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, 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 David Magney, Cher Batchelor, and Kenneth Niessen, with assistance from Daniel Brenner, performed a delineation of jurisdictional waters and wetlands. In addition to conducting the wetland delineation, DMEC biologists recorded biological resources 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 and compiled in conjunction with DMEC's field surveys and findings to prepare the bioconstraints report.

Survey Methods

A delineation of jurisdictional waters and riparian habitats was performed by DMEC (2004a). Oak tree surveys were performed by three separate arborists, 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. 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

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 to answer the City's[4] questions. 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.

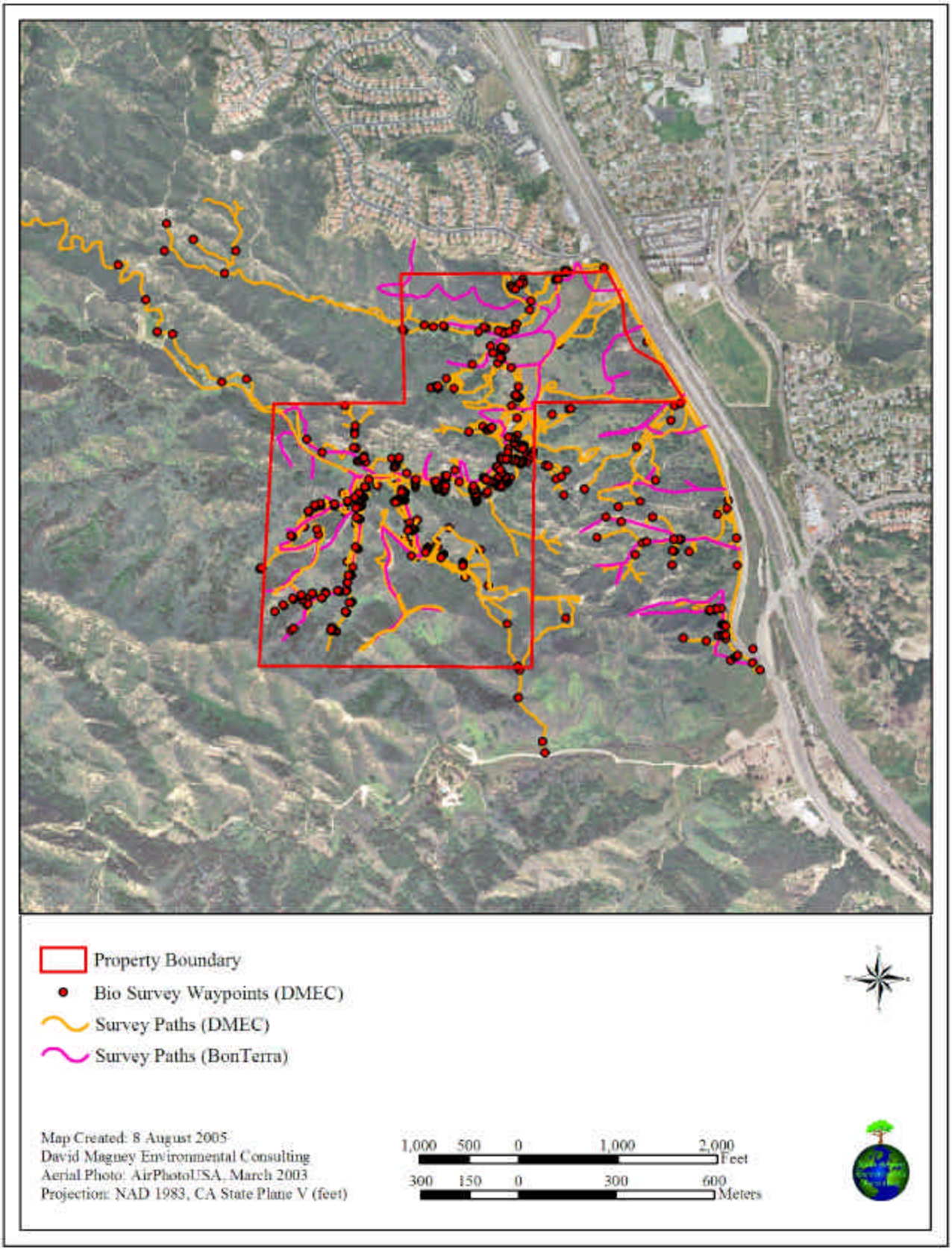
Wildlife Surveys

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.

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.)

[4] The report was originally prepared for and submitted to the City of Santa Clarita.

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.)

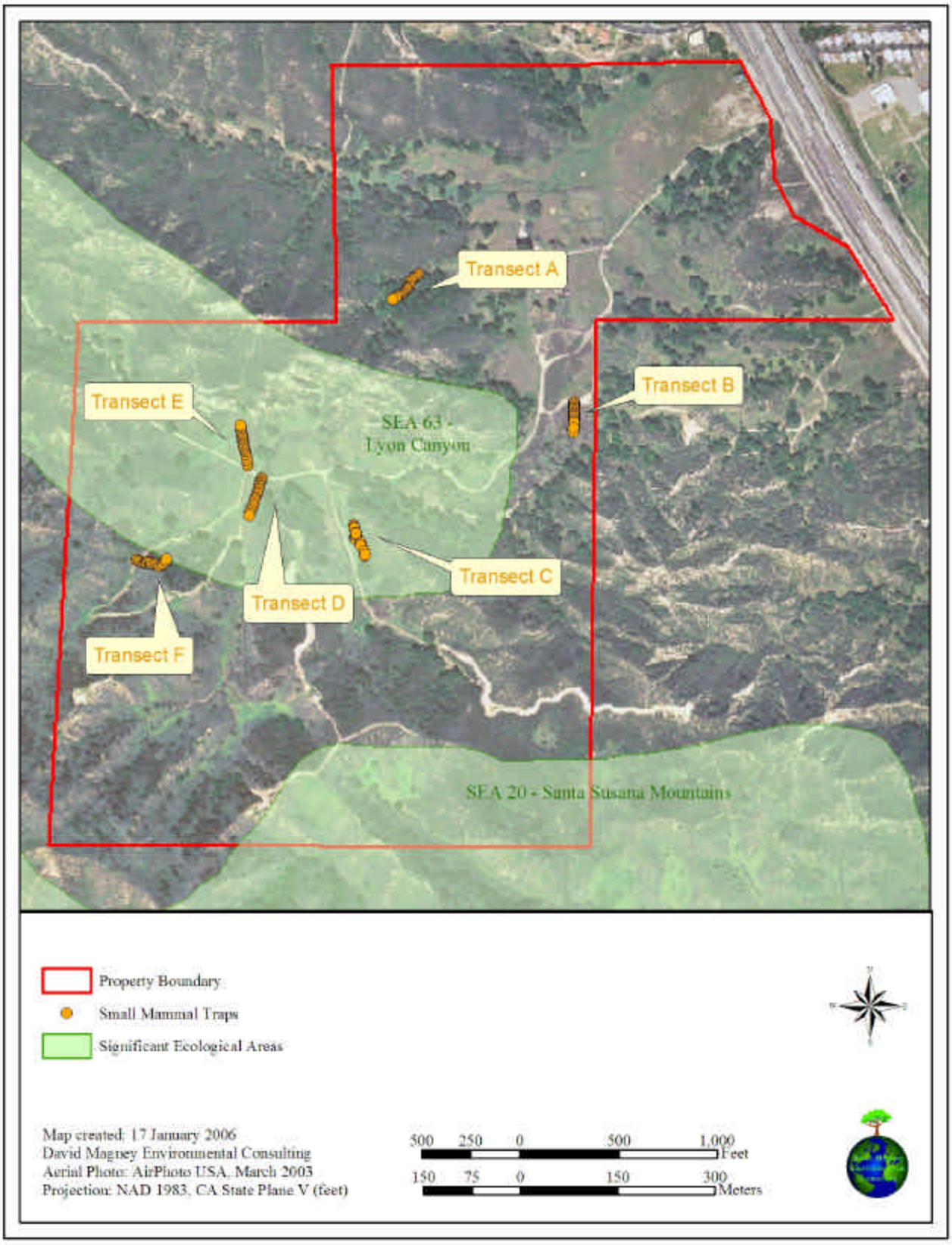
SMALL MAMMAL TRAPPING

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 Habitats

Mapping of wetland 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[5]) 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.

[5] 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. Up to 325 plant taxa were observed onsite[6]. Of those 325, approximately 243 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 269 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; 49 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.

[6] 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

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.

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

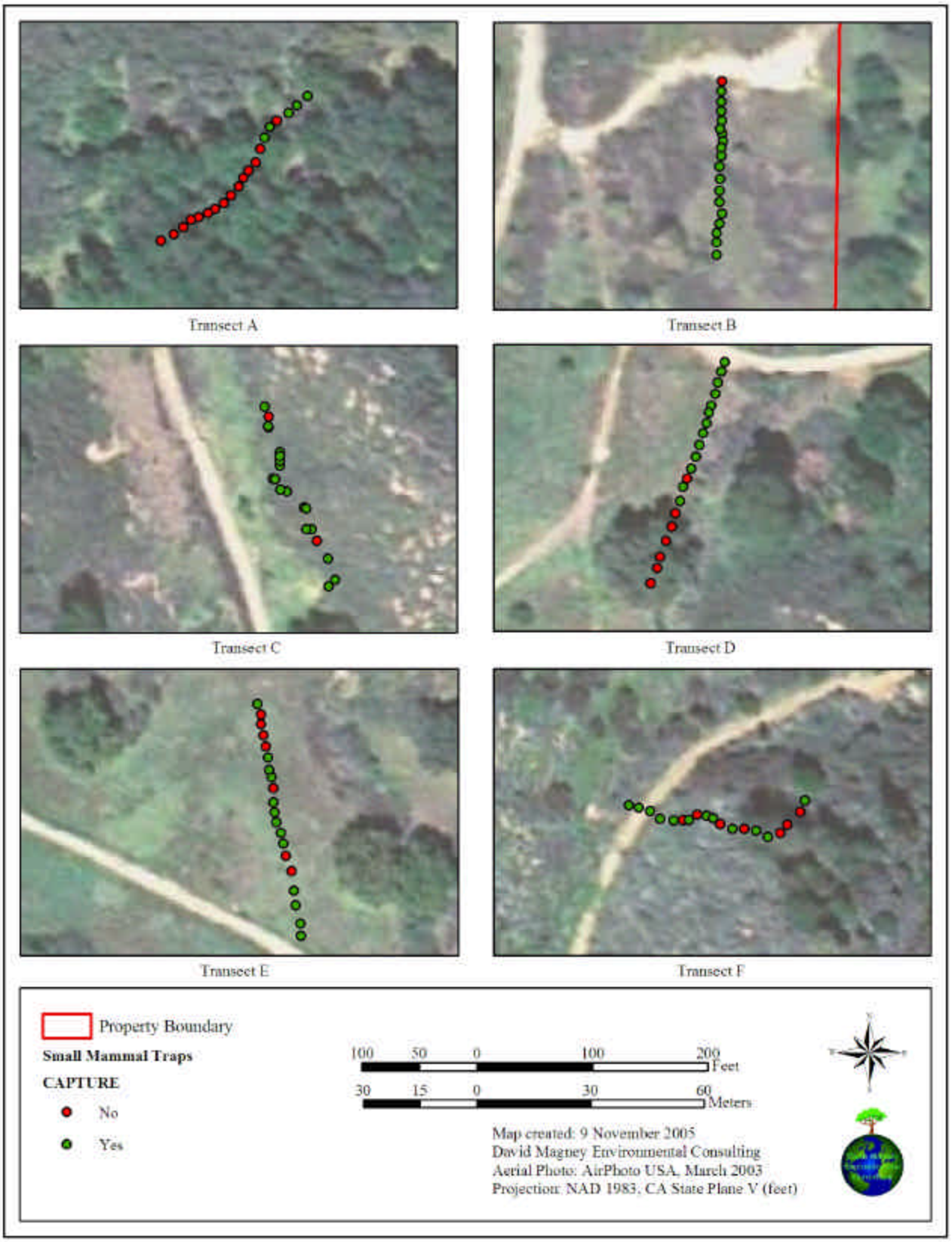
Scientific Name	Common Name	Number Individuals Trapped/Recaptured				Capture Totals
		30 Sep 05	1 Oct 05	2 Oct 05	Recaptured	
Neotoma lepida intermedia	San Diego Desert Woodrat	1[7]	0	0	-	**0**
Chaetodipus californicus	California Pocket Mouse	4	7	5	1	**16**
Peromyscus maniculatus	Deer Mouse	12	29	61	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%**

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). 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: San Diego Desert Woodrat onsite is *scarce* (population size expected to be less than 100 individuals); and California Pocket Mouse, Deer Mouse, and Western Harvest Mouse onsite are *common* in that more than 1,000 individuals are expected onsite.

[7] This is a special-status species. DMEC observed a nest only during trapping sessions, but an individual was not trapped.

Figure 15. Small Mammal Trapping Results



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.)

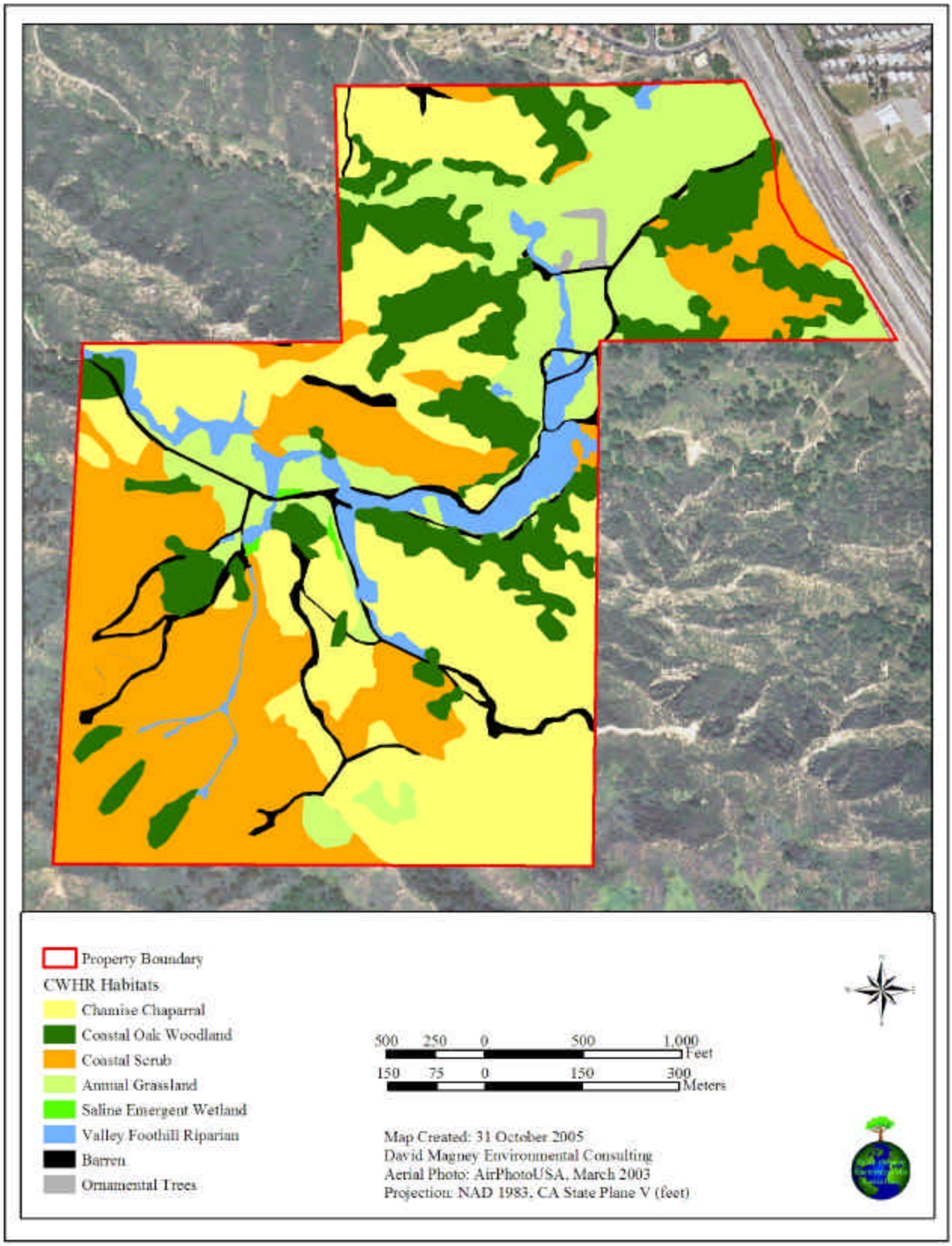
The wildlife habitats present on the project site are illustrated in Figure 16, California Wildlife Habitat Relationship (CWHR) Habitats of Lyons Canyon Ranch. The wildlife habitats mapped on Figure 16, which were classified based on the CWHR habitat classification, is a more general mapping level compared 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.

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**

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



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. (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 Western Skink (*Eumeces skiltonianus*), California Whipsnake (*Masticophis lateralis*), San Diego Gopher Snake (*Pituophis melanoleucus annectens*), California Kingsnake (*Lampropeltis getula californiae*), and Night Snake (*Hypsiglena torquata*), 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*) and Great Horned Owl (*Bubo virginianus*), none of which were observed (see Appendix D).

Bird species expected onsite but not observed include: White-tailed Kite (*Elanus leucurus*), Northern Harrier (*Circus cyaneus*), Sharp-shinned Hawk (*Accipiter striatus*), Western Screech-Owl (*Otus kennicotti*), Great Horned Owl (*Bubo virginianus*), Northern Pygmy-owl (*Glaucidium gnoma*), Burrowing Owl (*Athene cunicularia*), Long-eared Owl (*Asio otus*), 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*). (See 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 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*).

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

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 habitat areas 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. 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 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.

Although not on the project site, an important wildlife movement corridor 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 and Sunshine Canyons provide 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 movement paths onsite and in terms of interference with wildlife movement within Lyon Canyon.

Figure 17. Wildlife Corridors of the Newhall Region

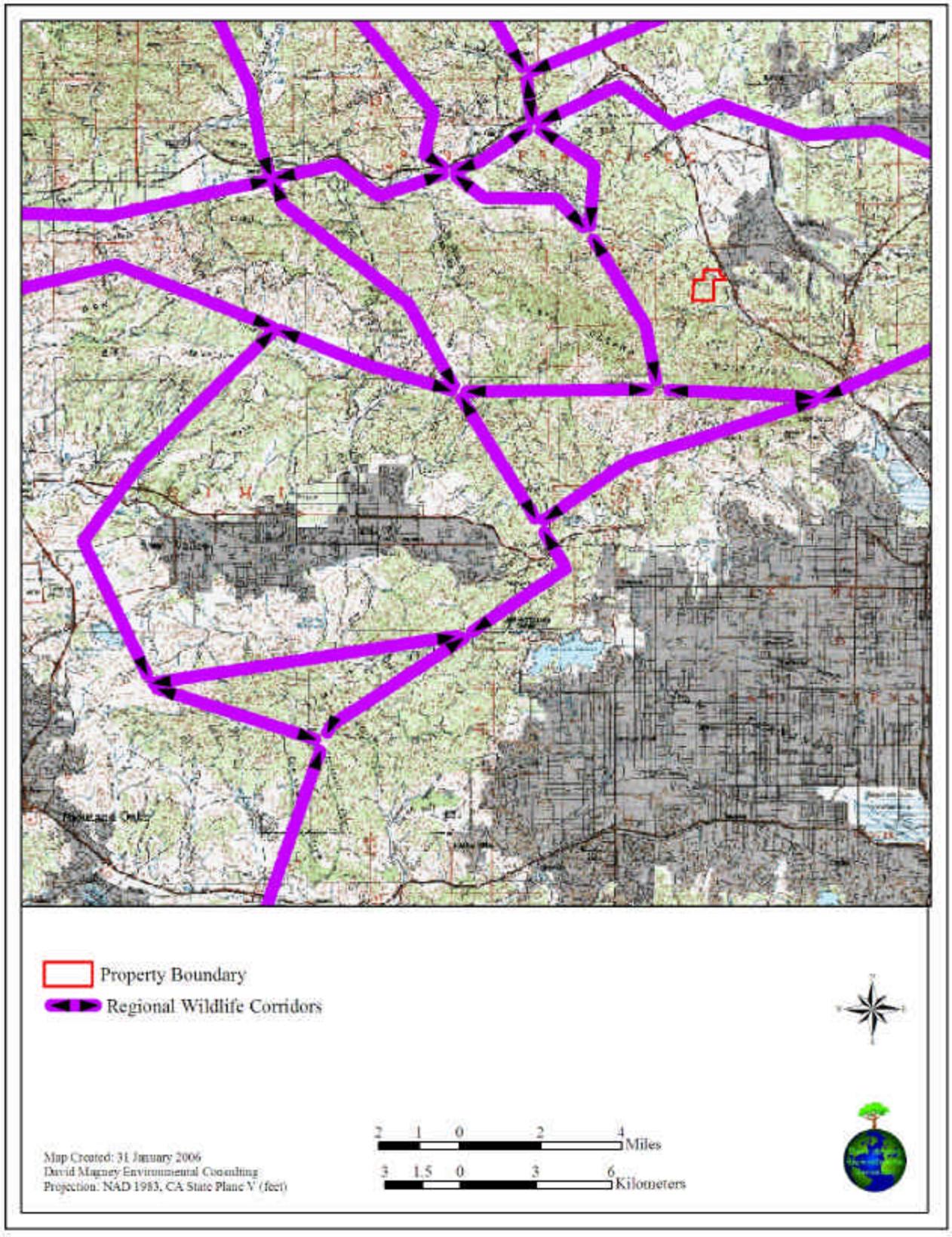


Figure 18. Wildlife Travel Paths at Lyons Canyon Ranch