment dates listed above, and by BonTerra Consulting on 28 and 29 May 2003, and 30 March 2004. BonTerra Consulting Senior Scientist Mike Robson visited the project site on 30 March 2004 to verify wildlife habitat conditions following the fire. DMEC biologists David Magney, Wendy Cole, and Carly Gocal where assisted by Annelie Jeffre and Nancy Breslin, and subconsultant Vince Semonsen for the small mammal trapping between 30 September and 2 October 2005.

METHODS

Separately, BonTerra Consulting and Bowland & Associates conducted plant surveys, wildlife surveys, and vegetation classification and mapping. BonTerra Consulting prepared their *Lyons Canyon Ranch Biological Technical Report* (BonTerra Consulting 2004) (*BonTerra Consulting - Lyons Canyon Ranch Biological Technical Report*), and Bowland & Associates prepared a letter report dated 19 February 2003 (*Results of Focused Plant Surveys of Lyons Canyon by Bowland & Associates*), to report their findings. Data from these reports were analyzed in conjunction with DMEC's field surveys and findings to prepare the bioconstraints report.

Survey Methods

During the wetland delineation and oak tree assessment field surveys, DMEC biologists collected floristic, habitat, and wildlife resource data within the boundaries of the project site. All plants and wildlife species observed were recorded, as well as any special-status species that may have been observed or detected onsite. DMEC conducted a supplemental project site survey on 26 July 2005, during which biological resources data were collected as well. DMEC also conducted three consecutive nights of small mammal trapping between 30 September and 2 October 2005.

Figure 13, Survey Paths and Data Collection Waypoints within Lyons Canyon Ranch, illustrates the areas walked and surveyed by DMEC during the wetland delineation (DMEC 2004a), the oak tree assessments (DMEC 2004b), and general site biological surveys, and includes areas surveyed by BonTerra Consulting biologists. The areas surveyed were used to compile floristic and faunal lists and to classify, describe, and map the project site vegetation (ground-truthing). The general methods used for conducting the wetland delineation and oak tree assessment, as well as the vegetation mapping methods, is discussed in the following subsections.

Floristic Surveys

BonTerra's plant surveys were conducted by using meandering transects to cover areas of suitable habitat on the project site. Locations of any special-status species found were recorded in field notes and on a topographic map. Voucher specimens were collected for special-status plant species and deposited at RSA to ensure accuracy in identification. All plant species observed were identified in the field or collected for identification. (BonTerra Consulting 2004.)

In general conformance with California Department of Fish and Game (CDFG) guidelines, botanical surveys conducted were, (1) conducted during flowering seasons for the special-status plants known from the area; (2) floristic in nature; (3) consistent with conservation ethics; (4) designed to systematically cover all habitat types on the site; and (5) documented by voucher specimens. BonTerra's surveys were intended to be floristic and follow CDFG guidelines.

DMEC's botanical surveys were supplemental in that they were not expressly conducted to document botanical resources present onsite. All plants observed during the surveys were recorded, and voucher specimens were collected for selected taxa. DMEC deposited voucher specimens at the University of California at Santa Barbara Herbarium (UCSB). BonTerra subconsultants deposited voucher specimens at the Rancho Santa Ana Botanic Garden Herbarium (RSA).

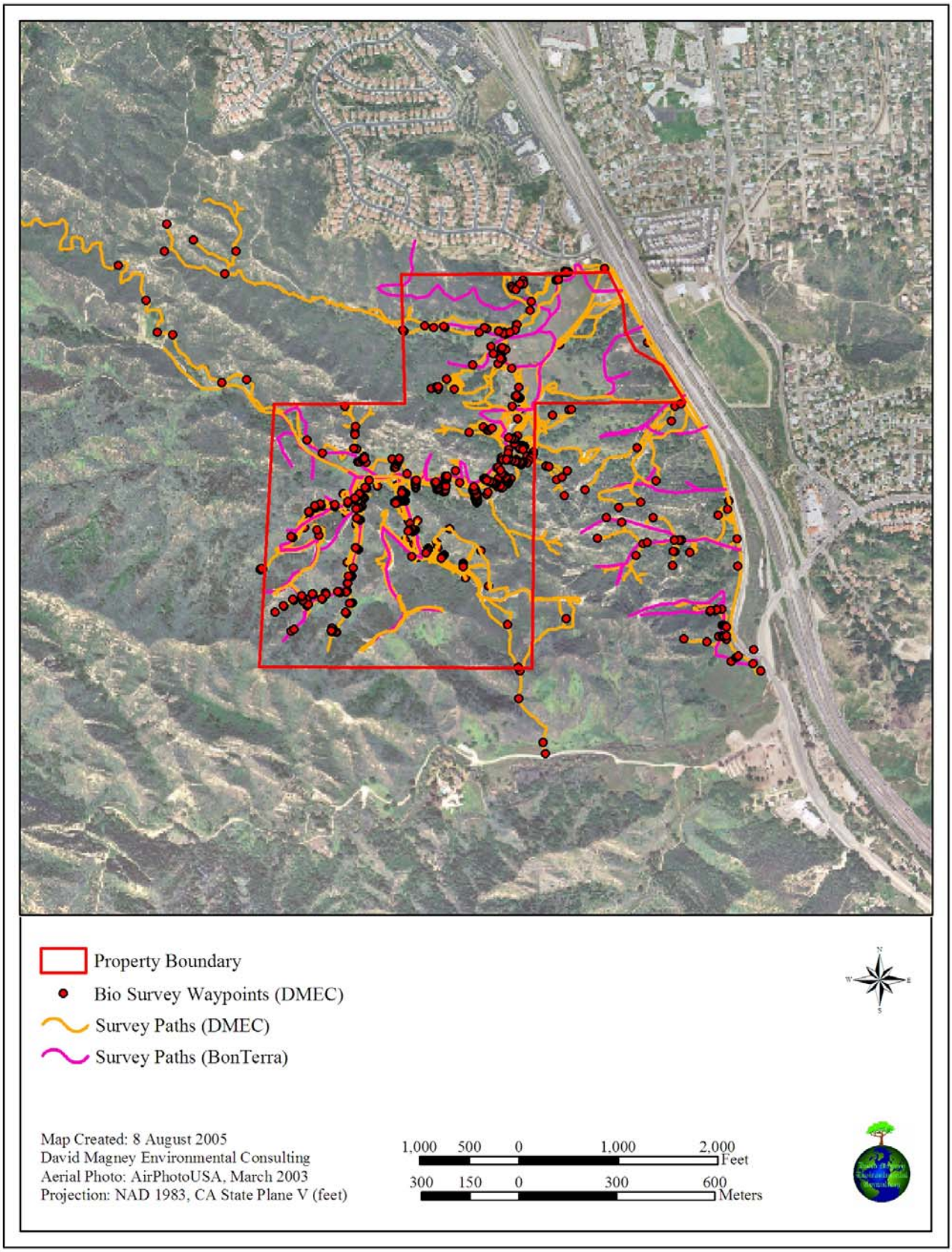
Oak Tree Assessment

DMEC gathered existing data on the oak trees present within the Lyons Canyon Ranch development site as prepared by Richard Iberra (arborist with Trees, Etc.), L. Newman Design Group and Land Design Consultants (DMEC 2004b). DMEC developed a GIS database focusing on onsite oak tree resources, including size, species, coordinates, condition, value, heritage or non-heritage, oak tree number (designated by the arborists), and other recorded data. Database queries were then conducted to create specific ArcView shapefiles to illustrate the results, which provided a means to create thematic maps. Additional datalayers were added as needed to provide reference and serve as a background, including a recent color aerial photograph (aerial survey flown on 26 March 2003), roads, city limits, project site and boundary, topography, and development planning areas.

Wildlife Surveys

General surveys for fish, amphibians, reptiles, birds, and mammals were conducted by DMEC during the wetland delineation and oak tree assessment dates listed above, and by BonTerra Consulting on 28 and 29 May 2003, and 30 March 2004. During the surveys, the project site was evaluated for its potential to support special-status wildlife species that are known or are expected to occur in the region. In addition, all wildlife species observed or detected onsite were documented.

Figure 13. Survey Paths and Data Collection Waypoints within Lyons Canyon Ranch



During BonTerra's wildlife surveys, the project site was evaluated for its potential to support special-status wildlife species that are known or are expected to occur in the region. All wildlife species detected during the course of the surveys were documented in field notes. Active searches for reptiles and amphibians included lifting, overturning, and carefully replacing rocks and debris. Birds were identified by visual and auditory recognition. Surveys for mammals were conducted during the day and included searching for and identifying diagnostic sign, including scat, footprints, dust bowls, burrows, bones (DMEC), and trails. (BonTerra Consulting 2004.)

No focused surveys for wildlife were performed in the spring of 2004 due to the Simi Fire. BonTerra Consulting Senior Scientist Mike Robson visited the project site on 30 March 2004 to verify wildlife habitat conditions following the Simi Fire. Little to no habitat for special-status wildlife species remained on the project site during the spring of 2004; therefore, no focused wildlife surveys were performed. (BonTerra Consulting 2004.)

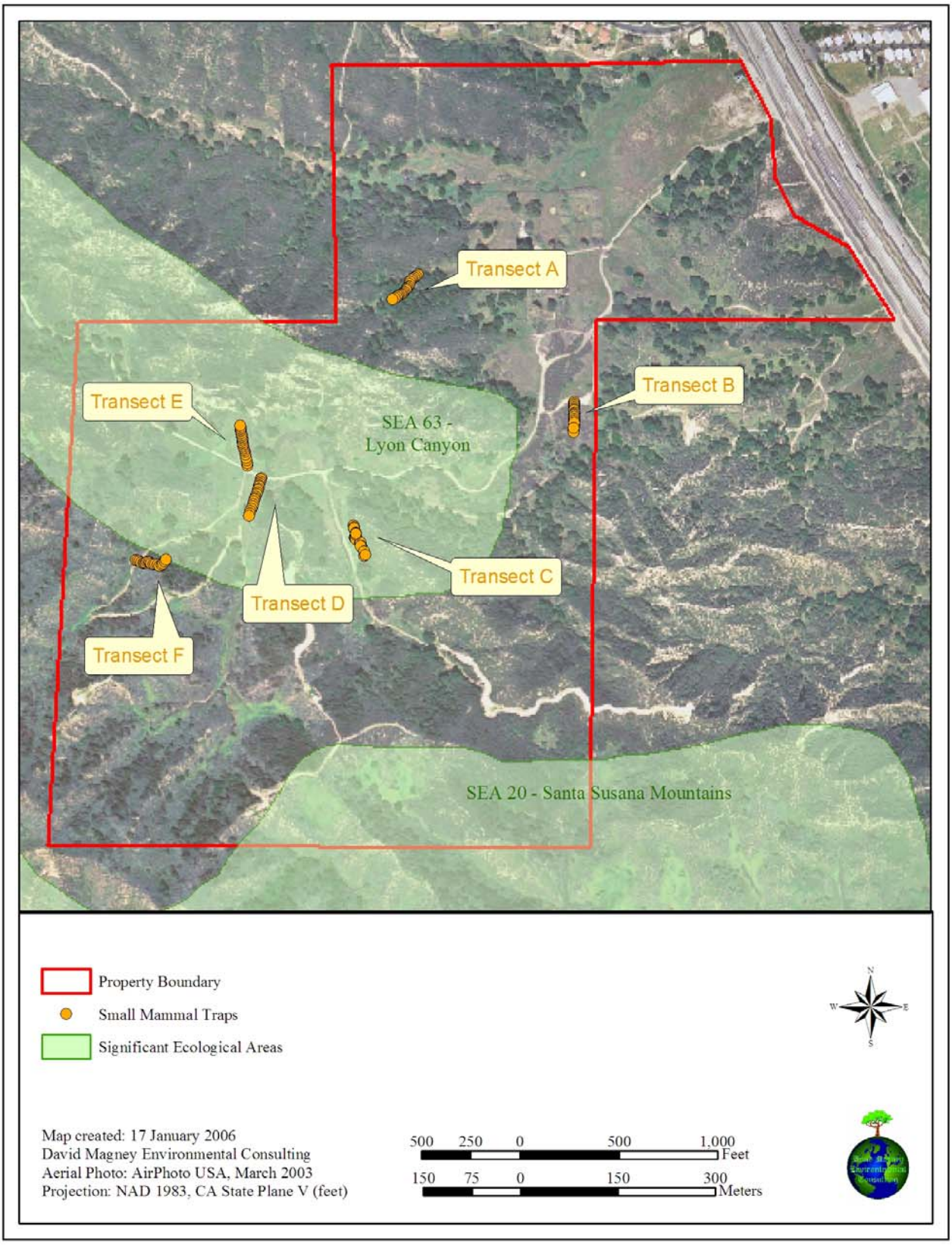
SMALL MAMMAL TRAPPING

DMEC conducted small mammal trapping (catch-and-release) in September and October of 2005 for general species detection (identification) and population size purposes. Small mammals were trapped over the course of three consecutive nights, using Sherman live traps to help account for any herbivorous small mammal species (special-status or otherwise) that inhabit the project site and to aid in the population estimations for the project site fauna. Six 200-foot long transects of up to 20 traps each (spaced approximately every 10 feet) were set and baited for three consecutive nights (30 September through 2 October 2005) for a total of 349 trap nights. The traps were baited with a mixture of rolled oats and creamy peanut butter. Habitats where trapping was conducted included: Chamise Chaparral, Coastal Sage Scrub, Coast Live Oak Woodland, Grassland, and Riparian Scrub. Three trap lines (Transects C, D, and E) were located entirely within SEA 63, and Transect F ended at the edge of SEA 63. Figure 14, Small Mammal Trapping Transects, illustrates the location and number of the trapping transects. Animals caught were marked (numbered consecutively), and recaptured animals were not recounted in the total number of animals captured. The traps were set in the evenings, and checked for results the following morning early enough not to cause harm to the animals from over exposure to heat.

Vegetation Mapping Methods

BonTerra's vegetation mapping was performed by Ms. Sangkatavat and Mr. Couffer, and was plotted on an aerial photograph with a topographic overlay. BonTerra's mapping was performed prior to the Simi Fire in October 2003. Wetlands and waters were mapped by DMEC during the wetland delineation. DMEC mapped and classified all vegetation at the project site based on BonTerra's map, the wetland delineation data, and DMEC botanist observations and aerial photo interpretation. DMEC used ground-truthing data points, aerial photo interpretation, and BonTerra's vegetation map to develop a detailed map of the natural vegetation of the project site. Data received from BonTerra Consulting and Bowland & Associates were analyzed and utilized in conjunction with DMEC's findings to prepare this report of the biological resources of Lyons Canyon Ranch, including special-status species and sensitive habitats, and to map the vegetation and plant communities onsite. DMEC mapped the natural vegetation at the alliance level according to CNPS-CDFG mapping protocols described in CNPS's *Manual of California Vegetation* (Sawyer and Keeler-Wolf 1995).

Figure 14. Small Mammal Trapping Transects



Mapping Upland Habitats

Mapping of upland vegetation alliances was performed with the aid of ArcGIS programs (ArcView 3.3, ArcView 8.2, and related programs). A preliminary vegetation map was drawn onscreen at a scale of 1:2,000 to 1:5,000 using color aerial photographs (AirPhotoUSA) taken 26 March 2003, and used as a base layer. The polygons of this preliminary map differentiate the distinct land cover signatures related to patterns observed on the aerial photograph. These polygons were attributed with different vegetation alliances (classified) after checking all available vegetation data gathered onsite by DMEC over the last two years. Field data (from DMEC) and the vegetation community map created by BonTerra Consulting (2004) were also consulted in order to discern the boundaries of vegetation alliances that were not easily detected with the color aerial photo. This preliminary vegetation map was then checked onsite for accuracy, and subsequently modified into the final vegetation alliance map.

Mapping Wetland and Riparian Habitats

Mapping of wetland and riparian vegetation alliances was performed much in the same manner as the upland communities; however, wetland data were specifically mapped in detail according to the wetland delineation conducted by DMEC. Many data points (254) were collected onsite by DMEC during wetland survey transects, enabling the polygons of vegetation alliances to be readily cross-referenced (ground-truthed) for accuracy. A point shapefile was created that described the vegetation associated with individual wetland delineation plots. After all points were attributed with the appropriate vegetation alliance classification, polygons describing the alliances were drawn with reference to the underlying point data. Any vegetation alliances that were greater than one-tenth of an acre in size were mapped as polygons.

LITERATURE SEARCH

A literature review was conducted prior to the initiation of the general plant and vegetation mapping surveys in order to determine the special-status plant species known to occur in the project region that may occur on the project site. CNPS's *Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2001, 2005[3]) and CDFG's California Natural Diversity Database (CNDDB) RareFind3 (CDFG 2005) were reviewed. Nine (9) California Quadrangles (USGS 7.5-minute Series Topographic Map) were queried for the CNDDB RareFind3 records search. Oat Mountain Quadrangle, in which the project site occurs, was searched, as well as all surrounding quadrangles, including Val Verde, Newhall, Mint Canyon, San Fernando, Van Nuys, Canoga Park, Calabasas, and Santa Susana. (Refer to the Oversized Maps at the end of this report for the Color USGS Oat Mountain Quad Sheet.)

The compendia of special-status species published by the United States Fish and Wildlife Service (USFWS) and CDFG were reviewed. RSA and the Jepson Herbarium (UC/JEPS) online collections were searched as well. Extensive world wide web searches for biological resource data for onsite and surrounding areas were conducted, with such keywords as: Lyon Canyon, Lyons Canyon, Towsley Canyon, Newhall, flora, fauna, birds, reptiles, amphibians, butterflies, invertebrates, geology, climate, weather, plants, mammals, small mammals, population density (for numerous species expected or known to occur onsite), and other similar keywords and combinations of keywords.

[3] Changes to the *Inventory* as published on CNPS website (http://www.cnps.org/programs/Rare_Plant/inventory/changes/changes_accepted.htm).

Vegetation at the project site was delineated, classified, and described into vegetation types and plant communities based on the CNPS' *A Manual of California Vegetation* (Sawyer and Keeler-Wolf 1995). The *List of California Terrestrial Natural Communities Recognized by the Natural Diversity Database* (CDFG 2003) and *Descriptions of the Terrestrial Natural Communities of California* (Holland 1986) were referenced as well to aid in the classification and descriptions of the plant communities observed. The wildlife habitats were classified and mapped according to the California Wildlife Habitat Relationships System (Mayer and Laudenslayer 1988).

BIOTA SURVEY RESULTS

This subsection discusses the results of the biological resource assessments conducted on the Lyons Canyon Ranch project site in terms of the project site flora, including oak trees, and in terms of the project site fauna, including wildlife habitats and wildlife movement.

Flora

All plant species observed and reported on the project site were compiled from all DMEC and BonTerra Consulting floristic surveys and vegetation mapping, as well as from species recorded during the wetland delineation and oak tree surveys.

During the surveys, the project site was evaluated for its potential to support special-status plant species that are known or are expected to occur in the region. All plant species observed during the course of the surveys were documented in field notes. A total of 324 plant taxa were observed onsite[4]. Of those 324, approximately 242 are native (75%), and 82 are introduced (25%), a ratio similar to that for the California flora (Hickman 1993). Fifty-six (56) (17%) of these taxa are hydrophytes (water loving plants), and 268 of the taxa (83%) are upland species, or have no wetland indicator status. The plant habits observed amongst the species consist of: 1 annual vine; 16 annual grasses; 137 annual herbs; 6 biennial herbs; 4 perennial ferns; 25 perennial grasses; 48 perennial herbs; 12 perennial vines; 60 shrubs, and 15 trees. All plant species observed are listed in Appendix C, Plant Species Observed at Lyons Canyon Ranch. Appendix C provides the scientific name, common name, habit, wetland indicator status (according to Reed 1988), family, and estimated abundance of each species observed onsite by DMEC and/or reported by BonTerra Consulting (2004). Scientific nomenclature follows the Flora of North America Editorial Committee (1993-2005).

DMEC documented the relative percent cover of plants occurring at each of the wetland delineation sample plots, focusing on dominant species at each plot. Since most vegetation was cleared by fire during the time of the surveys, DMEC can only estimate the abundance of plant species onsite, and cannot precisely predict population sizes of plant species onsite. Approximately 325 plant species were observed onsite. Of those 325, approximately 77 taxa observed are considered *common* species (approximately 1,000 individuals or more) within the boundary of the Lyons Canyon Ranch project site. Approximately 183 plant taxa observed are considered *uncommon* species (approximately 100 to less than 1,000 individuals) onsite, which contribute as associate species to the habitats onsite. The remaining approximate 65 plant taxa are considered *scarce* (fewer than 100 individuals) on the project site. Appendix C estimates abundance for each plant species.

[4] The floristic surveys covered more than the present footprint of the Lyons Canyon Ranch project site, which may have documented more species than actually occur on the current project site.

Oak Trees

A detailed GIS database was developed by DMEC for the assessed oak trees, which was used to determine which trees, by type, would be affected directly or indirectly by various project configurations and alternatives.

The Los Angeles County Oak Tree Ordinance defines oaks as the following:

- ***Oak Tree:*** "…any tree of the oak genus which is (a) 25 inches or more in circumference (eight inches in diameter) as measured four and one-half feet above mean natural grade; in the case of an oak with more than one trunk, whose combined circumference of any two trunks is at least 38 inches (12 inches in diameter) as measured four and one half feet above mean natural grade…" (Los Angeles County Oak Tree Ordinance 22.56.2060).
- ***Heritage Oak:*** "…either of the following: any oak tree measuring 36 inches or more in diameter, measured four and one-half feet above the natural grade; any oak tree having significant historical or cultural importance to the community, notwithstanding that the tree diameter is less than 36 inches…" (Los Angeles County Oak Tree Ordinance 22.56.2090).

The project site contained 1,409 oak trees meeting the Los Angeles County definition, primarily consisting of *Quercus agrifolia* var. *agrifolia* (Coast Live Oak), prior to the Simi Fire of October 2003. Many of these trees have been damaged or killed by the fire, but a complete assessment of post-fire conditions has not been performed; therefore, the impact assessment will be based on pre-fire conditions. The oak tree totals for the project site are listed in Table 5, Oak Tree Inventory within the Lyons Canyon Ranch Project Site. (Refer to DMEC's *Oak Tree Assessment for Lyons Canyon Ranch* [DMEC 2004b] for more detailed account of oak trees existing onsite.)

Table 5. Oak Tree Inventory within the Lyons Canyon Ranch Project Site[5]

Scientific Name	Common Name	Number of Non-Heritage Trees	Number of Heritage Trees	Total Number
Quercus agrifolia var. *agrifolia*	Coast Live Oak	1,286(1)	77	1,363(1)
Quercus berberidifolia	Scrub Oak	25	0	25
Quercus lobata	Valley Oak	16	5(1)	21(1)
	Total:	**1327**	**82(1)**	**1,409(2)**

Fauna

During the field surveys, the project site was evaluated for its potential to support special-status wildlife species that are known or are expected to occur in the region. All wildlife species detected during the course of the surveys were documented in field notes. Active searches for reptiles and amphibians included lifting, overturning, and carefully replacing rocks and debris. Birds were identified by visual and auditory recognition. Surveys for mammals were conducted during the day and included searching for and identifying diagnostic sign, including scat, footprints, scratch-outs, dust bowls, burrows, and trails.

[5] Trees in parentheses indicate trees that were dead pre-fire.

Up to 90 wildlife species were observed at Lyons Canyon Ranch, including 65 vertebrate species and 25 invertebrate species. Another 70 species are expected onsite. A list of those wildlife species observed and reported onsite was compiled from wildlife surveys, wetland delineation, oak tree assessment, and vegetation mapping sessions, which are listed in Appendix D, Wildlife Species Observed and Expected at Lyons Canyon Ranch. Appendix D also includes wildlife species expected onsite even though they were not observed during any of the field surveys.

DMEC counted individual wildlife species as they were observed onsite, and DMEC conducted small mammal trapping onsite. (No quantitative data were gathered by BonTerra Consulting on wildlife species to determine population sizes present onsite.) Based on the occurrences observed during the general surveys, the amount and type of habitats present onsite, and the results of the small mammal trapping, a general estimated abundance for each wildlife species observed has been made. These estimates are provided partially in the following subsection, as well as in Appendix D, which lists the estimated abundance (scarce, uncommon, or common) for each wildlife species observed.

Small Mammal Trapping

Small mammal trapping was conducted for general species detection (identification) and population size purposes. Small mammals were trapped over the course of three nights, using Sherman live traps, to help account for any herbivorous small mammal species (special-status or otherwise) that inhabit the project site and to aid in the population estimations for the project site fauna. Table 6, Small Mammal Trapping at Lyons Canyon Ranch, summarizes the small mammal trapping results.

Table 6. Small Mammal Trapping at Lyons Canyon Ranch

Scientific Name	Common Name	Number Individuals Trapped/Recaptured				Capture Totals
		30 Sep 05	1 Oct 05	2 Oct 05	Recaptured[6]	
Neotoma lepida intermedia	San Diego Desert Woodrat	0[7]	0	0	-	**0**
Chaetodipus californicus	California Pocket Mouse	4	7	5	1	**16**
Peromyscus maniculatus	Deer Mouse	12	29	61	5	**102**
Reithrodontomys megalotis	Western Harvest Mouse	4	5	0	0	**9**
	Capture Totals:	**21**	**41**	**66**	**6**	**128**
	Trap Nights:	**115**	**117**	**117**	-	**349**
	Percent Success:	**18.3%**	**35.0%**	**56.4%**	-	**36.7%**

[6] The recaptured totals are not included in the Capture Totals
[7] This is a special-status species. DMEC observed a nest during only during trapping sessions, but an individual was not trapped.

Three mammal species were caught onsite, including California Pocket Mouse, Deer Mouse, and Western Harvest Mouse. Figure 15, Small Mammal Trapping Results, illustrates the distribution of traps along each transect and indicates the traps where one or more species were captured at least once. Figure 15 illustrates the distribution of successful traps, possibly indicating the varying density of these small mammals in various locations within the project site. One nest of a special-status species was detected during the trapping sessions, the San Diego Desert Woodrat, but it was not seen or trapped. A total of 349 trap nights were established, with a total of 128 captures of the three mammal species (~37% success [recaptures not counted]). Two traps captured two individuals at a time in one night, while all other captures were of one animal at a time. Six individuals were recaptured. Each consecutive trapping session resulted in a higher success rate.

Based on the number of individuals trapped for each species listed above in Table 6, DMEC estimates that the general abundance for these species is as follows: California Pocket Mouse, Deer Mouse, and Western Harvest Mouse onsite are *common* in that more than 1,000 individuals are expected onsite. A San Diego Desert Woodrat nest was observed onsite and DMEC estimates that the general abundance for this species is *scarce* (population size expected to be less than 100 individuals).

Wildlife Habitats

Wildlife habitats were mapped onsite based on the California Wildlife Habitat Relationships (CWHR) System. The CWHR habitat classification scheme has been developed to support the CWHR System, a wildlife information system and predictive model for California's regularly occurring birds, mammals, reptiles and amphibians. In this system, stages are defined for virtually all habitats. A stage is a combination of size and cover class for tree-dominated habitats, age and cover class for shrub habitats, height and cover class for herb habitats, and depth and substrate for aquatic habitats. (Mayer and Laudenslayer 1988.)

The wildlife habitats present on the project site are illustrated in Figure 16, California Wildlife Habitat Relationship (CWHR) Habitats of Lyons Canyon Ranch. The wildlife habitats mapped on Figure 16, which were classified based on the CWHR habitat classification, is a more general mapping level compared to the more detailed plant community (alliance) mapping level (presented above in Figure 8, Vegetation Observed and Classified at Lyons Canyon Ranch [Section 2, Setting]). Table 7, California Wildlife Habitat Relationship (CWHR) Habitats at Lyons Canyon Ranch, gives the total acreages for the wildlife habitat types present onsite.

The habitats mapped below in Figure 16 generally fall into the higher classifications (as described above in the Habitat Description subsection of Section 2, Setting), and include the following:

- Coastal Oak Woodland;
- Chamise Chaparral;
- Coastal Scrub (= Coastal Sage Scrub);
- Annual Grassland (Includes California Annual Grassland and Ruderal Grassland);
- Valley Foothill Riparian (Palustrine Forested and Shrub-Scrub Wetland Habitats [including Arroyo Willow Woodland and Mulefat Scrub]);
- Saline Emergent Wetland (Saltgrass Wet Meadow);
- Ornamental Trees; and
- Barren.

Figure 15. Small Mammal Trapping Results

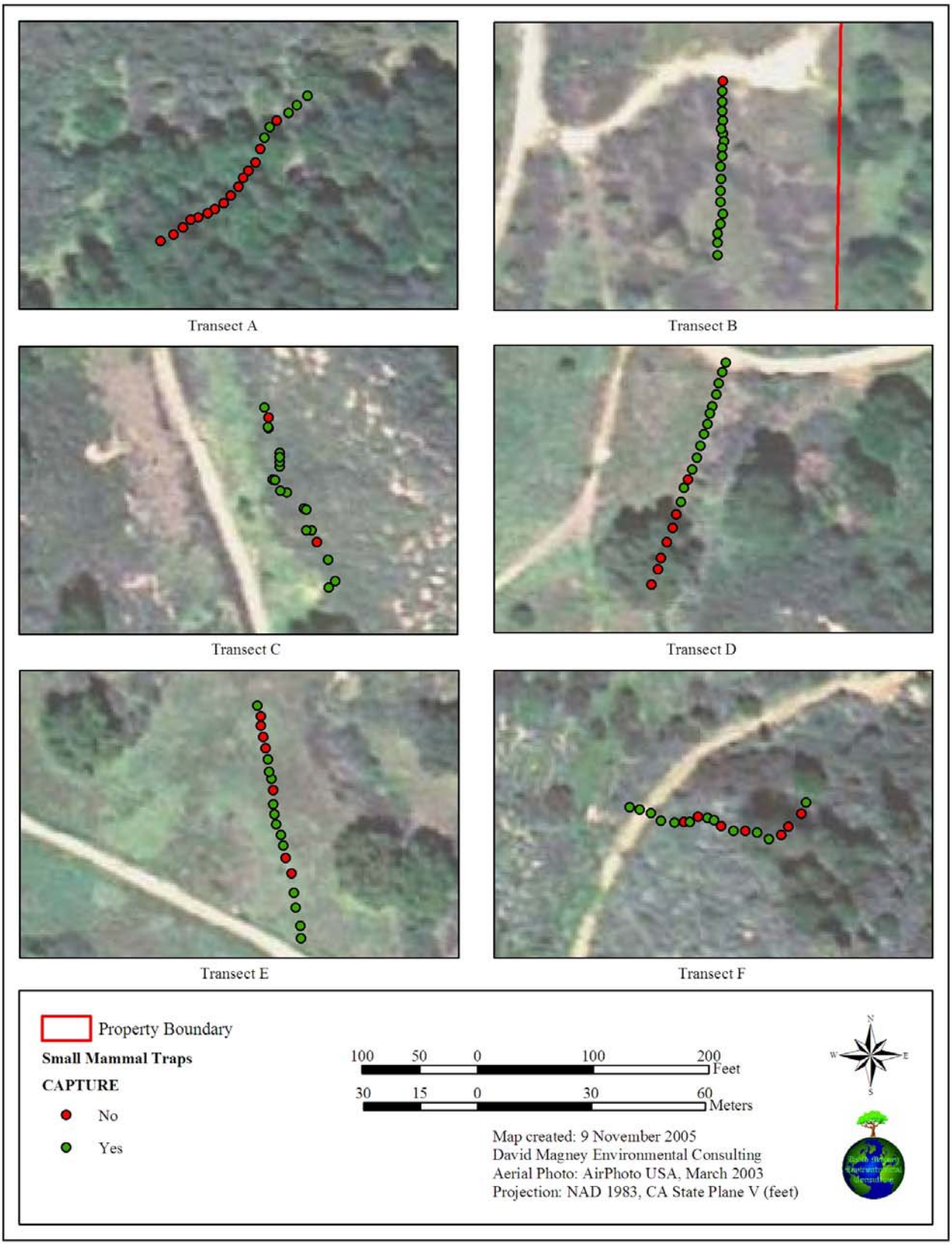


Figure 16. California Wildlife Habitat Relationship (CWHR) Habitats of Lyons Canyon Ranch

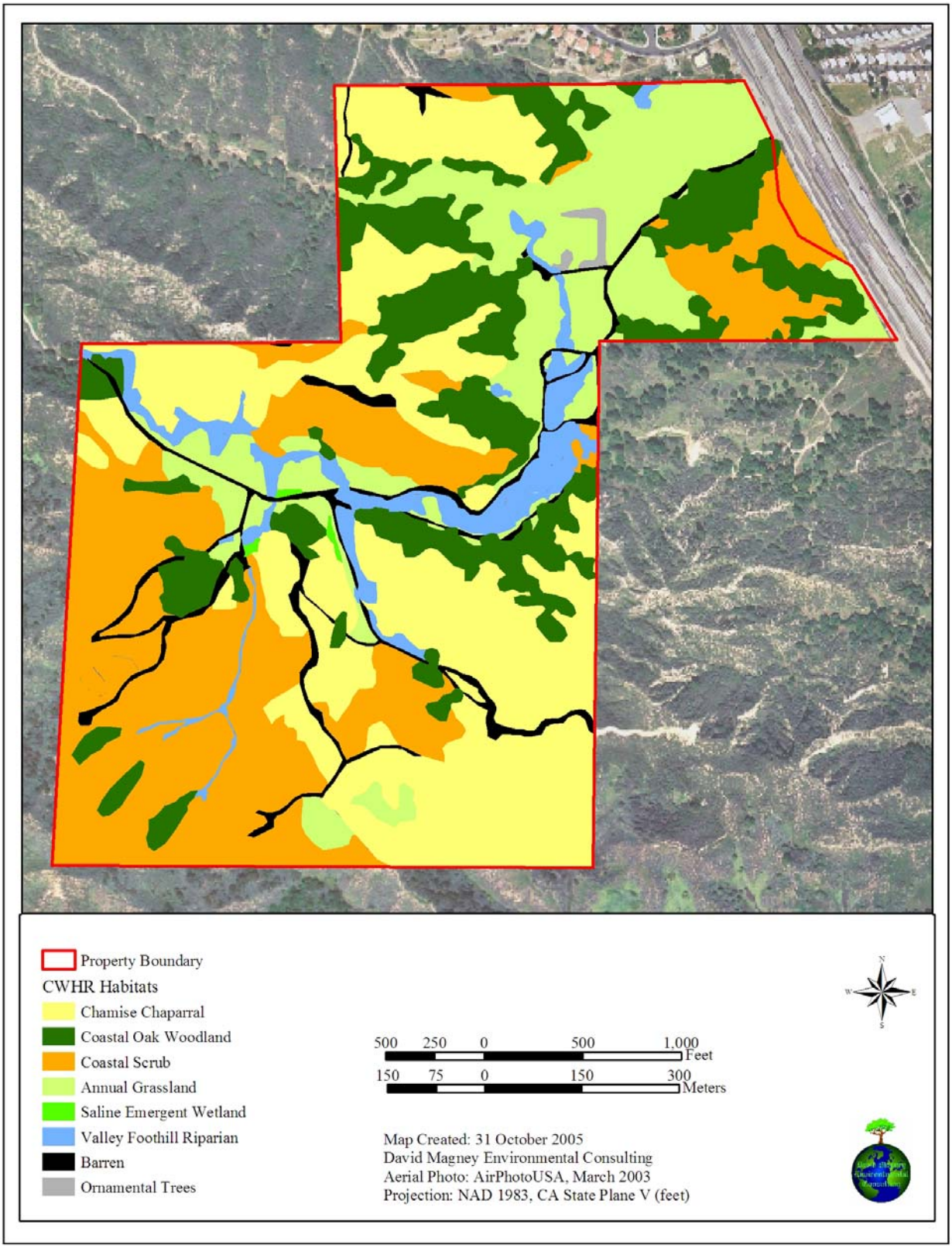


Table 7. California Wildlife Habitat Relationship (CWHR) Habitats at Lyons Canyon Ranch

CWHR Habitat Types	Acres
Coastal Oak Woodland	40.30
Chamise Chaparral	69.41
Coastal Scrub	66.36
Annual Grassland	37.96
Valley Foothill Riparian	11.84
Saline Emergent Wetland	0.34
Ornamental Trees	0.70
Barren	8.59
Total Acres	**235.50**

FISH

Most creeks in southern California are subject to periods of high water flow in winter and spring and little to no flow in late summer and fall. These creeks and waterways can support a variety of habitats, including Valley Foothill Riparian, Saline Emergent Wetland, and Freshwater Marsh. The herbaceous cover occupying these habitats varies by season from little to no cover during high water flows, to high coverage in late summer/fall. Native fish species that potentially inhabit these types of areas have adapted to living in the naturally fluctuating conditions of the region. However, natural and man-made impacts, such as drought, alteration of habitat, and introduced species, have contributed to the reduction of native fish populations in southern California. No fish were observed in creeks and drainages of the project site during general surveys or following the Simi Fire. Fish are not expected to inhabit any portions of the project site creek and drainages due to the downstream channelization of both watercourses that pass beneath I-5 and the intermittent nature of the watercourses. (BonTerra Consulting 2004.)

AMPHIBIANS

Amphibians require moisture for at least a portion of their life cycle and many require standing or flowing water for reproduction. Terrestrial species may or may not require standing water for reproduction. These species are able to survive in dry areas by aestivating (i.e. remaining beneath the soil in burrows or under logs and leaf litter, emerging only when temperatures are low and humidity is high). Many of these species' habitats are associated with water, such as Valley Foothill Riparian habitats, and they emerge to breed once the rainy season begins. Soil moisture conditions can remain high throughout the year in some habitat types, depending on factors such as the amount of vegetation cover, elevation, and slope aspect. (BonTerra Consulting 2004.)

The amphibian species observed during general wildlife surveys include Black-bellied Slender Salamander (*Batrachoseps nigriventris*) and California Western Toad (*Bufo boreas halophilus*). Other species of amphibians expected to occur onsite include the Pacific Treefrog (*Hyla regilla*) and Bullfrog (*Rana catesbeiana*), but none were observed. (Refer to Appendix D, Wildlife Species Observed and Expected at Lyons Canyon Ranch, for a complete list of all wildlife species observed and expected onsite.)

REPTILES

Reptilian diversity and abundance typically vary with vegetation type and character. Many species prefer only one or two vegetation types; however, most will forage in a variety of habitats, including Coastal Oak Woodland, Chamise Chaparral, Coastal Scrub, and Valley Foothill Riparian habitats. Most species occurring in open areas use rodent burrows for cover, protection from predators, and extreme weather conditions.

Common reptile species observed during the survey included Western Side-blotched Lizard (*Uta stansburiana elegans*), Western Fence Lizard (*Sceloporus occidentalis*), and Southern Alligator Lizard (*Elgaria multicarinatus*). Although no snake species were directly observed, the tracks of various snakes observed onsite include Gopher Snake (*Pituophis melanoleucus*) and Western Rattlesnake (*Crotalus viridis*) (Appendix D).

Reptile species expected to occur on the project site include Silvery Legless Lizard (*Anniella pulchra pulchra*), Western Skink (*Eumeces skiltonianus*), California Whipsnake (*Masticophis lateralis*), Night Snake (*Hypsiglena torquata*), California Kingsnake (*Lampropeltis getula californiae*), San Diego Horned Lizard (*Phrynosoma coronatum*), San Diego Gopher Snake (*Pituophis melanoleucus annectens*), and Coast Patch-nosed Snake (*Salvadora hexalepis virgultea*), although none were in fact observed.

BIRDS

Many bird species utilize most of the habitats present at Lyons Canyon Ranch. Bird species diversity and richness increases with the quality of riparian (Valley Foothill Riparian) and upland woodland (Coastal Oak Woodland) canopies. Well-developed Coastal Oak Woodland (*Quercus agrifolia* Alliance) occurs along the fringes of the riparian corridor, along the ridgelines, and on the north-facing slopes of the project site, and wildlife diversity, especially bird diversity, in these areas is relatively high.

Examples of resident bird species observed on the project site include: Mourning Dove (*Zenaida macoura*), Anna's Hummingbird (*Calypte anna*), Black Phoebe (*Sayornis nigricans*), Say's Phoebe (*Sayornis saya*), Western Scrub-jay (*Aphelocoma californica*), American Crow (*Corvus brachyrhynchos*), Bushtit (*Psaltriparus minimus*), Bewick's Wren (*Thryomanes bewickii*), Northern Mockingbird (*Mimus polyglottos*), European Starling (*Sturnus vulgaris*), Common Yellowthroat (*Geothlypis trichas*), California Towhee (*Pipilo crissalis*), and House Finch (*Carpodacus mexicanus*).

Birds of prey (raptors) *observed* in the project site include: American Kestrel (*Falco sparverius*), Barn Owl (*Tyto alba*), Turkey Vulture (*Cathartes aura*), Red-tailed Hawk (*Buteo jamaicensis*), Red-shouldered Hawk (*Buteo lineatus*), and Cooper's Hawk (*Accipiter cooperii*). Expected raptor species include Sharp-shinned Hawk (*Accipiter striatus*), Great Horned Owl (*Bubo virginianus*), White-tailed Kite (*Elanus leucurus*), Northern Harrier (*Circus cyaneus*), Western Screech-Owl (*Otus kennicotti*), Northern Pygmy-owl (*Glaucidium gnoma*), Burrowing Owl (*Athene cunicularia*), and Long-eared Owl (*Asio otus*), none of which were observed (Appendix D).

Other bird species expected onsite but not observed include: Costa's Hummingbird (*Calypte costae*), Rufous Hummingbird (*Selasphorus rufus*), Allen's Hummingbird (*Selasphorus sasin*), Downy Woodpecker (*Picoides pubescens*), Pacific Slope Flycatcher (*Empidonax difficilis*), Hammond's Flycatcher (*Empidonax hammondii*), Violet-green Swallow (*Tachycineta thalassina*), Cliff Swallow (*Petrochelidon pyrrhonota*), White-breasted Nuthatch (*Sitta carolinensis*), Cedar Waxwing (*Bombycilla cedrorum*), Sage Sparrow (*Amphispiza belli*), Bullock's Oriole (*Icterus bullockii*), and American Goldfinch (*Carduelis tristis*) (Appendix D).

MAMMALS

Lyons Canyon Ranch consists of a variety of functional connected wildlife habitats, most of which are readily utilized by mammal species for foraging, hunting, water, and cover resources. Several mammal species were observed inhabiting or frequenting, and are expected to inhabit, Valley Foothill Riparian, Coastal Scrub, and Coastal Oak Woodland habitats onsite.

Mammals observed or detected (e.g. tracks, scat, skeletons) on the project site include: Virginia Opossum (*Didelphis virginiana*), Mule Deer (*Odocoileus hemionus*), Gray Fox (*Urocyon cinereoargenteus*), a mole (*Scapanus* sp.), Botta's Pocket Gopher (*Thomomys bottae*), Coyote (*Canis latrans*), California Pocket Mouse (*Perognathus californicus*), Bobcat (*Lynx rufus*), California Ground Squirrel (*Spermophilus beecheyi*), Desert Shrew (*Notiosorex crawfordi*), Desert Cottontail (*Sylvilagus audubonii*), Raccoon (*Procyon lotor*), and Striped Skunk (*Mephitis mephitis*) (See Appendix D).

Mammals expected to frequent or inhabit the project site but not observed include: Pacific Kangaroo Rat (*Dipodomys agilis*), House Mouse (*Mus musculus*), California Mouse (*Peromyscus californicus*), Brush Mouse (*Peromyscus boylii*), Parasitic Mouse (*Peromyscus californicus*), Cactus Mouse (*Peromyscus eremicus*), California Meadow Vole (*Microtus californicus*), Southern Dusky-footed Woodrat (*Neotoma macrotis*), Black Bear[8] (*Ursus americanus*), Ring-tailed Cat (*Bassariscus astutus*), Long-tailed Weasel (*Mustela frenata*), and Mountain Lion (*Puma [Felis] concolor*).

Bats occur throughout most of southern California and may use any portion of the project site as foraging habitat. Different bat species characteristically utilize different roosting habitats. Most of the bats that potentially occur on the project site are either inactive during the winter (hibernating) or migrate south of the region to warmer climates. Bats expected to forage in and inhabit the project site include Long-legged Myotis (*Myotis volans*), California Myotis (*Myotis californicus*), Western Pipistrelle (*Pipistrellus esperus*), Big Brown Bat (*Eptesicus fuscus*), Hoary Bat (*Lasiurus cinereus*), Long-eared Myotis (*Myotis evotis*), Fringed Myotis (*Myotis*

[8] A Black Bear skull was observed on the adjacent Taylor-Prentice property prior to 2002 by Ty Garrison (pers. comm. 3 October 2005).

thysanodes), and Brazilian Free-tailed Bat (*Tadarida brasiliensis*). No bat species were observed during surveys of the project site; however, no nighttime surveys were conducted when bats would normally be detected, as they are nocturnal. (See Appendix D.)

INVERTEBRATES

The invertebrate species observed onsite include: Funnel Web Spider (*Agelenopsis* sp.), Red Skimmer (*Libellula saturata*), Circumpolar Bluet (*Enallagma cyanigerum*), Pallid Band-wing (*Trimerotropis pallidipennis*), Plicate Beetle (*Noserus plicatus*), Darkling Beetle (*Coelocnemis californicus*), Convergent Ladybird Beetle (*Hippodamia convergens*), an unidentified black and deep red ground beetle, European Honey Bee (*Apis mellifera*), Polybiine Paper Wasp (*Mischocyttarus flavitarsus*), and Vosnesenski's Bumble Bee (*Bombus vosnesenskii*).

The butterfly species observed onsite include: Painted Lady (*Vanessa cardui*), Buckeye (*Junonia coenia*), California Dog Face (*Colias eurydice*), Pale Swallowtail (*Papilio eurymedon*), Marine Blue (*Leptotes marina*), Senna Sulphur (*Phoebis sennae*), and Cabbage White (*Pieris rapae*).

The butterfly species expected to frequent the project site include: Silvery Blue (*Glaucopsyche lygdamus*), Sara Orangetip (*Anthocharis sara*), Lorquin's Admiral (*Limenitis lorquini*), Variable Checkerspot (*Euphydryas chalcedona*), California Ringlet (*Coenonympha tullia*), California Sister (*Adelpha bredowii*), Funeral Duskywing (*Erynnis funeralis*), Gray Hairstreak (*Strymon melinus*), Monarch Butterfly (*Danaus plexippus*), and Behr's Metalmark (*Apodemia virgulti*).

Wildlife Movement

Wildlife corridors link together areas of suitable wildlife habitat that are otherwise separated by rugged terrain, changes in vegetation, or human disturbance. The fragmentation of open space areas by urbanization creates isolated "islands" of wildlife habitat. Various studies have concluded that some wildlife species, especially the larger and more mobile mammals, will not likely persist over time in fragmented or isolated habitat areas because they prohibit the infusion of new individuals and genetic information. (City of Santa Clarita and County of Los Angeles 2001.)

Corridors mitigate the effects of this fragmentation by:

- Allowing animals to move between remaining habitats, thereby permitting depleted populations to be replenished and promoting genetic exchange;
- Providing escape routes from fire, predators, and human disturbances, thus reducing the risk that catastrophic events (e.g. fire and disease), will result in population or local species extinction; and
- Serving as travel routes for individual animals as they move in their home ranges in search of food, water, mates, and other necessary resources.

Wildlife movement activities usually fall into one of three movement categories: dispersal (e.g. juvenile animals from natal areas or individuals extending range distributions); seasonal migration; and movements related to home range activities (e.g. foraging for food or water, defending territories, or searching for mates, breeding areas, or cover). A number of terms such as "wildlife corridor", "travel route", "habitat linkage", and "wildlife crossing" have been used in various wildlife movement studies to refer to pathways by which wildlife move from one area to another. To clarify the meaning of these terms and facilitate the discussion on wildlife movement in this analysis, these terms are defined as follows (BonTerra Consulting 2004):

- ***Travel Route*** **–** A landscape feature (such as a ridgeline, drainage, canyon, or riparian strip) within a larger natural habitat area that is used frequently by animals to facilitate movement and to provide access to necessary resources (e.g. water, food, cover, den sites). The travel route is generally preferred because it provides the least amount of topographic resistance in moving from one area to another. It contains adequate food, water, and/or cover while moving between habitats and provides a relatively direct link between target habitat areas.
- ***Wildlife Corridor*** **–** A piece of habitat, usually linear in nature, that connects two or more habitat patches that would otherwise be fragmented or isolated from one another. Wildlife corridors are usually bounded by urban land areas or other areas unsuitable for wildlife. The corridor generally contains suitable cover, food, and/or water to support species and facilitate movement while in the corridor. Larger, landscape-level corridors, often referred to as "habitat or landscape linkages," can provide both transitory and resident habitat for a variety of species.
- ***Wildlife Crossing*** **–** A small, narrow area, relatively short in length and generally constricted in nature, that allows wildlife to pass under or through an obstacle or barrier that otherwise hinders or prevents movement. Crossings typically are manmade and include culverts, underpasses, drainage pipes, and tunnels to provide access across or under roads, highways, pipelines, or other physical obstacles. These often represent "choke points" along a movement corridor, which may impede wildlife movement and increase the risk of predation.

It is important to note that in a large open space area, in which there are few or no man-made or naturally occurring physical constraints to wildlife movement, wildlife corridors as defined above may not yet exist. Given an open space area that is both large enough to maintain viable populations of species and provide a variety of travel routes (e.g. canyons, ridgelines, trails, riverbeds, and others), wildlife will use these "local" routes while searching for food, water, shelter, and mates, and will not need to cross into other large, open space areas. Based on their size, location, vegetative composition, and availability of food, some of these movement areas (e.g. large drainages and canyons) are used for longer lengths of time and serve as source areas for food, water, and cover, particularly for small- and medium-sized animals. This is especially true if the travel route is within a larger open space area. However, once open space areas become constrained and/or fragmented, as a result of urban development or construction of physical obstacles such as roads and highways, the remaining landscape features or travel routes that connect the larger open space areas can "become" corridors as long as they provide adequate space, cover, food, and water, and do not contain obstacles or distractions (e.g. man-made noise, lighting) that would generally hinder wildlife movement. When these wildlife movement corridors provide connections between protected open space areas that have no other linkage, then the wildlife movement corridors become locally or even regionally important.

The project site presently provides high quality wildlife habitat that supports numerous travel routes for wildlife movement. The amount of movement documented onsite suggests that there is heavy use of the site by wildlife and it is an essential and functional part of the regional habitat linkage between the San Gabriel and Santa Susanna Mountains. In particular, drainages on the project site are natural conduits of wildlife movement whether in a natural setting or surrounded by development. Lyon Canyon Creek, and the unnamed drainage in the southeastern corner of the site, are tributaries of the South Fork of the Santa Clara River, and both flow beneath I-5 toward the Santa Clara River. These watercourses are concrete channels as they pass underneath I-5. They provide a wildlife crossing or connections between the east and west sides of I-5. Their use may be limited due to their length, and overall distance to suitable habitat areas.

Lyons Canyon Ranch is the northernmost part of an important east-west movement corridor. Although not on the project site, this important wildlife movement corridor (or habitat linkage) has been identified in East and Rice Canyons. This open space area is located approximately three miles south of the project site. Further south, Weldon Canyon provides an important wildlife movement corridor near the I-5/SR14 junction. These canyons provide important habitat on an east/west axis between the Santa Susana Mountains to the west, and the San Gabriel Mountains and the Angeles National Forest to the east. The project site provides important and contiguous open space habitats that support the quality of these nearby regionally important wildlife movement corridors. Generally, known wildlife corridors in the region are mapped on Figure 17, Wildlife Corridors of the Newhall Region, and wildlife travel routes are illustrated in Figure 18, Wildlife Travel Paths at Lyons Canyon Ranch. The wildlife movement corridors illustrated on Figure 17 are based primarily on research conducted by the South Coast Wildlands (Penrod et al. 2004).

Since wildlife corridors (linking two core habitats) currently do not exist within the property boundaries (only wildlife paths exist onsite), the impact analysis for Impacts to Wildlife Corridors and Habitat Linkages (provided below in Section 5, Project Impacts) will be addressed specifically in terms of loss of wildlife travel routes onsite and in terms of interference with wildlife corridors within Lyon Canyon.

Figure 17. Wildlife Corridors of the Newhall Region

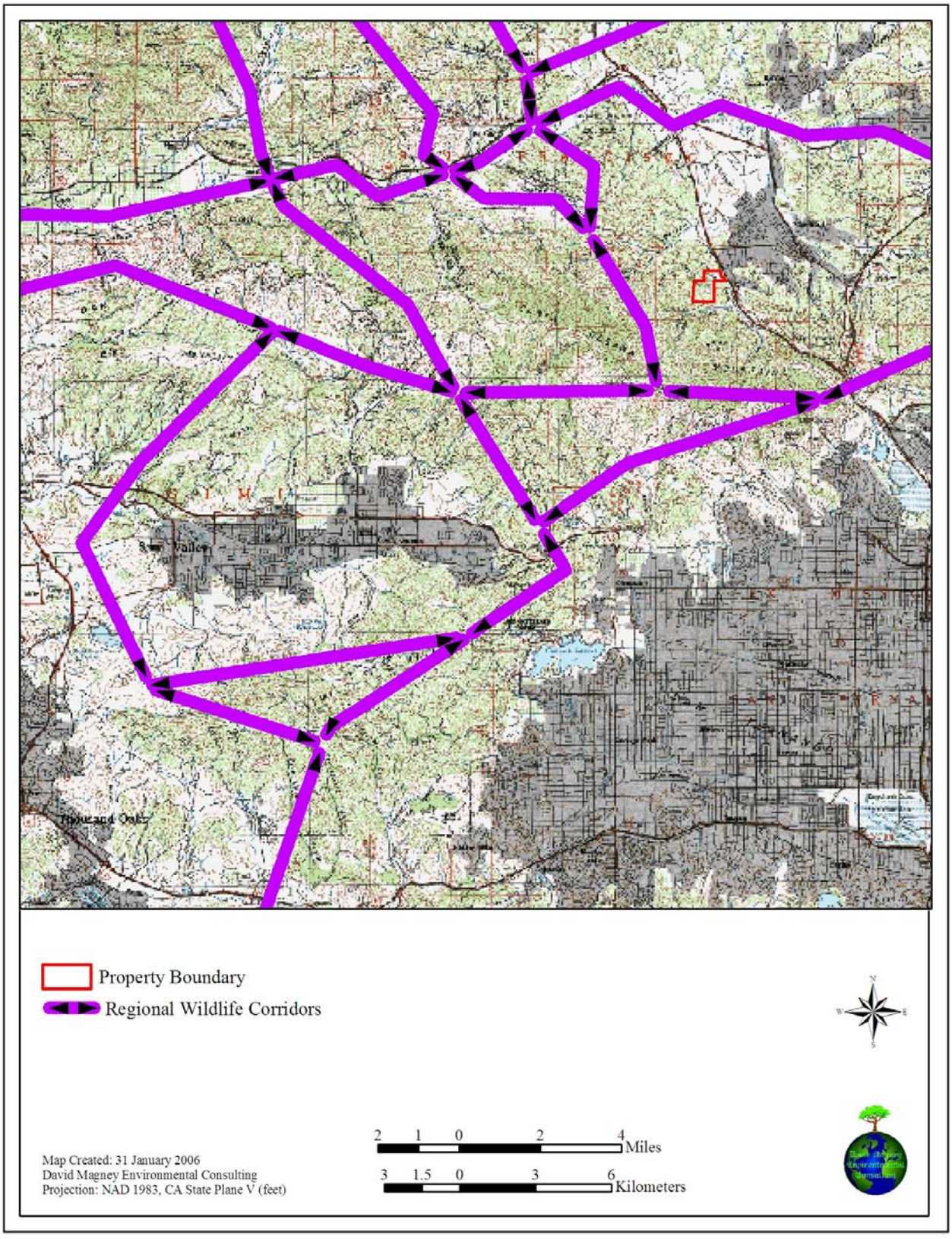
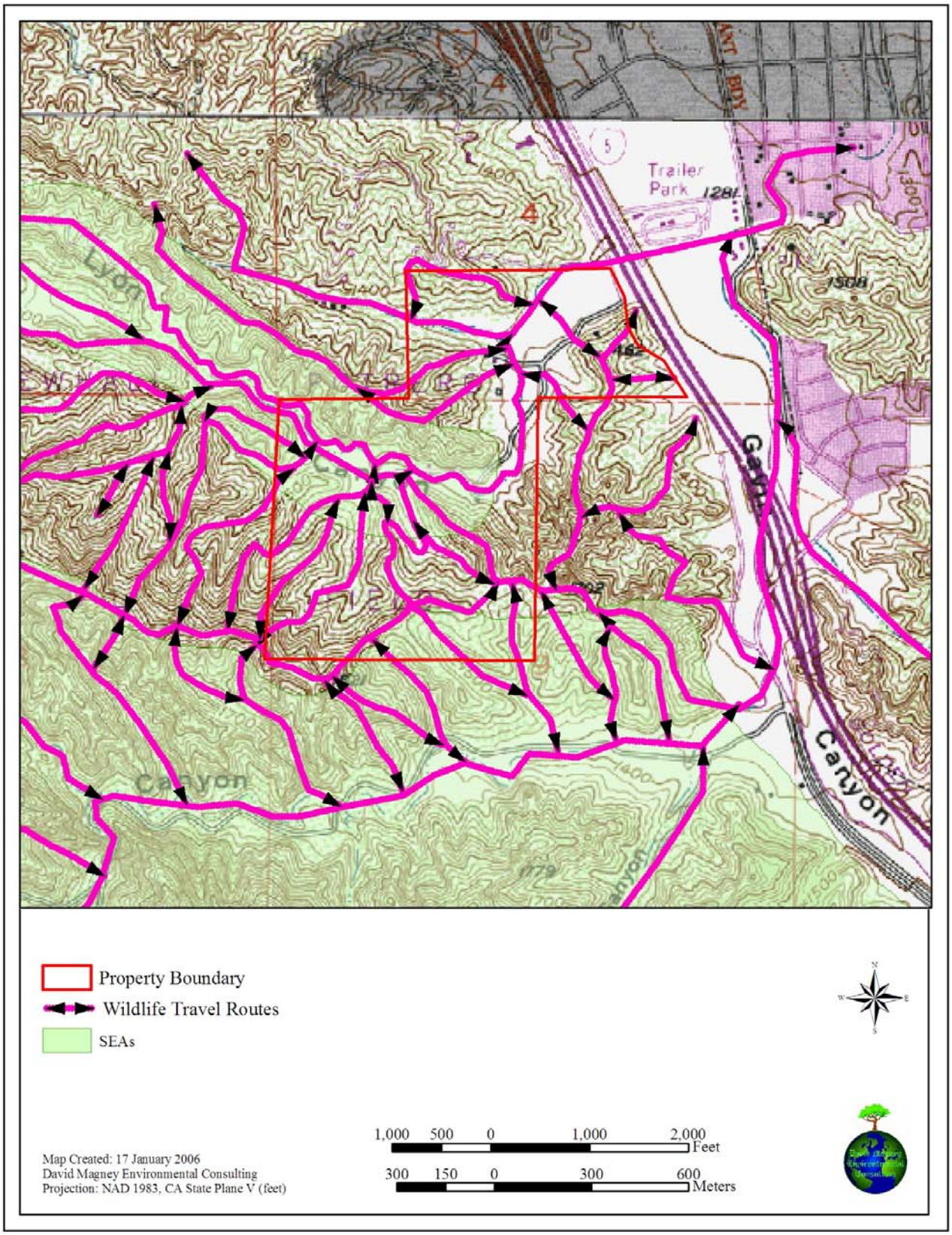


Figure 18. Wildlife Travel Paths at Lyons Canyon Ranch



SECTION 4. SPECIAL-STATUS BIOLOGICAL RESOURCES

This section analyzes the biological significance of the project area in consideration of Federal, State, and local laws and policies. Section 4 provides the definitions of special-status species, and presents the special-status biological resources observed and expected onsite.

A search of the CNDDB RareFind3 (CDFG 2005) was conducted to report all tracked special-status species and habitats with potential to occur at the project site. Nine (9) California Quadrangles (USGS 7.5-minute Series Topographic Map) were queried for the CNDDB RareFind3 records search. Oat Mountain Quadrangle, in which the project site occurs, was searched, as well as all surrounding eight quadrangles, including Val Verde, Newhall, Mint Canyon, San Fernando, Van Nuys, Canoga Park, Calabasas, and Santa Susana.

DEFINITIONS OF SPECIAL-STATUS SPECIES

Special-status Habitats are vegetation types, associations, or sub-associations that support concentrations of special-status plant or wildlife species, are of relatively limited distribution, or are of particular value to wildlife. Although special-status habitats are not afforded legal protection unless they support protected species, potential impacts on them may elicit concerns and mitigation suggestions by resources agencies.

Special-status species are plants and animals that are at least one of the following:

- *Listed as endangered* or *threatened* under Federal or California Endangered Species Acts,
- *Listed as rare* under the California Native Plant Protection Act, or
- *Considered rare* (but not formally listed) by resource agencies, professional organizations (e.g. Audubon Society, CNPS, The Wildlife Society), and the scientific community.

For the purposes of this project, special-status species are defined in Table 8, Definitions of Special-Status Species.

Listed species are those taxa that are formally listed as endangered or threatened by the federal government (e.g. U.S. Fish and Wildlife Service), pursuant to the Federal Endangered Species Act or as endangered, threatened, or rare (for plants only) by the State of California (i.e., California Fish and Game Commission), pursuant to the California Endangered Species Act or the California Native Plant Protection Act.

The CNPS' *Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2001, 2005[9]) categorizes rare California plants into one of five lists (1A, 1B, 2, 3, and 4) representing the five levels of species status, one of which is assigned to a sensitive species to indicate its status of rarity or endangerment and distribution. Table 9, California Native Plant Society List, provides a definition for each List code number. A CNPS List is a more general designation than the three separate sets of information provided in a CNPS R-E-D Code (defined in Table 10, California Native Plant Society R-E-D Code). However, the CNPS List is a significant designation in terms of a species' overall status throughout all of California, and it works well in conjunction to the specifications of the R-E-D Code.

[9] Changes to the *Inventory* as published on the CNPS website (http://www.cnps.org/programs/Rare_Plant/inventory/changes/changes_accepted.htm).

Table 8. Definitions of Special-Status Species

- Plants & animals legally protected under the California and Federal Endangered Species Acts or under other regulations.
- Plants and animals considered sufficiently rare by the scientific community to qualify for such listing; or
- Plants and animals considered to be sensitive because they are unique, declining regionally or locally, or are at the extent of their natural range.

Special-Status Plant Species	Special-Status Animal Species
• Plants listed or proposed for listing as threatened or endangered under the Federal Endangered Species Act (50 CFR 17.12 for listed plants and various notices in *Federal Register* for proposed species). • Plants that are Category 1 or 2 candidates for possible future listing as threatened or endangered under the Federal Endangered Species Act (55 CFR 6184, February 21, 1990). • Plants that meet the definitions of rare or endangered species under the CEQA (*State CEQA Guidelines*, Section 15380). • Plants considered by CNPS to be "rare, threatened, or endangered" in California (Lists 1B and 2 in CNPS 2001). • Plants listed by CNPS as plants needing more information and plants of limited distribution (Lists 3 and 4 in CNPS 2001). • Plants listed or proposed for listing by the State of California as threatened or endangered under the California Endangered Species Act (14 CCR 670.5). • Plants listed under the California Native Plant Protection Act (California Fish and Game Code 1900 et seq.). • Plants considered sensitive by other federal agencies (i.e. U.S. Forest Service, Bureau of Land Management) or state and local agencies or jurisdictions. • Plants considered sensitive or unique by the scientific community; occurs at natural range limits (*State CEQA Guidelines*, Appendix G).	• Animals listed/proposed for listing as threatened/endangered under the Federal Endangered Species Act (50 CFR 17.11 for listed animals and various notices in *Federal Register* for proposed species). • Animals that are Category 1 or 2 candidates for possible future listing as threatened or endangered under Federal Endangered Species Act (54 CFR 554). • Animals that meet the definitions of rare or endangered species under the CEQA (*State CEQA Guidelines*, Section 15380). • Animals listed or proposed for listing by the State of California as threatened and endangered under the California Endangered Species Act (14 CCR 670.5). • Animal species of special concern to the CDFG (Remsen [1978] for birds; Williams [1986] for mammals). • Animal species that are fully protected in California (California Fish & Game Code, Sections 3511 [birds], 4700 [mammals], 5050 [reptiles, amphibians]).

Table 9. California Native Plant Society List (CNPS List)

CNPS List	Definition
1A	Presumed Extinct in California
1B	Rare or Endangered in California and elsewhere
2	Rare and Endangered in California, more common elsewhere
3	Need more information
4	Plants of Limited Distribution

The CNPS R-E-D Code is a three-numbered numeric ranking, which is assigned to a special-status species, consisting of one number (1, 2, or 3) for each of the three categories (Rarity-Endangerment-Distribution). Each number accurately describes the species' population levels and distribution patterns within each category. The three number-codes are described for each category in Table 10, California Native Plant Society R-E-D Code, and is specific for each category.

Table 10. California Native Plant Society R-E-D Code

Rarity (R)	
1	Rare, but found in sufficient numbers and distributed widely enough that the potential for extinction is low at this time
2	Distributed in a limited number of occurrences, occasionally more if each occurrence is small
3	Distributed in one to several highly restricted occurrences, or present in such small numbers that it is seldom reported
Endangerment (E)	
1	Not endangered
2	Endangered in a portion of its range
3	Endangered throughout its range
Distribution (D)	
1	More or less widespread outside California
2	Rare outside California
3	Endemic to California

The CNDDB Element Ranking system provides a numeric global and state-ranking system for all special-status species tracked by the CNDDB. The global rank (G-rank) is a reflection of the overall condition of an element (species or natural community) throughout its global range. The state rank (S-rank) is assigned much the same way as the global rank, except state ranks in California often also contain a threat designation attached to the S-rank. This Element Ranking system is defined below in Table 11, California Natural Diversity Database Element Ranking System.

Table 11. California Natural Diversity Database Element Ranking System

Global Ranking (G)	
G1	Less than 6 viable element occurrences (populations for species), OR less than 1,000 individuals, OR < 809.4 hectares (ha) (2,000 acres [ac]).
G2	6 to 20 element occurrences OR 809.4 to 4,047 ha (2,000 to 10,000 ac).
G3	21 to 100 element occurrences OR 3,000 to 10,000 individuals OR 4,047 to 20,235 ha (10,000 to 50,000 ac).
G4	Apparently secure; this rank is clearly lower than G3, but factors exist to cause some concern (i.e. there is some threat, or somewhat narrow habitat).
G5	Population, or stand, demonstrably secure to ineradicable due to being commonly found in the world.
GH	All sites are **historic**; the element has not been seen for at least 20 years, but suitable habitat still exists.
GX	All sites are **extirpated;** this element is extinct in the wild.
GXC	Extinct in the wild; exists in cultivation.
G1Q	The element is very rare, but there is a taxonomic question associated with it.
Subspecies Level: Subspecies receive a **T-rank** attached to the G-rank. With the subspecies, the G-rank reflects the condition of the entire species, whereas the T-rank reflects the global situation of just the subspecies or variety. * For example: *Chorizanthe robusta* var. *hartwegii* is ranked G2T1. The G-rank refers to the whole species range (*Chorizanthe robusta*), whereas the T-rank refers only to the global condition of the variety (var. *hartwegii*).	
State Ranking (S)	
S1	Less than 6 element occurrences OR less than 1,000 individuals OR less than 809.4 ha (2,000 ac). S1.1 = very threatened S1.2 = threatened S1.3 = no current threats known
S2	6 to 20 element occurrences OR 3,000 individuals OR 809.4 to 4,047 ha (2,000 to 10,000 ac). S2.1 = very threatened S2.2 = threatened S2.3 = no current threats known..
S3	21 to 100 element occurrences OR 3,000 to 10,000 individuals OR 4,047 to 20,235 ha (10,000 to 50,000 ac). S3.1 = very threatened S3.2 = threatened S3.3 = no current threats known
S4	Apparently secure within California; this rank is clearly lower than S3 but factors exist to cause some concern (i.e., there is some threat, or somewhat narrow habitat). NO THREAT RANK.
S5	Demonstrably secure to ineradicable in California. NO THREAT RANK.
SH	All California sites are **historic**; the element has not been seen for at least 20 years, but suitable habitat still exists.
SX	All California sites are **extirpated;** this element is extinct in the wild.
Notes	
1. Other considerations used when ranking a species or natural community include the pattern of distribution of the element on the landscape, fragmentation of the population/stands, and historical extent as compared to its modern range. It is important to take an aerial view when ranking sensitive elements rather than simply counting element occurrences.	
2. Uncertainty about the rank of an element is expressed in two major ways: by expressing the rank as a range of values (e.g. S2S3 means the rank is somewhere between S2 and S3), and by adding a ? to the rank (e.g. S2?). This represents more certainty than S2S3, but less than S2.	

SPECIAL-STATUS BOTANICAL RESOURCES

This subsection provides the results of the special-status botanical resources survey and literature search conducted for Lyons Canyon Ranch. This subsection gives the status of all special-status plant species and habitats known and tracked in the vicinity of the project site, and provides a description of the special-status plant species observed onsite.

Figure 19, Distribution of CNDDB-Tracked Sensitive Species and Habitats in the Vicinity of Lyons Canyon Ranch, generally illustrates the distribution of special-status biological resources in the vicinity of the project site as tracked by CDFG's CNDDB (CDFG 2005). Figure 20, Special-Status Biological Resources Observed at Lyons Canyon Ranch, gives the locations of the special-status plant and wildlife species observed onsite and maps the sensitive habitats observed at the project site.

Special-Status Plant Species

Table 12, Special-Status Plant Species with Potential to Occur at Lyons Canyon Ranch, lists all special-status plant species known to occur in the vicinity of the project site. Included in Table 12 is each species' scientific name, common name, status, required habitat, and likelihood of occurrence.

No federally or state listed plant species were observed at Lyons Canyon Ranch; however, 26 special-status plant species have the potential to occur in the vicinity of the project site. Of these 26 special-status plant species, 23 are tracked for the Lyons Canyon Ranch vicinity by CDFG's (2005) CNDDB RareFind3, while the remaining three (3) are considered species of local concern (Boyd 1999). Seven (7) special-status plant species were observed onsite, including:

- *Ambrosia confertiflora* (Weakleaf Burweed);
- *Calochortus clavatus* var. *gracilis* (Slender Mariposa Lily);
- *Calochortus plummerae* (Plummer's Mariposa Lily);
- *Calystegia peirsonii* (Peirson's Morning-glory);
- *Ericameria ericoides* ssp. *ericoides* (Mock Heather);
- *Juglans californica* var. *californica* (Southern California Black Walnut); and
- *Navarretia hamata* ssp. *hamata* (Skunk Navarretia).

Another six (6) special-status plant species are considered likely to occur onsite, based on suitable required habitat present onsite, and the CNDDB results for special-status wildlife species tracked in the vicinity of the project site (CDFG 2005).

Voucher specimens were collected by BonTerra Consulting and/or Bowland & Associates for *Ambrosia confertiflora*, *Calystegia peirsonii*, *Calochortus plummerae*, and *Calochortus clavatus* var. *gracilis*, and deposited in at RSA to "ensure accuracy in identification" and provide verifiable vouchers.

Figure 19. Distribution of CNDDB-Tracked Sensitive Species and Habitats in the Vicinity of Lyons Canyon Ranch (CDFG 2005)

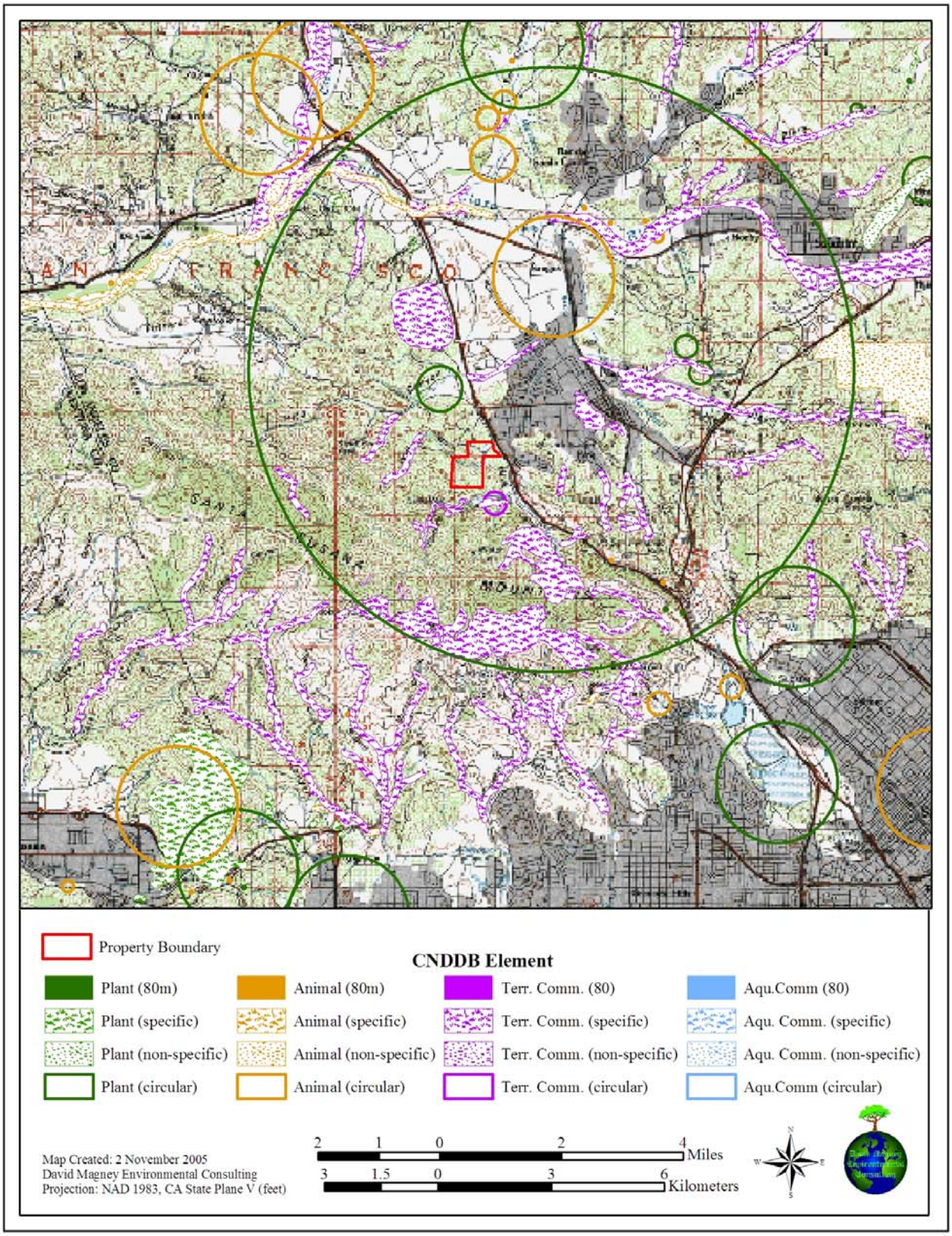


Figure 20. Special-Status Biological Resources Observed at Lyons Canyon Ranch

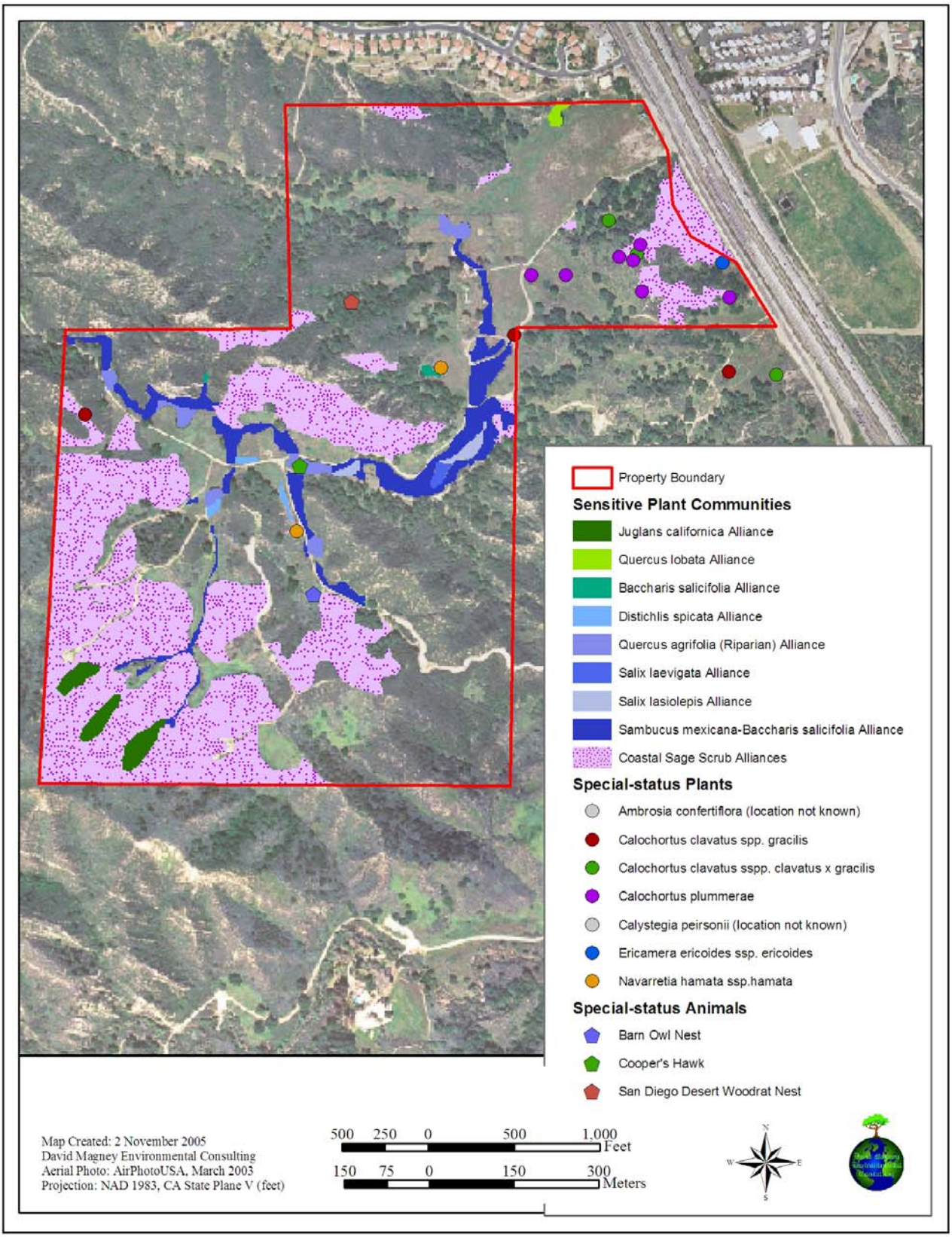


Table 12. Special-Status Plant Species with Potential to Occur at Lyons Canyon Ranch

Scientific Name[10]	Common Name	Federal[11]	State	G-Rank	S-Rank	CNPS List	CNPS R-E-D[12]	Habitat Requirements[13]	Likelihood of Occurrence[14]
Ambrosia confertiflora	**Weakleaf Burweed**	-	-	-	-	-	Species of local concern	Gr	**Known:** Observed by BonTerra Consulting onsite. No indication as to the location or abundance observed onsite. The population found represents the northernmost known occurrence of *Ambrosia confertiflora* in Los Angeles County and one of only eight known populations in the County. Only one (likely extirpated) population exists in Ventura County.
Aster greatae	Greata's Aster	-	-	G2	S2.3	1B	2-1-3	Ch, OW	Likely
Astragalus brauntonii	Braunton's Milkvetch	E	-	G2	S2.1	1B	3-3-3	Cl-cCF, Ch, CSS, Gr	Possible
Berberis nevinii	Nevin's Barberry	E	E	G2	S2.2	1B	3-3-3	Ch, OW, CSS, RS.	Unlikely. Recorded population in San Franciscito Canyon was likely planted by Theodore Paine after the dam disaster of the 1930s and is not a natural population (Boyd 1989)/

[10] Bold = special-status plant species known onsite.

[11] Federal and State Listings: E = Endangered; T = Threatened; R = Rare; C = Candidate.
For special-status species definitions see Tables 8 through 11 above.

[12] Species of local concern designations are presented here based onreporting by Boyd (1999).

[13] Habitat requirements definitions: AFSS = Alluvial Fan Sage Scrub; Cl-cCF = Closed-cone Coniferous Forest; Ch = Chaparral; ChenScrub = Chenopod Scrub; CSS = Coastal Sage Scrub; Gr = Grassland; JTW = Joshua Tree Woodland; LMCF = Lower Montane Coniferous Forest; MDS = Mojavian Desert Scrub; OW = Oak (Cismontane) Woodland; PJW = Pinyon-Juniper Woodland; RS/W = Riparian Scrub/Woodland; so. Calif. = southern California.

[14] Likelihood of occurrence based on species' habitat requirements and the presence of required habitat in the project site.
Known = the species has been reported as inhabiting or frequenting the project site;
Likely = Required habitat exists at the project site and has been reported near by;
Possible = Marginal required habitat exists onsite, and/or required habitat exists in surrounding areas;
Unlikely = Required habitat does not exist at the project site nor does it exist nearby.

Scientific Name[10]	Common Name	Federal[11]	State	G-Rank	S-Rank	CNPS List	CNPS R-E-D[12]	Habitat Requirements[13]	Likelihood of Occurrence[14]
Calochortus clavatus* var. *gracilis	**Slender Mariposa Lily**	-	-	G4T1	S1.1?	1B	3-2-3	Ch, CSS	**Known**: Approximately 600 individuals of *Calochortus clavatus* var. *gracilis* were observed by BonTerra Consulting and Bowland & Associates in the northeastern portion of the project site south of Lyons Ranch Road, in the middle portion of the project site on the southeast side of "Lyons Ranch Road", and in the southeastern corner of the project site just west of The Old Road.
Calochortus plummerae	**Plummer's Mariposa Lily**	-	-	G3	S3.2	1B	2-2-3	CSS, Ch, Gr, OW, LMCF	**Known**: 26 individuals observed by Bowland & Associates and approximately 1,100 individuals observed by BonTerra. These individuals were observed in the southeastern corner of the project site just west of The Old Road, in the mid-eastern portion of the project site, and in the northeastern portion near the intersection of The Old Road and Lyons Ranch Road.
Calystegia peirsonii	**Peirson's Morning-glory**	-	-	G3	S3.2	4	1-2-3	Ch, CSS, ChenScrub, OW, LMCF	**Known**: Occasional individuals reported as observed by BonTerra Consulting. No indication was made as to where this species was observed onsite.
Chorizanthe parryi var. *fernandina*	San Fernando Valley Spineflower	C	E	G2T1	S1.1	1B	3-3-3	CSS	Possible
Deinandra minthornii	Santa Susana Tarplant	-	R	G2	S2.2	1B	2-2-3	Ch, CSS	Unlikely
Dodecahema leptoceras	Slender-horned Spineflower	E	E	G1	S1.1	1B	3-3-3	Ch, CSS (AFSS)	Unlikely
Dudleya blochmaniae ssp. *blochmaniae*	Blochman's Dudleya	-	-	G2T2	S2.1	1B	2-3-2	CSS, coastal bluff scrub, Gr. Found with direct coastal or maritime influence.	Unlikely
Dudleya multicaulis	Many-stemmed Dudleya	-	-	G2	S2.1	1B	1-2-3	Ch, CSS, Gr	Unlikely

Scientific Name[10]	Common Name	Federal[11]	State	G-Rank	S-Rank	CNPS List	CNPS R-E-D[12]	Habitat Requirements[13]	Likelihood of Occurrence[14]
Ericameria ericoides* ssp. *ericoides	**Mock Heather**	-	-	-	-	-	Species of local concern	CSS; inland sandy soils	**Known:** The presence of this species so far inland represents a significant disjunction, and is treated here as a locally rare species. One individual was observed by DMEC in the northeastern-most corner of the project site, along The Old Road, in *Eriogonum fasciculatum* Alliance. Its presence is possibly a waif that may have been included in a hydroseed mix applied for erosion control on the road cut immediately south of Lyon Canyon, along with the non-indigenous *Eriogonum fasciculatum* var. *fasciculatum* at this site.
Erodium macrophyllum	Round-leaved Filaree	-	-	G4	S2.1	2	2-3-1	Cismontane woodland, Gr	Likely
Harpagonella palmeri var. *palmeri*	Palmer's Grapplinghook	-	-	G4	S3.2	4	1-2-1	Ch, CSS, Gr	Possible
Helianthus nuttallii ssp. *parishii*	Los Angeles Sunflower	-	-	G5TH	SH	1A	-	Coastal salt and fresh-water marshes and swamps.	Unlikely: Presumed extinct. Historical from So. California. Possibly rediscovered at Newhall Ranch in 2003.
Horkelia cuneata ssp. *puberula*	Mesa Horkelia	-	-	G4T2	S2.1	1B	2-3-3	Ch, OW, CSS	Likely
Juglans californica* var. *californica	**Southern California Black Walnut**	-	-	G3	S3.2	4	1-2-3	Ch, CSS, OW	**Known**: Occasional individuals observed by BonTerra Consulting and DMEC in the southwestern corner of the project site.
Lepidium virginicum var. *robinsonii*	Robinson's Peppergrass	-	-	G5T2?	S2.2	1B	3-2-2	Ch, CSS	Likely
Malacothamnus davidsonii	Davidson's Bush Mallow	-	-	G1	S1.1	1B	2-2-3	CSS, RW, Ch	Possible
Navarretia fossalis	Spreading Navarretia	T	-	G2	S2.1	1B	2-3-2	Vernal pools, ChenScrub, marshes & swamps, playas	Unlikely

Scientific Name[10]	Common Name	Federal[11]	State	G-Rank	S-Rank	CNPS List	CNPS R-E-D[12]	Habitat Requirements[13]	Likelihood of Occurrence[14]
Navarretia hamata* ssp. *hamata	**Skunk Navarretia**	-	-	-	-	-	Species of local concern	Dry sandy or rocky sites in Ch	**Known:** Approximately 50 individuals were observed by DMEC near the "empty pond" in the middle portion of the project site in Ruderal Grassland Alliance. It is considered a locally rare species in Ventura County (Magney 2005) and is not reported in the Liebre Mountains flora by Boyd (1999). No collections are reported this far north in LA County in the Jepson Herbarium database for this variety.
Nolina cismontana	Chaparral Nolina	-	-	G1	S1.1	1B	3-2-3	Ch, CSS	Likely
Opuntia basilaris var. *brachyclada*	Short-joint Beavertail	-	-	G5T1	S1.2	1B	3-2-3	Ch, JTW, MDS, PJW, RW	Unlikely
Orcuttia californica	California Orcutt Grass	E	E	G2	S2.1	1B	3-3-2	Vernal pools	Unlikely
Senecio aphanactis	Rayless Ragwort	-	-	G3?	S1.2	2	3-2-1	OW, CSS	Likely

Observed Special-Status Plant Species

Seven (7) special-status plant species were observed onsite. A brief description of the special-status plant species observed during the focused surveys is presented below.

AMBROSIA CONFERTIFLORA (WEAKLEAF BURWEED)

Ambrosia confertiflora (Weakleaf Burweed) is a species of local concern (Boyd 1999). This small shrub usually blooms during the summer. It ranges spottily from San Francisco County south to San Diego County and inland to San Bernardino and Riverside Counties. This species was observed and vouchered by BonTerra Consulting onsite. No indication was provided as to the location observed onsite, nor the abundance or population size observed onsite. The population found on Lyons Canyon Ranch represents the northernmost known occurrence of *Ambrosia confertiflora* in Los Angeles County and one of only eight known populations (based on Jepson Herbarium database search) in the County. Only one (likely extirpated) population exists in Ventura County (Marr Ranch in Simi Valley – *A.C. Sanders 22916* UCR[15]).

CALOCHORTUS CLAVATUS VAR. *GRACILIS* (SLENDER MARIPOSA LILY)

Calochortus clavatus var. *gracilis* (Slender Mariposa Lily) is a CNPS List 1B species. This perennial bulbiferous herb typically blooms between March and May. It is found in canyons in chaparral below approximately 762 meters. All known occurrences are in Los Angeles County, with many locations in the Liebre Mountains. It is widespread, but only infrequently common locally in open scrub and especially on recent burns; it more or less freely grades into var. *clavatus*. Approximately 600 individuals of *Calochortus clavatus* var. *gracilis* were observed by BonTerra Consulting and Bowland & Associates in the northeastern portion of the project site south of Lyons Ranch Road, in the middle portion of the project site on the southeast side of "Lyons Ranch Road", and in the southeastern corner of the project site just west of The Old Road (Figure 20).

CALOCHORTUS PLUMMERAE (PLUMMER'S MARIPOSA LILY)

Calochortus plummerae (Plummer's Mariposa Lily) is a CNPS List 1B species. This perennial bulbiferous herb typically blooms between May and July. It is found in dry rocky places and in brush below approximately 5,000 feet above msl, in coastal sage scrub and yellow pine forest vegetation communities. It is locally scarce on rocky slopes and alluvial fans. Twenty-six (26) individuals of *Calochortus plummerae* were observed by Bowland & Associates, and approximately 1,100 individuals were observed by BonTerra Consulting. These individuals were observed in the southeastern corner of the project site just west of The Old Road, in the mid-eastern portion of the project site, and in the northeastern portion near the intersection of The Old Road and Lyons Ranch Road (Figure 20).

CALYSTEGIA PEIRSONII (PEIRSON'S MORNING-GLORY)

Calystegia peirsonii (Peirson's Morning-glory) is a CNPS List 4 species. This perennial rhizomatous herb typically blooms between May and June. It is found on dry slopes from approximately 3,000 to 4,500 feet above msl, in creosote bush scrub and Joshua Tree Woodland

[15] UCR = University of California, Riverside Herbarium

vegetation communities. This species is a climbing vine also found in openings in Coastal Sage Scrub and chaparral, typically following a burn. *Calystegia peirsonii* occurs in the San Gabriel and Liebre Mountains and in the Antelope Valley. It was known only from a few collections prior to 1970 (Boyd 1999), but it is now believed to be more abundant in Coastal Sage Scrub throughout the Newhall-Mint Canyon region. Occasional individuals were observed by BonTerra Consulting. No location was indicated onsite.

ERICAMERIA ERICOIDES SSP. *ERICOIDES* (MOCK HEATHER)

Ericameria ericoides ssp. *ericoides* (Mock Heather) is a species of local concern (Boyd 1999, Magney 2001). This small shrub typically blooms during the summer. It is found usually on stabilized sand dunes along the coast. This shrub ranges from Marin County south to Los Angeles County. *Ericameria ericoides* typically occurs along the coast and its presence this far inland represents a significant disjunction and extralimital occurrence, and is therefore considered a locally rare species. One (1) individual of this species was observed by DMEC in the northeastern-most corner of the project site, along The Old Road, in *Eriogonum fasciculatum* Alliance (Figure 20). It is possible that its presence along The Old Road represents a waif that was included in a hydroseed mulch applied for erosion control on the road cut immediately south of Lyon Canyon, along with the introduced *Eriogonum fasciculatum* var. *fasciculatum* (native to California, but not indigenous to this region) at this site.

The fact that three species of *Ericameria* have been reported as occurring onsite raises questions about proper identification of one or more of the species, since all three species are morphologically similar. However, a search of the Jepson Herbarium online database found that *E. pinifolia* has been collected from Elizabeth Lake in the Liebre Mountains to the north south to Pacoima, including in Newhall both north and south of Lyon Canyon. Furthermore, *E. palmeri* var. *pachylepis* has been collected in the Newhall area, north and east of the project site.

JUGLANS CALIFORNICA VAR. *CALIFORNICA* (SOUTHERN CALIF. BLACK WALNUT)

Juglans californica var. *californica* (Southern California Black Walnut) is a CNPS List 4 species. This perennial deciduous tree typically blooms between March and May. It is found on slopes, canyons and valleys from approximately 200 to 3,000 feet above msl. This species occurs in Orange County, and from western cismontane San Bernardino County to Ventura County. Occasional individuals (a few small stands) were observed by BonTerra Consulting and DMEC in the southwestern corner of the project site (Figure 20).

NAVARRETIA HAMATA SSP. *HAMATA* (SKUNK NAVARRETIA)

Navarretia hamata ssp. *hamata* (Skunk Navarretia) is a species of local concern (Boyd 1999, Mangey 2001). Skunk Navarretia is a small annual herb that blooms during the late spring and early summer. *Navarretia hamata* ssp. *hamata* ranges from Santa Cruz County south to San Diego County along the coast and inland within Riverside and San Bernardino Counties below 500 meters. Approximately 50 individuals of *N. hamata* ssp. *hamata* were observed by DMEC near the "empty pond" in the middle portion of the project site in Ruderal Grassland Alliance (Figure 20). This taxon is treated as a locally rare species. It is considered a locally rare species in Ventura County (Magney 2005) and is not reported in the Liebre Mountains flora by Boyd

(1999). No collections are reported this far north in Los Angeles County in the Jepson Herbarium online database for this variety.

Sensitive Plant Communities

Table 13, Sensitive Habitats Tracked in the Vicinity of Lyons Canyon Ranch, lists the sensitive habitat types that are either unique, of relatively limited distribution in the region, or of particularly high wildlife value. These resources have been defined by Federal, State, and local government conservation programs.

Fourteen (14) of the sensitive habitats listed below are tracked by CNDDB (CDFG 2005), while Coast Live Oak Woodland is protected by the Los Angeles County Oak Tree Ordinance. Eight (8) of those 15 sensitive habitat types were observed onsite by DMEC biologists.

Table 13 provides the Holland classification used by CNDDB as well as the Sawyer and Keeler-Wolf (1995) classification. Refer to the Habitat Description section (above in Section 2, Setting) for complete descriptions of the sensitive habitat types that were identified within the project site.

SPECIAL-STATUS WILDLIFE RESOURCES

Sitxy (60) special-status wildlife species have the potential to occur on Lyons Canyon Ranch, based on known occurrences in the vicinity of the project site. Table 14, Special-Status Wildlife Species with Potential to Occur at Lyons Canyon Ranch, provides a summary of those 60 special-status wildlife species tracked in the project region. Table 14 also provides information on the status, habitat requirements, and likelihood of occurrence.

No federal or state listed wildlife species were observed at Lyons Canyon Ranch; however, four special-status wildlife species were observed or detected onsite or immediately adjacent to the project site. Three special-status wildlife species were observed or detected by DMEC, including: Cooper's Hawk (*Accipiter cooperi*) flying overhead, San Diego Desert Woodrat (*Neotoma lepida intermedia*) detected by a nest, and Oak Titmouse (*Baeolophus inornatus*). The fourth species, Nuttall's Woodpecker (*Picoides nuttallii*), was observed in Towsley Park by Wendy Langhans with the Mountains Recreation and Conservation Authority (Wendy Langhans, pers. comm. 21 July 2005).

It should also be noted that DMEC observed an occupied Barn Owl (*Tyto alba*) nest in a Coast Live Oak (*Quercus agrifolia* ssp. *agrifolia*) tree onsite. Barn Owl is not a special-status species (and therefore is not listed in Table 14 below); however, all active raptor nests (of common or special-status species) are regulated by California Fish and Game Code Sections 3503, 3503.5, and 3513.

Of the 60 species tracked in the project region, 19 special-status wildlife species are *likely* to occur onsite, based on suitable required habitat present onsite, and based on the CNDDB search results for special-status wildlife species tracked in the vicinity of the project site (CDFG 2005).

Table 13. Sensitive Habitats Tracked in the Vicinity of Lyons Canyon Ranch

Habitat Name (Holland 1986, CDFG 2005)	**Alliance Name Described Above in Habitat Descriptions** (Sawyer and Keeler-Wolf (1995))	**G-Rank**[16]	**S-Rank**	**Observed Onsite?**
Southern Calif Threespine Stickleback Stream	-	G?	S?	Not observed, and highly unlikely to occur onsite.
Cismontane Alkali Marsh	*Distichlis spicata* Alliance	G2	S2.1	**Observed onsite**. Dense patches of this alliance were observed on the boundary of riparian communities; however, the characteristic associate species for Cismontane Alkali Marsh were not present.
Southern Riparian Scrub	*Sambucus mexicana-Baccharis salicifolia* Alliance	G3	S3.2	**Observed onsite**.
Riversidian Alluvial Fan Sage Scrub	*Lepidospartum squamatum* Alliance	G1	S1.1	Not observed, but could possibly occur onsite.
Southern Willow Scrub	*Salix* Alliance	G3	S2.1	Not observed, but could possibly occur onsite.
Southern Mixed Riparian Forest	*Salix lasiolepis* Alliance *Salix laevigata* Alliance	G2	S2.1	**Observed onsite**.
Southern Cottonwood Willow Riparian Forest	*Populus fremontii-Salix* Alliance	G3	S3.2	Not observed, and unlikely to occur onsite.
Southern Sycamore-Alder Riparian Woodland	*Platanus racemosa-Alnus rhombifolia* Alliance	G4	S4	Not observed, but could potentially occur onsite, especially after several years of wildfire succession.
Southern Coast Live Oak Riparian Forest	*Quercus agrifolia* Alliance	G4	S4	**Observed onsite**.
Coast Live Oak Woodland	*Quercus agrifolia* Alliance	n/a	n/a	**Observed onsite**.
Valley Needlegrass Grassland	*Nassella pulchra* Alliance	G1	S3.1	The habitat not observed onsite, only patches of *Nassella* observed in transition between grassland and scrub plant communities onsite.
Coastal Sage Scrub	*Sambucus mexicana-Salvia leucophylla* Alliance *Salvia leucophylla* Alliance *Salvia apiana* Alliance	n/a	n/a	**Observed onsite**.
California Walnut Woodland	*Juglans californica* var. *californica* Alliance	G2	S2.1	**Observed onsite**.
Mainland Cherry Forest	*Prunus ilicifolia* Alliance	G1	S1.1	Not observed, and unlikely to occur onsite.
Valley Oak Woodland	*Quercus lobata* Alliance	G3	S2.1	**Observed onsite**. Emergent Valley Oak trees observed in small stand in northeastern portion of the property.

[16] For special-status definitions see Tables 8 through 11 above.

Table 14. Special-Status Wildlife Species with Potential to Occur at Lyons Canyon Ranch

Scientific Name	Common Name[17]	Fed.[18]	State	G-Rank	S-Rank	CDFG	Habitat Requirements[19]	Likelihood of Occurrence[20]
FISH								
Catostomus santaanae	Santa Ana Sucker	T	-	G1	S1	SC	Endemic to Los Angeles basin south coastal streams.	Unlikely
Gasterosteus aculeatus williamsoni	Unarmored Threespine Stickleback	E	E	G5T1	S1	-	Weedy pools, backwaters, and among emergent vegetation at the stream edge in small so. Calif. streams.	Unlikely
Gila orcutti	Arroyo Chub	-	-	G2	S2	SC	Los Angeles basin south coastal streams.	Unlikely
AMPHIBIANS								
Bufo californicus	Arroyo Toad	E	-	G2G3	S2S3	SC	Semi-arid regions near washes or intermittent streams, including valley-foothill and desert riparian, desert wash, etc.	Possible
Rana aurora draytonii	California Red-legged Frog	T	-	G4T2 T3	S2S3	SC	Lowlands & foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation.	Unlikely
Rana muscosa	Mountain Yellow-legged Frog	E	-	G2	S2	SC	Federal listing refers to populations in the San Gabriel, San Jacinto & San Bernardino Mountains only. Always encountered within a few feet of water. Tadpoles may require up to 2 years to complete their aquatic development.	Unlikely
Spea (=Scaphiopus) hammondii	Western Spadefoot	-	-	G3	S3	SC	Occurs primarily in Gr habitats, but can be found in valley-foothill hardwood woodlands in the Central Valley and Coast Ranges from Point Conception, Santa Barbara County south to San Diego County. Rarely observed outside of the breeding season. They breed in vernal pools and other ponds. Has declined substantially throughout its range.	Possible
Taricha torosa torosa	Coast Range Newt	-	-	G5T4	S4	SC	Coastal drainages from Mendocino County to San Diego County.	Unlikely

[17] * = Nesting habitat protected. ** = Wintering site protected.
[18] Federal and State Listings: E = Endangered; T = Threatened; R = Rare; C = Candidate; FSC = Federal Species of Concern. CDFG Listing: SC = California Species of Concern; FP = Fully Protected; SPM = Specially Protected Mammal.
For special-status species definitions see Table 5.6-s 8 through 11 above.
[19] Habitat requirements definitions: Ch = Chaparral; CSS = Coastal Sage Scrub; Gr = Grassland; JTW = Joshua Tree Woodland; PJW = Pinyon-Juniper Woodland; RS/W = Riparian Scrub/Woodland; so. Calif. = southern California.
[20] Likelihood of occurrence based on species' habitat requirements and the presence of required habitat in the project site.
Known = the species has been reported as inhabiting or frequenting the project site;
Likely = Required habitat exists at the project site and has been reported nearby;
Possible = Marginal required habitat exists onsite, and/or required habitat exists in surrounding areas;
Unlikely = Required habitat does not exist at the project site nor does it exist nearby.

Scientific Name	Common Name[17]	Fed.[18]	State	G-Rank	S-Rank	CDFG	Habitat Requirements[19]	Likelihood of Occurrence[20]
REPTILES								
Anniella pulchra pulchra	Silvery Legless Lizard	-	-	G3G4 T3T4 Q	S3	SC	Sandy or loose loamy soils under sparse vegetation. Beneath soil, under stones, logs, debris, or in leaf litter. Inhabits moist soil, dry washes, woodlands, riparian, and scrub types at < 5,000 feet elevation within Coast, Transverse, and Peninsular ranges and northwestern Baja Calif.	Likely
Aspidoscelis tigris stejnegeri	Coastal Western Whiptail	-	-	G5T3 T4	S2S3	-	Found in deserts & semiarid areas w/ sparse vegetation and open areas. Also found in woodland & riparian areas in sandy or gravelly substrate. Occurs in the coastal region of so. Calif. south to central Baja Calif., Mexico. Prey includes terrestrial insects. Has apparently declined due to loss of habitat.	Likely
Charina trivirgata	Rosy Boa	-	-	G4G5	S3S4	-	Habitats with a mix of brushy cover and rocky soil such as coastal canyons and hillsides, desert canyons, washes and mountains.	Likely
Coleonyx variegatus abbotti	San Diego Banded Gecko	-	-	G5T3 T4	S2S3	-	Coastal and cismontane southern California. Found in granite or rocky outcrops in Coastal Sage Scrub and chaparral habitats.	Likely
Emys (=Clemmys) marmorata pallida	Southwestern Pond Turtle	-	E	G3G4 T2T3 Q	S2	SC	Inhabits permanent or nearly permanent bodies of water in many habitat types; below 6,000 ft elev. Occurs in freshwater rivers, streams, lakes, ponds, vernal pools, and seasonal wetlands requiring water depths > 6 feet and basking sites such as logs & banks. Occurs from Monterey Bay south through the Coast Ranges to northern Baja Calif. Current range is similar to the historic range, but populations fragmented by agriculture and urban development.	Unlikely
Phrynosoma coronatum (blainvillei)	San Diego Horned Lizard	-	-	G4T3 T4	S2S3	SC	Inhabits open CSS and Ch in arid and semi-arid climate conditions. Prefers loose, friable soil for burrowing. Has declined due to loss of habitat, over-collecting, and introduction of exotic ants. Occurs in Transverse Ranges in Kern, Los Angeles, Santa Barbara, and Ventura Counties southward into the Peninsular Ranges to Baja Calif.	Likely
Salvadora hexalepis virgultea	Coast Patch-nosed Snake	-	-	G5T3	S2S3	SC	Brushy or shrubby vegetation in coastal so. Calif. Its Calif. range is from San Luis Obispo and Kern Counties south to San Diego County. Inhabits open sandy areas with rocky outcrops within scrub, grassland, and woodland vegetation types. It occurs < 7,000 feet in elevation. Nearest known populations to project site are in the watershed of Santa Clara River.	Likely
Thamnophis hammondii	Two-striped Garter Snake	-	-	G3	S2	SC	Coastal Calif. from vicinity of Salinas to northwest Baja Calif. From sea to about 7,000 ft elevation. Occurs from Monterey County south to northwest Baja Calif. This highly aquatic snake occurs in freshwater marsh and riparian habitats with perennial water. Prey consists of small fishes, frogs, and tadpoles. The nearest known populations to the project site are in the watershed of the Santa Clara River.	Possible

Scientific Name	Common Name[17]	Fed.[18]	State	G-Rank	S-Rank	CDFG	Habitat Requirements[19]	Likelihood of Occurrence[20]
BIRDS								
Accipiter cooperii	**Cooper's Hawk***	-	-	G5	S3	SC	(Nesting) woodland, chiefly of open, interrupted or marginal. An uncommon year-round resident in so. Calif. Prefers woodland habitats but can also be found in virtually any habitat during migration. Typical breeding habitat in so. Calif. consists of riparian and oak woodlands, but also nests in ornamental woodlands provided by parks.	**Known:** Observed by DMEC flying overhead.
Accipiter striatus	Sharp-shinned Hawk*	-	-	G5			(Nesting) Ponderosa Pine, Black Oak, riparian woodland, mixed conifer & Jeffrey Pine habitats. Prefers riparian areas. Fairly common winter resident in so. Calif. and a rare summer resident in the mountains.	Possible
Agelaius tricolor	Tricolored Blackbird*	-	-	G5	S3	SC	(Nesting colony) highly colonial species, most numerous in Central Valley & vicinity. Endemic to Calif.	Unlikely
Aimophila ruficeps canescens	Southern California Rufous-crowned Sparrow	-	-	G5T2 T4	S2	SC	Resident in so. Calif. CSS and sparse Mixed Ch. Prefer slopes with rock outcroppings.	Likely
Ammodramus savannarum	Grasshopper Sparrow	-	-	G5	S2	-	(Nesting) dense grasslands on rolling hills, lowland plains, in valleys & on hillsides on lower mountain slopes. Favors native grasslands with a mix of grasses, forbs & scattered shrubs. Loosely colonial when nesting.	Likely
Amphispiza belli ssp. *belli*	Bell's Sage Sparrow*	-	-	G5T2 T4	S2?	SC	(Nesting) nests in Ch dominated by fairly dense stands of Chamise. Found in CSS, often with stands of cactus (*Opuntia* sp.), in south of range. An uncommon to fairly common local resident in the interior foothills of coastal so. Calif.	Likely
Aquila chrysaetos	Golden Eagle*	Federal Bald Eagle Act.	-	G5	S3	SC, FP	(Nesting & wintering) rolling foothills, mountains, sage-juniper flats, desert. Uncommon year-round resident in so. Calif. Typically nests on rocky cliff ledges or trees, but also rarely on the ground.	Possible
Asio flammeus	Short-eared Owl	-	-	G5	S3	SC	(Nesting) found in swamplands, both fresh and salt; lowland meadows; irrigated alfalfa fields.	Unlikely
Asio otus	Long-eared Owl*	-	-	G5	S3	SC	(Nesting) riparian bottomlands grown to tall willows & cottonwoods; also, belts of oak paralleling stream courses. Uncommon resident in the deserts, and is quite rare coastally. Declined throughout Calif., but the most pronounced reductions have occurred in the southwestern part of the state with a minimum 55 percent decline.	Likely
Athene cunicularia	Western Burrowing Owl	-	-	G4	S2	SC	(Burrow sites) open, dry annual or perennial Gr, deserts & scrublands characterized by low-growing vegetation.	Possible

Scientific Name	Common Name[17]	Fed.[18]	State	G-Rank	S-Rank	CDFG	Habitat Requirements[19]	Likelihood of Occurrence[20]
Baeolophus inornatus	**Oak Titmouse**	-	-	G5	S3?	-	Oak woodlands. Cavity nester.	**Known:** one individual observed by DMEC
Buteo regalis	Ferruginous Hawk**	-	-	G4	S3S4	SC	(Wintering) open Gr, sagebrush flats, desert scrub, low foothills & fringes of PJW. Occurs as a winter resident in Calif. Occupies open, dry habitats such as grasslands, shrublands, rangelands, and, in winter, plowed agricultural fields.	Possible: unlikely to nest onsite, but may occur as rare migrant
Buteo swainsoni	Swainson's Hawk*	-	-	G5	S2	-	(Nesting) breeds in stands with few trees in juniper-sage flats, riparian areas and in oak savannah.	Possible
Calypte costae	Costa's Hummingbird	-	-	G5	S3?	-	(Nesting) desert riparian, desert and arid scrub foothill habitats.	Likely
Campylorhynchus brunneicapillus sandiegensis	Coastal Cactus Wren	-	T	G5T2 T3Q	S2S3	SC	So. Calif. CSS. Wrens require tall *Opuntia* cactus for nesting and roosting.	Unlikely
Carduelis lawrencei	Lawrence's Goldfinch	-	-	G3G4	S3	-	(Nesting) nests in open oak or other arid woodland and chaparral, near water. Nearby herbaceous habitats used for feeding. Closely associated with oak trees.	Likely
Chondestes grammacus	Lark Sparrow	-	-	G5	S?	-	(Nesting). For nesting they prefer edges between grasslands & trees or bushes or open grassy oak woodlands. Scattered trees or shrubs required for lookout, song perches & cover.	Likely
Circus cyaneus	Northern Harrier*	-	-	G5	S3	SC	(Nesting) coastal salt & freshwater marsh. Nest & forage in Gr, from Saltgrass in desert sink to mountain cienagas. Fairly common winter resident in so. Calif., but a very scarce and local breeder. Nests on the ground in a variety of wetland and upland habitats.	Likely
Coccyzus americanus occidentalis	Western Yellow-billed Cuckoo*	C	-	G5T2 Q	S1	-	(Nesting) riparian forest nester, along the broad, lower flood-bottoms of larger river systems.	Unlikely
Dendroica petechia brewsteri	Western Yellow Warbler*	-	-	G5T3?	S2	SC	(Nesting) riparian plant associations. Prefers *Salix*, *Populus*, *Platanus*, & *Alnus* for nesting & foraging.	Possible
Elanus leucurus	White-tailed Kite*	-	-	G5	S3	-	(Nesting) rolling foothills/valley margins w/scattered oaks & river bottomlands or marshes next to deciduous woodland. Uncommon locally, but fairly common year-round resident on the coast of so. Calif. Requires open habitats, such as grasslands, marshlands, and agricultural fields with nearby trees for perching and nesting.	Possible

Scientific Name	Common Name[17]	Fed.[18]	State	G-Rank	S-Rank	CDFG	Habitat Requirements[19]	Likelihood of Occurrence[20]
Empidonax traillii extimus	Southwestern Willow Flycatcher*	E	-	G5T1 T2	S1	-	(Nesting) RW in so. Calif. State listing includes all subspecies. Declined drastically due to a loss of breeding habitat and nest parasitism by Brown-headed Cowbirds. This species occurs in riparian habitats along rivers, streams, or other wetlands. On 12 October 2004, USFWS published a Final Rule designating critical habitat for this species. Approximately 99.8 river miles in Kern, Riverside, San Bernardino, and San Diego counties were designated for this species. The project site is not located within the designated critical habitat area for Southwestern Willow Flycatcher.	Unlikely suitable riparian habitat minimal for nesting requirements.
Eremophila alpestris actia	California Horned Lark	-	-	G5T3	S3	SC	Coastal regions, chiefly from Sonoma to San Diego Co. Also main part of San Joaquin Valley & east to foothills. In so. Calif., this subspecies is a fairly common breeding resident in grasslands and dry, open habitats.	Possible
Falco columbarius	Merlin**	-	-	G5	S3	SC	(Wintering) seacoast, tidal estuaries, open woodlands, savannahs, edges of Gr & deserts, farms & ranches. Uncommon fall migrant and rare winter resident in so. Calif. It prefers open to semi-open habitat for breeding and foraging.	Possible
Falco mexicanus	Prairie Falcon*	-	-	G5	S3	SC	(Nesting) inhabits dry, open terrain, either level or hilly. Uncommon year-round resident in the interior of so. Calif. An increasingly scarce winter resident and very rare summer resident along the coast of so. Calif. Prefers dry open habitats such as grasslands and ag fields.	Possible
Icteria virens	Yellow-breasted Chat	--	-	G5	S3	SC	(Nesting) summer resident; inhabits riparian thickets of willow & other brushy tangles near watercourses.	Unlikely
Lanius ludovicianus	Loggerhead Shrike	-	-	G4	S4	SC	(Nesting) broken woodlands, savannah, PJW, JTW, & RW, desert oases, scrub & washes. Widely distributed across North America but has declined throughout most of its range in recent decades. Has recently declined in its Calif. population. Found perched on fences and posts from which prey items can be seen hanging from a sharp object such as a barbed-wire fence.	Likely
***Picoides nuttallii* (nesting)**	**Nuttall's Woodpecker**	-	-	G5S?	-	-	Prefers mesic habitats. Occupies chaparral plant communities mixed with scrub oak, wooded canyons, and riparian woodlands. Forages on tree trunks, probing crevices and chipping away loose bark.	**Known:** reported by Wendy Langhans (pers. comm. 21 July 2005)

Scientific Name	Common Name[17]	Fed.[18]	State	G-Rank	S-Rank	CDFG	Habitat Requirements[19]	Likelihood of Occurrence[20]
Polioptila californica californica	Coastal California Gnatcatcher	T	-	G3	S2	SC	Obligate, permanent resident of several distinct alliances of CSS below 2500 ft in so. Calif. Brood parasitism by Brown-headed Cowbird and loss of habitat to urban development have caused population decline. On 24 October 2000, USFWS published a Final Rule to designate critical habitat for this species. On 24 April 2003, the USFWS published a Proposed Rule re-evaluating the boundaries. They proposed to designate 495,795 acres of land as critical habitat. The project site is not located within designated or proposed critical habitat areas for this species.	Possible: Prior to Fire, project site provided suitable CSS habitat. When suitable CSS recovers, focused surveys recommended.
Toxostoma redivivum	California Thrasher	-	-	G5S?	-	-	Chaparral-covered foothills.	Likely
Vireo bellii pusillus	Least Bell's Vireo*	E	E	G5T2	S2	-	(Nesting) summer resident of so. Calif. in low riparian near water or dry river bottoms; < 2000 ft. Breeds primarily in riparian habitats dominated by willows (*Salix* spp.) with dense understory vegetation. A dense shrub layer two to ten feet above ground is the most important habitat characteristic for this species. On 2 February 1994, the USFWS published a final critical habitat for this species, designating approx. 37,560 acres of land in Santa Barbara, Ventura, Los Angeles, San Bernardino, Riverside, and San Diego counties, Calif. The project site is not located within the designated critical habitat area.	Unlikely: Simi Fire took suitable habitat. When suitable riparian habitat recovers onsite, focused surveys for this species are recommended.
MAMMALS								
Antrozous pallidus	Pallid Bat	-	-	G5	S3	SC	Deserts, Gr, shrublands, woodlands & forests. Most common in open, dry habitats with rocky areas for roosting. A locally common year-round resident at low elevations throughout most of Calif. Forages primarily on the ground for large insects. Roosting habitat consists of caves, crevices, mines, and occasionally hollow trees and buildings.	Possible
Bassariscus astutus	Ring-tailed Cat	-	-	G5	(S2)	SC, FP	Never far from water. Found in rocky dry areas such as chaparrals and deserts from southwestern Wyoming to central Mexico. Occasionally will live in woodlands. This species makes nests of leaves and grass, and lives in caves, hollow tree trunks, abandoned burrows, or in buildings.	Likely
Corynorhinus townsendii pallescens	Pale Big-eared Bat	-	E	G4T4	S2S3	SC	Lives in a wide variety of habitats but most common in mesic sites. One of two subspecies of Townsend's Big-eared Bat that occur throughout most of Calif. Pale Big-eared Bat occurs in the southern part of the state and occupies a variety of habitats including oak woodlands, arid deserts, grasslands, and high-elevation forests and meadows. Known roosting sites in Calif. include mine tunnels, limestone caves, lava tubes, and buildings. The roosts support larger breeding colonies and are especially susceptible to disturbance.	Possible

Scientific Name	Common Name[17]	Fed.[18]	State	G-Rank	S-Rank	CDFG	Habitat Requirements[19]	Likelihood of Occurrence[20]
Euderma maculatum	Spotted Bat	-	-	G4	S2S3	SC	Occupies a wide variety of habitats from arid deserts and Gr through mixed conifer forests. Feeds over water and along washes. Needs rock crevices in cliffs or caves for roosting.	Unlikely
Eumops perotis californicus	Western Mastiff Bat	-	-	G5T4	S3?	SC	Many open, semi-arid to arid habitats, including conifer & deciduous woodlands, CSS, Gr, & Ch. An uncommon year-round resident at low elevations in California. The largest bat in North America, roosts in small colonies in crevices on cliff faces or very large boulders. This species forages over far distances from roost sites and can forage as high as 2,000 feet above ground.	Likely
Puma concolor	Mountain Lion	FSC	-	G5	(S3)	SC, SPM	From sea level to 10,000 feet. Typical habitat is steep, rocky canyon country, or mountainous terrain. Male territories range from 15 to 30 square miles, and females range from 5 to 20 square miles, depending on the number of young. They may hunt in a radius of 30 to 50 miles. Mountain Lion territory sometimes is not one large area, but rather several separate ones connected by pathways.	Likely
Lepus californicus bennettii	San Diego Black-tailed Jackrabbit	-	-	G5T3?	S3?	SC	Intermediate canopy stages of shrub habitats & open shrub / herbaceous & tree / herbaceous edges.	Possible
Macrotus californicus	California Leaf-nosed Bat	-	-	G4	S2S3	SC	Desert riparian, desert wash, desert scrub, desert succulent scrub, alkali scrub & palm oasis habitats. Known to occur from Riverside, Imperial, San Diego, and San Bernardino counties south to the Mexican border. Former populations have disappeared from coastal basins, in Los Angeles to San Diego counties. Prefers to roost in caves and mines, but may also roost in bridges or buildings.	Possible
Myotis yumanensis	Yuma Myotis	-	-	G5	S4?	-	Optimal habitats are open forests & woodlands w/ sources of water over which to feed. A common and widespread year-round resident in Calif. Found near ponds, stream, and lakes. Roosting habitat consists of buildings, mines, caves, crevices, and under bridges.	Possible
Neotoma lepida intermedia	**San Diego Desert Woodrat**	-	-	G5T3?	S3?	SC	Coastal so. Calif. from San Diego to San Luis Obispo Counties. Occupies arid areas with sparse vegetation (Coastal Sage Scrub and Desert Scrub). This subspecies of Desert Woodrat is restricted to the Pacific slope in a range that stretches from SLO County to northwestern Baja Calif.	**Known/ Detected**: Nest observed by DMEC in the northern portion of project site.
Onychomys torridus ramona	Southern Grasshopper Mouse	-	-	G5T3?	S3?	SC	Desert areas, especially scrub habitats with friable soils for digging. Prefers low to moderate shrubs.	Possible
INVERTEBRATES								
Danaus plexippus	Monarch Butterfly	-	-	G5	S3	-	Winter roost sites extend along the coast from northern Mendocino to Baja Calif., Mexico.	Possible

Observed Special-Status Wildlife Species

DMEC observed three special-status wildlife species. A brief description of the special-status wildlife resources observed during the biological resources surveys are presented in the following paragraphs.

*Cooper's Hawk (*Accipiter cooperii*)*

Cooper's Hawk is a California Species of Concern. DMEC observed one individual Cooper's Hawk flying overhead onsite during biological surveys. This raptor has a long, rounded, and barred tail, and short rounded wings. Its back is dark gray or gray-brown, with underparts barred reddish and white. Cooper's Hawk is an uncommon year-round resident in southern California. The Cooper's Hawk prefers woodland habitats but can also be found in virtually any habitat during migration. Typical breeding habitat in southern California consists of riparian and oak woodlands, but it also nests in ornamental woodlands provided by parks and other urban habitats. This medium-sized hawk preys primarily on medium-sized birds and mammals. The project site provides suitable foraging, as well as nesting habitat for the Cooper's Hawk.

Cooper's Hawks live in dense canopied evergreen and deciduous forests or in riparian zones throughout southern Canada and the continental United States (The Peregrine Fund World Center for Birds of Prey at http://www.peregrinefund.org/Explore_Raptors/hawks/cooperhk.html). Declines of the Cooper's Hawk in the late 1940s and 1950s were blamed on DDT and pesticide contamination. Populations started increasing in the late 1960s, but it is still listed as threatened or of special concern in a number of states. Thi species appears to be adapting to breeding in urban areas, which may help increase populations. (Cornell Lab of Ornithology 2003 at http://www.birds.cornell.edu/programs/AllAboutBirds/BirdGuide/Coopers_Hawk.html.)

*Barn Owl (*Tyto alba*) Nest*

A Barn Owl (*Tyto alba*) was observed flying from a nest in a Coast Live Oak tree onsite in the south central portion of the project site. The nest appeared to be occupied and active. Although Barn Owl has no protection as a species, all raptor nests are protected by the California Fish and Game Code Section 3503.5. Barn Owl has a body length of 14 - 20 inches, a $3^1/_2$-foot wingspan, and weighs 8 - 21 ounces. Barn Owls are nearly cosmopolitan, living in North America, South America, Europe, Africa, India, Southeast Asia, and Australia. Their northern range is limited by the severity of winter weather and food availability. These owls prefer open lowlands with some trees, including farmlands, plantations, urban areas, various forest types, semiarid shrub lands, and marshes. (The Peregrine Fund World Center for Birds of Prey athttp://www.peregrinefund.org/Explore_Raptors/owls/barnowl.html.)

*Oak Titmouse (*Baeolophus inornatus*)*

An Oak Titmouse was also observed by DMEC in a Coast Live Oak tree onsite in the south central portion of the project site. This species is listed with a Global-rank of G5, and a State-rank of S3?. Oak Titmouse lives year-round in warm, dry, intact oak or oak-pine woodlands. Loss of natural cavities for this sedentary species is affecting populations. Oak Titmouse is brownish-gray tinged with a plain face and short crest, and measures 5.75 inches in length. Oak

Titmouse gives a repeated series of three to seven syllables, each comprised of one low and one high note. Its year-round range is from southwest Oregon through California to northwestern Baja California, Mexico, where it breeds in low to middle elevations. Though the bird clearly prefers open oak and pine-oak woodlands, populations have adapted locally to warm, dry environments without oaks. It nests in mostly natural cavities and sometimes in old woodpecker holes. Females build nests with grass, moss, feathers, shredded bark, and other material mostly from mid-March through April. The bird requires an elevated perch from which to forage, and changes its feeding strategy to correspond with the seasons. Oak Titmouse declined 1.9% per year throughout California from 1980 through 1996. Oak Titmouse experienced a 1.6% annual decline in the California foothills from 1966 through 1996. Habitat loss from development is the greatest threat to the species. (Summarized from National Audubon Society [2002] available at: http://audubon2.org/webapp/watchlist/viewSpecies.jsp?id=148.)

*Nuttall's Woodpecker (*Picoides nuttallii*)*

A Nuttall's Woodpecker was observed at Towsley Park by Wendy Langhans, with the Mountains Recreation and Conservation Authority (Wendy Langhans, pers. comm. 21 July 2005). This species is listed with a Global-rank of G5S?. Nuttall's Woodpecker is a small black and white woodpecker 6.75 inches in length with a black-and-white barred back, wings and outer tail. The underparts are white with spotted flanks, and the face is black and white with white patch above bill (rear crown patch is red in males). This bird is resident from northern California to Baja California. Scrub oak communities, oak woodlands, and streamside growth are the preferred habitats of this species (Field Guide to Birds of North America, 2002-2005, Mitch Waite Group, available at: http://identify.whatbird.com/obj/182/_/Nuttalls_Woodpecker.aspx). Nuttall's Woodpecker behaves like large nuthatches, foraging on the trunks and branches of oaks and other trees, creeping diagonally as they search in crevices and underneath bark. They often hang upside down under limbs as they probe for insect prey (http://www.mbr-pwrc.usgs.gov/id/framlst/i3970id.html).

*San Diego Desert Woodrat (*Neotoma lepida intermedia*) Nest*

San Diego Desert Woodrat (*Neotoma lepida intermedia*) is a California Species of Concern. A nest of this rodent was observed by DMEC during small mammal trapping onsite, but the species was not observed nor did small mammal trapping confirm its presence except for the observation of the apparently active nest. San Diego Desert Woodrat has a compact body, long tail, large ears, and large, slightly bulging, black eyes. Their feet are strongly built for grasping. This species has a pale to dark gray wash with yellow above, light undersides, grayish to yellowish below, and gray at the base of the throat region. Their tail, over half of the body length, is distinctively bicolored. Their hind feet are white. These woodrats live in high desert areas, chaparral, sagebrush flats, and Pinyon-Juniper Woodland. San Diego Desert Woodrat is vulnerable to predation by coyotes, raccoons, owls, gopher and rattlesnakes, and hawks. Populations may be impacted by habitat loss to agricultural and urban development, isolation, fragmentation of habitats, and wildfires, especially in cactus areas. (Aquarium of the Pacific Animal Data Base 2005.)

SECTION 5. PROJECT IMPACTS

This section contains a discussion of the possible environmental effects of the proposed project for the specific issue areas that were identified, through the Initial Study process, as having the potential to experience significant impacts.

The assessment of each issue area begins with an introduction that summarizes the environmental effects considered for that issue area. This is followed by the issue area setting and impact analysis. Within each impact analysis, the first subsection identifies the criteria and significance thresholds. The significance thresholds are those criteria adopted by Los Angeles County or other agencies, and are universally recognized or developed specifically for impact analyses to determine whether potential effects are significant or less than significant.

Following criteria and significance thresholds, the next subsection describes each specific impact of that issue area related to the proposed project. Each issue area impact under consideration is separately listed with a discussion of that impact. Each impact listing contains a significance determination for the environmental impact.

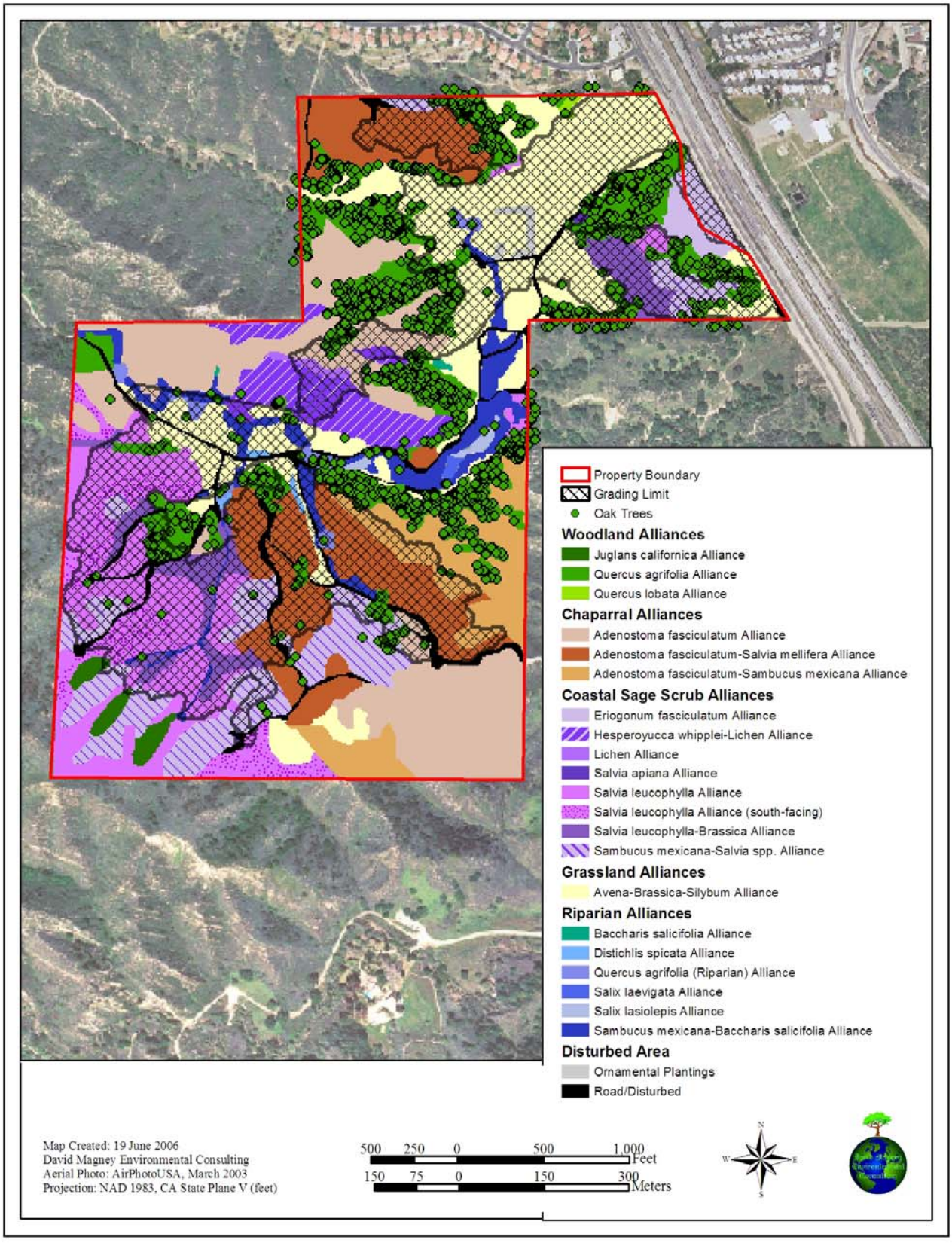
A residual effect is the level of significance remaining after the implementation of the recommended mitigation measures. In those cases where the mitigation measure for an impact could have a significant environmental impact in another issue area, this impact is discussed as a residual effect.

The impact analysis for each issue area concludes with a discussion of cumulative effects, which evaluates the impacts associated with the project in conjunction with other future development in the area. Growth-inducing impacts are also discussed.

Each impact presented in this section will have associated mitigation measure(s) as appropriate, which are provided in the following section (Section 6, Mitigation Measures). Each impact number matches its corresponding mitigation measure in Section 6.

The project site will be mass-graded in one phase, with a total grading volume of 3.8 million cubic yards, which will be balanced on-site. The impacts of the proposed grading activities will result in several impacts, which are all addressed separately in the following subsections. Figure 21, Grading Impacts to Lyons Canyon Ranch Vegetation, including Trees, provides an illustration of the general impacts to the project site in terms of biological resources, such as the natural vegetation and important trees onsite. Mitigations for these impacts resulting from the proposed grading activities are presented in Section 6. Since all impacts associated with the grading are addressed separately here in Section 5, the mitigation measures that are associated with those impacts are also addressed separately in Section 6. (Refer to the Oversized Maps at the end of this report for the Lyons Canyon Ranch Site Plans.)

Figure 21. Grading Impacts to Lyons Canyon Ranch Vegetation, including Trees



IMPACTS TO TREES AND SENSITIVE WOODLAND HABITAT

Loss of Southern California Black Walnut Woodland

The sensitive Southern California Black Walnut Woodland plant community observed onsite is also classified as *Juglans californica* var. *californica* Alliance. Approximately 1.89 acres of Southern California Black Walnut Woodland exists onsite. Of the 1.89 acres, approximately 0.08 acre will be impacted (4.2%) as a result of the Lyons Canyon Ranch project, and 1.8 acres will be preserved.

Level of Significance Before Mitigation: Significant

Loss of Oak Trees, Coast Live Oak Woodland, Coast Live Oak Riparian Woodland, and Valley Oak Woodland

The project site contains 1,409 oak trees, primarily consisting of *Quercus agrifolia* var. *agrifolia* (Coast Live Oak) (prior to the Simi Fire of October 2003). Many of these trees have been damaged or killed by the fire, but a complete assessment of post-fire conditions has not been performed; therefore, the impact assessment is based conservatively (more inclusively) upon pre-fire conditions.

A detailed GIS database was developed by DMEC for the assessed oak trees, which was used to determine which trees, by type, would be affected directly or indirectly by various project configurations and alternatives.

The following are oak tree definitions used here to determine oak tree impacts:

- ***Lost Tree:*** Any tree, the centerpoint of which is located within the grading limits of the project.
- ***Encroached Tree:*** Any tree, the protected zone of which is located within the grading limits of the project.
- ***Avoided Tree:*** Any tree that is neither lost nor encroached.
- ***Protected Zone:*** "…area within the dripline of an oak tree and extending there from to a point at least five feet outside the dripline, or 15 feet from the trunks of a tree, whichever distance is greater…" (Los Angeles County Oak Tree Ordinance 22.56.2060).

Based on the oak tree assessment and GIS database developed for the assessed oak trees, the number of oak trees potentially affected by the proposed project is calculated in Table 15, Impacts of Project on Onsite Oak Trees, which lists the trees by species. (Refer to DMEC's *Oak Tree Assessment for Lyons Canyon Ranch* [DMEC 2004b] for a more detailed account of the oak trees existing onsite.)

A total of 1,409 oak trees meeting the Los Angeles County definition are documented to have occurred onsite prior to the Simi Fire of October 2003, as listed by species in Table 15 and illustrated in DMEC's oak tree report. Of these 1,409 oak trees onsite, the proposed project is expected to directly impact (or result in the loss of) 179 oak trees, and is expected to indirectly impact (encroach upon) 75 oak trees as a result of grading activities onsite. The remaining 1,155 oak trees would be avoided by the proposed project and preserved in the open space preserve areas of the site or in small internal park areas containing the retained trees.

Heritage oak trees onsite are summarized in Table 16, Impacts of Project on Onsite Heritage Oak Trees. The location of heritage oaks that would potentially be impacted by the proposed project is illustrated in the oak tree report (DMEC 2004b).

Table 15. Impacts of Project on Onsite Oak Trees[21]

Scientific Name	Common Name	Number of Lost Trees	Number of Encroached Trees	Number of Avoided Trees	Total Number
Quercus agrifolia ssp. *agrifolia*	Coast Live Oak	168(1)	69	1,126	1,363(1)
Quercus berberidifolia	Scrub Oak	5	1	19	25
Quercus lobata	Valley Oak	6	5	10(1)	21(1)
	Total:	**179(1)**	**75**	**1,155(1)**	**1,409(2)**

Table 16. Impacts of Project on Onsite Heritage Oak Trees

Scientific Name	Common Name	Number of Lost Heritage Trees	Number of Encroached Heritage Trees	Number of Avoided Heritage Trees	Total Number of Heritage Trees
Quercus agrifolia ssp. *agrifolia*	Coast Live Oak	17	8	52	77
Quercus berberidifolia	Scrub Oak	0	0	0	0
Quercus lobata	Valley Oak	0	3	2(1)	5(1)
	Total:	**17**	**11**	**54(1)**	**82(1)**

A total of 17 heritage-size Coast Live Oak trees will be lost as a result of the proposed project, and 8 heritage Coast Live Oak trees will be encroached upon as a result of the proposed project. None of the heritage-sized Valley Oak trees would be lost from the proposed project; however, 3 heritage Valley Oak trees will be encroached upon as a result of the proposed project.

The loss of 179 oak trees, including 17 heritage-size trees, is considered a *significant* impact.

The impact assessment for impacts to the sensitive Coast Live Oak Woodland, Coast Live Oak Riparian Woodland, and Valley Oak Woodland plant communities observed onsite (shown above on Figure 21) is as follows:

- Approximately 38.42 acres of **Coast Live Oak Woodland (upland)** currently exist onsite. Of the 38.42 acres, approximately 7.87 acres will be impacted (20.5%) as a result of the project and 30.55 acres will be preserved.
- Approximately 1.65 acres of **Coast Live Oak Riparian Woodland** exist onsite. Of the 1.65 acres, approximately 0.92 acres will be impacted (55.8%) as a result of the proposed project and 0.73 acre will be preserved.
- Approximately 0.23 acres of **Valley Oak Woodland** exist onsite. Of the 0.23 acres, approximately 0.03 acres will be impacted (13.0%) as a result of the proposed project and 0.20 acre will be preserved.

The loss of 7.87 acres of Coast Live Oak Woodland, 0.92 acre of Coast Live Oak Riparian Woodland, and 0.03 acre of Valley Oak Woodland (totaling 8.82 acres of impacts to oak woodland plant communities) is considered a *significant impact*.

Level of Significance Before Mitigation: Significant

[21] Trees in parentheses indicate trees that were dead pre-fire. This table includes all oak trees onsite, including Heritage oak trees.

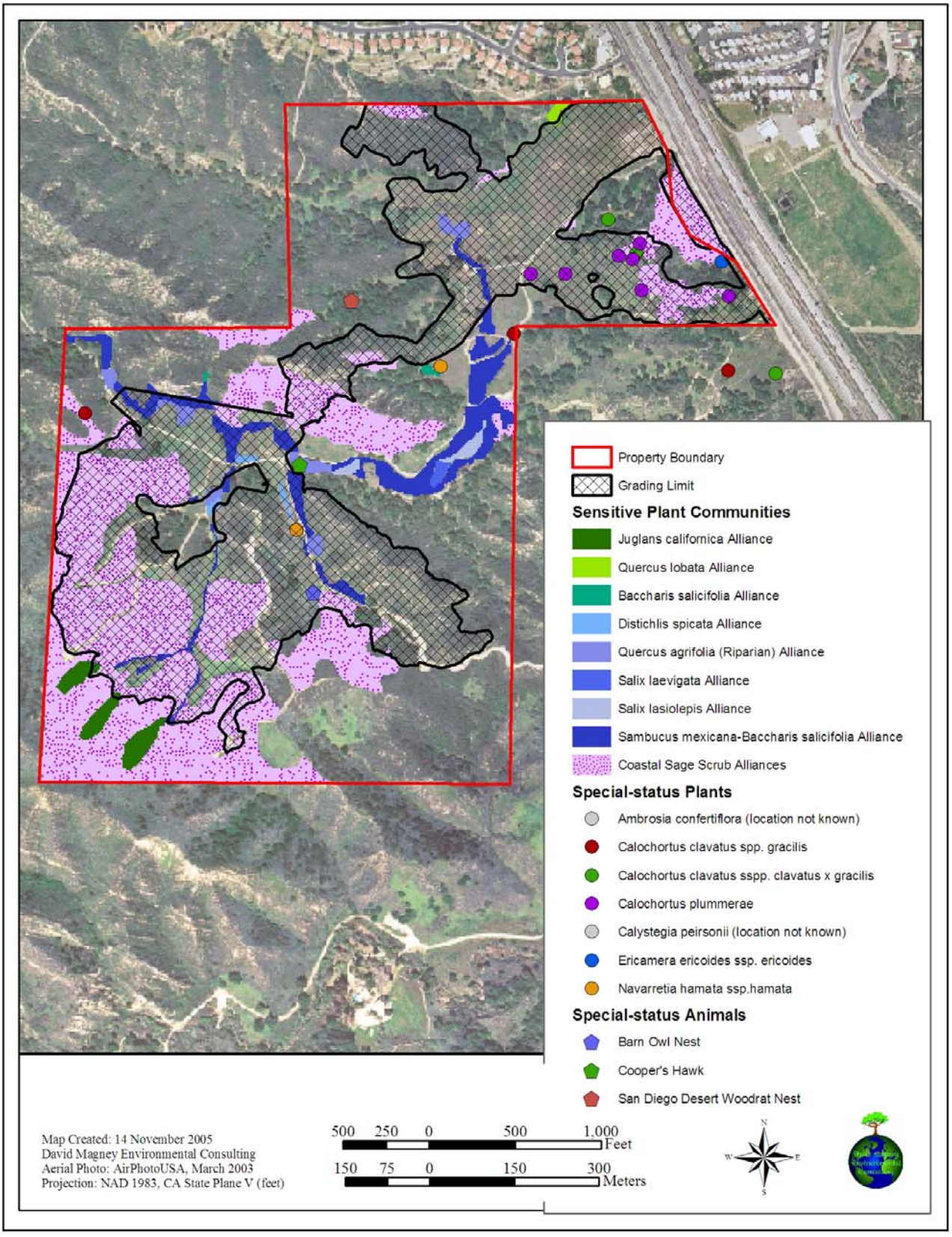
IMPACTS TO BIOLOGICAL LIFE HISTORY

Direct Impacts to Special-Status Plant Species

No federally or state listed plant species were observed at Lyons Canyon Ranch; however, 27 special-status plant species have the potential to occur in the vicinity of the project site. Of these 27 special-status plant species, 24 are tracked for the Lyons Canyon Ranch vicinity by CDFG's (2005) CNDDB RareFind3, while the remaining three (3) are considered species of local concern (Boyd 1999, Magney 2001). Figure 22, Grading Impacts to Special-Status Species Observed at Lyons Canyon Ranch, illustrates the impacts to the special-status plant species observed onsite. Seven (7) special-status plant species were ***observed*** (are known) onsite, including:

- ***Ambrosia confertiflora*** **(Weakleaf Burweed):** This species was observed by BonTerra Consulting onsite. No indication was provided as to the location or population size observed onsite. The population found on Lyons Canyon Ranch represents the northernmost known occurrence of *Ambrosia confertiflora* in Los Angeles County and one of only eight known populations (based on Jepson Herbarium database search) in the County. Only one (likely extirpated) population is known in Ventura County (Marr Ranch in Simi Valley – *A.C. Sanders 22916* UCR).
- ***Calochortus clavatus*** **var.** ***gracilis*** **(Slender Mariposa Lily):** This species is a CNPS List 1B species. All known occurrences are in Los Angeles County, with many locations in the Liebre Mountains. Approximately 600 individuals of *Calochortus clavatus* var. *gracilis* were observed by BonTerra Consulting and Bowland & Associates in the northeastern portion of the project site south of Lyons Ranch Road, in the middle portion of the project site on the southeast side of "Lyons Ranch Road", and in the southeastern corner of the project site just west of The Old Road (Figure 20).
- ***Calochortus plummerae*** **(Plummer's Mariposa Lily):** This species is a CNPS List 1B species. Twenty-six (26) individuals of *Calochortus plummerae* were observed by Bowland & Associates, and approximately 1,100 individuals were observed by BonTerra Consulting. These individuals were observed in the southeastern corner of the project site just west of The Old Road, in the mid-eastern portion of the project site, and in the northeastern portion near the intersection of The Old Road and Lyons Ranch Road.
- ***Calystegia peirsonii*** **(Peirson's Morning-glory):** This species is a CNPS List 4 species. *Calystegia peirsonii* occurs in the San Gabriel and Liebre Mountains and in the Antelope Valley. It was known only from a few collections prior to 1970 (Boyd 1999), but it is now believed to be more abundant in Coastal Sage Scrub throughout the Newhall-Mint Canyon region. Occasional individuals were observed by BonTerra Consulting. No location was indicated onsite.

Figure 22. Grading Impacts to Special-Status Species Observed at Lyons Canyon Ranch



- ***Ericameria ericoides* ssp. *ericoides* (Mock Heather):** This species is a species of local concern (Boyd 1999, Magney 2001). *Ericameria ericoides* typically occurs along the coast, and its presence this far inland represents a significant disjunction and extralimital occurrence. One (1) individual of this species was observed by DMEC on the eastern edge of the project site, along The Old Road, growing with *Eriogonum fasciculatum* var. *fasciculatum* (California Buckwheat). It is possible that its presence along The Old Road represents a waif that was included in a hydroseed mulch applied for erosion control immediately south of Lyon Canyon, along with the non-indigenous *E. fasciculatum* at this site.
- ***Juglans californica* var. *californica* (Southern California Black Walnut):** This species is a CNPS List 4 species. Occasional individuals (a few small stands) were observed by BonTerra Consulting and DMEC in the southwestern corner of the project site.
- ***Navarretia hamata* ssp. *hamata* (Skunk Navarretia):** This species is a species of local concern (Boyd 1999, Magney 2001). Approximately 50 individuals of *N. hamata* ssp. *hamata* were observed by DMEC near the "empty pond" in the middle portion of the project site in Ruderal Grassland Alliance. This taxon is treated as a locally rare species onsite, as it is considered a locally rare species in Ventura County (Magney 2005) and is not reported in the Liebre Mountains flora by Boyd (1999). No collections are reported this far north in Los Angeles County in the Jepson Herbarium online database for this variety.

Table 17, Observed Sensitive Plant Species Impacts Matrix, lists all plant species observed on the Lyons Canyon project site, and provides an analysis of habitat suitability and loss, edge effects, reduction of population sizes, restriction of range, and significance of the impact to each species. Figure 22, Grading Impacts to Special-Status Species Observed at Lyons Canyon Ranch (provided above), shows the footprint of the project in relation to the location of observed sensitive species onsite.

Six (6) of the 27 special-status plant species are *likely* to occur at Lyons Canyon Ranch. Species that are likely to occur onsite have required habitat existing at the project site and the species has been reported nearby, and they include:

- *Aster greatae* (Greata's Aster);
- *Erodium macrophyllum* (Round-leaved Filaree);
- *Horkelia cuneata* ssp. *puberula* (Mesa Horkelia);
- *Lepidium virginicum* var. *robinsonii* (Robinson's Pepper-grass);
- *Nolina cismontana* (Chaparral Nolina); and
- *Senecio aphanactis* (Rayless Ragwort).

There is potential to impact these special-status plant species that are likely to occur onsite as a result of the Lyons Canyon Ranch project.

Table 17. Observed Sensitive Plant Species Impacts Matrix

Species Scientific and Common Names:	***Ambrosia confertiflora* (Weakleaf Burweed)** (No location provided by BonTerra)	***Calochortus clavatus* var. *gracilis* (Slender Mariposa Lily)**	***Calochortus plummerae* (Plummer's Mariposa Lily)**
Habitat present and species is reasonably expected to occur on-site? (YES/NO)	Yes	Yes	Yes
Species impacted directly by habitat loss? (YES/NO)	Unknown	Yes	Yes
Habitat loss substantial? (YES/NO)	Yes	Yes	Yes
Species impacted indirectly on adjacent lands by edge effects? (YES/NO)	Potentially	Yes	Yes
Potential to eliminate species on-site? (YES/NO)	Yes	No	No
Potential to reduce population size below self sustaining levels? (YES/NO)	No	No	No
Potential for substantial reduction in numbers of individuals? (YES/NO)	Unknown	No	Yes
Potential restriction of range of rare or endangered species? (YES/NO)	Yes	No	No
Impact significant? (YES/NO)	Potentially	Yes	Yes
Mitigation:	Additional surveys, seed collection/propagation	Translocation	Translocation

Species Scientific and Common Names:	***Calystegia peirsonii* (Peirson's Morning-glory)** (No location provided by BonTerra)	***Ericameria ericoides* ssp. *ericoides* (Mock Heather)**	***Juglans californica* var. *californica* (Southern California Black Walnut)**	***Navarretia hamata* ssp. *hamata* (Skunk Navarretia)**
Habitat present and species is reasonably expected to occur on-site? (YES/NO)	Yes	Yes	Yes	Yes
Species impacted directly by habitat loss? (YES/NO)	Unknown	No	Yes	Yes
Habitat loss substantial? (YES/NO)	Yes	No	Yes	Yes
Species impacted indirectly on adjacent lands by edge effects? (YES/NO)	Potentially	Yes	Yes	Yes
Potential to eliminate species on-site? (YES/NO)	Yes	No	No	Yes
Potential to reduce population size below self-sustaining levels? (YES/NO)	Unknown	No	No	Yes
Potential for substantial reduction in numbers of individuals? (YES/NO)	Yes	No	No	Yes
Potential restriction of range of rare or endangered species? (YES/NO)	No	Yes	No	No
Impact significant? (YES/NO)	Potentially	Yes	Yes	Yes
Mitigation:	Additional surveys, seed collection/propagation	Seed collection/propagation	Seed collection/propagation	Seed collection/propagation

Loss of Ambrosia confertiflora *(Weakleaf Burweed) Plants Known Onsite*

Ambrosia confertiflora was observed onsite; however, the exact location was not reported by BonTerra Consulting. The population found on Lyons Canyon Ranch represents the northernmost known occurrence of *Ambrosia confertiflora* in Los Angeles County and one of only eight known populations (based on Jepson Herbarium database search) in the County. Only one (likely extirpated) population exists in Ventura County (Marr Ranch in Simi Valley – *A.C. Sanders 22916* UCR). The loss of individual *Calystegia peirsonii* plants is considered a significant impact.

Level of Significance Before Mitigation: Significant

Loss of Special-Status Calochortus *Species Known Onsite*

Two special-status species of *Calochortus* were observed at the project site:

- *Calochortus clavatus* var. *gracilis* (Slender Mariposa Lily): This species is a CNPS List 1B species. Approximately 600 individuals of *Calochortus clavatus* var. *gracilis* were observed by BonTerra Consulting and Bowland & Associates in the northeastern portion of the project site south of Lyons Ranch Road, in the middle portion of the project site on the southeast side of "Lyons Ranch Road", and in the southeastern corner of the project site just west of The Old Road.
- *Calochortus plummerae* (Plummer's Mariposa Lily): This species is a CNPS List 1B species. Twenty-six (26) individuals of *Calochortus plummerae* were observed by Bowland & Associates, and approximately 1,100 individuals were observed by BonTerra Consulting. These individuals were observed in the southeastern corner, in the mid-eastern portion, and in the northeastern portion near the intersection of The Old Road and Lyons Ranch Road.

Slender Mariposa Lily and Plummer's Mariposa Lily are CNPS List 1B species, which are considered rare, threatened, or endangered in California and elsewhere. Impacts to these species are considered significant. These species have met the criteria of Section 15380 of the *CEQA Guidelines*, which states that species that are not formally listed by the USFWS or CDFG can be treated as if they are listed if they meet the definition of Threatened or Endangered. Impacts to a CNPS List 1B species would be considered significant depending on the size of the population located within the impact area.

The proposed project would impact several individual *Calochortus clavatus* var. *gracilis* plants, which is considered a *significant impact*.

The proposed project would impact approximately 45 individual *Calochortus plummerae* plants, which is considered a *significant impact*.

Level of Significance Before Mitigation: Significant

Loss of Calystegia peirsonii *(Peirson's Morning-glory) Plants Known Onsite*

Calystegia peirsonii (Peirson's Morning-glory) was observed onsite; however, the exact location was not reported by BonTerra Consulting. This species is a CNPS List 4 species and considered to have limited distribution.

The loss of individual *Calystegia peirsonii* plants is considered a significant impact.

Level of Significance Before Mitigation: Significant

Loss of Ericameria ericoides *ssp.* ericoides *(Mock Heather) Plants Known Onsite*

This species is a species of local concern (Boyd 1999). *E. ericoides* ssp. *ericoides* typically occurs along the coast, and its presence this far inland represents a significant disjunction and extralimital occurrence. One (1) individual of this species was observed by DMEC on the eastern edge of the project site, along The Old Road. The loss of individual *Ericameria ericoides* ssp. *ericoides* plants is considered a significant impact.

Level of Significance Before Mitigation: Significant

Loss of Juglans californica *var.* californica *(Southern California Black Walnut) Plants Known Onsite*

Juglans californica var. *californica* (Southern California Black Walnut) was observed onsite. This species is a CNPS List 4 species and considered to have limited distributions. Southern California Black Walnut Woodland is considered a sensitive plant community. The proposed project would impact approximately 0.08 acre of Southern California Black Walnut Woodland. The loss of individual *Juglans californica* var. *californica* plants is considered a significant impact.

Level of Significance Before Mitigation: Significant

Loss of Navarretia hamata *ssp.* hamata *(Skunk Navarretia) Plants Known Onsite*

This species is a species of local concern (Boyd 1999). Approximately 50 individuals of *N. hamata* ssp. *hamata* were observed by DMEC near the "empty pond" in the middle portion of the project site in Ruderal Grassland Alliance. This taxon is treated as a locally rare species onsite, as it is considered a locally rare species in Ventura County (Magney 2005) and is not reported in the Liebre Mountains flora by Boyd (1999). No collections are reported this far north in Los Angeles County in the Jepson Herbarium online database for this variety. The loss of individual *N. hamata* ssp. *hamata* plants is considered a significant impact.

Level of Significance Before Mitigation: Significant

Loss of Rare Plants Potentially Occurring Onsite

Several special-status plant species are likely to occur onsite but have not been detected during the field surveys conducted onsite. The rare plant species that are likely to occur onsite include: *Aster greatae*, *Erodium macrophyllum*, *Horkelia cuneata* ssp. *puberula*, *Lepidium virginicum* var. *robinsonii*, *Malacothamnus davidsonii*, *Nolina cismontana*, and *Senecio aphanactis*. Since it is likely for these plants to be present, impacts to them would be considered significant.

Level of Significance Before Mitigation: Potentially Significant

Indirect Impacts to Special-Status Plant Species

Impacts of Increased Dust and Urban Pollutants on Special-Status Plant Species

Grading activities would disturb soils and result in the accumulation of dust on the surface of the leaves of trees, shrubs, and herbs. The respiratory function of the plants in the area would be impaired when dust accumulation is excessive. Dust that coats the leaves of plants has the potential to decrease plant vigor substantially, resulting in a decrease in habitat structure, diversity, and function. These adverse impacts could reduce any current native vegetation below self-sustaining levels onsite. Therefore, the indirect effect of project construction on the native vegetation in the immediate vicinity of the construction area would be *significant* and would require mitigation

Additional impacts on the biological resources in the area could occur as a result of changes in water quality and water velocity. Urban runoff from the proposed development site, containing petroleum residues and the improper disposal of petroleum and chemical products from construction equipment (temporary) or residential areas (i.e. cars, improper disposal of chemicals) (permanent), could have the potential to adversely affect water quality. Negatively affected water quality in turn could affect populations of aquatic species (fish and amphibians), as well as those that use riparian areas (amphibians, reptiles, birds, and mammals) onsite and in downstream (offsite) habitats. Water quality could also be adversely affected by runoff of nutrients from urban development. These impacts are considered *potentially significant.*

Level of Significance Before Mitigation: Potentially Significant

Impacts of Invasive Exotic Plant Species Introduction into Natural Plant Communities

The proposed project will include landscaping adjacent to the natural vegetation. The landscaping may include ornamental species that are known to be particularly invasive. Subsequent homeowners may also plant invasive plant species in their yards. Seeds or propagules from invasive planted species may escape to natural areas and degrade the native vegetation, particularly along downstream riparian areas. These impacts would be considered *adverse* and *potentially significant* considering the two SEAs on the project site.

Level of Significance Before Mitigation: Potentially Significant

Impacts to General Wildlife Species

The identified potential impacts to wildlife species, as a result of the Lyons Canyon Ranch project, include the following:

- Permanent loss of, or temporary impacts to, any aquatic or terrestrial wildlife species, due to the use of heavy equipment and temporary streambed alteration at the project site;
- Disturbance of breeding and nesting activities of various songbirds and fall migratory birds depending on the timing of construction; and
- Permanent or temporary impacts to any terrestrial wildlife due to temporary or long-term alteration of aquatic habitat; temporary loss of foraging and cover habitat; and temporary reductions in food sources for aquatic, semi-aquatic, and terrestrial wildlife species.

Loss of and Disturbance to Aquatic/Semi-aquatic Wildlife During Construction

Aquatic wildlife are not present onsite for most of the year; however, these resources may be present when water is flowing in Lyon Canyon Creek and its tributaries during the winter and early spring months. The potential for harm to, or permanent loss of, aquatic wildlife species is high since portions of the drainages onsite will be filled during construction activities associated with the development of Lyons Canyon Ranch. Permanent and temporary streambed alterations and filling by heavy equipment, in an active stream channel, create potential for increased erosion, sedimentation, and water turbidity levels, and it reduces the ecological integrity of an otherwise functional Riverine habitat.

The potential for impacts to aquatic wildlife species inhabiting the Riverine and Palustrine habitats onsite may increase in significance if project construction is conducted during seasons of peak channel flows. If construction activities are performed in the presence of active flows, several additional issues - including soil compaction, new channel morphology, potential for increased channel sedimentation and deposition, increased water turbidity levels, and increased erosion due to unstable bank soils - need to be addressed in order to ensure that as much of the aquatic and riparian habitats as possible remains intact and sustainable after construction activities have ceased.

Level of Significance Before Mitigation: Potentially Significant

Loss of and Disturbance to Amphibian Wildlife During Construction

Amphibian wildlife are present onsite year-round, and are most active when flows are present onsite. The potential for harm to, or permanent loss of, amphibian wildlife species is high since portions of the drainages onsite will be filled during construction activities associated with the development of Lyons Canyon Ranch. Permanent and temporary streambed alterations and filling by heavy equipment creates potential for increased erosion, sedimentation, and water turbidity levels, and it reduces the ecological integrity of an otherwise functional riparian habitat.

Level of Significance Before Mitigation: Potentially Significant

Loss of and Disturbance to Reptile Wildlife During Construction

Reptile wildlife species are present year round. Species of reptile onsite utilize all habitats existing onsite, especially oak woodland, chaparral, Coastal Sage Scrub, and riparian communities. The potential for harm to, or permanent loss of, reptile wildlife is high since portions of these habitats onsite will be graded during construction activities associated with the development of Lyons Canyon Ranch. Permanent and temporary natural habitat alterations and filling by heavy equipment creates potential for loss of individuals as well as a loss of habitat required by these species.

Level of Significance Before Mitigation: Potentially Significant

Loss of and Disturbance to Breeding and Nesting Birds During Construction

The potential for temporary harm to, or permanent loss of, observed and expected **breeding birds** within the project area still exists, especially with use of heavy equipment during construction. For example, birds (migratory or nesting birds) may be harmed or lost due to vegetation clearing with the use of heavy equipment or brush clearing. Take (killing, disturbance, harassing, etc.) of active bird nests is prohibited by California Fish and Game Code Section 3503, and migratory birds are protected by the Migratory Bird Treaty Act.

Level of Significance Before Mitigation: Potentially Significant

Loss of and Disturbance to Mammal Wildlife During Construction

Vegetation clearing and grading activities will result in the loss of or harm to mammal species that cannot escape the project site. In particular, small (burrowing) mammals hide in shrubs and herbaceous vegetation or in holes when threatened, and may be harmed during vegetation clearing activities. However, larger mammals will flee the area due to construction preparation activities and the mere presence of human beings. Assuming the adjacent habitats are fully occupied, those wildlife species that escape harm from heavy equipment have a high potential for death because of competition with other mammals occupying the habitats the refugees invade.

Level of Significance Before Mitigation: Potentially Significant.

Direct Impacts to Special-Status Wildlife Species

The identified potential impacts to special-status wildlife species, as a result of the Lyons Canyon Ranch project, include those listed above in Impacts to General Wildlife Species.

Sitxy (60) special-status wildlife species have the potential to occur on Lyons Canyon Ranch, based on known occurrences in the vicinity of the project site (refer to Table 14, Special-Status Wildlife Species with Potential to Occur at Lyons Canyon Ranch). No federal or state listed wildlife species were observed at Lyons Canyon Ranch; however, four special-status wildlife species were observed or detected onsite or immediately adjacent to the project site. Three special-status wildlife species were observed or detected by DMEC, including: Cooper's Hawk (*Accipiter cooperi*) flying overhead, San Diego Desert Woodrat (*Neotoma lepida intermedia*) detected by a nest, and Oak Titmouse (*Baeolophus inornatus*). The fourth species, Nuttall's Woodpecker (*Picoides nuttallii*), was observed at Towsley Park by Wendy Langhans, with the Mountains Recreation and Conservation Authority (Wendy Langhans, pers. comm. 21 July 2005). It should also be noted that DMEC observed an occupied Barn Owl (*Tyto alba*) nest in Coast Live Oak (*Quercus agrifolia* ssp. *agrifolia*) onsite.

These species are described briefly below:

- **Cooper's Hawk (*Accipiter cooperii*):** Cooper's Hawk is a California Species of Concern. DMEC observed one individual Cooper's Hawk flying overhead onsite during biological surveys. The project site provides suitable foraging as well as nesting habitat for the Cooper's Hawk. Declines of the Cooper's Hawk in the late 1940s and 1950s were blamed on DDT and pesticide contamination. Populations started increasing in the late 1960s, but it is still listed as threatened or of special concern in a number of states. (Cornell Lab of Ornithology 2003 at http://www.birds.cornell.edu/programs/AllAboutBirds/BirdGuide/Coopers_Hawk.html.)
- **Barn Owl (*Tyto alba*) Nest:** A Barn Owl was observed flying from a nest in a Coast Live Oak tree onsite in the southeastern portion of the project site. The nest appeared to be occupied and active. Although Barn Owl has no protection as a species, all raptor nests are protected by the California Fish and Game Code Section 3503.5.
- **Oak Titmouse (*Baeolophus inornatus*):** An Oak Titmouse was also observed by DMEC in a Coast Live Oak tree onsite in the south central portion of the project site. This species is listed with a Global-rank of G5, and a State-rank of S3?. Though the bird clearly prefers open oak and pine-oak woodlands, populations have adapted locally to warm, dry

environments without oaks. Oak Titmouse declined 1.9% per year throughout California from 1980 through 1996. Oak Titmouse experienced a 1.6% annual decline in the California foothills from 1966 through 1996. Habitat loss from development is the greatest threat to the species. (National Audubon Society [2002] available at: http://audubon2.org/webapp/watchlist/viewSpecies.jsp?id=148 2002 by.)

- **Nuttall's Woodpecker (*Picoides nuttallii*):** A Nuttall's Woodpecker was observed at Towsley Park by Wendy Langhans, with the Mountains Recreation and Conservation Authority (Wendy Langhans, pers. comm. 21 July 2005). This species is listed with a Global-rank of G5S?. Scrub oak communities, oak woodlands, and streamside growth are the preferred habitats of this species (Field Guide to Birds of North America, 2002-2005, Mitch Waite Group, available at: http://identify.whatbird.com/obj/182/_/Nuttalls_Woodpecker.aspx).
- **San Diego Desert Woodrat (*Neotoma lepida intermedia*):** This species is a California Species of Concern. A nest of this rodent was observed by DMEC during small mammal trapping onsite. Populations may be impacted by habitat loss to agricultural and urban development, isolation and fragmentation of habitats, and wildfires, especially in cactus areas (Aquarium of the Pacific Animal Data Base available at http://www.aquariumofpacific.org/ANIMAL_DATABASE/animaldb.asp?id=158).

Temporary harm to, or permanent loss of, any special-status wildlife species observed onsite is considered a *significant impact*; therefore, all potential impacts to special-status wildlife species observed onsite should be avoided and minimized to the maximum extent possible. This project may contribute to this species' habitat destruction and fragmentation, which are ultimately responsible for the continuing decline of these sensitive species.

Table 18, Observed Sensitive Wildlife Species Impacts Matrix, lists the three special-status wildlife species and resources (nest) observed on the Lyons Canyon project site and provides an analysis of habitat suitability and loss, edge effects, reduction of population sizes, restriction of range, and significance of the impact to each species. Figure 22, Grading Impacts to Special-Status Species Observed at Lyons Canyon Ranch (provided above), shows the footprint of the project in relation the location of observed sensitive species onsite.

Table 18. Observed Sensitive Wildlife Species Impacts Matrix

Species Common and Scientific Names:	Cooper's Hawk (*Accipiter cooperii*)	Barn Owl (*Tyto alba*) Nest	San Diego Desert Woodrat (*Neotoma lepida intermedia*)
Habitat present and species is reasonably expected to occur on-site? (YES/NO)	Yes	Yes	Yes
Species impacted directly by habitat loss? (YES/NO)	No	Yes, nest in habitat to be lost	Yes
Habitat loss substantial? (YES/NO)	No	No	Yes
Species impacted indirectly on adjacent lands by edge effects? (YES/NO)	No	No	Yes
Potential to eliminate species on-site? (YES/NO)	No	Nest-Yes	Yes

Species Common and Scientific Names:	Cooper's Hawk (*Accipiter cooperii*)	Barn Owl (*Tyto alba*) Nest	San Diego Desert Woodrat (*Neotoma lepida intermedia*)
Potential to reduce population size below self sustaining levels? (YES/NO)	No	No	No
Potential for substantial reduction in numbers of individuals? (YES/NO)	No	No	Yes
Potential restriction of range of rare or endangered species? (YES/NO)	No	No	Yes
Impact significant? (YES/NO)	Yes	Yes	Yes
Mitigation	Conduct survey prior to construction, Avoid contact with and harm to species; allow to escape	Conduct nest survey prior to construction; avoid contact with and harm to species; allow to escape. Protect nesting activity; 300/100-foot-buffer area	Conduct survey prior to construction; flag off active nests; avoid contact with and harm to species; allow to escape

Of the 60 special-status wildlife species tracked in the project region, 19 special-status wildlife species are *likely* to occur onsite, based on suitable required habitat present onsite, and based on the CNDDB results for special-status wildlife species tracked in the vicinity of the project site (CDFG 2005). The 19 special-status wildlife species *likely* to occur onsite include:

- Silvery Legless Lizard (*Anniella pulchra pulchra*);
- Coastal Western Whiptail (*Aspidoscelis tigris stejnegeri*);
- Rosy Boa (*Charina trivirgata*);
- San Diego Banded Gecko (*Coleonyx variegates abbotti*);
- San Diego Horned Lizard (*Phrynosoma coronatum*);
- Coast Patch-nosed Snake (*Salvadora hexalepis virgultea*);
- Southern California Rufous-crowned Sparrow (*Aimophila ruficeps canescens*);
- Grasshopper Sparrow (*Ammodramus savannarum*);
- Bell's Sage Sparrow (*Amphispiza belli* ssp. *belli*);
- Long-eared Owl (*Asio otus*);
- Costa's Hummingbird (*Calypte costae*);
- Lawrence's Goldfinch (*Caroluelis lawrencei*);
- Lark Sparrow (*Chondestes grammacus*);
- Northern Harrier (*Circus cyaneus*);
- Loggerhead Shrike (*Lanius ludovicianus*);
- California Thrasher (*Toxostoma redivivum*);
- Ring-tailed Cat (*Bassariscus astutus*);
- Western Mastiff Bat (*Eumops perotis californicus*); and
- Mountain Lion (*Puma concolor*).

If these species that are likely onsite actually do occur onsite, impacts to these, or any other special-status wildlife species found to be present, would be considered a significant impact. The potential for encountering and/or impacting some of these species is low considering nature of their habits and ability to avoid being killed during construction activities. The less mobile species - such as Silvery Legless Lizard, Coastal Western Whiptail, Rosy Boa, San Diego Banded Gecko, San Diego Horned Lizard, Coast Patch-nosed Snake, and San Diego Desert Woodrat - would not likely be able to escape. Pre-construction surveys and onsite monitoring

during at least initial site clearing and grading are necessary to determine presence, and implementation of avoidance measures.

*Loss of Cooper's Hawk (*Accipiter cooperii*) and Foraging and Nesting Habitat*

Cooper's Hawk is a California Species of Concern. DMEC observed one individual Cooper's Hawk flying overhead onsite during biological surveys. The project site provides suitable foraging and/or nesting habitat for this species. Any impacts to this species may be considered significant under Section 15380 of the *State CEQA Guidelines* if construction occurs during nesting season and this species is present. In addition, impacts to any active raptor nest (common or special-status species) would be considered a violation of the California Fish and Game Code Sections 3503, 3503.5, and 3513.

The loss of Cooper's Hawk individuals would be considered a *significant* impact if construction occurs during the nesting season and the species is present. The loss of 99.73 acres of a variety of suitable habitats for this species would also be considered a *significant* impact.

Level of Significance Before Mitigation: Significant

*Loss of Oak Titmouse (*Baeolophus inornatus*) and Foraging and Nesting Habitat*

Oak Titmouse is listed with a Global-rank of G5, and a State-rank of S3?. An Oak Titmouse was also observed by DMEC in a Coast Live Oak tree onsite in the south central portion of the project site. The project site provides suitable foraging and/or nesting Coast Live Oak Woodland habitat for this species. Any impacts to this species may be considered significant under Section 15380 of the *State CEQA Guidelines* if construction occurs during nesting season and this species is present.

The loss of Oak Titmouse individuals would be considered a *significant* impact if construction occurs during the nesting season and the species is present. The loss of 8.79 acres of Coast Live Oak Woodland and Coast live Oak Riparian Woodland habitats for this species would also be considered a *significant* impact.

Level of Significance Before Mitigation: Significant

*Loss of Nuttall's Woodpecker (*Picoides nuttallii*) and Foraging and Nesting Habitat*

Nuttall's Woodpecker is listed with a Global-rank of G5S?. Thi species was observed at Towsley Park by Wendy Langhans, with the Mountains Recreation and Conservation Authority (Wendy Langhans, pers. comm. 21 July 2005). The project site provides suitable foraging and/or nesting habitat (oak woodlands and riparian scrub/woodlands) for this species. Any impacts to this species may be considered significant under Section 15380 of the *State CEQA Guidelines* if construction occurs during nesting season and this species is present.

The loss of Nuttall's Woodpecker individuals would be considered a *significant* impact if construction occurs during the nesting season and the species is present. The loss of 8.79 acres

of Coast Live Oak Woodland and Coast live Oak Riparian Woodland, and 3.56 acres of riparian scrub habitats for this species would be considered a *significant* impact.

Level of Significance Before Mitigation: Significant

Loss of Barn Owl (Tyto alba) Foraging and Nesting Habitat

Barn Owl was observed flying from its nest in a Coast Live Oak tree onsite. This species is not a special-status wildlife species; however, the project site provides suitable foraging and/or nesting habitat for this species. Impacts to any active raptor nest (common or special-status species) regulated by California Fish and Game Code Sections 3503, 3503.5, and 3513.

The loss of a Barn Owl **nest** would be considered a *significant* impact. The loss of habitat required by Barn Owl is a *less than significant* impact since Barn Owl is not a special-status species. Only its nest is regulated by the Fish and Game Code.

Level of Significance Before Mitigation: Significant (for impacted nests only)

*Loss of San Diego Desert Woodrat (***Neotoma lepida intermedia***) and Habitat*

San Diego Desert Woodrat is a California Species of Concern. A nest of this rodent was observed by DMEC during small mammal trapping onsite. The proposed project would result in the loss of 33.93 acres of suitable Coastal Sage Scrub habitat for this species. Any impacts to this species is considered significant under Section 15380 of the *State CEQA Guidelines* if construction occurs while this species is present.

The loss of San Diego Desert Woodrat individuals and loss of suitable habitat would be considered a *significant* impact.

Level of Significance Before Mitigation: Significant

Loss of Special-Status Reptiles Potentially Present

Six (6) special-status reptile species are *likely* to occur onsite due to the present of suitable habitat onsite and their known occurrence nearby. These species are discussed in the following paragraphs. While none of these reptiles were observed during surveys, loss of individuals of these species would be considered a significant impact if any are actually present onsite.

Silvery Legless Lizard (*Anniella pulchra pulchra*) was not observed onsite; however, this species is likely to occur onsite based on the presence of suitable habitat onsite and this species is reported nearby (CDFG 2005). In addition, the proposed project would result in the loss of 7.84 acres of potentially occupied Coast Live Oak Woodland habitat, and loss of over 4 acres of potentially occupied riparian habitat for this species. This species is a CDFG California Species of Concern.

Coastal Western Whiptail (*Aspidoscelis tigris stejnegeri*) was not observed onsite; however, this species is likely to occur onsite based on the presence of suitable habitat onsite and this species is reported nearby (CDFG 2005). In addition, the proposed project would result in the loss of 7.84 acres of potentially occupied Coast Live Oak Woodland habitat, and loss of over 4 acres of potentially occupied riparian habitat for this species.

Rosy Boa (*Charina trivirgata*) was not observed onsite; however, this species is likely to occur onsite based on the presence of suitable habitat onsite and this species is reported nearby (CDFG 2005). The proposed project would result in the loss of up to 23.57 acres of suitable Chaparral habitat for this species.

San Diego Banded Gecko (*Coleonyx variegates abbotti*) was not observed onsite; however, this species is likely to occur onsite based on the presence of suitable habitat onsite and this species is reported nearby (CDFG 2005). In addition, the proposed project would result in the loss of 2.66 acres of potentially occupied Rock Outcrops, 33.93 acres of Coastal Sage Scrub, and 23.57 acres of Chaparral habitat for this species.

San Diego Horned Lizard (*Phrynosoma coronatum* [*blainvillei*]) was not observed onsite; however, this species is likely to occur onsite based on the presence of suitable habitat onsite (Coastal Sage Scrub), and this species is reported nearby (CDFG 2005). The Argentine Ant is the primary prey of the San Diego Horned Lizard. The Argentine Ant is closely associated with urban and suburban habitats, particularly where landscaping is regularly irrigated. Argentine Ant invasions into natural habitats of native ant species will result in the loss of the native ant species, a vital food source for San Diego Horned Lizard. In addition, the proposed project would result in the loss of 33.93 acres of suitable Coastal Sage Scrub habitat for this species. This species is a CDFG California Species of Concern.

Coast Patch-nosed Snake (*Salvadora hexalepis virgultea*) was not observed onsite; however, this species is likely to occur onsite based on the presence of suitable habitat onsite, and this species is reported nearby (CDFG 2005). In addition, the proposed project would result in the loss of suitable habitat for this species, including 7.87 acres of Coast Live Oak Woodland, 2.66 acres of Lichen Rock Outcrop, and 26.85 acres of Grassland. This species is a CDFG California Species of Concern.

Any impacts to Silvery Legless Lizard, Coastal Western Whiptail, Rosy Boa, San Diego Banded Gecko, San Diego Horned Lizard, and Coast Patch-nosed Snake are considered significant under Section 15380 of the *State CEQA Guidelines* if construction occurs while these species are present. The loss of individuals of these six species would be considered a *potentially significant* impact and the loss of suitable habitat would be considered a *significant* impact.

Level of Significance Before Mitigation: Potentially Significant

Loss of Special-Status Bird Species Potentially Present

Since it is likely for ten (10) special-status bird species to occur onsite, there is potential for direct loss of these species, direct and indirect impacts to active nests, and a known loss of suitable habitat for these species. The impacts, to each special-status bird species likely to occur onsite, are discussed in the following paragraphs.

Southern California Rufous-crowned Sparrow (*Aimophila ruficeps canescens*)**:** The loss of potential Southern California Rufous-crowned Sparrow individuals onsite would be considered a *potentially significant* impact. The loss of observed Southern California Rufous-crowned Sparrow individuals would be considered a *significant* impact. The proposed project would result in the loss of 33.93 acres of potentially occupied Coastal Sage Scrub, 23.57 acres of potentially occupied Chaparral, and 2.66 acres of potentially occupied Rock Outcrops for this species. The loss of its suitable habitat is also considered a *significant* impact.

Grasshopper Sparrow (*Ammodramus savannarum*)**:** The loss of potential Grasshopper Sparrow individuals onsite would be considered a *potentially significant* impact. The loss of observed Grasshopper Sparrow individuals would be considered a *significant* impact. The proposed project would result in the loss of 26.85 acres of potentially occupied Grassland habitat for this species. The loss of its suitable habitat is also considered a *significant* impact.

Bell's Sage Sparrow (*Amphispiza belli* ssp. *belli*)**:** The loss of potential Bell's Sage Sparrow individuals onsite would be considered a *potentially significant* impact. The loss of observed Bell's Sage Sparrow individuals would be considered a *significant* impact. The proposed project would result in the loss of 33.93 acres of potentially occupied Coastal Sage Scrub, and 23.57 acres of potentially occupied Chaparral for this species. The loss of its suitable habitat is considered a *significant* impact.

Long-eared Owl (*Asio otus*)**:** The loss of potential Long-eared Owl individuals onsite would be considered a *potentially significant* impact. The loss of observed Long-eared Owl individuals would be considered a *significant* impact. The proposed project would result in the loss of 3.56 acres of potentially occupied Southern Riparian Scrub, and 0.92 acre of potentially occupied Coast Live Oak Riaprian Woodland for this species. The loss of its suitable habitat is considered a *significant* impact.

Costa's Hummingbird (*Calypte costae*)**:** The loss of potential Costa's Hummingbird individuals onsite would be considered a *potentially significant* impact. The loss of observed Costa's Hummingbird individuals would be considered a *significant* impact. The proposed project would result in the loss of 33.93 acres of potentially occupied Coastal Sage Scrub and 3.56 acres of potentially occupied Southern Riparian Scrub for this species. The loss of its suitable habitat is also considered a *significant* impact.

Lawrence's Goldfinch (*Caroluelis lawrencei*)**:** The loss of potential Lawrence's Goldfinch individuals onsite would be considered a *potentially significant* impact. The loss of observed Lawrence's Goldfinch individuals would be considered a *significant* impact. The proposed project would result in the loss of 7.98 acres of potentially occupied Coast Live Oak, Valley Oak, and Southern California Black Walnut Woodlands; 23.57 acres of potentially occupied Chaparral; and 26.85 acres of potentially occupied Grassland habitat for this species. The loss of its suitable habitat is also considered a *significant* impact.

Lark Sparrow (*Chondestes grammacus*)**:** The loss of potential Lark Sparrow individuals onsite would be considered a *potentially significant* impact. The loss of observed Lark Sparrow individuals would be considered a *significant* impact. The proposed project would result in the loss of 26.85 acres of potentially occupied Grassland habitat, 7.87 acres of potentially occupied Coast Live Oak Woodland, and 33.93 acres of potentially occupied Coastal Sage Scrub habitat for this species. The loss of its suitable habitat is also considered a *significant* impact.

Northern Harrier (*Circus cyaneus*)**:** The loss of potential Northern Harrier individuals onsite would be considered a *potentially significant* impact. The loss of observed Northern Harrier individuals would be considered a *significant* impact. The proposed project would result in the loss of 99.73 acres of a variety of potentially occupied habitats for this species. The loss of its suitable habitat is considered a *significant* impact.

Loggerhead Shrike (*Lanius ludovicianus*)**:** The loss of potential Loggerhead Shrike individuals onsite would be considered a *potentially significant* impact. The loss of observed Loggerhead Shrike individuals would be considered a *significant* impact. The proposed project would result in the loss of 7.98 acres of potentially occupied Coast Live Oak, Valley Oak, and Southern

California Black Walnut Woodlands; 3.56 acres of potentially occupied Southern Riparian Scrub, and 0.92 acre of potentially occupied Coast Live Oak Riparian Woodland for this species. The loss of its suitable habitat is considered a *significant* impact.

California Thrasher (*Toxostoma redivivum*)**:** The loss of potential California Thrasher individuals onsite would be considered a *potentially significant* impact. The loss of observed California Thrasher individuals would be considered a *significant* impact. The proposed project would result in the loss of 23.57 acres of potentially occupied Chaparral habitat for this species. The loss of its suitable habitat is also considered a *significant* impact.

Level of Significance Before Mitigation: Potentially Significant

*Disturbance to Mountain Lion (*Puma concolor*) and Loss of Habitat*

Mountain Lion was not observed onsite; however, this species is likely to occur onsite based on the presence of suitable habitat onsite, and known occurrences in the vicinity of the project site.

A total of 99.73 acres of natural habitat will be permanently lost, which contributes to the cumulative loss of habitat for a population that is already at risk of local extinction. Construction activities will keep Mountain Lion from foraging onsite in the development area and temporarily from adjacent open space areas during construction.

Level of Significance Before Mitigation: Significant

*Disturbance to Ring-tailed Cat (*Bassariscus astutus*) and Loss of Habitat*

Ring-tailed Cat was not observed onsite; however, this species is likely to occur onsite based on the presence of suitable habitat onsite, and known occurrences in the vicinity of the project site. A total of 99.73 acres of natural habitat will be permanently lost, which also contributes to the cumulative loss of habitat for this species. Foraging area will be lost and disturbed during construction.

Level of Significance Before Mitigation: Significant

*Disturbance to Western Mastiff Bat (*Eumops perotis californicus*) and Loss of Habitat*

Western Mastiff Bat was not observed onsite; however, this species is likely to occur onsite based on the presence of suitable habitat onsite, and known occurrences in the vicinity of the project site. Western Mastiff Bat may forage and nest on the project site. Project impacts are not expected to affect the overall availability of prey on the project site for bats foraging at night. However, project implementation would result in night lighting and may cause subsequent changes in inter-species bat and prey behavior. In addition, project implementation would result in the loss of some roosting habitat for bats. Any impacts to this species may be considered significant under Section 15380 of the *State CEQA Guidelines* if construction occurs while this species is present.

Level of Significance Before Mitigation: Significant

Indirect Impacts to Special-Status Wildlife Species

Indirect impacts to special-status wildlife species are caused when project-related activities cause unusual and detrimental behavioral changes in wildlife that results in sickness, death, or abandonment of otherwise suitable habitat. The causes of such behavioral changes can be excessive noise, annoyance, harassment by humans and/or pets, and increased excessive nighttime lighting. Such indirect impacts have the potential to cause significant impacts to sensitive wildlife.

Impacts Related to Noise

Noise levels on the project site would increase over present levels during construction of the proposed project. During construction, temporary noise impacts have the potential to disrupt foraging, nesting, roosting, and denning activities for a variety of wildlife species including reptiles, amphibians, mammals, and birds. Noise can also interfere with a species' ability to protect itself from predators, and to communicate. While each species of wildlife present onsite has different tolerance levels to noise, and individuals within each species can vary considerably, little data on thresholds are available. The degree of species habituation to various levels and types of noise disturbances in their territories and home ranges will dictate the extent, if any, of induced stresses.

The effect of intolerable construction-related noise on wildlife is related directly to a species' ability to breed, forage, and avoid predation. Excessive noise can reduce or eliminate some wildlife species' ability to attract mates, repel competitors, avoid predators, communicate, and detect food. Amphibians, reptiles, and mammals suffered deleterious effects from moderate exposure to off-road vehicle (ORV) noise (Brattstrom and Bondello 1983 in Schubert and Smith 2000). These effects included physiological and behavioral hearing loss and the misinterpretation of important environmental acoustic signals.

SPECIFIC EFFECTS ON WILDLIFE

Wildlife exposed to noise can suffer high levels of physiological stress even if they appear to fully adapt to the noise (Aune 1981 in Schubert and Smith 2000; Environmental Protection Agency [EPA] and Memphis State University 1971). Loss of hearing sensitivity can lead to increased exposure to predation, increased difficulty killing prey, and otherwise significant disruptions in predator-prey relationships (EPA and Memphis State University 1971). The impairment of intraspecific communication is another serious concern (Luz and Smith 1976; Luckenbach 1975 and 1978; and Weinstein 1978 in Schubert and Smith 2000). Specific problems can include the inability to recognize mating signals, warning calls, and calls by juveniles (EPA and Memphis State University 1971). The degree of species habituation to various levels and types of noise disturbances in their territories and home ranges will dictate the extent, if any, of induced stresses.

SOUND ATTENUATION

Moderate noise levels associated with construction activities will be fluctuating and intermittent. High noise levels will also be fluctuating, but these noise levels will be more continuous in nature due to the extent and duration of the construction activities. Noise levels at any individual project site will be attenuated to varying degrees, dependent on the sound frequency, by

atmospheric conditions, terrain, ground impedance, foliage and vegetation, and the actual distance between the sound source and potential wildlife species (U.S. Fish and Wildlife Service 1997). The formula to calculate sound attenuation with distance in a free field (outdoors) is:

Decibels of Change = 20 x log(distance 1/distance 2).

For example, if you were standing 10 feet from a noise source, and were to move 100 feet away from that noise source, you would expect to see a drop in level of 20dB (Mc Squared System Design Group, Inc, 2005).

SPECIES AFFECTED

Birds: Nesting raptors and other bird species have the potential to incur temporary short-term impacts from construction noise, if present in the vicinity of the project site, and may be temporarily displaced due to these disturbances. The effect of intolerable construction-related noise on wildlife is related directly to a species' ability to breed, forage, and avoid predation.

Falcons: Peregrine Falcons are in this group and are known for being scared off their nest by sonic booms (Manci et al. 1988). A study done in Arizona found responses to extremely frequent and nearby jet aircraft by peregrines were often minimal; however, the disturbance was not found to be associated with reproductive failure. Nesting success and site reoccupancy rates were high for all aeries. The birds observed were noticeably alarmed by the noise stimuli (82-114 dBA), but the negative responses were brief and apparently not productivity limiting (Ellis 1981, as cited in Manci et al. 1988). Prairie Falcon and Merlin are not expected onsite (no nesting habitat).

Accipiters: White-tailed Kite, Sharp-shinned Hawk, Northern Harrier, and Golden Eagle have potential to occur at the project site. Cooper's Hawk is known onsite. Accipiters in general are not known to be as sensitive to noise, and Northern Harriers have been observed to continue to prey on disturbed smaller birds near the origination site of a loud noise from a practice bomb (Jackson et al. 1977 in Manci et al. 1988).

Amphibians: Spadefoot Toad (*Scaphiopus couchi*) is known to be cued by early summer thunderstorms to emerge from the burrow to mate and lay eggs, and larvae are subsequently born and undergo metamorphosis. If other noise mimics the sound of thunderstorms, reproductive activity can occur in the absence of appropriate environmental conditions, and cause adverse impacts to the local population. (McClanahan 1967; Brattstrom and Bondello 1983 in Schubert and Smith 2000). A congener, the Western Spadefoot Toad (*Scaphiopus hammondi*), is a species of special concern that may possibly occur onsite.

Reptiles: The reproductive success of lizards is known to decrease when ORV activity peaks in their vicinity (Mayhew 1966 and 1966a, as cited in Schubert and Smith 2000). Reptiles that may occur on the project site include Silvery Legless Lizard, Two-striped Garter Snake, and the Coast Patch-nosed Snake. The Coastal Western Whiptail and San Diego Horned Lizard are expected to occur onsite.

Mammals: Sprock et al. (1967), as cited in EPA and Memphis State University (1971), subjected caged wild rats and mice to sounds of varying frequencies (100-25,000 Hz) and Sound Pressure Level (60-140 dB). Rats exposed to high noise levels suffered impacts which included reduced body weight, increased heart rate, and the shrinking of ovaries and kidneys, decreased nesting, and death (Geber and Geber et al. (1966), as cited in EPA and Memphis State University (1971). Manci et al. (1988) reports that at noise levels above 90 decibels mammals may retreat, freeze, or become startled. One potential effect of noise on mammals is that of displacement.

When a species is dependent upon a narrow range of habitat characteristics, displacement to marginal or unsuitable habitat can have lasting impacts on survival and productivity. This has been found to be true for the kangaroo rat (Brattstrom and Bondello 1983, as cited in Schubert and Smith 2000). These studies may indicate potential impacts for the San Diego Desert Woodrat, a special-status species that may occur at the project site.

A number of species of bat species are considered likely to occur at the project site. It has been shown that bats are generally resistant to jamming of their "radar" echo-location abilities by external noise sources (Griffin, McCue, and Grinnell 1963). Apparently, they orient themselves so that noise and signal are received from different angles. Signal masking is greatest when noise and signal are received from the same direction. Despite these results, it would be conservative to halt construction activities just before bat feeding times, before or at dusk, in the immediate vicinity of bat foraging areas onsite. A number of special-status species bats may occur at the site, including Pallid Bat, Pale Big-eared Bat, Western Mastiff Bat, California Leaf-nosed Bat, and Yuma Myotis.

EQUIPMENT NOISE LEVELS

Noise levels of various types of construction equipment are provided in Table 19, Noise Levels of Construction Equipment, which provides a basic guide to expected noise levels that would significantly disturb wildlife enough to change their normal behavior patterns in a detrimental manner. Since wildlife sensitivity to specific noise levels is not well known, human sensitivity levels will be used as a surrogate. Generally, levels above 86 dBA at 15 meters would be used as the impact threshold, requiring implementation of measures to mitigate the adverse behavioral changes, based on the Caltrans Traffic Noise Analysis Protocols (California Department of Transportation 1998).

Table 19. Noise Levels of Construction Equipment[22]

Type of Equipment	Range of Maximum Sound Level Measured at 50 feet (dBA)	Suggested Maximum Sound Level for Analysis at 50 feet (dBA)
Pile Drivers, 12,000 to 18,000 ft-lb/blow	81-96	93
Rock Drills	83-99	96
Jackhammers	75-85	82
Pneumatic Tools	78-88	85
Pumps	74-84	80
Scrapers	83-91	87
Haul Trucks	83-94	88
Cranes	79–86	82
Portable Generators	71–87	80
Rollers	75–82	80
Dozers	77–90	85
Tractors	77–82	80
Front-End Loaders	77–90	86
Hydraulic Backhoes	81–90	86
Hydraulic Excavators	81–90	86

[22] From Bolt, Beranek, & Newman. 1987. Noise Control for Buildings and Manufacturing Plants.

Type of Equipment	Range of Maximum Sound Level Measured at 50 feet (dBA)	Suggested Maximum Sound Level for Analysis at 50 feet (dBA)
Graders	79–89	86
Air Compressors	76–89	86
Trucks	81–87	86

EFFECTS ON WILDLIFE AFTER DEVELOPMENT OF PROPOSED PROJECT

The project site is adjacent to a major State Highway generating substantial noise under existing conditions. Project related noise levels would not increase substantially over present levels when the land use is converted to a residential community. Nevertheless, wildlife habitat within isolated areas of the project site and immediately surrounding areas to the west and south could be disturbed. Therefore, some wildlife species stressed by noise may disperse from the remaining habitat on and in the vicinity of the site, leaving only wildlife tolerant of human activity. Though these adverse impacts from construction-related noise would not be expected to reduce any current wildlife population below self-sustaining levels, mortality of breeding wildlife of special-status species would be considered adverse and significant. Chronic (permanent) noise impacts would be less than significant and mitigation would not be required. Mitigation measures, such as capture and relocation, or capture and hold wildlife until the impact has ended or decreased to tolerable levels, have the potential for impacts equal to the temporary displacement of these animals, and are therefore not recommended. Noise attenuation and work scheduling measures are feasible mitigation to reduce temporary noise impacts to sensitive wildlife.

The impacts resulting from excessive noise levels that result in the abandonment of care-giving, and interference to survival, growth, and reproduction are considered adverse and *significant*, especially because the proposed project occurs adjacent to natural open space areas that support high wildlife value.

Level of Significance Before Mitigation: Potentially Significant

Impacts Related to Human Activity

The residents of the proposed development may use the proposed open space for passive recreation (e.g. hiking). This would increase the noise and disturbance of habitat areas remaining on the site, especially those adjacent to the proposed development. Human disturbance could disrupt normal foraging and breeding behavior of wildlife remaining on the site, substantially diminishing the value of habitat areas remaining. In addition, pets in these neighborhoods (i.e., cats and dogs) would become introduced predators and would increase the stresses of wildlife remaining in the open space areas on the site. This impact would be considered potentially significant.

Level of Significance Before Mitigation: Potentially Significant

Impacts Related to Night Lighting

Lighting of the urban development would inadvertently affect the behavior patterns of nocturnal and crepuscular (active at dawn and dusk) wildlife at these areas, especially amphibian and bat species. Of greatest concern is the effect on small ground-dwelling animals that use the darkness

to hide from predators, and on owls that are specialized night foragers. Night lighting could inhibit wildlife from using the habitat adjacent to lighted areas.

Night lighting could negatively affect wildlife activities and wildlife vigor if exposed to bright artificial lighting from streetlights, or outdoor lighting at residences. While limited to the areas a short distance from the light source, and depending on the intensity of the outdoor lighting, such nuisance spillover lighting represents a potentially significant impact to wildlife sensitive to such lighting.

Level of Significance Before Mitigation: Potentially Significant

IMPACTS TO NATURAL VEGETATION, INCLUDING SENSITIVE HABITATS

Lyons Canyon Ranch includes 11 general vegetation types that make up the landscape onsite. Damage or loss of any natural, native vegetation ultimately contributes to the degradation of a region's structural diversity, species richness, and ecological integrity. Nine sensitive habitats were observed onsite that are tracked by CNDDB (CDFG 2005).

Table 20, Project Impact Area for each Vegetation Type Onsite, presents the area of impact for each of the nine sensitive habitats as well as the area of impact to other plant communities creating the landscape onsite. The subsections following Table 20 provide an impact analysis for the sensitive plant communities observed onsite.

The project site consists of approximately 226.8 acres of natural vegetation. The proposed project will impact a total of approximately 99.7 acres of natural vegetation would be impacted by the proposed project and 127.1 acres would be preserved. Of the 226.8 acres of vegetation onsite, approximately 119.4 acres consist of sensitive habitat types. Of the 119.4 acres of sensitive habitat onsite, the proposed project would impact approximately 49.3 acres of sensitive habitat onsite and would preserve approximately 70.1 acres of sensitive habitat onsite.

Table 20. Project Impact Area for Each Vegetation Type Onsite

Vegetation Type	Sensitive? (Yes/No)	Existing Acreage	Impact Acreage	Percent of Impacts	Acres Preserved	Impact Significant ?
Riparian						
Coast Live Oak Riparian Woodland (*Quercus agrifolia* Alliance)	Yes	1.65	0.92	55.8	0.73	Yes
Southern Mixed Riparian Forest (*Salix lasiolepis* Alliance and *Salix laevigata* Alliance)	Yes	0.81	0	0	0.81	No
Southern Riparian Scrub (*Baccharis salicifolia* Alliance and *Sambucus mexicana-Baccharis salicifolia* Alliance)	Yes	9.15	3.56	38.9	5.59	Yes
Cismontane Alkali Marsh (*Distichlis spicata* Alliance)	Yes	0.34	0.26	76.5	0.08	Yes
Upland						
Coast Live Oak Upland Woodland (*Quercus agrifolia* Alliance)	Yes	38.42	7.87	20.5	30.55	Yes
Valley Oak Woodland (*Quercus lobata* Alliance)	Yes	0.23	0.03	13.0	0.20	Yes
Southern California Black Walnut Woodland (*Juglans californica* var. *californica* Alliance)	Yes	1.89	0.08	4.2	1.81	Yes
Chaparral (*Adenostoma fasciculatum* Alliance, *Adenostoma fasciculatum-Salvia mellifera* Alliance, and *Adenostoma fasciculatum-Sambucus mexicana* Alliance)	No	69.41	23.57	34.0	45.84	Yes
Coastal Sage Scrub (*Eriogonum fasciculatum* Alliance, *Salvia leucophylla* Alliance, *Salvia leucophylla-Brassica* Alliance, *Salvia apiana* Alliance, and *Sambucus mexicana-Salvia leucophylla* Alliance)	Yes	57.43	33.93	59.1	23.50	Yes
Lichen Rock Outcrop (Lichen Alliance and *Hesperoyucca whipplei*-Lichen Alliance)	Yes	9.50	2.66	28.0	6.84	Yes
Grassland (*Avena-Brassica-Silybum* Alliance)	No	37.96	26.85	70.7	11.11	Yes
Totals:	-	**226.79**[23]	**99.73**[24]	**44.0%**	**127.06**	Yes

[23] Total area of project site is approximately 235.50 acres. The project site vegetation area of 226.79 acres includes only the vegetated portions of the project site.

[24] Total grading/impact area is approximately 104.90 acres. The impact area of approximately 99.73 represents the estimated impact acreage on natural vegetation. Therefore, the difference represents land that is already disturbed by roads and previous development and ornamental landscaping.

Loss of Grassland Habitat

Grasslands support some of the most diverse assemblies of plant and wildlife species in California (Jones & Stokes Associates, Inc 1989), many of which are threatened and endangered. Mule Deer and Coyote both breed in grasslands, as do Short-eared Owl, Burrowing Owl, Peregrine Falcon, Northern Harrier, American Badger, Western Spotted Skunk, San Diego Black-tailed Jackrabbit, and many other species (CWHR System Version 7.0). Although the grassland communities onsite include a large component of nonnative plant species, this condition does not preclude it from being used as habitat by native plants and animals (Howald 1993). CWHR rates grasslands as of high reproductive, cover, and feeding value for mant wildlife species.

Approximately 37.96 acres of Grassland habitat exists onsite. Approximately 26.85 acres of this natural habitat will be impacted by the proposed project (70.7%). This is considered a *significant* impact.

Level of Significance Before Mitigation: Significant

Loss of Lichen-Rock Outcrop Habitat

Approximately 9.50 acres of sensitive Lichen-Rock Outcrop Habitat exist onsite. Approximately 2.66 acres will be impacted by the proposed project (28.0%). This is considered a *potentially significant* impact.

Level of Significance Before Mitigation: Potentially Significant

Loss of Coastal Sage Scrub

The sensitive Coastal Sage Scrub plant communities observed onsite include *Sambucus mexicana-Salvia leucophylla* Alliance, *Salvia leucophylla* Alliance, and *Salvia apiana* Alliance. Approximately 57.43 acres of Coastal Sage Scrub exist onsite. Of this, approximately 33.93 acres of Coastal Sage Scrub will be impacted by the project. Approximately 7.61 acres of the Coastal Sage Scrub proposed to be impacted by the project are degraded habitat infested by invasive exotic plants such as *Brassica nigra*, *Silybum marianum*, *Cirsium vulgare*, and *Avena barbata*, effectively decreasing its functional value to native wildlife species that may utilize it onsite. The remaining 27.43 acres are dominated by natives; but still contain several nonnative forbs, degrading its value to wildlife, but to a lesser extent.

At one time, the Santa Clarita Valley area supported the region's most extensive patches of sage and sagebrush scrub plant communities prior to urbanization. Coastal Sage Scrub is a community at risk, with approximately 90 percent already lost to development (urban and agriculture); very little Coastal Sage Scrub has been protected by any mechanisms, such as enforceable conservation easements (Davis et al. 1985). (Boyd 1999.)

Although the vegetation burned in the Simi Fire, Coastal Sage Scrub recovers quickly and may support habitat for special-status species. The loss of 33.93 acres of Coastal Sage Scrub vegetation onsite (59.1%) is considered a significant impact due to the cumulative losses of this habitat in southern California, and the potential for it to support special-status species.

Level of Significance Before Mitigation: Significant

Loss of Chaparral Habitat

Approximately 69.41 acres of functional Chaparral habitat exists on the Lyons Canyon Ranch property. Approximately 23.57 acres will be impacted by the proposed project (34.0%), which will decrease natural open areas and contribute to the loss of habitats for several wildlife species.

Chaparral habitats are typically not considered sensitive habitats. However, Lyon Canyon SEA 63 specifically focuses on Chamise Chaparral, riparian, and oak woodland habitats along Lyon Canyon Creek. SEA 63 includes the middle portion of the creek with the eastern end of the SEA in the center of the Lyons Canyon Ranch, extending westward beyond the project site. Lyon Canyon SEA 63 is approximately 174.45 acres total, of which approximately 58.48 acres of SEA 63 exist onsite.

The northern portion of the SEA contains Chamise Chaparral, which is dominated by *Adenostoma fasciculatum* (Chamise) and includes *Rhus ovata* (Sugarbush), *Ceanothus crassifolius* (Snowball Ceanothus), and *Salvia mellifera* (Black Sage), as major canopy contributors.

Of the 58.48 acres of SEA 63 existing onsite, 18.27 acres is occupied by Chaparral. Of the 18.27 acres of Chaparral within the SEA, 7.34 acres will be impacted by the proposed project. This is considered a *significant* impact.

Level of Significance Before Mitigation: Significant

Loss of Southern California Black Walnut Woodland

Approximately 1.89 acres of sensitive Southern California Black Walnut Woodland habitat exist onsite. Southern California Black Walnut Woodland plant community observed onsite is also classified as *Juglans californica* var. *californica* Alliance. Approximately 0.08 acre will be impacted (4.2%) as a result of the Lyons Canyon Ranch project.

Level of Significance Before Mitigation: Significant

Loss of Coast Live Oak Woodland and Coast Live Oak Riparian Woodland

A total of 1,409 oak trees meeting the Los Angeles County definition are documented to have occurred onsite prior to the Simi Fire of October 2003, as listed by species in Table 15 and illustrated in DMEC's oak tree report. Of the 1,409 Los Angeles County regulated oak trees present onsite, the proposed project is expected to directly impact (or resulting the loss of) 179 oak trees, and is expected to indirectly impact (encroach upon) 75 oak trees. The remaining 1,155 oak trees would be avoided by the proposed project and preserved in the open space preserve areas of the site or in small internal park areas containing the retained trees.

A total of 17 heritage-size Coast Live Oak trees will be lost as a result of the proposed project, and 8 heritage Coast Live Oak trees will be encroached upon as a result of the proposed project. None of the heritage-sized Valley Oak trees would be lost from the proposed project; however, three heritage Valley Oak trees will be encroached upon as a result of the proposed project.

The loss of 179 oak trees, including 17 heritage-size trees, is considered a *significant* impact.

The impact assessment for impacts to the sensitive Coast Live Oak Woodland and Coast Live Oak Riparian Woodland observed onsite (shown above on Figure 21) is as follows:

- Approximately 38.42 acres of **Coast Live Oak Woodland (upland)** currently exist onsite. Of the 38.42 acres, approximately 7.87 acres will be impacted (20.5%) as a result of the project and 30.55 acres will be preserved.
- Approximately 1.65 acres of **Coast Live Oak Riparian Woodland** exist onsite. Of the 1.65 acres, approximately 0.92 acres will be impacted (55.8%) as a result of the proposed project and 0.73 acre will be preserved.

The loss of 7.87 acres of Coast Live Oak Woodland, and 0.92 acre of Coast Live Oak Riparian Woodland (totaling 8.79 acres of impacts to oak woodland) would be considered a *significant* impact.

Level of Significance Before Mitigation: Significant

Loss of Valley Oak Woodland

Approximately 0.23 acres of Valley Oak Woodland exist onsite. Of the 0.23 acres, approximately 0.03 acres will be impacted (13.0%) as a result of the proposed project and 0.20 acre will be preserved.

The loss of 0.03 acres of Valley Oak Woodland would be considered a *significant* impact.

Level of Significance Before Mitigation: Significant

Loss of Wetland Habitats and Plant Communities

The Lyons Canyon Ranch project will result in impacts to riparian habitats, including waters and wetlands regulated by federal and state agencies. Several wetland and/or riparian plant communities will be directly and indirectly affected by the proposed project. Since wetlands and waters of the United States will be affected, a permit from the U.S. Army Corps of Engineers (Corps) will be required. CDFG regulated wetland habitats are also present, and would be impacted. A Streambed Alteration Agreement will be required to alter wetland habitats under CDFG jurisdiction.

Under US Army Corps of Engineers standards, a total of 9.10 acres of "Waters of the United States" and "Wetlands" are found on the project site, of which 2.96 acres would be impacted by the proposed project. A total of 15.51 acres of CDFG riparian habitat and stream courses occur onsite, of which 5.74 acres would be impacted by the proposed project. A detailed breakdown of onsite wetlands and riparian habitats under jurisdiction of Corps and CDFG are calculated in Table 21, Summary of All Jurisdictional Waters, Wetlands, and Riparian Areas at Lyons Canyon Ranch.

Table 21. Summary of All Jurisdictional Waters, Wetlands, and Riparian Areas at Lyons Canyon Ranch

Agency/Status	Stream Lengths (linear feet)	Total Area (acres)	Proposed Project Impacts (acres)
Corps Jurisdictional Waters of the U.S., excluding wetlands	28,723.8	4.35	2.11
Corps Jurisdictional Wetlands	6,216.0	4.75	0.85
Total Corps Jurisdiction (Waters and Wetlands)	**34,939.8**	**9.10**	**2.96**
CDFG Riparian Habitats	14,474.5	12.44[25]	4.38
CDFG stream courses (without riparian vegetation)	19,343.4	3.07	1.36
Total CDFG Jurisdictional Area[26]	**33,814.9**	**15.51**	**5.74**

Direct impacts to wetland and riparian habitats are regulated by the Corps and/or CDFG pursuant to Section 404 of the Clean Water Act and Section 1600 *et seq*. of the California Fish and Game Code, respectively. The loss of, or damage to, riparian trees and shrubs that contribute to a sensitive habitat type is considered a *significant direct and cumulative impact*, directly and indirectly negatively affecting wildlife inhabiting it.

Corps and CDFG regulatory requirements are described below.

Corps Jurisdictional Waters and Wetlands

State and federal regulations have been established to protect wetland and water quality resources. Section 404 of the Clean Water Act regulates certain activities within waters of the U.S., including wetlands. The State Water Resources Control Board, through regional water quality control boards (Los Angeles RWQCB), regulates discharges into waters of the U.S. and the State, pursuant to Section 401 of the Clean Water Act. Waters of the U.S., including stream channels and wetlands, fall under the jurisdiction of the Corps under Section 404 of the Clean Water Act. (Refer to DMEC 2004.)

The Corps, under Section 404 of the Clean Water Act, defines a wetland as possessing the following three general diagnostic environmental characteristics during the growing season: (1) hydrophytic vegetation, (2) hydric soils, and (3) wetland hydrology. The Corps requires that one or more indicators, for each of the three wetland criteria, be met in order for an area in question to be considered a jurisdictional wetland. This requirement for the presence of all three environmental conditions does not apply in Atypical Situations and in problem areas; therefore, all three wetland parameters need not be met for most portions of Lyons Canyon Ranch since most of the property is in an Atypical Situation (DMEC 2004a).

The function of Riverine (aquatic) habitats is largely dependent upon the natural channel morphology and bordering native plant communities, both of which will be temporarily altered by the project. Thus, the completion of the proposed project will have negative effects on the overall ecosystem function of the aquatic habitat of the Lyon Canyon Creek portion of the project site.

[25] The area of riparian habitat was calculated from the delineation of habitat by the field surveys and aerial photograph interpretation of pre-burned vegetation.

[26] Includes all areas under CDFG jurisdiction, including areas lacking riparian vegetation.

The Riverine habitat onsite is classified as Riverine Intermittent Streambed. This habitat is jurisdictional waters of the U.S., but is not determined to be a *wetland* under Corps jurisdiction, since it has positive indicators for the presence of only two of the three wetland criteria: (1) wetland hydrology, including drift lines, sediment deposits, and drainage patterns; and (2) sand and Riverwash hydric soils. The Riverine habitat located in the immediate active creek bottom is not dominated by hydrophytic vegetation. This habitat lacks vegetation in general, except for a few scattered emergent forbs.

A total of 9.1 acres of Corps jurisdictional waters of the U.S., including wetlands, have been verified (Corps pers. comm.) as occurring on the project site, which includes the adjacent Taylor-Prentice property immediately to the southeast (DMEC 2004a). Of the 9.1 acres, 4.75 acres are Corps jurisdictional *wetlands*.

The proposed project will result in impacts to approximately 0.85 acre of Corps jurisdictional wetlands, and approximately 7,820.93 linear feet (2.11 acres) of Corps jurisdictional waters (not including wetlands), or Riverine habitat. (DMEC 2004a.).

CDFG Jurisdictional Riparian Habitats

The California Fish and Game Code protects and regulates activities associated with wildlife and wildlife habitats. Wetlands, such as habitats occurring in freshwater stream channels, are considered sensitive and declining by several regulatory agencies, including CDFG and USFWS. Stream channels and banks are specifically addressed by the CDFG Streambed Alteration Agreement, pursuant to Section 1600 *et seq.* of the California Fish and Game Code.

CDFG jurisdictional wetlands and riparian habitat onsite totals 15.51 acres, of which 12.44 acres consists of riparian vegetation. The remaining 3.07 acres consists of unvegetated ephemeral drainages, usually on the steep slopes of the project site.

The construction activities to be conducted in Lyon Canyon Creek and tributaries will substantially adversely affect existing biological resources of the project site and will result in the loss of, or disturbance to, a total of approximately 5.74 acres of CDFG jurisdictional wetlands and riparian habitat.

All impacts should be minimized to the maximum extent possible, such as keeping the area of impact as small as possible. Impacts resulting from project construction activities within the sensitive riparian zone should also be compensated for by implementing specific mitigation measures (restoration). A Streambed Alteration Agreement will need to be obtained from CDFG to modify existing wetland riparian habitats under CDFG jurisdiction.

Loss of Sensitive Wetland Plant Communities

The riparian vegetation onsite provides functional habitat for a number of plant and wildlife species. For example, riparian habitat is used for nesting and foraging sources for several species of birds, as well as cover and foraging habitat for small and large mammals, some of which may use the site as a movement corridor where vegetation provides cover from predators.

Four riparian habitats exist onsite, all of which are sensitive wetland habitats, and they include: Coast Live Oak Riparian Woodland (discussed earlier), Cismontane Alkali Marsh, Southern Riparian Scrub, and Southern Mixed Riparian Forest. The acreage and Alliance names for these sensitive habitat types are presented below:

Vegetation Type	Sensitive? (Yes/No)	Existing Acreage	Impact Acreage	Percent of Impacts	Acres Preserved	Significant Impact?
Coast Live Oak Riparian Woodland (*Quercus agrifolia* Alliance)	Yes	1.65	0.92	55.8	0.73	Yes
Southern Mixed Riparian Forest (*Salix lasiolepis* Alliance and *Salix laevigata* Alliance)	Yes	0.81	0	0	0.81	No
Southern Riparian Scrub (*Baccharis salicifolia-Sambucus mexicana* Alliance)	Yes	9.15	3.56	38.9	5.59	Yes
Cismontane Alkali Marsh (*Distichlis spicata* Alliance)	Yes	0.34	0.26	76.5	0.08	Yes
Totals:	**-**	**11.95**	**4.74**[27]	**40.0%**	**7.21**	Yes

A total of 11.95 acres of riparian habitat is mapped as existing onsite. Approximately 1.65 acres of **Coast Live Oak Riparian Woodland** (*Quercus agrifolia* Alliance) exists onsite. Of that, 0.92 acre (55.8%) will be impacted as a result of the proposed project, and 0.73 acre will be preserved. Approximately 9.15 acres of **Southern Riparian Scrub** (*Baccharis salicifolia-Sambucus mexicana* Alliance) exists onsite. Of this, 3.56 acres (38.9%) of will be impacted as a result of the Lyons Canyon Ranch project, and 5.59 acres will be preserved. Approximately 0.34 acre of **Cismontane Alkali Marsh** (*Distichlis spicata* Alliance) exists onsite. Of this, 0.26 acre (76.5%) will be impacted as a result of the proposed project, and 0.8 acre will be preserved. These three habitats are not only a sensitive plant community tracked by CDFG's CNDDB RareFind3 (CDFG 2005), the riparian habitats are also considered jurisdictional wetlands by regulatory agencies. No existing **Southern Mixed Riparian Forest** (*Salix lasiolepis* Alliance and *Salix laevigata* Alliance) will be impacted as a result of the proposed project.

Wetlands such as freshwater stream channels are considered sensitive and declining by several regulatory agencies, including CDFG and the U.S. Fish and Wildlife Service (USFWS). Stream channels and banks are specifically addressed by the California Fish and Game Code Section 1600 *et seq.* (Streambed Alteration Agreement). Waters of the U.S., including stream channels and wetlands, may fall under the jurisdiction of Corps under Section 404 of the Clean Water Act.

Direct impacts to a total of 5.74 acres of jurisdictional wetlands habitats will result from the development of the proposed project. A Streambed Alteration Agreement will be required from CDFG and a permit will be required from the Corps to alter or fill those wetlands under CDFG or Corps jurisdiction. The completion of the proposed project will have negative effects on the overall ecosystem function of Lyon canyon Creek, its tributaries, and the associated riparian wetlands. Mitigation measures will be implemented to compensate for permanently lost wetlands and a temporary loss of ecosystem functions. The Applicant will implement measures to avoid and minimize unnecessary impacts to waters of the U.S., and to biological resources. Furthermore, the Applicant will implement a long-term monitoring program to ensure that any mitigation efforts are successful.

Level of Significance Before Mitigation: Significant.

[27] This area includes only the jurisdictional area dominated by wetland/riparian vegetation, and excludes jurisdictional areas not dominated by riparian vegetation.

Loss of Wildlife Foraging and Cover Habitats

The wildlife habitats observed onsite include those sensitive habitats discussed, including Grassland, Coastal Sage Scrub, Chaparral, Coast Live Oak-California Black Walnut Woodland, and Southern Riparian Scrub. These habitats observed at Lyons Canyon Ranch are used for nesting and foraging habitat for several species of birds, and cover and foraging habitat for small and large mammals. Several wildlife species use the habitats onsite as a movement corridor where the site vegetation provides cover from predators, and food and water resources. The function of the wetland habitat onsite is improved by the presence of natural upland vegetation and habitats creating cumulative high species richness for the Lyon Canyon area.

When functional wildlife habitat, consisting of ample foraging and cover resources, is degraded or negatively impacted, a temporary reduction in various food sources for aquatic, semi-aquatic, and terrestrial wildlife species typically follows. For example, stream channel disturbances - such as changes in channel morphology, fill of channel materials, surface water quality degradation (increased siltation, turbidity levels, and sedimentation), and removal of mature native vegetation within the water column of Riverine habitats - may result in short-term reductions of aquatic invertebrates, which are a valuable food source for many wildlife species. Furthermore, damaging or clearing plants contributing to a functional wildlife habitat will result in a shortage of cover, nesting, and breeding resources vital for several wildlife species' survival. Therefore, impacts to foraging and cover habitats, contributing to the function of a region's ecosystem, should be minimized and avoided as much as possible.

A total of approximately 99.73 acres of natural vegetation will be impacted onsite, including sensitive plant communities and wetlands. Collectively, impacts to these wildlife habitats, including impacts that break their connectivity and increase habitat fragmentation, are considered a significant impact.

Level of Significance Before Mitigation: Significant

IMPACTS OF FUEL MODIFICATION

The County of Los Angeles Fire Department (LAFD) Fuel Modification Program's objective is to create the defensible space necessary for effective fire protection in newly constructed and/or remodeled homes within the Department's Very High Fire Hazard Severity Zones. Fuel modification zones are strategically placed as a buffer to open space, or areas of natural vegetation and generally would occur surrounding the perimeter of a subdivision, commercial development, or isolated development of a single-family dwelling. (LAFD 1998.)

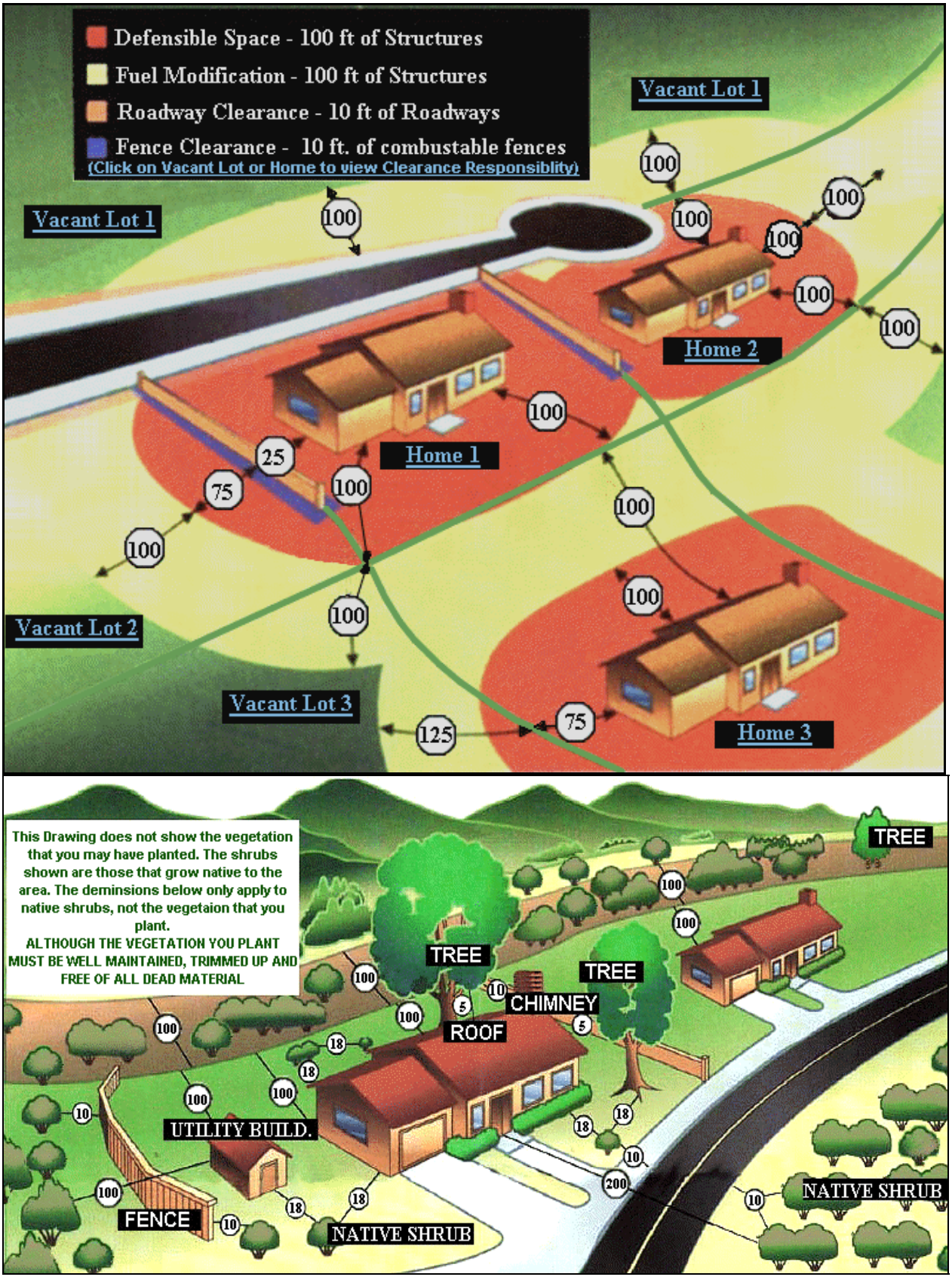
The fuel modification plan identifies specific zones within a property, which are subject to fuel modification. A fuel modification zone is a strip of land where combustible native or ornamental vegetation has been modified and/or partially or totally replaced with drought-tolerant, low-fuel-volume plants. (LAFD 1998.)

The Fuel Modification Unit provides guidelines and reviews the landscape and irrigation plans submitted by the property owner for approval before construction of a structure. The fuel modification plans vary in complexity and reflect the fire history, the amount and type of vegetation, the arrangement of the fuels, topography, local weather patters, and construction, design and placement of structures. (LAFD 1998.)

The size and type of the fuel modification zone(s) will be determined by the Fire Department upon review of a preliminary fuel modification plan. Fuel modification distances are designed for typical fire weather scenarios and are not intended to be a blanket requirement for all fuel modification plans. The fuel modification plan shall identify one or more of the following zones: A-Setback Zone; B-Irrigated Zone; C-Thinning Zone; and D-Interface Thinning Zone based upon preliminary plan review by the Forestry Division of the Fire Department. The actual width of zone(s) will depend on the ability to provide desirable clearance distances. The following summarizes the four zones, including their purpose and general requirements (Figure 23, Example of Los Angeles Fire Department Fuel Modification Unit Requirements):

- Zone A- Setback Zone
  - Purpose:
    - Provides defensible space for fire suppression forces.
    - Offers protection from intense flames and sparks or embers carried by strong winds common to a wildfire by reducing the probability of ignition through increased moisture content of existing vegetation and removal of fine fuels.
  - General Requirements:
    - Zone in closest proximity to the structure.
    - Minimum of 20 feet beyond the edge of combustible structures, attached accessory structures, or appendages and projections.
    - For purposes of the fuel modification plan, all combustible accessory structures, appendages, or projections within 20 feet of the combustible structure will be considered as attached.
    - Most vegetation in this zone is limited to ground covers, green lawns, and a limited number of selected ornamental plants.
- Zone B – Irrigation Zone
  - Purpose:
    - Provide defensible space for fire suppression forces.
    - Augment irrigation and planting required by the County Department of Public Works and City Public Works Departments relating to remanufactured slopes and landscape ordinances.
  - General Requirements:
    - May have isolated detached accessory structures such as patio covers, decks, carports, trellises, and other similar accessory structures provided they meet building code requirements.
    - Some native or existing vegetation may remain if spaced according to planting guidelines and maintained free of dead wood, and individual plants are thinned to a percentage as specified during the preliminary review to reduce the fuel load.
    - A large percentage of existing vegetation may be removed and replaced with appropriate irrigated fire resistant and drought tolerant plant material.
- Zone C-Thinning Zone
  - Purpose:
    - Designed to slow the rate of spread, reduce flame lengths, and intensities of the fire prior to reaching the irrigated area.
    - Designed to eliminate the spread of fire from one plant to another via ladder fuels and eliminate horizontal continuity by property spacing remaining vegetation and limiting large masses of unbroken vegetation.
    - Reduce the fuel load of a wildland area adjacent to a structure, thereby, reducing the radiant and convective heat of wildland fires.

Figure 23. Example of Los Angeles Fire Department Fuel Modification Unit Requirements



- General Requirements:
  - Predominantly existing vegetation with removal of the majority of undesirable plant species including trees and tree-form shrubs.
  - Reduce fuel loading by reducing the fuel in each remaining shrub or tree without substantial decrease in the canopy cover or removal of soil holding root systems.
  - Some replacement planting with ornamental or less flammable native species to meet minimum slope coverage requirements of city or county public works landscape or hillside ordinances.
  - Natural vegetation is thinned by reduced amounts as the zone moves away from the development.

- Zone D- Interface Thinning Zone
  - Purpose:
    - Designed to slow the rate of spread, reduce flame lengths, and intensities of the fire prior to reaching the irrigated area.
    - Designed to eliminate the spread of fire from one plant to another via ladder fuels and eliminate horizontal continuity by properly spacing remaining vegetation and limiting large masses of unbroken vegetation.
    - Reduce the fuel load of a wildland area adjacent to a structure, thereby, reducing the radiant and convective heat of wildland fires.
  - General Requirements:
    - Area serving as the initial interface between wildland area and fuel modification zones.
    - Consists of native vegetation individually thinned to reduce foliage mass or fuel loading. This does not necessarily require removing plants, but thinning those that exist.
    - Proper thinning and spacing of remaining trees and tree-form native shrubs, reducing fuel load without overly exposing the soil to the threat of erosion.
    - Natural vegetation is thinned by reduced amounts as the zone moves away from the development. (LAFD 1998.)

Figures 24, 25, and 26, Impacts of Fuel Modification to Lyons Canyon Ranch Vegetation, Special-Status Species, and SEAs, respectively, show the effects of the proposed project and its associated fire clearance on the habitats and sensitive biological resources existing onsite. Since the exact location of each house is not yet known, the impact of the fuel modification zone was estimated by drawing a zone of approximately 200 feet from the proposed development envelope. This analysis excludes the impacts from the actual grading limits; however, those grading limits impacts are discussed above in the first paragraphs of this Project Impacts Section. Approximately 8.15 additional acres within Lyon Canyon SEA would be impacted as a result of the fuel modification zone, and no additional impacts would result in the Santa Susana SEA.

Table 22, Impact Area of Fuel Modification to Lyons Canyon Ranch Vegetation Alliances, lists the impacts of the fuel modification zone to each alliance observed onsite. These numbers represent additional impacts to natural vegetation; therefore, the areas listed in Table 20, Project Impact Area for Each Vegetation Type Onsite (above), do not include these impacts from fuel modification. Table 22 shows that in addition to the loss of 99.73 acres of natural vegetation onsite resulting from the proposed project, an additional 40.24 acres of natural vegetation will be lost or significantly degraded as a result of required fuel modofication around structures constructed onsite. Table 22 also shows that of the 40.24 acres of additional vegetation to be cleared resulting from fuel modification, that 31.80 acers of vegetation clearing will occur within the Lyons Canyon Ranch property, and 8.44 acres of clearing will occur outside of the property.

Figure 24. Impacts of Fuel Modification to Lyons Canyon Ranch Vegetation

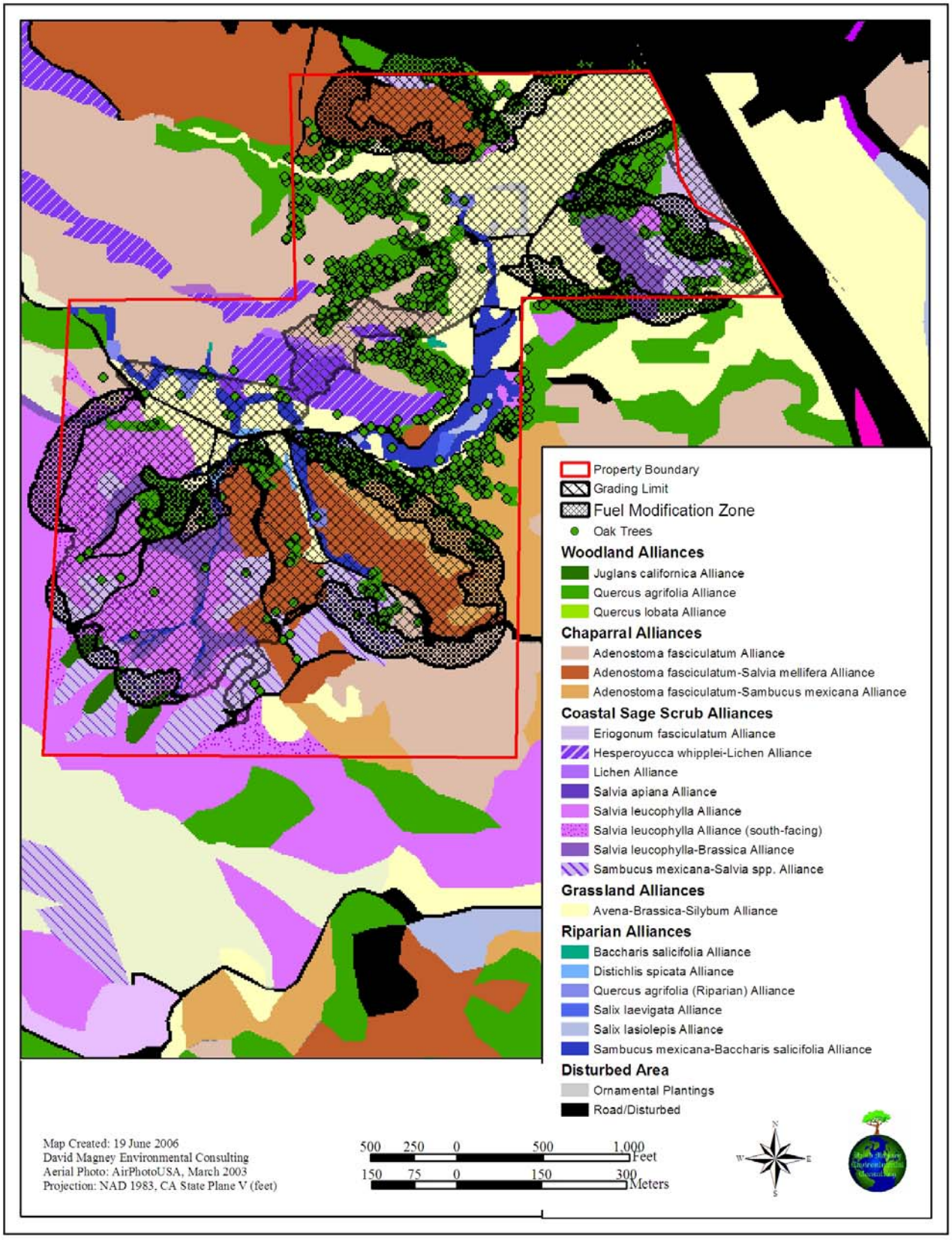


Figure 25. Impacts of Fuel Modification to Lyons Canyon Ranch Special-Status Species

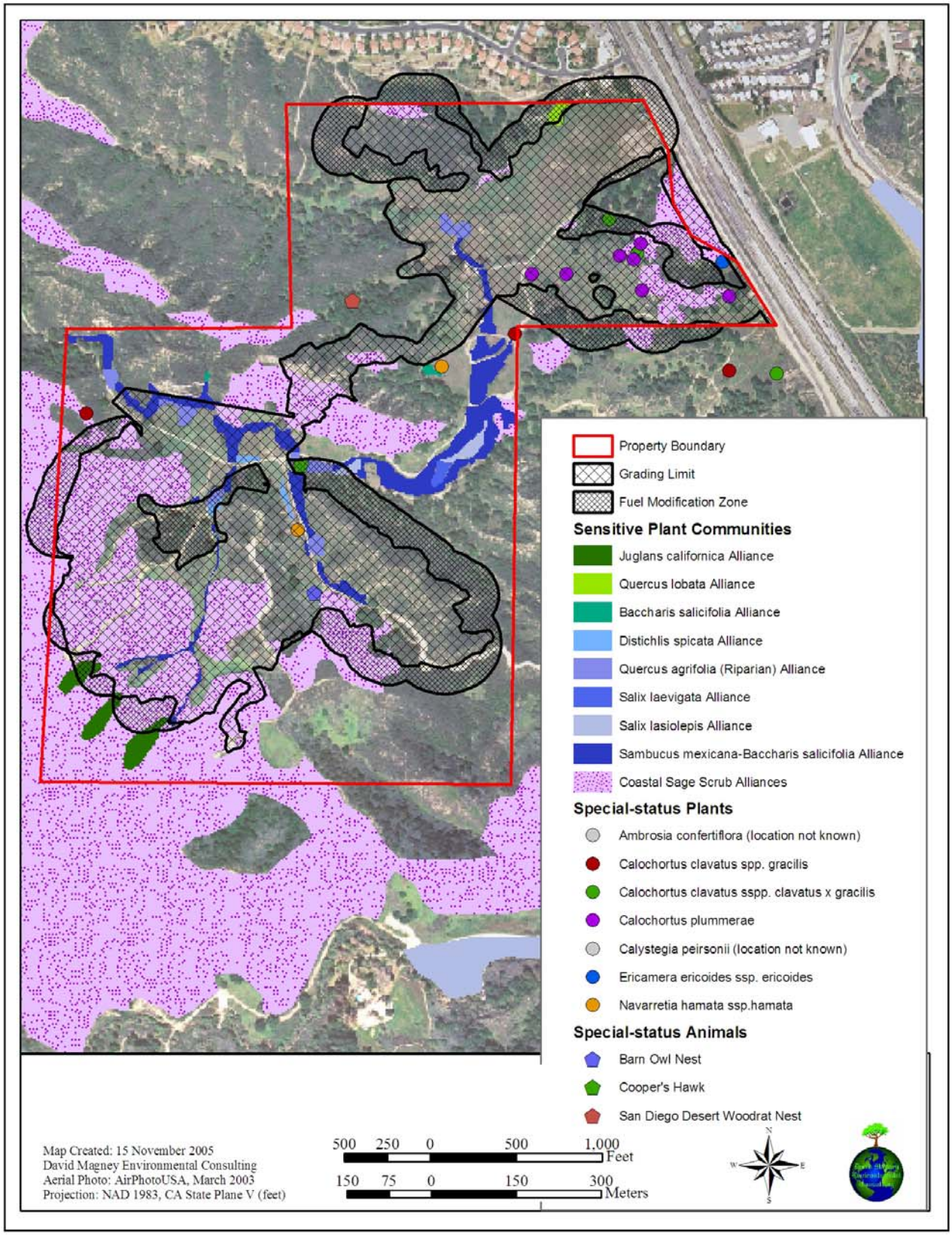


Figure 26. Impacts of Fuel Modification to Lyons Canyon Ranch SEAs

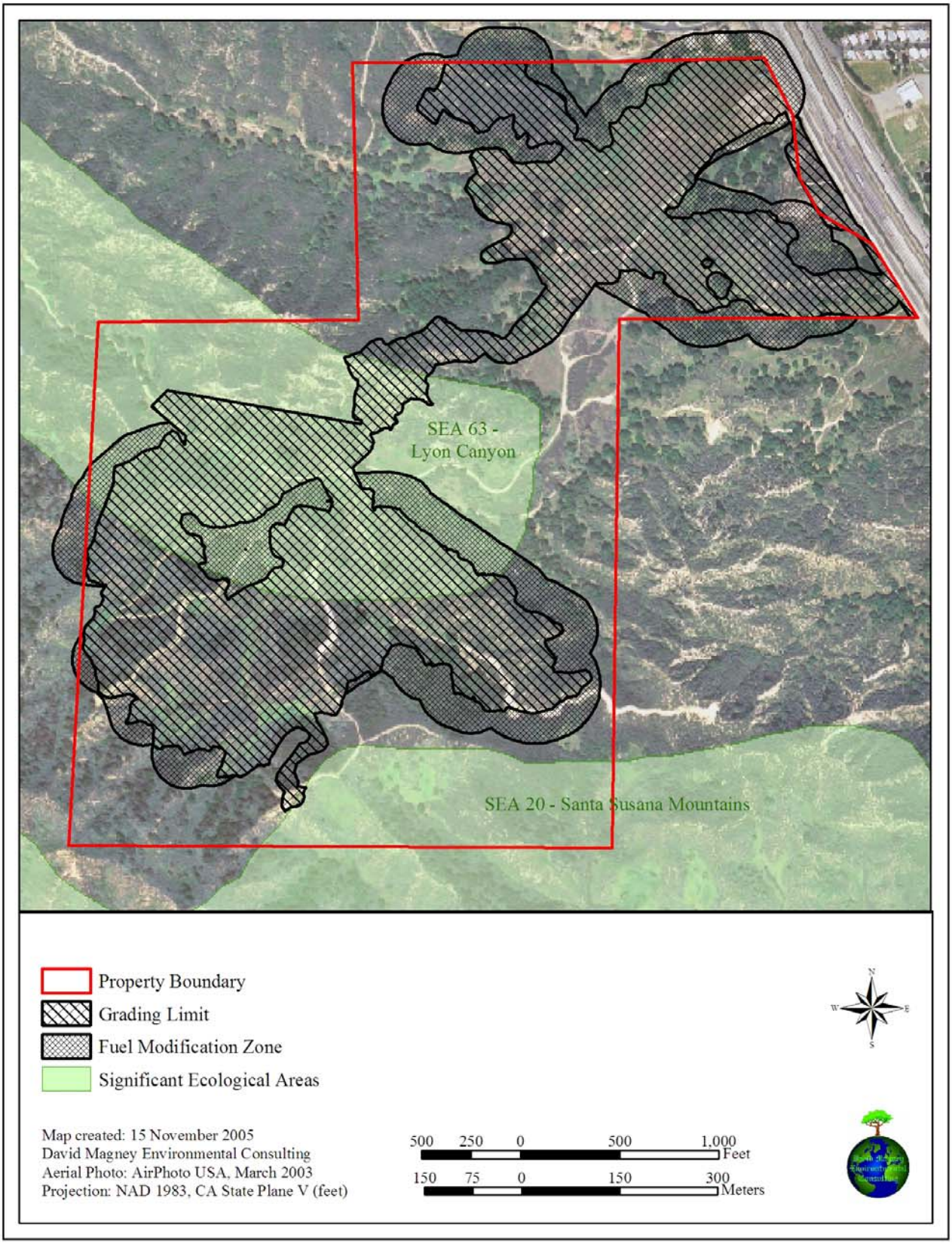


Table 22. Impact Area of Fuel Modification to Lyons Canyon Ranch Vegetation Alliances

Alliance	Area Within Property (Acres)	Area Outside Property (Acres)	Total
Adenostoma fasciculatum Alliance	2.30	0.00	2.30
Adenostoma fasciculatum-Salvia mellifera Alliance	3.45	0.10	3.55
Adenostoma fasciculatum-Sambucus mexicana Alliance	3.34	0.00	3.34
Avena-Brassica-Silybum Alliance	2.68	0.40	3.08
Distichlis spicata Alliance	0.09	0.00	0.09
Eriogonum fasciculatum Alliance	0.84	0.00	0.84
Juglans californica var. *californica* Alliance	0.42	0.00	0.42
Quercus agrifolia (Riparian) Alliance	0.46	0.00	0.46
Quercus agrifolia Alliance	10.15	2.82	12.97
Quercus lobata Alliance	0.21	0.00	0.21
Salix lasiolepis Alliance	0.09	0.00	0.09
Salvia apiana Alliance	0.03	0.00	0.03
Salvia leucophylla Alliance	1.60	1.69	3.29
Salvia leucophylla Alliance (south-facing)	0.54	0.00	0.54
Salvia leucophylla-Brassica Alliance	0.68	0.43	1.11
Sambucus mexicana-Baccharis salicifolia Alliance	0.19	0.00	0.19
Sambucus mexicana-Salvia spp. Alliance	3.64	0.00	3.64
Road/Disturbed	1.09	0.05	1.13
Urban Developed	0.00	1.93	1.93
Paved Road	0.00	1.03	1.03
Totals:	**31.80**	**8.44**	**40.24**

IMPACTS FROM LANDSCAPING

The proposed project will include landscaping adjacent to the natural vegetation. The landscaping may include ornamental species that are known to be particularly invasive. Subsequent homeowners may also plant invasive plant species in their yards. Seeds or propagules from invasive planted species may escape to natural areas and degrade the native vegetation, particularly along downstream riparian areas. These impacts would be considered *adverse* and *potentially significant* considering the two SEAs on the project site.

Level of Significance Before Mitigation: Potentially Significant

IMPACTS TO SEA INTEGRITY

Santa Susana Mountains SEA 20 is approximately 18,410.5 acres total. Approximately 17.54 acres of SEA 20 exist onsite. SEA 20 includes the southernmost portion of the Lyons Canyon Ranch property. Of the 17.54 acres onsite, approximately 0.06 acre will be impacted by the proposed project.

Lyon Canyon SEA 63 is approximately 174.45 acres total. Approximately 58.48 acres of SEA 63 exist onsite. SEA 63 includes the middle portion of the creek with the eastern end of the SEA in the center of the Lyons Canyon Ranch, extending westward beyond the project site. This SEA focuses on Chamise Chaparral, riparian, and oak woodland habitats along Lyon Canyon Creek. Of the 58.48 acres onsite, approximately 26.35 acres (45%) would be directly impacted by the proposed project.

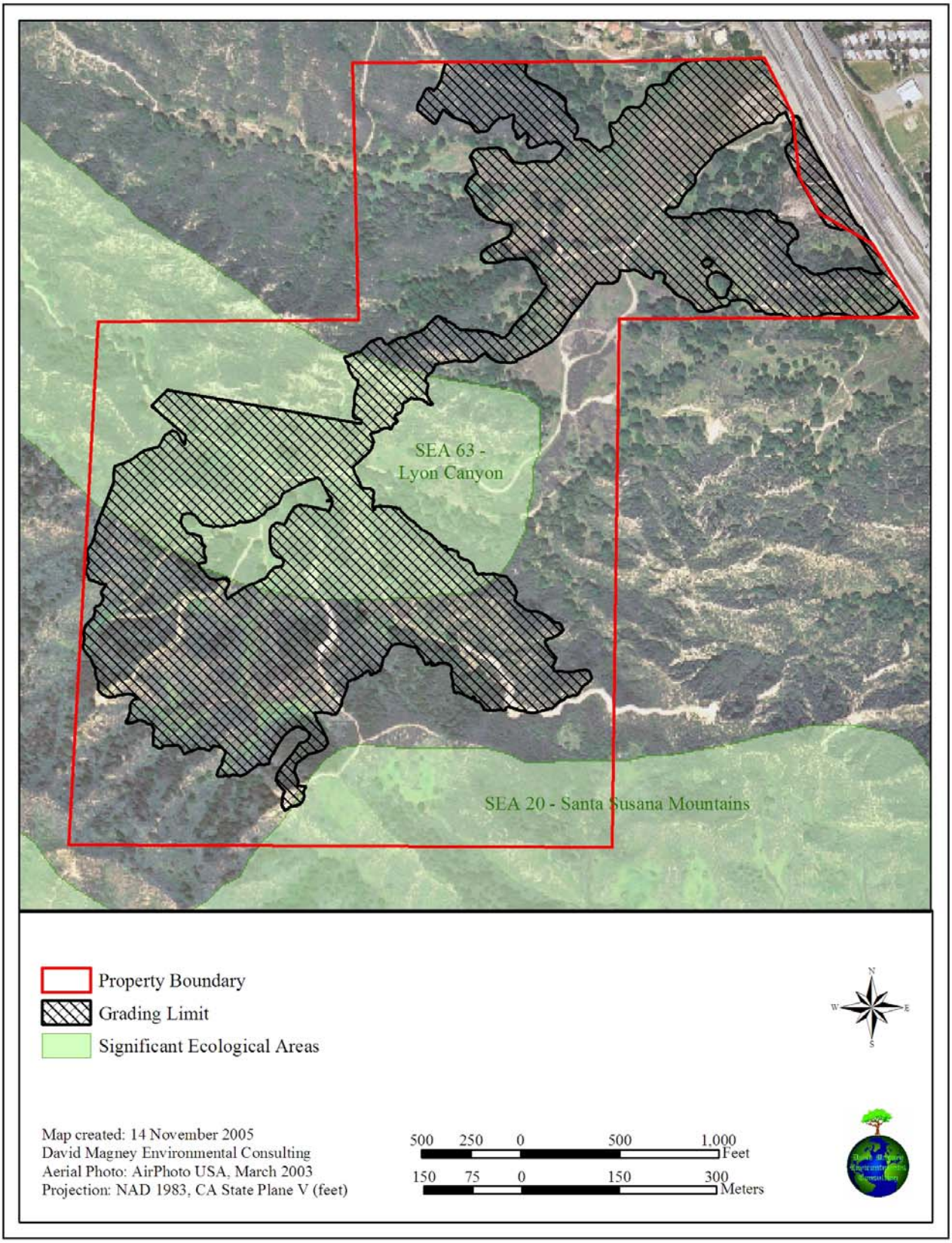
Figure 27, Grading Impacts to SEA Integrity, illustrates the impacts to SEA onsite.

Of the 26.35 acres of SEA 63 to be impacted, the area of *Adenostoma fasciculatum* Alliance (Chamise Chaparral) and *Quercus agrifolia* Alliance (Coast Live Oak Woodland) to be impacted is 7.34 and 2.17 acres, respectively. The impacts to wetland habitats within the SEA will be mitigated onsite.

The road is not necessarily incompatible, since wildlife movement will be facilitated by the installation of a large culvert under the road. The proposed project avoids impacts to approximately half of SEA 63; however, the primary access road would traverse the SEA. The drainage course will not be kept in a natural condition. Regardless, encroaching upon the SEA significantly reduces some of the wildlife functions and integrity of the SEA. The proposed project proposes to grade portions of Lyon Canyon Creek and adjacent lowland habitats within the bounds of SEA 63 in the area to the east of the middle portion of the SEA.

Level of Significance Before Mitigation: Potentially Significant

Figure 27. Grading Impacts to SEA Integrity



IMPACTS TO NATURAL OPEN AREA

The project site provides habitat similar to that in the undeveloped land to the west and south (Ed Davis Park in Towsley Canyon), including Riparian Scrub/Woodland, California Annual Grassland, Coastal Sage Scrub, Chaparral, and Coast Live Oak Woodland. The steep slopes and ridges combined with the canyon lowlands provide a diversity of habitats locally.

The project site contains more oaks and more riparian habitat, than the area surrounding it; however, the surrounding area has several communities with little to no representation in the project site Southern Sycamore-Alder Woodland, Southern Willow Scrub, and Riversidian Alluvial Fan Sage Scrub. This increase in habitat diversity probably reflects an increase in community diversity of the surrounding area, versus the project area.

The surrounding area provides relatively significant suitable connective habitats for species with large home ranges, such as Mountain Lion and Black Bear. There are more streams with less concrete in the surrounding area to the west and south, so the occurrence of special-status wildlife is more probable.

The 235-acre project site is currently natural open space, consisting of approximately 226.79 acres of natural vegetation and 8.71 acres of roads and disturbed areas. Of the 226.79 acres of natural vegetation onsite, approximately 99.73 acres of those habitats, including sensitive plant communities, will be impacted onsite (44.0%), and approximately 127.06 acres of natural habitats will be preserved onsite.

Level of Significance Before Mitigation: Significant

IMPACTS TO WILDLIFE TRAVEL ROUTES AND WILDLIFE CORRIDORS

Wildlife species routinely move between habitats and habitat areas to forage, mate, nest, and migrate seasonally. Interference in wildlife movement between habitats and core habitat areas decreases the ability of wildlife to survive locally or regionally, depending on the species' habitat requirements. Wildlife species such as the Mountain Lion require extremely large habitat areas to support a viable population. Blocking a species' ability to move within core habitats or between habitats may lead to local extirpation and extinction, even if a species is not threatened with extinction as a species globally. Creating barriers to wildlife movement can effectively eliminate adjacent, but otherwise suitable, habitat from the wildlife species range. In addition, these wildlife species would have an increased potential to interface with humans and their pets.

Development of the proposed project would result in the loss of approximately 99.73 acres of native habitat that provide valuable nesting, foraging, roosting, and denning opportunities for a wide variety of wildlife species. Implementation of the proposed project would further fragment existing wildlife habitat and wildlife travel routes on and in the vicinity of the project site, with preserved portions of the project site left with minimal or no habitat connection to core habitat areas. In addition, the proposed project would result in a reduction of open space habitats that support the regionally valuable wildlife corridor of East and Rice Canyons. Increased light and noise pollution and the concomitant increase in human activity after completion of the proposed development would likely further degrade the quality of this linkage in the vicinity of the proposed project.

Removing or altering habitats on the project site would result in the loss of small mammals, reptiles, amphibians, and other animals of low mobility that live within the project's direct impact area. More mobile wildlife species now using the project site would be forced to move into remaining areas of open space, consequently increasing competition for available resources in those areas. This would result in the loss of individuals that cannot successfully compete.

Since wildlife routes (movement paths within habitats) exist onsite, and since wildlife corridors (linking two separate core habitats) currently do not exist within the property boundaries, the following subsections discuss separately as the loss of wildlife travel routes onsite and the interference with wildlife corridors within lyon canyon.

Loss of Wildlife Travel Routes Onsite

Most wildlife travel routes existing onsite represent local movement paths between onsite habitats. A loss of a large number of localized paths is expexted due to the proposed project; however, habitat to be retained onsite will still be accessible to wildlife from adjacent habitats. The paths shown on Exhibit 5.6-27, Impacts to Wildlife Travel Routes on Lyons Canyon Ranch, illustrate the impacts to the paths as a result of the proposed project. Exhibit 5.6-27 includes known and observed paths as well as theoretical paths based on where wildlife typically move/travel. The actual number of paths impacted onsite can only be estimated. Wildlife will be able to use the remaining habitats within the periphery of the developed portion of the project site after construction; however, wildlife movement will be limited within the fuel modification zone since significant vegetation will be removed or thinned from that zone (up to 200 feet from all structures). Wildlife may be reluctant to use the fuel modification zones since much of the vegetation will be removed in these areas, with very little cover and/or shelter resources. This means that wildlife may only use the outside edge of the fuel modification zone, adjacent to intact natural vegetation.

Level of Significance Before Mitigation: Significant

Interference with Wildlife Corridors within Lyon Canyon

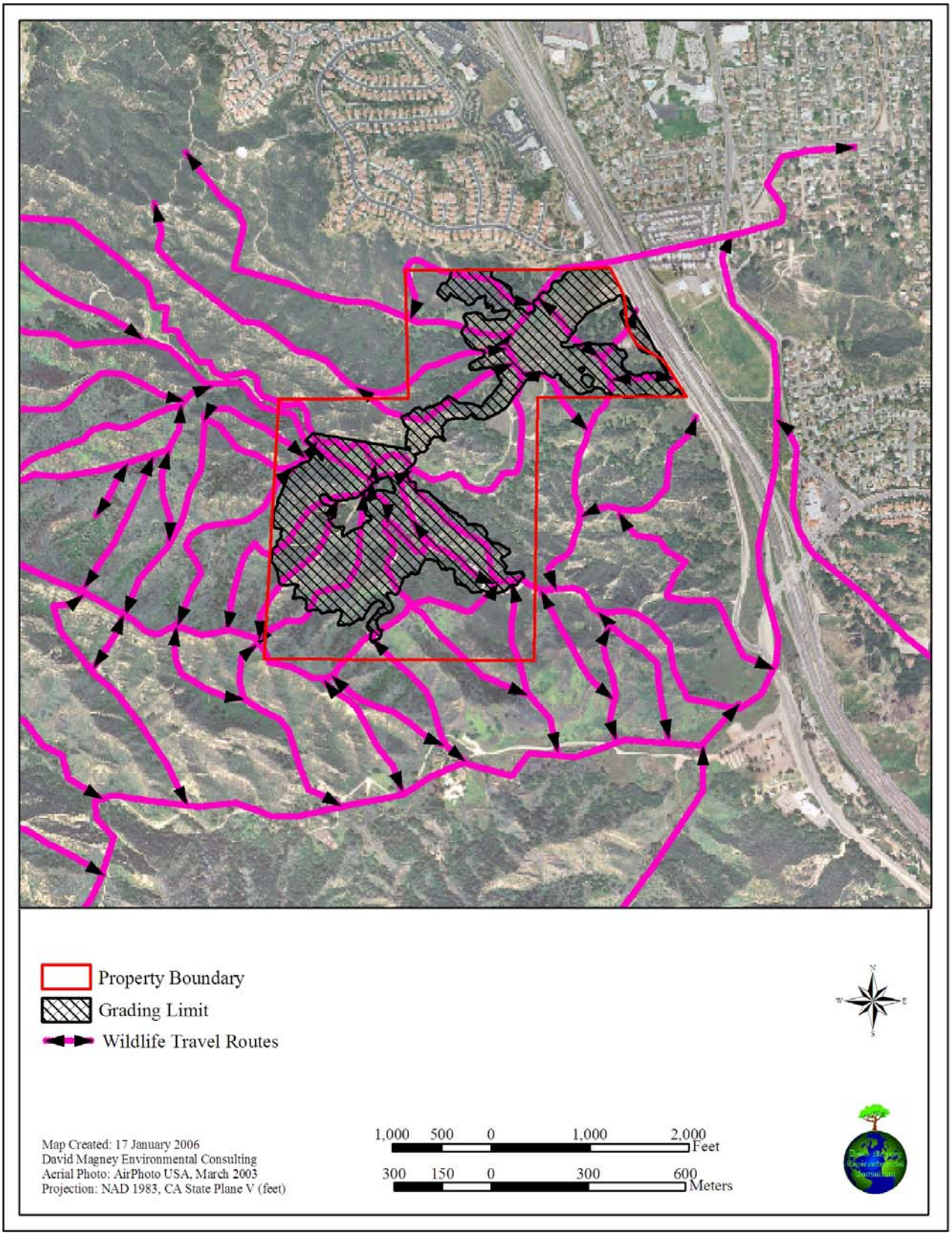
The proposed project is composed of two general development areas, which are connected by a road through the ridge on the north side of Lyon Canyon Creek. This road and development potentially creates an effective barrier to terrestrial wildlife movement to the east side of the project site and would interfere with movement within Lyon Canyon (Exhibit 5.6-27).

Lyon Canyon is currently the northernmost route of access from the Santa Susana Mountains to the I-5 over-crossing of Calgrove Boulevard. Although 57% of the project site would be preserved, portions of the remaining habitat will be isolated as relatively small islands surrounded by development. Connected areas will be reduced in value due to edge effects of the new adjacent land use. The impact associated with those adjacent land uses will vary depending on each species' habitat requirements. This loss of habitat would not represent a significant impact to the most common wildlife species that use the project site habitats. The use of these areas by special-status wildlife species would likely result in a significant adverse impact to wildlife by preventing or restricting movement onsite.

Established wildlife corridors occur in the region outside of the project site, where neither the east-west nor the north-south known wildlife corridors cross the project site. Regardless, it is possible the proposed project would result in significant impacts to existing offsite wildlife movement corridors and onsite travel paths, especially within Lyon Canyon.

Level of Significance Before Mitigation: Significant

Figure 28. Impacts to Wildlife Travel Routes on Lyons Canyon Ranch



CUMULATIVE IMPACTS TO BIOLOGICAL RESOURCES AND SEA INTEGRITY

The cumulative impacts to biological resources within and adjacent to Significant Ecological Areas are assessed below.

Cumulative Impacts to Oak Trees, Coast Live Oak Woodland, Coast Live Oak Riparian Woodland, and Valley Oak Woodland

Oak trees and oak woodlands throughout southern California have been decreasing in area and numbers since European colonization. Urban expansion in the Santa Clarita Valley region of Los Angeles County has significantly reduced oak trees and oak woodlands in the last 10 years, and currently proposed and permitted projects will further reduce them in the near future. The loss of 179 oak trees onsite and approximately 8.82 acres of oak woodland onsite, as a result of the proposed Lyons Canyon Ranch project, will contribute to this regional cumulative loss, and is considered a *cumulatively significant and unavoidable* impact. Proposed mitigation will reduce this cumulative loss onsite somewhat; however, a temporal loss of this habitat will occur for at least 10 decades until the planted trees reach maturity.

Cumulative Impacts to Biological Life History

Cumulative Impacts to Special-Status Plant Species

CUMULATIVE IMPACTS TO SPECIAL-STATUS PLANT SPECIES KNOWN ONSITE

Populations of several special-status plant species will be directly impacted by the proposed project. Mitigation measures are proposed to compensate for direct and indirect impacts to each species impacted. Cumulative impacts should be *less than significant* if the proposed mitigation measures of translocation, avoidance, and preservation mitigation measures are successful.

CUMULATIVE IMPACTS TO RARE PLANTS POTENTIALLY OCCURRING ONSITE

The plant species with high potential to occur onsite include: *Aster greatae*, *Erodium macrophyllum*, *Horkelia cuneata* ssp. *puberula*, *Lepidium virginicum* var. *robinsonii*, *Malacothamnus davidsonii*, *Nolina cismontana*, and *Senecio aphanactis*. Continued losses of populations and individuals of these species contribute to the cumulative loss of rare species regionally and statewide. If these special-status plant species that are likely to occur onsite are indeed impacted by the proposed project, and mitigation fails, the loss of individuals and populations of these species would contribute to the cumulative impact to these special-status plants species and would represent a cumulative significant impact. Therefore, impacts to special-status plant species potentially onsite is considered *cumulatively potentially significant*.

Cumulative Impacts to General Wildlife Species

CUMULATIVE IMPACTS TO AQUATIC/SEMI-AQUATIC WILDLIFE

Wetland habitats impacted by the proposed project will be mitigated onsite through onsite habitat restoration and enhancement. Successful implementation of the recommended mitigation measures should avoid any cumulative project-related impacts to aquatic wildlife or degradation of instream habitats. Therefore, the cumulative loss of aquatic/semi-aquatic wildlife is considered a *cumulatively less than significant* impact.

CUMULATIVE IMPACTS TO AMPHIBIAN WILDLIFE

The cumulative loss of amphibians globally has been an issue of concern to biologists. Habitat for amphibians has decreased significantly in Los Angeles County since European colonization and urban development has increased in the last decade in the Santa Clarita Valley region. Currently proposed and permitted projects will further reduce habitat in the near future. The cumulative loss of amphibians and amphibian habitats would contribute to the incremental and cumulative loss of amphibian wildlife, and is considered a *cumulatively potentially significant* impact.

CUMULATIVE IMPACTS TO REPTILE WILDLIFE

Habitat for reptiles has decreased significantly in Los Angeles County since European colonization and urban development has increased in the last decade in the Santa Clarita Valley region. Currently proposed and permitted projects will further reduce habitat in the near future; however, since a majority of the land within the region is preserved, and a majority of the project site habitat will be preserved, the cumulative impact to common reptile wildlife is considered *less than significant*.

CUMULATIVE IMPACTS TO BREEDING AND NESTING BIRDS

Habitat for nesting birds has decreased significantly in Los Angeles County since European colonization and urban development has increased substantially in the last decade in the Santa Clarita Valley region. The loss of unoccupied individual bird nests (other than raptor nests) and nesting habitat is considered a less-than-significant impact; however, the loss of an occupied nest is considered a significant impact. Currently proposed and permitted projects will further reduce existing bird nests and habitat for nesting birds in the near future. The cumulative loss of bird nests and nesting habitat would contribute to the incremental and cumulative loss of such habitat, and is considered a *cumulatively potentially significant* impact.

CUMULATIVE IMPACTS TO MAMMAL WILDLIFE

Habitat for mammals has decreased significantly in Los Angeles County since European colonization and urban development has increased in the last decade in the Santa Clarita Valley region. Currently proposed and permitted projects will further reduce habitat in the near future; however, since a majority of the land within the region is preserved, and a majority of the project site habitat will be preserved, the cumulative impact to common mammal wildlife is considered *cumulatively less than significant*.

Cumulative Impacts to Special-Status Wildlife Species

The direct loss of foraging and nesting habitat for the special-status wildlife species at the Lyons Canyon Ranch project site contributes to the cumulative loss of habitat for all wildlife species. Currently proposed and permitted projects will further reduce habitat in the near future. Since occupied and suitable habitat onsite to be preserved will be improved through enhancement actions, the cumulative loss of habitat will be mitigated in part; however, an incremental loss of habitat will remain as a project-related cumulative impact, and is considered a *cumulatively significant and unavoidable impact* to any special-status wildlife species inhabiting the project site.

CUMULATIVE IMPACTS TO COOPER'S HAWK (*ACCIPITER COOPERII*) AND FORAGING AND NESTING HABITAT

The direct loss of foraging and nesting habitat for the Cooper's Hawk at the project site contributes to the cumulative loss of habitat for this raptor. Suitable habitat for Cooper's Hawk exists onsite, and since suitable habitat to be preserved will be improved through enhancement actions, the cumulative loss of habitat will be mitigated in part; however, an incremental loss of habitat will remain a project-related cumulative impact, and is considered *cumulatively significant and unavoidable*.

LOSS OF OAK TITMOUSE (*BAEOLOPHUS INORNATUS*) AND FORAGING AND NESTING HABITAT

The direct loss of foraging and nesting habitat for Oak Titmouse at the project site contributes to the cumulative loss of habitat for this bird species. Suitable oak woodland habitat for Oak Titmouse exists onsite, and since suitable habitat to be preserved will be improved through enhancement actions, the cumulative loss of habitat will be mitigated in part; however, an incremental loss of oak woodland habitat will remain a project-related cumulative impact, and is considered *cumulatively significant and unavoidable*.

LOSS OF NUTTALL'S WOODPECKER (*PICOIDES NUTTALLII*) AND FORAGING AND NESTING HABITAT

The direct loss of foraging and nesting habitat for Nuttall's Woodpecker at the project site contributes to the cumulative loss of habitat for this bird species. Suitable oak woodland and riparian scrub habitats for Nuttall's Woodpecker exists onsite, and since suitable habitat to be preserved will be improved through enhancement actions, the cumulative loss of habitat will be mitigated in part; however, an incremental loss of oak woodland and riparian scrub habitats will remain a project-related cumulative impact, and is considered *cumulatively significant and unavoidable*.

CUMULATIVE IMPACTS TO BARN OWL (*TYTO ALBA*) NESTING HABITAT

The significance after mitigation would be *less than significant* because this owl species is highly adaptable and routinely utilizes man-made structures, and is little affected by human activities as long as suitable foraging habitat remains nearby. The loss of natural habitat onsite for the Barn Owl does contribute to the cumulative loss of foraging habitat; however, this is considered a *cumulatively less than significant* impact.

CUMULATIVE IMPACTS TO SAN DIEGO DESERT WOODRAT (*NEOTOMA LEPIDA INTERMEDIA*) AND HABITAT

Habitat for the San Diego Desert Woodrat has decreased significantly in Los Angeles County since European colonization and urban development has increased substantially in the last decade in the Santa Clarita Valley region. The loss of habitat for this subspecies is considered a significant impact. Currently proposed and permitted projects will further reduce existing San Diego Desert Woodrat habitat in the near future. The cumulative loss of San Diego Desert Woodrat habitat contributes to the incremental and cumulative loss of such habitat, and is considered a *cumulatively significant and unavoidable* impact.

CUMULATIVE IMPACTS TO SPECIAL-STATUS REPTILES POTENTIALLY PRESENT

The direct loss of up to 99.73 acres of foraging and breeding habitat for the six special-status reptile species, that are *likely* to occur at the project site (based on the presence of suitable habitat and the species are tracked nearby), contributes to the cumulative loss of habitat for these reptiles. The proposed project would result in the loss of:

- 7.84 acres of potentially occupied Coast Live Oak Woodland habitat, and loss of over 4 acres of potentially occupied riparian habitat for Silvery Legless Lizard.
- 7.84 acres of potentially occupied Coast Live Oak Woodland habitat, and loss of over 4 acres of potentially occupied riparian habitat for Coastal Western Whiptail.
- up to 23.57 acres of potentially occupied suitable Chaparral habitat for Rosy Boa.
- 2.66 acres of potentially occupied Rock Outcrops, 33.93 acres of Coastal Sage Scrub, and 23.57 acres of Chaparral habitat for San Diego Banded Gecko.
- 33.93 acres of potentially occupied foraging and breeding habitat (Coastal Sage Scrub) for San Diego Horned Lizard at the project site contributes to the cumulative loss of habitat for this reptile. Furthermore, urbanization adjacent to suitable habitat results in the introduction of the invasive Argentine Ant, which extirpates populations of native ants that the San Diego Horned Lizard feeds upon, resulting in an indirect impact.
- 7.87 acres of potentially occupied Coast Live Oak Woodland, 2.66 acres of Lichen Rock Outcrop, and 26.85 acres of Grassland for Coast Patch-nosed Snake. The direct loss of these foraging and breeding habitats for the Coast Patch-nosed Snake onsite contributes to the cumulative loss of habitat for this reptile.

Since preserved habitat onsite will be improved through enhancement actions, the cumulative loss of habitats for these six species will be mitigated in part; however, an incremental loss of habitat will remain as a project-related cumulative impact, and would be considered *cumulatively potentially significant and unavoidable* for each of the six reptile species likely to occur onsite.

CUMULATIVE IMPACTS TO SPECIAL-STATUS BIRDS POTENTIALLY PRESENT

The direct loss of up to 99.73 acres of foraging and nesting habitats for the ten special-status bird species, that are *likely* to occur at the project site (based on the presence of suitable habitat and the species are tracked nearby), contributes to the cumulative loss of habitat for these birds. The proposed project would result in the loss of:

- 33.93 acres of potentially occupied Coastal Sage Scrub, 23.57 acres of potentially occupied Chaparral, and 2.66 acres of potentially occupied Rock Outcrops for Southern California Rufous-crowned Sparrow.
- 26.85 acres of potentially occupied Grassland habitat for Grasshopper Sparrow.

- 33.93 acres of potentially occupied Coastal Sage Scrub, and 23.57 acres of potentially occupied Chaparral for Bell's Sage Sparrow.
- 3.56 acres of potentially occupied Southern Riparian Scrub, and 0.92 acre of potentially occupied Coast Live Oak Riaprian Woodland for Long-eared Owl.
- 33.93 acres of potentially occupied Coastal Sage Scrub and 3.56 acres of potentially occupied Southern Riparian Scrub for Costa's Hummingbird.
- 7.98 acres of potentially occupied Coast Live Oak, Valley Oak, and Southern California Black Walnut Woodlands; 23.57 acres of potentially occupied Chaparral; and 26.85 acres of potentially occupied Grassland habitat for Lawrence's Goldfinch.
- 26.85 acres of potentially occupied Grassland habitat, 7.87 acres of potentially occupied Coast Live Oak Woodland, and 33.93 acres of potentially occupied Coastal Sage Scrub habitat for Lark Sparrow.
- 99.73 acres of a variety of potentially occupied habitats for Northern Harrier.
- 7.98 acres of potentially occupied Coast Live Oak, Valley Oak, and Southern California Black Walnut Woodlands; 3.56 acres of potentially occupied Southern Riparian Scrub, and 0.92 acre of potentially occupied Coast Live Oak Riparian Woodland for Loggerhead Shrike.
- 23.57 acres of potentially occupied Chaparral habitat for California Thrasher.

Since preserved habitat onsite will be improved through enhancement actions, the cumulative loss of habitat will be mitigated in part; however, an incremental loss of habitat would remain as a project-related cumulative impact, and would be considered *cumulatively potentially significant and unavoidable* for each of the ten bird species likely to occur onsite.

CUMULATIVE IMPACTS TO MOUNTAIN LION (*PUMA CONCOLOR*) & HABITAT

The direct loss of approximately 99.73 acres of foraging habitat for the Mountain Lion at the Lyons Canyon Ranch project site contributes to the cumulative loss of habitat for this top predator species. Currently proposed and permitted projects will further reduce habitat in the near future. Since occupied and suitable habitat onsite to be preserved will be improved through enhancement actions, the cumulative loss of habitat will be mitigated in part; however, an incremental loss of habitat will remain a project-related cumulative impact, and is considered *cumulatively significant and unavoidable*.

CUMULATIVE IMPACTS TO RING-TAILED CAT (*BASSARISCUS ASTUTUS*) AND HABITAT

The direct loss of approximately 99.73 acres of foraging habitat for the Ring-tailed Cat at the Lyons Canyon Ranch project site contributes to the cumulative loss of habitat for this wildlife species. Currently proposed and permitted projects will further reduce habitat in the near future. Since occupied and suitable habitat onsite to be preserved will be improved through enhancement actions, the cumulative loss of habitat will be mitigated in part; however, an incremental loss of habitat will remain a project-related cumulative impact, and is considered *cumulatively significant and unavoidable*.

CUMULATIVE IMPACTS TO WESTERN MASTIFF BAT (*EUMOPS PEROTIS CALIFORNICUS*) AND HABITAT

The loss of up to 99.73 acres of foraging and nesting habitat contributes to the cumulative loss of such habitat for bats. Currently proposed and permitted projects will further reduce habitat in the near future. The cumulative loss of foraging and nesting habitat for bats is considered *cumulatively significant and unavoidable*.

Cumulative Impacts to Natural Vegetation, Including Sensitive Habitats

Cumulative Impacts to Grassland Habitat

Grasslands were once extensive and wide-ranging in California; however, the extent of grassland habitat has been reduced substantially, by up to 90 percent, since European colonization. Grassland habitats are the first to be developed for agriculture and urban uses. While the grassland habitats present at Lyons Canyon Ranch are dominated primarily by invasive exotic plant species, the value of the existing grasslands to wildlife for foraging is nearly equal to native grasslands. Furthermore, degraded grassland habitats retain potential for restoration.

The direct loss of approximately 26.85 acres of grassland habitat for wildlife at the Lyons Canyon Ranch project site contributes to the cumulative loss of grassland habitat. Currently proposed and permitted projects will further reduce grassland habitats in the near future. Since grassland habitat onsite to be preserved will be improved through enhancement actions, the cumulative loss of grassland will be mitigated in part; however, an incremental loss of grasslands will remain a project-related cumulative impact, and is considered *significant and unavoidable*.

Cumulative Impacts to Lichen-Rock Outcrop Habitat

Impacts to 2.66 acres of Lichen-Rock Outcrop habitat will contribute to the cumulative impacts on this habitat. Currently proposed and permitted projects will further reduce habitat in the near future. Since there is no mitigation for this impact, this impact is a *cumulatively significant and unavoidable.*

Cumulative Impacts to Coastal Sage Scrub Habitat

Coastal Sage Scrub was once extensive and wide-ranging in coastal California; however, the extent of Coastal Sage Scrub habitat has been reduced substantially, by up to 70 percent, since European colonization. Coastal Sage Scrub has been reduced as a result of agriculture (orchards) and urban development.

The direct loss of approximately 33.93 acres of Coastal Sage Scrub habitat for wildlife at the Lyons Canyon Ranch project site contributes to the cumulative loss of Coastal Sage Scrub habitat. Currently proposed and permitted projects will further reduce Coastal Sage Scrub habitats in the near future. Since Coastal Sage Scrub habitat onsite to be preserved will be improved through enhancement actions, the cumulative loss of Coastal Sage Scrub will be mitigated in part; however, an incremental loss of Coastal Sage Scrub will remain a project-related cumulative impact, and is considered *significant and unavoidable*.

Cumulative Impacts to Chaparral Habitat

The direct loss of approximately 23.57 acres of Chaparral habitat for wildlife at the Lyons Canyon Ranch project site contributes to the cumulative loss of Chaparral habitat throughout the region. Currently proposed and permitted projects will further reduce Chaparral habitats in the near future. An incremental loss of Chaparral will remain a project-related cumulative impact, and is considered *significant and unavoidable*.

Cumulative Impacts to Coast Live Oak Woodland and Coast Live Oak Riparian Woodland Habitats

Coast Live Oak trees and Coast Live Oak Woodland throughout southern California have been decreasing in area and numbers since European colonization. Urban expansion in the Santa Clarita Valley region of Los Angeles County has significantly reduced oak trees and oak woodlands in the last 10 years, and currently proposed and permitted projects will further reduce them in the near future. The loss of 168 Coast Live Oak trees onsite (and the encroachment of 69 Coast Live Oak trees onsite) and approximately 8.79 acres of Coast Live Oak Woodland onsite, as a result of the proposed Lyons Canyon Ranch project, will contribute to this regional cumulative loss, and is considered a *cumulatively significant and unavoidable* impact. Proposed mitigation will reduce this cumulative loss onsite somewhat; however, a temporal loss of this habitat will occur for at least 10 decades until the planted trees reach maturity.

Cumulative Impacts to Valley Oak Habitats

Currently proposed and permitted projects will further reduce the number of Valley Oak trees and Valley Oak Woodland in the near future. The loss of 6 Valley Oak trees onsite (and the encroachment of 5 Valley Oak trees onsite) and approximately 0.03 acre of Valley Oak Woodland onsite, as a result of the proposed Lyons Canyon Ranch project, will contribute to this regional cumulative loss, and is considered a *cumulatively significant and unavoidable* impact. Proposed mitigation will reduce this cumulative loss onsite somewhat; however, a temporal loss of this habitat will occur for at least 10 decades until the planted trees reach maturity.

Cumulative Impacts to Wetland Habitats and Plant Communities

Since no areas exist onsite to create the 7.02 additional acres of wetland mitigation, impacts to wetland habitats would be considered a *cumulatively significant and unavoidable impact*.

Cumulative Impacts to Wildlife Foraging and Cover Habitats

The wildlife habitats observed onsite include those sensitive habitats discussed, including Grassland, Coastal Sage Scrub, Chaparral, Coast Live Oak-California Black Walnut Woodland, and Southern Riparian Scrub. These habitats observed at Lyons Canyon Ranch are used for nesting and foraging habitat for several species of birds, and cover and foraging habitat for small and large mammals. Several wildlife species use the habitats onsite as a movement corridor where the site vegetation provides cover from predators and food and water resources. The function of the wetland habitat onsite is improved by the presence of natural upland vegetation and habitats creating cumulative high species richness for the Lyon Canyon area.

A total of approximately 99.73 acres of natural vegetation will be impacted onsite, including sensitive plant communities and wetlands. Collectively, impacts to these wildlife habitats, including impacts that break their connectivity and increase habitat fragmentation, are considered a *cumulatively significant and unavoidable* impact.

Cumulative Impacts of Fuel Modification

In addition to the proposed project resulting in the loss of 99.73 acres of natural vegetation, fuel modification, required by the County of Los Angeles Fire Department Fuel Modification Unit, will also result in the loss of, or significant degradation to, an additional 40.24 acres of natural vegetation. More specifically, the implementation of the required 200-foot-wide structure protection zone around each building constructed at the project site will result in the additional loss of up to 40.24 acres of natural vegetation. The 40.24 acres is the portion of the fuel modification zone that extends beyond the project grading limits, which will contribute additionally to the cumulative loss of natural vegetation in the region. Currently proposed and permitted projects in the region will further reduce the total area of natural vegetation in the near future. This will contribute to the cumulative loss of natural vegetation and is considered *cumulatively significant and unavoidable*.

Cumulative Impacts to SEA Integrity

Ed Davis Park in Towsley Canyon (otherwise known as Towsley Canyon Park) is a subset of the Santa Clarita Woodlands Park, and is an open space reserve located immediately to the south of Lyons Canyon Ranch. Other than Ed Davis Park, Lyon Canyon includes the majority of the remaining open space, including SEAs.

The Lyon Canyon SEA does not coincide with the canyon's watershed boundary; however, it is a relatively narrow canyon that contains both an oak woodland community and a substantial Chamise Chaparral community. The oak woodland, found in the southern portion of the Lyon Canyon SEA, contains both *Quercus agrifolia* (Coast Live Oak) and *Quercus lobata* (Valley Oak) trees. The northern portion of the SEA contains the Chamise Chaparral community consisting of *Rhus ovata* (Sugarbush), *Ceanothus crassifolius* (Snowball Ceanothus), *Salvia mellifera*, *Baccharis salicifolia*, and *Adenostoma fasciculatum*, which is the dominant shrub.

The uses surrounding the project site are I-5 on the east, Ed Davis Park in Towsley Canyon to the south, vacant land to the west, residential uses on Sagecrest Circle and the Stevenson Ranch development, opposite of Sagecrest Circle, to the north. Due to the I-5 and the Stevenson Ranch development, there is no vegetation bordering the project site to the east or to the north, respectively. South of the project site lies Ed Davis Park in Towsley Canyon, which contains habitat similar to that found onsite, including the following: riparian scrub/woodland, California Annual Grassland, Coastal Sage Scrub, chaparral (primarily Chamise Chaparral), and Coast Live Oak Woodland. The undeveloped land to the west of the project site contains similar general vegetation types, with fewer oaks than encountered on the project site, and less riparian habitat, concentrated in narrow corridors.

Wildlife within the Santa Clarita Valley-Santa Susana Mountains is extremely diverse with a special abundance in undeveloped high quality habitats. The river channels and open upland areas are ideal habitat for movement and foraging by wildlife species. The nearby Angeles National Forest also offers habitat and movement corridors for larger species. Native mammal diversity is extensive and abundant. Bird diversity within the region is related to habitat opportunities for resident, migrant, and seasonal species that occupy the area. Amphibians and reptiles are also abundant and relatively diverse within certain segments of the region.

The surrounding area has some communities with little to no representation in the project site, including Bigcone Spruce-Canyon Oak Forest, Coast Live Oak Riparian Woodland, California Juniper Woodland, Pinyon-Juniper Woodland, Southern Sycamore-Alder Woodland, Southern Willow Scrub, vernal pools, and Riversidian Alluvial Fan Sage Scrub, most of which are more than a half mile from the project site. This increase in habitat diversity probably reflects an increase in community diversity of the surrounding area, versus the project area. The land to the north and east is developed and provides little to no habitat.

The surrounding area allows for species with large home ranges, such as Mountain Lion and Black Bear. There are more streams with less concrete in the surrounding area to the west and south, so the occurrence of special-status aquatic wildlife is more probable. Several special-status plant and wildlife species occupy habitat within the surrounding area.

The potential for effects on the natural resources and integrity of SEAs 20 and 63 are limited. The limiting factors include:

1) The size of SEA 63 within the project site and the neighboring property to the west. Because no development is currently proposed for the property to the west of the Lyons Canyon Ranch property, no cumulative impact potential currently exists. This parcel may develop in the future; however, the current General Plan land use and zoning designations permit only low-density residential development.

2) The Taylor-Prentice property immediately southeast of the project site, adjacent to SEA 20, has similarly no development application before the County of Los Angeles. The majority of land within SEA 20 is held in trust for the public by land conservancies or other legal jurisdictions. This parcel may be developed sometime in the future; however, the current General Plan land use and zoning designations permit only low-density residential development.

The potential impact to the SEAs is considered a *cumulatively less than significant impact* because no other projects are proposed that would degrade them.

Cumulative Impacts to Natural Open Areas

Tables 23, Cumulative Projects List (City of Santa Clarita), and 24, Cumulative Projects List (Unincorporated Area of Los Angeles County), identify related projects and other possible development in the area determined as having the potential to interact with the proposed project to the extent that a significant cumulative effect may occur. Information integral to the identification process was obtained from the City of Santa Clarita and County of Los Angeles. The resulting related projects include primarily only those determined to be at least indirectly capable of interacting with the proposed project.

Based on the following tables, the total of future projects is approximately 10,180 acres of residential and approximately 802 acres of commercial; therefore, approximately 10,982 acres of natural habitats will be impacted by future developments. The 99.73 acres of impact to natural vegetation resulting from the Lyons Canyon Ranch development is relatively insignificant compared to the total of all future projects. However, 99.73 acres ultimately contribute to the cumulative impacts to natural open areas, and is considered a *cumulatively significant and unavoidable* impact.

Cumulative Impacts to Wildlife Travel Routes Onsite

Most wildlife travel routes existing onsite represent local movement paths between onsite habitats. A loss of a large number of localized paths is expexted due to the proposed project; however, habitat to be retained onsite will still be accessible to wildlife from adjacent habitats. The paths shown on Exhibit 5.6-27, Impacts to Wildlife Travel Routes on Lyons Canyon Ranch, illustrate the impacts to the paths as a result of the proposed project. Exhibit 5.6-27 includes known and observed paths as well as theoretical paths based on where wildlife typically move/travel. The actual number of paths impacted onsite can only be estimated. Wildlife will be able to use the remaining habitats within the periphery of the developed portion of the project site after construction; however, wildlife movement will be limited within the fuel modification zone since significant vegetation will be removed or thinned from that zone (up to 200 feet from all structures). Wildlife may be reluctant to use the fuel modification zones since much of the vegetation will be removed in these areas, with very little cover and/or shelter resources. This means that wildlife will most likely use only the outside edge of the fuel modification zone, adjacent to intact natural vegetation. Therefore, the project will contribute to the cumulative impacts to wildlife paths with in Lyons Canyon Ranch, and is considered a *cumulatively significant and unavoidable* impact.

Table 23. Cumulative Projects List (City of Santa Clarita)

Name and/or Location	Description
1) South of Pico Canyon Road/West of The Old Road	74 Single Family Residential DU 83,000 sq. ft. Commercial Retail 221,0000 sq. ft. Commercial Office
2) South of Pico Canyon Road/West of Stevenson Ranch Parkway	18-Acre Park
3) Stevenson Ranch Phase III: North of Pico Canyon Road/West of The Old Road	94 Single Family Residential DU 100 Condominium/Townhouse DU 567 Apartment DU 5-acre Park
4) Westridge: North and South of Valencia Boulevard/West of The Old Road	254 Single Family Residential DU 80 Condominium/Townhouse DU 378 Apartment DU Elementary School and 5-acre Park
5) North of Valencia Boulevard/East of The Old Road	20,000 sq. ft. Commercial Retail
6) South of Valencia Boulevard/East of The Old Road	72,000 sq. ft. Commercial Office
7) North of McBean Parkway/West of Rockwell Cyn Rd.	250,000 sq. ft. Commercial Office
8) South of Valencia Boulevard/West of Rockwell Canyon Road	28,000 sq. ft. Commercial Office 6,500 Additional Students (College of the Canyons)
9) Gate-King Industrial Park: South of San Fernando Road/West of Sierra Highway	4,200,000 sq. ft. Industrial Park
10) Tract No. 61811: North side of Golden Valley Road at Robert E. Lee Parkway	167 Single-family Residential DU on 33 total acres.
11) Las Lomas: Northeast side of Interstate 5, immediately north of Interstate 5/State Route 14 Interchange	5,800 Residential DU, 2.3 million square feet of office uses, 225,000 square feet of retail uses, and 3 public schools (K-12) totaling 250,000 square feet on a total of 555 acres.
12) Porta Bella or Whittaker-Bermite (partial): South of Soledad Canyon Road, east of Circle J Ranch area	Approximately 50% of the project land use is included in the Interim Year Database. 100% of the project land use is included in the long-range database. Includes 1,244 single-family dwelling units, 1,667 multi-family residential units, 2,911,000 square feet of commercial uses, and 448.7 acres of open space.

Name and/or Location	Description
13) Valencia Town Center: East of McBean Parkway, north of Valencia Boulevard, south of Magic Mountain Parkway, and west of Citrus Street	Expansion of the existing shopping mall to consist of an additional 600,000 square feet of retail and office uses, including a new 171,000-square-foot department store.
14) Tentative Parcel Map 20838: North of Bouquet Canyon Road and south of the Santa Clara River	Development of 168 multi-family apartment dwelling units.
15) Facey Medical: Southwest corner of McBean Parkway and Valencia Boulevard	79,000 square feet of medical office uses
16) Tract No. 53419: North of Golden Valley Road and Northwest of Sierra Highway	111 Multi-family Residential DU
17) Tract No. 53074: Northeast corner of Sierra Highway and Sand Canyon Road	24 Single-family Residential DU, 100,000 square feet of commercial uses, and 2 open space lots on 55 total acres.
18) Tract No. 52355: North of Sierra Highway and east of Sand Canyon Road, just north of Tract No. 53074	63 Single-family Residential DU and 64 open space lots on 34.3 total acres.
19) Golden Valley Ranch (Tract No. 52414): South of SR-14, north of Placerita Canyon Road, and west of Sand Canyon Road	498 Single-family Residential DU, 618,759 square feet of commercial uses, open space, a school, and fire station on 1,289 total acres.
20) Tract No. 47787: South of Placerita Canyon Road and east of Sand Canyon Road	7 Single-family Residential DU
21) Tract No. 47785: Immediately east of Sand Canyon Road, south of SR-14, and north of Placerita Cyn Rd.	20 Single-family Residential DU on 23.44 total acres.
22) Henry Mayo Newhall Memorial Hospital Master Plan: North side of McBean Parkway at Orchard Village Road.	Net addition of 601,639 square feet of medical office and administration buildings, patient towers.

Table 24. Cumulative Projects List (Unincorporated Area of Los Angeles County)

Name and/or Location	Description
1) PM062134; North of Vasquez Canyon between Burton Way and Far Hills Rd; 4 lot subdivision/hillside cup	4 Single Family Lots on 37.63 acres
2) PM27121; 30501 Bouquet Canyon Road	4 Single Family Lots on 28.69 acres
3) TR53189; HNM: 279M117; west of San Francisquito Canyon Road between Lowridge Place & Cherokee Canyon Lane	66 Lots: 60 Single Family, 3 Open Space, 3 Public Facility Lots on 185.8 acres
4) PM060030; HNM: 273H089, 273H093, 276H093; South of Hasley Canyon between Camino Del Valle & Avenue Penn., Val Verde	Major land division to create 24 Industrial Lots on 119.2 acres
5) PM060734	Subdivision of 5 parcels into 10
6) PM060792; HNM: 240H121, 240H125, 237H125, 237H129, 234H129, 234H133; Northeasterly of the I-5 Fwy. and The Old Road; APN: 2827028004	Reversion to acreage of 14 lots to one lot
7) PM062336; West side of southerly Gibrator Lance Driveway Extension	11 Industrial Condo Lots 10 Buildings 1 Parking Lot on 9.10 acres
8) PM062615; Avenue Penn approx. 500 ft southerly of Witherspoon Parkway	Major land division: 1 industrial lot with 6 attached condominiums in 3 buildings on 2.81 acres
9) PM26574; located off of The Old Rd between Turnberry & Muirfield in Santa Clarita	Amendment to approved map (16 industrial lots on 11.2 acres) to reconfigure lots 1-8, buildings and parking area
10) TR060257; HNM: 276H089, 276H093, 273H093, 273H089; West of Camino Del Valle, easterly of Van Buren Street, Val Verde	257 Lots: 244 Single Family 3 MF (109 NC), 1 C, 1 PK 8 Open Space on 218 acres

Name and/or Location	Description
11) TR060319; HNM: 282H101, 279H101; west side of The Old Road between Sedona Way & Hillcrest Parkway	One multi-family lot with 35 new single family detached condominiums on 5.7 gross acres
12) TR060665; HNM: 276H089, 276H093, 279H089, 279H093; Southerly of Hasley Canyon Road	Proposed development of 10 lots
13) TR060678; Newhall Ranch Heritage	5,464 units 3 schools, 3 parks, fire station, private recreation, open space, spineflower preserve, and natural open space on 2,699.1 acres
14) TR061996; 2826009103	1381 single family, 20 mf (2086 nc), 1 lot w/ 342 beds for assisted living, 8 c lots, 11 rec lots, 62 private street lots, 47 utility lots, 367 open space lots, 75 trail lots on 1750 ac
15) TR52905; HNM: 249H105, 249H109; south of Pico Canyon Road, approx. 1.25 mile west of I-5 Fwy; APN: 2826-020-015	37 sf lots on 94.83 ac
16) TR53295; 27254 Saugus Ventura Rd	638 lots, including 3,230 dwelling units and 3,085,007 single family commercial space on 812.8 acres (Previously 27 industrial lots on 114 acres)
17) TR53653	100 single family, 1 mf, 5 open space, 6 pf lots on 232 acres. Concurrent oak tree permit, cup-sea, hm, density bonus
18) TR060359; HNM: 276H165; Wistaria Valley Road between Doug Road and terminus	55 lots: 50 single family, 2 public facility lots, 3 open space) on 81.6 acres
19) TR060922; HNM: 270H145, 270H149, 267H145, 276H149, 273H149, 153H270, 282H153, 279H153, 276H153, 267H149, 279H149; west of Sierra Hwy., south of Vasquez Canyon Road; APN: 2839002017	1,251 single-family lots, 1 school, 7 park, 30 open space and 12 debris basin lots on 2,206 acres
20) TR060999; HNM: 273-141, 270-141; South of Whites Canyon Road; APN: 2812009032	45 Single Family 1 Open Space Lot on 12.50 acres
21) TR062389; southeast of the Plum Canyon Road and Golden Valley Road intersection	6 lots; 81 units 9.9 acres
22) TR52833; 27342 Woodfall Road	751 Single Family 140 NC 155 Apartments on 602.1 acres
23) 061976; 0 VAC/Haskett Rd/VIC	4 single family lots on 22.3 ac
24) PM061748; 0 VAC/Escondido Canyon Road/Vic Hubba Road	4 Single Family Parcels with Hillside CUP on 19.00 acres
25) PM062192; 9100 Sierra Hwy	4 single family lots on 20.52
26) PM062890; Located off Shannondale near Clayvale, Acton	4 Single Family Lots on 20 gross acres
27) PM062944; 0 VAC/ Hypotenuse Rd/VIC	4 single family lots on 20 acres
28) PM11641; 3862 Roberts Road	(RA) 4 Single Family Lots on 4.89 acres in A1-10K (TN)
29) PM26478; 0 VAC/WESTCOATT/VIC; located at 31st Street West, north of Bandell Street, south of Westcoatt Street	Four single family lots on 20 acres
30) PM26508; 0 VAC/Crown Valley Rd/Vic Banson T	4 single family lots on 5 acres
31) TR060259; 0 VAC/TICK CYN RD/1 1/2 MI N SOL ED; at the northeasterly extension of Shadow Pines Blvd east of Snow Drop Court and Jasmine Valley Dr	492 Single-family, 1 Park, 28 Open Space, 1 Water Tank, 7 Bio Basin and 1 Sewer Pump Station lots on 500 acres
32) TR060464; 0 VAC/CEDRAL ST/VIC ACKLINS AV	56 single family lots on 83.96 acres

Name and/or Location	Description
33) TR061708; 0 VAC/COR SIERRA HWY/LISTIE AV	10 single family lots on 11.71 acres
34) TR062320; 0 VAC/Sierra Hwy/VIC Johnson Road; Located 2,360 feet west of Caprock Road between Caprock Road and Johnson Road, Agua Dulce	19 Single Family Lots on 98.6 acres
35) TR062921	20 single family lots on 52.6 acres
36) TR060024; HNM: 291H097, 291H101; east & west of Van Gorder Way between Lake Hughes & Violin Canyon, Castaic	1 multi-family lot with 84 new single family detached condominiums
37) TR060543	28 single family, 1 pf, 1 open space lots on 40 ac
38) TR062351	Subdivide into 6 lots: 4 commercial lots, 1 industrial lot, 1 remainder parcel
39) TR062401; 28718 San Francisquito Canyon Rd; located east of San Francisquito Canyon Rd between Lowridge Place and Copperhill Drive	194 lots (161 single-family, 5 multi-family (422 units), 26 open space, 2 bio basin on 154.4 acres
40) TR062985; 0 VAC/COR Crown Valley Rd/Banson	16 single family lots on 19 acres
41) TR43196-2; 0 VAC/Sierra Hwy/VIC Desert Rd; at North Sierra Hwy and East McEnnery Cyn Rd, Acton	Reactivation: 22 Single Family Lots on 22.6 acres
42) TR54237; 0 VAC/Sierra Hwy/Vic Ward Rd	4 single family lots and 1 remainder parcel on 32.4 acres
43) TR54337; 0 VAC/VIC Calmgarden Rd/Silverset; Located at Cedarcroft Road/south of Y-8	(TN) 5 Single Family Lots on 79.22 acres

SECTION 6. MITIGATION MEASURES

The recommended mitigation measures (if required), the level of significance after mitigation, and the residual effects (if any), are presented.

MITIGATION FOR IMPACTS TO TREES AND SENSITIVE WOODLAND HABITAT

Mitigation for Loss of Southern California Black Walnut Woodland

BIO1 **Plant *Juglans californica* Onsite**. To mitigate for the loss of 0.08 acre of *Juglans californica* var. *californica* Alliance, plant locally indigenous seeds from this species in the appropriate locations such as a designated mitigation site. Seeds are a viable source for mitigation; however, nursery-grown plantings should have higher success. With proper maintenance and monitoring, the impacts should be fully mitigable. Planting should occur on one or more of the preserved areas onsite on a north-facing slope adjacent to Coast Live Oak Woodland areas. The total area to be planted should be approximately 0.16 acre.

Walnuts, acrons, and seeds required for restoration plantings of *Juglans californica* var. *californica*, as well as for other special-status species to be impacted onsite, shall be obtained from the native trees, shrubs, herbs, and grasses cleared from the project site during construction activities. If additional seeds are required to complete the restoration effort, seeds and/or plant material may also be salvaged from other areas of the project site. Additional seeds should only be collected from areas of the project site that are already disturbed in order to prevent any additional impacts. The seeds from preserved special-status plant species inhabiting the property shall be manually collected, without damage to the living plants or their habitats, during their appropriate seeding periods and used for planting onsite to mitigate for impacts to special-status species.

All replacement seed stock shall be obtained from the existing project site vegetation. The contractor shall provide a list of any materials that must be obtained from other than onsite sources prior to planting. Unacceptable plant material will be rejected, at the contractor's expense, by restoration specialists.

BIO2 **Mitigation Measure for the Implementation of Conditions of Approval Related to Preserve Maintenance.** The Lyons Canyon Ranch project shall provide for the establishment of a Home Owners' Association (HOA) and the preparation of Conditions, Covenants, and Restrictions (CC&Rs) prior to the recordation of the final tract map as a condition of project approval. The HOA shall be governed by CC&Rs that describe all aspects of property maintenance of common area preserves and biological resource mitigation areas under control of the HOA. The HOA shall be fully funded, pursuant to, and consistent with, the recorded CC&Rs.

The Lyons Canyon Ranch project HOA shall maintain all common areas consistent with the applicable mitigation measures and conditions of approval adopted by the County of Los Angeles. The applicable mitigation measures and conditions of approval that fall under the responsibility of the HOA shall be explicitly specified in the CC&Rs, and shall be verified by the County of Los Angeles prior to recordation of the final tract map.

The HOA shall retain the services of a wildlands ecologist familiar with plants and wildlife native to the Santa Clarita region to provide review and approval of the specific activities of preserve parcels prior to installation consistent with the plant list approved by the County Biologist. The ecologist shall also oversee HOA maintenance staff, when performing the following maintenance, to ensure compliance with biological mitigation measures applicable to the project site:

- Fuel modification within common areas;
- Maintenance of privately owned wetlands restoration areas;
- Maintenance of common areas designated as preserves or mitigation areas; and
- Maintenance of privately owned trails.

Said landscape architect and/or HOA shall not be responsible for maintenance or oversight of activities within lands dedicated to Los Angeles County or any other agency. The HOA shall enforce the CC&Rs at all times through the terms outlined in the recorded CC&Rs.

Because a small amount of Southern California Black Walnut Woodland will be impacted onsite (less than one-tenth of an acre) by the proposed project, and because impacts to this sensitive plant community are easily mitigated, impacts to this habitat would be considered less than significant after mitigation.

To limit the amount of human disturbance on natural open space areas on and adjacent to the project site, a fencing plan shall be submitted to the County of Los Angeles. Prior to obtaining occupancy permits, signs and split-rail fencing (the latter, if appropriate) shall be posted directing people and their animals to keep out of the natural open space areas and revegetation areas. In addition, the project applicant shall be required to post signage stating that dogs shall be required to be leashed in areas near the project boundary, and fecal collection bags along with the posting of information relative to the use of the bags and their importance shall be placed in convenient places in the open space areas around the project. All dogs shall be kept on leashes when walking on trails within or through onsite preserves. Dogs are not permitted in areas such as Ed Davis Park in Towsley Canyon, specifically to protect wildlife.

Level of Significance After Mitigation: Less Than Significant

Mitigation for Loss of Oak Trees, Coast Live Oak Woodland, Coast Live Oak Riparian Woodland and Valley Oak Woodland

Mitigation for impacts to 254 mature oak trees (including the loss of 179, and the encroachment of 75 oak trees) can be accomplished by replacing the lost and encroached oak trees through planting new trees onsite, and transplanting impacted trees to protected sites. The temporary loss of the mature oaks cannot be fully mitigated by planting acorns or seedlings; however, this temporary loss of tree habitat is typically mitigated through planting at a relatively high ratio. In addition, transplanting mature oak trees has been performed numerous times in southern California to mitigate the take of mature oak trees; however, there are differing expert opinions on the long-term success rate of such efforts.

To mitigate for the loss of 179, and the encroachment of 75, oak trees, DMEC recommends this loss be mitigated through (1) preserving the trees to be avoided onsite; (2) planting acorns onsite at a 10:1 ratio or planting oak seedlings onsite at a 5:1 ratio, per the County Oak Tree Ordinance replacement criteria; and (3) transplanting selected mature oaks to protected sites.

BIO3 **Protect Avoided Onsite Oak Trees**. The 1,155 oak trees to be avoided by the proposed project shall be protected onsite in perpetuity by establishing onsite preserves that are permanently protected from future development and managed for conservation purposes. Management of the preserved trees shall be minimal, focused on facilitating the natural growth and condition of the protected trees and associated habitat.

AND

BIO4 **Plant Acorns or Oak Seedlings Onsite**. To mitigate for the loss of 179, and the encroachment of 75, mature oak trees by the proposed project, acorns or oak seedlings of the species impacted shall be planted in appropriate ratios. To mitigate for impacted oak trees by planting acorns, an overall mitigation ratio of 10 acorns (two acorns per hole) planted for each tree impacted shall be implemented (a 10:1 replacement ratio), or an overall mitigation ratio of 5 seedlings (or a larger size as specified by the County of Los Angeles) planted for each tree impacted (a 5:1 replacement ratio). Therefore, 2,540 acorns or 1,270 container seedlings would be required for mitigation for the impacts to 254 oak trees (179 lost plus 75 encroached upon) onsite. The planted trees shall be maintained and monitored for a period of seven (7) years after planting. Success of this mitigation measure will be established if 50 percent of the acorns or seedlings survive after 7 years. Implementation of **BIO1** should also mitigate for impacts to oak species and woodland onsite.

AND

BIO5 **Transplant Selected Mature Oak Trees Onsite**. Even though transplanting mature oak trees is expensive and may have a low success rate, the Applicant desires to transplant selected mature oak trees to help mitigate the loss of 179 and the encroachment upon 75 mature oak trees. A detailed transplantation plan shall be developed by a qualified arborist and submitted to the County for approval. Maintenance and monitoring of all transplanted oak trees shall be required for a period of ten (10) years after transplantation, or as required by the County of Los Angeles. Generally, success is achieved if at least 75% of transplanted trees are in good health after the 10-year monitoring period. No sensitive habitat shall be impacted as a result of any transplanting activities.

AND

BIO6 **Replace Oak Woodland Habitat Onsite with Oak Mitigation Implementation Plan**. Oak woodland habitat will be replaced onsite within preserved portions of the project site, or at an offsite location. The oak woodland habitat shall be replaced at a 2:1 ratio for the oak woodland habitat lost onsite by the proposed project, estimated at 8.82 (including 7.87 acres of upland Coast Live Oak Woodland, 0.92 acres of Coast Live Oak Riparian Woodland, and 0.03 acre of Valley Oak Woodland), for a replacement onsite of 16.4 acres. A total of 16.4 acres of oak woodland shall be created onsite, offsite, or a combination of onsite and offsite locations. The oak woodland habitat shall be monitored and maintained for a period of seven (7) years. The oak woodland area(s) can be created through the plantings and transplantations required under Mitigation Measures **BIO4** and **BIO5**.

In addition to the mitigation measures outlined above, a full oak tree report with the health, diameter at breast height (dbh), and canopy diameter of each tree within the impact area and fuel modification zone shall be submitted to the County of Los Angeles prior to grading. The report shall also outline the mitigation for removal of oak trees. The mitigation shall include the following measures:

- Prior to grading, orange construction or chain-link fencing shall be installed around trees (10 feet outside the dripline of each tree or groups of trees) that should not be impacted by construction. Fencing shall be in place and inspected prior to commencement of grading. This fencing shall remain in place throughout the entire period of construction.
- Preferred replacement tree seedlings shall be planted directly onsite either as acorns in prepared plots or as sprouted seedlings in liner tubes. Such plants are better able to become established and healthy trees adapted to site conditions. For each oak tree removed, the mitigation shall require replacement trees of indigenous oak species in the ratio of at least 10:1 for acorn planting or 5:1 for container seedling planting.
- The landscape architect/designer for this project shall design these replacement trees into the landscape to replace the habitat of removed woodlands. The habitat shall be reviewed by a qualified botanist and shall be comparable to the removed woodland.
- Planting specifications shall consider the following:
  - Newly planted trees shall be planted above grade and maintained for seven years, including irrigation, weed control, herbivore protections, and replacement.
  - Amending the backfill soil with wood shavings, oak-leaf mold, etc. is not recommended when existing soil is high in natural organic matter with a sandy loam texture.
  - Recommendations for the need of planting amendments and drainage systems shall be based on soil tests of this project and approved by the county.

Any County approved work within the driplines of saved trees, including branch removal, shall be under the inspection of a qualified arborist.

AND

BIO7 **Contribute Funds to the Oak Species Forest Fund**. If the success criteria for any of the mitigation measures (**BIO3 through BIO5**) are not met, the Applicant shall contribute to the Oak Species Forest Fund. The compensation rate shall be set at 50 percent of the assessed economic value of the trees lost, less the estimated economic value of the trees covered under Mitigation Measures **BIO4** and **BIO5**.

AND

BIO8 **Landscape Irrigation Out of Oak Driplines.** Landscaping requiring irrigation shall not be planted within the dripline of oaks due to the susceptibility of native oaks to root rot caused by excessive unseasonable irrigation. The design and installation of landscape irrigation systems outside the dripline of the oaks shall be such that the area within the dripline is not wetted during operation of the system. In addition, surface runoff from impermeable surfaces shall be directed away from oaks; where natural topography has been altered, provisions shall be made for drainage away from trunks of oaks so that water shall not pond or collect within the dripline of any oak. If any existing oak tree are damaged or impacted by the affects of irrigation of mitigation plantings, additional plantings shall be implemented as replacement.

Implementing Mitigation Measure **BIO2** (Mitigation for the Implementation of Conditions of Approval Related to Preserve Maintenance) will also mitigate for this impact.

Level of Significance After Mitigation: Significant. The temporal loss of habitat function cannot be mitigated until all planted oaks reach maturity.

MITIGATION FOR IMPACTS TO BIOLOGICAL LIFE HISTORY

Mitigation for Direct Impacts to Special-Status Plant Species

Mitigation for Loss of Ambrosia confertiflora *(Weakleaf Burweed) Plants Known Onsite*

BIO9 A seasonal survey shall be conducted to account for all occurrences of this species and any other special-status plant species onsite. The survey shall be conducted by a qualified botanist familiar with the flora of the Santa Susana Mountains. Seeds shall be gathered when ripe and transferred to a native plant nursery experienced with propagating *Ambrosia confertiflora* or similar species, and grown out to 1-gallon container size. These plants shall be planted in suitable preserved habitat found onsite at a ratio of 10 plants for every 1 plant impacted by the project.

The planted plants shall be maintained and monitored for a period of five (5) years after initial planting, with annual reports submitted to the County.

Implementing Mitigation Measure **BIO1** and **BIO2** (Mitigation for the Implementation of Conditions of Approval Related to Preserve Maintenance) will also mitigate for this impact.

Level of Significance After Mitigation: Less Than Significant

Mitigation for Loss of Special-Status Calochortus *Species Known Onsite*

To mitigate for the loss of several individual *Calochortus* plants, avoidance, bulb translocation, seed collection and propagation, and mitigation monitoring in protected locations are identified as four means to reduce the level of impact from significant to less than significant. This genus is not difficult from a production standpoint as long as species of *Calochortus* are not over-watered and are protected from predators (snails, slugs, birds, rabbits, and rodents) (Carol Bornstein, pers. comm. 30 January 2006).

BIO10 Prior to site disturbance activities associated with the proposed project, supplemental field surveys for *Calochortus plummerae* and *Calochortus clavatus* should be conducted to clearly determine and to mark off the exact locations and numbers of plants onsite in the development footprint as well as those to be preserved. Surveys should be conducted in the spring prior to construction to flag locations of *Calochortus* within and immediately adjacent to the project site. All bulbs and seeds of populations within the grading areas shall be salvaged, translocated, and planted in preserve areas. Rancho Santa Ana Botanic Garden would be an appropriate facility to conduct the translocation, storage, and ongoing propagation of these species.

Avoidance and Protection: Areas with *Calochortus* outside of the development footprint shall be avoided and preserved in perpetuity through an appropriate recordable legal instrument. The legal document shall be recorded prior to issuance of a grading permit. A qualified botanist shall survey for and appropriately mark all populations of *Calochortus* at

Lyons Canyon Ranch that are to be avoided and preserved. Where avoidance and protection is not possible, mitigation shall be accomplished through bulb translocation and seed planting.

Bulb Translocation: A pre-construction survey during the peak flowering period, approximately March through June, shall be conducted by a qualified botanist, acceptable to the Los Angeles County Department of Regional Planning, in the areas of the project site that will be disturbed, and all individual *Calochortus* plants shall be marked for subsequent relocation. Each impacted *Calochortus* bulb shall be clearly delineated with pin flags for collection by a qualified bulb collector. Bulbs shall be collected after the flowering period when the plants are dormant. If necessary, the bulbs could be lifted when the shoots are just breaking the soil surface; however, care should be taken not to damage the bulb itself, as well as the root mass. Any lifted bulbs with shoots would require immediate planting since they are actively growing (since they are not dormant). Where high lily concentrations exist onsite, the first ten inches of topsoil shall be moved in large blocks to the selected revegetation site. The salvaged bulbs or bulb-containing topsoil shall be translocated to an appropriate site(s) within the preserved portions of the project site.

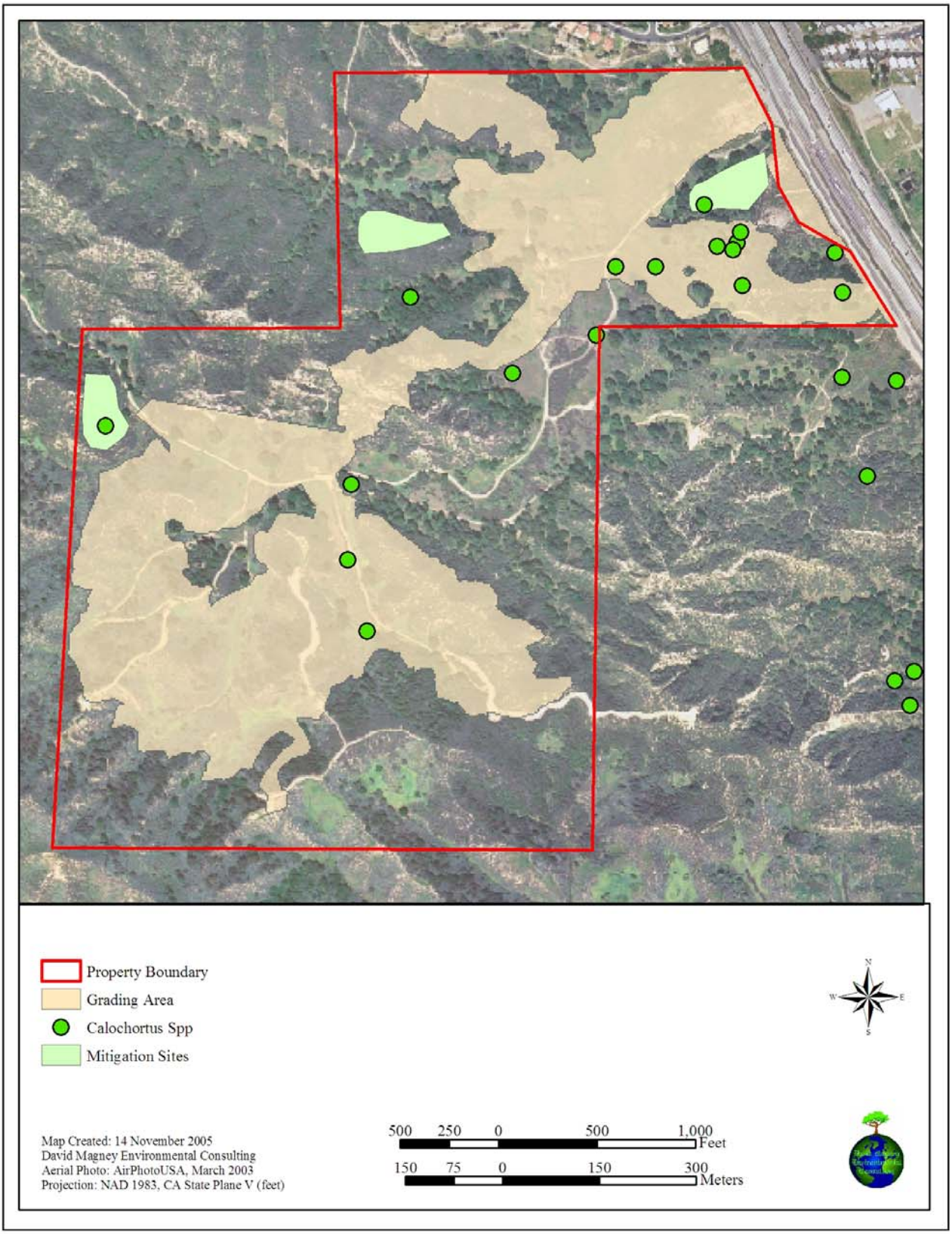
Seed Collection and Propagation: *Calochortus* are typically grown from seed for mitigation purposes (Carol Bornstein, pers. comm. 30 January 2006). A seasonal survey shall be conducted in suitable habitat after the flowering season to collect seeds. The survey shall be conducted by a qualified botanist familiar with the flora of the Santa Susana Mountains. Seeds shall be collected when ripe, cleaned, stored by a qualified nursery or institution with appropriate storage facilities, and transferred to a native plant nursery experienced with propagating *Calochortus* species and grown out to 1-gallon container size. The best time to sow seed is in the fall in conjunction with the onset of rain. *Calochortus* usually takes at least three (3) years to achieve flowering size, depending upon the species (Carol Bornstein, pers. comm. 30 January 2006). These plants shall be planted in suitable preserved habitat onsite at a ratio of 10 plants for every 1 plant impacted by the project. The propagated plants shall be maintained and monitored for a period of five (5) years after initial planting, with annual reports submitted to the County.

A site analysis plan must be conducted to determine potential planting areas and to identify the most appropriate mitigation site(s) acceptable to the Los Angeles County Department of Regional Planning, which should be conducted prior to bulb collection. A detailed mitigation plan shall be prepared and submitted to the appropriate agencie(s) for review prior to implementation. The plan must be prepared by a qualified botanist as determined by Los Angeles County Department of Regional Planning. Potential mitigation areas onsite are shown on Figure 29, Potential *Calochortus* Mitigation Areas.

Prepare Detailed Mitigation Plan. Following seed and bulb collection, the *Calochortus* shall be relocated into a suitable mitigation site in the undeveloped portion of the project site, or in an adjacent undeveloped acreage that shall be preserved in perpetuity. A qualified botanist shall be selected by the applicant that is acceptable to the County to prepare and implement a detailed mitigation plan, which shall include the following requirements:

- Following collection, seeds and bulbs shall be stored by a qualified nursery, or by an institution with appropriate storage facilities. Then, the upper 12 inches of topsoil from the *Calochortus* locations shall be scraped, stockpiled, and re-spread at the selected mitigation site(s).

Figure 29. Potential *Calochortus* Mitigation Areas



- The mitigation site(s) shall be located in dedicated open space on the project site, or at an appropriate offsite location acceptable to the County. The site shall be selected based on the species habitat requirements and to promote growth of the individual plantings and the population as a whole.
- The mitigation site(s) shall be prepared for seeding and bulb planting as described in a detailed restoration plan.
- The topsoil shall be re-spread in the selected location as approved by the project biologist. Approximately sixty percent (60%) of the seeds and bulbs shall be planted in the site during the fall, following soil preparation. Forty percent (40%) of the seeds and bulbs shall be kept in storage by a qualified nursery for subsequent seeding, if necessary.
- A detailed maintenance and monitoring plan for the mitigation site shall be developed by a qualified botanist prior to issuance of the grading permit. The plan shall include descriptions of maintenance activities appropriate for the site, monitoring requirements, and annual reporting requirements. The project botanist shall have the full authority to suspend any operation on the project site that is directly impacting *Calochortus* plants outside the approved development footprint, and to suspend any activity related to the *Calochortus* plants that is not consistent with the restoration plan. Any dispute regarding the consistency of an action with the restoration plan shall be resolved by the applicant and the County of Los Angeles Department of Regional Planning.
- The performance criteria developed in the maintenance and monitoring plan shall include requirements for a minimum of 60 percent germination of the amount of plant material collected and transferred to the mitigation site. This assumes that there will be a 40% mortality of the bulbs and seed plantings. The performance criteria should also include percent cover created by the established plants, density, and seed production requirements, and shall be developed by the project botanist following habitat analysis of an existing high-quality lily habitat. Performance monitoring shall be conducted by a qualified botanist.
- If the seed germination and bulb sprouting goal of 60 percent is not achieved following the first season, remediation measures shall be implemented prior to planting with the remaining 40 percent of collected seeds and bulbs. Remedial measures shall include at a minimum: soil testing and amendments, control of invasive species, and physical disturbance of the planted areas by raking (or similar actions) to provide scarification of the seed.
- Potential seed sources from donor sites shall also be identified in case it becomes necessary to collect additional seeds for use on the site, following performance of remedial measures.
- The site shall be maintained for five years to ensure that the *Calochortus* populations are self-sustaining.

Implementing Mitigation Measure **BIO2** (Mitigation for the Implementation of Conditions of Approval Related to Preserve Maintenance) will also mitigate for this impact.

Level of Significance After Mitigation: Less Than Significant

Mitigation for Loss of Calystegia peirsonii *(Peirson's Morning-glory) Plants Known Onsite*

BIO11 Since the exact location of *Calystegia peirsonii* was not reported, a seasonal survey shall be conducted in suitable habitat when positive identification can be made. The survey shall be conducted by a qualified botanist familiar with the flora of the Santa Susana Mountains. If *Calystegia peirsonii* plants are found to be within the project impact area,

then seeds shall be gathered when ripe and transferred to a native plant nursery experienced with propagating *Calystegia peirsonii* or similar species, and grown out to 1-gallon container size. These plants shall be planted in suitable preserved habitat found onsite at a ratio of 10 plants for every 1 plant impacted by the project.

The planted plants shall be maintained and monitored for a period of five (5) years after initial planting, with annual reports submitted to the County.

Implementing Mitigation Measure **BIO1** and **BIO2** (Mitigation for the Implementation of Conditions of Approval Related to Preserve Maintenance) will also mitigate for this impact.

Level of Significance After Mitigation: Less Than Significant

Mitigation for Loss of Ericameria ericoides *ssp.* ericoides *(Mock Heather) Plants Known Onsite*

Implementation of the same methods as decribed for **BIO1**, **BIO2** and **BIO9** will mitigate for impacts to *Ericameria ericoides* ssp. *ericoides.*

Level of Significance After Mitigation: Less Than Significant

Mitigation for Loss of Juglans californica *var.* californica *(Southern California Black Walnut) Plants Known Onsite*

BIO12 Restoration of *Juglans californica* var. *californica* is often successful, and the fruit (walnuts) should be collected from locally indigenous (onsite) sources. Seeds shall be gathered when ripe and transferred to a native plant nursery experienced with propagating *Juglans californica* or similar species, and grown out to 1-gallon container size, preferably in liners rather than 1-gallon pots. These plants shall be planted in suitable preserved habitat found onsite at a ratio of 10 plants for every 1 plant impacted by the project. The seedlings should be monitored and irrigated on a regular basis to ensure survival. *Juglans californica* can also be grown from mature stem cuttings and sprouted in a greenhouse. Rooted cuttings can then be planted at the mitigation site(s).

The planted plants shall be maintained and monitored for a period of five (5) years after initial planting, with annual reports submitted to the County.

Implementing Mitigation Measure **BIO1** and **BIO2** (Mitigation for the Implementation of Conditions of Approval Related to Preserve Maintenance) will also mitigate for this impact.

Level of Significance After Mitigation: Less Than Significant

Mitigation for Loss of Navarretia hamata *ssp.* hamata *(Skunk Navarretia) Plants Known Onsite*

Implementation of the same methods as decribed for **BIO1**, **BIO2** and **BIO9** will mitigate for impacts to *Navarretia hamata* ssp. *hamata.*

Level of Significance After Mitigation: Less Than Significant

Mitigation for Loss of Rare Plants Potentially Occurring Onsite

BIO13 The rare plant species with high potential to occur onsite include: *Aster greatae*, *Erodium macrophyllum*, *Horkelia cuneata* ssp. *puberula*, *Lepidium virginicum* var. *robinsonii*, *Malacothamnus davidsonii*, *Nolina cismontana*, and *Senecio aphanactis*. Since the location or presence of these species onsite is not known, seasonal surveys shall be conducted in suitable habitat when positive identifications can be made. The surveys shall be conducted by a qualified botanist familiar with the flora of the Santa Susana Mountains. If any of these plants are found to be within the project impact area, then seeds shall be gathered when ripe and transferred to a native plant nursery experienced with propagating sensitive or similar species, and grown out to 1-gallon container size. These plants shall be propagated in suitable preserved habitat found onsite at a ratio of 10 plants for every 1 plant of each species impacted by the project.

The mitigation plantings shall be maintained and monitored for a period of five (5) years after initial planting, with annual reports submitted to the County. Seeding may require several seed sowing events to establish viable reproducing populations at the mitigation site.

Implementing Mitigation Measure **BIO1** and **BIO2** (Mitigation for the Implementation of Conditions of Approval Related to Preserve Maintenance) will also mitigate for this impact.

Level of Significance After Mitigation: If any likely special-status plant species are found onsite, the significance after mitigation would be *significant* if replanting efforts are not successful. If any likely special-status plant species are not found, impacts would be *less than significant*.

Mitigation for Indirect Impacts to Special-Status Plant Species

Mitigation for Impacts of Increased Dust and Urban Pollutants on Special-Status Plant Species

BIO14 Prior to the issuance of a grading permit, the project applicant shall prepare a fugitive dust control plan that specifically strives to keep construction grading-generated dust from substantially coating the leaves of all native plants not to be disturbed by the proposed project. Dust control measures may include applying water or other acceptable material to keep fugitive dust to a minimum. High winds can also significantly increase the amount of dust generated from a construction site; therefore, when wind gusts at or above 25 miles per hour (mph) occur more than once per hour, grading activities shall be suspended. A designated monitor shall monitor for excessive fugitive dust originating from onsite construction, and monitor the quantity of dust accumulating on native plants adjacent to the construction site. Exceeding established dust thresholds shall require immediate remedial action(s) to further control fugitive dust onsite. Fugitive dust airborne or accumulating on native plant leaves shall not exceed twenty percent (20%) of background (natural) levels.

BIO15 Prior to the issuance of a grading permit, the project applicant shall apply for and obtain coverage under the California Regional Water Quality Control Board's general permit for storm water discharge associated with construction activity and shall comply with all the provisions of the permit, including the development of a storm water pollution prevention plan, which includes provisions for the implementation of best management

practices and erosion control measures. Best management practices shall include both structural and non-structural measures.

BIO16 Mitigation Measure for the Implementation of Conditions of Approval Related to Landscaping. The Lyons Canyon Ranch project shall provide for the establishment of a Home Owners' Association (HOA) and the preparation of Conditions, Covenants, and Restrictions (CC&Rs) prior to the recordation of the final tract map as a condition of project approval. The HOA shall be governed by CC&Rs that describe all aspects of property maintenance of common area landscape, and the overall regulation of aesthetics for the property grounds and buildings. The HOA shall be fully funded, pursuant to, and consistent with, the recorded CC&Rs.

The Lyons Canyon Ranch project HOA shall maintain all common areas, that are routinely maintained, consistent with the applicable mitigation measures and conditions of approval adopted by the County of Los Angeles. The applicable mitigation measures and conditions of approval that fall under the responsibility of the HOA shall be explicitly specified in the CC&Rs, and shall be verified by the County of Los Angeles prior to recordation of the final tract map.

The HOA shall retain the services of a licensed landscape architect familiar with plants native to the Santa Clarita region to provide review and approval of the landscaping of individual parcels prior to installation consistent with the plant list approved by the County Biologist. The landscape architect shall also oversee HOA maintenance staff, when performing the following maintenance, to ensure compliance with biological mitigation measures applicable to the project site:

- Fuel modification within common areas;
- Maintenance of street or roadway landscaping;
- Maintenance of parks;
- Maintenance of landscaped common areas; and
- Maintenance of roadway landscaping.

Said landscape architect and/or HOA shall not be responsible for maintenance or oversight of activities within lands dedicated in fee title to Los Angeles County or any other agency. The HOA shall enforce the CC&Rs at all times through the terms outlined in the recorded CC&Rs.

Level of Significance After Mitigation: Less Than Significant

Mitigation for Impacts of Invasive Exotic Plant Species' Introduction into Natural Plant Communities

BIO17 Project landscape design shall be submitted by a qualified botanist to the County biologist for review and approval. The review shall ensure that no invasive, exotic plant species such as those listed in the CNPS and California Invasive Plant Council 1999 List (CalIPPC 1999) and subsequent (draft) list for 2005 are used in any proposed landscaping, and that suitable substitutes are proposed. Ideally, only locally indigenous native species should be used in landscaping along a boundary bordering open space/SEA. Native plants used shall include coastal sage scrub, chaparral, and woodland species that currently occur on the project site.

BIO18 The Conditions, Covenants, and Restrictions (CC&Rs) for the homes shall prohibit planting any invasive exotic species listed by either CNPS or CalIPPC. Homeowner landscaping plans shall be submitted to the landscape architect for review and approval consistent with this requirement as described in the CC&Rs. The review shall ensure that no invasive exotic plant species are planted onsite in order to reduce the chance of inadvertent introductions or escapes of invasive exotic species into native habitats, including bordering open space areas and SEAs.

Implementing Mitigation Measure **BIO16** (Mitigation Measure for the Implementation of Conditions of Approval Related to Landscaping) will also mitigate for this impact.

Level of Significance After Mitigation: Less Than Significant

Mitigation for Impacts to General Wildlife Species

Mitigation for Loss of and Disturbance to Aquatic/Semi-aquatic Wildlife During Construction

BIO19 In order to minimize impacts to aquatic habitat and aquatic wildlife due to alteration of the Riverine habitat onsite, the construction activities shall be conducted during times of no active channel flows (during the dry season, generally June through October). However, if construction must be conducted while active flows are present within the Riverine system, these measures should be implemented to minimize impacts:

- Equipment contact with the active channel should be minimized to a maximum extent possible, and equipment should only enter the active channel within the permitted and demarcated areas;
- Flows should be diverted from the work area prior to initializing work;
- Sedimentation barriers should be installed downstream of any work areas within the active channel and should be maintained frequently to ensure they are working properly;
- Exposed groundwater should be allowed to settle behind a downstream diversion berm prior to discharge to the primary flow channel;
- Turbidity levels should be monitored and minimized to levels consistent with the project's RWQCB General Permit for stormwater discharge requirements (no greater than a 20% increase in turbidity downstream o fhte work areas); and
- All foreign materials and litter should be removed from the channel, including but not limited to trash, concrete, metal, fencing, rebar, Styrofoam, plastic, and any dumped materials.

Level of Significance After Mitigation: Less Than Significant

Mitigation for Loss of and Disturbance to Amphibian Wildlife During Construction

BIO20 Prior to grading or site-clearing activities, a qualified biologist shall survey the construction areas of the site to determine if wildlife species are foraging, frequenting, or

nesting on or adjacent to the construction areas. If any wildlife species are observed foraging, frequenting, or nesting during construction activities, the wildlife biologist shall allow the wildlife species to escape or shall relocate the wildlife species to a preserved area with similar required habitat.

Level of Significance After Mitigation: Less Than Significant

Mitigation for Loss of and Disturbance to Reptile Wildlife During Construction

Implementation of **BIO20** should mitigate for project-related impacts to reptile wildlife during construction.

Level of Significance After Mitigation: Less Than Significant

Mitigation for Loss of and Disturbance to Breeding and Nesting Birds During Construction

BIO21 To avoid violating the Migratory Bird Treaty Act or Fish and Game Code S 3503, a qualified ornithologist shall survey the construction site(s) two weeks prior to initiation of site disturbance to identify any nests of birds that would be directly or indirectly affected by the construction activities. Bird nesting typically occurs from February through August. Some bird species nest outside this period. If active nests that would be directly impacted by construction activities are found, protection/no work zones at 100 to 300 feet shall be established for appropriate periods to avoid impacting them. Onsite nests shall be avoided until vacated. Occupied nests adjacent to the construction site(s) may need to be avoided for short durations to ensure nesting success. Any nest permanently vacated for the season need not be protected.

Level of Significance After Mitigation: Less Than Significant

Mitigation for Loss of and Disturbance to Mammal Wildlife During Construction

Implementation of **BIO20** should mitigate for project-related impacts to mammal wildlife during construction.

Level of Significance After Mitigation: Less Than Significant

Mitigation for Direct Impacts to Special-Status Wildlife Species

To mitigate for potential impacts to special-status wildlife species onsite and for the loss of foraging, roosting, and nesting habitat, specific mitigation measures are recommended:

BIO22 Prior to grading or site-clearing activities, a qualified biologist shall survey the construction areas of the site to determine if any special-status wildlife species are foraging, frequenting, or nesting on or adjacent to the construction areas. If any special-status wildlife species are observed foraging, frequenting, or nesting during construction activities, the area in which the special-status species was observed should be flagged or fenced off to

protect the wildlife species. In addition, the equipment operators shall be informed of the species' presence and provided with pictures in order to help avoid impacts to this species to the maximum extent possible. As part of the environmental training, contractors and heavy equipment operators shall be provided with photographs of expected special-status wildlife species to identify them, and to avoid harming them during construction.

BIO23 Thirty (30) days prior to the onset of construction activities, a qualified biologist shall survey within the limits of project disturbance for the presence of any active raptor and bird nests. Any nest found during survey efforts shall be mapped on the construction plans and marked on the ground. If no active nests are found, no further mitigation is required. Results of the surveys shall be provided to the CDFG. If nesting activity is present at any raptor nest site, the active site shall be protected, 100 to 300 feet away from construction activities, until nesting activity has ended to ensure compliance with Section 3503.5 of the California Fish and Game Code. Nesting activity for bird species in the region of the project site normally occurs from February through August.

BIO24 To avoid impacts to all special-status wildlife species observed onsite, equipment operators shall avoid contact with or harm to any special-status species and any of their sources of cover (e.g. nest, midden, burrow). If a special-status wildlife species is encountered during construction activities, it shall be allowed to escape any danger that may result from construction work, and the onsite biological monitor shall be notified in order to implement all measures necessary to protect the sensitive species.

BIO25 Existing habitat, required by observed or likely special-status wildlife species, shall be replaced, or compensated for, after all development activities have been completed, as presented below in the Mitigation for Impacts to Natural Vegetation, Including Sensitive Habitats Section. Compensation for lost habitat onsite shall be accomplished at least in part through improving habitat conditions of preserved onsite habitats, such as through removal of invasive exotic plant species and replacing them with indigenous native species. A residual impact will remain since there will be a reduction of the total area of habitat available onsite.

BIO26 To protect any active nest sites, the following restrictions on construction are required between 1 February and 30 June (or until nests are no longer active as determined by a qualified biologist): clearing limits shall be established a minimum of 300 feet in any direction from any occupied nest (or as otherwise deemed appropriate by the monitoring biologist). Access and land surveying shall not be allowed within 100 feet of any occupied nest (or as otherwise deemed appropriate by the monitoring biologist). Any encroachment into the 300/100-foot-buffer area around the known nest shall only be allowed if it is determined by a qualified biologist that the proposed activity would not disturb the nest occupants. Construction during the non-nesting season shall occur at the sites only if a qualified biologist has determined that fledglings have left the nest.

Implementing Mitigation Measure **BIO21** will also mitigate direct impacts to special-status wildlife species.

Level of Significance After Mitigation: Direct impacts to active nests would be reduced to a *less-than-significant* level. The significance after mitigation for habitat loss would be *significant and unavoidable* because approximately 99.73 acres of suitable occupied foraging and nesting habitat onsite will be permanently lost. Note: suitable habitat onsite varies with each species. The total area disturbed by the proposed project is estimated to be 99.73 acres.

*Mitigation for Loss of Cooper's Hawk (***Accipiter cooperii***) and Foraging and Nesting Habitat*

Implementation of Mitigation Measures **BIO 21, BIO22**, **BIO23**, **BIO24**, and **BIO25** described above should adequately mitigate project-related impacts to Cooper's Hawk, except for cumulative loss of habitat.

Level of Significance After Mitigation: The significance after mitigation would be *significant and unavoidable* because approximately 99.73 acres of suitable occupied foraging and nesting habitat onsite will be permanently lost.

*Mitigation for Loss of Oak Titmouse (***Baeolophus inornatus***) and Foraging and Nesting Habitat*

Implementation of Mitigation Measures **BIO22**, **BIO23**, **BIO24**, **BIO25**, and **BIO26** described above should adequately mitigate project-related impacts to Oak Titmouse, except for incremental loss of habitat.

Level of Significance After Mitigation: The significance after mitigation would be *significant and unavoidable* since 8.79 acres of Coast Live Oak Woodland and Coast live Oak Riparian Woodland habitats, which are suitable and occupied foraging and nesting habitats for Oak Titmouse, will be permanently lost.

*Mitigation for Loss of Nuttall's Woodpecker (***Picoides nuttallii***) and Foraging and Nesting Habitat*

Implementation of Mitigation Measures **BIO21, BIO22**, **BIO23**, **BIO24**, and **BIO25** described above should adequately mitigate project-related impacts to Cooper's Hawk, except for incremental loss of habitat.

Level of Significance After Mitigation: The significance after mitigation would be *significant and unavoidable* since 8.79 acres of Coast Live Oak Woodland and Coast live Oak Riparian Woodland, and 3.56 acres of riparian scrub habitats, which are suitable and occupied foraging and nesting habitats for Nuttall's Woodpecker, will be permanently lost.

*Mitigation for Loss of Barn Owl (***Tyto alba***) Foraging and Nesting Habitat*

Implementation of Mitigation Measures **BIO21, BIO22**, **BIO23**, **BIO24**, and **BIO25** should mitigate project-related impacts to Barn Owl.

Level of Significance After Mitigation: The significance after mitigation would be *less than significant.*

*Mitigation for Loss of San Diego Desert Woodrat (***Neotoma lepida intermedia***) and Habitat*

Implementation of Mitigation Measures **BIO22**, **BIO24**, and **BIO25** will provide some mitigation for potential losses of San Diego Desert Woodrat individuals and provide

compensation for some lost habitat; however, the loss of 33.93 acres of occupied or potential habitat (Coastal Sage Scrub) onsite would not be fully mitigated to a less-than-significant level.

Level of Significance after Mitigation: Significant and Unavoidable.

Mitigation for Loss of Special-Status Reptiles Potentially Present

BIO27 Conduct Focused Surveys. Prior to grading, focused surveys shall be conducted on the proposed development site for special-status reptile species that have a high potential to occur onsite. The surveys results shall be submitted within 45 days after completion of the last survey to the CDFG for concurrence. If it is determined that special-status wildlife species are not present on the proposed development site, then no further mitigation is necessary.

BIO28 Implement Relocation Program. If Silvery Legless Lizard, Coastal Western Whiptail, Rosy Boa, San Diego Banded Gecko, San Diego Horned Lizard, and/or Coast Patch-nosed Snake (the six special-status reptile species that are likely to occur onsite) is/are found onsite, a capture and relocation program shall be implemented. Prior to implementation of the relocation program, the program and the biologist(s) implementing the program shall be subject to approval of the CDFG and the County Biologist. A relocation program shall be prepared to include a detailed methodology for locating, capturing, and relocating individuals prior to construction. The program shall identify a suitable location for relocation of each species prior to capture. A qualified biologist with the necessary permits (if required by CDFG) shall be required for handling the specific special-status wildlife species. The adopted relocation program shall be implemented.

BIO29 Control Argentine Ants. The control of Argentine Ant from the project site is necessary to prevent the loss of forage resources for the San Diego Horned Lizard, which cannot survive on consumption of Argentine Ant. The landscaping plan, within 300 feet of any natural areas containing San Diego Horned Lizard, shall be designed to utilize native plant species that do not require supplemental irrigation in an attempt to keep invading Argentine Ant populations as low as possible. In addition, an Argentine Ant control plan shall be developed and implemented in perpetuity by the homeowners association or other responsible party.

Level of Significance After Mitigation: The significance after mitigation would be *potentially significant and unavoidable* because up to 99.73 acres of suitable habitats onsite will be permanently lost, and control of Argentine Ant is difficult in areas adjacent to urban landscaping.

Mitigation for Loss of Special-Status Bird Species Potentially Present

Implementation of Mitigation Measures **BIO21, BIO22**, **BIO23**, **BIO24**, **BIO25**, and **BIO26** described above should adequately mitigate project-related impacts to the ten special-status bird species that are likely to occur onsite, except for incremental loss of habitat.

Level of Significance After Mitigation: The significance after mitigation would be *potentially significant and unavoidable* if any of the species are found to be present during future focused surveys (as required in **BIO21, BIO23,** and **BIO26**), since up to 99.73 acres of suitable foraging and nesting habitat onsite will be permanently lost.

*Mitigation for Disturbance to Mountain Lion (*Puma concolor*) and Loss of Habitat*

Implementation of Mitigation Measures **BIO22**, **BIO24**, and **BIO25**, described above should adequately mitigate project-related impacts to Mountain Lion, except for incremental loss of habitat. Additional mitigation may be required if individuals are found onsite.

Level of Significance After Mitigation: The significance after mitigation would be *potentially significant and unavoidable* if this species is found onsite, since up to 99.73 acres of suitable hunting and cover habitat onsite will be permanently lost.

*Mitigation for Disturbance to Ring-tailed Cat (*Bassariscus astutus*) and Loss of Habitat*

Implementation of Mitigation Measures **BIO22**, **BIO24**, and **BIO25**, described above should adequately mitigate project-related impacts to Ring-tailed Cat, except for incremental loss of habitat. Additional mitigation may be required if individuals are found onsite.

Level of Significance After Mitigation: The significance after mitigation would be *potentially significant and unavoidable* if this species is found onsite, since up to 99.73 acres of suitable hunting and cover habitat onsite will be permanently lost.

*Mitigation for Disturbance to Western Mastiff Bat (*Eumops perotis californicus*) and Loss of Habitat*

Implementation of Mitigation Measures **BIO22**, **BIO24**, and **BIO25** should provide sufficient mitigation for potential losses of Western Mastiff Bat individuals and provide partial compensation for lost habitat. Additional mitigation may be required if individuals are found onsite.

BIO30 If the Western Mastiff Bat, or other special-status bat species, is found to forage or nest onsite, then bat boxes shall be installed at appropriate locations within preserved land onsite to replace lost nesting habitat. A mitigation plan designed specifically to provide nesting and foraging habitat for special-status bat species shall be prepared and submitted to CDFG and the County Biologist for approval, and after approval, it shall be implemented.

Level of Significance after Mitigation: Less Than Significant

Mitigation Measures for Indirect Impacts to Special-Status Wildlife Species

Mitigation for Impacts Related to Noise

Recommended mitigation measures to reduce construction noise impacts on sensitive wildlife cover three basic actions: equipping equipment with mufflers, scheduling noisy work in less sensitive areas to minimize impact, and using noise attenuation structures/barriers to reduce noise levels locally. Implement Mitigation Measure **BIO22 and BIO23** as well as the following mitigation measures:

BIO31 Require All Equipment to Be Equipped With Mufflers. Construction equipment, such as earth-moving vehicles, excavators, dump trucks, and other similar types of vehicles should all be fitted with mufflers to keep engine-generated noise below 86 dBA at a distance of 15 m from the source. All diesel or gas engines (such as for generators) should be equipped with mufflers. Using boring equipment over pile drivers would significantly reduce noise for such activities. Noise reducing saw blades should be used on all saws, such as for cutting masonry blocks.

BIO32 Identify and Monitor Sensitive Wildlife Sites. A qualified biologist shall identify all active bird nests and sensitive wildlife species sites that may be harmed or disrupted by excessive noise. Buffer zones shall be established around each sensitive wildlife site, sized according to the relative sensitivity of the wildlife species. The biological monitor shall monitor noise levels at the sensitive sites to determine if construction-related noise is causing wildlife to change their normal behavior sufficiently to abandon active nests, or stop feeding or defending their young.

BIO33 Temporary Work Stoppage. If construction-related noise causes detrimental wildlife behavior, the biological monitor shall have the authority to stop all construction activities deemed to cause the adverse affect. Work stoppage would normally not last more than one or two days in the immediate vicinity of the sensitive wildlife site, such as at an active bird nest, but would likely last only a few hours at a time.

BIO34 Temporary Sound Barriers or Blankets. When applicable, temporary noise barriers may be effective in mitigating construction noise, dust, glare, and visual impacts. These barriers can be quickly constructed from safety-shape and plywood panels, or of noise-control blankets. The purpose of the temporary sound barriers is to reduce noise levels to below action thresholds and allow sensitive wildlife to resume normal behavioral patterns.

BIO35 Cease Work at Dusk. Stop work 30 minutes before dusk to avoid noise interference with echolocation of bats.

Implementing Mitigation Measure **BIO2** (Mitigation for the Implementation of Conditions of Approval Related to Preserve Maintenance) will also mitigate for this impact.

Level of Significance After Mitigation: The significance after mitigation for the temporary construction impacts would be *less than significant.* The impacts of noise after completion of grading activities for the proposed project would be *potentially adverse but less than significant.*

Mitigation for Impacts Related to Human Activity

BIO36 To limit the amount of human disturbance on natural open space areas on and adjacent to the project site, a fencing plan shall be submitted to the County of Los Angeles. Prior to obtaining occupancy permits, signs and split-rail fencing (the latter, if appropriate) shall be posted directing people and their animals to keep out of the natural open space areas and revegetation areas. In addition, the project applicant shall be required to post signage stating that dogs shall be required to be leashed in areas near the project boundary, and fecal collection bags along with the posting of information relative to the use of the bags and their importance shall be placed in convenient places in the open space areas around the project. All dogs shall be kept on leashes when

walking on trails within or through onsite preserves. Dogs are not permitted in areas such as Ed Davis Park in Towsley Canyon, specifically to protect wildlife.

BIO37 Perimeter fencing at houses onsite adjacent to open space areas shall be designed to prevent dogs from accessing open space areas onsite, and keep wildlife from entering yards and homes as much as feasible.

Implementing Mitigation Measure **BIO2** (Mitigation for the Implementation of Conditions of Approval Related to Preserve Maintenance) will also mitigate for this impact.

Level of Significance After Mitigation: Less Than Significant

Mitigation for Impacts Related to Night Lighting

BIO38 Prior to issuance of building permits, the County of Los Angeles shall ensure that the following elements are included in all project plans, as appropriate:

- All exterior lighting shall be designed and located as to avoid intrusive effects on adjacent residential properties and undeveloped areas adjacent to the project site. Motion detectors, low-intensity street lighting, and low-intensity exterior lighting shall be used throughout the development to the extent feasible. Lighting fixtures shall use shielding, if necessary, to prevent spill lighting on adjacent off-site areas;
- Design and placement of site lighting shall minimize glare affecting adjacent properties, buildings, and roadways;
- Fixtures and standards shall conform to state and local safety and illumination requirements;
- All trail and park lighting shall provide optimum public safety, while at the same time reducing nighttime light spillover and glare;
- Development projects shall use minimally reflective glass and all other materials used on exterior building and structures shall be selected with attention to minimizing reflective glare; and
- Automatic timers on lighting shall be designed to maximize personal safety during nighttime use while saving energy.

These measures would partially mitigate for adverse impacts of landscaping nuisance lighting impacting wildlife in adjacent open space areas of the project site. In addition:

BIO39 Require all street and outdoor lighting to be hooded to direct away from, or prevent light from entering, open space areas of the project site. Light intensity should be set as low as possible while meeting the primary objective of the outdoor lighting.

Implementing Mitigation Measure **BIO2** (Mitigation for the Implementation of Conditions of Approval Related to Preserve Maintenance) will also mitigate for this impact.

Level of Significance After Mitigation: Less Than Significant

MITIGATION FOR IMPACTS TO NATURAL VEGETATION, INCLUDING SENSITIVE HABITATS

Mitigation for Loss of Grassland

The loss of 26.85 acres of Grassland can be mitigated by avoidance, creation onsite or elsewhere, protection and enhancement onsite or elsewhere, and protection of equal area and quality of habitat already designated for destruction. To fully mitigate the loss of 26.85 acres of Grassland habitat, one or more of the mitigation measures described below shall be implemented:

BIO40 Protect and Enhance Grassland. The loss of 26.85 acres of Grassland vegetation shall be mitigated by enhancing at an acreage rate of 1.5 acres for each acre lost (1.5:1 replacement ratio), equaling 40.27 acres of required mitigation. Prior to implementation of any restoration, a detailed program shall be developed by the project applicant and shall contain the following items:

- *Responsibilities and Qualifications Specified.* The responsibilities of the landowner, technical specialists, and maintenance personnel that shall supervise and implement the restoration plan shall be specified.
- *Protect Grassland Preserved Onsite.* The project shall preserve 11.11 acres of Grassland onsite in perpetuity by a legal instrument.
- *Enhance Degraded Grassland Preserved Onsite.* Habitat enhancement of the required 40.27 acers of Grassland will include eradicating invasive exotics from the remaining Grassland onsite. The areas of Grassland, from which invasive speices will be eradicated, will be planted with supplemental native Grassland grasses and herbs. This will increase native groundlayer cover to match desired cover levels, and increase dominance by native species. Approximately 11.11 acres of Grassland vegetation will be avoided by the proposed project; however, the Grassland onsite is contaminated with invasive exotic plant species in varying amounts. Enhancement of up to 11.11 acres of degraded Grassland habitat onsite will mitigate for 28% of the area needed, based on the 1.5:1 enhancement ratio. An additional 29.2 acres would need to be preserved and enhanced, for a total of 40.27 acres of Grassland enhanced and protected. The lack of reasonable availability (the offsite component) may render this mitigation measure at least partially infeasible.
- *Mitigation Site Selection*. The site for the mitigation shall be determined in coordination with the project applicant and resource agencies. The site shall be located on the proposed development site in a dedicated open space area or dedicated open space area shall be purchased offsite. Appropriate sites shall have suitable hydrology and soils for the establishment of target native species.
- *Site Preparation and Planting Implementation*. A seasonal survey shall be conducted in suitable habitat after the flowering season to collect seeds from the native grasses and wildflowers inhabitaing Grassland habitats onsite. The survey shall be conducted by a qualified botanist familiar with the flora of the Santa Susana Mountains. Seeds shall be collected when ripe, cleaned, and stored by a qualified nursery or institution with appropriate storage facilities, and transferred to a native plant nursery experienced with propagating native herbaceous grassland species species and grown out to 1-gallon container size plantings. The site preparation shall

include: protection of existing native species; trash and weed removal; native species salvage and reuse (i.e. duff); soil treatments (i.e., imprinting, decompacting); temporary irrigation installation; erosion control measures (i.e., rice or willow wattles); seed mix application; and container plantings. The best time to sow seed is in the fall in conjunction with the onset of rain. These native annual and perennial grass and herb plantings shall be planted in suitable preserved habitat onsite. The propagated plants shall be maintained and monitored for a period of five (5) years after initial planting, with annual reports submitted to the County. Mitigation Measure **BIO1** will aid in planting implementation.

- *Schedule*. A schedule shall be developed which includes planting to occur in late fall and early winter between October 1 and January 30.
- *Maintenance Plan/Guidelines*. The maintenance plan shall include: weed control; herbivore control; trash removal; irrigation system maintenance; maintenance training; and replacement planting.
- *Mitigation and Monitoring Plan.* A detailed mitigation plan shall be submitted for approval to the County prior to project implementation. The mitigation plan shall include specifics regarding grassland enhancement, planting details, timing, and monitoring proposed for grassland mitigation. The monitoring plan shall include: qualitative monitoring (i.e. photographs and general observations); quantitative monitoring (e.g. randomly placed transects); performance criteria as approved by the resource agencies; monthly reports for the first year and bimonthly thereafter; and annual reports for five years that shall be submitted to the resource agencies. The site shall be monitored and maintained for five years to ensure successful establishment of Grassland habitat within the restored and created areas.
- *Long-term Preservation.* Long-term preservation of the site shall also be outlined in the conceptual mitigation plan to ensure the mitigation site is not impacted by future development. An appropriate legal instrument over the area to be preserved shall be recorded prior to implementation of site grading to ensure protection in perpetuity.
- *Earth-moving Equipment.* Earth-moving equipment shall avoid maneuvering in any area identified as natural open space areas. Prior to grading, the open space limits shall be marked by the construction supervisor and the project biologist. These limits shall be identified on the grading plan.

Implementing Mitigation Measure **BIO1 and BIO2** will also mitigate for this impact.

Level of Significance After Mitigation: If mitigation measure **BIO40** is implemented, then the impact would be *less than significant*. If offsite acquisition of mitigation land proves infeasible, the loss of 29.2 (unmitigable) acres of Grassland onsite would be considered a *significant* impact.

Mitigation for Loss of Lichen Rock Outcrop Habitat

No feasible mitigation is available other than avoidance.

Level of Significance After Mitigation: Potentially Significant

Mitigation for Loss of Coastal Sage Scrub

Mitigation can consist of avoidance or minimization of impacts; compensation in the form of habitat restoration; or compensation through participation in a mitigation bank. Avoidance and minimization of impacts is preferred by regulatory agencies. Any compensation through restoration should be onsite and in kind whenever possible.

The loss of 33.93 acres of Coastal Sage Scrub can be mitigated in several ways: avoidance, creation onsite or elsewhere, protection and enhancement onsite or elsewhere, and protection of equal area and quality of habitat already designated for destruction. To fully mitigate the loss of 33.93 acres of Coastal Sage Scrub habitat one or more of the mitigation measures described below should be implemented:

BIO41 Replace Coastal Sage Scrub through Revegetation. The loss of 33.93 acres of Coastal Sage Scrub vegetation shall be replaced at an acreage rate of 1.5 acres for each acre lost (1.5:1 replacement ratio), equaling 55.89 acres of required mitigation. Prior to implementation of any restoration, a detailed program shall be developed by the project applicant and shall contain the following items:

- *Responsibilities and qualifications of the personnel to implement and supervise the plan.* The responsibilities of the landowner, technical specialists, and maintenance personnel that shall supervise and implement the restoration plan shall be specified.
- *Site selection*. The site for the mitigation shall be determined in coordination with the project applicant and resource agencies. The site shall either be located on the proposed development site in a dedicated open space area or dedicated open space area shall be purchased offsite. Appropriate sites shall have suitable hydrology and soils for the establishment of target native species.
- *Site preparation and planting implementation*. The site preparation shall include: protection of existing native species; trash and weed removal; native species salvage and reuse (i.e. duff); soil treatments (i.e., imprinting, decompacting); temporary irrigation installation; erosion control measures (i.e., rice or willow wattles); seed mix application; and container species.
- *Schedule*. A schedule shall be developed which includes planting to occur in late fall and early winter between October 1 and January 30.
- *Maintenance plan/guidelines*. The maintenance plan shall include: weed control; herbivore control; trash removal; irrigation system maintenance; maintenance training; and replacement planting.
- *Monitoring plan.* The monitoring plan shall include: qualitative monitoring (i.e. photographs and general observations); quantitative monitoring (e.g. randomly placed transects); performance criteria as approved by the resource agencies; monthly reports for the first year and bimonthly thereafter; and annual reports for five years that shall be submitted to the resource agencies. The site shall be monitored and maintained for five years to ensure successful establishment of Coastal Sage Scrub habitat within the restored and created areas.
- *Long-term preservation.* Long-term preservation of the site shall also be outlined in the conceptual mitigation plan to ensure the mitigation site is not impacted by future development. An appropriate legal instrument over the area to be preserved shall be recorded prior to implementation of site grading to ensure protection in perpetuity.

- *Earth-moving equipment.* Earth-moving equipment shall avoid maneuvering in any area identified as natural open space areas. Prior to grading, the open space limits shall be marked by the construction supervisor and the project biologist. These limits shall be identified on the grading plan.

BIO42 Protect Coastal Sage Scrub Habitat Onsite. The project shall preserve 23.50 acres of Coastal Sage Scrub onsite in perpetuity by a legal instrument.

BIO43 Enhance Degraded Coastal Sage Scrub Habitat Preserved Onsite. Since simply enhancing existing degraded habitat does not completely restore habitat functions impacted by the loss of 33.9 acres onsite, enhancement of existing degraded habitat would need to occur at a ratio of 3:1; therefore, approximately 101.8 acres will be required for mitigation. Habitat enhancement would include eradicating invasive exotics from the remaining Coastal Sage Scrub onsite. The areas of Coastal Sage Scrub from which invasive speice swould be eradicated would be planted with supplemental Coastal Sage Scrub species. This would increase native shrub canopy cover to match desired cover levels, and increase dominance by native species. Approximately 23.5 acres of Coastal Sage Scrub vegetation will be avoided by the proposed project; however, the Coastal Sage Scrub onsite is contaminated with invasive exotic plant species in varying amounts. Of the 23.5 acres avoided, 7.6 acres of Coastal Sage Scrub vegetation is highly infested with invasive exotic plants (*Salvia leucophylla-Brassica* Alliance). Enhancement of up to 23.5 acres of degraded Coastal Sage Scrub habitat onsite would mitigate for less than 25% of the area needed, based on the 3:1 enhancement ratio. An additional 78 acres would need to be preserved and enhanced, for a total of 101.8 acres of Coastal Sage Scrub enhanced and protected. The lack of reasonable availability (the offsite component) may render this mitigation measure at least partially infeasible. The enhancement plan shall include all the elements, as appropriate, as described in Mitigation Measure **BIO40**.

BIO44 Protect and Enhance Degraded Coastal Sage Scrub Habitat Offsite. The Applicant shall protect and enhance approximately 78 acres of existing Coastal Sage Scrub at an offsite location in the region of the project site. Habitat enhancement shall include eradicating the mitigation site(s) of invasive exotic species, and planting Coastal Sage Scrub plants in their place. This would increase native shrub canopy cover to match desired cover levels, and increase dominance by native species. The enhancement plan shall include all the elements, as appropriate, as described in Mitigation Measure **BIO41**. The lack of reasonable availability may render this mitigation measure at least partially infeasible.

Implementing Mitigation Measure **BIO2** (Mitigation for the Implementation of Conditions of Approval Related to Preserve Maintenance) will also mitigate for this impact.

Level of Significance After Mitigation: If mitigation measures **BIO41** through **BIO44** are implemented, then the impact will be *less than significant*.

Mitigation for Loss of Chaparral

No feasible mitigation is available other than avoidance.

Level of Significance After Mitigation: Significant

Mitigation for Loss of Southern California Black Walnut Woodland

BIO45 **Plant *Juglans californica* onsite**. To mitigate for the loss of 0.08 acre of *Juglans californica* var. *californica* Alliance, plant locally indigenous seeds from this species in the appropriate locations such as a designated mitigation site. *Juglans* seedlings are quite successful, and with proper maintenance and monitoring, the impacts should be fully mitigable. Planting should occur on one or more of the preserve areas onsite on a north-facing slope adjacent to Coast Live Oak Woodland areas. The total area to be planted should be 0.16 acre. No sensitive habitat shall be impacted during *Juglans* mitigation efforts.

Because a small amount of Southern California Black Walnut Woodland will be impacted onsite (less than one-tenth of an acre) by the proposed project, and because impacts to this sensitive plant community are easily mitigated, impacts to this habitat would be considered less than significant after mitigation.

Implementing Mitigation Measure **BIO2** (Mitigation for the Implementation of Conditions of Approval Related to Preserve Maintenance) will also mitigate for this impact.

Level of Significance After Mitigation: Less Than Significant

Mitigation for Loss of Coast Live Oak Woodland and Coast Live Oak Riparian Woodland

The mitigation for the loss of 179 and encroachment of 75 mature oak trees can be accomplished in two ways: replacing the lost oak trees through planting new trees onsite by acorns and seedlings, as well as transplanting trees to be impacted to protected sites. The temporal loss of the mature oaks cannot be fully mitigated by planting young oaks; however, this temporal loss of tree habitat is typically mitigated through planting at a high ratio, such as 10:1 (planting 10 seedlings for each mature tree lost). Transplanting mature oak trees has been performed numerous times in southern California as mitigation of taking mature oak trees; however, the long-term mortality rate is high, as well as the costs associated with transplanting and long-term maintenance of the transplanted trees. To mitigate for the loss of 179 and encroachment of 75 mature oak trees, DMEC recommends this loss be mitigated entirely through preserving the trees to be avoided onsite, and planting 1,270 oak seedlings onsite, and transplanting selected mature oaks to protected sites.

Implementation of the following mitigation measures, as described above, should partially mitigate for loss of Coast Live Oak Woodland and Coast Live Oak Riparian Woodland onsite:

BIO2 Mitigation Measure for the Implementation of Conditions of Approval Related to Preserve Maintenance, and

BIO3 Protect Avoided Onsite Oak Trees, and

BIO4 Plant Acorns or Oak Seedlings Onsite, and

BIO5 Transplant Selected Mature Oak Trees Onsite, and

BIO6 Replace Oak Woodland Habitat Onsite, and

BIO7 Contribute Funds to the Oak Species Forest Fund, and

BIO8 Landscape Irrigation out of Oak Driplines.

Level of Significance After Mitigation: Significant. The temporal loss of habitat function cannot be mitigated until all planted Coast Live Oaks reach maturity.

Mitigation for Loss of Valley Oak Woodland

Implementation of the following mitigation measures, as described above, should partially mitigate for loss of Valley Oak Woodland onsite:

BIO2 Mitigation Measure for the Implementation of Conditions of Approval Related to Preserve Maintenance, and

BIO3 Protect Avoided Onsite Oak Trees, and

BIO4 Plant Acorns or Oak Seedlings Onsite, and

BIO5 Transplant Selected Mature Oak Trees Onsite, and

BIO6 Replace Oak Woodland Habitat Onsite, and

BIO7 Contribute Funds to the Oak Species Forest Fund, and

BIO8 Landscape Irrigation out of Oak Driplines.

Level of Significance After Mitigation: Significant. The temporal loss of habitat function cannot be mitigated until all planted Valley Oaks reach maturity.

Mitigation for Loss of Wetland Habitats and Plant Communities

Impacts to 4.74 acres of wetland and riparian habitats shall be minimized to the maximum extent possible. Compensation for direct permanent impacts to wetlands shall be replaced at a 2:1 ratio in area, in-kind (9.48 acers of mitigation area required), or resulting in an increase in wetland functions onsite by at least ten (10) percent. The following measures should be implemented:

BIO46 **Perform Wetland Functional Assessment**. To determine the functional levels of wetland functions of the project site streams, a functional assessment shall be performed using the Hydrogeomorphic Assessment Approach (HGM), as developed by the Corps and EPA (Smith et al. 1995) using regional HGM models (Lee et al. 1996, 1997, 2001). The regional models have been used and accepted regionally on several projects by wetland regulatory agencies (DMEC 1997, 2000, 2001, 2004c). The HGM assessment shall assess existing wetland functions (14 independent functions) and how each wetland function will be affected by the proposed project. The results of the HGM assessment shall be used to determine the required wetland functions improvements required by onsite wetland mitigation. This approach provides an unbiased method to determine project-related impacts to wetland functions compared to simplistic area-impact assessments. It also allows a means to identify specific restoration actions that can be taken to most efficiently improve wetland habitat conditions (functions) onsite.

BIO47 **Implement Best Management Practices (BMPs) During Construction In and Near Wetlands**. Impacts to riparian habitat shall be minimized to the maximum extent possible by implementing the following BMPs:

- Construction equipment shall only cut back or cut down riparian habitat that is absolutely necessary for construction equipment access;
- All construction activities, within the banks of Lyon Creek and tributaries, should be conducted during seasons of no, or minimal, channel flows (summer/early fall);

- A path through the creek channel shall be selected that minimizes impacts to the existing riparian vegetation;
- A fence shall be placed around any (mature) trees, which are less efficiently replaced by mitigation/restoration efforts;
- All active wildlife nests existing within the project site riparian vegetation shall be protected and avoided by construction equipment; and
- A biological monitor shall be present during all construction activities within or adjacent to the drainages of Lyon Canyon that are not to be impacted.

BIO48 Enhance Existing Disturbed Wetlands Onsite. Existing wetlands not impacted by the proposed project currently are degraded by past activities on the project site (e.g. road crossings, fill, culverts, berms, dumping, invasion by exotic plants). A 1/3 credit shall be allowed for every acre of existing protected wetland habitat that is enhanced onsite and shall be credited towards the 9.48 acres required for mitigation. Therefore, 1/3 of the protected 7.21 acres equals 2.38 acres to be enhanced. Enhancement activities shall include: removing all foreign materials from wetland areas; eradicating and controlling invasive exotic plant species; and planting native riparian plant species in disturbed areas. Nearly all the wetland areas onsite are currently in a degraded condition, to varying degrees, and are available for habitat enhancement. 9.48 acres is required for mitigation based on the 2:1 ratio. 9.48 acres of required mitigation area minus the 2.38 acres of enhanced wetlands habitat (as discussed in BIO 37) equals 7.02 acres of mitigation that is still required to be created. Since the County will not permit riparian mitigation within the detention basins onsite, the applicant shall be required to implement one of the following measures: (1) make a payment to an in-lieu fee mitigation program; (2) contribute to a mitigation bank; or (3) create offsite mitigation for 7.02 acres of remaining required mitigation after enhancement of 2.38 acres onsite (totaling the required 9.48 acres based on the 2:1 mitigation ratio).

BIO49 Protect Existing Wetlands Onsite. Existing wetlands not to be impacted by the proposed project shall be protected in perpetuity through a prohibition from any development. The wetland preserve area(s) shall be clearly marked with signs, and a public education program shall be developed for future residences of the project site and visitors.

BIO50 Prepare Disturbed Wetland Areas for Replanting. After efforts to minimize the impacts to the riparian vegetation are implemented, appropriate areas of the project site shall be restored, and lost habitat mitigated. This shall be accomplished by implementing the following mitigation measures:

- Regrading portions of the drainages to accommodate onsite revegetation and to accomplish natural sinuosity of the creek channel;
- Replacing and planting selected portions of the site with indigenous riparian plant species;
- Maintaining and irrigating the restored area;
- Removing invasive exotic plants, such as *Centaurea melitensis* (Tocalote), and replacing them with native species to increase species diversity and habitat function; and
- Monitoring the site for at least five (5) years after restoration plantings have been completed.

BIO51 Design and Implement a Wetlands Restoration Plan. Prior to implementation of any restoration, a detailed program shall be developed by the project applicant and shall be approved by the Corps and CDFG as part of the 404 and 1600 *et seq*. permitting process. The program shall contain the following items:

- *Responsibilities and qualifications of the personnel to implement and supervise the plan*. The responsibilities of the landowner, technical specialists, and maintenance personnel that shall supervise and implement the restoration plan shall be specified.
- *Site selection*. The site for the mitigation shall be determined in coordination with the project applicant and resource agencies. The site shall either be located on the proposed development site in a dedicated open space area or dedicated open space area shall be purchased off-site. Appropriate sites shall have suitable hydrology and soils for the establishment of riparian species.
- *Site preparation and planting implementation*. The site preparation shall include: protection of existing native species; trash and weed removal; native species salvage and reuse (i.e., duff); soil treatments (i.e., imprinting, decompacting); temporary irrigation installation; erosion control measures (i.e., rice or willow wattles); seed mix application; and use of container species.
- *Schedule*. A schedule shall be developed which includes planting to occur in late fall and early winter between October and January.
- *Maintenance plan/guidelines*. The maintenance plan shall include: weed control; herbivore control; trash removal; irrigation system maintenance; maintenance training; and replacement planting.
- *Monitoring plan*. The monitoring plan shall include 1) qualitative monitoring (i.e. photographs and general observations), 2) quantitative monitoring (i.e. randomly placed transects), 3) performance criteria as approved by the resource agencies, 4) monthly reports for the first year and bimonthly thereafter, and 5) annual reports for five years that shall be submitted to the resource agencies on an annual basis. The site shall be monitored and maintained for five years to ensure successful establishment of riparian habitat within the restored and created areas; however, if there is successful coverage prior to five years, the project applicant may request to be released from the monitoring requirements from USACE and CDFG.
- *Long-term preservation*. Long-term preservation of the site through an appropriate recordable legal instrument shall also be outlined in the conceptual mitigation plan to ensure the mitigation site is not impacted by future development.
- *Earth-moving equipment.* Earth-moving equipment shall avoid maneuvering in areas outside the identified limits of grading in order to avoid disturbing open space areas that will remain undeveloped. Prior to grading, the open space limits shall be marked by the construction supervisor and the project biologist. These limits shall be identified on the grading plan. No earth-moving equipment shall be allowed within the open space area.
- If work must be conducted when surface water flows are present, specific actions should be taken to avoid increasing water turbidity downstream. Surface water flows should be diverted around all construction activities, and no equipment should be allowed to actively work in flowing water without sedimentation and turbidity control measures in place. In order to minimize impacts to aquatic habitat and aquatic wildlife due to alteration of the Riverine habitat onsite, construction shall be conducted during times of no active channel flows. However, if construction must be conducted while active flows are present within the Riverine system, these measures should be implemented to minimize impacts:
    - Equipment contact with the active channel should be minimized to a maximum extent;
    - Flows should be diverted from the work area, and sedimentation barriers should be installed and maintained;
    - Arising groundwater should be allowed to settle behind a downstream diversion berm prior to discharge to the primary flow channel;

- Turbidity levels should be monitored and minimized (kept below a 20 percent increase over background turbidity);
- Employ BMPs for avoiding fuel leaks in or near active flows; and
- All foreign materials and litter should be removed from the channel.

Implementing Mitigation Measure **BIO2** (Mitigation for the Implementation of Conditions of Approval Related to Preserve Maintenance) will also mitigate for this impact.

Adoption and successful implementation of the mitigation measures recommended above would reduce significant adverse impacts to wetlands and wetland functions to a level of less than significant.

Level of Significance After Mitigation: Since no areas exist onsite to create 7.02 additional acres of wetlands (the creation of wetlands within the detention basins onsite will not be permitted), the level of significance after mitigation would be *significant and unavoidable*.

Mitigation for Loss of Wildlife Foraging and Cover Habitats

BIO52 Implementation of the project will result in permanent loss and temporary disturbance to the existing vegetation. To minimize impacts to areas occupied by the foraging and cover habitats required by wildlife species of the project site the contractor shall:

- Keep habitat impacts to only those areas within the development envelope and fenced in work areas;
- Avoid contact or harm to any dens, middens, and nests;
- Allow all wildlife observed during construction activities the chance to escape any danger; and
- Have a biological monitor onsite during construction activities to help prevent harm to wildlife, relocate wildlife if necessary, and document impacts that require mitigation.

Level of Significance After Mitigation: Significant and Unavoidable

MITIGATION FOR IMPACTS OF FUEL MODIFICATION

Impacts from fuel modification should be mitigated by the implementation of the mitigation measures listed above under Impacts to Natural Vegetation, Including Sensitive Habitats (including **BIO2 through BIO8** and **BIO40 to BIO51**). Implementing Mitigation Measures **BIO2** (Mitigation for the Implementation of Conditions of Approval Related to Preserve Maintenance) and **BIO16** (Mitigation Measure for the Implementation of Conditions of Approval Related to Landscaping) will also mitigate for this impact.

Level of Significance After Mitigation: Significant

MITIGATION FOR IMPACTS FROM LANDSCAPING

BIO53 Project landscape design shall be submitted to the Los Angeles County Department of Regional Planning for review and approval by a County botanist. The review shall ensure that no invasive, exotic plant species such as those listed in the CNPS and California Invasive Plant Council 1999 List (CalIPPC 1999) and subsequent (draft) list for 2005 are

used in any proposed landscaping, and that suitable substitutes are proposed. Ideally, only locally indigenous native species should be used in landscaping along a boundary bordering open space/SEA. Natives used shall include coastal sage scrub, chaparral, and woodland species that currently occur on the project site.

BIO54 The CC&Rs for the homes shall include restrictions on homeowners from planting any invasive exotic species listed by either CNPS or CalIPPC. Homeowner landscaping plans shall be submitted to the CC&Rs for review. The review shall ensure that no invasive exotic plant species are planted onsite in order to reduce the chance of inadvertent introductions or escapes of invasive exotic species into native habitats, including bordering open space areas and SEAs.

Implementing Mitigation Measure **BIO16** (Mitigation Measure for the Implementation of Conditions of Approval Related to Landscaping) will also mitigate for this impact.

Level of Significance After Mitigation: Less Than Significant

MITIGATION FOR IMPACTS TO SEA INTEGRITY

Implementation of all the above mitigation measures for impacts to biological life history - including plants, special-status plants, wildlife, special-status wildlife, natural plant communities, and sensitive habitats – should partially mitigate for impacts to components of the SEA integrity onsite. However, an unavoidable loss of a portion of SEA 63 will result.

Level of Significance After Mitigation: Significant and Unavoidable

MEASURES TO PROTECT/MANAGE OPEN AREAS

Implementation of all the above mitigation measures for impacts to natural vegetation, including sensitive habitats should partially mitigate for impacts to natural open space. However, an unavoidable loss of natural open space will result.

BIO55 In addition to these mitigation measures, an open area protection and management plan, for all preserve areas designated onsite, shall be prepared to ensure the implementation by HOA of the mitigation and to aid in the protection of the remaining preserved open areas after the development onsite.

Level of Significance after Mitigation: Significant and Unavoidable

MITIGATION FOR LOSS OF WILDLIFE TRAVEL ROUTES ONSITE

Implementation of the following mitigation measures (presented above) would partially mitigate local impacts to wildlife travel routes onsite:

BIO1 (Seasonal survey, gather and grow in preserved habitat, and maintain and monitor), and

BIO2 (for implementing conditions of approval related to preserve maintenance), and

BIO13 through BIO16 (for impacts to special-status wildlife species), and

BIO21 through BIO23 (for indirect impacts to special-status wildlife species), as well as

BIO31 through BIO35 (for impacts from noise), and

BIO40 through BIO51 (for restoring natural vegetation, including sensitive habitats).

In addition, lighting and enlarging proposed culverts resulting from the project development will help to mitigate for impacts to wildlife movement. No additional mitigation measures are required.

Level of Significance After Mitigation: Significant

MITIGATION FOR INTERFERENCE WITH WILDLIFE CORRIDORS WITHIN LYON CANYON

Implementation of the following mitigation measures (presented above) would mitigate for impacts to wildlife corridors within Lyon Canyon:

- **BIO22 through BIO26** (for impacts to special-status wildlife species), and
- **BIO31, BIO32, and BIO35** (for impacts from noise), and
- **BIO36 and 37** (for impacts from human activity), and
- **BIO38 and 39** (for impacts from night lighting), and
- **BIO3 through 8,** and **BIO40 through 51** (for impacts to natural vegetation).

In addition, the proposed dim lighting and enlarged culverts to be implemented with the project development will help to mitigate for impacts to wildlife movement. A culvert/tunnel will be constructed over Lyon Canyon Creek to accommodate animal movement through the remaining habitats onsite and beyond. No additional mitigation measures are required.

Level of Significance After Mitigation: Less Than Significant

SECTION 7. SEA DESIGN COMPATIBILITY CRITERIA

PROJECT CONSISTENCY WITH SEA CUP COMPATIBILITY CRITERIA

1. Development is designed to be highly compatible with biotic resources present, including setting aside appropriate and sufficient undisturbed areas.

The majority of onsite natural areas have been set aside as either permanent open space and/or passive recreational areas, including onsite waterbodies/wetlands, significant ridgeline and viewshed areas, oak woodlands, and other sensitive habitat areas. The project proposes to preserve approximately 127.06 acres of natural open space (approximately 56 percent of the site). Located within this open space area are the majority of onsite oak woodlands, onsite streams and waterbodies, riparian habitats, Chamise Chaparral, and other significant biological habitats. Onsite landscaping is also proposed, which will include native and/or non-invasive plant specimens designed to create aesthetically pleasing communities while being compatible with the surrounding native habitat.

2. Development is designed to maintain water bodies, watercourses, and their tributaries in a natural state.

The majority of onsite waterbodies, watercourses, and their tributaries have been set aside as either permanent open space and/or passive recreational areas. The project proposes to preserve approximately 127.06 acres of natural open space (approximately 56% percent of the site).

3. Development is designed so that wildlife movement corridors (migratory paths) are left in an undisturbed and natural state.

The proposed dedication of onsite open space is directly adjacent to known migratory paths (including the Lyons Canyon SEA # 63 and Santa Susana Mountains SEA # 20). The proposed project proposes to preserve the natural habitat areas directly adjacent to these two SEAs, thereby preserving the linkage between known wildlife movement corridors.

4. Development retains sufficient natural vegetative cover and/or open spaces to buffer critical resource areas from the development.

The majority of on-site waterbodies, watercourses, and their tributaries have been set aside as either permanent open space and/or passive recreational areas. The project proposes to preserve approximately 127.06 acres of natural open space (approximately 56 percent of the site).

5. Roads and utilities serving the development are located and designed so as not to conflict with critical resources, habitat areas, or migratory paths.

All proposed development areas adjacent to important onsite habitat areas will be fenced off from human and domestic animal intrusion. Designated trailhead and staging areas will be provided within the proposed development to reduce the potential for unnecessary intrusion into the preserved natural habitat areas. Project access will be provided by a roadway system design to Los Angeles County standards. Almost all of the proposed circulation system was designed outside of the critical on-site waterbodies and streams and on-site oak woodlands. Therefore, critical natural resources and wildlife movement corridors will be maintained.

LAND USES COMPATIBLE WITH GENERAL PLAN SEA REGULATIONS

The General Plan established the following land uses as compatible, by definition, within the SEAs:

1. Regulated scientific study.
2. Passive recreation including wildlife observation and photography.
3. Limited picnicking, riding, hiking, and overnight camping.

The Lyons Canyon Ranch project is compatible with these three land uses.

LAND USES COMPATIBLE AS DETERMINED BY BIOTIC SURVEY

In addition, the following uses may be compatible as determined from the biotic survey and from such conditions that may be necessary to protect the biological resources within the SEA:

1. Residential uses at densities compatible with resource values present and consistent with community character in terms of overall density and magnitude as defined in adopted community, areawide, or countywide plans.

Lyon Canyon SEA 63 is approximately 174.45 acres total. Although the site is zoned for residential development, the SEA will be reduced in size by 26.35 acres (15.1 %) as a result of the proposed residential development. A 1-unit/acre housing density is not considered high density in terms of designated urban classes; however, from a biological resources perspective, this density would result in near elimination of all wildlife habitat on each lot. Such housing density within an SEA would not be compatible with the goals and objectives of the SEA. Therefore, a 1-unit/acre density is too dense to meet SEA compatibility requirements at least in that portion of the SEA converted to such an urban use. Furthermore, little to no natural habitat will remain in each 1-acre lot within the developed portion of the SEA. Proposed mitigation measures should minimize or compensate for the reduction in the total area of the SEA by improving the habitat conditions within the remainder of the SEA onsite.

2. Commercial uses of a minor nature serving local residents and visitors, where provided for in an adopted community or areawide plan.

No commercial uses are proposed for this project.

3. Public and semi-public uses essential to the maintenance of public health, safety, and welfare, where no alternative site or alignment is feasible.

No public uses essential to the maintenance of public health, safety, and welfare are proposed for this project except for the detention basins. The detention basins will result in some modification of natural habitat onsite.

4. Agricultural uses compatible with the resources present.

No agricultural uses are proposed for this project.

5. Extractive uses, including oil and gas recovery, and rock, sand, and gravel quarrying, where compatible with identified biotic resources.

No extractive uses are proposed for this project.

SECTION 8. MONITORING PROGRAM

MONITORING PROGRAM FOR SPECIAL-STATUS PLANT SPECIES

Monitoring Program for Special-Status *Calochortus* Species

- Prior to site disturbance activities associated with the proposed project, supplemental field surveys for *Calochortus plummerae* and *Calochortus clavatus* should be conducted to clearly determine the exact locations and numbers of plants onsite in the development footprint. Surveys should be conducted in the spring prior to construction to flag locations of *Calochortus* within and immediately adjacent to the project site. If the project is constructed prior to blooming, a botanist should monitor all construction activities during work through and immediately adjacent to Lyons Canyon Ranch to ensure that *Calochortus plummerae* is not inadvertently impacted. In addition, the bounds of the work area should be fenced temporarily to clearly delineate where construction workers and equipment are, and are not, allowed.

- Areas with *Calochortus* outside of the development footprint shall be avoided and preserved in perpetuity through an appropriate recordable legal instrument. The legal document shall be recorded prior to issuance of a grading permit. A qualified botanist shall survey for and appropriately mark all populations of *Calochortus* at Lyons Canyon Ranch that are to be avoided and preserved. Where avoidance and protection is not possible, mitigation shall be accomplished through bulb translocation, seed propagation, and monitoring.

- The salvaged bulbs or bulb-containing topsoil shall be translocated to an appropriate site(s) within the preserved portions of the project site. A site analysis plan must be conducted of potential planting areas to identify the most appropriate mitigation site(s), which should be conducted prior to bulb collection. A detailed mitigation plan shall be prepared and submitted to the appropriate agencie(s) for review prior to implementation. The plan must be prepared by a qualified botanist as determined by Los Angeles County Regional Planning.

- Prepare Detailed Mitigation Plan. Following seed and bulb collection, the *Calochortus* shall be relocated into a suitable mitigation site in the undeveloped portion of the project site, or in an adjacent undeveloped acreage that shall be preserved in perpetuity. A qualified botanist shall be selected by the applicant to prepare and implement a detailed mitigation plan, which shall include the following requirements:

  - Following collection, seeds and bulbs shall be stored by a qualified nursery, or by an institution with appropriate storage facilities. Then, the upper 12 inches of topsoil from the *Calochortus* locations shall be scraped, stockpiled, and re-spread at the selected mitigation site(s).

  - The mitigation site(s) shall be located in dedicated open space on the project site, or at an appropriate offsite location. The site shall be selected based on the species habitat

requirements and to promote growth of the individual plantings and the population as a whole.

- The mitigation site(s) shall be prepared for seeding as described in a conceptual restoration plan.
- The topsoil shall be re-spread in the selected location as approved by the project biologist. Approximately sixty percent (60%)of the seeds and bulbs shall be planted in the site during the fall, following soil preparation. Forty percent (40%)of the seeds and bulbs shall be kept in storage for subsequent seeding, if necessary.
- A detailed maintenance and monitoring plan for the mitigation site shall be developed by a qualified botanist. The plan shall include descriptions of maintenance activities appropriate for the site, monitoring requirements, and annual reporting requirements. The project botanist shall have the full authority to suspend any operation on the project site that is directly impacting *Calochortus* plants outside the approved development footprint, and to suspend any activity related to the *Calochortus* plants that is not consistent with the restoration plan. Any dispute regarding the consistency of an action with the restoration plan shall be resolved by the applicant and the County of Los Angeles Department of Regional Planning.
- The performance criteria developed in the maintenance and monitoring plan shall include requirements for a minimum of 60 percent germination of the amount of plant material collected and transferred to the mitigation site. The performance criteria should also include percent cover, density, and seed production requirements, and shall be developed by the project botanist following habitat analysis of an existing high-quality lily habitat. Performance monitoring shall be conducted by a qualified botanist.
- If the germination goal of 60 percent is not achieved following the first season, remediation measures shall be implemented prior to planting with the remaining 40 percent of collected seeds and bulbs. Remedial measures shall include at a minimum: soil testing and amendments, control of invasive species, and physical disturbance of the planted areas by raking (or similar actions) to provide scarification of the seed.
- Potential seed sources from donor sites shall also be identified in case it becomes necessary to collect additional seeds for use on the site, following performance of remedial measures.
- The site shall be maintained for five years to ensure that the *Calochortus* populations are self-sustaining.

Monitoring Program for *Calystegia peirsonii*, *Ambrosia confertiflora*, *Ericameria ericoides* ssp. *ericoides*, & *Navarretia hamata* ssp. *hamata*

- The propagated seeds of each special-status species shall be maintained and monitored for a period of five (5) years after initial planting, with annual reports submitted to the County.

MONITORING PROGRAM FOR INDIRECT IMPACTS TO SPECIAL-STATUS PLANT SPECIES

- Dust control measures may include applying water or other acceptable material to keep fugitive dust to a minimum. High winds can also significantly increase the amount of dust generated from a construction site; therefore, when wind gusts at or above 25 miles per hour (mph) occur more than once per hour, grading activities shall be suspended. A designated monitor shall monitor for excessive fugitive dust originating from onsite construction, and monitor the quantity of dust accumulating on native plants adjacent to the construction site. Exceeding of established dust thresholds shall require immediate remedial action(s) to further control fugitive dust onsite. Fugitive dust airborne or accumulating on native plant leaves shall not exceed twenty percent of background (natural) levels.
- Development of a storm water pollution prevention plan, which shall include provisions for the implementation of best management practices and erosion control measures. Best management practices shall include both structural and non-structural measures.
- Monitoring for invasive plant species shall be conducted regularly to assess invasion by invasive plant species from landscaped areas into adjacent natural habitats. Weed eradication and maintenance shall be conducted when any problem species arise.

MONITORING PROGRAM FOR GENERAL WILDLIFE

Monitoring Program for Aquatic/Semi-Aquatic Wildlife

- If construction must be conducted while active flows are present within the Riverine system , these measures should be implemented to minimize impacts:
  - Equipment contact with the active channel should be minimized to a maximum extent feasible;
  - Flows should be diverted from the work area;
  - Sedimentation barriers should be installed and maintained;
  - Arising groundwater should be allowed to settle behind a downstream diversion berm prior to discharge to the primary flow channel;
  - Turbidity levels should be monitored and minimized consistent with the project's RWQCB General Permit for stormwater discharge requirements; and
  - All foreign materials and litter should be removed from the channel.

Monitoring Program for Breeding and Nesting Birds

- To avoid violating the Migratory Bird Treaty Act or Fish and Game Code § 3503, a qualified ornithologist shall survey the construction site(s) two weeks prior to initiation of site disturbance to identify any nests of birds that would be directly or indirectly affected by the construction activities. If active nests that would be directly impacted by construction activities are found, protection/no work zones at 100 to 300 feet shall be established for appropriate periods to avoid impacting them. Onsite nests shall be avoided until vacated. Occupied nests adjacent to the construction site(s) may need to be avoided for short durations to ensure nesting success. Any nest permanently vacated for the season need not be protected.

- During construction, equipment operators shall avoid contact with or harm to any wildlife species. If a wildlife species is encountered during construction activities, it shall be allowed to escape any danger that may result from construction work.

MONITORING PROGRAM FOR SPECIAL-STATUS WILDLIFE SPECIES

- If any special-status wildlife species are observed foraging, frequenting, or nesting during construction activities, the area in which the special-status species was observed should be flagged or fenced off to protect the wildlife species. In addition, the equipment operators shall be informed of the species' presence and provided with pictures in order to help avoid impacts to this species to the maximum extent possible.
- If nesting activity is present at any raptor nest site, the active site shall be protected until nesting activity has ended to ensure compliance with Section 3503.5 of the California Fish and Game Code. Nesting activity for bird species in the region of the project site normally occurs from 1 February to 30 June.
- To avoid impacts to all special-status wildlife species observed onsite, equipment operators shall avoid contact with or harm to any special-status species and any of their sources of cover (e.g. nest, midden, burrow). If a special-status wildlife species is encountered during construction activities, it shall be allowed to escape any danger that may result from construction work, and the onsite biological monitor shall be notified in order to implement all measures necessary to protect the sensitive species.
- To protect any active nest sites, the following restrictions on construction are required between 1 February and 30 June (or until nests are no longer active as determined by a qualified biologist): clearing limits shall be established a minimum of 300 feet in any direction from any occupied nest (or as otherwise deemed appropriate by the monitoring biologist). Access and land surveying shall not be allowed within 100 feet of any occupied nest (or as otherwise deemed appropriate by the monitoring biologist). Any encroachment into the 300/100-foot-buffer area around the known nest shall only be allowed if it is determined by a qualified biologist that the proposed activity would not disturb the nest occupants. Construction during the non-nesting season shall occur at the sites only if a qualified biologist has determined that fledglings have left the nest.
- If the Western Mastiff Bat, or other special-status bat species, is found to forage or nest onsite, then bat boxes shall be installed at appropriate locations within preserved land onsite to replace lost nesting habitat. A mitigation plan designed specifically to provide nesting and foraging habitat for special-status bat species shall be prepared and submitted to CDFG and the County Biologist for approval, and after approval, it shall be implemented.

MONITORING PROGRAM FOR NOISE IMPACTS TO SPECIAL-STATUS WILDLIFE SPECIES

- A qualified biologist shall identify all active bird nests and sensitive wildlife species sites that may be harmed or disrupted by excessive noise. Buffer zones shall be established around each sensitive wildlife site, sized according to the relative sensitivity of the wildlife species. The biological monitor shall monitor noise levels at the sensitive sites to determine if construction-related noise is causing wildlife to change their normal behavior sufficiently to abandon active nests, or stop feeding or defending their young.
- If construction-related noise causes detrimental wildlife behavior, the biological monitor shall have the authority to stop all construction activities deemed to cause the adverse affect. Work stoppage would normally likely last only a few hours at a time but would not likely last more than one or two days in the immediate vicinity of the sensitive wildlife site, such as at an active bird nest.

MONITORING PROGRAM FOR NATURAL VEGETATION, INCLUDING SENSITIVE HABITATS

- **Coastal Sage Scrub**. Earth-moving equipment shall avoid maneuvering in any area identified as natural open space areas. Prior to grading, the open space limits shall be marked by the construction supervisor and the project biologist. These limits shall be identified on the grading plan. Prior to implementation of any restoration, a detailed program shall be developed by the project applicant and shall contain the following items: qualitative monitoring (i.e. photographs and general observations); quantitative monitoring (e.g. randomly placed transects); performance criteria as approved by the resource agencies [CDFG, USFWS, County, as appropriate]; monthly reports for the first year and bimonthly thereafter; and annual reports for five years that shall be submitted to the resource agencies. The site shall be monitored and maintained for five years to ensure successful establishment of Coastal Sage Scrub habitat within the restored and created areas.
- **Southern California Black Walnut Woodland.** The seedlings should be monitored and irrigated on a regular basis to ensure survival. Juglans californica can also be grown from mature stem cuttings and sprouted in a greenhouse. Rooted cuttings can then be planted at the mitigation site(s). The propagated plants shall be maintained and monitored for a period of five (5) years after initial planting, with annual reports submitted to the County.
- **Coast Live Oak Woodland, Coast Live Oak Riparian Woodland.** The planted trees shall be maintained and monitored for a period of seven (7) years after planting. Success of this mitigation measure will be established if 50 percent of the acorns or seedlings survive after 7 years. A detailed mitigation-monitoring plan shall be developed by a qualified biologist, which shall require maintenance and monitoring of all transplanted oak trees for a period of ten (10) years after transplantation, or as required by the County of Los Angeles. Generally, success is achieved if at least 75% of transplanted trees are in good health after the 10-year monitoring period. The oak woodland habitat shall be monitored and maintained for a period of seven (7) years. The oak woodland area(s) can be created through the plantings and transplantations. Prior to grading, orange construction or chain-link fencing shall be installed around trees (10 feet outside the dripline of each tree or groups of trees) that

should not be impacted by construction. Fencing shall be in place and inspected prior to commencement of grading. This fencing shall remain in place throughout the entire period of construction. The landscape architect/designer for this project shall design these replacement trees into the landscape to replace the habitat of removed woodlands. The habitat shall be reviewed by a qualified botanist and shall be comparable to the removed woodland.

- **Wetland Plant Communities.** Implement Best Management Practices (BMPs) during construction in and near wetlands. Impacts to riparian habitat shall be minimized to the maximum extent possible by implementing the following BMPs:
    - Construction equipment shall only cut back or cut down riparian habitat that is absolutely necessary for construction equipment access;
    - All construction activities, within the banks of Lyon Creek and tributaries, should be conducted during seasons of no, or minimal, channel flows (summer/early fall);
    - A path through the creek channel shall be selected that minimizes impacts to the existing riparian vegetation;
    - A fence shall be placed around any (mature) trees, which are less efficiently replaced by mitigation/restoration efforts;
    - All active wildlife nests existing within the project site riparian vegetation shall be protected and avoided by construction equipment; and
    - A biological monitor shall be present during all construction activities within or adjacent to the drainages of Lyon Canyon that are not to be impacted.

    After efforts to minimize the impacts to the riparian vegetation are implemented, appropriate areas of the project site shall be restored, and lost habitat mitigated. This shall be accomplished by implementing the following mitigation measures:
    - Regrading portions of the drainages to accommodate onsite revegetation and to accomplish natural sinuosity of the creek channel;
    - Replacing and planting selected portions of the site with indigenous riparian plant species;
    - Maintaining and irrigating the restored area;
    - Removing invasive exotic plants, such as *Centaurea melitensis* (Tocalote), and replacing them with native species to increase species diversity and habitat function; and
    - Monitoring the site for at least five (5) years after restoration plantings have been completed.

    Prior to implementation of any restoration, a detailed program shall be developed by the project applicant and shall be approved by the Corps and CDFG as part of the 404 and 1600 et seq. permitting process. The monitoring plan shall include 1) qualitative monitoring (i.e. photographs and general observations), 2) quantitative monitoring (i.e. randomly placed transects), 3) performance criteria as approved by the resource agencies, 4) monthly reports for the first year and bimonthly thereafter, and 5) annual reports for five years that shall be submitted to the resource agencies. The site shall be monitored and maintained for five years to ensure successful establishment of riparian habitat within the restored and created areas; however, if there is successful coverage prior to five years, the project applicant may request to be released from the monitoring requirements from USACE and CDFG.

    Earth-moving equipment shall avoid maneuvering in areas outside the identified limits of grading in order to avoid disturbing open space areas that will remain undeveloped. Prior to grading, the open space limits shall be marked by the construction supervisor and the

project biologist. These limits shall be identified on the grading plan. No earth-moving equipment shall be allowed within the open space area.

If work must be conducted when surface water flows are present, specific actions should be taken to avoid increasing water turbidity downstream. Surface water flows should be diverted around all construction activities, and no equipment should be allowed to actively work in flowing water without sedimentation and turbidity control measures in place. In order to minimize impacts to aquatic habitat and aquatic wildlife due to alteration of the Riverine habitat onsite, DMEC recommends that the construction be conducted during times of no active channel flows.

- Equipment contact with the active channel should be minimized to a maximum extent feasible;
- Flows should be diverted from the work area, and sedimentation barriers should be installed and maintained;
- Arising groundwater should be allowed to settle behind a downstream diversion berm prior to discharge to the primary flow channel;
- Turbidity levels should be monitored and minimized (kept below a 20 percent increase over background turbidity);
- Employ Best Management Practives (BMPs) for avoiding fuel leaks in or near active flows; and
- All foreign materials and litter should be removed from the channel.

- **Monitoring Program for Wildlife Foraging and Cover Habitats.** Impacts to areas containing foraging and cover habitats required by wildlife species of the project site shall be minimized by: minimizing habitat impacts to the greatest extent feasible; avoiding contact or harm to any dens, middens, and nests; allowing all wildlife observed during construction activities the chance to escape any danger; and having a biological monitor onsite during construction activities to help prevent harm to wildlife and to document impacts that require mitigation.

MONITORING PROGRAM FOR LANDSCAPING

Landscaping plans shall be reviewed and approved by a County botanist to ensure appropriate noninvasive plant species are planted onsite, especially in those areas immediately adjacent to open natural areas or preserves.

MONITORING PROGRAM FOR SEA INTEGRITY AND OPEN AREAS

The implementation of all monitoring measures listed in this section (Section 8 - Monitoring Program) will be appropriate monitoring for mitigation for impacts to SEA integrity.

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Jasch Janowicz of Daly Owens Group reviewed a draft of this report and provided project information and valuable corrections and clarifications.

GUIDELINE COMPLIANCE CHECKLIST

Guideline	Page	Reparer's Initials
Setting	Section 2, pg. 8	
Original topographical quad sheet (or color photocopy)	Oversized Maps at end of report	
Project site photographs or color photocopies	Appendix B	
Color aerial photographs	See List of Figures	
SEA/SERA map	Figure 3, pg. 11	
Biotic survey of the project site	Section 3, pg. 43	
Floral and faunal lists in systematic/alphabetic order	Appendices C & D, respectively	
Table of sensitive species impacts matrix	Table 17, pg. 92 and Table 18, pg. 100	
Document showing CNDDB contact	References Cited (CNDDB 2005), pg. 171	
Site/grading plans	Oversized Maps at end of report	
Initial study questionnaire	Appendix A	
Impacts	Section 5, pg. 85	
Mitigation measures	Section 6, pg. 138	
Mitigation monitoring	Section 8, pg. 164	
Reparer's resume/qualifications	On File	

APPENDICES

APPENDIX A.
INITIAL STUDY QUESTIONAIRE

APPENDIX B.
PHOTOGRAPH KEY MAP OF LYONS CANYON RANCH AND SURROUNDING AREA WITH PHOTOGRAPHS

APPENDIX C.
PLANT SPECIES OBSERVED AT LYONS CANYON RANCH

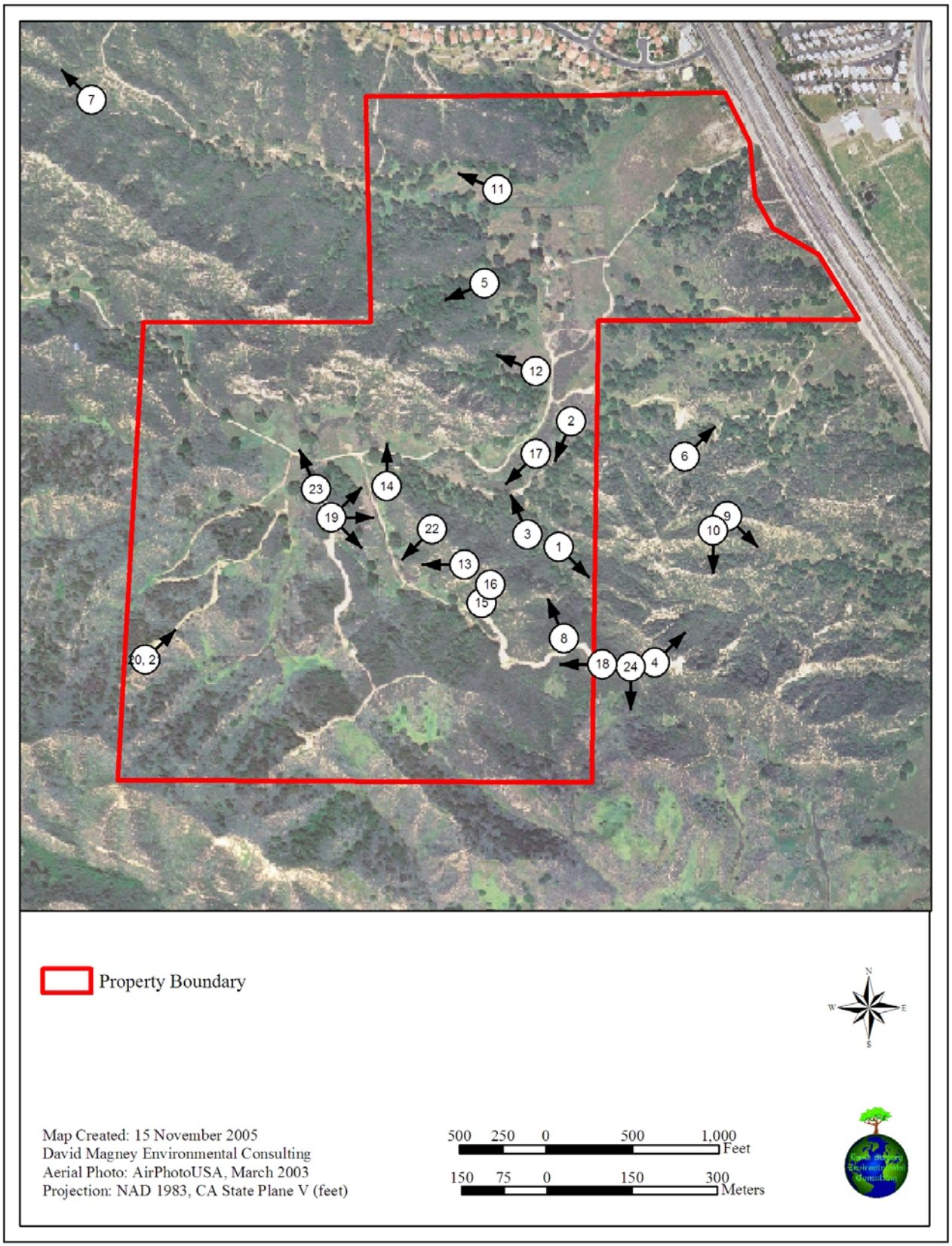
APPENDIX D.
WILDLIFE OBSERVED AND EXPECTED AT LYONS CANYON RANCH

OVERSIZED MAPS:
(1) COLOR U.S.G.S. OAT MOUNTAIN QUAD SHEET; AND
(2) LYONS CANYON RANCH SITE PLANS

APPENDIX A.
INITIAL STUDY QUESTIONAIRE

APPENDIX B.
PHOTOGRAPH KEY MAP OF LYONS CANYON RANCH AND SURROUNDING AREA WITH PHOTOGRAPHS

Photograph *Key Map* of Lyons Canyon Ranch and Surrounding Area



Photographs for Key Map of Lyons Canyon Ranch and Surrounding Area Surrounding

1

1: Steep canyon slope dominated by chaparral vegetation after fire.

2

2: Lyon Canyon Creek near east end of SEA 63 after fire.

3

4

3: Steep canyon slope dominated by chaparral vegetation with Coast Live Oak Woodland in lowland areas of the site after fire; view NNW.
4: View NE from near SE corner of site after fire.

5

6

5: Coast Live Oak Woodland vegetation after fire W of old house site; view W.
6: Small tributary canyon to Lyon Canyon after fire; view NNW.

7

8

7: Steep canyon slope dominated by chaparral vegetation after fire W of project site; view W.
8: Lyon Canyon Creek near east end of SEA 63 after fire as seen from near top of ridge to the south; view NNW.

9

10

9: Steep canyon dominated by chaparral vegetation after fire with Coast Live Oak Woodland in canyon bottom on adjacent Taylor-Prentice property; view SSE with I-5 in upper left of photo.

10: Same canyon as in right photo off project site.

11

12

11: Unnamed main tributary creek to Lyon Canyon Creek after fire; view W.
12: Man-made ponds just NW of east end of SEA 63 in Lyon Canyon after fire, dominated by Mulefat; view NW.

13

14

13: SW area of project site dominated by chaparral vegetation and scattered Coast Live Oak trees after fire; view W from ridge between Lyon Canyon and first major southern tributary canyon.
14: Lyon Canyon Creek and SEA 63 after fire at confluence of first major southern tributary canyon; view N towards Lyon Canyon Creek.

15

16

15: Resprouting Chamise after fire in first southern main tributary canyon to Lyon Canyon.
16: Fossils exposed on primary ridge south of Lyon Canyon.

17

18

17: Lyon Canyon Creek within the eastern end of SEA 63 after fire and winter 2004 rains; view upstream/SW.
18: Burned Chamise Chaparral on S-facing slope at SW corner of project site; view W.

19

Pseudo-panorama of first southern tributary canyon to Lyon Canyon; view eastward.

20

20: Southwestern most onsite tributary canyon to Lyon Canyon Creek; view N.

21

2

22

22: Southern tributary canyon to Lyon Canyon Creek; view WSW.

23

23: View of Lyon Canyon from southern tributary canyon; view NNW.

24

24: View south of Towsley Canyon tributary.

APPENDIX C.
PLANT SPECIES OBSERVED AT LYONS CANYON RANCH

DMEC

Plant Species Observed at Lyons Canyon Ranch

Scientific Name[28]	Common Name	Habit[29]	WIS[30]	Reported By (Voucher No.)[31]	Estimated Abundance within the Project Site[32]
PTERIDOPHYTES – FERNS & ALLIES					
Pteridaceae – Brake Fern Family					
Pellaea andromedifolia	Coffee Fern	PF	.	BonTerra	Uncommon
Pellaea mucronata var. *mucronata*	Birdsfoot Fern	PF	.	DMEC	Uncommon
Pentagramma triangularis	Goldenback Fern	PH	.	DMEC & BonTerra	Uncommon
Selaginellaceae – Spike-Moss Family					
Selaginella bigelovii	Bigelow Spike-moss	PF	.	DMEC & BonTerra	Uncommon
GYMNOSPERMS					
Cupressaceae – Cypress Family					
Cupressus sp.*	Cypress	T	.	BonTerra	Uncommon
Pinaceae – Pine Family					
Pinus sp.*	Pine	T	.	BonTerra	Scarce
ANGIOSPERMAE – FLOWERING PLANTS					
DICOTYLEDONES - DICOTS					
Amaranthaceae – Amaranth Family					
*Amaranthus albus**	Tumbleweed	AH	FACU	DMEC (170-05) & BonTerra (10,487)	Common
Anacardiaceae – Sumac Family					
Malosma laurina	Laurelleaf Sumac	S	.	DMEC & BonTerra	Scarce
Rhus ovata	Sugar Bush	S	.	DMEC & BonTerra	Common
Rhus trilobata var. *quinata*	Slender-twig Skunkbrush	S	NI	DMEC (167-05) & BonTerra	Uncommon
Toxicodendron diversilobum	Poison Oak	PV	.	DMEC & BonTerra	Common
Apiaceae - Carrot Family					
Bowlesia incana	American Bowlesia	AH	FACU*	BonTerra	Scarce
*Conium maculatum**	Poison Hemlock	PH	FACW	DMEC & BonTerra	Uncommon

[28] * = Introduced/nonnative plant species. **Bold** = Special-status species (discussed below in the Special-Status Biological Resources section). Scientific names follow Hickman (1993), Flora of North America Editorial Committee (1993-2005), and Boyd (1999).

[29] Habit definitions: AG = annual grass or graminoid; AH = annual herb; PF = perennial fern or fern ally; PG = perennial grass or graminoid; PH = perennial herb; PV = perennial vine; S= shrub; T = tree.

[30] WIS = Wetland Indicator Status. The following code definitions are according to Reed (1988):
OBL = obligate wetland species, occurs almost always in wetlands (>99% probability).
FACW = facultative wetland species, usually found in wetlands (67-99% probability).
FAC = facultative species, equally likely to occur in wetlands or nonwetlands (34-66% probability).
FACU = facultative upland species, usually found in nonwetlands (67-99% probability).
"+ or –" symbols are modifiers that indicate greater or lesser affinity for wetland habitats.
NI = no indicator has been assigned due to a lack of information to determine indicator status.
* = a tentative assignment to that indicator status by Reed (1988).
Parentheses around a status indicate a wetland status as suggested by David L. Magney based on extensive field observations.

[31] Species reported only by BonTerra Consulting (including Bowland & Associates and Scott White) were not observed by DMEC. DMEC did not conduct floristic surveys prior to the wildfire; however, DMEC conducted surveys approximately one year following the wildfire. Vouchers listed for BonTerra Consulting are those of Scott White, an independent consultant, who deposited his vouchers at RSA.

[32] Scarce=less than 100 individuals; Uncommon=100 to less than 1,000 individuals; Common=1,000 individuals or more.

Scientific Name[28]	Common Name	Habit[29]	WIS[30]	Reported By (Voucher No.)[31]	Estimated Abundance within the Project Site[32]
Daucus pusillus	Rattlesnake Weed	AH	.	DMEC & BonTerra	Common
*Foeniculum vulgare**	Sweet Fennel	PH	FACU	DMEC & BonTerra	Uncommon
Sanicula crassicaulis	Pacific Sanicle	PH	.	DMEC & BonTerra (10,424)	Common
Tauschia arguta	Tauschia	PH	.	DMEC	Uncommon
Apocynaceae – Dogbane Family					
*Vinca major**	Periwinkle	PV	.	BonTerra	Uncommon
Asclepiadaceae – Milkweed Family					
Asclepias californica	California Milkweed	PH	.	BonTerra (10,402)	Uncommon
Asclepias eriocarpa	Indian Milkweed	PH	.	DMEC & BonTerra	Scarce
Asclepias fascicularis	Narrow-leaved Milkweed	PH	FAC	DMEC & BonTerra	Uncommon
Asteraceae – Sunflower Family					
Achillea millefolium	Common White Yarrow	PH	FACU	BonTerra (10,446)	Uncommon
Achyranchaena mollis	Blow-wives	AH	.	BonTerra (10,489)	Scarce
Acourtia microcephala	Sacapellote	PH	.	DMEC & BonTerra (10,434)	Scarce
Agoseris grandiflora	Large-flowered Mountain Dandelion	PH	.	BonTerra (10,442)	Uncommon
Ambrosia acanthicarpa	Burweed	AH	.	DMEC	Common
Ambrosia confertiflora[33]	**Weakleaf Burweed**	AH	.	BonTerra (10,484)	Uncommon
Ambrosia psilostachya var. *californica*	Western Ragweed	AH	FAC	DMEC & BonTerra	Common
Ancistrocarphus filagineus	Woolly Fish Hooks	AH	.	BonTerra	Uncommon
Artemisia californica	California Sagebrush	S	.	DMEC & BonTerra	Common
Artemisia douglasiana	Mugwort	PH	FACW	DMEC & BonTerra	Common
Artemisia dracunculus	Tarragon	PH	.	BonTerra	Uncommon
Artemisia tridentata spp. *Tridentata*	Great Basin Sagebrush	S	.	DMEC & BonTerra	Scarce
Baccharis pilularis	Coyote Brush	S	.	DMEC & BonTerra	Common
Baccharis salicifolia	Mulefat	S	FACW	DMEC & BonTerra	Common
*Carthamnuns tinctorius**	Safflower	AH	.	BonTerra (10,444)	Scarce
Bidens pilosa	Common Beggar Ticks	AH	FACW	BonTerra	Uncommon
Brickellia californica	California Brickellbush	S	FACU	DMEC	Uncommon
*Carduus pycnocephalus**	Italian Thistle	AH	.	DMEC & BonTerra	Common
*Centaurea melitensis**	Tocalote	AH	.	DMEC & BonTerra	Common
Chrysothamnus nauseosus ssp. *?*	Rubber Rabbitbrush	S	.	BonTerra	Uncommon
Cirsium occidentale var. *californica*	Red Western Thistle	AH	.	DMEC & BonTerra	Uncommon
Cirsium occidentale var. *occidentale*	Western Thistle	AH	.	BonTerra	Uncommon
*Cirsium vulgare**	Bull Thistle	AH	FACU	DMEC & BonTerra	Common
*Cnicus benedictus**	Blessed Thistle	PH	.	DMEC & BonTerra	Uncommon
Conyza canadensis	Horseweed	AH	FAC	DMEC & BonTerra	Common
Corethrogyne filaginifolia	California Cudweed-aster	PH	.	DMEC & BonTerra	Uncommon

[33] Northernmost known occurrence of *Ambrosia confertiflora* in Los Angeles County and one of only eight known populations (based on Jepson Herbarium database search). Only one likely extirpated population in Ventura County (Marr Ranch in Simi Valley – *A.C. Sanders 22916* UCR).

Scientific Name[28]	Common Name	Habit[29]	WIS[30]	Reported By (Voucher No.)[31]	Estimated Abundance within the Project Site[32]
Deinandra fasciculata	Fascicled Tarplant	AH	.	DMEC (181-05) & BonTerra (10,414)	Common
Encelia californica	California Bush Sunflower	S	.	DMEC & BonTerra	Uncommon
Ericameria ericoides* ssp. *ericoides[34]	**Mock Heather**	S	.	DMEC (822-03)[35]	Uncommon
Ericameria palmeri var. *pachylepis*	Palmer Goldenbush	S	.	Bowland[36]	Uncommon
Ericameria pinifolia	Pine Goldenbush	S	.	BonTerra (10,403)	Uncommon
Erigeron foliosus var. *?*	Leafy Fleabane Daisy	PH	.	BonTerra (10,412)	Uncommon
Eriophyllum confertiflorum var. *confertiflorum*	Golden Yarrow	PH	.	DMEC & BonTerra	Uncommon
Filago californica	Fluffweed	AH	.	BonTerra (10,427)	Common
*Ganzania linearis**	Trailing Ganzania	S	.	BonTerra	Uncommon
Hazardia squarrosa var. *squarrosa?*	Sawtooth Goldenbush	S	.	DMEC & BonTerra	Uncommon
*Hedypnois cretica**	Crete Hedypnois	AH	.	BonTerra	Uncommon
Helianthus annuus	Western Sunflower	AH	FAC-	BonTerra	Uncommon
Helianthus gracilentus	Slender Sunflower	AH	.	BonTerra	Uncommon
Heterotheca grandiflora	Telegraph Weed	BH	.	DMEC & BonTerra	Uncommon
Heterotheca sessiliflora ssp. *echioides*	Hairy Golden Aster	BH	.	DMEC (178-05)	Scarce
Heterotheca sessiliflora ssp. *sessiliflora*	Hairy Golden Aster	BH	.	BonTerra	Scarce
Heterotheca subaxillaris	Camphor Weed	BH	.	BonTerra (10,498)	Scarce
*Lactuca biennis**	Prickly Lettuce	BH	NI*	BonTerra	Uncommon
*Lactuca saligna**	Willow Lettuce	AH	FACU	BonTerra	Uncommon
*Lactuca serriola**	Prickly Wild Lettuce	AH	FAC	DMEC & BonTerra	Uncommon
Madia elegans	Elegant Madia	AH	.	BonTerra	Uncommon
Madia gracilis	Slender Madia	AH	.	DMEC & BonTerra	Uncommon
Madia sativa (or *gracilis*)	Common Tarplant	AH	.	BonTerra (10,490)	Scarce
Malacothrix clevelandii	Cleveland's Cliff-aster	AH	?	BonTerra	Scarce
Malacothrix saxatilis var. *tenuifolia*	Slenderleaf Cliff-aster	PH	.	DMEC & BonTerra	Common
Micropus californicus var. *californicus*	Slender Cottonseed	AH	(FAC)	BonTerra	Uncommon
Microseris douglasii	Douglas' Microseris	AH	.	BonTerra	Common
Microseris lindleyi	Silver Puffs	AH	.	BonTerra	Uncommon

[34] *Ericameria ericoides* typically occurs along the coast and its presence this far inland represents a significant disjunction and extralimital occurrence, and is therefore considered a locally rare species. It is possible that its presence along The Old Road represents a waif that was included in a hydroseed mulch applied for erosion control on the road cut immediately south of Lyon Canyon, along with the introduced *Eriogonum fasciculatum* var. *fasciculatum* at this site.

[35] The fact that three species of *Ericameria* have been identified as occurring onsite raises questions about proper identification of one or more of the species since all three species are morphologically similar; however, a search of the Jepson Herbarium online database found that *E. pinifolia* has been collected from Elizabeth Lake in the Liebre Mountains to the north south to Pacoima, including in Newhall both north and south of Lyon Canyon. Furthermore, *E. palmeri* var. *pachylepis* has been collected in the Newhall area, north and east of the project site.

[36] BonTerra reported *Ericameria palmeri* without designating which variety is present, for which protocol requires an assumption that the taxon is the type variety: *Ericameria palmeri* var. *palmeri*. Bowland & Associates reported *E. palmeri* var. *pachylepis*. Scott White, subcontractor to BonTerra, tentatively identified it as *E. palmeri* var. *pachylepis*, which is probably why BonTerra's did not fully identify it as to variety in their report. DMEC concludes that *E. palmeri* var. *pachylepis* was present onsite.

Scientific Name[28]	Common Name	Habit[29]	WIS[30]	Reported By (Voucher No.)[31]	Estimated Abundance within the Project Site[32]
*Picris echioides**	Bristly Ox-tongue	AH	FAC*	DMEC & BonTerra	Common
Pseudognaphalium californicum	Green Everlasting	PH	FACW-	DMEC & BonTerra (10,500)	Common
*Pseudognaphalium luteo-album**	Cudweed Everlasting	AH	FACW-	DMEC & BonTerra	Uncommon
Pseudognaphalium microcephalum	White Everlasting	PH	.	BonTerra	Uncommon
Psilocarphus tenellus var. *tenellus*	Slender Woollyheads	AH	FAC	BonTerra	Scarce
Rafinesquia californica	California Chicory	AH	.	BonTerra	Scarce
Senecio flaccidus var. *douglasii*	Douglas Butterweed	S	.	BonTerra	Uncommon
*Senecio vulgaris**	Common Groundsel	AH	NI*	BonTerra (10,429)	Uncommon
*Silybum marianum**	Milk Thistle	AH	.	DMEC & BonTerra	Common
*Sonchus asper**	Prickly Sow-thistle	AH	FAC	DMEC & BonTerra	Uncommon
*Sonchus oleraceus**	Common Sow-thistle	AH	NI*	DMEC & BonTerra	Common
Stephanomeria virgata	Twiggy Wreath Plant	AH	.	DMEC	Uncommon
Uropappus lindleyi	Silverpuffs	AH	.	BonTerra	Uncommon
Boraginaceae – Borage Family					
Amsinckia menziesii var. *intermedia*	Rancher's Fire	AH	.	DMEC & BonTerra	Uncommon
Cryptantha sp.	a Forget-Me-Not	AH	.	BonTerra (10,419)	Uncommon
Cryptantha intermedia	Common Forget-Me-Not	AH	.	DMEC & BonTerra (10,423)	Common
Cryptantha muricata	Prickly Forget-Me-Not	AH	.	DMEC & BonTerra (10,441)	Common
Heliotropium curassavicum	Alkali Heliotrope	PH	OBL	DMEC & BonTerra	Uncommon
Nemophila sp.	Nemophila	AH	.	DMEC	Uncommon
Pectocarya penicillata	Winged Pectocarya	AH	.	BonTerra	Scarce
Plagiobothrys nothofulvus	Rusty Popcornflower	AH	FAC	BonTerra	Uncommon
Brassicaceae – Mustard Family					
*Brassica nigra**	Black Mustard	AH	.	DMEC & BonTerra	Common
*Capsella bursa-pastoris**	Shepherd's Purse	AH	FAC-	BonTerra	Uncommon
*Hirschfeldia incana **	Summer Mustard	BH	.	DMEC & BonTerra	Common
*Lepidium latifolium**	Broad-leaved Peppergrass	AH	FACW	BonTerra	Uncommon
*Sisymbrium altissimum**	Tumble Mustard	AH	FACU	BonTerra	Common
*Sisymbrium irio**	London Rocket	AH	.	DMEC & BonTerra	Common
*Sisymbrium officinale**	Hedge-mustard	AH	.	BonTerra	Uncommon
*Sisymbrium orientale**	Hare's Ear Cabbage	AH	.	BonTerra	Common
Thysanocarpus laciniatus	Narrow-leaved Lacepod	AH	.	BonTerra	Scarce
Caprifoliaceae – Honeysuckle Family					
Lonicera interrupta	Honeysuckle	S	.	BonTerra	Uncommon
Sambucus mexicana	Mexican Elderberry	S	FAC	DMEC & BonTerra	Common
Caryophyllaceae – Pink Family					
*Silene gallica**	Windmill Pink	AH	.	BonTerra	Uncommon
*Spergula arvensis**	Corn Spurry	AH	.	BonTerra	Uncommon
*Stellaria media**	Common Chickweed	AH	FACU	DMEC & BonTerra	Uncommon

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Chenopodiaceae Goosefoot Family					
Atriplex canescens	Fourwing Saltbush	S	FACU	BonTerra	Uncommon
Atriplex rosea	Redscale	AH	FACU	BonTerra	Uncommon
*Atriplex semibaccata**	Australian Saltbush	S	FAC	DMEC (177-05) & BonTerra	Uncommon
Atriplex serenana var. *serenana*	Bracted Saltscale	AH	.	DMEC (177-05) & BonTerra (10,497)	Uncommon
Chenopodium album *	Lambsquarters	AH	FAC	DMEC (182-05) & BonTerra	Uncommon
Chenopodium californicum	Californica Goosefoot	PH	.	BonTerra	Scarce
*Chenopodium murale**	Nettle-leaved Goosefoot	AH	.	BonTerra	Common
*Chenopodium pumilo**	Tasmanian Goosefoot	AH	.	BonTerra	Uncommon
Chenopodium sp.	a goosefoot	AH	?	BonTerra	Uncommon
Salsola tragus *	Russian Thistle	AH	FACU+	DMEC	Uncommon
Cistaceae – Rock Rose Family					
Helianthemum scoparium	Rush Rose	PH	.	BonTerra (10,486)	Scarce
Convolvulaceae – Morning-Glory Family					
Calystegia macrostegia ssp. *intermedia*	Chaparral Morning-glory	PV	.	DMEC & BonTerra	Scarce
Calystegia peirsonii	**Pierson's Morning-glory**	PV	.	BonTerra (10,443)	Scarce
*Convolvulus arvensis**	Field Bindweed	PV	.	DMEC & BonTerra	Uncommon
Cuscuta californica	California Dodder	AV	.	DMEC & BonTerra	Uncommon
Crassulaceae – Stonecrop Family					
Crassula connata	Sand Pygmy Weed	AH	FAC	BonTerra	Scarce
Dudleya lanceolata	Lanceleaf Live-forever	PH	.	BonTerra	Scarce
Cucurbitaceae Gourd Family					
Cucurbita foetidissima	Coyote Melon	PV	.	BonTerra	Uncommon
Marah macrocarpus var. *macrocarpus*	Large-fruited Man-root	PV	.	DMEC & BonTerra	Common
Ericaceae – Heath Family					
Arctostaphylos glauca	Bigberry Manzanita	S	.	DMEC & BonTerra	Uncommon
Euphorbiaceae – Spurge Family					
Chamaesyce albomarginata	Rattlesnake Weed	AH	.	DMEC & BonTerra	Scarce
*Chamaesyce maculata**	Spotted Spurge	AH	.	BonTerra	Common
Croton californicus var. *californicus*	California Croton	PH	.	DMEC & BonTerra	Uncommon
Eremocarpus setigerus	Dove Weed	AH	.	DMEC & BonTerra	Common
*Euphorbia peplus**	Petty Spurge	AH	.	DMEC & BonTerra	Uncommon
*Ricinus communis**	Castor Bean	S	FACU	BonTerra	Uncommon
Fabaceae – Pea Family					
Amorpha californica var. *californica*	California False Indigo	S	FACU	DMEC (180-05) & BonTerra	Scarce
Astragalus trichopodus var. *phoxus*	Antisell Three-pod Milkvetch	PH	.	DMEC (168-05) & BonTerra	Uncommon
Lathyrus vestitus ssp. *?*	Pacific Peavine	PV	.	DMEC & BonTerra	Uncommon
*Lotus corniculatus**	Birdsfoot Trefoil	AH	FAC	BonTerra	Common
Lotus micranthus	Miniature Lotus	AH	.	BonTerra	Scarce
Lotus purshianus var. *purshianus*	Pursh's Lotus	AH	.	DMEC & BonTerra	Uncommon

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Lotus salsuginosus var. *salsuginosus*	Coastal Lotus	AH	.	DMEC & BonTerra (10,406)	Common
Lotus scoparius var. *scoparius*	Deerweed	S	.	BonTerra	Common
Lotus strigosus	Strigose Lotus	AH	.	DMEC & BonTerra (10,413)	Uncommon
Lupinus bicolor	Bicolored Lupine	AH	.	DMEC & BonTerra	Common
Lupinus hirsutissimus	Stinging Lupine	AH	.	DMEC & BonTerra (10,417)	Scarce
Lupinus microcarpus var. *?*	Chick Lupine	AH	.	BonTerra	Scarce
Lupinus sparsiflorus ssp. *sparsiflorus*	Few-flowered Lupine	AH	.	DMEC & BonTerra (10,485)	Uncommon
Lupinus succulentus	Fleshy Lupine	AH	.	DMEC & BonTerra (10,408)	Common
Lupinus truncatus	Truncate-leaved Lupine	AH	.	DMEC & BonTerra	Scarce
*Medicago polymorpha**	Bur-clover	AH	(FACU)	DMEC & BonTerra	Common
*Melilotus alba**	White Sweetclover	AH	FACU+	DMEC & BonTerra	Common
*Melilotus indica**	Sourclover	AH	FAC	DMEC & BonTerra	Common
*Robinia pseudoacacia**	Black Locust	T	.	BonTerra	Uncommon
*Spartium junceum**	Spanish Broom	S	.	BonTerra	Uncommon
Trifolium gracilentum (?)	Pin-point Clover	AH	.	BonTerra	Uncommon
*Trifolium hirtum**	Rose Clover	AH	.	DMEC (174-05) & BonTerra	Uncommon
Trifolium willdenovii	Tomcat Clover	AH	.	BonTerra	Uncommon
Fagaceae – Oak Family					
Quercus agrifolia var. *agrifolia*	Coast Live Oak	T	(FACU)	DMEC & BonTerra	Common
Quercus berberidifolia	Scrub Oak	S	.	DMEC & BonTerra	Uncommon
Quercus douglasii	Blue Oak (outside of project site)	T	.	DMEC & BonTerra	Scarce
Quercus john-tuckeri[37]	Tucker Oak (outside project site)	S	.	BonTerra	Scarce
Quercus lobata	Valley Oak	T	FAC*	DMEC & BonTerra	Uncommon
Geraniaceae – Geranium Family					
*Erodium botrys**	Long-beaked Filaree	AH	.	BonTerra	Common
*Erodium cicutarium**	Redstem Filaree	AH	.	DMEC & BonTerra	Common
Grossulariaceae – Gooseberry Family					
Ribes aureum var. *gracillimum*	Golden Current	S	.	BonTerra	Uncommon
Ribes cf. *malvaceum*	Chaparral Current	S	.	DMEC & BonTerra	Uncommon
Hydrophyllaceae – Waterleaf Family					
Emmenanthe penduliflora var. *penduliflora*	Whispering Bells	AH	.	DMEC & BonTerra	Uncommon
Eriodictyon crassifolium var. *nigrescens*	Thickleaf Yerba Santa	S	.	DMEC (183-05) & BonTerra	Uncommon
Eucrypta chrysanthemifolia var. *chrysanthemifolia*	Common Eucrypta	AH	.	DMEC & BonTerra (10,409)	Common
Phacelia cf. *brachyloba*	Lobed Phacelia	AH	.	DMEC	Uncommon
Phacelia cicutaria var. *hispida*	Caterpillar Phacelia	AH	.	DMEC & BonTerra	Uncommon

[37] The presence of *Quercus john-tuckeri* in this area is highly questionable as it is not known to occur in the Santa Susana Mountains. It more typically occurs at the edge of the Mojave Desert and Liebre Mountains in Los Angeles County and in the Cuyama Badlands in Ventura County. Furthermore, no vouchers were collected to support this claim by BonTerra, Scott White did not find it, and none of the arborists that surveyed the site found it.

Scientific Name[28]	Common Name	Habit[29]	WIS[30]	Reported By (Voucher No.)[31]	Estimated Abundance within the Project Site[32]
Phacelia distans	Common Phacelia	AH	.	BonTerra	Uncommon
Phacelia cf. *imbricata*	Imbricate Phacelia	AH	.	DMEC & BonTerra	Uncommon
Phacelia ramosissima var. *latifolia*	Branching Phacelia	PH	.	BonTerra	Uncommon
Phacelia tanasetifolia	Tansy Phacelia	AH	.	BonTerra	Uncommon
Phacelia viscida	Sticky Phacelia	AH	.	BonTerra	Uncommon
Juglandaceae – Walnut Family					
Juglans californica* var. *californica	**Southern Calif. Black Walnut**	T	FAC	DMEC, BonTerra, and Bowland & Associates	Uncommon
Lamiaceae – Mint Family					
*Lamium amplexicaule**	Henbit	AH	.	DMEC & BonTerra	Uncommon
Marrubium vulgare *	White Horehound	S	FAC	DMEC & BonTerra	Uncommon
Salvia apiana	White Sage	S	.	DMEC & BonTerra	Scarce
Salvia columbariae	Chia	AH	.	BonTerra	Scarce
Salvia leucophylla	Purple Sage	S	.	DMEC & BonTerra	Uncommon
Salvia mellifera	Black Sage	S	.	DMEC & BonTerra	Common
Trichostema lanatum	Woolly Blue-curls	S	.	BonTerra	Uncommon
Trichostema lanceolatum	Vinegar Weed	AH	.	DMEC (171-05) & BonTerra	Uncommon
Loasaceae – Stickleaf Family					
Mentzelia laevicaulis	Blazing Star	AH	.	BonTerra	Scarce
Mentzelia micrantha	Tiny-flowered Stickleaf	AH	.	DMEC (172-05) & BonTerra (10,418)	Scarce
Lythraceae – Loosestrife Family					
Lagerstroemia indica+	Crape-myrtle	T	.	BonTerra	Scarce
Magnoliaceae – Magnolia Family					
Magnolia sp. (probably *grandiflora*)+	Southern Magnolia	T	.	BonTerra	Scarce
Malvaceae – Mallow Family					
Malacothamnus fasciculatus	Chaparral Bush Mallow	S	.	DMEC (184-05) & BonTerra	Common
Malva parviflora *	Cheeseweed	AH	.	DMEC & BonTerra	Common
Myoporaceae-Myoporum Family					
Myoporum laetum+	Myoporum	S	.	DMEC & BonTerra	Common
Nyctaginaceae – Four-O'clock Family					
Mirabilis laevis var. *crassifolia*	California Wishbone Bush	PH	.	DMEC & BonTerra	Scarce
Oleaceae-Olive Family					
Fraxinus dipetala	California Flowering Ash	T	.	BonTerra	Scarce
Onagraceae-Primrose Family					
Camissonia bistorta	California Sun-cup	AH	.	BonTerra (10,440)	Uncommon
Camissonia boothii	Shredding Primrose	AH	.	BonTerra	Uncommon
Camissonia californica	Mustard Primrose	AH	.	DMEC & BonTerra	Uncommon
Camissonia hirtella(?)	Field Suncup	AH	.	BonTerra (10,432)	Uncommon
Clarkia cylindrica	Willow-herb Clarkia	AH	.	BonTerra (10,422) & Bowland & Assoc	Common

Scientific Name[28]	Common Name	Habit[29]	WIS[30]	Reported By (Voucher No.)[31]	Estimated Abundance within the Project Site[32]
Clarkia epilobioides	Willow-herb Clarkia	AH	.	BonTerra and Bowland & Assoc.	Common
Clarkia purpurea ssp. *quadrivulnera*	Four-spotted Purple Clarkia	AH	.	BonTerra and Bowland & Assoc. (10,436)	Uncommon
Clarkia unguiculata	Elegant Clarkia	AH	.	BonTerra	Common
Epilobium canum	California Fuchsia	PH	.	BonTerra	Common
Epilobium ciliatum ssp. *ciliatum*	Northern Willow-herb	PH	FACW	DMEC	Uncommon
Oenothera californica	California Evening Primrose	PH	.	BonTerra	Common
Orobanchaceae – Broom-Rape Family					
Castilleja exserta	Purple Owl's Clover	AH	.	BonTerra	Uncommon
Castilleja foliolosa	Woolly Indian Paintbrush	PH	.	DMEC (173-05)	Scarce
Cordylanthus rigidus ssp. *setigerus*	Dark-tipped Rigid Bird's-beak	AH	.	DMEC (169-05)	Uncommon
Orobanche bulbosa	Chaparral Broom-rape	PH	.	BonTerra	Uncommon
Orobanche fasciculata	Pine Broom-rape	PH	.	BonTerra	Uncommon
Paeoniaceae – Peony Family					
Paeonia californica	California Peony	PH	.	DMEC & BonTerra (10,435)	Scarce
Papaveraceae – Poppy Family					
Dendromecon rigida	California Bush Poppy	S	.	BonTerra	Scarce
Eschscholzia californica	California Poppy	PH	.	DMEC & BonTerra	Uncommon
Phrymaceae – Monkeyflower Family					
Mimulus longiflorus [*M. aurantiacus*]	Bush Monkeyflower	S	.	DMEC & BonTerra	Uncommon
Mimulus brevipes	Wide-throat Monkeyflower	AH	.	BonTerra (10,421)	Scarce
Plantaginaceae – Plantain Family					
Antirrhinum coulterianum	White Snapdragon	AH	.	BonTerra	Scarce
Antirrhinum multiflorum	Sticky Snapdragon	S	.	DMEC (250-04)	Scarce
Collinsia heterophylla	Chinese Houses	AH	.	BonTerra	Uncommon
Keckiella cordifolia	Heart-leaved Bush Beardtongue	S	.	DMEC & BonTerra	Scarce
Keckiella ternata ssp. *ternata*	Blue-stemmed Bush Beardtongue	S	.	BonTerra	Scarce
Penstemon centranthifolius	Scarlet Bugler	PH	.	BonTerra	Uncommon
Penstemon heterophyllus	Foothill Beardtongue	PH	.	BonTerra (10,437)	Uncommon
Plantago erecta	California Plantain	AH	OBL	BonTerra	Scarce
*Plantago lanceolata**	English Plantain	PH	FAC-	BonTerra	Common
*Plantago major**	Broadleaf Plantain	PH	FACW-	BonTerra	Uncommon
Platanaceae – Sycamore Family					
Platanus racemosa var. *racemosa*	California Sycamore	T	FACW	DMEC	Uncommon
Polemoniaceae – Phlox Family					
Allophyllum gilioides	Straggling Allophyllum	AH	.	BonTerra	Uncommon
Allophyllum glutinosum	Sticky Allophyllum	AH	.	DMEC (176-05) & BonTerra (10,433)	Uncommon
Eriastrum sapphirinum	Sapphire Woollystar	AH	.	BonTerra (10,502)	Common (locally)
Gilia ochroleuca	Gilia	AH	.	BonTerra	Uncommon
Leptodactylon californicum ssp. *glandulosum*	Glandular Prickly Phlox	S	.	DMEC & BonTerra	Scarce

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Linanthus liniflorus	Flax-flowered Linanthus	AH	.	BonTerra (10,416)	Scarce
Navarretia atractyloides	Rough Navarretia	AH	.	BonTerra	Uncommon
***Navarretia hamata* ssp. *hamata*[38]**	**Skunk Navarretia**	AH	.	DMEC (175-05)	Uncommon
Navarretia sp. (likely one of the above)	Navarretia	AH	.	BonTerra	Uncommon
Polygonaceae – Buckwheat Family					
Chorizanthe staticoides	Turkish Rugging	AH	.	DMEC (251-04) & BonTerra (10,420)	Uncommon
Chorizanthe xantii	Riverside Spineflower	AH	.	BonTerra	Uncommon
Eriogonum angulosum	Angle-stemmed Buckwheat	AH	.	DMEC & BonTerra	Uncommon
Eriogonum elongatum	Long-stemmed Buckwheat	PH	.	BonTerra	Uncommon
Eriogonum fasciculatum var. *fasciculatum**	California Buckwheat	S	.	DMEC (166-05) & BonTerra	Uncommon
Eriogonum fasciculatum var. *polifolium*	Hoary California Buckwheat	S	.	DMEC	Common
*Polygonum arenastrum**	Common Knotweed	AH	FAC	DMEC & BonTerra	Uncommon
*Polygonum argyrocoleon**	Silver-sheath Knotweed	AH	FAC+	BonTerra	Uncommon
Pterostegia drymarioides	Fairy Mist	PF	.	DMEC & BonTerra (10,405)	Scarce
*Rumex crispus**	Curly Dock	PH	FACW-	DMEC & BonTerra	Uncommon
Rumex hymenosepalus	Wild Rhubarb	PH	.	DMEC	Scarce
Rumex salicifolius (var. *salicifolius*)	Willow Dock	PH	FACW	BonTerra (10,491)	Uncommon
Portulacaceae – Purslane Family					
Calandrinia ciliata	Red Maids	AH	FAC	BonTerra (10,438)	Uncommon
Claytonia parviflora	Small-flowered Miner's Lettuce	AH	FAC	DMEC	Common
Claytonia perfoliata ssp. *mexicana*	Mexican Miner's Lettuce	AH	FAC	DMEC	Common
Claytonia sp. (likely one of the above)	Miner's Lettuce	AH	FAC	BonTerra	Common
Primulaceae - Primrose					
*Anagallis arvensis**	Scarlet Pimpernel	AH	FAC	DMEC & BonTerra	Common
Ranunculaceae – Crowfoot Family					
Clematis ligusticifolia	Western Virgin's Bower	PV	FAC	BonTerra	Uncommon
Delphinium parryi ssp. *parryi*	Parry's Larkspur	PH	.	BonTerra (10,431)	Scarce
Rhamnaceae – Buckthorn Family					
Ceanothus crassifolius var. *crassifolius*	Snowball Ceanothus	S	.	DMEC & BonTerra	Uncommon
Rhamnus californica ssp. *californica?*	California Coffeeberry	S	.	BonTerra	Uncommon
Rhamnus ilicifolia	Hollyleaf Redberry	S	.	DMEC & BonTerra	Uncommon
Rhamnus tomentella ssp. *tomentella?*	Hoary Coffeeberry	S	.	BonTerra	Uncommon
Rosaceae – Rose Family					
Adenostoma fasciculatum	Chamise	S	.	DMEC & BonTerra	Common
Cercocarpus betuloides var. *betuloides?*	Birchleaf Mountain Mahogany	S	.	BonTerra	Uncommon
Heteromeles arbutifolia	Toyon	S	.	DMEC & BonTerra	Scarce
Prunus ilicifolia	Hollyleaf Cherry	S	.	DMEC & BonTerra	Scarce
Pyracantha sp.+	Firethorn	S	.	BonTerra	Uncommon

[38] This taxon is treated as a locally rare species. It is considered a locally rare species in Ventura County (Magney 2005) and is not reported in the Liebre Mountains flora by Boyd (1999). No collections are reported this far north in Los Angeles County in the Jepson Herbarium online database for this variety.

Scientific Name[28]	Common Name	Habit[29]	WIS[30]	Reported By (Voucher No.)[31]	Estimated Abundance within the Project Site[32]
Rosa californica	California Wild Rose	S	FAC+	BonTerra	Uncommon
Rubus ursinus	Pacific Blackberry	PV	FACW*	BonTerra	Uncommon
Rubiaceae – Madder Family					
Galium angustifolium var. *angustifolium*	Chaparral Bedstraw	PV	.	DMEC	Uncommon
Galium aparine	Common Bedstraw	AH	.	BonTerra	Uncommon
Galium porrigens var. *porrigens*	Climbing Bedstraw	PV	.	DMEC (179-05) & BonTerra (10,499)	Scarce
Salicaceae – Willow Family					
Populus fremontii ssp. *fremontii*	Fremont Cottonwood	T	FACW	DMEC & BonTerra	Uncommon
Salix laevigata	Red Willow	T	FACW	DMEC	Uncommon
Salix lasiolepis var. *lasiolepis*	Arroyo Willow	T	FACW	DMEC & BonTerra	Common
Simaroubaceae – Quassia Family					
*Ailanthus altissima**	Tree-of-heaven	T	FACU	DMEC & BonTerra	Uncommon
Solanaceae – Nightshade Family					
Datura wrightii	Jimson Weed	AH	.	DMEC & BonTerra	Uncommon
*Nicotiana glauca**	Tree Tobacco	S	FAC	DMEC & BonTerra	Uncommon
Nicotiana quaudrivalvis	Indian Tobacco	PH	.	BonTerra (10,488)	Uncommon
*Solanum americanum**	White Nightshade	S	.	BonTerra (10,483)	Common
Solanum douglasii	Douglas' Nightshade	S	.	BonTerra	Uncommon
Solanum xantii var. *xantii*	Chaparral Nightshade	S	.	DMEC & BonTerra (10,410)	Uncommon
Verbenaceae – Vervain Family					
Verbena lasiostachys	Western Verbena	PH	FAC-	DMEC & BonTerra (10,426)	Uncommon
Viscaceae – Mistletoe Family					
Phoradendron villosum	Oak Mistletoe	PH	.	DMEC	Uncommon
Violaceae – Violet Family					
Viola pedunculata	Johnny-jump-up	PH	.	BonTerra	Scarce
Zygophyllaceae – Caltrop Family					
*Tribulis terrestris**	Puncture Weed	AH	.	DMEC	Common
MONOCOTYLEDONES - MONOCOTS					
Agavaceae – Agave Family					
Hesperoyucca whipplei	Our Lord's Candle	S	.	DMEC	Uncommon
Cyperaceae – Sedge Family					
Carex sp.	Sedge	PG	(OBL)	BonTerra	Uncommon
Iridaceae – Iris Family					
Sisyrinchium bellum	Blue-eyed Grass	PG	.	DMEC & BonTerra	Uncommon
Juncaceae – Rush Family					
Juncus cf *balticus*	Baltic Rush	PG	OBL	DMEC	Uncommon
Juncus mexicanus	Mexican Rush	PG	FACW	BonTerra	Uncommon

Scientific Name[28]	Common Name	Habit[29]	WIS[30]	Reported By (Voucher No.)[31]	Estimated Abundance within the Project Site[32]
Liliaceae – Lily Family					
Calochortus clavatus* var. *gracilis	**Slender Mariposa Lily**	PG	.	BonTerra and Bowland & Assoc.	Scarce
Calochortus plummerae	**Plummer's Mariposa Lily**	PG	.	BonTerra and Bowland & Assoc. (10,428)	Scarce
Calochortus venustus	Butterfly Mariposa Lily	PG	.	BonTerra	Scarce
Chlorogalum pomeridianum var. *pomeridianum*	Common Soap Lily	PG	.	DMEC & BonTerra (10,407)	Uncommon
Poaceae – Grass Family					
Achnatherum coronatum	Giant Needlegrass	PG	.	BonTerra	Uncommon
*Avena barbata**	Slender Wild Oat	AG	.	DMEC & BonTerra	Common
*Avena fatua**	Wild Oat	AG	.	BonTerra	Common
Bromus carinatus	California Brome	AG	.	BonTerra	Uncommon
*Bromus diandrus**	Ripgut Grass	AG	(FACU)	DMEC & BonTerra	Common
*Bromus hordeaceus**	Soft Chess	AG	FACU-	DMEC & BonTerra	Common
Bromus madritensis ssp. *rubens**	Red Brome	AG	NI	DMEC & BonTerra	Common
Bromus madritensis ssp. *madritensis*	Madrid Brome	AG	NI	BonTerra (10,411)	Uncommon
*Bromus tectorum**	Cheat Grass	AG	.	BonTerra	Common
*Cynodon dactylon**	Bermuda Grass	PG	FAC	BonTerra	Uncommon
Distichlis spicata	Salt Grass	PG	FACW	DMEC & BonTerra	Uncommon
Elymus elymoides	Bottlebrush Squirreltail	PG	FACU-	BonTerra	Uncommon
Elymus glaucus	Blue Wildrye	PG	FACU	BonTerra (10,425)	Uncommon
Hordeum murinum (ssp. *murinum*)*	Winter Barley	AG	.	BonTerra	Common
*Hordeum vulgare**	Cultivated Barley	AG	.	BonTerra	Uncommon
*Lamarckia aurea**	Goldentop	AG	.	DMEC & BonTerra	Uncommon
Leymus condensatus	Giant Wildrye	PG	FACU	DMEC & BonTerra	Common
Leymus triticoides	Creeping Wildrye	PG	FAC+	DMEC & BonTerra	Uncommon
*Lolium multiflorum**	Italian Ryegrass	AG	FAC*	DMEC & BonTerra	Common
Melica imperfecta	Coast Melic Grass	PG	.	BonTerra	Uncommon
Muhlenbergia microsperma	Littleseed Muhly	PG	.	BonTerra (10,404)	Scarce
Nassella cernua	Nodding Needlegrass	PG	.	BonTerra (10,492)	Scarce
Nassella lepida	Foothill Needlegrass	PG	.	BonTerra	Scarce
Nassella pulchra	Purple Needlegrass	PG	.	DMEC & BonTerra	Scarce
*Piptatherum miliaceum**	Smilo Grass	PG	(FACU)	DMEC & BonTerra	Uncommon
Poa secunda	Nodding Bluegrass	PG	.	BonTerra	Uncommon
*Polypogon monspeliensis**	Rabbitsfoot Grass	AG	FACW+	DMEC & BonTerra	Uncommon
*Schismus barbatus**	Mediterranean Grass	AG	.	DMEC & BonTerra	Uncommon
Vulpia microstachys (var. *microstachys*)	Annual Fescue	AG	.	BonTerra (10,415)	Uncommon
*Vulpia myuros**	Rattail Fescue	AG	FACU*	DMEC & BonTerra	Uncommon
Themidaceae – Brodiaea Family					
Bloomeria crocea var. *crocea*	Goldenstars	PG	.	DMEC & BonTerra	Uncommon
Dichelostemma capitatum ssp. *capitatum*	Blue Dicks	PG	.	DMEC & BonTerra	Common

APPENDIX D.
WILDLIFE SPECIES OBSERVED AND EXPECTED AT LYONS CANYON RANCH

Wildlife Observed and Expected at Lyons Canyon Ranch

Scientific Name[39]	Common Name	Observed By[40]	Estimated Abundance Onsite[41]
AMPHIBIANS			
Plethodontidae - Lungless Salamanders			
Batrachoseps nigriventris	Black-bellied Slender Salamander	BonTerra	Uncommon
Bufontidae - True Toads			
Bufo boreas halophilus	California Western Toad	BonTerra	Scarce
Hylidae - Treefrogs			
Hyla regilla	Pacific Treefrog	Expected	Common
Ranidae - True Frogs			
*Rana catesbeiana**	Bullfrog	Expected	Common
REPTILES			
Iguanidae – Iguanid Lizards			
Sceloporus occidentalis	Western Fence Lizard	8 DMEC; BonTerra	Common
Uta stansburiana elegans	Western Side-blotched Lizard	6 DMEC; BonTerra	Common
Scincidae - Skinks			
Eumeces skiltonianus	Western Skink	Expected	Uncommon
Anguidae – Alligator Lizards			
Elgaria multicarinata	Southern Alligator Lizard	BonTerra	Scarce
Colubridae – Colubrids			
Charina trivargata	Coastal Rosy Boa	Possible	Scarce
Masticophis lateralis	California Whipsnake	Expected	Uncommon
Pituophis melanoleucus	Gopher Snake (tracks)	BonTerra	Scarce
Pituophis melanoleucus annectens	San Diego Gopher Snake	Expected	Uncommon
Hypsiglena torquata	Night Snake	Expected	Uncommon
Lampropeltis getula californiae	California Kingsnake	Expected	Scarce
Masticophis lateralis lateralis	California Striped Racer	Expected	Uncommon
Viperidae – Vipers			
Crotalus viridis	Western Rattle Snake (tracks)	BonTerra	Uncommon
BIRDS			
Ardeidae – Herons, Egrets			
Ardea herodias	Great Blue Heron	Expected	Scarce
Ardea alba	Great Egret	Expected	Scarce
Anatidae - Screamers, Ducks, & Relatives			
Anas platyrhynchos	Mallard	2 W.Langhans (nesting)[42]	Scarce

[39] * = nonnative species. Note: DMEC's wildlife observation data were incidental to field work, focused on the delineation of wetlands and assessment of oak trees, and are not intended to be considered complete by any definition. BonTerra had primary responsibility for determining wildlife species presence.

[40] The number in front of DMEC indicates the total number of individuals for each wildlife species that was observed during the biological surveys onsite.

[41] Scarce = less than 100 individuals; Uncommon = 100 to less than 1,000 individuals; Common = more than 1,000 individuals.

[42] Personal communication with Wendy Langhans, Mountains Recreation and Conservation Authority (wendy.langhans@mrca.ca.gov) regarding bird observations at Towsley Park, 21 July 2005.

Scientific Name[39]	Common Name	Observed By[40]	Estimated Abundance Onsite[41]
Cathartidae - New World Vultures			
Cathartes aura	Turkey Vulture	BonTerra	Scarce
Gymnogyps californianus	California Condor	2 W. Langhans	Scarce
Accipitridae - Hawks			
Elanus leucurus	White-tailed Kite	Expected	Scarce
Circus cyaneus	Northern Harrier	Expected	Scarce
Accipiter striatus	Sharp-shinned Hawk	Expected	Scarce
Accipiter cooperii	Cooper's Hawk	1 DMEC; BonTerra	Scarce
Buteo lineatus	Red-shouldered Hawk	2 W. Langhans (nesting)	Scarce
Buteo jamaicensis	Red-tailed Hawk	3 DMEC; BonTerra	Scarce
Falconidae - Falcons			
Falco sparverius	American Kestrel	BonTerra	Scarce
Odontophoridae - Quail			
Callipepla californica	California Quail	5 DMEC; BonTerra	Scarce
Charadriidae - Plovers			
Charadrius vociferous	Killdeer	BonTerra	Uncommon
Columbidae - Pigeons & Doves			
Columba fasciata	Band-tailed Pigeon	1 DMEC	Scarce
Columba livia	Rock Pigeon	BonTerra	Scarce
Zenaida macroura	Mourning Dove	7 DMEC; BonTerra	Common
Cuculidae - Cuckoos & Roadrunners			
Geococcyx californianus	Greater Roadrunner	BonTerra	Scarce
Tytonidae - Owls			
Tyto alba	Barn Owl	1 DMEC: observed flying from nest in a *Quercus agrifolia* onsite. Nest appeared occupied and active. All raptor nests are protected by California Fish and Game Code §3503.5.	Uncommon
Otus kennicotti	Western Screech-Owl	Expected	Scarce
Bubo virginianus	Great Horned Owl	Expected	Scarce
Glaucidium gnoma	Northern Pygmy-owl	Expected	Scarce
Athene cunicularia	Burrowing Owl	Expected	Scarce
Asio otus	Long-eared Owl	Expected	Scarce
Trochilidae - Hummingbirds			
Archilochus colubris	Ruby-throated Hummingbird	Expected	Uncommon
Archilochus alexandri	Black-chinned Hummingbird	Expected	Uncommon
Calypte anna	Anna's Hummingbird	2 DMEC; BonTerra	Common
Calypte costae	Costa's Hummingbird	Expected	Uncommon
Selasphorus rufus	Rufous Hummingbird	Expected	Common
Selasphorus sasin	Allen's Hummingbird	Expected	Common
Picidae - Woodpeckers			
Colaptes auratus	Northern Flicker	2 DMEC; BonTerra	Scarce
Melanerpes formicivorus	Acorn Woodpecker	3 DMEC; BonTerra	Common
Picoides nuttallii	Nuttall's Woodpecker	1 W. Langhans	Scarce

Scientific Name[39]	Common Name	Observed By[40]	Estimated Abundance Onsite[41]
Picoides pubescens	Downy Woodpecker	Expected	Scarce
Tyrannidae - Tyrant Flycatchers			
Empidonax difficilis	Pacific Slope Flycatcher	Expected	Scarce
Empidonax hammondii	Hammond's Flycatcher	Expected	Scarce
Sayornis nigricans	Black Phoebe	3 DMEC; BonTerra	Scarce
Sayornis saya	Say's Phoebe	BonTerra	Uncommon
Corvidae - Jays & Crows			
Aphelocoma coerulescens	Western Scrub-jay	10 DMEC; BonTerra	Common
Corvus brachyrhynchos	American Crow	3 DMEC; BonTerra	Common
Corvus corvax	Common Raven	8 DMEC	Uncommon
Hirundinidae - Swallows			
Tachycineta thalassina	Violet-green Swallow	Expected	Uncommon
Petrochelidon pyrrhonota	Cliff Swallow	Expected	Common
Hirundo rustica	Barn Swallow	Expected	Common
Paridae - Titmice			
Baeolophus ridgwayi	Oak Titmouse	2 DMEC; BonTerra	Scarce
Aegithalidae - Bushtits			
Psaltriparus minimus	Bushtit	15 DMEC; BonTerra	Common
Sittidae - Nuthatches			
Sitta carolinensis	White-breasted Nuthatch	Expected	Scarce
Troglodytidae - Wrens			
Thromanes bewickii	Bewick's Wren	BonTerra	Uncommon
Turididae - Thrushes & Robins			
Sialia mexicana	Western Bluebird	1 DMEC; BonTerra	Scarce
Ixoreus naevius	Varied Thrush	Los Angeles Rare Bird Alert[43]	Uncommon
Turdus nigratorius	American Robin	4 DMEC; BonTerra	Scarce
Timaliidae - Wrentits			
Chamaea fasciata	Wrentit	BonTerra	Common
Mimidae - Thrashers			
Mimus polyglottos	Northern Mockingbird	2 DMEC; BonTerra	Common
Sturnidae - Starlings			
*Sturnus vulgaris**	European Starling	3 DMEC; BonTerra	Common
Bombycillidae			
Bombycilla cedrorum	Cedar Waxwing	Expected	Scarce
Ptilogonatidae - Silky Flycatchers			
Phainopepla nitens	Phainopepla	3 DMEC	Scarce
Parulidae - Warblers			
Dendroica coronata	Yellow-rumped Warbler	BonTerra	Scarce
Geothlypis trichas	Common Yellowthroat	1 DMEC; BonTerra	Scarce

[43] Obtained from http://listserv.arizona.edu/cgi-bin/wa?A2=ind0211d&L=birdwest&F=&S=&P=72.

Scientific Name[39]	Common Name	Observed By[40]	Estimated Abundance Onsite[41]
Emberizidae - Sparrows & Juncos			
Pipilo crissalis	California Towhee	4 DMEC; BonTerra	Common
Pipilo maculatus	Spotted Towhee	2 DMEC; BonTerra	Scarce
Aimophila ruficeps	Rufous-crowned Sparrow	Expected	Uncommon
Chondestes grammacus	Lark Sparrow	Expected	Uncommon
Amphispiza belli	Sage Sparrow	Expected	Uncommon
Melospiza melodia	Song Sparrow	BonTerra	Common
Zonotrichia leucophrys	White-crowned Sparrow	4 DMEC	Common
Junco hyemalis	Dark-eyed Junco	Expected	Uncommon
Sturnella neglecta	Western Meadowlark	1 DMEC; BonTerra	Scarce
Euphagus cyanocephalus	Brewer's Blackbird	6 DMEC; BonTerra	Common
Quisicalus mexicanus	Great-tailed Grackle	BonTerra	Uncommon
Molothrus ater	Brown-headed Cowbird	Expected	Uncommon
Icterus bullockii	Bullock's Oriole	Expected	Scarce
Fringillidae - Finches			
Carpodacus mexicanus	House Finch	3 DMEC; BonTerra	Common
Carduelis tristis	American Goldfinch	Expected	Common
Carduelis psaltria	Lesser Goldfinch	BonTerra	Scarce
Passeridae - Old World Sparrows			
*Passer domesticus**	House Sparrow	BonTerra	Common
MAMMALS			
Didelphidae - New World Opossums			
Didelphis virginiana	Virginia Opossum	BonTerra	Uncommon
Soricidae - Shrews			
Notiosorex crawfordi	Desert Shrew	BonTerra	Common
Talpidae - Moles			
Scapanus sp.	Mole	1 DMEC	Common
Vespertilionidae - Vespertilionid Bats			
Myotis volans	Long-legged Myotis	Expected	Uncommon
Myotis californicus	California Myotis	Expected	Uncommon
Pipistrellus hesperus	Western Pipistrelle	Expected	Uncommon
Eptesicus fuscus	Big Brown Bat	Expected	Uncommon
Lasiurus cinereus	Hoary Bat	Expected	Uncommon
Myotis evotis	Long-eared Myotis	Expected	Uncommon
Myotis thysanodes	Fringed Myotis	Expected	Uncommon
Tadarida brasiliensis	Brazilian Free-tailed Bat	Expected	Uncommon
Molossidae - Free-Tailed Bats			
Tadarida brasiliensis	Brazilian Free-tailed Bat	Expected	Uncommon
Leporidae - Rabbits & Hares			
Sylvilagus audubonii	Desert Cottontail	BonTerra	Common
Sciuridae - Squirrels, Chipmunks, & Marmots			
Spermophilus beecheyi	California Ground Squirrel	2 DMEC; BonTerra	Common

Scientific Name[39]	Common Name	Observed By[40]	Estimated Abundance Onsite[41]
Geomyidae - Pocket Gophers			
Thomomys bottae	Botta's Pocket Gopher	1 DMEC; BonTerra	Common
Heteromyidae - Kangaroo Rats & Pocket Mice			
Perognathus californicus	California Pocket Mouse	16 DMEC; BonTerra	Common
Dipodomys agilis	Pacific Kangaroo Rat	Expected	Uncommon
Cricetidae - Deer Mice, Voles, & Relatives			
Mus Musculus	House Mouse	Expected	Common
Peromyscus californicus	California Mouse	Expected	Common
Peromyscus boylii	Brush Mouse	Expected	Common
Peromyscus californicus	Parasitic Mouse	Expected	Common
Peromyscus eremicus	Cactus Mouse	Expected	Uncommon
Peromyscus maniculatus	Deer Mouse	102 DMEC	Common
Reithrodontomys megalotis	Western Harvest Mouse	9 DMEC	Common
Microtus californicus	California Meadow Vole	Expected	Common
Neotoma fuscipes	Dusky-footed Woodrat	Expected	Scarce
Neotoma macrotis	Southern Dusky-footed Woodrat	Expected	Scarce
Neotoma lepida intermedia	San Diego Desert Woodrat	Detected (nest) DMEC	Scarce
Canidae - Wolves & Foxes			
Canis latrans	Coyote	10 (scat, skeleton) DMEC; BonTerra	Uncommon
Urocyon cinereoargenteus	Gray Fox	1 (skeleton) DMEC	Scarce
Ursidae - Bears			
Ursus americanus	Black Bear	Expected	Scarce
Procyonidae - Raccoons & Relatives			
Procyon lotor	Raccoon	BonTerra	Scarce
Bassariscus astutus	Ring-tailed Cat	Expected	Scarce
Mustelidae - Weasels, Badgers, & Relatives			
Mustela frenata	Long-tailed Weasel	Expected	Uncommon
Mephitis mephitis	Striped Skunk	BonTerra	Scarce
Felidae – Cats			
Puma concolor	Mountain Lion	Expected	Scarce
Lynx rufus	Bobcat	2 (skull & leg) DMEC	Scarce
Cervidae - Deer, Elk, & Relatives			
Odocoileus hemionus	Mule Deer	1 (Buck observed) 5 (tracks, skeleton) DMEC; BonTerra	Uncommon
INVERTEBRATES			
Agelenopsis sp.	Funnel Web Spider	1 DMEC	Common
Ctenolepisma longicaudata	Long-tailed Silverfish	3 DMEC	Common
Octogomphus cf. *specularis*	Small Western Gomphid	1 DMEC	Uncommon
Libellula saturata	Red Skimmer	1 DMEC	Uncommon
Enallagma cyanigerum	Circumpolar Bluet	1 DMEC	Uncommon
Schistocerca nitens	Gray Bird Grasshopper	10 DMEC	Uncommon
Trimerotropis pallidipennis	Pallid Band-wing	1 DMEC	Common

Scientific Name[39]	Common Name	Observed By[40]	Estimated Abundance Onsite[41]
Supella longipalpa	Brown-Banded Cockroach	1 DMEC	Common
(Cicadidae)	Cicada	1 DMEC	Uncommon
(Culicidae)	Mosquito	1 DMEC	Common
Noserus plicatus	Plicate Beetle	1 DMEC	Common
Coelocnemis californicus	Darkling Beetle	1 DMEC	Common
Hippodamia convergens	Convergent Ladybird Beetle	1 DMEC	Common
(Coleoptera)	Tiny flower beetle	Many DMEC	Common
Mischocyttarus flavitarsus	Polybiine Paper Wasp	3 DMEC	Uncommon
*Apis mellifera**	European Honey Bee	20 DMEC	Common
Bombus vosnesenskii	Vosnesenski's Bumble Bee	3 DMEC	Uncommon
Lepidoptera - Butterflies & Moths[44]			
Hylephila phyleus	Fiery Skipper	1 DMEC	Scarce
Glaucopsyche lygdamus	Silvery Blue	Expected	Scarce
Pontia protodice	Checkered White	Expected	Common
Anthocharis sara	Sara Orangetip	Expected	Scarce
Leptotes marina	Marine Blue	40 DMEC	Common
Limenitis lorquini	Lorquin's Admiral	Expected	Common
Vanessa atalanta	Red Admiral	Expected	Uncommon
Euphydryas chalcedona	Variable Checkerspot	Expected	Scarce
Vanessa cardui	Painted Lady	3 DMEC	Common
Papilio eurymedon	Pale Swallowtail	1 DMEC	Uncommon
Phoebis sennae	Senna Sulphur	50 DMEC	Common
Coenonympha tullia	California Ringlet	Expected	Scarce
Colias eurydice	California Dog Face	1 DMEC	Scarce
Pieris rapae	Cabbage White	50 DMEC	Common
Adelpha bredowii	California Sister	Expected	Common
Erynnis funeralis	Funeral Duskywing	Expected	Scarce
Strymon melinus	Gray Hairstreak	Expected	Common
Plebeius [*Icaricia*] *acmon*	Acmon Blue	Expected	Scarce
Danaus plexippus	Monarch Butterfly	Expected	Scarce
Junonia coenia	Buckeye	4 DMEC	Scarce
Apodemia virgulti	Behr's Metalmark	Expected	Scarce

[44] Expected butterflies: http://www.lamountains.com/pdf/Butterfly%20Brochure-screen.pdf (www.lamountains.com, 2004, *Butterflies of Towsley Canyon*).

OVERSIZED MAPS:

(1) COLOR U.S.G.S. OAT MOUNTAIN QUAD SHEET; AND (2) LYONS CANYON RANCH SITE PLANS