Appendix D13
Biological Resources Assessment (PCR 1999)

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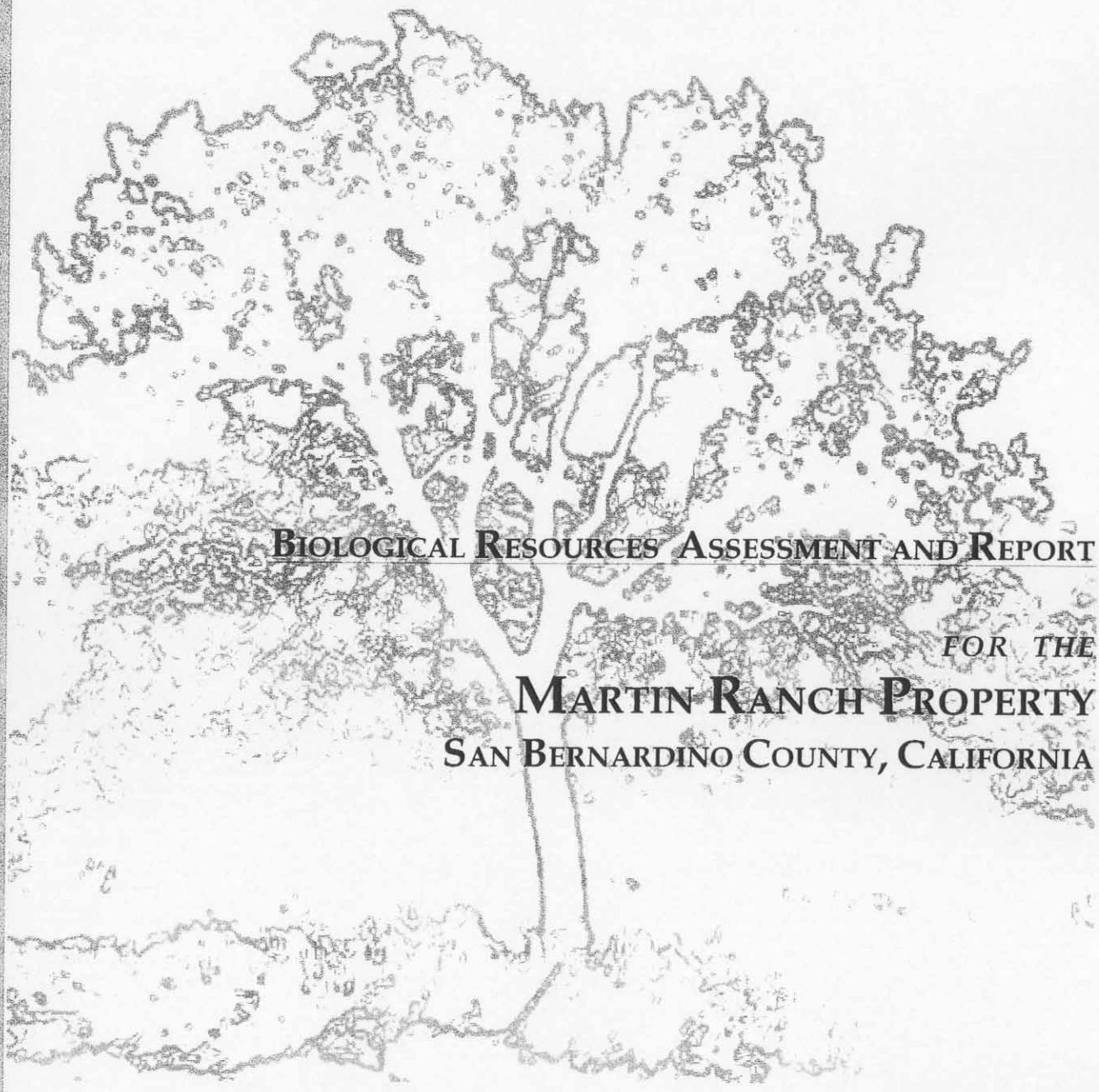
BIOLOGICAL RESOURCES ASSESSMENT



BIOLOGICAL RESOURCES ASSESSMENT AND REPORT

FOR THE

MARTIN RANCH PROPERTY

SAN BERNARDINO COUNTY, CALIFORNIA

FEBRUARY 1999

PCR

BIOLOGICAL RESOURCES ASSESSMENT

PREPARED FOR:

DAVE TANNER AND ASSOCIATES

223 62nd Street

Newport Beach, California 92663

Phone (949) 646-8958

Contact: Mr. Dave Tanner

PREPARED BY:

PCR SERVICES CORPORATION

One Venture, Suite 150

Irvine, California 92618

Phone (949) 753-7001

Contact: Steven G. Nelson,

Director of Biological Services

Stacie Tennant, Wildlife Biologist

FEBRUARY 1999

PCR

BIOLOGICAL RESOURCES ASSESSMENT

MARTIN RANCH
SAN BERNARDINO, SAN BERNARDINO COUNTY, CALIFORNIA

The undersigned certify that this report is a complete and accurate account of the findings and conclusions of a biological assessment for the above-referenced project.

PCR SERVICES CORPORATION

Steve Nelson, Director of Biological Services

Ms. Stacie Tennant, Project Manager

January, 1999

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EXECUTIVE SUMMARY

Background

Montecito Equities Limited is requesting administrative and discretionary action approval for the implementation of the Martin Ranch project located in San Bernardino County, California. As proposed, the property would be converted to a residential community including 359 residential dwelling units, limited commercial uses, public facilities, and open space. The site occupies nearly 353 acres in the western foothills of the San Bernardino Mountains. Specifically, the site is located 1.5 miles east of the unincorporated town of Devore. The property's southern boundary is Meyers Road and the western boundary is Martin Ranch Road. To the north and east the project site is bordered by the San Bernardino National Forest.

Scope and Methodology

The scope of this assessment includes the methods, survey, and documentation of existing biological resources on the property, and the determination of potential impacts associated with the proposed land use plan for the purpose of complying with the California Environmental Quality Act (CEQA). Methods of study included a review of relevant literature and existing documentation previously compiled, comprehensive field investigations, and focused sensitive species surveys performed in the spring, summer, and fall seasons of 1998. This documentation is consistent with accepted scientific and technical standards and the requirements of the U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Game (CDFG). While general biological resources are discussed in summary manner, the focus of this assessment is those resources considered to be significant/sensitive.

Existing Conditions

The Martin Ranch property consists of gently sloping open space with a series of unimproved roads throughout the site. Surrounding land use includes open space to the north, west, and east and rural residential development to the south and west. Canyons and steep hillsides occur throughout the property. Cable Canyon and Martin Canyon Creek traverse the property. The Cable Canyon Creek flows east to west in the northern portion of the site and the Martin Canyon Creek, near the easterly boundary, flows north to south. A portion of Meyers Canyon crosses the southeastern corner of the site.

The majority of the site supports woodland, chaparral, and Riversidean sage scrub communities. Riversidean sage scrub, California walnut woodland, southern willow scrub, sycamore alluvial woodland, and southern sycamore alder riparian woodland are vegetation communities considered sensitive to CDFG because they are becoming rare within their range and/or they support sensitive wildlife species. Sensitive wildlife observed include Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens),* Bell's sage sparrow (*Amphispiza belli belli),* San Diego horned lizard (*Phrynosoma coronatum blainvillei),* and Los Angeles Pocket Mouse (*Perognathus longimembris brevinasus).* These species are of special concern to federal and state wildlife agencies.

Potentially Significant Adverse Impacts

The proposed project would result in the loss of 156.01 of the approximately 221.5 acres of Riversidean sage scrub on the site. This would be a potentially significant impact because it is a substantial effect on a sensitive habitat, identified as a CDFG highest-inventory priority community.

The proposed project would also impact approximately one acre or less of wetlands and jurisdictional waters of the State. Permits would be required from the U.S. Army Corps of Engineers, California Department of Fish and Game, and the Regional Water Quality Control Board.

Mitigation

The project applicant would be responsible for the mitigation of Riversidean sage scrub habitat. Such mitigation is proposed to involve the preservation and enhancement of 159 acres of native habitats onsite and the revegetation of a minimum of 80 acres of manufactured slopes onsite with native vegetation, the majority of which will be Riversidean sage scrub. This is proposed as a project design features. Because the habitat to be removed has a history of disturbance and it does not support any listed threatened or endangered species, this mitigation will drop the level of impact to below significant thresholds.

The potential loss of wetlands and waters of the State would require avoidance, minimization, and finally compensatory mitigation before permits are issued by the U.S. Army Corps of Engineers, California Department of Fish and Game, and the Regional Water Quality Control Board. However, because the project would likely impact less than one acre of jurisdictional habitat and there are no endangered or threatened species on the site, this project

would qualify for a Nationwide Permit upon acceptance of an appropriate mitigation which would include either on-site habitat creation or restoration, or payment of appropriate fees to an approved wetland mitigation bank.

Unavoidable Significant Beneficial and Adverse Impacts

The proposed project, inclusive of project design features and mitigation measures is capable of mitigating all significant adverse impacts to a level less than significant.

1. INTRODUCTION

1.1 BACKGROUND AND PURPOSE

This report presents the findings of an in-depth biological resources assessment, including focused surveys for sensitive, threatened, and endangered plant and wildlife species, proposed project-related impact analysis, and mitigation program across the approximately 353-acre Martin Ranch property. The project site is located in San Bernardino County just east of the town of Devore and northeast of the city of Rancho Cucamonga, as shown in Figure 1, Project Location Map. The property lies north of Meyers Road and east of Martin Ranch Road. The San Bernardino National Forest lies to the north and east. It is contained on the United States Geological Survey (USGS) 7.5' San Bernardino North Quadrangle, within sections 26 and 35, T2N, R5W, San Bernardino Meridian (S.B.M.), as shown in Figure 2, Vicinity Map. A small portion of the western corner of the project site is contained within the Devore Quadrangle of section 26, T2N, R5W. The project includes a proposed secondary access road that will link Meyers Road with Interstate 15.

The property is relatively undisturbed and consists of canyons and steep hillsides with gently sloping or flat open space in between. The east and west fork of Cable Creek flow through the northwest corner of the property and the northern section of the property is bisected east to west by a perennial streambed. A portion of Meyers Canyon crosses the southeastern corner of the site. The elevation of the property ranges from 2,060 feet above mean sea level (MSL) in the southernmost portion of the site to 3,400 feet above MSL in the northeast corner.

The northern portion of the project site is surrounded on all three sides by the San Bernardino National Forest and the south and southwest portion are surrounded by single-family rural residential homes. In the past, the more level areas of the site were planted with barley and grapes.

The project applicant, Montecito Equities Limited, is requesting administrative and discretionary action approval for the implementation of a proposed development project. As proposed, the property would be converted to a residential community, including single-family residences, limited commercial uses, public facilities, and open space. Previous surveys on the property include a biological assessment by Recon in 1990 for incorporation into an earlier Martin Ranch EIR. Key biological issues identified represent potential impacts to endangered,

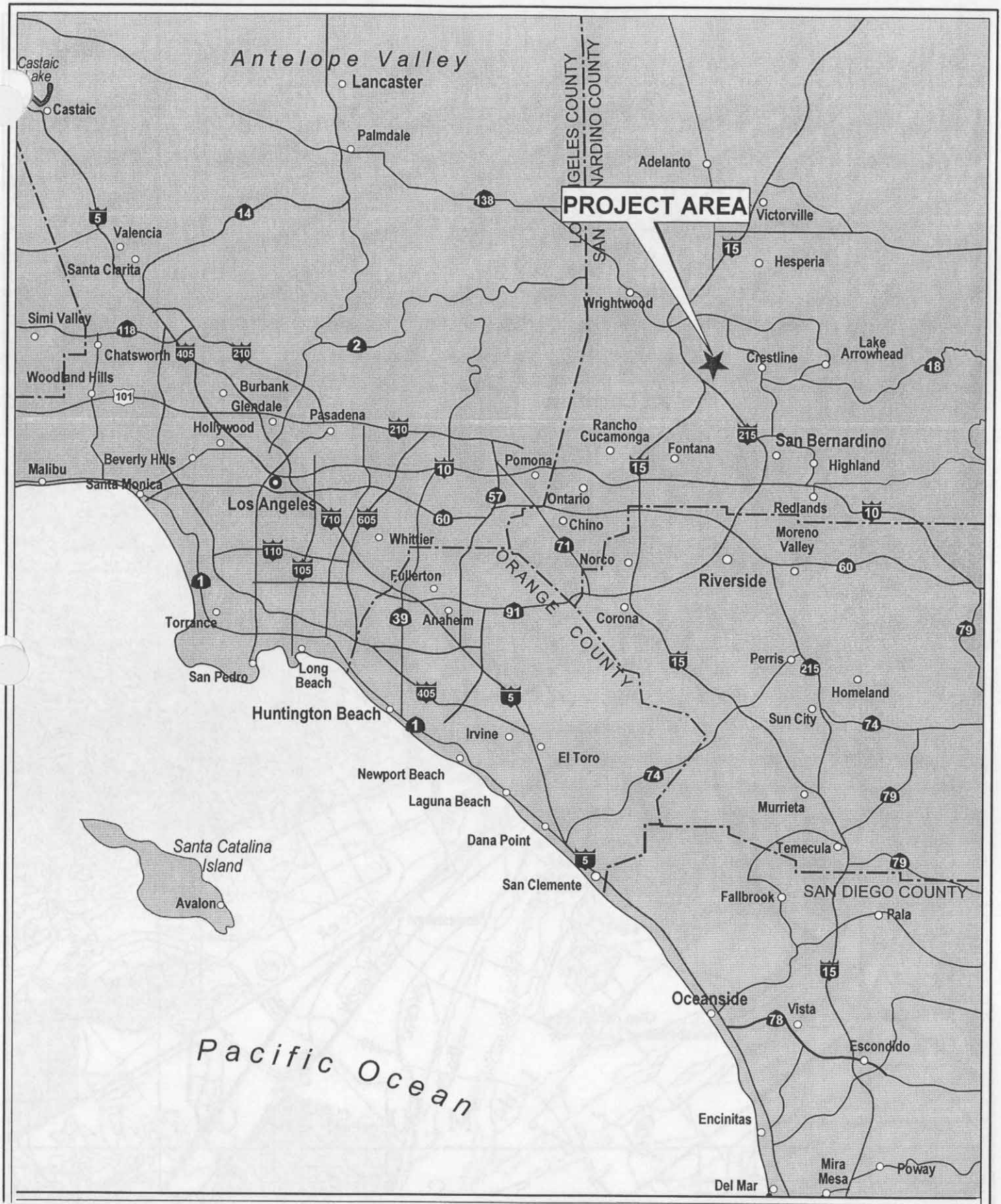

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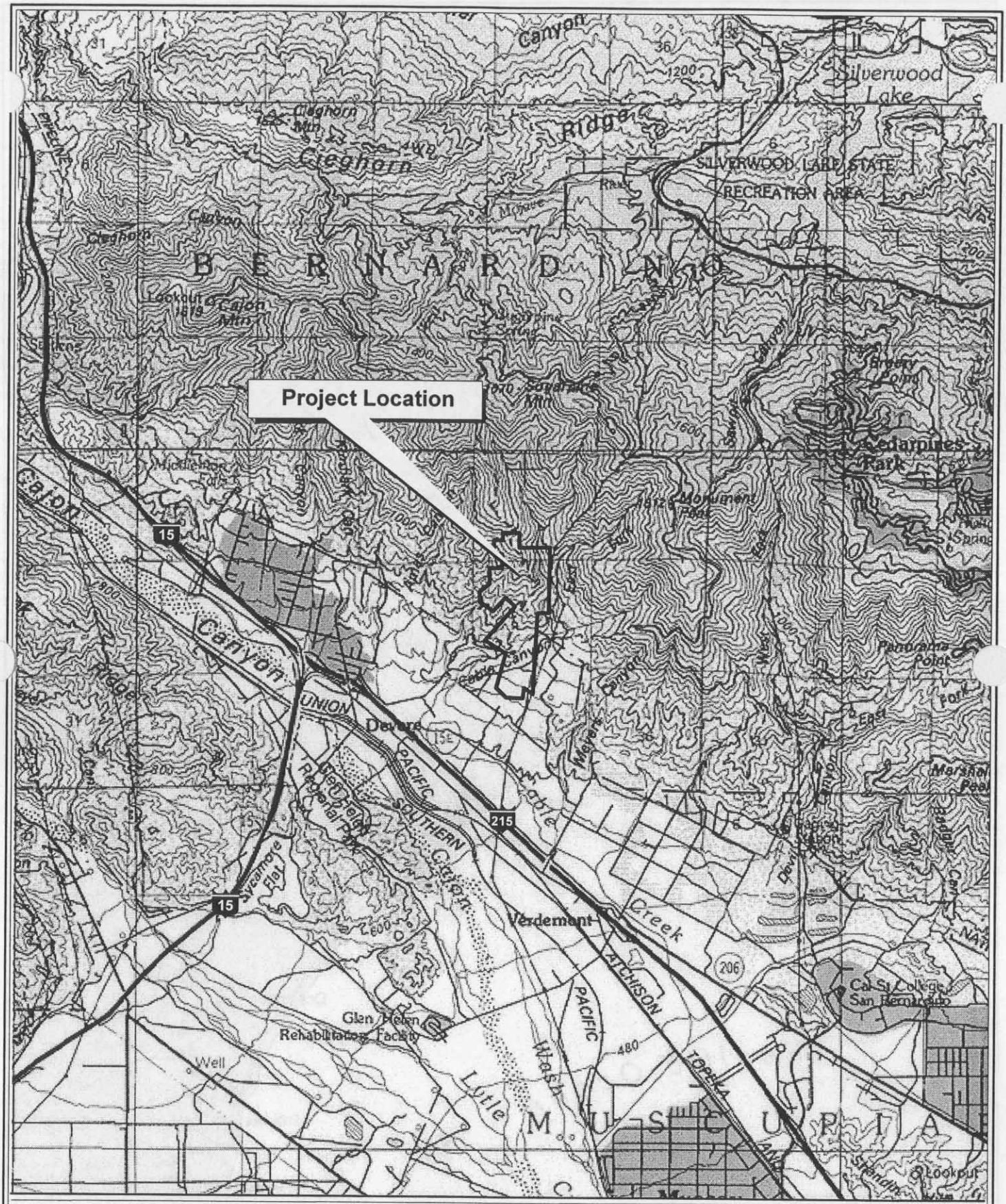
FIGURE 1
Martin Ranch
Project Location



Source: San Bernadino North USGS Quadrangle 1967 (photo revised 1988) and Devore USGS Quadrangle1966 (1988)

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0 1 2 Miles

FIGURE 2
Martin Ranch
Vicinity map

threatened, and otherwise sensitive species, and their habitats. The intent of this study is to assess and disclose these potential impacts and formulate mitigation measures as warranted pursuant to the requirements of the California Environmental Quality Act (CEQA). These will serve as input to discretionary actions taken by appropriate decision-making bodies. All determinations regarding presence or absence of sensitive resources reflect PCR Services Corporation (PCR) surveys and conclusions.

1.2 SCOPE OF STUDY

The scope of this assessment encompasses the methods, survey results, and comprehensive documentation of existing biological resources on the Martin Ranch property. The study incorporates the findings of an extensive literature review and existing documentation previously compiled, and a series of field reconnaissance and focused surveys conducted in the spring, summer, and fall of 1998. Project-related impacts associated with the proposed land use plan will be analyzed and recommendations regarding measures to alleviate any resulting significant adverse impacts will be made. This documentation is consistent with accepted scientific and professional standards pursuant to CEQA and is congruent with technical requirements of the U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Game (CDFG), where appropriate. While general biological resources are discussed in a comprehensive manner, the focus of this assessment is on those resources considered to be significant and/or sensitive.

2. METHODS OF STUDY

2.1 APPROACH

Previous surveys on the property include a biological assessment by Recon in 1990 for incorporation into the Martin Ranch EIR. This report was reviewed prior to the initial field visits and was used during the preparation of this document. As existing conditions were found to have changed in some areas of the property, PCR performed a comprehensive general biological assessment for the preparation of this report, as well as necessary focused sensitive species surveys. While conclusions reported from prior surveys are referenced where applicable, all determinations regarding presence or absence of sensitive resources and potential project-related impacts in this report ultimately reflect PCR's surveys and conclusions.

The study area was first surveyed by PCR biologists Stacie Tennant and Marc Blain in February of 1998. During this initial survey, Ms. Tennant and Mr. Blain characterized the site's habitat and evaluated the site's potential to support sensitive species. During the spring, summer, and fall, 1998, PCR biologists conducted focused protocol surveys for the coastal California gnatcatcher (*Polioptila californica californica*), least Bell's vireo (*Vireo bellii pusillus),* southwestern willow flycatcher (*Empidonax traillii extimus*), southern California rufous-crowned sparrow, Bell's sage sparrow, San Bernardino kangaroo rat (*Dipodomys merriami parvus*) (SBKR), and Los Angeles Pocket Mouse (LAPM). Approximately 300 total person-hours were spent on site conducting general surveys and surveys for sensitive animal species that may occur on site.

2.2 LITERATURE REVIEW

Existing biological resource conditions on the Martin Ranch property were initially investigated through review of pertinent scientific literature. Additional sources of information included consultations with, and identification by, qualified experts in relevant fields, examination of herbarium specimens, and unpublished biological resource letter reports and assessments. Also consulted was the biological technical report for Martin Ranch Project (Recon, 1990). All consulted resources are listed in Section 8, References.

Primary current references for federally-listed sensitive species include USFWS listings of federally threatened and endangered plants and animals and candidate reviews for same, published in the Federal Register. Publications consulted include:

- Federal Register, Department of the Interior, Fish and Wildlife Service; 50 C.F.R. Part 17.11 and 17.12: Endangered and Threatened Wildlife and Plants (October 31, 1996);
- Internet Compilation and Special Reprint, Department of the Interior, Fish and Wildlife Service 50 C.F.R. Part 17.11 and 17.12: Endangered and Threatened Wildlife and Plants; Endangered and Threatened Wildlife (December 31, 1997); and
- Federal Register, Department of the Interior, Fish and Wildlife Service; 50 C.F.R Part 17: Endangered and Threatened Species: Notice of Reclassification of 96 Candidate Species Taxa (February 28, 1996).

The California Department of Fish and Game (Natural Heritage Division) Natural Diversity Data Base (CNDDB), the state's authoritative inventory of the locations of sensitive species and habitats, was consulted on January 15, 1998 regarding potential sensitive resources on the property. Other CDFG reports and publications which were consulted include the following:

- Endangered, Threatened and Rare Plants of California (April 1998);
- Endangered and Threatened Animals of California (July 1998);
- Annual Report on the Status of California's State Listed Threatened and Endangered Plants and Animals (1992);
- Special Plants (April 1998); and
- Special Animals (March 1998).

In addition, numerous regional field guides and floras were utilized. These and other references are listed in Section 8, References, in this report. The sources reviewed provided a partial means by which sensitive resources were identified for surveys on the property.

2.3 FIELD INVESTIGATIONS

Surveys were conducted over the entire property by qualified PCR biologists on foot and with the aid of four-wheel drive vehicles. Special attention was paid to sensitive habitats or those areas potentially supporting sensitive flora or fauna. A color aerial photograph at a scale of 1"=200' and U.S. Geological 7.5' topographic maps were used in the field to aid in the identification and delineation of sensitive habitats and species locations. General field surveys along the proposed access road right-of-way are in progress and will be reported separately.

The following personnel participated in the compilation of data for this analysis: Steve Nelson, PCR Director of Biological Services (initial reconnaissance); Ruben Ramirez, PCR senior biologist (sensitive bird surveys, mammal trapping, general wildlife); Stacie Tennant, PCR biologist (sensitive bird surveys, vegetation mapping, mammal trapping, general wildlife); Marc Blain, PCR biologist (sensitive bird surveys, vegetation mapping, mammal trapping, general wildlife); Steve Sprague, PCR biologist (sensitive bird surveys, general wildlife); Ken Halama, PCR biologist (sensitive bird surveys, general wildlife); Shana Dodd, independent consulting biologist (sensitive bird surveys), Markus Spiegelberg (sensitive bird surveys), Jennifer Turnbull, independent consulting biologist (sensitive bird surveys), and Erin Bomcamp, PCR intern (mammal trapping).

2.3.1 Plant Community/Habitat Classification and Mapping

Plant communities were mapped with the aid of a 1:200 scale color aerial photograph and a 7.5-minute USGS topographic map. The topographic map was used as a guide in delineating project boundaries onto the aerial photograph. Plant community boundaries were delineated directly onto the aerial photograph while in the field. Plant communities were identified according to the Preliminary Descriptions of the Terrestrial Natural Communities of California (Holland, 1986). Sensitive or unusual biological resources observed in the field were denoted on the aerial photo as well.

2.3.2 General Plant Inventory

All plants observed during surveys were either identified in the field or collected and identified using taxonomic keys. Plant surveys were completed in combination with other surveys. All plant species observed were recorded in field notes. A complete list of observed plant species is provided in Appendix A, Table A-1. Plant taxonomy follows Hickman (1993). Common plant names, when not available from Hickman (1993), were taken from Munz (1974),

Abrams (1974 and 1976), Abrams and Ferris (1980) and McCauley (1996). Scientific names are included only during the first mention of a species; thereafter, common names alone are used.

2.3.3 Sensitive Plant Surveys

During all site visits, including vegetation mapping and focused surveys, PCR biologists paid special attention to detect any and all sensitive plants. Over thirty site visits were made, all of which occurred within the flowering period (February through November) of those sensitive plant species potentially occurring on-site. Close attention was paid to those sensitive plant species reported by the CNDDB to occur within the vicinity of the project site such as Nevin's barberry (*Berberis nevinii),* slender horned spineflower (*Dodecahema leptoceras),* Santa Ana river woollystar (*Eriastrum densifolium* ssp. *sanctorum),* thread-leaved brodiaea (*Brodiaea filifolia),* Plummer's mariposa lily (*Calochortus plummerae),* Parry's spineflower (*Chorizanthe parryi* var. *parryi),* many-stemmed dudleya (*Dudleya multicaulis),* Orcutt's brodiaea (*Brodiaea orcutti),* San Bernardino mountain owl's clover (*Castilleja lasiorhyncha),* hot springs fimbristylis (*Fimbristylis thermalis),* marsh sandwort (*Arenaria paludicola),* smooth tarplant (*Hemizonia pungens* ssp. *laevis),* and parish's gooseberry (*Ribes divaricatum* var. *parishii).* If detected, the locations of the plants were mapped on a 1:200 scale aerial photograph.

2.3.4 General Wildlife Inventory

Animals identified during the field surveys by sight, call, track, nests, scat, or other signs were recorded. In addition to species actually detected, expected use of the site by other wildlife was derived from the analysis of habitats on the site, combined with known habitat preferences of regionally-occurring wildlife species. Animal species observed or expected to be present on site are listed in the Faunal Compendium in Appendix A, Table A-2. The methodology for sensitive faunal species are discussed in the Sensitive Wildlife Surveys section below.

Vertebrate taxonomy followed in this report is according to Stebbins (1985) for amphibians and reptiles, the American Ornithologists' Union (1983 and supplemental) for birds, and Jones et al. (1982) for mammals. Scientific names are used during the first mention of a species; common names only are used in the remainder of the text. A discussion of the survey methods used for each of the major wildlife group follows.

Amphibian Surveys

General surveys for amphibians were conducted in appropriate habitat only during diurnal activity periods. The intent of these surveys was not to extensively search for individual amphibians but to ascertain the presence of potential amphibian habitat and the location of amphibians within the study area. The discussions in this document of amphibians potentially present within the study area are based on the habitats used by the species and their geographic ranges. Surveys were conducted on foot in suitable habitat types concurrently with all other surveys on-site. Habitats were examined for diagnostic amphibian signs, such as eggs and larvae. All areas containing potentially suitable riparian habitat were surveyed. While searching for resting amphibians, surface litter, stones, fallen bark, and tree branches were overturned (and replaced). Observed or expected amphibian species, as well as diagnostic signs, were recorded in field notes.

Reptile Surveys

General surveys for common reptiles were conducted in appropriate habitat simultaneous to all other surveys on-site. Field investigators evaluated suitable habitat and assessed its potential to support reptiles. Conclusions regarding the potential presence of reptiles are drawn based on known habitat utilization and geographic range. Surveys were conducted on foot in suitable habitat types concurrently with all other surveys on-site to search for reptile signs, such as shed skin, scat, footprints, snake prints, and lizard tail-drag marks. Surface litter was also overturned (and replaced) to search for resting reptiles. Observed, as well as diagnostic signs, were recorded in field notes. It should be noted that field investigations were conducted during the spring and summer seasons, when reptile activity is highest.

Avian Surveys

Avian surveys of the entire property were conducted on foot in appropriate habitats simultaneous to all other surveys. Birds were detected both by sight and by call. In addition to the species actually detected, expected use of the study area by other bird species was postulated from an evaluation of the habitat types present on the site, in conjunction with known habitat preferences of bird species found in the region. All avian species observed were recorded in field notes. Survey methods for sensitive birds are discussed in the Sensitive Wildlife Surveys section below.

Surveys for the presence of nesting raptors (birds of prey) within the study area and in the vicinity of the study area were conducted simultaneously with other field surveys. Such efforts included directed and incidental observation of raptor nests and the identification of raptor species overflying the site.

Mammal Surveys

During all site visits, special attention was given to identifying mammal scat, burrows, tracks, dens, browsed vegetation or other feeding signs, hair, nests, and bones. Each plant community on the site was surveyed by evaluating the areas most likely to contain evidence of mammal usage. Methods employed for finding mammal signs included searching the ground and adjacent vegetation, locating and following mammal trails, and surveying muddy banks of small streams and pools. Any sign, such as scat, that could not be associated with a specific mammal was later analyzed for further identification. Any observed mammals and all diagnostic signs were recorded in field notes.

In addition to the indirect evidence for the presence or absence of mammals described above, an extensive mammal trapping program was conducted as part of a focused survey for the federally endangered San Bernardino Kangaroo Rat (SBKR). While the purpose of the trapping survey was to establish the presence or absence of the SBKR at Martin Ranch, other rodent species found in the target habitats were captured, adding to the list of mammals inhabiting the site. Survey methods for sensitive mammals are discussed in the Sensitive Wildlife Surveys section below. Mammal species observed, captured during the trapping survey, or expected to occur are included in Appendix A, Table A-2, Faunal Compendium.

2.3.5 Sensitive Wildlife Surveys

Habitat assessments for sensitive species indicated potential habitat, and consequently focused protocol surveys, for three species, the Federally threatened and CDFG Species of Special Concern coastal California gnatcatcher, the Federally endangered least Bell's vireo, and the Federally endangered Southwestern willow flycatcher. Simultaneously, surveys were conducted for the southern California rufous-crowned sparrow and Bell's sage sparrow. These are both Federal and CDFG Species of Special Concern.

Focused trapping surveys were conducted for the Federally endangered and CDFG Species of Special Concern San Bernardino kangaroo rat and the Federal and CDFG Species of Special Concern Los Angeles pocket mouse. In addition, habitat evaluations were made for the Federally

threatened and CDFG Species of Special Concern California red-legged frog (*Rana aurora draytonii*), the Federal and CDFG Species of Special Concern mountain yellow-legged frog (*Rana muscosa*), and the Federally endangered Quino checkerspot butterfly (*Euphydryas editha quino*). Suitable habitat for these species, however, was not observed.

California Gnatcatcher

Surveys were performed to determine the presence or absence of the federally-threatened California gnatcatcher. Surveys were conducted by PCR biologists Ruben Ramirez (PRT No. 780566) and Stacie Tennant (PRT No. 834489), and independent consultant Shana Dodd (PRT No. 796271) and Markus Spiegelberg (PRT No.797924). Methods employed were in conformance with USFWS *Coastal California Gnatcatcher Presence/Absence Survey Guidelines*, revised July 28th, 1997. Accordingly, six surveys for delineated areas of 80 acres each, were performed no less than seven days apart, between the hours of 0600 and 1200, within all portions of the study area containing Riversidean sage scrub habitat. Three survey plots of 80 acres each were delineated on an aerial photograph of the site to ensure thorough coverage of all on-site habitat. No more than 80 acres of habitat were covered per survey by each field investigator.

Temperatures during surveys ranged between 53 and 74 degrees Fahrenheit. Weather conditions during surveys were generally conducive to a high level of bird activity. Surveys were suspended whenever conditions became less than favorable. This included periods of rain, excessive wind, or exceedingly hot or cold temperatures. Weather conditions were suitable for surveys, with skies ranging from clear to 100 percent overcast, with winds below Beaufort scale 5.

In addition to weather conditions and survey time periods, field investigators recorded dominant plant species and percent shrub cover. Other sensitive bird observations were also recorded in the same manner as California gnatcatchers.

The field investigators slowly walked over each plot, stopping at approximately 200-foot intervals, uttering pishing sounds and playing a tape of recorded California gnatcatcher vocalizations. Taped vocalizations were used unless gnatcatchers were detected upon arrival in each habitat. The tape was played for several seconds at each interval, followed by a brief pause to listen for a response. Surveys were conducted within the breeding season on March 26th, April 9th, 16th, 17th, 26th, and 30th, May 2nd, 9th, 15th and 29th, June 6th, 13th, and 20th, 1998.

Focused California gnatcatcher surveys along the right-of-way for the proposed access road linking Meyers Road with I-15 will begin in mid-March. The protocol for these surveys will follow the procedures outlined in the previous paragraph and will be completed by the end of April.

Least Bell's Vireo

Surveys for least Bell's vireo were conducted by PCR biologists Stacie Tennant, Marc Blain, Steve Sprague, and Ken Halama on April 9th, 13th, 22nd, and 29th, May 7th, 14th, 21st, and 28th, 1998. Methods employed were in conformance with the USFWS Least Bell's Vireo Survey Guidelines, issued February, 1992. Accordingly, eight surveys were performed no less than seven (7) days apart, between the hours of 0600 and 1100, within all portions of the study area containing suitable riparian habitat and within adjacent suitable habitat potentially used for foraging.

Temperatures during surveys ranged from 46 to 82 degrees Fahrenheit. Weather conditions were suitable for surveys, with skies ranging from 100 percent overcast with low ground fog to clear and winds below Beaufort scale 2. Riparian habitat included southern willow scrub and sycamore alder riparian woodland and was covered in its entirety during each survey. The field investigators slowly walked along or within the riparian habitat, stopping at approximately 150- to 200-foot intervals, listening for least Bell's vireo vocalizations.

Southern California Rufous-Crowned Sparrow and Bell's Sage Sparrow

Surveys for the southern California rufous-crowned sparrow and Bell's sage sparrow were conducted in Riversidean sage scrub habitats simultaneously with focused surveys for the California gnatcatcher. Temperatures during surveys ranged from 53 and 74 degrees Fahrenheit. Weather conditions were suitable for surveys, with skies ranging from 100 percent overcast to clear and winds below Beaufort scale 5. The field investigators slowly walked over each plot, stopping at approximately 200-foot intervals, uttering pishing sounds, followed by a brief pause to listen for a response. Surveys were conducted on March 26th, April 9th, 16th, 17th, 26th, and 30th, May 2nd, 9th, 15th and 29th, June 6th, 13th, and 20th, 1998.

Southwestern Willow Flycatcher

Surveys for Southwestern willow flycatcher were conducted by Jennifer Turnbull of TW Biological Services, San Diego, California. Methods employed were in conformance with U.S.

Fish and Wildlife Service protocol. Accordingly, three (3) surveys were performed during 1998 within all portions of the study area containing riparian habitat. Riparian habitat includes southern willow scrub and sycamore alder riparian woodland. The first survey occurring between May 15th and May 31st, the second between June 1st and June 21st, and the final survey between June 21st and July 10th.

Surveys were conducted between the hours of 0630 and 0130 on May 27th, June 9th, and July 9th, 1998. Temperatures during surveys ranged between 55 degrees and 85 degrees Fahrenheit. Weather conditions were suitable for surveys, with skies ranging from clear to 100 percent overcast with winds below Beaufort scale 1. Surveys were conducted only during clement or fair weather conditions. The field investigator slowly walked within or immediately adjacent to all suitable riparian habitat areas looking for, as well as listening for Southwestern willow flycatchers. A tape of recorded Southwestern willow flycatcher vocalizations was used during all surveys. The tape was played for several seconds at each interval, followed by a brief pause to listen for a response.

San Bernardino Kangaroo Rat and Los Angeles Pocket Mouse

During site assessments, PCR determined that portions of the Martin Ranch property had marginally suitable habitat for the San Bernardino kangaroo rat and the Los Angeles pocket mouse As required by the USFWS, a focused trapping survey was conducted by Ruben Ramirez (PRT No. 780566), assisted by Marc Blain, Stacie Tennant, and Erin Bomcamp to determine presence or absence of the San Bernardino kangaroo rat on-site. These surveys also served to determine the presence or absence of the Los Angeles pocket mouse as well as increase the thoroughness of the mammal compendium. Following protocol, all potential habitat was surveyed on five consecutive nights. A total of 350 traps were used dispersed along five distinct trapping lines amounting to 1,750 trap nights (one trap night=one trap set and checked twice for one night). The first three lines of 50 traps each were checked on August 18th, 19th, 20th, 21st, and 22nd, 1998. The remaining two lines of 100 traps each were checked on November 2nd, 3rd, 4th, 5th and 6th, 1998. Traps were set approximately 15 feet apart using a combination of nine-inch and twelve-inch Sherman live traps then baited with an oatmeal/seed mix. All traps were set at sunset, checked and reset at midnight, and checked again at sunrise. All animals captured were identified, sexed and aged. Weather conditions during all surveys were normal and well within protocol acceptable parameters. Mammal species observed are included in Appendix A, Table A-2, Faunal Compendium.

Focused SBKR trapping surveys along the right-of-way for the proposed access road linking Meyers road with I-15, will begin in mid-March. The protocol for these surveys will follow the procedures outlined in the previous paragraph and be completed by the end of March.

2.3.6 Regional Connectivity / Wildlife Movement Corridor Assessment

The analysis of wildlife movement corridors associated with the study area and its immediate vicinity is based on information compiled from the literature, input from wildlife agency personnel, analysis of the aerial photograph and topographic map, and direct observations made in the field during survey work.

Little quantitative data exists on the movements of animals through corridors. A literature review was conducted that included documents on island biogeography (studies of fragmented and isolated habitat "islands"), reports on wildlife home range sizes and migration patterns, and studies on wildlife dispersal. Wildlife movement studies conducted in southern California also were reviewed. The relationship of the study area to large open space areas in the immediate vicinity (i.e., San Bernardino National Forest) was also evaluated in terms of connectivity and habitat linkages. Relative to corridor issues, the discussions in this report are intended to focus on wildlife movement associated with the study area and immediate vicinity.

3. EXISTING CONDITIONS

3.1 CHARACTERISTICS OF THE SITE AND THE SURROUNDING AREA

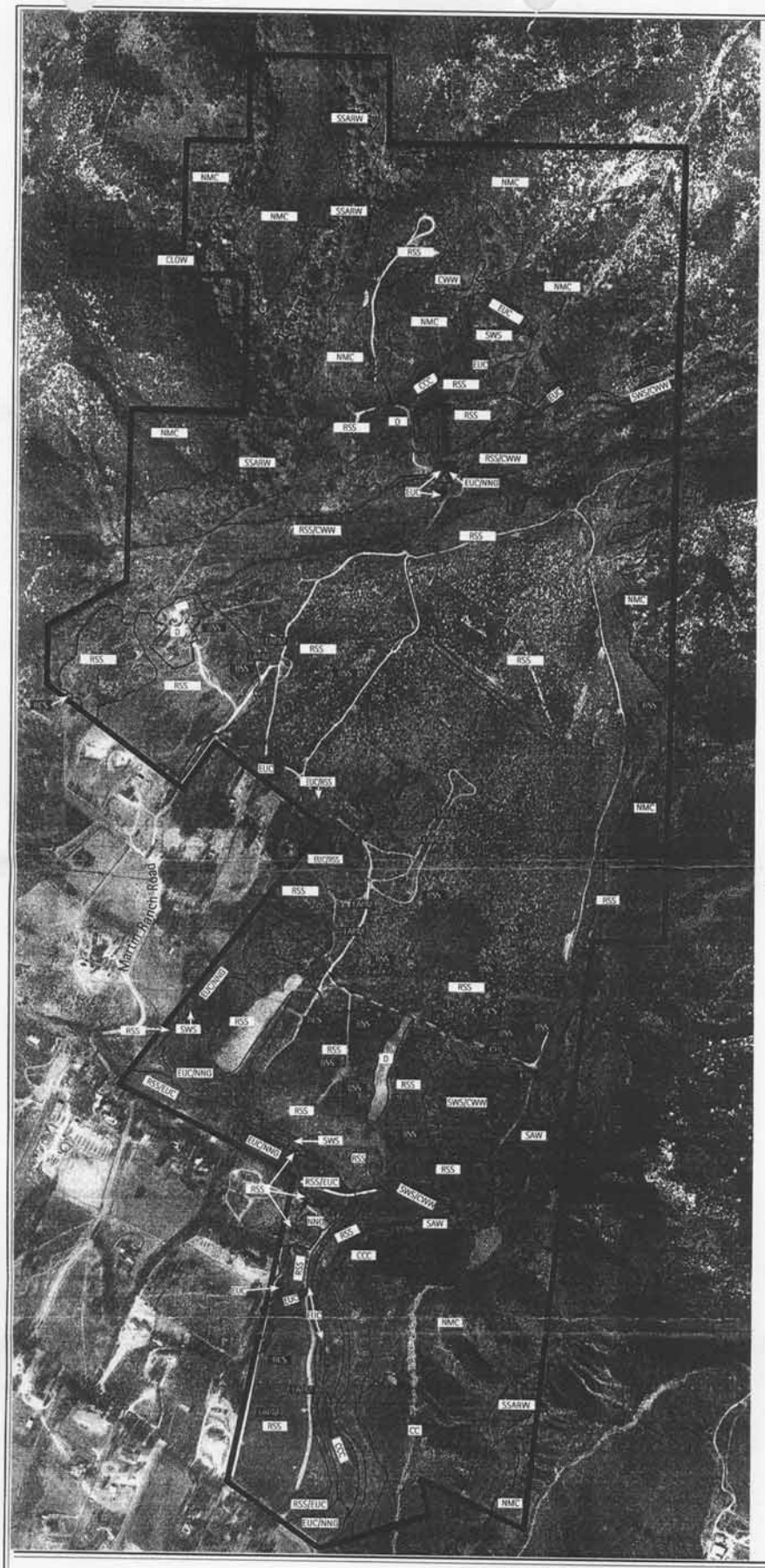
The Martin Ranch property is located southeast of the junction of interstates 15 and 215 along the base of the San Bernardino Mountains. The site lies north of Meyers Road and east of Martin Ranch Road. The property contains some flatlands but the majority of land slopes north to south with elevations ranging from 2,060 feet above mean sea level (MSL) to 3,400 feet above MSL. Steep canyon bottoms vegetated with a mixture of oak woodland, chaparral, and streamside riparian habitat occur on the site. Both Cable Creek and its tributaries traverse the property. The west fork of Meyers Canyon Creek flows north to south close to the eastern edge of the property. Cable Creek, along the east and west tributaries, flow north to south near the western edge of the property. The southeast fork of Cable Creek traverses the property east to west. The San Bernardino National Forest surrounds the site on the north with single-family homes to the south and southwest. Surrounding land use includes open space to the north, west, and east, and sparse development to the south and west.

3.2 PLANT COMMUNITIES / HABITATS

As a result of the presence of many drainages, including perennial streams, and varied topographical conditions, the project site supports a high diversity of habitat types. Ten native plant communities were identified on the Martin Ranch property. In addition, there were two non-vegetated areas identified as disturbed and one area identified as ornamental. Scattered eucalyptus trees occur throughout the project site. A brief description of the plant communities and the plant species dominating and common to these communities is discussed below based on field observations and existing documentation pertaining to the biological resources on the project area. A map of plant communities on the property is included in Figure 3, Plant Communities and Sensitive Species Locations. Table 3-1 summarizes existing acreages of on site plant communities.

3.2.1 Northern Mixed Chaparral

This chaparral community contains a diversity of broad-leaved, sclerophyllous shrubs. The vegetation is comprised of 10-foot tall shrubs that form a dense canopy. Northern mixed



Plant Communities

NMC	Northern Mixed Chaparral
SSARW	Southern Sycamore-Alder Riparian Woodland
NNG	Non-Native Grassland
CWW	California Walnut Woodland
RSS/CWW	Riversidean Sage Scrub/California Walnut Woodland
EUC	Eucalyptus
EUC/NNG	Eucalyptus/Non- Native Grassland
CLOW	Coast Live Oak Woodland
SWS	Southern Willow Scrub
RSS	Riversidean Sage Scrub
CCC	Ceonothus Crassifolius Chaparral
D	Disturbed
EUC/RSS	Eucalyptus/Riversidean Sage Scrub
RSS/EUC	Riversidean Sage Scrub/Eucalyptus
SWS/CWW	Southern Willow Scrub/California Walnut Woodland
SAW	Sycamore Alluvial Woodland
O	Ornamental
CC	Chamise Chaparral

Sensitive Species

BSS	Bell's Sage Sparrow
CHL	San Diego Coast Horned Lizard
RCS	Southern California Rufous-Crowned Sparrow
LAPM	Los Angeles Pocket Mouse
	Project Boundary

SOURCES: Eagle Aerial Photography and PCR,1999.

PCR

0 500 1000
FEET
Approximate Scale

FIGURE 3
Martin Ranch
Plant Communities and Sensitive Species Locations

Table 3-1

MARTIN RANCH
ACREAGES OF PLANT COMMUNITIES/HABITATS WITHIN THE PROJECT SITE

Plant Community	Acres
Scrub Communities	
Riversidean Sage Scrub	221.50
Chaparral Communities	
Northern Mixed Chaparral	47.00
Chamise Chaparral	7.00
Ceonothus Crassifolius Chaparral	10.00
Grassland Communities	
Non-native Grassland	8.15
Riparian Communities	
Southern Willow Scrub	1.00
Southern Willow Scrub/California Walnut Woodland	8.00
Southern Sycamore-Alder Riparian Woodland	17.00
Woodland Communities	
Canyon Live Oak Woodland	0.50
Sycamore Alluvial Woodland	15.00
California Walnut Woodland	3.00
Disturbed or Developed Areas	
Disturbed (grazed, rural residential, roadways)	1.65
Ornamental	8.00
Eucalyptus Trees	5.00
Total	**352.80**

Sources: PCR Services Corporation, January 1999

chaparral consists of a broad mix of chaparral species and generally occurs below 3,000 feet in elevation in northern California and 5,000 feet in southern California.

Dominant plant species on-site include chamise, chaparral whitethorn (*Ceanothus leucodermis*), scrub oak (*Quercus berberidifolia),* birch-leaf mountain-mahogany (*Cercocarpus betuloides),* hoary leaf ceonothus (*Ceanothus crassifolius*), mexican elderberry (*Sambucus mexicana*), holly-leaved redberry (*Prunus ilicifolia*), toyon (*Heteromeles arbutifolia)*, and skunkbrush (*Rhus trilobata*).

Northern mixed chaparral comprises approximately 47 acres of the project site and occurs on the rocky slopes predominantly in the eastern and northern edges of the property.

3.2.2 Riversidean Sage Scrub

Riversidean sage scrub is the most xeric expression of coastal sage scrub in southern California. It is the driest, most inland expression of the collection of sage scrub or coastal scrub series, and ranges throughout southern California south into Baja California between approximately 1,500 and 4,500 feet above MSL. Typically this low, open shrub occurs on dry sites such as steep slopes, severely drained soils or clays that release stored moisture slowly. This community consists of drought-deciduous low shrubs, averaging two to three feet in height, and an herbaceous understory.

Dominant species on-site include California sagebrush (*Artemisia californica*), brittlebush (*Encelia farinosa*), California buckwheat (*Eriogonum fasciculatum*), white sage (*Salvia apiana*) and hairy yerba santa (*Eriodictyon trichocalyx*). Associated, less common plant components include black sage (*Salvia mellifera*), deerweed (*Lotus scoparius*), our Lord's candle (*Yucca whipplei)*, California everlasting (*Gnaphalium californicum*), and California croton (*Croton californicus*). Canopy coverage ranges from approximately 80 to 90 percent cover in undisturbed areas of densest vegetation, with non-native grassland interspersed.

In terms of total coverage, Riversidean sage scrub dominates the project site and is distributed throughout the property. Approximately 221.5 acres of Riversidean sage scrub occur on the project site.

The reader should note that the majority of Riversidean sage scrub onsite has a history of disturbance. Up until 1989 most of the areas supporting sage scrub were dryland farmed. In fact, Recon (1991) described such areas as being "primary successional sage scrub communities".

Today, evidence of past disturbances include the predominance of human-mediated (clearing) and natural fires disturbance. The site has been colonized by disturbance followers including California buckwheat and deerweed, both of which will quickly establish themselves on highly disturbed areas.

3.2.3 Ceonothus Crassifolius Chaparral

Ceonothus crassifolius chaparral occurs on xeric sites with shallow, stony soils, usually below 4,000 feet, and ranges from Santa Barbara County south to Baja. This chaparral is dominated by hoary leaf ceonothus, often forming pure stands of dense shrubs 2 to 3 meters high.

Dominant plant species occurring on-site include hoary leaf ceonothus and chamise with toyon, scrub oak, sugar bush (*Rhus ovata)* occurring as subdominants. Ceonothus crassifolius chaparral occupies approximately 10 acres and occurs in small amounts in the northern and southern portion of the project site.

3.2.4 Southern Sycamore-Alder Riparian Woodland

This tall, open, broad-leafed, deciduous, streamside woodland is dominated by white alder (*Alnus rhombifolia)* and western sycamore. It occurs on rocky streambeds with some trees over 25 meters high and ranges from Point Conception south into Baja California.

Dominant riparian overstory on-site consists of big leaf maple (*Acer macrophyllum),* coast live oak, white alder, western sycamore, California bay (*Umbellularia californica),* California black walnut, scrub oak, and mexican elderberry. The understory consists of California blackberry , poison oak, wild grape (*Vitis californica),* and mugwort.

Approximately 19.0 acres of southern sycamore-alder riparian woodland occur on-site. This includes all of Cable Creek from the northern boundary and a small portion near the southeastern boundary.

3.2.5 California Walnut Woodland

California walnut woodland is an open woodland dominated by Southern California black walnut (*Juglans californica* var. *californica).* The open tree canopy usually has a grassy understory. This community occurs on moist, fine-textured soils of valley slopes and bottoms and

ranges from the south side of the San Gabriel mountains to the Santa Ana mountains between 500 and 3,000 feet in elevation.

This habitat on-site often intergrades with northern mixed chaparral, southern willow scrub, and Riversidean alluvial fan sage scrub. Characteristic species include coast live oak (*Quercus agrifolia),* sugar bush, and skunkbrush. Understories consist of rushes (*Juncus* sp.), western ragweed (*Ambrosia psilostachya),* and tarragon (*Artemisia dracunculus).*

California walnut woodland is found in the northeastern portion of the property in dense patches at the base of hillsides. It is also found in the north and south central portion of the site. This community occupies approximately 3.0 acres of the project site.

3.2.6 Sycamore Alluvial Woodland

Sycamore alluvial woodland is an open to moderately closed, winter deciduous broadleafed riparian woodland dominated by western sycamore (*Platanus racemosa).* It is associated with braided, depositional channels of intermittent streams with cobbly bottoms.

On-site, this community is dominated by western sycamore, scrub oak, and mexican elderberry. Understories include non-native grasses, mulefat, and horehound (*Marrubium vulgare).* Approximately 15.0 acres of sycamore alluvial woodland occur in the southeastern portion of the property boundary in the lower part of Meyers Canyon.

3.2.7 Chamise Chaparral

Chamise Chaparral is found from Baja to northern California in pure stands or mixed stands. It is a 1-3 meter tall chaparral dominated by chamise with very little herbaceous understory. It is characteristically found integrated with sage scrub associations at lower elevations and various chaparral communities at higher elevations. Chamise chaparral is the most common chaparral community in the state, although chamise occurs in approximately 70 percent of all chaparral communities (Barbour and Major, 1988). Chamise tolerates dry, nutrient poor soil and is associated with xeric south- and west-facing slopes and ridgelines and shallow soils, often forming nearly pure stands.

On site this plant community is dominated by chamise (*Adenostoma fasciculatum*). Although chamise is the dominant shrub other shrubs are present, including California buckwheat, white sage, golden yarrow (*Eriophyllum confertifolium*), deerweed, and California sagebrush.

Chamise chaparral comprises approximately 7.0 acres of the project site and occurs in the extreme southern portion of the project site.

3.2.8 Southern Willow Scrub

Southern willow scrub contains dense, broadleaved, winter-deciduous trees and is associated with seasonally flooded or saturated stream and river corridors. It typically forms thickets in riparian zones along alluvial fan stream channels, adjacent sandy or gravelly floodplains, and low stream terraces in southern California. Southern willow scrub is an early seral community to southern cottonwood-willow riparian forest. Willow scrub may or may not be dominated by a single willow species, depending upon location (primarily elevation).

The community on-site is dominated by one or more of several willow species and may contain other riparian woodland species. Common willow scrub dominants include arroyo willow (*Salix lasiolepis*) and red willow (*Salix laevigata*), with lesser amounts of mulefat (*Baccharis salicifolia*), Fremont's cottonwood (*Populus fremontii* ssp. *fremontii),* narrow-leaf cottonwood (*Populus angustifolia),* and mexican elderberry. The understory consists of wild grape, poison oak (*Toxicodendron diversilobum),* mugwort (*Artemisia douglasiana),*California blackberry (*Rubus ursinus),* and numerous ferns. Approximately 1.0 acre of southern willow scrub occur in the north and south as part of Meyers Canyon.

3.2.9 Disturbed

Disturbed areas are dominated by non-native, weedy species that are adapted to frequent disturbance. Many of the characteristic species of disturbed habitat are also indicator species of non-native grasslands, but disturbed areas tend to be more dominated by forbs than grasses.

Types of disturbed areas found on the property include cleared land, a residential area, and dirt access roads. Ruderal vegetation typically found on-site include non-native grasses and a high proportion of weedy species, including black mustard and thistle species (*Cirseum* sp.). Approximately 1.65 acres of disturbed areas occur scattered through out the site.

3.2.10 Non-Native Grassland

Non-native grassland typically occurs in upland areas and with deep soils of relatively flat terrain or gradual slopes below 3,000 feet in elevation. It is represented by a dense-to-sparse cover of annual and/or perennial grasses often associated with numerous species of showy

flowered, native annual forbs. Dominant genera in non-native grassland include brome and chess (*Bromus* sp.), wild oat *(Avena sp.),* fescue (*Vulpia* sp.), and barley (*Hordeum* sp.). Many species of native forbs and bulbs, as well as naturalized annual forbs, are also found in non-native grassland. Floristic richness is affected to a high degree by land use activity, such as intensity and duration of grazing, fires, or other disturbances. Heavily-grazed grasslands, in particular, exhibit reduced species richness. Common forbs include common fiddleneck (*Amsinckia menziesii*), cryptantha (*Cryptantha* sp.), red-stemmed filaree (*Erodium cicutarium*), mustard (*Brassica* sp.), tocalote (*Centaurea melitensis*), fascicled tarweed (*Hemizonia fasciculata*), cardoon (*Cynara cardunculus*), milk thistle (*Silybum marianum*), peppergrass (*Lepidium* sp.), dove weed (*Eremocarpus setigerus*), and California bur clover (*Medicago polymorpha*). Less disturbed grasslands often contain a predominance of native forbs, including purple owl's clover (*Castilleja exserta*), popcorn flower (*Plagiobothrys* sp.), pectocarya (*Pectocarya* sp.), angel gilia (*Gilia angelensis*), blue-eyed-grass (*Sisyrinchium bellum*), lupine (*Lupinus* sp.), mariposa lily (*Calochortus* sp.), goldfields (*Lasthenia* sp.), and California aster (*Corethrogyne filaginifolia*).

On-site this community is dominated by wild oat (*Avena fatua),* slender wild oat (*Avena barbata),* ripgut grass (*Bromus diandrus),* foxtail chess (*Bromus madritensis* ssp. *rubens),* barley (*Hordeum vulgare),* fescue (*Vulpia myuros),* black mustard (*Brassica nigra*), red-stemmed filaree, and cheeseweed (*Malva parviflora*). Approximately 8.15 acres of non-native grassland occur on the property occuping the low-lying flat and gently-sloped terrain in the southwestern portion of the property.

3.2.11 Canyon Live Oak Woodland

Canyon live oak woodland is a broad-leaved, sclerophyllous woodland up to 15.24 meters tall. It is dominated by canyon live oak *(Quercus chrysolepis)* and has a closed, dense canopy. This community is found on gentle to steep, north-facing hillsides below 8,500 feet in elevation.

Characteristic species present include holly-leaved cherry and skunkbrush. This woodland is found in the northwestern portion of the property and occupies approximately 0.5 acres of the project site.

3.2.12 Ornamental

One area identified as ornamental occurs around an old house foundation. This area is bordered on the north, south, and west by dirt roads and is east of where Cable Creek fork converges.

Approximately 8.0 acres of ornamental occurs in the northern portion of the property. It is dominated by tree of heaven (*Ailanthus glandulosa),* olive (*Olea europaea),* eucalyptus (*Eucalyptus* sp.), California black walnut, and incense cedar (*Calocedrus decurrens*).

3.2.13 Eucalyptus Trees

Eucalyptus trees occur throughout the project site and consists of red gum (*Eucalyptus camaldulensis),* blue gum *(Eucalyptus globulus),* silver-dollar gum (*Eucalyptus polyanthemos),* and flooded gum (*Eucalyptus rudis).* Eucalyptus trees are also scattered throughout Riversidean alluvial fan sage scrub, Riversidean sage scrub, and non-native grassland communities.

3.3 WILDLIFE POPULATIONS

The majority of the plant communities discussed above provide wildlife habitat. While a few wildlife species are entirely dependent on a single vegetation community, the entire mosaic of all the vegetation communities within the study area and adjoining areas constitutes a functional ecosystem for a variety of wildlife species, both within the study area and as part of the regional ecosystem. Following are discussions of wildlife populations on-site, segregated by taxonomic group. Representative examples of each taxonomic group either observed or expected on-site are provided. Wildlife species actually observed, as well as those expected to occur, within the study area are indicated in the faunal compendium in Appendix A. Sensitive wildlife species occurring or potentially occurring on-site are discussed in Section 3.9, Sensitive Wildlife Species (page 44).

3.3.1 Invertebrates

No specific surveys were performed for common invertebrates. However, species encountered during the general biological assessment or focused surveys were noted in the faunal compendium in Appendix A. The site is expected to support many species of invertebrates common to urban and suburban environments.

3.3.2 Amphibians

The potential presence of amphibians varies greatly between habitats within the study area. Most amphibians are dependent on standing or flowing water for reproduction. Terrestrial species avoid desiccation by burrowing underground; within crevices in trees, rocks, and logs; and under stones and surface litter during the day and dry seasons. Due to their secretive nature, terrestrial

amphibians are rarely observed, but may be quite abundant if conditions are favorable. Aquatic amphibians are dependent on standing or flowing water for reproduction. Such habitats include fresh water marshes and open water (reservoirs, permanent and temporary pools and ponds, and perennial streams). Many aquatic amphibians will utilize vernal pools as nesting sites. These pools are temporary in duration and form following winter and spring rains common to southern California.

Both the Cable Canyon and the Martin Canyon Creek transverse the property, and the occurrence of perennial streams on the site, provide adequate habitat for common amphibian species. Also, the project site can support a variety of amphibians in the moister woodland areas and canyon bottoms. No amphibians were observed on the project site but the potential for the occurrence of several species does exist due to the presence of riparian habitat. Some species very likely to occur include the California newt (*Taricha torosa),* Pacific slender salamander *(Batrachoseps pacificus),* western toad (*Bufo boreas*), and western spadefoot (*Scaphiopus hammondii)*. All amphibian species expected to occur on the site, are included in the Faunal Compendium. Sensitive amphibian species occurring or potentially occurring on-site are discussed in Section 3.9, Sensitive Wildlife Species (page 44).

3.3.3 Reptiles

Reptilian diversity and abundance typically varies with habitat type and character. Some species prefer only one or two plant communities; however, most will forage in a variety of communities. A number of reptile species prefer open habitats that allow free movement and high visibility. Most species occurring in open habitats rely on the presence of small mammal burrows for cover and escape from predators and extreme weather.

The project site has many essential reptilian habitat characteristics and possesses the potential to support a wide variety of species. Some reptile species observed include the western fence lizard (*Scleroporus occidentalis*), side-blotched lizard (*Uta stansburiana*), western rattlesnake (*Crotalus viridis)*, and California whipsnake (*Masticophis lateralis*). Other species expected include the western skink (*Eumeces skiltonianus)*, sagebrush lizard (*Sceloporus graciosus),* gopher snake (*Pituophis melanoleucus),* ringneck snake (*Diadophis punctatus)*, and common kingsnake (*Lampropeltis getulus)*. All reptile species observed, as well as those expected to occur on-site, are included in the Faunal Compendium. Sensitive reptile species occurring or potentially occurring on-site are discussed in Section 3.9, Sensitive Wildlife Species (page 44).

3.3.4 Birds

Upland Birds: The grassland, shrubland, woodland, and riparian habitats on-site provide foraging and cover habitat for year-round residents, seasonal residents, and migrating song birds. The overall condition of these communities on the site is good, and mostly undisturbed. In addition, there is a steady water supply. The combination of these resources as well as the confluence of many community types provides for a high diversity of bird species. All upland avian species observed, as well as those expected to occur on-site, are included in the Faunal Compendium. Sensitive bird species occurring or potentially occurring on-site are discussed in the Sensitive Wildlife Species section (page 44).

Raptors: Much of the habitat within the project site provides optimal foraging or breeding habitat for raptors. Upland plant communities provide excellent habitat for many small mammals, resulting in an abundant rodent population upon which raptors largely prey. Large sycamore, walnut, eucalyptus, and oak trees present within the riparian habitat on-site provide perches for foraging over adjacent grassland and sage scrub communities, as well as nesting sites. Power poles that traverse the site provide perches for foraging over the grassland, chaparral, and sage scrub plant communities. These areas provide excellent habitat for many small mammals resulting in a potentially large rodent population on the project site. Collectively, the abundance of prey and the availability of both perches and cliff and tree nesting sites would suggest that the site is being used by a variety of raptor species. All raptor species observed, as well as those expected to occur on-site, are included in the Faunal Compendium. Sensitive raptor species occurring or potentially occurring within the area are discussed in the Sensitive Wildlife Species section below.

3.3.5 Mammals

The diversity of habitats on-site is anticipated to support a variety of mammals. During field surveys, a number of mammal species were either directly observed, or their presence was deduced by diagnostic signs (track, scat, burrows, etc.). Among these were the desert cottontail (*Sylvilagus audubonii*), California ground squirrel (*Spermophilus beecheyi*), bobcat (*Lynx rufus*), coyote (*Canis latrans*), and mule deer (*Odocoileus hemionus)*.

The trapping program revealed the presence of numerous rodent species on the Martin Ranch property. Species found include the deer mouse (*Peromyscus maniculatus*), California mouse (*Peromyscus californicus*), cactus mouse (*Peromyscus eremicus*), dusky footed woodrat (*Neotoma*), San Diego pocket (*Chaepodipus fallax*), western harvest mouse (*Reithrodontomys megalotis*), Pacific kangaroo rat (*Dipodomys agilis*). All mammals observed on-site, as well as

those expected to occur, are listed in Appendix A, Faunal Compendium. Sensitive mammal species occurring or potentially occurring within the area are discussed in the Sensitive Wildlife Species section below.

3.4 WILDLIFE MOVEMENT

3.4.1 Overview

Wildlife corridors link together areas of suitable 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. In the absence of habitat linkages that allow movement to adjoining open space areas, 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 material (Soule 1987). Corridors effectively act as links between different populations of a species. A group of smaller populations (termed "demes") linked together via a system of corridors is termed a "metapopulation." The long-term health of each deme within the metapopulation is dependent upon its size and the frequency of interchange of individuals (immigration vs. emigration). The smaller the deme, the more important immigration becomes, because prolonged inbreeding with the same individuals can reduce genetic variability. Immigrant individuals that move into the deme from adjoining demes mate with individuals and supply that deme with new genes and gene combinations that increase overall genetic diversity.

Corridors mitigate the effects of habitat fragmentation by (1) allowing animals to move between remaining habitats, which allows depleted populations to be replenished and promotes genetic change; (2) providing escape routes from fire, predators, and human disturbances, thus reducing the risk that catastrophic events (such as fires or disease) will result in population or local species extinction; and (3) serving as travel routes for individual animals as they move within their home ranges in search of food, water, mates, and other needs (Noss 1983, Fahrig and Merriam 1985, Simberloff and Cox 1987).

Wildlife movement activities usually fall into one of three movement categories: (1) dispersal (e.g., juvenile animals from natal areas, or individuals extending range distributions); (2) seasonal migration; and (3) movements related to home range activities (foraging for food or water, defending territories, searching for mates, breeding areas, or cover). A number of terms have been used in various wildlife movement studies, such as "wildlife corridor," "travel route," "habitat linkage," and wildlife crossing," to refer to areas in which wildlife move from one area

to another. To clarify the meaning of these terms and facilitate the discussion on wildlife movement in this study, these terms are defined as follows:

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 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 human-made, and include culverts, underpasses, drainage pipes, and tunnels to provide access across or under roads, highways, pipelines, or other physical obstacles. These are often "choke points" along a movement corridor.

3.4.2 Wildlife Movement Within the Study Area

The Martin Ranch project site is likely to be utilized by a large variety of species in large numbers for several reasons. First, the location of the site allows easy access for many species. There are no physical barriers surrounding the site other than sparse residential development along the lower western and southern edge of the site. Adjacent properties to the east, north, and west are mostly undeveloped and part of the much larger natural open space of the San Bernardino National Forest. This expanse of undisturbed open space surrounding much of the site harbors an abundance of wildlife which may, in turn, facilitate a substantial amount of wildlife movement within the study area.

3.5 REGIONAL BIOLOGICAL VALUE OF THE SITE

The Martin Ranch project site provides both foraging habitat and travel routes for many wildlife species of the region. Although the foraging habitat and other resources associated with the variety habitats on site are valuable to many species, these conditions are available throughout much of the region. As previously described, the project site is located in a region which retains a large amount of natural open space. Most of this open space is within the San Bernardino National Forest and is protected from development.

The regional biological value of the wildlife corridor features on the project site is potentially high. Of the wildlife movement areas previously discussed, one is likely to be an important part of the regional ecology, Cable Creek Canyon. This canyon begins in the northwest portion of the site as the east and west forks of Cable Creek merge and eventually turn west and off the project site. Off-site, the Canyon turns south and soon opens into a more wash like habitat flowing south-east, parallel to the 215 freeway. Several miles downstream, the creek is channeled under the freeway and into the Cajon Wash.

Several factors make Cable Creek Canyon a potentially valuable regional wildlife movement corridor. First, that portion of Cable Creek which flows through the project site experiences a year round substantial flow of water. Perennially flowing streams are uncommon in the region making it a highly valuable water resource, at least seasonally, for both local and regional animals populations. Second, the Cable Creek corridor links up several different communities. The creek's north-south orientation means that the associated movement corridor runs along an altitudinal gradient from lowland alluvial communities, oak woodlands, chaparral, to higher elevation montane coniferous forest communities. Animals associated with these various communities are able to use the water, food, and cover of the riparian corridor to travel to other communities and access additional resources. In addition to community linkages, the corridor connects secondary and tertiary stream drainages which may function as tributary corridors for dispersing animals. The elevational gradient of the Cable Creek corridor may also provide a pathway for seasonal migration of some species. Although other undeveloped canyons connect the valley floor with the mountains, the Cable Creek corridor would most likely be preferable due to the perennial water availability. For example, deer may seasonally migrate from the valley floor to the mountains for purposes of foraging and/or reproduction. Third, as previously discussed, the site is undeveloped and adjacent to mostly undeveloped areas to the north, east, and west. Due to the large amount of undisturbed habitat in the region, there is potentially an abundance of wildlife. Species requiring larger territories such as deer, bobcat, and mountain lion, are able to persist in the region as well. Therefore, the corridor is likely to be utilized by

a large variety of species in the region. In fact, there exists a low potential for utilization of this area by the black bear as well. A true omnivore, the black bear may travel down through the canyons to forage on the host of food supplies available. Finally, the high concentration of plants and animals present in the corridor make it good foraging habitat for many species. Some species may frequently travel the length of the corridor in search of food alone. For example, the high density of deer in the corridor may have a tendency to attract mountain lions for predation purposes. Mountain lions may additionally take advantage of the coverage and connectivity of the canyons.

3.6 SENSITIVE BIOLOGICAL RESOURCES

The following discussion describes the plant and wildlife species present, or potentially present within the study area, that have been afforded special recognition by federal, state, or local resource conservation agencies and organizations, principally due to the species' declining or limited population sizes, usually resulting from habitat loss. Also discussed are habitats that are unique, of relatively limited distribution, or of particular value to wildlife. Protected sensitive species are classified by either state or federal resource management agencies, or both, as *Threatened* or *Endangered*, under provisions of the state and federal Endangered Species Acts. Vulnerable or "at-risk" species which are proposed for listing as *Threatened* or *Endangered* (and thereby for protected status) are categorized administratively as "candidates" by the USFWS. CDFG uses various terminology and classifications to describe vulnerable species. There are additional sensitive species classifications applicable in California; these are described below.

Sensitive biological resources are habitats or individual species that have special recognition by federal, state, or local conservation agencies and organizations as endangered, threatened, or rare. The CDFG, USFWS, and special groups like the California Native Plant Society (CNPS) maintain watch lists of such resources. For the purpose of this assessment sources used to determine the sensitive status of biological resources are:

- **Plants:** U. S. Fish and Wildlife Service (USFWS 1993), California Department of Fish and Game (CDFG 1992, 1997, and 1998), California Natural Diversity Data Base (CNDDB 1997), and California Native Plant Society (CNPS) (Skinner and Pavlik 1994),

- **Wildlife:** California Wildlife Habitat Relationships Database System (CWHRDS 1991), USFWS (1991, 1994, and 1996), CDFG (1998), CNDDB (1997), Williams (1986), and Remsen (1978), and

- **Habitats:** CNDDB (1997).

3.6.1 Federal Protection and Classifications

The Federal Endangered Species Act of 1973 (FESA) defines an endangered species as "any species which is in danger of extinction throughout all or a significant portion of its range..." Threatened species are defined as "any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range." Under provisions of Section 9(a)(1)(B) of the FESA it is unlawful to "take" any listed species. "Take" is defined as follows in Section 3(18) of the Act: "... harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." Further, USFWS, through regulation, has interpreted the terms "harm" and "harass" to include certain types of habitat modification as forms of "take". These interpretations, however, are generally considered and applied on a case-by-case basis and often vary from species to species. In a case where a property owner seeks permission from a federal agency for an action which could affect a federally-listed plant and animal species, the property owner and agency are required to consult with USFWS. Section 9(a)(2)(b) of the federal Endangered Species Act addresses the protections afforded to listed plants.

Within the last two years, the USFWS instituted changes in the listing status of former candidate species. Former C1 (candidate) species are now referred to simply as candidate species and represent the only candidates for listing. Former C2 species (for which the Service had insufficient evidence to warrant listing at this time) and C3 species (either extinct, no longer a valid taxon or more abundant than was formerly believed) are no longer considered as candidate species. Therefore, these species are no longer maintained in list form by the Service, nor are they formally protected. However, some USFWS field offices have issued memoranda stating that former C2 species are henceforth to be considered *Federal Species of Concern*. This term is employed in this document, but carries no official protections. All references to federally protected species in this report (whether listed, proposed for listing or candidate) include the most current published status or candidate category to which each species has been assigned by USFWS.

For purposes of this assessment the following acronyms are used for federal status species:

- **FE** - Federal Endangered
- **FT** - Federal Threatened
- **FPE** - Federal Proposed Endangered
- **FPT** - Federal Proposed Threatened
- **FC** - Federal Candidate for Listing
- **FSC** - Federal Species Concern (former C2 or C3 species)

3.6.2 State of California Protection and Classifications

California's Endangered Species Act (CESA) defines an endangered species as "...a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant which is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease." The State defines a threatened species as "... a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of the special protection and management efforts required by this chapter. Any animal determined by the commission as rare on or before January 1, 1985 is a threatened species." Candidate species are defined as "... a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that the commission has formally noticed as being under review by the department for addition to either the list of endangered species or the list of threatened species, or a species for which the commission has published a notice of proposed regulation to add the species to either list." Candidate species may be afforded temporary protection as though they were already listed as threatened or endangered at the discretion of the Fish and Game Commission. Unlike the federal ESA, CESA does not include listing provisions for invertebrate species.

Article 3, Sections 2080 through 2085, of the California Endangered Species Act addresses the taking of threatened or endangered species by stating "No person shall import into this state, export out of this state, or take, possess, purchase, or sell within this state, any species, or any part or product thereof, that the commission determines to be an endangered species or a threatened species, or attempt any of those acts, except as otherwise provided..." Under the California Endangered Species Act, "take" is defined as "... hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." Exceptions authorized by the state to allow "take" require "... permits or memorandums of understanding..." and can be authorized for "... endangered species, threatened species, or candidate species for Scientific, educational, or

management purposes." Sections 1901 and 1913 of the California Fish and Game Code provide that notification is required prior to disturbance.

Additionally, some sensitive mammals and birds are protected by the state as Fully Protected Mammals or Fully Protected Birds, as described in the California Fish and Game Code, Sections 4700 and 3511, respectively. California Species of Special Concern ("special" animals and plants) listings include special status species, including all state and federally protected and candidate taxa, Bureau of Land Management and U.S. Forest Service sensitive species, species considered to be declining or rare by the California Native Plant Society or National Audubon Society, and a selection of species which are considered to be under population stress but are not formally proposed for listing. This list is primarily a working document for the CDFG's CNDDB project. Informally listed taxa are not protected *per se*, but warrant consideration in the preparation of biotic assessments. For some species, the CNDDB is only concerned with specific portions of the life history, such as roosts, rookeries, or nest sites.

For purposes of this assessment the following acronyms are used for state status species:

- **SE** – State Endangered
- **ST** – State Threatened
- **SCE** – State Candidate Endangered
- **SCT** – State Candidate Threatened
- **SFP** – State Fully Protected
- **SP** – State Protected
- **CSC** – California Species of Special Concern

3.6.3 California Native Plant Society

The California Native Plant Society (CNPS) is a private plant conservation organization dedicated to the monitoring and protection of sensitive species in the state. CNPS has compiled an inventory comprised of the information focusing on geographic distribution and qualitative characterization of rare, threatened, or endangered vascular plant species of California (Skinner and Pavlik, 1994). The list serves as the candidate list for listing as threatened and endangered by CDFG. CNPS has developed five categories of rarity:

- **List 1A:** Presumed extinct in California.
- **List 1B:** Rare, threatened, or endangered throughout their range.

- **List 2:** Rare, threatened, or endangered in California, but more common in other states.
- **List 3:** Plant species for which additional information is needed before rarity can be determined.
- **List 4:** Species of limited distribution in California (i.e., naturally rare in the wild), but whose existence does not appear to be susceptible to threat.

Sensitive species that occur or potentially could occur on the project site are based on one or more of the following: (1) the direct observation of the species on the property during one of the biological surveys, (2) a record reported in the California Natural Diversity Data Base, and (3) the project site is within known distribution of a species and contains appropriate habitat.

3.6.4 Resource Agency Policies and Regulations

Federal authorization of incidental take of a listed species by a private individual or private entity is granted in one of the following ways:

- **ESA Section 7 Permit:** Applies to federal agencies undertaking an action (i.e., permit or license issuance or federal funding) that may affect an endangered species or a proposed species (or habitat).[1] Federal agencies are obligated to consult with the USFWS regarding proposed actions before issuing permits. Consultation between the "action agency" and USFWS may be formal or informal if it is determined that the agency action is not likely to adversely affect listed or proposed species or critical habitat. Private applicants may participate in the process, in accordance with USFWS regulations.

- **ESA Section 10(a) Permit:** Applies if project implementation is anticipated to result in incidental take (i.e., inadvertent and incidental to otherwise lawful activities) of federally-listed endangered and threatened species by non-federal entities. As issuance of an incidental take permit is a federal action subject to the National Environmental Policy Act (NEPA), a Habitat Conservation Plan (HCP) and accompanying NEPA documentation (Environmental Assessment and Environmental Impact Statement or Finding of No Significant Impact) must be prepared and submitted to USFWS for approval prior to permit issuance. In Riverside County, a countywide HCP and "blanket" 10(a) permit already exist for the incidental take of the Stephens' kangaroo

[1] *16 U.S.C. & 1536 (a)(2); 50 CFR & 402.14.*

rat (*Dipodomys stephensi*). Therefore, incidental take requires only habitat acreage-based fee payment to the Riverside County Habitat Conservation Authority, the permit-issuing authority.

- **ESA Special Rule, Section 4(d)**: USFWS may initiate a special rule to allow incidental take of a threatened species in conjunction with a state-initiated plan (i.e., NCCPs, MSHCPs). Although a Multi-Species Habitat Conservation Plan (MSHCP) exists for western Riverside County, focused on the Stephens' kangaroo rat, and thus a Section 10 (a)(1)(b) permit, the County is nonetheless subject to Section 10 of the ESA with regard to the California gnatcatcher.

- **CDFG Section 2081.5**: CDFG is authorized to issue a permit or Memorandum of Understanding or approve or enter into an NCCP, HCP, Habitat Management Plan (HMP) or amendment thereto if the conditions of Section 2081 are met. Such conditions include the following:

  - The take is incidental to an otherwise lawful activity.
  - The impacts of the take shall be minimized and fully mitigated. The measure required to meet this obligation shall be roughly proportional in extent to the impact of the authorized taking on the species.
  - The permit is consistent with any regulations adopted pursuant to Section 2112 and 2114.
  - The applicant shall ensure adequate funding to implement the measures required [for mitigation] and for monitoring compliance with, and effectiveness of, those measures.

3.7 SENSITIVE PLANT COMMUNITIES

The Martin Ranch property includes several habitat types considered sensitive by resource agencies, including CDFG (Holland, 1986), because of their scarcity and support of a number of state- and federal-listed endangered, threatened, and rare vascular plants, as well as several bird and reptile species that are federally-listed or otherwise considered sensitive. These include approximately 221.5 acres of Riversidean sage scrub (the majority of which has a history of disturbance), approximately 3 acres of California walnut woodland, approximately 1 acre of southern willow scrub, approximately 8 acres of southern willow scrub/California walnut woodland, approximately 15 acres of sycamore alluvial woodland, and approximately 17 acres of southern sycamore alder riparian woodland (Figure 3). These communities are considered highest-inventory priority communities by the CDFG, indicating that they are experiencing a

decline throughout their range. The distribution and floral composition of these communities is discussed in Section 3.2, Plant Communities/Habitats.

3.8 SENSITIVE PLANT SPECIES

Sensitive plants include those listed, or candidates for listing by, USFWS, CDFG, and CNPS (particularly list 1A, 1B, and 2). Several sensitive plant species were reported in the CNDDB from the vicinity. A discussion of each sensitive species potentially present on the project site is presented below. However, none of these sensitive plant species were observed on the Martin Ranch project site.

Endangered and Threatened Plant Species

NEVIN'S BARBERRY – *Berberis nevinii*

USFWS Status:	FE
CDFG Status:	SE
CNPS Status:	List 1B
Natural History:	Evergreen shrub, March-April
Habitat:	Chaparral, sage scrub, riparian scrub, cismontane woodland
Distribution:	Los Angeles, Riverside, San Bernardino, San Diego Counties
Comments:	Threatened due to non-native plant species, development and road maintenance

Nevin's barberry was not observed on the project site and was not likely to have been overlooked due to its large shrub-like growth form.

SLENDER HORNED SPINEFLOWER – *Dodecahema leptoceras*

USFWS Status:	FE
CDFG Status:	SE
CNPS Status:	List 1B
Natural History:	Annual herb, April-June
Habitat:	Alluvial terraces and washes
Distribution:	San Gabriel, San Bernardino County, San Jacinto Mountains; reported from Lake Elsinore and Hemet

Comments: Threatened by development, flood control, and recreation

The slender horned spineflower was not observed on the project site and is not expected due to the general absence of wash habitat.

SANTA ANA RIVER WOOLLY STAR – *Eriastrum densifolium sanctorum*

USFWS Status:	FE
CDFG Status:	SE
CNPS Status:	No status
Natural History:	Perennial herb, July-August
Habitat:	Chaparral, sage scrub (alluvial fan)
Distribution:	San Bernardino County
Comments:	Threatened by development, sand and gravel mining

The Santa Ana river woollystar was not observed on the project site. There is an extremely low likelihood of occurrence due to the fact that this species is known from only a few populations within the larger Cajon, Lytle Creek, and Santa Ana River washes.

MARSH SANDWORT – *Arenaria paludicola*

USFWS Status:	FE
CDFG Status:	SE
CNPS Status:	List 1B
Natural History:	Perennial herb, May-August
Habitat:	Freshwater marshes and swamps
Distribution:	L.A. and San Bernardino Counties
Comments:	Threatened due to loss of wetland habitat

The Marsh sandwort was not observed on the site. It is highly unlikely to occur due to the absence of appropriate habitat.

THREAD-LEAVED BRODIAEA – *Brodiaea filifolia*

USFWS Status:	FE
CDFG Status:	SE
CNPS Status:	List 1B
Natural History:	Bulbiferous perennial herb, March-June

Habitat: A variety of communities including sage scrub, valley and foothill grassland, yellow pine forest, rocky or sandy sites, granitic or alluvial soil to 4,800 feet
Distribution: Los Angeles, Riverside, Orange, San Diego and San Bernardino Counties
Comments: This species may hybridize with other *Brodiaea* species

The thread-leaved brodiaea was not observed on-site. There is a low likelihood of occurrence due to its extreme rarity throughout San Bernardino County.

Other Sensitive Plant Species

ORCUTT'S BRODIAEA – *Brodiaea orcutti*
USFWS Status: FSC
CDFG Status: None
CNPS Status: List 1B
Natural History: Bulbiferous perennial herb, May-July
Habitat: Chaparral, valley and foothill grassland, cismontane woodland
Distribution: Orange, Riverside, and San Diego Counties
Comments: Threatened by development, vehicles, road construction, and dumping

Orcutt's brodiaea was not observed on the site, but there is a moderate likelihood of occurrence due to the presence of suitable habitat.

PLUMMER'S MARIPOSA LILY – *Calochortus plummerae*
USFWS Status: FSC
CDFG Status: None
CNPS Status: List 1B
Natural History: Bulbiferous perennial herb, May-July.
Habitat: Variety of southern California plant communities, including sage scrub, valley and foothill grassland, yellow pine forest; dry, rocky or sandy sites, granitic or alluvial soil; to 4,800 feet.
Distribution: Ventura, Los Angeles, Riverside and San Bernardino Counties; reported from divide road between Oak Flat and Pleasants Peak, Santa Ana Mountains.

Comments: Threatened by development.

Plummer's mariposa lily was not observed on the site. There is a moderate likelihood of occurrence due to the presence of suitable habitat.

PARRY'S SPINEFLOWER – *Chorizanthe parryi*

USFWS Status: FSC
CDFG Status: None
CNPS Status: List 3
Natural History: Annual herb, April-June.
Habitat: Coastal or desert sage scrub, chaparral, dry slopes or flat ground, sandy soils.
Distribution: Riverside and San Bernardino Counties, possibly Los Angeles County.
Comments: Declining due to development and known from only 20 occurrences in Riverside County.

Parry's spineflower was not observed on the project site. There is a low likelihood of occurrence due to its rarity and the general absence of suitable habitat.

MANY-STEMMED DUDLEYA – *Dudleya multicaulis*

USFWS Status: FSC
CDFG Status: None
CNPS Status: List1B
Natural History: Succulent perennial herb, May-June.
Habitat: Sage scrub, valley and foothill grassland, heavy clay soils or rock outcrops.
Distribution: Orange and Los Angeles County south to San Onofre Mt. in San Diego County.
Comments: Declining due to development.

Many-stemmed dudleya was not observed at Martin Ranch. There is a low likelihood of occurrence because the project site lies at the edge of its geographic range.

SAN BERNARDINO MOUNTAIN OWL'S CLOVER – *Castilleja lasiorhyncha*

USFWS Status: FSC
CDFG Status: None
CNPS Status: List 1B
Natural History: Annual herb (hemiparasitic), June-August.

Habitat: Chaparral, meadows.
Distribution: Riverside, San Bernardino, and San Diego Counties.
Comments: Threatened by vehicles and recreation.

The San Bernardino mountain owl's clover was not observed on the project site. There is a moderate likelihood of occurrence due the presence of suitable habitat.

HOT SPRINGS FIMBRISTYLIS – *Fimbristylis thermalis*

USFWS Status: None
CDFG Status: None
CNPS Status: List 2
Natural History: Perennial herb, July-September.
Habitat: Meadows (alkaline, near hot springs).
Distribution: San Bernardino, Kern, Inyo Counties.
Comments: Species is rare due to the rarity of its preferred habitat.

Hot springs fimbristylis was not observed on site. It is highly unlikely to occur due to the absence of suitable habitat.

SMOOTH TARPLANT – *Hemizonia pungens laevis*

USFWS Status: FSC
CDFG Status: None
CNPS Status: List 1B
Natural History: Annual herb, April-September.
Habitat: Chaparral, meadows, playas, valley and foothill grassland.
Distribution: Los Angeles, Orange, and Riverside Counties.
Comments: Threatened by development.

The smooth tarplant was not observed on the project site. There is a moderate likelihood of occurrence due to the presence suitable habitat.

PARISH'S GOOSEBERRY – *Ribes divaricatum parishii*

USFWS Status: FSC
CDFG Status: None
CNPS Status: List 1B
Natural History: Shrub, February-April.
Habitat: Riparian woodland.

Distribution: Los Angeles and San Bernardino Counties.
Comments: Threatened by development, possibly extinct.

Parish's gooseberry was not observed on the project site. There is a low likelihood of occurrence on-site due to this species' extreme rarity.

3.9 SENSITIVE WILDLIFE SPECIES

Sensitive wildlife includes those species listed as endangered or threatened under FESA or CESA, candidates for listing by USFWS or CDFG, and species of special concern to USFWS or CDFG. A number of sensitive wildlife species from the region were reported in the CNDDB. Focused surveys were conducted in the spring of 1998 to determine the presence or absence of sensitive wildlife species. The intent of these surveys was to locate individuals of sensitive species, evaluate habitat for their suitability to support sensitive species, and ascertain which sensitive species are likely to be present on the property. Discussion of each sensitive wildlife species observed or potentially present on the project site is based on expected habitat use, geographic ranges, and information collected during current and past surveys in the vicinity. While others may occur within the region, the discussion includes only those which have a reasonable probability of occurring on-site.

Endangered and Threatened Wildlife Species

ARROYO SOUTHWESTERN TOAD – *Bufo microscaphus californicus*

USFWS Status: FE
CDFG Status: CSC
Natural History: This stocky toad is primarily nocturnal and feeds on a variety of insects.
Habitat: Washes/streams, sandy banks, grown to willows, cottonwoods or sycamores; riparian habitats of semiarid areas, small cobbly streambeds.
Distribution: Southern part of the Coast Range from northern San Luis Obispo County south to Baja California.
Comments: Declining due to habitat loss and the introduction of exotics, such as the bullfrog (*Rana catesbeiana*); petitioned for federal listing as endangered in August, 1991.

This species was not observed on the site and is highly unlikely to occur due to the lack of suitable habitat.

CALIFORNIA RED LEGGED FROG – *Rana aurora draytonii*

USFWS Status:	FT
CDFG Status:	CSC, SP
Natural History:	The largest native frog in California.
Habitat:	Humid forests, woodlands, grasslands and streamsides, especially where cattails and other plants provide good cover.
Distribution:	West of the Sierra-Cascade crest along the coast ranges.
Comments:	Threatened by a loss of riparian habitat.

Red-legged frogs were not observed on site. There is a low likelihood of occurrence due to a lack of suitable habitat.

SOUTHERN RUBBER BOA– *Charina bottae umbratica*

USFWS Status:	FSC
CDFG Status:	ST, SP
Natural History:	The tail of this species is shaped similar to its head. When feeding on young mice it will often fend off attacks by the adult mice by striking with its tail.
Habitat:	Montane forest habitats, usually in the vicinity of streams or wet meadows.
Distribution:	San Bernardino and San Jacinto Mountains.
Comments:	Threatened by development and increased recreational use in forest habitats where it occurs.

The rubber boa was not observed on-site. There is a low likelihood of occurrence because the site lies below the elevation range of this species.

SOUTHWESTERN WILLOW FLYCATCHER – *Empidonax traillii extimus*

USFWS Status:	FE
CDFG Status:	None
Natural History:	Over-winters in Central and South America.
Habitat:	Low elevation sites: riparian woodlands that contain water and low growing willow thickets; high elevation sites: large, flat, wet meadows that contain patches of willow trees.
Distribution:	Summer resident 2000-8000 ft range in the Sierra Nevada and Cascade Range. Common spring migrant in riparian areas at lower elevations.

Comments: Threatened in Southern California because of the loss of willow riparian habitat.

This species does not occur on the Martin Ranch property as determined by focused surveys.

COASTAL CALIFORNIA GNATCATCHER – *Polioptila californica californica*

USFWS Status: FT
CDFG Status: CSC
Natural History: Gleans insects from shrubs and also eats seeds.
Habitat: Coastal sage scrub vegetation below 2,500 feet elevation in Riverside County and generally below 1,000 feet elevation along the coastal slope; generally avoids steep slopes and dense vegetation for nesting.
Distribution: Eastern and southern Orange County, southwestern Riverside county, south through the coastal foothills of San Diego County.
Comments: Threatened due to loss of coastal sage scrub habitat.

This species does not occur on the Martin Ranch property as determined by focused surveys.

SAN BERNARDINO KANGAROO RAT – *Dipodomys merriami parvus*

USFWS Status: FE
CDFG Status: CSC
Natural History: Constructs burrow system with 2 to 5 entrances.
Habitat: Alluvial fan scrub.
Distribution: San Bernardino and Riverside Counties.
Comments: Threatened by loss of habitat caused by development.

The San Bernardino kangaroo rat does not occur on-site as determined by focused surveys.

LEAST BELL'S VIREO – *Vireo bellii pusillus*

USFWS Status: FE
CDFG Status: CSC
Natural History: Builds an open-cup nest from pieces of bark, grass, and horse hair.
Habitat: Low, dense riparian growth along water course or along dry parts of intermittent streams. Associated with willow, cottonwood, and mule fat.

Distribution: A patchily distributed summer resident across southern California.
Comments: Threatened by loss of habitat caused by development.

This species does not occur on-site as determined by focused surveys.

Other Sensitive Species

WESTERN SPADEFOOT TOAD – *Scaphiopus hammondii*
USFWS Status: FSC
CDFG Status: CSC, SP
Natural History: Breeds in ephemeral pools after winter and/or spring rains.
Habitat: Prefers relatively open areas in lowland grasslands, chaparral, and pine-oak woodlands.
Distribution: Coast ranges from Point Conception south to the Mexican border.
Comments: Threatened by loss of vernal pool habitat.

The western spadefoot toad was not observed on-site. There is a moderate likelihood for its occurrence due to the presence of suitable habitat.

MOUNTAIN YELLOW-LEGGED FROG – *Rana muscosa*
USFWS Status: FSC
CDFG Status: CSC, SP
Natural History: Eggs are laid in shallow water attached to gravel or rocks. Reproduction does not take place until lakes and streams are free of ice.
Habitat: Sunny riverbanks, meadows, streams, isolated pools, lake borders.
Distribution: Elevations above 5,940 feet in the Sierra Nevada from Plumas County to southern Tulare County. Isolated populations exist in the San Gabriel and San Bernardino Mountains.
Comments: Declining due to loss of habitat.

This species was not observed on-site and there is a very low likelihood of occurrence due to the lack of suitable habitat.

SOUTHWESTERN POND TURTLE – *Clemmys marmorata pallida*
USFWS Status: FSC
CDFG Status: CSC, SP
Natural History: The only abundant aquatic turtle native to California.

Habitat:	Ponds, marshes, rivers, streams, irrigation ditches.
Distribution:	California and west of the Sierra-Cascade crest.
Comments:	While still quite abundant in California, many populations have been lost due to destruction of suitable habitat.

The southwestern pond turtle was not observed on site, nor is it likely to occur due to the lack of suitable habitat.

ORANGE-THROATED WHIPTAIL– *Cnemidophorus hyperythrus beldingi*

USFWS Status:	FSC
CDFG Status:	CSC
Natural History:	Eats small arthropods especially termites.
Habitat:	Coastal scrub, chamise and mixed chaparral, valley-foothill hardwood habitats.
Distribution:	Orange, Western Riverside, and Western San Diego Counties.
Comments:	Threatened by loss of habitat.

The orange-throated whiptail was not observed on-site. There is a very low likelihood of occurrence on-site because the site lies outside the species' known geographic range.

SAN DIEGO HORNED LIZARD – *Phrynosoma coronatum blainvillei*

USFWS Status:	FSC
NCCP Status:	CSC, SP
Natural History:	Diet consists exclusively of ants.
Habitat:	Coastal sage scrub, chaparral, grassland, broad-leaf woodlands. Prefers rocky or shallow, sandy soils, sandy washes and open sandy areas.
Distribution:	Orange, western Riverside and western San Diego counties.
Comments:	Declining in number in southern California due to development on suitable habitat.

The San Diego horned lizard was observed on site. Figure 3 (page 19) depicts the areas where this species was observed.

TWO-STRIPED GARTER SNAKE – *Thamnophis hammondii*

USFWS Status:	FSC
CDFG Status:	CSC, SP
Natural History:	Generally aquatic, these snakes feed in and along streams where they take a variety of fish, amphibians and amphibian larva.
Habitat:	Riparian and freshwater marshes with perennial water.
Distribution:	Ventura County to the Mexican border west of the peninsular and transverse ranges.
Comments:	Numbers declining due to loss of riparian areas.

The two-striped garter snake was not observed on the Martin Ranch property, but there is a high likelihood of occurrence due to the presence of suitable habitat and the site's proximity to known snake populations in the San Gabriel and San Bernardino Mountains.

SAN BERNARDINO RING-NECK SNAKE – *Diadophis punctatus modestus*

USFWS Status:	FSC
CDFG Status:	None
Natural History:	Most common in open relatively rocky areas.
Habitat:	Open, relatively rocky areas within valley-foothill, mixed chaparral, and annual grass habitats.
Distribution:	San Bernardino, Riverside and Orange counties.
Comments:	Threatened by development.

This secretive snake was not observed on-site, but there is a high likelihood of occurrence due to the presence of suitable habitat.

NORTHERN HARRIER – *Circus cyaneus*

USFWS Status:	None
CDFG Status:	CSC
Natural History:	Nests on the ground in shrubby vegetation.
Habitat:	Coastal salt marshes, freshwater marshes, grasslands, and agricultural fields; occasionally forages over open desert and brushlands.
Distribution:	Alaska, Canada, south U.S.
Comments:	Threatened by agriculture which destroys suitable habitat.

No harriers were observed on-site, however there is a high likelihood of occurrence due to the presence of suitable habitat.

GOLDEN EAGLE – *Aquila chrysaetos*

USFWS Status:	None
CDFG Status:	CSC, SFP
Natural History:	Nests on cliffs and in trees in open areas.
Habitat:	Mountains, deserts, and open country
Distribution:	Throughout California with the exception of the center of the central valley.
Comments:	Threatened due to its uncommon nature.

This species was not observed at Martin Ranch, but is likely to forage on the site. Suitable nesting sites exist in the nearby San Gabriel and San Bernardino Mountains.

MERLIN – *Falco columbarius*

USFWS Status:	None
CDFG Status:	CSC
Natural History:	Feeds primarily on other birds.
Habitat:	Coastlines, wetlands, woodlands, agricultural fields, and grasslands.
Distribution:	Western half of the state below 3,900 feet.
Comments:	Threatened by pesticide use.

No merlins were observed on the site. There is a low likelihood of occurrence due to their uncommon occurrence.

SHARP-SHINNED HAWK – *Accipiter striatus*

USFWS Status:	None
CDFG Status:	CSC
Natural History:	This species feeds on a variety of small animals, including birds, mammals, insects, reptiles and amphibians.
Habitat:	Woodlands; forages over chaparral and other scrublands.
Distribution:	Entire state, although only winters in most of southern California.
Comments:	Threatened by development.

Sharp-shinned hawks were observed on the Martin Ranch property.

COOPER'S HAWK – *Accipiter cooperii*

USFWS Status:	None
CDFG Status:	CSC
Natural History:	An important predator on small birds.
Habitat:	Open Woodlands.
Distribution:	Entire state.
Comments:	Numbers declining for unknown reasons.

Cooper's hawk was not observed on-site. There is a high likelihood of occurrence due to the presence of suitable habitat and their relative abundance within the region.

PRAIRIE FALCON – *Falco maxicanus*

USFWS Status:	None
CDFG Status:	CSC
Natural History:	Catches prey either in air or on the ground.
Habitat:	Grasslands, savannahs, rangeland, agricultural fields, and desert scrub; often uses sheltered cliff ledges for cover.
Distribution:	Southeastern deserts northwest along the inner Coast Ranges and Sierra Nevada.
Comments:	Uncommon in California.

This species was not observed on-site. There is a low likelihood of occurrence due to its uncommon occurrence.

WHITE-TAILED KITE – *Elanus leucurus*

USFWS Status:	None
CDFG Status:	SFP
Natural History:	Makes a nest of sticks and twigs that is lined with grass and straw.
Habitat:	Grasslands with scattered trees, near marshes, along highways.
Distribution:	Length of state; breeding in lowlands from Sacramento to San Diego counties.
Comments:	Numbers and range have increased in recent years.

This species was not observed on-site. There is a high likelihood of occurrence due to the presence of suitable habitat.

BURROWING OWL – *Athene cunicularia*

USFWS Status:	FSC
CDFG Status:	CSC
Natural History:	Uses rodent or other burrows for roosting and nesting.
Habitat:	Dry grasslands, desert habitats, and open pinyon-juniper and ponderosa pine woodlands.
Distribution:	Found throughout state below 5,300 feet.
Comments:	In decline due to conversion of grassland habitats to agriculture.

Burrowing owls were not observed and there is a low likelihood of occurrence due to the lack of suitable grassland habitat.

CALIFORNIA HORNED LARK – *Eremophila alpestris actia*

USFWS Status:	None
CDFG Status:	CSC
Natural History:	Year-round resident in the state. After breeding the lark becomes very gregarious, forming large flocks.
Habitat:	Grasslands and other open habitats with low, sparse vegetation.
Distribution:	Length of state.
Comments:	Threatened by loss of grassland habitat.

The horned-lark was not observed on-site and there is a low likelihood of occurrence due to the lack of suitable grassland habitat.

LOGGERHEAD SHRIKE – *Lanius ludovicianus*

USFWS Status:	FSC
CDFG Status:	CSC
Natural History:	Often will cache food by impaling a prey item on thorns, sharp twigs, and barb wire, or forcing it into a crotch of a tree.
Habitat:	Open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches.
Distribution:	Lowlands and foothills throughout California.
Comments:	Populations have been in decline in recent years possibly from pesticides and nest predation.

Shrikes were not observed on-site, but there is a high likelihood of occurrence due to the presence of suitable habitat.

SOUTHERN CALIFORNIA RUFOUS-CROWNED SPARROW – *Aimophila ruficeps canescens*

USFWS Status:	FSC
CDFG Status:	CSC
Natural History:	A monogamous species, the rufous-crowned sparrow breeds from mid-March to mid-June with a peak in May.
Habitat:	Generally, steep, rocky areas within coastal sage scrub and chaparral, often with scattered bunches of grass; prefers relatively recently burned areas.
Distribution:	Cis-montane southern California.
Comments:	Subject to nest parasitism by the brown-headed cowbird.

Rufous-crowned sparrows were observed at Martin Ranch. (Figure 3 illustrates the location.)

BELL'S SAGE SPARROW – *Amphispiza belli belli*

USFWS Status:	FSC
CDFG Status:	CSC
Natural History:	Many populations east of the Cascade Range and Sierra Nevada over winter in the southeastern deserts.
Habitat:	Dense, dry chamise chaparral and coastal slopes of coastal sage scrub.
Distribution:	Cis-montane California
Comments:	Threatened by development.

Bell's sage sparrows were observed at Martin Ranch. (Figure 3 illustrates the locations of the sightings.)

YELLOW WARBLER – *Dendroica petechia*

USFWS Status:	None
CDFG Status:	CSC
Natural History:	Breeds from mid-April to early August.
Habitat:	Riparian woodlands, montane chaparral, open ponderosa pine and mixed conifer habitats.
Distribution:	Summer resident throughout California except the Central Valley and Mojave desert.

Comments: Brood parasitism by brown-headed cowbirds is contributing to this species' decline.

This species was not observed. There is a high likelihood of occurrence on-site in riparian areas on-site.

YELLOW-BREASTED CHAT – *Icteria virens*

USFWS Status: None
CDFG Status: CSC
Natural History: Monogamous pairs breed from early May to early August.
Habitat: Riparian woodlands with a thick understory.
Distribution: Uncommon summer resident in coastal California and in the Sierra Nevada foothills.
Comments: Loss and degradation of riparian habitat and brood parasitism by brown-headed cowbirds are contributing to this species' decline.

This species was not observed on-site. There is a high likelihood of occurrence in riparian habitat on-site.

TRICOLORED BLACKBIRD – *Agelaius tricolor*

USFWS Status: FSC
CDFG Status: CSC
Natural History: Breeds in large colonies from mid-April to late June.
Habitat: Freshwater marshes and riparian scrub.
Distribution: Central Valley and in coastal areas from Sonoma County south.
Comments: Threatened by loss of wetland habitat.

The tricolored blackbird was not observed at Martin Ranch. There is a low likelihood of occurrence due to the lack of wetland vegetation needed for breeding.

RING-TAILED CAT – *Bassariscus astutus*

USFWS Status: None
CDFG Status: Fully Protected
Natural History: Primarily carnivorous, the ringtail consumes rodents and rabbits, but also takes birds, reptiles, fruits, nuts, and carrion.
Habitat: Rocky habitats, chaparral.

Distribution: Statewide except the Central Valley and northeast.
Comments: Threatened in some areas by development.

Not observed at Martin Ranch, but highly likely to occur because suitable habitat is present.

NORTHWESTERN SAN DIEGO POCKET MOUSE – *Chaetodipus fallax fallax*

USFWS Status: FSC
CDFG Status: CSC
Natural History: Obtains water metabolically from food.
Habitat: Sagebrush, scrub, annual grassland, chaparral and desert scrubs.
Distribution: Occurs mainly in arid coastal areas and desert border areas in San Diego, Riverside, Orange, and San Bernardino Counties.
Comments: Threatened by loss of habitat within an already restricted geographic range.

The San Diego pocket mouse was observed on-site in several locations during the focused mammal trapping program as shown in Figure 3, Plant Communities and Sensitive Species.

LOS ANGELES POCKET MOUSE – *Perognathus longimembris brevinasus*

USFWS Status: FSC
CDFG Status: CSC
Natural History: Breeding season for the pocket mouse is closely tied to temperatures, food supply and the timing of spring plant growth.
Habitat: Coastal sage scrub, and grasslands, desert cactus, creosote bush and sagebrush habitats.
Distribution: Los Angeles Basin.
Comments: Threatened by loss of habitat.

The Los Angeles pocket mouse was observed on-site in several locations during the focused mammal trapping program, as shown in Figure 3, Plant Communities and Sensitive Species Locations, on page 19.

WHITE-EARED POCKET MOUSE – *Perognathus alticola alticola*

USFWS Status: FSC
CDFG Status: CSC
Natural History: This species is extremely rare; last individuals known from the San Bernardino Mountains were captured in 1938; species may be extinct there.

Habitat: Mixed chaparral and sagebrush habitats.
Distribution: Tehachapi Mountains and San Bernardino Mountains.
Comments: Threatened by loss of habitat.

The white-eared pocket mouse was not observed and is not expected to occur due to results of the focused mammal trapping program and its rarity.

SOUTHERN GRASSHOPPER MOUSE – *Onychomys torridus ramona*

USFWS Status: FSC
CDFG Status: CSC
Natural History: Carnivorous, feeds almost exclusively on arthropods, but may also take salamanders, frogs, lizards, and small mammals.
Habitat: Grasslands.
Distribution: Southern California except coastal areas from Orange to Monterey Counties.
Comments: Threatened by development.

The southern grasshopper mouse was not observed and is not expected to occur due to results of the focused mammal trapping program and limited suitable habitat.

SAN DIEGO DESERT WOODRAT – *Neotoma lepida intermedia*

USFWS Status: FSC
CDFG Status: CSC
Natural History: Will defend succulent vegetation, which are water sources, against other species.
Habitat: Chaparral and sage scrub.
Distribution: Southern California.
Comments: Threatened by development.

The San Diego desert woodrat was observed on-site in several locations during the focused mammal trapping program.

POCKETED FREE-TAILED BAT – *Nyctinomops femorosaccus*

USFWS Status:	None
CDFG Status:	CSC
Natural History:	Detects food using echolocation.
Habitat:	Pinyon-juniper woodlands, desert riparian, desert wash, desert scrub, desert succulent shrub, alkali desert scrub, Joshua tree, and palm oasis; roosts in rock crevices in cliffs, caverns and buildings.
Distribution:	Riverside, San Diego, and Imperial Counties.
Comments:	Rare in U.S., but more abundant in Mexico.

No pocketed free-tailed bats were observed and there is a very low likelihood for their occurrence due to the rarity of the species and the site lies outside its primary geographical range.

WESTERN MASTIFF BAT – *Eumops perotis*

USFWS Status:	FSC
CDFG Status:	CSC
Natural History:	Largest native bat in the U.S.
Habitat:	Primarily arid lowlands, especially deserts.
Distribution:	Southeastern San Joaquin Valley and coastal ranges from Monterey County south.
Comments:	Uncommon in California.

No western mastiff bats were observed on-site and the likelihood of occurrence is low due to its rarity.

4. PROJECT RELATED IMPACTS

4.1 APPROACH

The following discussion examines the potential impacts to plant and wildlife resources that may occur as a result of implementation of the proposed project, as shown in Figure 4, Conceptual Land Use Plan. The determination of impacts in this analysis is based upon a preliminary project description provided by John L. Chapman Land Planning (January, 1999) and conceptual land use map, illustrating the proposed development, which was overlaid on maps of plant communities, sensitive species, and habitat distributions at a scale of 1"=200'. Whereas this assessment is comprehensive, the focus is on listed or otherwise sensitive species and sensitive plant communities/habitats.

4.1.1 Project Description

Montecito Equities Limited is planning to develop the 352.8 acre Martin Ranch property near the town of Devore in San Bernardino County into a master-planned, residential, mixed-use community as shown in Figure 4, Conceptual Land Use Plan. The project anticipates development of a maximum of 359 dwelling units, mini-parks, project roads, and three water tanks. Total developed area (graded) will be 202.65 acres and the remaining 150.15 acres will stay as natural open space.

4.2 THRESHOLDS OF SIGNIFICANCE

The environmental impacts relative to biological resources are assessed using impact significance criteria which mirror the policy statement contained in CEQA at Section 21001© of the Public Resources Code to:

> *"Prevent the elimination of fish or wildlife species due to man's activities, ensure that fish and wildlife populations do not drop below self-perpetuating levels, and preserve for future generations representations of all plant and animal communities..."*

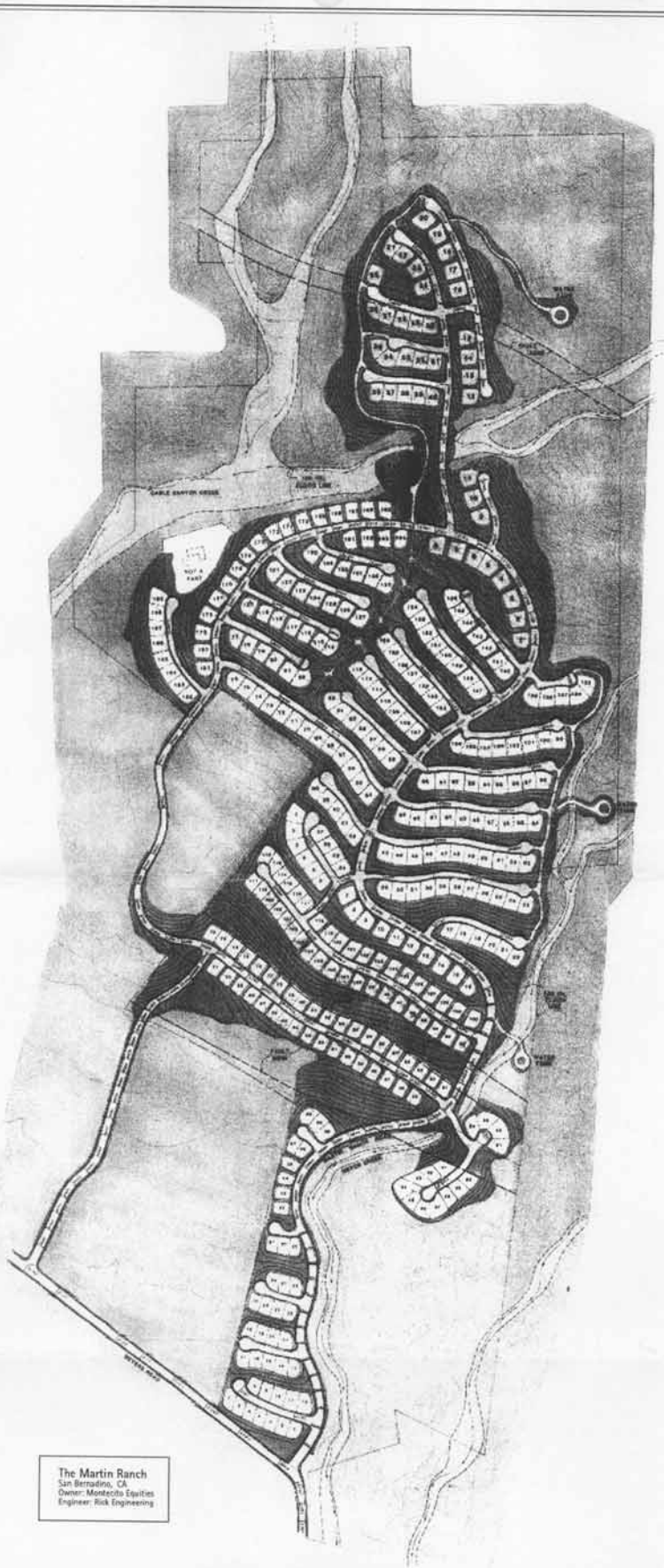
The following definitions apply to the significance criteria for biological resources:

- *"Endangered"* means that the species is listed as endangered under state or federal law.
- *"Threatened"* means that the species is listed as threatened under state or federal law.
- *"Rare"* means that the species exists in such small numbers throughout all or a significant portion of its range that it may become endangered if its environment worsens.
- *"Region"* refers to the area within the southwestern San Bernardino, western Riverside, Los Angeles, Orange, and San Diego counties that is within the range of an individual species.
- *"Sensitive habitat"* refers to habitat for plants and animals (1) which plays a special role in perpetuating species utilizing the habitat on the project site, and (2) without which there would be substantial danger that the population of that species would drop below self-perpetuating levels.
- *"Substantial effect"* means significant loss or harm of a magnitude which, based on current scientific data and knowledge, (1) would cause a species or a native plant or animal community to drop below self-perpetuating levels on a statewide or regional basis or (2) would cause a species to become threatened or endangered.

Impacts to biological resources are considered significant if one or more of the following conditions would result from implementation of the proposed project:

- Direct loss of individuals of a state- or federal-listed threatened or endangered species.
- Substantial effect on a species or native plant or animal community.
- Substantial effect on a sensitive habitat.
- Substantial effect on a critical, yet limited, resource utilized by state or federal listed threatened or endangered species.
- Substantial effect on the movement of any resident or migratory fish or wildlife species.

Also, the determination of impacts has been made according to the federal definition of "take." The federal Endangered Species Act (FESA) prohibits the "taking" of a member of an



SOURCES: Rick Engineering 1999, and PCR,1999.

PCR

FIGURE 4
Martin Ranch
Conceptual Land Use Plan

The following definitions apply to the significance criteria for biological resources:

- *"Endangered"* means that the species is listed as endangered under state or federal law.
- *"Threatened"* means that the species is listed as threatened under state or federal law.
- *"Rare"* means that the species exists in such small numbers throughout all or a significant portion of its range that it may become endangered if its environment worsens.
- *"Region"* refers to the area within the southwestern San Bernardino, western Riverside, Los Angeles, Orange, and San Diego counties that is within the range of an individual species.
- *"Sensitive habitat"* refers to habitat for plants and animals (1) which plays a special role in perpetuating species utilizing the habitat on the project site, and (2) without which there would be substantial danger that the population of that species would drop below self-perpetuating levels.
- *"Substantial effect"* means significant loss or harm of a magnitude which, based on current scientific data and knowledge, (1) would cause a species or a native plant or animal community to drop below self-perpetuating levels on a statewide or regional basis or (2) would cause a species to become threatened or endangered.

Impacts to biological resources are considered significant if one or more of the following conditions would result from implementation of the proposed project:

- Direct loss of individuals of a state- or federal-listed threatened or endangered species.
- Substantial effect on a species or native plant or animal community.
- Substantial effect on a sensitive habitat.
- Substantial effect on a critical, yet limited, resource utilized by state or federal listed threatened or endangered species.
- Substantial effect on the movement of any resident or migratory fish or wildlife species.

Also, the determination of impacts has been made according to the federal definition of "take." The federal Endangered Species Act (FESA) prohibits the "taking" of a member of an

endangered or threatened wildlife species or removing, damaging, or destroying a listed plant species by any person (including private individuals and private or governmental and entities). The FESA defines "take" as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect" an endangered or threatened species, or to attempt to engage in these activities.[2] "Harm" includes such actions as significant habitat modification or degradation which would result in death or injury to a species by significantly disrupting essential behavior patterns.

4.3 PROJECT DESIGN FEATURES

The project, as currently proposed, includes a number of design features which were developed to address anticipated potentially significant adverse biological impacts. These project design features, listed below, will result in a reduction of anticipated significant adverse biological impacts.

4.3.1 Avoidance Features

As proposed, Cable Creek Canyon is to remain as dedicated open space. This feature has the affirmative aspects of avoiding impacts to approximately 17.0 acres of southern sycamore alder riparian woodland, a CDFG highest inventory priority community. This feature will afford the potential for continued wildlife movement through the project site to adjacent open space Similarly, the project includes the dedication of approximately 10.6 acres of Riversidean sage scrub, 53.67 acres of Riversidean sage scrub, 1.22 acres of Riversidean sage scrub/eucalyptus trees, 1.82 acres of southern willow scrub/California walnut woodland, and 13.0 acres of sycamore alluvial woodland. These features will serve to avoid impacts to sensitive resources on approximately 150.15 acres of the project site. The undeveloped open space will also provide a refuge for local plants and wildlife reducing the impacts of development. Although some minor encroachments into the drip-lines of individual trees by access roads are unavoidable, the project design appears to be sensitive to loss of habitat concerns.

4.3.2 Revegetation Features

All new slope areas along the exterior of the development envelope are proposed for revegetation. This will be accomplished through the establishment of a "native/natural zone" in such areas. This zone will be characterized by native species indigenous to the surrounding area.

[2] *50 C.F.R. §17.3.*

It will serve as a mitigation area to reestablish removed trees at a ratio of 2:1, and, as a means to offset impacts to Riversidean sage scrub. Irrigation will be provided by a drip system and is intended to be temporary in nature depending on specific soils, topography and slope exposure of the planting. As formulated by I.D.L.A., landscape architects, the following species will be used.

- Tree species – southern California black walnut, California sycamore, coast live oak, red willow, and arroyo willow.
- Shrub species – toyon, Mexican blue elderberry and flannelbush.
- Understory shrub and groundcover species – non-irrigated hydroseed mix including California sagebrush, California buckwheat, deerweed, white sage, brittlebush and black sage.

Trees will be grouped in natural settings, as will shrub species.

In addition, a fuel modification zone will be established which will emphasize the use of native Riversidean sage scrub plant species. In total, a minimum of 82 acres of the project site will be revegetated using a predominance of native shrub species.

4.3.3 Tree Transplanting Management Program

As part of the project's implementation, transplanting and management programs are proposed for all native trees lost during construction. Using Integrated Urban Forestry (1998) as a guide with input from other knowledgeable sources and experts, species specific programs will be developed for the location of suitable habitats, transplanting techniques, and monitoring efforts. Details of this plan are outlined in the Arborist Report for Martin Ranch (Integrated Urban Forestry, 1998), attached as Appendix B.

4.4 STANDARD CONDITIONS

As part of the proposed project's review and approval, there are a number of performance criteria and standard conditions that must be met. Among these are those that relate to federal and state regulatory agencies for impacts to wetlands, riparian habitats, and stream courses.

4.4.1 State of California Fish and Game Code, Section 1600

This provision of state Fish and Game Code requires that a project proponent notify CDFG of any proposed alterations to streambeds. Its intent is to protect streambed habitats important to fish and wildlife. In the course of this notification process, CDFG will review the proposed project as it affects streambed habitats on site. The CDFG may then place conditions on the Section 1600 clearance to address the potentially significant adverse impacts within Department jurisdictional limits.

4.4.2 United States Clean Water Action, Section 404

In similar fashion, this federal provision, as administrated by the U.S. Army Corps of Engineers (Corps) and USFWS, requires a permit for any filling or dredging within "water" of the United States. Several drainages on site may fall within this category. Here again, the permit review process entails an assessment of potential adverse impacts to wetlands and streambed habitats. In response to the permit application, the Corps and USFWS will also require conditions amounting to mitigation measures. Where a federally listed species is concerned, they will also require Section 7 consultation under the National Endangered Species Act. Through this process, potentially significant adverse impacts within federal jurisdictional limits will be mitigated to a level less than significant.

4.5 POTENTIAL IMPACTS DETERMINED TO BE INSIGNIFICANT

Those impacts determined to be less than significant include impacts to biological resources that are relatively common or exist in a degraded or disturbed state, rendering them less valuable as habitat, or impacts which do not meet or exceed the significance thresholds. Also, conclusions are based on conditions of species ecology and the resource's regional distribution and status. Potential impacts found to be insignificant are summarized below.

4.5.1 Insignificant Impacts to Plant Communities/Habitats

As shown in Table 4-1, project implementation would result in the direct removal of the following vegetation: ceanothus crassifolius chaparral (2.98 acres), northern mixed chaparral (12.40 acres), and non-native grassland (7.15 acres). The proposed project would also remove eucalyptus trees (4.28 acres), disturbed land (1.65 acres), and ornamental areas (8.0 acres). None

Table 4-1

MARTIN RANCH
IMPACTS TO ON-SITE PLANT COMMUNITIES

Plant Community	Existing Acres	Impacted Acres
Scrub Communities		
Riversidean Sage Scrub	221.50	156.01
Chaparral Communities		
Northern Mixed Chaparral	47.00	12.40
Chamise Chaparral	7.00	0.00
Ceonothus Crassifolius Chaparral	10.00	2.98
Grassland Communities		
Non-native Grassland	8.15	7.15
Riparian Communities		
Southern Willow Scrub	1.00	1.00
Southern Willow Scrub/California Walnut Woodland	8.00	6.18
Southern Sycamore-Alder Riparian Woodland	19.00	0.00
Woodland Communities		
Canyon Live Oak Woodland	0.50	0.00
Sycamore Alluvial Woodland	15.00	2.00
California Walnut Woodland	1.00	1.00
Disturbed or Developed Areas		
Disturbed (grazed, rural residential, roadways)	1.65	1.65
Ornamental	8.00	8.00
Eucalyptus Trees	5.00	4.28
Total	**352.80**	**202.65**

Source: PCR Services Corporation, 1999

of these represent sensitive plant communities, and their removal does not constitute a significant impact to plant communities in and of themselves.

As part of the removal of the above vegetation types, a number of native trees scattered over the property will be removed. Whereas the loss of native trees will be adverse, this is not considered to be adverse due to the revegetation and tree transplanting programs incorporated as project design features. As proposed, these trees will be replaced at a ration of 2:1 both within existing woodlands to remain in open space and on exterior manufactured slopes.

Project implementation would also result in the removal of 1.0 acre of California walnut woodland, 1.0 acre southern willow scrub, and 2.0 acres of sycamore alluvial woodland communities. The representative acreage of each community on the site is small and would not result in a regionally significant impact to these otherwise sensitive communities. In addition, the proposed project design features outlined above call for the replacement of the lost trees through 2:1 replanting.

Of the approximately 221.5 acres of Riversidean sage scrub existing onsite, impacts include the removal of 156.01 acres. If not addressed, this would be considered a significant adverse impact because it is a substantial effect on a sensitive habitat, the community is not widespread, under most circumstances it represents valuable wildlife habitat, and it is a CDFG highest inventory priority community. However, in the case of the project site the vast majority of this community is successional following years of dryland farming until 1989. Today, it exists as dominated by California buckwheat and deerweed which are disturbance followers; and, it does not support listed threatened or endangered species.

As project design features the project incorporates the retention of approximately 159 acres of natural open space, some of which will be enhanced. In addition, a minimum of 82 acres of manufactured slopes will be revegetated with native plant species. Therefore, the net loss of Riversidean sage scrub will be 74.01 acres. This habitat is mostly disturbed, supports no listed species, and the compensatory dedication of 159 acres of natural open space and revegetation of 82 acres will reduce the level of impact to below significant.

4.5.2 Insignificant Impacts to Common Plant Species

Project implementation would result in the direct removal of numerous common plant species on the project site. Common plant species present on-site occur in large numbers throughout the region and are therefore not expected to be significantly impacted. In addition,

common plant species existing within disturbed areas on-site are typically disturbance-tolerant, and would be expected to be found off-site on suitable habitat in remaining open space throughout the region as well.

4.5.3 Insignificant Impacts to Common Wildlife Species

Project implementation would result in the direct removal of existing wildlife habitat and mortality of numerous common wildlife species existing on the proposed project site. Additionally, indirect project-related impacts would include increased human activity, increased ambient noise, higher unnatural nighttime light levels, and increased threat of road kill by traffic. Common wildlife species using habitats on-site would avoid habitats affected by these "spillover" impacts, thereby decreasing species diversity beyond the actual development envelope. Elimination or disruption of habitat for these species would not represent a regionally significant impact, and no significant impacts on common wildlife resources would result from project implementation. Impacts to wildlife movement corridors are discussed below.

4.5.4 Insignificant Impacts to Sensitive Plant Species

Pursuant to the thresholds of significance used in this analysis, the following impacts to sensitive plant species were deemed insignificant owing to a number of factors, including low likelihood of occurrence on-site, marginal and/or lack of habitat, or relative abundance on a regional scale.

Although not observed during focused surveys of the Martin Ranch site, **Orcutt's brodiaea, Plummer's mariposa lily, San Bernardino mountain owl's clover,** and **smooth tarplant,** are moderately likely to occur on portions of the property, albeit in small numbers. **Nevin's barberry, slender horned spineflower, Santa Ana River woolly star, marsh sandwort, thread-leaved brodiaea, Parry's spineflower, many-stemmed dudleya, hot springs fimbristylis,** and **Parish's gooseberry** likewise were not observed and have a low likelihood of occurrence. Given either the low likelihood of their occurrence or their expected low numbers, no significant adverse impacts are expected.

4.5.5 Insignificant Impacts to Sensitive Wildlife Species

Pursuant to thresholds of significance used in this analysis, impacts to the following sensitive wildlife species were deemed insignificant owing to a number of factors including low

likelihood of occurrence on-site, marginal and/or lack of suitable habitat, or substantial abundance on a regional scale.

Several sensitive bird species were observed or have at least a moderate-to-high potential to occur on-site. For purposes of this discussion, these have been broken down into the following groups: (1) raptorial birds which use the site primarily for nesting and foraging; (2) riparian birds which do or could use the woodlands for foraging and/or nesting; and (3) upland birds which inhabit or potentially inhabit the sage scrub, chaparral, and grassland habitat on-site.

Several raptorial birds, all sensitive, were either observed or have a high to moderate likelihood of occurring on the site. These are **northern harrier, golden eagle, sharp-shinned hawk, Cooper's hawk,** and **white-tailed kite.** For those species believed to be transient or otherwise are not expected to use the site as an important or "critical" habitat area, or have a low likelihood of occurrence on site, the project will not have a significant impact. That is, the use of the site by these species is infrequent and short-lived, indicating only an incremental habitat loss. These species are the **merlin, prairie falcon,** and **burrowing owl**. Similarly, for those species that were either observed or have a high to moderate likelihood of occurring on the site, the proposed development will retain all of the southern sycamore alder riparian woodland as open space allowing for nesting and foraging of these species. Sensitive raptorial species which will be most affected by the project will be those that use the sage scrub and ridge tops for foraging. For individuals of these species which use the site, the proposed development will result in the loss of approximately 150 acres of foraging habitat. This loss is not considered to be significant, primarily for three reasons. First, the number of individuals to be impacted is believed to be limited to one or two individuals per species. This will not have a marked effect on the regional populations of these species. Second, these species may continue to forage in the remaining acres of natural open space. Third, large portions of similar habitat types will remain intact as open spaces in the area. These birds are also found soaring over other scrub areas throughout southern California. Therefore, elimination or disruption of habitat for these species would not represent a regionally significant impact, and no significant impacts on raptorial species would result from project implementation.

Sensitive bird species which could use the riparian woodlands for foraging and/or nesting include the **yellow-breasted chat** and **yellow warbler**. These species were not observed on-site. As these species are not protected by federal or state listings as threatened or endangered, and any loss of individuals would not threaten the regional population, removal of their habitat represents an adverse but less than significant impact to regional populations of these species. Also, the

impact is not considered significant due to the proposed avoidance and dedication of southern sycamore alder riparian woodland as open space.

Finally, sensitive birds which use the sage scrub, chaparral, and grasslands on-site have the potential to be impacted by the project. These species include the **southern California rufous-crowned sparrow, loggerhead shrike, Los Angeles pocket mouse, northwestern San Diego pocket mouse**, and **Bell's sage sparrow.** As these species are not protected by federal or state listings as threatened or endangered, and any loss of individuals would not threaten the regional population, removal of their habitat represents an adverse but less than significant impact to regional populations of these species.

Other sensitive wildlife species observed on-site or expected to occur, and associated with the sage scrub, chaparral, riparian, and grassland habitats, include the **San Diego horned lizard, San Bernardino ring-neck snake, two-striped garter snake,** and **ring-tailed cat.** As these species are not protected by federal or state listings as threatened or endangered, and any loss of individuals would not threaten the regional population, removal of their habitat represents an adverse but less than significant impact.

No sensitive amphibians were observed on-site during field investigations. The **western spadefoot toad, southwestern pond turtle, arroyo southwestern toad, California red-legged frog,** and **mountain yellow-legged frog** have a moderate-to-low potential to be present on-site. None of these species would be expected to occur in more than very low numbers, if present. Any loss of individuals would not threaten the regional population.

4.5.6 Insignificant Impacts to Regional Wildlife Movement Corridors

As discussed in the Regional Biological Value section of this report, Cable Creek Canyon may be a potentially vital corridor for wildlife movement in the region. That portion of the corridor which traverses the Martin Ranch project site is proposed to be completely avoided. The Canyon and Creek will be left in a natural state to ensure that wildlife may continue to utilize it. However, the tributary drainage which splits from Cable Creek and turns northeast and crosses the site will suffer minor impacts due to a road crossing. This drainage potentially functions as a secondary movement corridor for more localized wildlife. To minimize the impact of this road crossing, 10'x 12' box culverts will be used. The large size and flat bottom features of these culverts are believed to reduce hesitation of wildlife to pass through them. The length of the culverts will be as short as feasiblely possible based on the construction of the overhead road and ensuring that the opposite side is clearly visible from both directions. In addition, the immediate

vicinity of the road and culverts will be revegetated with native species to provide additional cover to animals using the corridor.

4.6 IMPACTS FOUND TO BE POTENTIALLY SIGNIFICANT

The following is a discussion of impacts to biological resources which do meet the thresholds of significance outlined above in 5.1.2.

4.6.1 Significant Impacts to Jurisdictional Wetlands

The proposed project would potentially impact both Cable Creek and Meyers Creek through construction of bridges which would cross these riparian corridors. Another low flow crossing would be constructed along with the alternate access road to the south of the project site. In addition, two small seeps would be filled through construction of this project. The U.S. Army Corps of Engineers (Corps) considers placement of fill material into jurisdictional wetlands or waters a significant impact and requires a permit be issued before any work be completed. CDFG regulations also evaluate any impacts to waters of the state as significant and require processing of a streambed alteration agreement prior to any work being conducted in the stream or riparian habitat. The Regional Water Quality Control Board would also evaluate the project to insure that discharges of water and other material do not impact the quality of the water or aquatic habitat on or off the project site. Therefore, unless all impacts to wetlands are avoided, this would be considered a potentially significant adverse impact.

4.6.2 Significant Impacts to Nesting Raptors

During the course of field surveys on the Martin Ranch property, no raptor nests were observed within suitable habitat. From the time that the surveys were completed until the time that grading begins, raptors may construct nests. Breeding season typically runs from March through late June. Disturbing or destroying active raptor nests is a violation of the Migratory Bird Treaty Act.

5. MITIGATION MEASURES

5.1 MEASURES FOR IMPACTS TO NESTING RAPTORS

Mitigation for the taking of raptor nests may be accomplished in two ways. First, prior to the commencement of tree removal, all suitable habitat should be thoroughly surveyed for the presence of nesting raptors by a qualified biologist, especially during the spring breeding season. If any active nests are detected, the tree containing the nest should be flagged and avoided until the nesting cycle is complete. In addition, a biologist should be present on-site to monitor the tree removal and grading to insure that nests are not detected during the initial survey. Second, as an alternative, tree removal and grading could be delayed until after the breeding season. This would insure that no active nests would be disturbed and that grading could proceed rapidly.

5.2 MEASURES FOR IMPACTS TO JURISDICTIONAL WETLANDS

The permit process for both the Corps and CDFG require the applicant to first avoid, then minimize, and finally mitigate for any impacts to wetlands or waters of the state. These agencies work together to evaluate projects and do not issue permits until appropriate measures are in place to avoid, minimize, and mitigation for all impacts.

The potential impacts from this project would affect four areas of wetlands and waters of the State: one bridge crossing of cable creek, one bridge crossing of Meyers Creek, one low-flow crossing associated with the southern access road, and placement of fill into two small seep areas with associated riparian habitat. Both bridge crossings have been designed to span the creeks and would avoid all impacts to jurisdictional waters with only minimal impacts to riparian habitat under the jurisdiction of CDFG. The low-flow crossing associated with the southern access road would likely meet the terms and conditions of a Nationwide Permit for minor fill associated with a single road crossing. The placement of fill into the two small seeps has been determined to be unavoidable but would impact less than one acre of wetlands and riparian habitat. Because of the small size of all impacts, this project would likely qualify for a Nationwide Permit from the Corps and be permitted after an appropriate mitigation plan is accepted. Mitigation for this potential impact would include restoration of a portion of Cable or Meyers Creek on-site, creation of approximately one acre of wetland habitat on or off the project site, or payment into a Corps approved mitigation bank at a ratio to be determined. CDFG requirements would be included in the mitigation plan. The Regional water Quality Control Board would also add restrictions to the

plan to control run off from the site, require on-site treatment of run off to improve water quality, and impose Best Management practices (BMP's) on the construction. Approval of the plan and issuance of permits from all three agencies would insure impacts to wetlands are mitigated and would not be significant.

6. IMPACTS AFTER MITIGATION

6.1 UNAVOIDABLE SIGNIFICANT IMPACTS

The proposed project, inclusive of project design features and mitigation measures would likely be able to mitigate all significant adverse impacts to a level less than significant.

6.2 CUMULATIVE IMPACTS

Per the provisions of CEQA [App. F, XXI(c)], actions which have impacts which are individually limited, but cumulatively considerable may be considered significant and adverse. A number of sensitive wildlife species (discussed above) can be reasonably expected or demonstrated to occur on the property in a resident, seasonal, migratory or transient basis, primarily in association with the riparian corridor, but also utilizing Riversidean sage scrub and chaparral. While significance may not have been assessed for impacts to these taxa on a species by species basis, the number of sensitive organisms potentially affected is cumulatively considerable, and virtually all sensitive taxa on the property will suffer some level of indirect or direct incremental habitat losses or degradation. The potential reduction of habitat and resource values for a site of sensitive Riversidean sage scrub taxa qualifies as significant and adverse under CEQA.

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Appendix A
Plant and Wildlife Species Compendia

Table A-1

PLANT SPECIES COMPENDIUM

VASCULAR PLANTS	
Scientific Name	**Common Name**
Ferns and Fern Allies	
Blechnaceae	**Deer Fern Family**
Woodwardia fimbriata	giant chain fern
Dennstaedtiaceae	**Bracken Family**
Pteridium aquilinum var. pubescens	western bracken
Pteridaceae	**Brake Family**
Pellaea andromedifolia	coffee fern
Selaginellaceae	**Spike-Moss Family**
Selaginella cinerascens	ashy spike-moss
Gymnosperms	
Cupressaceae	**Cypress Family**
Calocedrus decurrens	incense cedar
Pinaceae	**Pine Family**
* *Pinus halepensis*	aleppo pine
Pseudotsuga macrocarpa	bigcone douglas-fir
Angiosperms (Dicotyledons)	
Aceraceae	**Maple Family**
Acer macrophyllum	big-leaf maple
Anacardiaceae	**Sumac or Cashew Family**
Malosma laurina	laurel sumac
Rhus ovata	sugar bush
Rhus trilobata	skunkbrush
Toxicodendron diversilobum	poison oak
Asteraceae	**Sunflower Family**
Ambrosia psilostachya	western ragweed
Artemisia californica	California sagebrush
Artemisia douglasiana	mugwort

VASCULAR PLANTS

	Scientific Name	Common Name
	Artemisia dracunculus	tarragon
	Baccharis salicifolia	mulefat
*	*Centaurea melitensis*	tocalote
	Chaenactis glabriuscula	yellow pincushion
	Cirsium occidentale	cobweb thistle
*	*Cirsium vulgare*	bull thistle
	Coreopsis californica var. *californica*	California coreopsis
	Corethrogyne filaginifolia	California aster
	Encelia farinosa	brittlebush
	Ericameria parishii var. *parishii*	Parish's goldenbush
	Ericameria pinifolia	pinebush
	Eriophyllum confertiflorum	golden yarrow
	Filago californica	California fluffweed
	Gnaphalium californicum	California everlasting
	Gnaphalium canescens	felty everlasting
	Hazardia squarrosa	saw-toothed goldenbush
	Helianthus annuus	common sunflower
	Hemizonia fasciculata	fascicled tarweed
	Heterotheca grandiflora	telegraph weed
	Isocoma menziesii	coastal goldenbush
	Lepidospartum squamatum	scale-broom
	Malacothrix saxatilis	cliff malacothrix
	Pluchea odorata	salt marsh fleabane
*	*Senecio vulgaris*	common groundsel
	Solidago californica	California goldenrod
	Stephanomeria virgata	twiggy wreathplant
Betulaceae		**Birch Family**
	Alnus rhombifolia	white alder
Boraginaceae		**Borage Family**
	Amsinckia menziesii	common fiddleneck
	Pectocarya linearis ssp. *ferocula*	slender pectocarya
	Plagiobothrys collinus	California popcorn flower
Brassicaceae		**Mustard Family**
*	*Brassica nigra*	black mustard

VASCULAR PLANTS

Scientific Name	Common Name
* *Brassica rapa*	field mustard
* *Capsella bursa-pastoris*	shepherd's purse
Erysimum capitatum	western wallflower
* *Lepidium virginicum*	wild peppergrass
Cactaceae	**Cactus Family**
Opuntia littoralis	coastal prickly pear
Caprifoliaceae	**Honeysuckle Family**
Lonicera subspicata	southern honeysuckle
Sambucus mexicana	Mexican elderberry
Symphoricarpos mollis	creeping snowberry
Crassulaceae	**Stonecrop Family**
Dudleya lanceolata	lance-leaved dudleya
Cucurbitaceae	**Gourd Family**
Marah macrocarpus	wild cucumber
Cuscutaceae	**Dodder Family**
Cuscuta californica	California dodder
Ericaceae	**Heath Family**
Arctostaphylos glauca	bigberry manzanita
Euphorbiaceae	**Spurge Family**
Croton californicus	California croton
Fabaceae	**Legume Family**
Lotus scoparius	deerweed
Lotus strigosus	strigose lotus
Lupinus sp.	lupine
Lupinus bicolor	miniature lupine
Lupinus truncatus	collar lupine
* *Medicago polymorpha*	California bur clover
* *Medicago sativa*	alfalfa
* *Melilotus alba*	white sweetclover
* *Melilotus officinalis*	yellow sweet clover
* *Robinia pseudoacacia*	black locust
Fagaceae	**Oak Family**
Quercus agrifolia	coast live oak
Quercus berberidifolia	scrub oak

VASCULAR PLANTS

Scientific Name	Common Name
Quercus chrysolepis	canyon live oak
Quercus wislizenii	interior live oak
Geraniaceae	**Geranium Family**
* *Erodium cicutarium*	red-stemmed filaree
Hamamelidaceae	**Witch Hazel Family**
Liquidamber styraciflua	sweet gum
Hydrophyllaceae	**Waterleaf Family**
Emmenanthe penduliflora	whispering bells
Eriodictyon trichocalyx	hairy yerba santa
Phacelia cicutaria	caterpillar phacelia
Phacelia distans	wild heliotrope
Phacelia minor	wild canterbury-bell
Juglandaceae	**Walnut Family**
Juglans californica var. *californica*	Southern California black walnut
Lamiaceae	**Mint Family**
* *Marrubium vulgare*	horehound
Salvia apiana	white sage
Salvia mellifera	black sage
Lauraceae	**Laurel Family**
Umbellularia californica	California laurel
Malvaceae	**Mallow Family**
Malacothamnus sp.	bushmallow
* *Malva parviflora*	cheeseweed
Meliaceae	**Mahogany Family**
* *Melia azederach*	Chinaberry
Moraceae	**Mulberry Family**
* *Ficus carica*	edible fig
Myrtaceae	**Myrtle Family**
* *Eucalyptus* sp.	gum tree
* *Eucalyptus polyanthomos*	silver-dollar gum
* *Eucalyptus rudis*	flooded gum
* *Eucalyptus sideroxylon*	red-iron bark
Oleaceae	**Olive Family**
* *Olea europaea*	olive

VASCULAR PLANTS

Scientific Name	Common Name
Onagraceae	**Evening Primrose Family**
Camissonia bistorta	California sun cup
Camissonia californica	California evening primrose
Camissonia micrantha	small primrose
Clarkia purpurea	winecup clarkia
Epilobium canum	California fuchsia
Oenothera californica	California evening primrose
Oxalidaceae	**Oxalis Family**
* *Oxalis pes-caprae*	Bermuda buttercup
Paeoniaceae	**Peony Family**
Paeonia californica	California peony
Platanaceae	**Sycamore Family**
Platanus racemosa	western sycamore
Polemoniaceae	**Phlox Family**
Gilia angelensis	angel gilia
Gilia capitata	blue field gilia
Polygonaceae	**Buckwheat Family**
Eriogonum fasciculatum	California buckwheat
* *Rumex crispus*	curly dock
Portulacaceae	**Purslane Family**
Calandrinia ciliata	red maids
Claytonia perfoliata	miner's lettuce
Primulaceae	**Primrose Family**
* *Anagallis arvensis*	scarlet pimpernel
Ranunculaceae	**Buttercup Family**
Delphinium parryi	Parry's larkspur
Rhamnaceae	**Buckthorn Family**
Ceanothus crassifolius	hoary leaf ceanothus
Ceanothus cuneatus	buck brush
Ceanothus leucodermis	chaparral whitethorn
Ceanothus spinosus	green bark ceanothus
Rhamnus californica	California coffeeberry
Rhamnus crocea	spiny redberry
Rhamnus ilicifolia	holly-leaf redberry

VASCULAR PLANTS

Scientific Name	Common Name
Rosaceae	**Rose Family**
Adenostoma fasciculatum	chamise
Cercocarpus betuloides	birch-leaf mountain-mahogany
Heteromeles arbutifolia	toyon
Rosa californica	California wild rose
Rubus ursinus	California blackberry
Rubiaceae	**Madder Family**
Galium angustifolium	narrow-leaved bedstraw
Salicaceae	**Willow Family**
Populus angustifolia	narrow-leaf cottonwood
Populus fremontii ssp. *fremontii*	Fremont's cottonwood
Salix laevigata	red willow
Salix lasiolepis	arroyo willow
Scrophulariaceae	**Figwort Family**
Antirrhinum coulterianum	white snapdragon
Castilleja foliolosa	woolly Indian paintbrush
Cordylanthus rigidus	bird's-beak
Keckiella antirrhinoides	chaparral beard-tongue
Mimulus aurantiacus	orange bush monkey-flower
Penstemon spectabilis	royal penstemon
Solanaceae	**Nightshade Family**
Datura wrightii	jimson weed
Solanum douglasii	Douglas' nightshade
Solanum xanti	chaparral nightshade
Ulmaceae	**Elm Family**
* *Ulmus parvifolia*	lace-bark elm
Urticaceae	**Nettle Family**
Urtica dioica ssp. *holosericea*	giant creek nettle
Viscaceae	**Mistletoe Family**
Phoradendron villosum	oak mistletoe
Vitaceae	**Grape Family**
Vitis californica	wild grape
Vitis girdiana	desert wild grape

VASCULAR PLANTS

Scientific Name	Common Name
Angiosperms (Monocotyledons)	
Cyperaceae	**Sedge Family**
Carex sp.	sedge
Scirpus californicus	California bulrush
Juncaceae	**Rush Family**
Juncus sp.	rush
Liliaceae	**Lily Family**
Calochortus splendens	lilac mariposa lily
Dichelostemma capitatum	blue dicks
Yucca whipplei	Our Lord's candle
Poaceae	**Grass Family**
* *Avena barbata*	slender wild oat
* *Avena fatua*	wild oat
* *Bromus diandrus*	ripgut grass
* *Bromus hordeaceus*	soft chess
* *Bromus madritensis* ssp. *rubens*	foxtail chess
Hordeum vulgare	barley
* *Lamarckia aurea*	goldentop
Leymus condensatus	giant wild rye
* *Lolium multiflorum*	Italian ryegrass
* *Vulpia myuros*	fescue
Typhaceae	**Cattail Family**
Typha angustifolia	narrow-leaved cattail

Table A-2

WILDLIFE SPECIES COMPENDIUM

INVERTEBRATES		
Scientific Name	**Common Name**	**Status**
Hesperiidae	**Skippers**	
Erynnis funeralis	funereal dusky wing	
Papilionidae	**Swallowtail Butterflies**	
Papilio rutulus	western tiger swallowtail	
Pieridae	**Whites, Sulphurs, and Orangetips**	
Artogeia rapae	cabbage white	
Nymphalidae	**Brush-Footed Butterflies**	
Vanessa cardui	painted lady	

AMPHIBIANS

	Scientific Name	Common Name
	Salamandridae	**Newts**
	Taricha torosa	California newt
	Plethodontidae	**Lungless Salamanders**
	Ensatina eschscholtzi	ensatina
	Aneides lugubris	arboreal salamander
	Batrachoseps pacificus	Pacific slender salamander
	Pelobatidae	**Spadefoot Toads**
	Scaphiopus hammondii	western spadefoot
	Bufonidae	**True Toads**
	Bufo boreas	western toad
	Bufo microscaphus	southwestern toad
	Hylidae	**Tree Frogs**
	Pseudacris cadaverina	California chorus frog
	Pseudacris regilla	Pacific chorus frog
	Ranidae	**True Frogs**
	Rana aurora	red-legged frog
*	*Rana catesbeiana*	bullfrog
	Rana muscosa	mountain yellow-legged frog
	Pipidae	**Tongueless Frogs**
*	*Xenopus laevis*	African clawed frog

✔ Observed
* Non-native

REPTILES	
Scientific Name	**Common Name**
Emydidae	**Box and Water Turtles**
Clemmys marmorata	western pond turtle
Gekkonidae	**Geckos**
Coleonyx variegatus	western banded gecko
Iguanidae	**Iguanid Lizards**
Sceloporus orcutti	spiny granite lizard
✔ *Sceloporus occidentalis*	western fence lizard
Sceloporus graciosus	sagebrush lizard
✔ *Uta stansburiana*	side-blotched lizard
✔ *Phrynosoma coronatum blainvillei*	San Diego coast horned lizard
Scincidae	**Skinks**
Eumeces skiltonianus	western skink
Eumeces gilberti	Gilbert skink
Teiidae	**Whiptail Lizards**
✔ *Cnemidophorus tigris multiscutatus*	western whiptail
Anguidae	**Alligator Lizards**
✔ *Gerrhonotus multicarinatus*	southern alligator lizard
Leptotyphlopidae	**Slender Blind Snakes**
Leptotyphlops humilis	western blind snake
Boidae	**Boas**
Lichanura trivirgata	rosy boa
Colubridae	**Colubrid Snakes**
Diadophis punctatus	ringneck snake
Coluber constrictor	racer
Masticophis flagellum	coachwhip
✔ *Masticophis lateralis*	California whipsnake
Salvadora hexalepis	western patch-nosed snake
Arizona elegans	glossy snake
Pituophis melanoleucus	gopher snake
Lampropeltis getulus	common kingsnake
Lampropeltis zonata	California mountain kingsnake
Rhinocheilus lecontei	long-nosed snake

✔ Observed
* Non-native

REPTILES		
Scientific Name		**Common Name**
	Thamnophis conchi	western aquatic garter snake
	Thamnophis sirtalis	common garter snake
	Tantilla planiceps	California black-headed snake
	Trimorphodon biscutatus	lyre snake
	Hypsiglena torquata	night snake
Viperidae		**Vipers**
✔	*Crotalus viridis*	western rattlesnake
✔	*Crotalus viridis helleri*	Southern Pacific rattlesnake

✔ Observed
* Non-native

BIRDS

	Scientific Name	Common Name	Status
	Cathartidae	**New World Vultures**	
	Cathartes aura	turkey vulture	
	Accipitridae	**Hawks**	
	Elanus leucurus	white-tailed kite	
	Circus cyaneus	northern harrier	
	Accipiter striatus	sharp-shinned hawk	
	Accipiter cooperii	Cooper's hawk	
	Accipiter gentilis	northern goshawk	
✔	*Buteo lineatus*	red-shouldered hawk	
✔	*Buteo jamaicensis*	red-tailed hawk	
	Buteo regalis	ferruginous hawk	
	Buteo lagopus	rough-legged hawk	
	Aquila chrysaetos	golden eagle	
	Gymnogyps Californianns	California condor	FE, SE
	Haliacetus leucocephalus	bald eagle	
	Falconidae	**Falcons**	
✔	*Falco sparverius*	American kestrel	
	Falco columbarius	merlin	
	Falco peregrinus	peregrine falcon	
	Falco mexicanus	prairie falcon	
	Phasianidae	**Pheasants and Quails**	
✔	*Callipepla californica*	California quail	
	Oreortyx pictus	mountain quail	
	Charadriidae	**Plovers**	
	Charadrius vociferus	killdeer	
	Laridae	**Gulls and Terns**	
	Larus delawarensis	ring-billed gull	
	Larus californicus	California gull	
	Columbidae	**Pigeons and Doves**	
✔*	*Columba livia*	rock dove	
	Columba fasciata	band-tailed pigeon	
*	*Streptopelia chinensis*	spotted dove	
	Zenaida asiatica	white-winged dove	
✔	*Zenaida macroura*	mourning dove	

✔ Observed
* Non-native

BIRDS

Scientific Name	Common Name	Status
Cuculidae	**Cuckoos and Roadrunners**	
Coccyzns americanus	yellow-billed cuckoo	
✔ *Geococcyx californianus*	greater roadrunner	
Tytonidae	**Barn Owls**	
Tyto alba	barn owl	
Strigidae	**True Owls**	
Otus kennicottii	western screech-owl	
✔ *Bubo virginianus*	great horned owl	
Glancidium gnoma	northern pygmy owl	
Speotyto cunicularia	burrowing owl	
Strix occidentalis	spotted owl	
Aeglius acadicus	northern saw-whet owl	
Caprimulgidae	**Goatsuckers**	
Chordeiles acutipennis	lesser nighthawk	
Phalaenoptilus nuttallii	common poorwill	
Apodidae	**Swifts**	
Aeronautes saxatalis	white-throated swift	
Trochilidae	**Hummingbirds**	
Archilochus alexandri	black-chinned hummingbird	
✔ *Calypte anna*	Anna's hummingbird	
✔ *Calypte costae*	Costa's hummingbird	
Stellula calliope	Calliope hummingbird	
Alcedinidae	**Kingfishers**	
Ceryle alcyon	belted kingfisher	
Picidae	**Woodpeckers**	
Melanerpes lewis	Lewis' woodpecker	
Melanerpes formicivorus	acorn woodpecker	
Sphyrapicus ruber	red-breasted sapsucker	
✔ *Picoides nuttallii*	Nuttall's woodpecker	
✔ *Picoides pubescens*	downy woodpecker	
Picoides villosus	hairy woodpecker	
✔ *Colaptes auratus*	northern flicker	
Tyrannidae	**Tyrant Flycatchers**	
✔ *Contopus sordidulus*	western wood-pewee	
✔ *Empidonax difficilis*	Pacific slope flycatcher	

✔ Observed
* Non-native

BIRDS

	Scientific Name	Common Name	Status
✔	*Sayornis nigricans*	black phoebe	
✔	*Sayornis saya*	Say's phoebe	
✔	*Myiarchus cinerascens*	ash-throated flycatcher	
	Tyrannus vociferans	Cassin's kingbird	
✔	*Tyrannus verticalis*	western kingbird	
	Alaudidae	**Larks**	
	Eremophila alpestris	horned lark	
	Hirundinidae	**Swallows**	
	Tachycineta thalassina	violet-green swallow	
	Stelgidopteryx serripennis	northern rough-winged swallow	
	Petrochelidon pyrrhonota	cliff swallow	
	Corvidae	**Jays and Crows**	
✔	*Cyanocitta stelleri*	Steller's jay	
✔	*Aphelocoma californica*	Western scrub jay	
✔	*Corvus brachyrhynchos*	American crow	
✔	*Corvus corax*	common raven	
	Paridae	**Titmice**	
	Poecile gambeli	mountain chickadee	
✔	*Parus inornatus*	plain titmouse	
	Aegithalidae	**Bushtits**	
✔	*Psaltriparus minimus*	bushtit	
	Sittidae	**Nuthatches**	
	Sitta canadensis	red-breasted nuthatch	
	Sitta carolinensis	white-breasted nuthatch	
	Certhiidae	**Creepers**	
	Certhia americana	brown creeper	
	Troglodytidae	**Wrens**	
	Salpinctes obsoletus	rock wren	
	Catherpes mexicanus	canyon wren	
✔	*Thryomanes bewickii*	Bewick's wren	
✔	*Troglodytes aedon*	house wren	
	Muscicapidae	**Kinglets, Gnatcatchers, Thrushes, and Babblers**	
✔	*Regulus calendula*	ruby-crowned kinglet	
✔	*Polioptila caerulea*	blue-gray gnatcatcher	
	Catharus ustulatus	Swainson's thrush	

✔ Observed
* Non-native

BIRDS

	Scientific Name	Common Name	Status
✔	*Catharus guttatus*	hermit thrush	
✔	*Turdus migratorius*	American robin	
✔	*Chamaea fasciata*	wrentit	
	Sialia mexicana	western bluebird	
	Mimidae	**Thrashers**	
✔	*Mimus polyglottos*	northern mockingbird	
✔	*Toxostoma redivivum*	California thrasher	
	Motacillidae	**Pipits**	
	Anthus rubescens	American pipit	
	Bombycillidae	**Waxwings**	
	Bombycilla cedrorum	cedar waxwing	
	Ptilogonatidae	**Silky Flycatchers**	
	Phainopepla nitens	phainopepla	
	Laniidae	**Shrikes**	
	Lanius ludovicianus	loggerhead shrike	
	Sturnidae	**Starlings**	
✔*	*Sturnus vulgaris*	European starling	
	Vireonidae	**Vireos**	
✔	*Vireo solitarius*	solitary vireo	
✔	*Vireo huttoni*	Hutton's vireo	
✔	*Vireo gilvus*	warbling vireo	
	Emberizidae	**Wood Warblers, Tanagers, Buntings, and Blackbirds**	
✔	*Vermivora celata*	orange-crowned warbler	
	Vermivora ruficapilla	Nashville warbler	
	Dendroica petechia	yellow warbler	
✔	*Dendroica coronata*	yellow-rumped warbler	
	Dendroica nigrescens	black-throated gray warbler	
	Dendroica townsendi	Townsend's warbler	
	Geothlypis trichas	common yellowthroat	
	Wilsonia pusilla	Wilson's warbler	
	Icteria virens	yellow-breasted chat	
✔	*Pheucticus melanocephalus*	black-headed grosbeak	
✔	*Piranga ludoviciana*	western tanager	
	Guiraca caerulea	blue grosbeak	
✔	*Passerina amoena*	lazuli bunting	

✔ Observed
* Non-native

BIRDS

	Scientific Name	Common Name	Status
	Pipilo chlorurus	green-tailed towhee	
✔	*Pipilo crissalis*	California towhee	
✔	*Pipilo maculatus*	spotted towhee	
✔	*Aimophila ruficeps*	rufous-crowned sparrow	
	Spizella passerina	chipping sparrow	
✔	*Spizella atrogularis*	black-chinned sparrow	
	Chondestes grammacus	lark sparrow	
	Amphispiza bilineata	black-throated sparrow	
✔	*Amphispiza belli*	sage sparrow	
✔	*Amphispiza belli belli*	Bell's sage sparrow	
	Passerella iliaca	fox sparrow	
✔	*Melospiza melodia*	song sparrow	
	Melospiza lincolnii	Lincoln's sparrow	
✔	*Icterus cucullatus*	hooded oriole	
✔	*Zonotrichia atricopilla*	golden-crowned sparrow	
✔	*Zonotrichia leucophrys*	white-crowned sparrow	
	Junco hyemalis	dark-eyed junco	
	Agelaius phoeniceus	red-winged blackbird	
	Agelaius tricolor	tricolored blackbird	
	Sturnella neglecta	western meadowlark	
	Euphagus cyanocephalus	Brewer's blackbird	
✔	*Molothrus ater*	brown-headed cowbird	
✔	*Icterus galbula*	northern oriole	
Fringillidae		**Finches**	
	Carpodacus purpureus	purple finch	
✔	*Carpodacus mexicanus*	house finch	
✔	*Carduelis psaltria*	lesser goldfinch	
✔	*Carduelis lawrencei*	Lawrence's goldfinch	
✔	*Carduelis tristis*	American goldfinch	
Passeridae		**Old World Sparrows**	
*	*Passer domesticus*	house sparrow	

✔ Observed
* Non-native

MAMMALS

Scientific Name	Common Name
Didelphidae	**New World Opossums**
* *Didelphis virginiana*	Virginia opossum
Soricidae	**Shrews**
Sorex ornatus	ornate shrew
Notiosorex crawfordi	desert shrew
Talpidae	**Moles**
Scapanus latimanus	broad-footed mole
Vespertilionidae	**Evening Bats**
Myotis californicus	California myotis
Myotis evotis	long-eared myotis
Myotis leibii	small-footed myotis
Myotis lucifugus	little brown myotis
Myotis volans	long-legged myotis
Myotis yumanensis	Yuma myotis
Lasiurus borealis	red bat
Lasiurus cinereus	hoary bat
Pipistrellus hesperus	western pipistrelle
Antrozous pallidus	pallid bat
Eptesicus fuscus	big brown bat
Euderma maculatan	spotted bat
Plecotus townsendii	Townsend's big-eared bat
Molossidae	**Free-Tailed Bats**
Tadarida brasiliensis	Brazilian free-tailed bat
Eumops perotis	western mastiff bat
Leporidae	**Hares and Rabbits**
Lepus californicus	Black-tailed jackrabbit
✔ *Sylvilagus audubonii*	desert cottontail
Sylvilagus bachmani	brush rabbit
Sciuridae	**Squirrels**
Tamias merriami	Merriam's chipmunk
✔ *Spermophilus beecheyi*	California ground squirrel
✔ *Sciurus griseus*	western gray squirrel
Geomyidae	**Pocket Gophers**
✔ *Thomomys bottae*	Botta's pocket gopher
Heteromyidae	**Pocket Mice and Kangaroo Rats**
✔ *Perognathus longimembris*	little pocket mouse

✔ Observed
* Non-native

MAMMALS

	Scientific Name	Common Name
✔	*Chaetodipus californicus*	California pocket mouse
✔	*Chaetodipus fallax fallax*	Northwestern San Diego pocket mouse
✔	*Dipodomys agilis*	Pacific kangaroo rat
	Dipodomys merriami	Merriam's kangaroo rat
Muridae		**Mice, Rats, and Voles**
	Peromyscus boylii	brush mouse
✔	*Peromyscus californicus*	California mouse
✔	*Reithrodontomys megalotis*	western harvest mouse
✔	*Peromyscus eremicus*	cactus mouse
✔	*Peromyscus maniculatus*	deer mouse
	Peromyscus truei	pinyon mouse
	Onychomys torridus	southern grasshopper mouse
✔	*Neotoma fuscipes*	dusky-footed woodrat
✔	*Neotoma lepida*	desert woodrat
*	*Rattus norvegicus*	Norway rat
*	*Rattus rattus*	black rat
*	*Mus musculus*	house mouse
✔	*Microtus californicus*	California vole
Canidae		**Wolves and Foxes**
✔	*Canis latrans*	coyote
	Urocyon cinereoargenteus	gray fox
Ursidae		**Bears**
	Ursus americanus	black bear
Procyonidae		**Raccoons**
	Bassariscus astutus	ringtail
	Procyon lotor	raccoon
Mustelidae		**Weasels, Skunks, and Otters**
	Mustela frenata	long-tailed weasel
	Taxidea taxus	American badger
	Spilogale gracilis	western spotted skunk
	Mephitis mephitis	striped skunk
Felidae		**Cats**
*	*Felis catus*	domestic cat
	Felis concolor	mountain lion
✔	*Lynx rufus*	bobcat

✔ Observed
* Non-native

MAMMALS	
Scientific Name	**Common Name**
Cervidae	**Deer**
✔ *Odocoileus hemionus*	mule deer

✔ Observed
* Non-native