

**FINDINGS AND RECOMMENDATIONS
FOR THE ISSUANCE OF A SECTION 10(a)(1)(B)
INCIDENTAL TAKE PERMIT
ASSOCIATED WITH THE
WESTERN RIVERSIDE COUNTY MULTIPLE SPECIES
HABITAT CONSERVATION PLAN/NATURAL
COMMUNITY CONSERVATION PLAN**

I. DESCRIPTION OF THE PROPOSED ACTION

The United States Fish and Wildlife Service (Service) proposes to issue an Incidental Take Permit (Permit) to the Western Riverside County Regional Conservation Authority (RCA), County of Riverside, Riverside County Flood Control and Water Conservation District, Riverside County Regional Parks and Open Space District, Riverside County Waste Management District, Riverside County Transportation Commission, City of Banning, City of Beaumont, City of Calimesa, City of Canyon Lake, City of Corona, City of Hemet, City of Lake Elsinore, City of Moreno Valley, City of Murrieta, City of Norco, City of Perris, City of Riverside, City of San Jacinto, City of Temecula, California Department of Transportation, and California Department of Parks (together with their successors and assigns) (collectively, the Permittees or Applicants) under the authority of section 10(a)(1)(B) and section 10(a)(2) of the Endangered Species Act of 1973 as amended (FESA or the Act) for a period of 75 years. The Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP or Plan) also makes provision to allow certain public utilities and public agencies not formally participating in the application (i.e., Participating Special Entities) to “opt into” the MSHCP through compliance with specific mitigation obligations and the other applicable provisions of the Plan. The Permittees are also seeking the issuance of a Natural Community Conservation Plan (NCCP) Permit by the California Department of Fish and Game (CDFG) under the authority of California Fish and Game Code section 2800 *et seq.*

Documents used in the preparation of this statement of Findings and Recommendations include the Draft and Final Western Riverside County Multiple Species Habitat Conservation Plan/Natural Community Conservation Plan (County *et al.* 2003, 2003a), the associated Draft and Final Environmental Impact Statement/Environmental Impact Report (EIS/EIR) (Service 2002, 2003a), the Implementing Agreement (IA) (County *et al.* 2003), The Service’s draft FESA Section 10(a) Permit Terms and Conditions, the Service’s Biological and Conference Opinion on the Permit applications (Service 2004), a Local Development Fee “Nexus Study,” and related documents. All of these documents are incorporated by reference.

The Service has reviewed the above-described documents, as well as other available biological information and other documentation, in accordance with 16 U.S.C. § 1539(a), 50 C.F.R. §§ 17.22(b), 17.32(b) and other applicable laws and regulations.

Under the Permit, the prospective Permittees would receive incidental take authorization for Covered Activities administered under their jurisdictions as identified in the MSHCP submitted as part of their Permit applications. The County of Riverside, Cities, and RCA would also have the ability to extend take authorization to third parties (i.e., landowners and developers) that are

under the Permittees’ direct land use or other control. These entities would have the authority to impose Local Development Mitigation Fees, to require property owner/land use applicant participation in the Property Owner Initiated Habitat Evaluation and Acquisition Process (HANS) or other equivalent process, and/or to impose other mitigation measures and conditions under any discretionary and certain ministerial approvals the Permittees issue for projects located in the MSHCP Plan Area.

The prospective Permittees are requesting coverage under the Permit for a total of one hundred forty-six species (Table 1). Of the 146 species collectively termed as Covered Species, 117 species are considered as Covered Species Adequately Conserved. To become a Covered Species Adequately Conserved, 12 species require that a Memorandum of Understanding be executed with the U.S. Forest Service that addresses management for these species on National Forest Service Lands. In order for the remaining 17 species to become Covered Species Adequately Conserved, achievement of species-specific conservation objectives, as identified in Table 9-3 of the MSHCP, will need to be demonstrated.

Table 1. Proposed Covered Species

MSHCP Proposed Covered Species Species Name (146 species)	Listing Status State/ Federal	Proposed Adequately Conserved	Survey Required	Required to Achieve Adequately Conserved Status
LISTED CRUSTACEANS				
Riverside fairy shrimp <i>Streptocephalus woottoni</i>	-/FE	✓	Riparian/Riverine/ Vernal Pool	
vernal pool fairy shrimp <i>Branchinecta lynchi</i>	-/FT	✓	Riparian/Riverine/ Vernal Pool	
LISTED INSECTS				
Delhi Sands flower-loving fly <i>Rhaphiomidas terminatus abdominalis</i>	-/FE	✓	Delhi Sands flower- loving fly Survey Area	
Quino checkerspot butterfly <i>Euphydryas editha quino</i>	-/FE	✓		
LISTED FISH				
Santa Ana sucker <i>Catostomus santaanae</i>	SSC/FT	✓		
LISTED AMPHIBIANS				
arroyo toad <i>Bufo californicus</i>	SSC/FE	✓	Additional Survey Area: ASSA	
California red-legged frog <i>Rana aurora draytonii</i>	SSC/FT	✓	Additional Survey Area: ASSA	
mountain yellow-legged frog <i>Rana mucosa</i>	SSC/FE	✓	Additional Survey Area: ASSA	
LISTED BIRDS				
bald eagle <i>Haliaeetus leucocephalus</i>	SP, SE/FT	✓		
coastal California gnatcatcher <i>Poliophtila californica californica</i>	SSC/FT	✓		
least Bell's vireo <i>Vireo bellii pusillus</i>	SE/FE	✓	Riparian/Riverine/ Vernal Pool	

MSHCP Proposed Covered Species Species Name (146 species)	Listing Status State/ Federal	Proposed Adequately Conserved	Survey Required	Required to Achieve Adequately Conserved Status
southwestern willow flycatcher <i>Empidonax traillii extimus</i>	SE/FE	✓	Riparian/Riverine/ Vernal Pool	
western yellow-billed cuckoo <i>Coccyzus americanus occidentalis</i>	SE/FC	✓	Riparian/Riverine/ Vernal Pool	
LISTED MAMMALS				
San Bernardino kangaroo rat <i>Dipodomys merriami parvus</i>	SSC/FE	✓	Additional Survey Area: MSSA	
Stephens' kangaroo rat <i>Dipodomys stephensi</i>	ST/FE	✓		
LISTED PLANTS				
California Orcutt grass <i>Orcuttia californica</i>	SE/FE	✓	NEPPSA	
Munz's onion <i>Allium munzii</i>	ST/FE	✓	NEPPSA	
Nevin's barberry <i>Berberis nevinii</i>	SE/FE	✓	Additional Survey Area: CASSA	
San Diego ambrosia <i>Ambrosia pumila</i>	-/FE	✓	NEPPSA	
San Diego button-celery <i>Eryngium aristulatum</i> var. <i>parishii</i>	SE/FE	✓		
San Jacinto Valley crownscale <i>Atriplex coronata</i> var. <i>notatior</i>	-/FE	✓	Additional Survey Area: CASSA	
Santa Ana River woollystar <i>Eriastrum densifolium</i> ssp. <i>sanctorum</i>	SE/FE	✓		
slender-horned spine flower <i>Dodecahema leptoceras</i>	SE/FE	✓	NEPPSA	
spreading navarretia <i>Navarretia fossalis</i>	- / FT	✓	NEPPSA	
thread-leaved brodiaea <i>Brodiaea filifolia</i>	SE/FT	✓	Additional Survey Area: CASSA	
Vail Lake ceanothus <i>Ceanothus ophiochilus</i>	SE/FT	✓	Additional Survey Area: CASSA	
CRUSTACEANS				
Santa Rosa Plateau fairy shrimp <i>Linderiella santarosae</i>	- / -	✓	Riparian/Riverine/ Vernal Pool	
FISH				
arroyo chub <i>Gila orcutti</i>	SSC/-	✓		
AMPHIBIANS				
coast range newt <i>Taricha tarosa tarosa</i>	SSC/-	✓		
western spadefoot <i>Scaphiopus hammondii</i>	SSC/-	✓		
REPTILES				
Belding's orange-throated whiptail <i>Cnemidophorus hyperythrus beldingi</i>	SSC/-	✓		
coastal western whiptail <i>Cnemidophorus tigris multiscutatus</i>	- / -	✓		
granite night lizard <i>Xantusia henshawi henshawi</i>	- / -	✓		

MSHCP Proposed Covered Species Species Name (146 species)	Listing Status State/ Federal	Proposed Adequately Conserved	Survey Required	Required to Achieve Adequately Conserved Status
granite spiny lizard <i>Sceloporus orcutti</i>	- / -	✓		
northern red-diamond rattlesnake <i>Crotalus ruber ruber</i>	SSC/-	✓		
San Bernardino mountain kingsnake <i>Lampropeltis zonata parvirubra</i>	SSC/-			MOU with U.S. Forest Service
San Diego banded gecko <i>Coleonyx variegatus abbottii</i>	- / -	✓		
San Diego horned lizard <i>Phrynosoma coronatum blainvillei</i>	SSC/-	✓		
San Diego mountain kingsnake <i>Lampropeltis zonata pulchra</i>	SSC/-			MOU with U.S. Forest Service
southern rubber boa <i>Charina bottae umbratica</i>	ST/-			MOU with U.S. Forest Service
southern sagebrush lizard <i>Sceloporus graciosus vandenburgianus</i>	- / -			MOU with U.S. Forest Service
western pond turtle <i>Clemmys marmorata pallida</i>	SSC/-	✓		
BIRDS				
American bittern <i>Botaurus lentiginosus</i>	- / -	✓		
Bell's sage sparrow <i>Amphispiza belli belli</i>	SSC/-	✓		
black swift (breeding) <i>Cypseloides niger</i>	SSC/-	✓		
black-crowned night heron <i>Nycticorax nycticorax</i>	- / -	✓		
burrowing owl <i>Athene cucularia hypugaea</i>	SSC/-	✓	Additional Survey Area: BOSA	
cactus wren <i>Campylorhynchus brunneicapillus</i>	SSC/-	✓		
California horned lark <i>Eremophila alpestris actia</i>	SSC/-	✓		
California spotted owl <i>Strix occidentalis occidentalis</i>	SSC/-			MOU with U.S. Forest Service
Cooper's hawk <i>Accipiter cooperii</i>	SSC/-	✓		
double-crested cormorant <i>Phalacrocorax auritus</i>	SSC/-	✓		
downy woodpecker <i>Picoides pubescens</i>	- / -	✓		
ferruginous hawk <i>Buteo regalis</i>	SSC/-	✓		
golden eagle <i>Aquila chrysaetos</i>	SP, SSC/-	✓		
grasshopper sparrow <i>Ammodramus savannarum</i>	- / -			Species-specific objectives
great blue heron <i>Ardea herodias</i>	- / -	✓		

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Lincoln's sparrow (breeding) <i>Melospiza lincolni</i>	- / -			Species-specific objectives
loggerhead shrike <i>Lanius ludovicianus</i>	SSC/-	✓		
Macgillivray's warbler <i>Oporornis tolmiei</i>	- / -	✓		
Merlin <i>Falco columbarius</i>	SSC/-	✓		
mountain plover (wintering) <i>Charadrius montanus</i>	SSC/-	✓		
mountain quail <i>Oreortyx pictus</i>	- / -	✓		
Nashville warbler <i>Vermivora ruficapilla</i>	- / -	✓		
northern goshawk <i>Accipiter gentiles</i>	SSC/-	✓		
northern harrier (breeding) <i>Circus cyaneus</i>	SSC/-	✓		
Osprey <i>Pandion haliaetus</i>	SSC/-	✓		
peregrine falcon <i>Falco peregrinus</i>	SP, SE/ delisted	✓		
prairie falcon (breeding) <i>Falco mexicanus</i>	SSC/-	✓		
purple martin <i>Progne subis</i>	SSC/-	✓		
sharp-shinned hawk <i>Accipiter striatus</i>	SSC/-	✓		
So. California rufous-crowned sparrow <i>Aimophila ruficeps canescens</i>	SSC/-	✓		
Swainson's hawk <i>Buteo swainsoni</i>	ST/-	✓		
tree swallow <i>Tachycineta bicolor</i>	- / -	✓		
tricolored blackbird (colony) <i>Agelaius tricolor</i>	SSC/-	✓		
turkey vulture (breeding) <i>Cathartes aura</i>	- / -	✓		
white-faced ibis <i>Plegadis chihi</i>	SSC/-	✓		
white-tailed kite <i>Elanus leucurus</i>	SP/-	✓		
Williamson's sapsucker <i>Sphyrapicus thyroideus</i>	- / -			MOU with U.S. Forest Service
Wilson's warbler <i>Wilsonia pusilla</i>	- / -	✓		
yellow warbler <i>Dendroica petechia brewsteri</i>	SSC/-	✓		
yellow-breasted chat <i>Icteria virens</i>	SSC/-	✓		

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MAMMALS				
Aguanga kangaroo rat <i>Dipodomys merriami collinus</i>	- / -	✓	Additional Survey Area: MSSA	
Bobcat <i>Lynx rufus</i>	- / -	✓		
brush rabbit <i>Sylvilagus bachmani</i>	- / -	✓		
Coyote <i>Canis latrans</i>	- / -	✓		
Dulzura kangaroo rat <i>Dipodomys simulans</i>	- / -	✓		
long-tailed weasel <i>Mustela frenata</i>	- / -	✓		
Los Angeles pocket mouse <i>Perognathus longimembris brevinasus</i>	SSC/-	✓	Additional Survey Area: MSSA	
mountain lion <i>Puma concolor</i>	- / -	✓		
northwestern San Diego pocket mouse <i>Chaetodipus fallax fallax</i>	SSC/-	✓		
San Bernardino flying squirrel <i>Glaucomys sabrinus californicus</i>	SSC/-			Species-specific objectives
San Diego black-tailed jackrabbit <i>Lepus californicus bennettii</i>	SSC/-	✓		
San Diego desert woodrat <i>Neotoma lepida intermedia</i>	SSC/-	✓		
PLANTS				
beautiful hulsea <i>Hulsea vestita</i> ssp. <i>Callicarpha</i>	- / -			Species-specific objectives
Brand's phacelia <i>Phacelia stellaris</i>	- / FC	✓	NEPPSA	
California beardtongue <i>Penstemon californicus</i>	- / -	✓		
California bedstraw <i>Galium californicum</i> ssp. <i>Primum</i>	- / -			MOU with U.S. Forest Service
California black walnut <i>Juglans californica</i> var. <i>californica</i>	- / -	✓		
California muhly <i>Muhlenbergia californica</i>	- / -			Species-specific objectives
chickweed oxytheca <i>Oxytheca caryophylloides</i>	- / -			Species-specific objectives
Cleveland's bush monkeyflower <i>Mimulus clevelandii</i>	- / -			MOU with U.S. Forest Service
cliff cinquefoil <i>Potentilla rimicola</i>	- / -			Species-specific objectives
Coulter's goldfields <i>Lasthenia glabrata</i> ssp. <i>Coulteri</i>	- / -	✓	Additional Survey Area: CASSA	
Coulter's matilija poppy <i>Romneya coulteri</i>	- / -			Species-specific objectives
Davidson's saltscare <i>Atriplex serenana</i> var. <i> davidsonii</i>	- / -	✓	Additional Survey Area: CASSA	

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Engelmann oak <i>Quercus engelmannii</i>	- / -	✓		
Fish's milkwort <i>Polygala cornuta</i> var. <i>fishiae</i>	- / -			Species-specific objectives
graceful tarplant <i>Holocarpha virgata</i> ssp. <i>Elongate</i>	- / -			Species-specific objectives
Hall's monardella <i>Monardella macrantha</i> ssp. <i>Hallii</i>	- / -	✓		
Hammitt's clay-cress <i>Sibaropsis hammittii</i>	- / -	✓	NEPPSA	
heart-leaved pitcher sage <i>Lepechinia cardiophylla</i>	- / -	✓	Additional Survey Area: CASSA	
intermediate mariposa lily <i>Calochortus weedii</i> var. <i>intermedius</i>	- / -			Species-specific objectives
Jaeger's milk-vetch <i>Astragalus pachypus</i> var. <i>jaegeri</i>	- / -	✓		
Johnston's rock cress <i>Arabis johnstonii</i>	- / -	✓	NEPPSA	
lemon lily <i>Lilium parryi</i>	- / -			MOU with U.S. Forest Service
little mousetail <i>Myosurus minimus</i>	- / -	✓	Additional Survey Area: CASSA	
long-spined spine flower <i>Chorizanthe polygonoides</i> var. <i>longispina</i>	- / -	✓		
many-stemmed dudleya <i>Dudleya multicaulis</i>	- / -	✓	NEPPSA	
Mojave tarplant <i>Deinandra mohavensis</i>	SE/ -			Species-specific objectives
mud nama <i>Nama stenocarpum</i>	- / -	✓	Additional Survey Area: CASSA	
Munz's mariposa lily <i>Calochortus palmeri</i> var. <i>munzii</i>	- / -	✓	NEPPSA	
ocellated Humboldt lily <i>Lilium humboldtii</i> ssp. <i>Ocellatum</i>	- / -			MOU with U.S. Forest Service
Orcutt's brodiaea <i>Brodiaea orcuttii</i>	- / -	✓		
Palmer's grapplinghook <i>Harpagonella palmeri</i>	- / -	✓		
Palomar monkeyflower <i>Mimulus diffuses</i>	- / -	✓		
Parish's brittlescale <i>Atriplex parishii</i>		✓	Additional Survey Area: CASSA	
Parish's meadowfoam <i>Limnanthes gracilis</i> var. <i>parishii</i>	SE/ -	✓		
Parry's spine flower <i>Chorizanthe parryi</i> var. <i>parryi</i>	- / -			Species-specific objectives
Payson's jewelflower <i>Caulanthus simulans</i>	- / -	✓		
peninsular spine flower <i>Chorizanthe leptotheca</i>	- / -			Species-specific objectives

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Plummer's mariposa lily <i>Calochortus plummerae</i>	- / -			Species-specific objectives
prostrate navarretia <i>Navarretia prostrate</i>	- / -	✓	Additional Survey Area: CASSA	
prostrate spineflower <i>Chorizanthe procumbens</i>	- / -	✓		
Rainbow manzanita <i>Arctostaphylos rainbowensis</i>	- / -			Species-specific objectives
round-leaved filaree <i>Erodium macrophyllum</i>	- / -	✓	Additional Survey Area: CASSA	
San Jacinto Mountains bedstraw <i>Galium angustifolium</i> ssp. <i>jacinticum</i>	- / -	✓	NEPPSA	
San Miguel savory <i>Satureja chandleri</i>	- / -	✓	NEPPSA	
shaggy-haired alumroot <i>Heuchera hirsutissima</i>	- / -			MOU with U.S. Forest Service
small-flowered microseris <i>Microseris douglasii</i> var. <i>platycarpha</i>	- / -			Species-specific objectives
small-flowered morning-glory <i>Convolvulus simulans</i>	- / -	✓		
smooth tarplant <i>Centromadia pungens</i> ssp. <i>Laevis</i>	- / -	✓	Additional Survey Area: CASSA	
sticky-leaved dudleya <i>Dudleya viscida</i>	- / -			MOU with U.S. Forest Service
vernal barley <i>Hordeum intercedens</i>	- / -	✓		
Wright's trichocoronis <i>Trichocoronis wrightii</i> var. <i>wrightii</i>	- / -	✓	NEPPSA	
Yucaipa onion <i>Allium marvinii</i>	- / -	✓	NEPPSA	

Status Codes: ST - State threatened
SE - State endangered
SP - State Fully Protected
SSC - State species of concern

FT - Federally threatened
FE - Federally endangered
FP - Federally proposed threatened
FC - Federal candidate for listing

Table Codes:

Riparian/Riverine/Vernal Pools If impacts are unavoidable, focused surveys are required for these species within the Plan Area in association with the implementation of the Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools policy.

NEPPSA Site specific focused surveys for narrow endemic plant species are required in association with the implementation of the Protection of Narrow Endemic Plant Species within a defined narrow endemic plant species survey area (NEPPSA).

Additional Survey Area Site specific focused surveys are required for certain species in association with the implementation of the Additional Survey Needs and Procedures within defined survey areas: Criteria Area Species Survey Area (CASSA), Amphibian Species Survey Areas (ASSA), Burrowing Owl Survey Areas (BOSA), Mammal Species Survey Areas (MSSA).

MOU with U. S Forest Service	In order for these species to become a Covered Species adequately conserved, a Memorandum of Understanding with the U.S. Forest Service will need to be executed that addresses management for these species on Forest Service lands.
Species-specific objectives	In order for these species to become a Covered Species adequately conserved, achievement of species-specific conservation objectives will need to be demonstrated.
Delhi Sands flower-loving fly	With the Exception of Cells 21, 22, and 55 within Area Plan Subunit Survey Area 3 of the Jurupa Area Plan, surveys will be conducted for future projects within the approximately 5,100 acres of mapped Delhi Soils within the Plan Area (MSHCP Volume II-B, 1-3 and Exhibit 12)

The Permit would become effective to authorize take of the currently unlisted Covered animal species adequately conserved concurrent with their listing under the FESA. Although take of plant species on non-federal property is not prohibited under the FESA and therefore cannot be authorized under an incidental take permit, the plant species would be included on the Permit in recognition of the conservation benefits provided to the species under the MSHCP. The assurances provided under the “No Surprises” rule at 50 C.F.R. §§ 17.3, 17.22(b)(5) and 17.32(b)(5), as modified on February 28, 1998, and in the Service Director’s November 4, 2003 and January 28, 2004 memoranda on the subject, would extend to all Covered Species – to the full extent allowed by law.

The prospective Permittees have requested incidental take authorization under the Natural Community Conservation Planning (NCCP) Act from the CDFG for the 39 species protected under the California Endangered Species Act (CESA), as well as the remaining Covered Species set forth in the Plan.

The least Bell’s vireo, coastal California gnatcatcher, southwestern willow flycatcher and bald eagle are covered by the Migratory Bird Treaty Act, 16 U.S.C. § 703 et seq. (MBTA), and listed under the FESA. The FESA Permit would also constitute an MBTA Special Purpose Permit for each of these species for a three-year term as specified under 50 C.F.R. § 21.27, subject to renewal by the Permittees. Should any additional Covered Species which are also covered by the MBTA become listed under the FESA during the life of the Permit, the Permit would also constitute an MBTA Special Purpose Permit for that species for a three-year term as specified under 50 C.F.R. § 21.27, subject to renewal by the Permittees. To the extent Covered Activities will impact unlisted Covered bird species protected by the MBTA, the Covered Activities must comply with the MBTA throughout the Plan Area.

The Permit would authorize for a period of 75 years the incidental take of Covered Species associated with the conversion of approximately 466,000 acres, as modeled and analyzed by the Service (Service 2004), of undeveloped land (agricultural, vacant, and other lands) within the 1.2 million acre MSHCP Plan Area that currently, or in the future, could provide habitat for the Covered Species. The development of these lands would occur as a result of future growth and the associated development, as addressed and covered by the MSHCP, and would result in impacts to Covered Species, including take of species currently listed under the Act, and their habitat. In addition, take resulting from the implementation of management and monitoring activities in the MSHCP Conservation Area would be authorized by the Permit.

The primary mitigation for the impacts of take on Covered Species and their habitat resulting from development is the acquisition, protection, and permanent management of 103,000 acres of

new conservation lands (e.g. Additional Reserve Lands) and the permanent management of an additional 55,000 acres of existing locally owned Public/Quasi-Public Land as part of a comprehensive 500,000 acre MSHCP Conservation Area. The MSHCP Conservation Area would be comprised of existing Public/Quasi-Public Lands (347,000 acres) and 153,000 acres of Additional Reserve Lands acquired by the Permittees (103,000 acres), and State and Federal land purchases (50,000 acres). The Permittees collection and use of landfill tipping fees, development mitigation fees, and other funding specified in the MSHCP and related documents will be used to acquire, protect, and manage in perpetuity their contribution to the Additional Reserve Lands.

The precise location and configuration of the 103,000 acres of Additional Reserve Lands (e.g. mitigation land) and the 50,000 acres Federal and State purchases of Additional Reserve Lands have not been mapped but rather are based on textual conservation descriptions to be interpreted for the purposes of assembling and configuring the Additional Reserve Lands from within a 310,000 acre Criteria Area. The Criteria Area is divided into cells of approximately 160 acres. The written criteria (Criteria) describe the conservation anticipated to occur within each cell or cell group. Context for the Criteria is provided in the MSHCP discussion of cores and linkages (MSHCP Section 3.2.3) and Area Plans (MSHCP Section 3.3). In general, the Additional Reserve Lands would be configured to link with, or be contiguous with, existing Public/Quasi-Public Lands. Within 5 years of permit issuance, the Permittees will verify the precise acreage, location, and status of Public/Quasi-Public Lands in the MSHCP Conservation Area and submit such information to the Service and CDFG (collectively, the “Wildlife Agencies”) for review.

The Additional Reserve Lands will be managed for the benefit of the Covered Species in perpetuity. Local Permittee owned Public/Quasi-Public Lands and State Permittee Public/Quasi-Public Lands will be managed for Covered Species. The Permittees and the Wildlife Agencies will work cooperatively to enter into a Memorandum of Understanding or other appropriate agreements with the non-Permittees managing Public/Quasi-Public land within the MSHCP Conservation Area to cooperatively manage lands in conformance and compliance with the MSHCP.

In addition, the MSHCP includes measures to avoid and minimize impacts on Covered Species resulting from Covered Activities.

Types of Activities Covered

Activities proposed to be covered under the Permit (collectively, “Covered Activities”) are the otherwise lawful activities which are described in Section 7 of the MSHCP and in the Biological and Conference Opinion (Service 2004) and summarized below. The MSHCP discusses Covered Activities relative to their location outside the Criteria Area and Public/Quasi-Public Lands or within either Public/Quasi-Public Land or the Criteria Area.

Covered Activities Outside the Criteria Area and Public/Quasi-Public Lands

The Permittees are seeking incidental take coverage for activities which consist of public and private development including construction of buildings, structures, infrastructure and all alterations of the land that are outside both the Criteria Area and Public/Quasi-Public land subject to consistency with applicable MSHCP policies that apply to Covered Activities

occurring within this area.

Covered Activities within Public/Quasi-Public Lands

Covered Activities which result in alterations of Public/Quasi-Public Lands are required to be mitigated by locating and acquiring or otherwise encumber replacement acreage at a 1:1 minimum ratio taking into account direct and indirect effects in one location with another. An equivalency analysis comparing effects/benefits is to be considered. Mitigation lands will be considered part of the MSHCP Conservation Area. The process that includes replacement of Public/Quasi-Public Lands with lands of equivalent or superior biological value in accordance with the process described in the Plan whereby the Wildlife Agencies will have opportunity for review and concurrence.

The prospective Permittees are seeking incidental take coverage for the following activities that would occur within Public/Quasi-Public Lands: 1) maintenance of existing public facilities by the Permittees within areas of existing disturbance and without any changes in the operating characteristics of the facility that would affect Covered Species; 2) existing agricultural uses, excluding pesticide use, within Local Public/Quasi-Public Lands subject to no increase in area or intensity; 3) maintenance of existing privately and publicly maintained roads such as the grading necessary to restore a smooth driving surface, maintenance of existing graded shoulders within existing rights-of-way, and essential weed abatement, excluding herbicide use; 4) pavement of some existing unpaved roadbeds maintained by the County as future conditions warrant; 5) specified safety improvements to other publicly maintained existing roadways; 6) certain new, or improvements to, circulation element roads identified in the MSHCP and subject to specified conditions; and 7) other specific planned roadway projects, including the CETAP transportation corridors, subject to additional restrictions or a process for coverage as set forth in section 7.2 of the MSHCP and section 20.4.2 of the IA; and 8) future facilities such as water, sewer, electrical, gas and solid waste facilities.

Covered Activities within the Criteria Area

Covered Activities within the Criteria Area would be covered if they are consistent with the written conservation cell Criteria and other MSHCP policies that are applicable within the Criteria Area. Maintenance of existing roads within the Criteria Area is generally covered. Privately maintained roads receive limited maintenance coverage, including grading as necessary to restore a smooth driving surface, maintain existing graded shoulders within the existing rights-of-way, and essential weed abatement, excluding herbicide use. Some County maintained unpaved roads may be paved as future conditions warrant. Other specific planned roadway projects would be covered, including the CETAP transportation corridors, subject to a process for coverage as set forth in sections 7.2 and 7.3 of the MSHCP, and section 20.4.2 of the IA. Only the planned roads identified in Section 7 of the MSHCP would be a Covered Activity in the Criteria Area. Other roads are not covered without an amendment to the MSHCP. Future facilities necessary to support planned development will be covered if carried out by a Permittee, Participating Special Entities and/or Third Parties Granted Take Authorization. Development of individual single-family homes on existing parcels would be covered subject to siting constraints. Existing agricultural uses and conversion of natural lands to agricultural use would be covered in the Criteria Area. Up to 10,000 acres within the Criteria Area may be converted to

agriculture over the life of the Plan, provided such operations are in compliance with all applicable laws and regulations.

Flood Control Facilities

Flood control facilities (improvements and new construction) within and outside the Criteria Area that are undertaken by a Permittee consistent with the MSHCP would be covered. In addition, maintenance of existing flood control facilities within Public/Quasi-Public Lands or the Criteria Area that are described as activities subject to a Memorandum of Understanding or agreement with the CDFG would be covered upon execution of the appropriate Memorandum.

Waste Management Facilities

Operations, maintenance and expansion activities at the existing active waste management facilities within the Criteria Area and Public/Quasi-Public Lands would be covered if performed within their existing boundaries, subject to satisfaction of all pertinent obligations identified in the IA. Waste related activity developments within existing disturbed use areas at inactive landfill sites, including energy production (such as gas-to-energy operations), transfer and recycling facilities, and state-mandated maintenance activities would be covered.

State Park Facilities

Specified uses at existing state parks in the MSHCP Conservation Area, including future expansions, would be covered. Recreational activities allowed within the campgrounds and day use areas include hiking, horseback riding, bicycling, camping, picnicking, swimming, and boating at Lake Perris State Recreation Area.

Development of an Off-Highway Vehicle Park/State Vehicle Recreation Area and access developed to the site impacting up to 1200 acres at a specified location in the Criteria Area would be covered subject to project specific measures identified in Section 7.3.6 of the MSHCP.

Covered Activities Subject to a Minor Amendment

The MSHCP identifies certain Covered Activities that are subject to the Minor Amendment Process (IA 20.4.2) in order to be permitted under the Plan. The minor amendment will be based on the project specific biological criteria/consistency analysis identified in the Plan that will be submitted by the Permittees to the Wildlife Agencies for review and concurrence. If the Wildlife Agencies do not concur with the analysis supporting the minor amendment, the projects would be subject to a major amendment. These specific activities are the Cajalco Road Realignment and Widening (MSHCP Section 7.2.3), State Route 79 Realignment (Newport Road to Gilman Springs Road) (MSHCP Section 7.3.5, p. 7-32), Orange County to Riverside County CETAP transportation corridor, and flood control measures on the San Jacinto River between the Ramona Expressway and the mouth of Railroad Canyon (“San Jacinto River Project”). Specific details regarding the criteria/analysis and process for coverage of these facilities by the Plan are included in the above referenced MSHCP sections and the IA.

Covered Activities within the MSHCP Conservation Area

Repairs required to public infrastructure facilities and utilities located in the MSHCP Conservation Area as necessary for the health, safety and welfare of the public, carried out by Plan Participants, would be covered.

Activities related to monitoring (e.g. trapping, handling, marking) and management (e.g. fire management, weed control, access control, habitat enhancement) subject to consistency with the MSHCP would be covered.

Public access activities including trails, facilities, and passive recreational activities within the MSHCP Conservation Area would be covered subject to consistency with MSHCP guidelines. No impacts or improvements to existing community trails will be covered under the MSHCP. However, the construction and operation of adopted regional trails including 14 trailheads, 5 interpretive centers, and 4 maintenance facilities would be Covered Activities.

Activities Not Covered in the Permit

Take authorization would not be authorized by the Permit for the following activities:

1. Activities on Federal lands.
2. Additional Regulations. In addition to complying with the FESA Section 10(a)(1)(B) and the NCCP permits, the MSHCP Permittees shall also comply with all other applicable local, State and Federal, regulations, laws or ordinances. Any activity not in compliance with all local, State and Federal regulations, laws or ordinances is not covered by the Permit. The State and Federal laws include, but are not limited to the following: U.S. Army Corps of Engineers Clean Water Act Section 404 permits; State Water Quality Control Board/Regional Water Quality Control Board Section 401 water quality certification and/or waste discharge requirements; CDFG Streambed Alteration Agreements pursuant to Fish and Game Code Section 1600 *et. seq.*; State and Federal Departments of Transportation; U.S. Environmental Protection Agency and Department of Pesticide Regulation.
3. Pesticide use. The Permit does not cover the use of pesticides.
4. Projects that are no longer subject to the control of the prospective Permittees (e.g. lands with vested development rights) and operations of water and wind power facilities.

Relationship of Plan to Section 7 Consultations

Private or public actions that are Covered Activities under the MSHCP may also be subject to separate Section 7 review if those actions are authorized, carried out, or funded by federal agencies. Incidental take for Covered Activities carried out by the Permittees or those granted Take Authorization by the Permittees will be granted under the Permit and will be subject to the take mitigation, minimization, avoidance and other measures provided for under the MSHCP. To the extent that Covered Activities involving a federal nexus are determined to affect federally listed species or adversely modify designated critical habitat and would, as such, require a Section 7 consultation with the Service under the FESA, Incidental Take Coverage would occur through the Section 7 process; however, the Service's Obligations and Assurances provided for in Section 14.9 of the IA would apply.

Term of the Permit

The Permit would be in effect for a period of 75 years. The Permittees may unanimously elect to terminate the MSHCP and the Permit. In that event, the Permittees would be required to fulfill any existing and outstanding minimization and mitigation measures required under the terms of the Permit for Take occurring prior to the termination, as well as the minimization and mitigation measures required under the IA and the MSHCP.

The Service may suspend all or portions of the Permit, in accordance with the laws and regulations in force at the time of such revocations or suspension. Such revocation or suspension may be triggered by: 1) failure to implement the Implementation Mechanisms adopted by a Permittee; 2) approval of a project that significantly compromises the viability of the MSHCP Conservation Area; 3) approval of a Criteria Refinement which compromises the viability of the MSHCP Conservation Area, or which adversely affects conservation or jeopardizes the continued existence of any individual Covered Species or otherwise fails to substantially comply with the terms of the MSHCP or the IA; 4) failure to comply with the Rough Step requirements of the MSHCP; and/or 5) withdrawal of a Permittee. The Service may also suspend all or portions of the Permit if land within the Criteria Area is annexed to a non-participating public agency and, thus, development of such land could significantly compromise the viability of the MSHCP Conservation Area. Notwithstanding potentially jeopardizing the survival of federally listed species, no actions or lack of action taken by any federal agencies or Non-Permittee State agencies shall result in the revocation or suspension of the Take Permit or a portion thereof.

Background

Historically, urban and agricultural development in Southern California has occurred in the coastal areas of Los Angeles, Orange, and San Diego Counties, resulting in a significant loss of important biological resources in the region. The inland valleys and hillsides of Riverside and San Bernardino Counties have, until the final years of the 20th Century, remained largely rural, agricultural, and relatively undeveloped. Natural vegetation communities that were once common and extensive in Southern California have rapidly declined due to this historic development pattern and to increasing development pressure in the northwestern and southwestern parts of Riverside County over the past 15 years.

As development pressure has increased, many of the species dependent on Coastal Sage Scrub and associated ecosystems have been listed pursuant to FESA and CESA or are now sensitive. The responsibility of mitigating the effects of urbanization now falls largely on the County, the Cities participating in the MSHCP and private landowners who hold much of the last remaining intact vegetation communities interests and the state and federal regulatory processes associated with protecting endangered, threatened, and rare species.

As urbanization has increased within the County, an increasing number of proponents of public and private development have been required to obtain an incidental take permit from the Wildlife Agencies for impacts to endangered, threatened, and rare species and their habitats. This process, however, has resulted in delays and increased costs to public and private development projects. Also, mitigation was predominantly an assemblage of unconnected habitats created on a project-by-project basis. This piecemeal and uncoordinated effort to mitigate the effects of

development was not an effective nor efficient means to sustain wildlife mobility, genetic flow, or ecosystem health, which require large, interconnected natural areas.

The County's population in 2000 was approximately 1.5 million people. Its population is expected to double by 2020, to reach approximately 3.5 million by 2030, and to be approximately 4.5 million by 2040, according to forecasts by the Southern California Association of Governments (SCAG). This is nearly a 400 percent population increase over the next 40 years. Most of Southern California's growth over the next 40 years is expected to occur in the Inland Empire (San Bernardino and Riverside Counties) (SCAG 2001). Accommodating an increase in population of this magnitude will involve urbanizing thousands of acres of undeveloped land and result in significant conflicts with conservation of species and their habitats. Conflicts with species and delays to obtain permits will escalate costs for all development projects, and potentially result in uncoordinated, fragmented. For the benefit of all citizens and wildlife, the County embarked on the process to obtain incidental take permits from the Wildlife Agencies as part of a larger coordinated approach to development.

The MSHCP is one element of a comprehensive regional planning effort begun in 1999 called the Riverside County Integrated Project (RCIP). RCIP includes:

- A MSHCP, which forms the nucleus of an open-space plan for the western part of the County.
- An updated General Plan for the unincorporated portion of the County; the General Plan addresses land use, circulation, housing and open space, conservation, and other mandatory elements in conformance with state statute. The General Plan includes several programs, such as incentive programs, that will be utilized in implementing the MSHCP, programs to enhance transit alternatives, and programs that will encourage the development of mixed-use centers.
- The Community and Environmental Transportation Acceptability Process (CETAP) identifies future transportation Corridors in the western part of the County and provides environmental documentation to allow early preservation of the necessary rights-of-way for future Corridor development. These Corridors will be designed to meet future mobility needs for autos, buses, and trucks, as well as for the transport of goods and information. CETAP forms a component of the County's circulation element and its arterial highway plan, both associated with the General Plan.

In June 1992, the Riverside County Habitat Conservation Agency, Riverside County Regional Parks and Open Space District and the Western Riverside Council of Governments initiated a program to develop a regional multiple-species plan for Western Riverside County. This effort began partially in response to the then-anticipated listing of the coastal California gnatcatcher as endangered under the FESA. The multiple-species planning effort was intended to bring together the diverse assemblage of local and regional plans and develop a coordinated approach to protecting biodiversity on a regional basis. This effort focused on coastal sage scrub vegetation communities and resulted in the preparation of a Phase 1 document entitled *Information Collection and Evaluation* (Pacific Southwest Biological Services [PSBS]/KTU+A, February 1995). As part of these initial multiple-species planning efforts, a Planning Agreement

was drafted between the Wildlife Agencies and participating local entities. Section 3 of the Planning Agreement presented the goals and principles for development of the MSHCP.

MSHCP Conservation Strategy

The MSHCP was developed as a multi-species conservation program designed to provide a regional conservation strategy for the protection and conservation of threatened, endangered, and sensitive species and their habitats in western Riverside County. The MSHCP emphasizes conservation of the overall ecosystem in the area by assembling, maintaining and enhancing a variety of ecological habitats in an interconnected, cohesive manner. It establishes a conservation program to minimize and mitigate the expected loss of habitat values and incidental take of Covered Species that will result from development and from certain activities associated with management of the reserves established under the MSHCP.

The primary biological goal of the MSHCP is to conserve Covered Species and their habitats in the MSHCP Plan Area. The MSHCP is based on a conservation biology model, using the following reserve design tenets: conserve focus species and their habitats throughout the Plan Area; conserve large habitat blocks; conserve habitat diversity; keep reserves contiguous and connected; and protect reserves from encroachment and invasion by non-native species. A species list developed early in the planning process, along with a species occurrence database and input provided by local biologists and the information assembled for the species accounts, provided guidance for the overall species needs. A vegetation map, coastal sage scrub quality model, and an edge analysis were used to identify large habitat blocks for potential inclusion within conserved areas. These data and analyses also were used to evaluate existing and potential locations for linkages.

In order to receive species coverage, the MSHCP must meet the FESA criteria for a complete HCP application which requires, among other things, that the HCP disclose the impacts likely to result from the proposed taking, and measures the applicant will undertake to avoid, minimize and mitigate such impacts. Existing available information is not sufficient to make findings necessary to satisfy these issuance criteria for 41 Covered Species. For those species, survey requirements are incorporated in the MSHCP to provide the level of information necessary to receive Take coverage. Efforts have been made prior to approval of the MSHCP and will be made during the early baseline studies to be conducted as part of MSHCP management and monitoring efforts to collect as much information as possible regarding these species.

For the prospective Permittees, the primary mitigation is the assembly and management of a reserve for the conservation of natural habitats and their constituent wildlife populations. The proposed MSHCP would provide for the creation of a reserve system that, in addition to the approximately 347,000 acres of existing Public/Quasi-Public land, would protect and manage another 103,000 acres of habitat for Covered Species. The 103,000 acres will be assembled from an approximately 310,000 acre Criteria Area and will consist of 97,000 acres conserved as the local mitigation component and 6,000 acres conserved as mitigation for State Permittee projects (Caltrans and State Parks). In addition the Wildlife Agencies have committed to acquiring 50,000 acres, as permitted by law. Of the 97,000 acres conserved as the local mitigation component, including mitigation for impacts to biological resources as a result of development projects in the Plan Area, 41,000 would accrue through the implementation of developer

incentives and on-site set asides accomplished through the development review process. The RCA, governed by a Board of Directors consisting of designated members of the County Board of Supervisors and an elected official from each of the Participating Cities, will be responsible for assembling the MSHCP Conservation Area.

The MSHCP is designed for the Permittees to independently mitigate the impacts of their Covered Activities and to administer the MSHCP program to Third Parties seeking incidental take authorization within their jurisdiction. Any Permittee may terminate its participation in the MSHCP and abandon prospective take authorization in its jurisdiction. In the event of termination by any Permittee, the RCA will meet and confer with the Wildlife Agencies to determine to what extent, if any, take authorization may continue to be provided to the remaining Permittees. The Wildlife Agencies will evaluate the benefits to Covered Species resulting from the participation of the remaining Permittees, the extent to which the withdrawing Permittee has outstanding obligations for compliance with take minimization and mitigation measures, an evaluation of whether the Permits continue to meet issuance Criteria pursuant to FESA, and any other relevant information. Such evaluation will include an analysis of the viability of the MSHCP Conservation Area without the participation of the Permittee, including whether adequate funding will be available to implement the terms of the MSHCP.

The effectiveness of the MSHCP was designed not to depend on limiting total development to a certain number of acres; instead, it depends upon the assembly of a MSHCP Conservation Area of approximately 500,000 acres including certain specified habitats. A variety of implementation procedures and strategies are incorporated in the MSHCP, designed to minimize and mitigate impacts to Covered Species to the maximum extent practicable. These procedures and strategies are described in detail in MSHCP sections 6.0, 7.0 and 9.3, in the Service's Biological and Conference Opinion (2004), and elsewhere in the Plan and IA . As required under the No Surprises Rule (50 CFR Parts 17 and 22, as modified on February 28, 1998, and in the Service Director's November 4, 2003 and January 28, 2004 memoranda on the subject), unforeseen and changed circumstances are also addressed in more detail later in this document.

The conservation strategy is further summarized below:

Incidental Take Avoidance and Minimization Measures

The MSHCP, the Service's Biological and Conference Opinion (2004), and related documents discuss in detail specific incidental take minimization measures designed to minimize impacts by averting the actual mortality or injury of individuals of Covered Species. The minimization and mitigation measures proposed by the prospective Permittees were developed based on a evaluation of impacts to Covered Species that would result from the Covered Activities, including RCA management practices that will occur in the MSHCP Conservation Area. The Monitoring Program will monitor the effectiveness of the conservation program over the life of the Permit.

As set forth above, the primary mitigation for the development associated with the MSHCP is the acquisition, protection, management, and monitoring of 103,000 acres of Covered Species habitats in perpetuity, and the management in perpetuity of 55,000 acres of existing locally owned Public/Quasi-Public Lands for Covered Species. Further, there are: (1) mitigation

measures for individual Covered Activities; (2) measures designed to ensure that the MSHCP Conservation Area is assembled to meet species conservation goals and objectives; and (3) measures related to long-term management of the Conservation Area.

Project-specific mitigation measures, which are described in more detail below, include elements such as: avoidance and minimization; survey requirements for riparian/riverine and vernal pool associated species, narrow endemic plant species, and species with additional survey needs; criteria for siting, design, construction, operations and maintenance for Covered Activities incorporating avoidance and minimization requirements; and measures such as urban/wildlands interface guidelines, wildlife crossings, and best management practices designed to ensure that indirect effects associated with land uses in proximity to the MSHCP Conservation Area are minimized.

Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools

The MSHCP provides procedures to ensure that the biological functions and values of riparian/riverine areas and vernal pools in the Plan Area are maintained to protect habitat values and Covered Species, including amphibians, birds, fish, invertebrates-crustaceans, and plants. As projects are proposed within the Plan Area, an assessment of the potentially significant effects of those projects on riparian/riverine and vernal pools will be performed. Information necessary for the assessment of these habitats includes the identification and mapping of these resources as well as a description of their functions and values including species composition, topography/hydrology, soil analysis, hydrologic regime, flood storage and nutrient retention and transformation, sediment trapping and transport, toxicant trapping, public use, wildlife habitat and aquatic habitat. The mapping developed as part of the process will be used to identify aquatic resources such as riparian/riverine areas, vernal pools and other jurisdictional areas that may be acquired for inclusion in the MSHCP Conservation Area. Project applicants will be required to develop alternatives demonstrating efforts that first avoid, and then minimize, direct and indirect effects to the wetlands mapped pursuant to this section and shall review these alternatives with the Permittee. An avoidance alternative will be selected, if Feasible. If an avoidance alternative is selected, measures will be incorporated into the project design to ensure the long-term conservation of the areas to be avoided through the use of deed restrictions, conservation easements or other appropriate mechanisms, and management.

If an avoidance alternative is not Feasible, those impacts that are unavoidable will be mitigated pursuant to a Determination of Biologically Equivalent or Superior Preservation to ensure replacement of any lost functions and values of habitat as it relates to Covered Species. If an avoidance alternative is not implemented, surveys will be conducted within suitable habitat for the following species: the least Bell's vireo, southwestern willow flycatcher, western yellow-billed cuckoo, Riverside fairy shrimp, Santa Rosa Plateau fairy shrimp, and vernal pool fairy shrimp. Ninety to 100 percent of the habitat with long-term conservation value will be avoided and conserved by way of implementing species-specific objectives.

The Determination of Biologically Equivalent or Superior Preservation will include quantification of unavoidable impacts to riparian/riverine areas and vernal pools associated with the project, including direct and indirect effects; a written description of project design features and mitigation measures that reduce indirect effects, such as edge treatments, landscaping,

elevation difference, minimization and/or compensation through restoration or enhancement; and a finding demonstrating that although the proposed project would not avoid impacts, with proposed design and compensation measures, the project would be biologically equivalent or superior to that which would occur under an avoidance alternative without these measures. In addition, prior to approval of Biologically Equivalent or Superior Preservation Determinations, the Wildlife Agencies will be notified and be provided a 60-day review and response period.

Protection of Narrow Endemic Plant Species

The MSHCP requires site-specific focused surveys for 14 narrow endemic plants (see Table 1) for Covered Activities within defined Narrow Endemic Plant Species Survey areas where appropriate habitat is present.

Survey results will be documented in mapped and text form and will be presented for review by the Permittee. Where survey results are positive, any proposals with the potential to affect Narrow Endemic Plant Species will be subject to avoidance, minimization and mitigation strategies. The information developed as part of the process described above will be used to identify Narrow Endemic Plant Species population areas that should be made priorities for MSHCP Conservation Area acquisition. If such areas are identified, acquisition would proceed in accordance with the HANS or equivalent process.

For Narrow Endemic Plant Species populations identified as part of the survey process described above, impacts to 90 percent of those portions of the property that provide for long-term conservation value of the identified Narrow Endemic Plant Species shall be avoided until it is demonstrated that species conservation goals including species-specific objectives are met. Findings of equivalency will be made by the Permittees to demonstrate that the 90 percent standard has been met. The information developed as part of this process will be used to identify areas that should be made priorities for MSHCP Conservation Area acquisition. Avoided areas will not be considered as conserved unless they are incorporated into the Additional Reserve Lands.

If it is determined that the 90 percent threshold cannot be met and achievement of overall MSHCP conservation goals for the particular species have not yet been demonstrated, the Permittee(s) must make a Determination of Biologically Equivalent or Superior Preservation. Equivalency Findings will be based upon a definition of the project area, a written project description, a written description of the biological information available for the site, quantification of unavoidable impacts to narrow endemic plant species associated with the project documenting that the 90 percent threshold will be met, a written description of project design features that reduce impacts, and a summary conclusion, including findings of consistency with the 90 percent threshold. An expanded project description will include information demonstrating that although the proposed project would exceed the 10 percent Narrow Endemic Plant Species impact threshold, with proposed design and compensation measures, it would result in an overall MSHCP Conservation Area design and configuration biologically equivalent or superior to that which would occur under a project alternative within the impact threshold without these measures.

Prior to approval of Biologically Equivalent or Superior Preservation determinations, the Wildlife Agencies will be notified of such determinations and be provided a 60-day review and response period. A written record of such determinations shall be maintained and shall be included in the annual reporting documentation prepared by the Permittees and submitted to the Wildlife Agencies.

Additional Survey Needs and Procedures

Surveys will be conducted within defined survey areas for 13 plant species, three amphibians, one bird, and three mammals (see Table 1) according to accepted protocol. For locations with positive survey results, 90 percent of those portions of the property that provide for the long-term conservation value for the identified species will be avoided until it is demonstrated that species conservation goals including species-specific objectives have been met. Findings of equivalency will be made by the Permittees to demonstrate that the 90 percent standard has been met. The information developed as part of this process will be used to identify areas that should be made priorities for MSHCP Conservation Area acquisition. Avoided areas will not be considered as conserved unless they are incorporated into the Additional Reserve Lands

If it is determined that the 90 percent threshold cannot be met and achievement of overall MSHCP conservation goals for the particular species have not yet been demonstrated, the Permittee(s) must make a Determination of Biologically Equivalent or Superior Preservation. Equivalency Findings will be based upon a definition of the project area, a written project description, a written description of the biological information available for the site, quantification of unavoidable impacts to narrow endemic plant species associated with the project documenting that the 90 percent threshold will be met, a written description of project design features that reduce impacts, and a summary conclusion, including findings of consistency with the 90 percent threshold. An expanded project description will include information demonstrating that although the proposed project would exceed the 10 percent Narrow Endemic Plant Species impact threshold, with proposed design and compensation measures, it would result in an overall MSHCP Conservation Area design and configuration biologically equivalent or superior to that which would occur under a project alternative within the impact threshold without these measures.

Prior to approval of Biologically Equivalent or Superior Preservation determinations, the Wildlife Agencies will be notified of such determinations and be provided a 60-day review and response period. A written record of such determinations shall be maintained and shall be included in the annual reporting documentation prepared by the Permittees and submitted to the Wildlife Agencies.

Urban/Wildlands Interface Guidelines

The MSHCP contains guidelines intended to address indirect effects, e.g., edge effects, associated with locating development in proximity to the MSHCP Conservation Area. Measures are included to ensure that the quantity and quality of runoff discharged to the MSHCP Conservation Area is not altered in an adverse way when compared with existing conditions. Stormwater systems in these areas will be designed to prevent the release of toxins, chemicals, petroleum products, exotic plant materials, or other elements that might harm or degrade

biological resources. In addition, night lighting will be directed away from the MSHCP Conservation Area. Noise generating land uses will incorporate setbacks, berms or walls to minimize the effects of noise on biological resources. Also, when approving landscape plans for development adjacent to the MSHCP Conservation Area, Permittees will consider avoiding the approval of invasive, non-native plants in landscaping adjacent to the MSHCP Conservation Area. Proposed land uses adjacent to the MSHCP Conservation Area will incorporate barriers, where appropriate, in individual project designs to minimize unauthorized public access, domestic animal predation, illegal trespass or dumping in the area. Further, manufactured slopes associated with development will not extend into the MSHCP Conservation Area.

Guidelines for Construction of Wildlife Crossings

The MSHCP contains general considerations and specific design guidelines for construction of wildlife crossings that will be implemented in the Criteria Area and on Public/Quasi-Public Lands. Design and location parameters are set forth for large- and medium-sized wildlife, small terrestrial species, and insect crossings. In general, road undercrossings may be used by all species as long as the undercrossing meets certain minimal dimensions. Overcrossing installation will be well thought-out prior to implementation and a cost-benefit analysis completed to determine if economic resources are best spent on the venture. Barriers to small terrestrial wildlife movement will be encouraged along new and modified roadways, so that they are guided toward appropriate undercrossings, culverts, and viaducts. Another consideration for these species includes potential crossing through intervening properties within the Core/Linkage network. Smooth-wire strand or barb-wire strand, post and rail, or some other similar method of fencing will be encouraged so that large wildlife is still able to maintain normal movement routes. Where solid or other similar fencing is deployed, wildlife movement gates or one-way wildlife doors will be installed to allow wildlife movement.

Construction Guidelines

The MSHCP contains construction guidelines for the Criteria Area and Public/Quasi-Public Lands that include, but are not limited to, development of water and pollution control plans, implementation of sediment and erosion control measures for soil stabilization, the use of sand bags or other methods for short-term stream diversions, silt fencing or sediment trapping, procedures for settling pond maintenance, the siting of equipment, fueling and staging areas in non-sensitive habitats, and construction personnel training. Construction sites will be watered regularly to control dust. Appropriate fire-fighting equipment will be available on the project site. The limits of construction will be clearly defined and marked in the field prior to construction to ensure the project limits of disturbance are not exceeded. Exotic species removed during construction will be properly handled to minimize further infestations. The timing of construction will consider seasonal requirements for breeding birds and migratory non-resident birds. However, to the extent Covered Activities will impact unlisted Covered bird species protected by the Migratory Bird Treaty Act (MBTA), the Covered Activities must comply with the MBTA throughout the Plan Area. Permittees will ensure that the guidelines and best management practices are implemented by requiring ongoing monitoring and reporting during construction activities.

Fuels Management

The MSHCP establishes a program to ensure that fuel management activities carried out to protect humans and their property adjacent to the MSHCP Conservation Area, as well as fuel management carried out in the MSHCP Conservation Area itself, are conducted in a manner designed to minimize impacts to Covered Species and their habitats. In brief, where existing reserves occur adjacent to existing developed areas, the brush management zone may encroach into the MSHCP Conservation Area. Where Reserve Assembly proceeds adjacent to existing developed areas, MSHCP Conservation Area boundaries should be established to avoid such encroachment wherever possible. In accordance with existing policies, for new development that is planned adjacent to the MSHCP Conservation Area or other undeveloped areas, brush management shall be incorporated in the development boundaries and shall not encroach into the MSHCP Conservation Area.

Fire management activities necessary for human safety and protection of biological resources may also occur within the MSHCP Conservation Area. Such activities may include construction of fire breaks, fuel reduction zones or efforts to manage fuel loads. To minimize negative effects and maximize positive effects on the MSHCP Conservation Area, within one year following approval of the MSHCP, the MSHCP Reserve Management Oversight Committee shall begin work with fire protection entities to identify and map potential fuel reduction zones or firebreak locations as well as access routes for fire these activities shall be sited and designed to avoid sensitive biological resources, preferably at the top or bottom of a slope, rather than across a slope, and through use of existing firebreaks such as natural ridge lines and fire roads where available. In smaller, fragmented conserved areas, fuel loads shall be managed in a manner most consistent with the protection of biological resources. On those lands designated as State Responsibility Area, the California Department of Forestry and Fire Protection is the primary agent for any fire related activity involving the vegetative cover

Establishment and Management of the MSHCP Conservation Area

As set forth above, the MSHCP proposes to offset the adverse effects of urban, agricultural and other development by providing for the assembly of an interconnected reserve system, i.e., the MSHCP Conservation Area, composed of a variety of habitat types including agriculture, chaparral, cismontane, alkali marsh, coastal sage scrub, desert scrub, grasslands, meadows and marshes, montane coniferous forest, playas and vernal pools, riparian forest/woodland/scrub, alluvial fan sage scrub, water, and woodlands/forests. The primary mitigation by the Permittees under the MSHCP is the progressive assembly over time of a 103,000 acres of Additional Reserve Lands that would be generally contiguous with, or linked to, existing Public/Quasi-Public Lands, and State and Federal Land purchases for a biological reserve totaling approximately 500,000 acres. The MSHCP Conservation Area is to be managed for the benefit of Covered Species. Approximately 466,000 acres of currently undeveloped/vacant or agricultural lands, as modeled and analyzed by the Service, is proposed for development under the MSHCP. The bulk, if not all, of the 103,000 acres of mitigation lands will be acquired through fee simple or easement acquisitions.

The MSHCP Additional Reserve Lands (103,000 acres of mitigation plus 50,000 acres from the Wildlife Agencies) will be assembled over time, approximately 25 years, and when assembly is

completed, must be in a configuration and contain key vegetation communities (both location and acres) that provide for the conservation of Covered Species (MSHCP sections 3.0 and 4.0; Figure 3-2; and Table 9-2). As the Additional Reserve Lands are assembled, the Parties and the public must be able to determine that: 1) lands being conserved within the Criteria Area support the habitat(s) necessary to achieve the conservation goals for Covered Species; 2) development on lands within the Criteria Area is not substantially reducing the opportunity to conserve the Additional Reserve Lands and protect especially those habitat(s) that are critical to meeting species conservation goals; and 3) acquisition priorities at any point in time are appropriately focused on conserving parcels and vegetation communities needed to meet Covered Species conservation goals.

To configure the conservation area, the MSHCP relies upon existing core habitat areas and other blocks of land in public or quasi-public ownership and provides for written Criteria aimed at the conservation of additional cores, extension of existing cores, non-contiguous habitat blocks, and linkage areas from within the Criteria Area. The cores are large blocks of habitat that will comprise the foundation of the reserve system. The cores would protect large habitat blocks supporting Covered Species and the natural processes on which they depend. Connectivity among core habitat areas would be maintained through linkages which would serve as habitat for Covered Species and convey species between core areas of habitat. Non-contiguous habitat blocks would also be conserved and would generally provide for vernal pool associated species and endemic plant species. Non-contiguous habitat blocks may also contribute to overall reserve design by operating as “stepping stones” for dispersal of mobile terrestrial species.

The RCA will manage the Local Permittee MSHCP Conservation Area lands in a manner that will benefit the Covered Species. While the MSHCP Conservation Area is intended to benefit all Covered Species, individual conserved areas may focus on one or more of the above-listed vegetation/habitat types or species. The management strategies, and goals and objectives, of the MSHCP Conservation Area are described above.

Area Plans

The MSHCP is a Criteria-based plan. The County's General Plan Area Plan boundaries were selected to provide the broad organizational framework for the Criteria (see Figure 2-5 of the MSHCP).

The Area Plan Criteria involved identification of: (1) planning species; (2) biological issues and considerations; and (3) reserve configuration and management issues. For each Area Plan, several wildlife and plant species known to occur within the Area Plan were selected as planning species to provide guidance for a conceptual reserve design. Listed species and species with specific habitat requirements, such as Bell's sage sparrow (requires large patches of undisturbed habitat) or bobcat (requires ability for movement with less tolerance to human presence than other species such as coyote), were generally selected as planning species. Biological issues and considerations, such as maintenance of key habitat blocks or linkages, were also identified for each Area Plan. Reserve configuration issues were generally addressed on a Plan Area wide basis.

The Area Plans form the basis for the individual cell Criteria. Consideration was given to adjacent Area Plans to provide for appropriate edge matching and appropriate connectivity across planning and jurisdictional boundaries. Area Plans for 16 different regions of Western Riverside County were established. Within each Area Plan is a detailed description of the biological purpose and objectives of particular land areas within the MSHCP Conservation Area. These purposes and objectives include or relate to core areas, extensions of existing core areas, linkages, bioregions, vegetation, soils, patch size, edge effects, and other relevant Criteria. The MSHCP identifies the range of target conservation acreage by Area Plan Subunits (MSHCP Table 3-2). Flexibility is incorporated in the target acreage ranges and the Area Plan Criteria to allow assembly of the Additional Reserve Lands to be informed by project-specific data and planning as part of the MSHCP implementation process

Criteria Review Consistency Process

Application of the reserve assembly guidance provided in the MSHCP (Section 3.0) is intended to occur sequentially, beginning at the broad, landscape scale and proceeding through the individual cell Criteria. Permittee review of projects will consider the overall MSHCP Conservation Area by relating projects to the MSHCP Conservation Area description provided in Section 3.2.3 of the Plan. The sequential process should continue with the identification of the specific Area Plan and Area Plan Subunits within which a particular project is located. The process would then continue with a review of the specific conservation Criteria for the identified cells or cell group. The individual cell or cell group Criteria typically identifies vegetation communities toward which conservation should be directed along with connectivity requirements (to adjacent cells). The cell Criteria identify a range, by percentage, of conservation desirable within each cell or cell group. Achievement of the variable target acreages will be measured on a core and linkage or Area Plan and Area Plan Subunit basis, not on an individual project or cell/cell group basis. Implementation of the reserve assembly guidance is intended to provide a reserve configuration that supports Covered Species and their habitats

Implementation and findings documenting this sequential process will be made by the Local Permittees for each project for which a Criteria consistency review is conducted and will be included in the appropriate project review and approval documentation. In general, the information and findings will include: a brief project description and location focusing on location of the project with respect to applicable MSHCP core or linkages, Area Plan subunit, and cell or cell group; brief description of onsite biological resources; brief analysis of the relationship of the project to the biological resource issues; brief discussion of any conflicts with the MSHCP Criteria due to project design features; and statement of findings that the proposed project has been determined to be consistent with the MSHCP Criteria and the rationale for this determination. Further details of these findings are found in the MSHCP (pp. 3-122-124).

Criteria Refinement Process

Covered Activities (with the exceptions provided for in the Plan for a single family home on existing legal lot and new agriculture) within the Plan Area are expected to be designed and implemented in accordance with the Criteria for each Area Plan. In cases where the refinements to the Criteria are desirable to facilitate reserve assembly or where the Local Permittees requests refinements for either the purposes of correcting minor discrepancies or for evaluating alternative

conservation proposals that are of equivalent or superior benefit to Covered Species, the MSHCP Criteria Refinement Process will be implemented.

Project information and an equivalency analysis will be provided by the applicant to the Permittees. This analysis will address: 1) the effects on habitat, Covered Species, core, linkages, habitat blocks, non-contiguous habitat blocks, MSHCP Conservation Area, and ecotones; 2) equivalent or greater acreage contributed to the MSHCP Conservation Area; and 3) an applicant must demonstrate agreements or control over mitigation property being offered under the equivalency analysis. The equivalency analysis will draw conclusions regarding the degree to which the proposed project, incorporating the refinements, is considered to be biologically equivalent or superior to a project on the same site not deviating from the MSHCP Criteria.

Projects where the Refinements to the Criteria are determined to be biologically equivalent or superior would not require an amendment to the MSHCP. Projects not determined to be biologically equivalent or superior will be determined as unacceptable deviations from the MSHCP Criteria and an amendment to the MSHCP would be required in order for the project to be a Covered Activity under the MSHCP.

If a Permittee determines that Criteria Refinements are appropriate, the affected Permittee will meet with the RCA Executive Director and the Wildlife Agencies to discuss the proposed refinements. Prior to Permittee approval of projects incorporating a proposed Criteria refinement, the Permittee will notify the Wildlife Agencies in writing and allow for a 60-day review and response period. The written notice will include the relevant project information. In the event there is disagreement regarding the Criteria refinements for a project, RCA staff shall schedule and hold a meeting with affected parties. In the event the parties are unable to resolve the disputed issues, the matter may be appealed to the RCA Board of Directors for final determination. Criteria Refinements that are proposed to incorporate conservation outside the Criteria Area to meet equivalency findings will be subject to concurrence by the Wildlife Agencies.

Initial Project Review

To ensure the requirements of the MSHCP, a joint review process will be instituted whereby projects within the Criteria Area will be reviewed jointly by the RCA and Permittees for consistency with the MSHCP. The Permittees will submit relevant project information to the RCA. In turn, RCA will prepare comments that address compliance with the MSHCP. RCA comments will be forwarded to the Permittee, private project applicant, and the Wildlife Agencies. The Wildlife Agencies will submit comments in response to the RCA's comments within 10 days of receipt. The Permittees will send the final decision documents to the RCA.

The Wildlife Agencies and the State Permittees will jointly review proposed projects that are within the Criteria Area and those projects outside the Criteria Area that affect narrow endemic plant species, riparian/riverine areas and vernal pools, and species requiring additional survey needs and procedures. State Permittees will submit relevant project information to the Wildlife Agencies and the RCA during preparation of a Project Identification Document or equivalent process that includes application of the MSHCP requirements.

During the first three years of MSHCP implementation, RCA staff and the Wildlife Agencies will meet every ninety days, at a minimum, to review the status of MSHCP implementation including, but not limited to, achieving species objectives.

Local Permittee MSHCP Implementation Mechanisms

The County and the Cities are required to adopt and maintain ordinances or resolutions as necessary, and amend their General Plans as appropriate, to implement the requirements and to fulfill the purposes of the Permit, the MSHCP and the IA for private and public development projects. Such requirements include: **(1)** the collection of Local Development Mitigation Fees and other relevant fees to help implement the Plan; **(2)** compliance with the HANS process or equivalent process to ensure application of the Criteria and thus, satisfaction of the local acquisition obligation; **(3)** compliance with the policies for the Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools; **(4)** compliance with the policies for the Protection of Narrow Endemic Plant Species; **(5)** compliance with survey requirements; **(6)** require Urban/Wildlands Interface Guidelines compliance for the benefit of all Covered Species; and **(7)** compliance with the Best Management Practices and siting and design criteria for the benefit of all Covered Species.

In addition, the County and Cities must:

- Transmit any collected Local Development Mitigation Fees, other appropriate fees and associated interest to the RCA at least quarterly.
- Contribute to Plan implementation and Reserve Assembly for County and City public projects, including but not limited to any one or any combination of the following: 1) acquisition of replacement Habitat at a 1:1 ratio that is Biologically Equivalent or Superior to the property being disturbed; or 2) payment of the Local Development Mitigation Fees as established for commercial and industrial development.
- Participate as a member agency in the RCA.
- Notify the RCA, through the Joint Project/Acquisition Review Process, of proposed Discretionary Projects within the Criteria Area and participate in any further related requirements.
- Take all necessary and appropriate actions to enforce the terms of project approvals for public and private projects, including compliance with the MSHCP, the Permit and the IA.
- Carry out all other applicable requirements of the MSHCP, the IA and the Permit.
- Manage MSHCP Conservation Area property or conservation easements owned or leased by the County or respective City in compliance with the Plan.
- Participate as a member of the RMOC.

The Permittee Regional Conservation Authority must also comply with the above-listed mitigation requirements, except for the HANS or equivalent process. In addition to the above, RCTC will contribute \$121 million from Measure “A” funds, and the RCTC and County will contribute an additional \$250 million from a percentage, 3-5 percent, of other new road construction budgets for mitigation of its Covered Activities

HANS

The MSHCP establishes a process for the Local Permittees to acquire Additional Reserve Lands. The HANS process is intended to ensure that an early determination is made regarding the properties needed as Additional Reserve Lands, the owners of property needed for the MSHCP Conservation Area are compensated, and owners of property not needed for the Additional Reserve Lands will be covered for Take of Covered Species Adequately Conserved and their habitat through the Permits issued to Permittees.

Inside the Criteria Area, the HANS process allows a property owner to determine how their project relates to the MSHCP, and what portion (if any) of the property is needed for conservation. If it is determined that all or a portion of property is needed for inclusion as Additional Reserve Lands, various incentives may be available to the property owner in lieu of, on in addition to, monetary compensation in exchange for the conveyance of a property interest. If none of the property is needed for conservation, the applicant proceeds with the project as they would outside the Criteria Area. If all or a portion of the applicant’s property is needed for conservation, it is up to the applicant at that point to determine if they wish to propose a development project consistent with the MSHCP, what lands would be conserved through dedication, whether incentives would provide compensation for some or all of the conservation lands, and to enter into negotiations with the Local Permittees to sell portions needed for conservation that would not be conserved through dedications or the application of incentives. HANS sets an initial review period of 45 days and a negotiation period of 120 days for this process.

Participating Special Entities

The Plan also provides for Participating Special Entities, such as public utilities and local public agencies not directly acting as Permittees or Third Parties Granted Take Authorization under the MSHCP, to “opt into” the Plan. If they opt in, such entities will be required to contribute to Plan implementation through payment of a fee based upon the type of proposed activity, which shall be applicable to all activities in the Plan Area. For Regional Utility Projects that will be constructed to serve development, such as major trunk lines, Participating Special Entities shall pay a fee in the amount of 5 percent (5%) of total capital costs or take such other actions as may be agreed to by the RCA and the Wildlife Agencies. For such activities that will result in only temporary impacts and disturbance, Participating Special Entities shall pay a fee in the amount of three percent (3%) of total capital costs or other appropriate measures as may be agreed to by the RCA and the Wildlife Agencies. For such activities outside the Criteria Area, contribution shall consist of payment of Local Development Mitigation Fees as adopted for commercial and industrial development. All obligations must be satisfied prior to impacts to Covered Species and their Habitats.

Identification of Species to be Covered Under the MSHCP

The MSHCP examines the existing biological setting, including vegetation, species occurrence, herbarium data, wetlands, soils, and topography. The Plan individually examines the County's bioregions and vegetation communities, including agriculture, chaparral, cismontane, alkali marsh, coastal sage scrub, desert scrub, grasslands, meadows and marshes, montane coniferous forest, playas and vernal pools, riparian forest/woodland/scrub, alluvial fan sage scrub, water, woodlands/forests, and developed/disturbed land.

The initial list of species considered for conservation under the MSHCP included 247 species identified by the MSHCP Advisory Committee in collaboration with the Wildlife Agencies. Early in the process, it was determined that sufficient information was not available to proceed with conservation planning for many of these species. The initial list of 247 species was reduced to 165 species as part of the August 9, 1999 Draft MSHCP Proposal. The list was further refined to 146 species as the MSHCP planning process proceeded and information needed to proceed with conservation planning could not be obtained for certain species. Several species were added to the list during this process as suggested by stakeholders such as the Wildlife Agencies and the California Native Plant Society (CNPS). Species added included great blue heron, Dulzura kangaroo rat, Aguanga kangaroo rat, and six plant species.

Biological Goals and Objectives

The Global Biological Goal: The Biological Conservation Goal of the MSHCP is to conserve Covered Species and their habitats in the MSHCP Plan Area.

Global Biological Objectives: The following global biological objectives will be implemented for the benefit of the MSHCP Covered Species in order to achieve the global biological goal:

1. The MSHCP Conservation Area shall be approximately 500,000 acres in size and shall be comprised of approximately 347,000 acres of Public/Quasi-Public Lands and approximately 153,000 acres of Additional Reserve Lands. The MSHCP Conservation Area shall incorporate the Cores and Linkages as well as habitat distributions generally as presented in the MSHCP Conservation Area Description (MSHCP Section 3.0)
2. Upland habitat quality within the MSHCP Conservation Area will be maintained and managed generally in similar or better condition as at the time lands are conveyed to the MSHCP Conservation Area.
3. Wetland habitat quality within the MSHCP Conservation Area will be maintained and managed generally in similar or better condition as at the time lands are conveyed to the MSHCP Conservation Area.
4. Best Management Practices (BMPs) will be implemented in accordance with the guidelines presented in Appendix C of the Plan. For Flood Control projects, the existing NPDES general permit for storm water discharges associated with construction activities (Water Quality Order 99-08-DWQ) and California Fish & Game Code Section 1601 Streambed Alteration Agreements for flood control facilities maintenance will be implemented.

5. New land uses adjacent to the MSHCP Conservation Area will implement the Guidelines Pertaining to the Urban/Wildlands Interface.
6. The Maintenance of Existing Habitat Conditions Prior to Reserve Assembly policies will be implemented to ensure that habitat quality within the Criteria Area generally remains in its existing condition prior to conveyance of lands to the MSHCP Conservation Area.
7. The Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools policy will be implemented for the benefit of those species associated with these habitat types.
8. The Protection of Narrow Endemic Plant Species policy will be implemented for the benefit of narrow endemic plant species.
9. The Additional Survey Needs and Procedures policy will be implemented for the benefit of those species subject to this policy.
10. Covered Activities within the Criteria Area and allowable Uses within the MSHCP Conservation Area will be implemented in accordance with the siting, construction, design, operations and maintenance guidelines.
11. Monitoring and management activities will be undertaken for each of the MSHCP Covered Species as described in the Plan.

The MSHCP establishes species-specific biological objectives for each of the Covered Species in the MSHCP Volume 2. B. The quantitative information presented in the MSHCP sets the overall parameters for species conservation and reserve assembly. Species-specific objectives may be modified in response to future data collection efforts and as jointly agreed upon by the Permittees and the Wildlife Agencies.

Survey Requirements

Of the 146 species covered by the MSHCP, no surveys will be required by applicants for public and private development for 105 of the Covered Species. Covered Species for which surveys may be required by applicants for public and private development projects are identified above in Table 1 and are described under the Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools, Protection of Narrow Endemic Plant Species, and Additional Survey Needs and Procedures. In addition, Covered Species will be surveyed for inventory and monitoring purposes within the MSHCP Conservation Area.

General Management in the Plan Area

The MSHCP Management and Adaptive Management Program uses an adaptive approach to management to ensure that the Covered Species and vegetation communities within the MSHCP Conservation Area are maintained and/or enhanced during the 75-year term of the Permit, utilizing the best science available over time. Mitigation in the form of 103,000 acres of Additional Reserve Lands and 55,000 acres of existing Public/Quasi-Public Lands will be managed in perpetuity for the benefit of the Covered Species, utilizing the best science available

over time. To achieve the overriding management goal of the MSHCP of protecting and maintaining a self-sustaining MSHCP Conservation Area, there will be an integrated multidisciplinary effort that incorporates Adaptive Management principles and monitoring efforts. Where there are significant data gaps in the MSHCP with respect to certain species or habitat, those data gaps are addressed through additional survey requirements, attainment of specific conservation targets, and other components of the MSHCP Adaptive Management program.

General Management Activities: General management activities will be implemented by Reserve Managers and the Reserve Management Oversight Committee (RMOC) and occur at two levels: habitat- or landscape-level management activities and species-specific management activities. The habitat- or landscape-level management activities will ensure that the Monitoring Program will help assure that trends are not misinterpreted at the species-specific level. The species-specific management activities will ensure that the management needs of individual species are met, taking into consideration the known information for each species including primary habitats and known threats.

Based on three major considerations – existing ownership/management structures, common biological issues, and geography – the MSHCP Conservation Area was divided into five units for purposes of implementing the Management and Monitoring Program: the Santa Ana River Management Unit, Badlands/San Jacinto River Management Unit, National Forests Management Unit, Lake Mathews/Lake Skinner Management Unit, and Upper Santa Margarita River/Wilson Creek/Anza Valley Management Unit.

The following general management measures, which address the processes, threats, and disturbances that affect habitat and natural communities, and are intended to sustain sufficient species diversity to maintain the health of the particular ecosystem, will be undertaken:

1. Control of unauthorized public access to the MSHCP Conservation Area.
2. An initial baseline assessment of Additional Reserve Lands will be undertaken within the first four years of conveyance of such lands to the MSHCP Conservation Area. The baseline assessments will include a general characterization of existing habitat conditions, species presence and diversity, presence of threats, and general identification of management issues. The assessment will be documented and presented to the RMOC for inclusion in the MSHCP annual reports. Existing baseline data will be used for the existing reserves and will be augmented by new data collected during monitoring efforts. Baseline data are currently being gathered on existing Public/Quasi-Public Lands.
3. Upland Habitats within the MSHCP Conservation Area will be maintained and managed to the extent Feasible in a condition similar to or better than the habitat's conditions at the time lands are conveyed to the MSHCP Conservation Area. Remedial action will be recommended if there is a substantial decline in native species or other apparent threats to habitat conditions are observed
4. Wetland Habitat within the MSHCP Conservation Area will be maintained and managed to the extent Feasible in a condition similar to or better than the habitat's condition at the

time the lands are conveyed to the MSHCP Conservation Area. Remedial actions will be recommended if a substantial decline is documented in habitat conditions or native species compared to the baseline or other apparent threats to habitat conditions.

5. Existing known or newly observed active raptor nests will be conserved within the MSHCP Conservation Area. Implementation of this objective will benefit the following species: bald eagle, burrowing owl, California spotted owl, Cooper's hawk, ferruginous hawk, golden eagle, merlin, northern goshawk, northern harrier, osprey, peregrine falcon, prairie falcon, sharp-shinned hawk, Swainson's hawk, turkey vulture, and white-tailed kite.
6. Management activities will be directed toward Core Areas and species localities.
7. Unless otherwise specified in the species-specific conservation objectives, species presence and continued use shall be verified at 75 percent of the locations identified for each species in the species accounts, as measured at a minimum once every eight years. Species declines below this threshold, or other thresholds as noted in the species-specific conservation objectives, shall trigger management actions. Specific management actions shall be based on site-specific information and recommendations. These specific management actions will be in addition to ongoing management activities. The identified 75 percent threshold is the default lower limit (unless otherwise specified) and may be modified as new data are collected over time. Thresholds shall be determined by the RMO which will meet at a minimum twice yearly to evaluate new data and review species-specific trigger points. It is anticipated that sufficient data will be available to determine any needed modification in species-specific trigger points for management activities by Year 15 after Permit issuance.
8. General management efforts will be directed to respond to natural and anthropogenic disturbance regimes, particularly those that may be causing ecosystem state transition (conversion of one habitat type to another).

Within larger habitat blocks in the MSHCP Conservation Area, fire management activities such as prescribed burning may be determined to be desirable to achieve biological goals within the MSHCP Conservation Area. Such activities shall be considered in the detailed management plans for each management unit within the MSHCP Conservation Area, that will be prepared within five years after approval of the MSHCP.

Adaptive Management Program

Under the MSHCP, when an adverse change in Covered Species status or habitat is detected, Reserve Managers will utilize data from the Monitoring Program and other relevant data to evaluate the information and will respond by initiating, modifying, or even ending a particular management strategy if necessary. Adaptive Management activities in the MSHCP may involve basic and applied research undertaken by scientists and their students, participating in on-the-ground work as part of their own research programs. Such research efforts will be conducted with the oversight of the RMO and RCA to provide consistency with the procedures, policy direction and decision-making process of the overall MSHCP. Adaptive Management

hypothesis testing will occur throughout the life of the Permit. The extent of the testing will be determined based on the “conceptual models” developed for various species and the identified stressors. The level of Adaptive Management hypothesis testing will be included annually in the 3-5 year work plans.

The appropriate parties to the MSHCP, including the RCA and CDFG, will institute the Adaptive Management Program in accordance with a cooperative organizational structure. The RCA will sponsor annual workshops including Adaptive Management issues, and funding will be prioritized for management and Adaptive Management activities.

Preliminary Management Units: Reserve Management Units will form the structure for the MSHCP management efforts over the long-term. Preliminary Management Unit boundaries may be refined, changed or consolidated based on information gathered during this period. Reserve Management Plans (RMP) will be prepared within five years after Permit issuance for each Management Unit where substantial acquisition has occurred within a management unit as per proposed FESA section 10(a) Permit Terms and Condition 13.

Compliance Monitoring and Reporting

Annual reports will be prepared by the RCA and provided to the Wildlife Agencies to track habitat losses and gains associated with public and private development projects and new agricultural land within the Criteria Area. The annual reports will be used to demonstrate that conservation is occurring in rough proportionality with development, ensure that the MSHCP Conservation Area is being assembled as contemplated in the MSHCP, and ensure that habitat conservation goals and objectives are being achieved. The annual report will also include acres authorized for disturbance in the Plan Area during the reporting period, single family and mobile home activity within the Criteria Area, new or expanded agricultural operations within the Criteria Area, minor/administrative amendments for the preceding year, highlights of ongoing management and monitoring activities, and funding/collection of mitigation fees.

Biological Monitoring and Reporting

The goals of the Biological Monitoring Program are to fulfill the strategically required inventory and monitoring of plant and animal species and vegetation community/habitat in support of the MSHCP and provide data for management decisions. The inventory and monitoring aspects of the program will range from simple short-term efforts, such as field verifying existing species occurrence records, to long-term monitoring of population status and trends. The Monitoring Program will seek to accommodate as many diverse life history strategies of species as possible that could be affected over the long-term by implementation of the MSHCP. Where Feasible, the intent is to monitor groups or suites of similar species in a community context that includes gathering data on habitat attributes, vegetative composition, and structure.

The Biological Monitoring Program will be implemented in phases, and phases may overlap in time to increase flexibility and opportunity during implementation. Inventory on some species groups may be completed in four years, whereas on others, the inventory may be completed in one or two years. The phased strategy allows full implementation of monitoring to begin as soon as a first inventory cycle for any suite of species (*e.g.*, amphibians) has been completed rather

than waiting for inventory to be completed on all suites of species. There is an initial phase of species, community, and habitat inventory and assessment, for the development of monitoring strategies, and for testing of methodologies and protocols. The initial inventory and assessment phase will consist of (a) mapping the vegetation communities and assessing habitat quality; (b) baseline inventory field surveys of all Covered Species; and (c) updating and field verifying existing recorded species occurrences. A thorough baseline will be established during the first few years. This initial period will be followed by full implementation of the long-term Biological Monitoring Program.

The first 5 years of the Monitoring Program will be devoted to gathering objective data on species distribution and relative abundances that will be used to determine the long-term monitoring strategy. The Wildlife Agencies will be responsible for developing the long-term monitoring strategy with CDFG serving as the Monitoring Program Administrator for the first 8 years of the Permit. The CDFG's Resource Assessment Program has developed long-term collaborative relationship with the University of California, Riverside Center for Conservation Biology to assist with developing monitoring strategies that will be used consistently throughout. Involving CDFG's Resource Assessment Program will ensure that data is collected consistently, and stored and accessed through a centralized database.

The initial phase of the Biological Monitoring Program will focus on assembling existing data, mapping vegetation communities/wildlife habitat, and inventorying Covered Species. The initial phase will establish the baseline condition of the area for the next step, which is to establish survey strategies for species and species-groups for long-term monitoring. Careful attention will be given to how sampling protocols can provide feedback. The information collected by the Biological Monitoring Program will assist Reserve Managers in adapting management activities to meet species and vegetation community/habitat objectives and to determine appropriate management actions.

Under the long term phase, Covered Species will be monitored according to a schedule (see MSHCP Table 5-8), and vegetation communities and wildlife habitats GIS layer and map will be updated. Every 8th year calls for change detection analyses for vegetation communities and wildlife habitats, with a feedback loop that will be used in the analysis of data for the MSHCP Adaptive Management strategy, and evaluation and feedback for potential modification of monitoring strategies. Specific long-term monitoring sampling locations, methods, and survey intensity will be fully developed after analyses of the Habitat and species inventories.

There are several existing inventory and monitoring accepted methodologies that will be used by the Biological Monitoring Program, such as classifications for type mapping for vegetation communities and wildlife habitats, as well as accepted protocols for assessing aquatic species and certain suites of birds, small mammals, reptiles, and some amphibians. There are also peer-reviewed and published protocols for some species, such as the southwestern willow flycatcher (Sogge, *et al.* 1997). Baseline inventory field surveys for the 146 Covered Species will be the most important element of the Covered Species inventory and monitoring effort. Long-term Covered Species monitoring strategies will also be developed. Methodologies will be developed to detect species geographic distribution, population substructure, and population classification. Collected data will facilitate development of strategies for long-term monitoring of Covered Species.

To ensure consistency the Monitoring Program Administrator will prepare annual monitoring work plans, which include a description of the proposed monitoring efforts for the following year, survey protocols, schedule for field work and budget, three-five year projected schedules and cost estimates for monitoring, and a reporting of the monitoring over the previous 12 months.

The first annual report is to be submitted by the Permittees to the Wildlife Agencies, through the Reserve Management Oversight Committee, within 15 months of permit issuance. The report shall contain required information from the first 12 months of MSHCP implementation.

Minimum information required for the annual report are listed in the IA, section 10.1.

Throughout the life of the permit, annual reports are to be submitted to the Wildlife Agencies every 12 months, after the initial report.

Plan Modifications and Amendments

While MSHCP modifications and amendments are not anticipated on a regular basis, certain events may trigger modifications, or minor or major amendments to the MSHCP. Potential MSHCP modifications (but not amendments) include clerical changes, land use changes by the Permittees, and adaptive management changes. Minor amendments to the MSHCP are limited to: minor corrections to land ownership; minor revisions to surveying, monitoring, reporting and/or management protocols, transfer of target Reserve Assembly acreages between identified subunits with a single Area Plan, or between Area Plans, with a single Rough Step Analysis Unit consistent with the Criteria; application of take authorization to Development within Cities incorporated within Plan boundaries after the Effective Date of the IA provided certain requirements are met; annexation of property to the Plan Area, provided certain requirements are met; minor extensions of cut or fill slope outside of the rights-of-way limits analyzed in the MSHCP for covered roadways, and updates/corrections to the vegetation map and/or species occurrence data. In addition, specific Covered Activities (State Route 79 Road Improvements, Cajalco Road Improvements, and San Jacinto River Project) are conditionally covered subject to a minor amendment provided the project specific criteria/equivalency analysis identified in the Plan are met.

Major amendments to the MSHCP (IA section 20.5) are those other than changes which are clerical (IA section 20.1), land use changes (IA section 20.2), adaptive management changes (IA section 20.3) or minor amendments (IA section 20.4-20.5). Minor amendments may be proposed, in writing, by the Permittees or Wildlife Agencies and do not require modification to the IA or Permit. Major amendments can be requested by the Permittees in writing to the Wildlife Agencies. Any change to the IA or Permit would require a major amendment.

Changed and Unforeseen Circumstances

Changed Circumstances are defined in 50 C.F.R. § 17.3 as “changes in circumstances affecting a species or geographic area covered by a conservation plan that can reasonably be anticipated by plan developers and the Service and that can be planned for (e.g., the listing of new species, or a fire or other natural catastrophic event in areas prone to such events).” The MSHCP identifies 4 Changed Circumstances (1) short-interval return fire, (2) flood, (3) drought, and (4) invasion by exotic species.

Short-interval return fire: The Plan contains a fire risk assessment which has determined that vegetation communities within the MSHCP Conservation Area are generally adapted to the existing fire regime and will naturally recover from fire. For purposes of assessing Changed Circumstances, repetitive fire that may adversely affect Covered Species is defined as a fire within the MSHCP Conservation Area that occurs within the same burn footprint more than once in a 5-year period. Based on fire history data available from CDF, such occurrences would be infrequent and would not be expected to occur on more than five occasions during the 75-year term of the Permit. Excluding National Forest lands, the largest area that could burn is anticipated to be 6,000 acres. The Executive Director of the RCA will develop and implement a monitoring program to monitor natural re-growth within the damage area for a period of up to two years; if, after two years, it is determined that natural re-growth is not occurring and that such absence of natural re-growth will adversely affect Covered Species, an action plan will be developed and implemented through the Adaptive Management Plan.

Flood: For the purpose of defining Changed Circumstances, flood is defined as flood events occurring within the MSHCP Conservation Area in portions of the Santa Ana River, the San Jacinto River and the Santa Margarita River watersheds, at greater than 50-year and up to and including 100-year levels, as classified by Federal Emergency Management Agency (FEMA). The 100-year flood has a 39 percent chance of occurring in any given 50-year period, and thus is reasonably foreseeable during the life of the Permit. However, flooding is a natural event and is not anticipated to cause damage sufficiently severe to prevent natural regeneration within the MSHCP Conservation Area. If a 50-or 100-year flood or a dam break occurs within the MSHCP Plan Area resulting in inundation within the MSHCP Conservation Area, the RCA Executive Director will notify the Wildlife Agencies of this Changed Circumstance. The Executive Director will prepare a damage assessment report; recommend actions to repair the damage if necessary, such as natural regeneration; implement response measures through the Adaptive Management Plan; and monitor the response of species/Habitats to the action(s) taken.

Drought: Data assembled for 120 years indicates a general eight year periodicity in wet and dry conditions with more infrequent occurrences of dry years extending for more than a 1-2 year period. Based on these data, and the fact that drought is an expected occurrence in Southern California, a drought event significantly affecting Covered Species is not anticipated to occur during the life of the Permit. The Permittees in their General Plan have incorporated plans to ensure adequate water supplies for residents during drought and such measures may ensure that artificial water sources are available to assist Covered Species during periods of drought. If a climatic drought occurs within the MSHCP Plan Area as defined by this section, the RCA Executive Director shall notify the Wildlife Agencies of this Changed Circumstance. The Executive Director shall prepare a damage assessment report; and recommend actions to ameliorate the effects of the climatic drought on Covered Species, such as providing temporary artificial water sources to benefit Covered Species adversely affected by drought, implementing measures through the Adaptive Management Plan, and monitoring the response of species/Habitats to the action(s) taken.

Invasion by Exotic Species: If an unanticipated invasion by exotic species occurs as a result of another Changed Circumstance identified in this section, the RCA Executive Director will notify the Wildlife Agencies of this Changed Circumstance and prepare a damage assessment report; and recommend actions to address the threat(s) resulting from the unanticipated invasion by

exotic species. Such actions may involve efforts to improve habitat conditions, implementing response through the Adaptive Management Plan, and monitoring the response of species/Habitats to the action(s) taken.

New Listings of Species Not Covered by the MSHCP: The Service may list additional species under FESA as threatened or endangered, delist species that are currently listed, or declare listed species as extinct. If a species not covered by the MSHCP is listed as threatened or endangered under the FESA during the life of the Permit, the Service and the Permittee(s) shall identify actions that may cause take, jeopardy or adverse modification of Critical Habitat, and the Permittee(s) shall avoid such actions in the implementation of their Covered Activities until approval of an amendment to the MSHCP to address the newly listed species. Such avoidance measures shall include evaluating proposed project applications for potential effects of Covered Activities on the newly listed species, including assessing for suitable habitat in proposed Covered Activity areas and surveys for the newly listed species, as appropriate, using accepted protocols; and evaluating that data in the context of the proposed Covered Activity and avoiding impacts to the newly listed species.

Unforeseen Circumstances

Subject to the provisions of the November 4, 2003 and January 28, 2004 memoranda issued by Service Director Steve Williams regarding the “No Surprises” litigation, and any future revisions thereto, including the requirement to place a “severability provision” in the MSHCP Take Permit, pursuant to the “No Surprises” rule, the Service will not require any additional land, water, or other natural resources without the consent of the Permittees in the event an Unforeseen Circumstance occurs. The term “Unforeseen Circumstances” means “changes in circumstances affecting a species or geographic area covered by a conservation plan that could not reasonably have been anticipated by plan developers and the Service at the time of the conservation plan’s negotiation and development, and that result in a substantial and adverse change in the status of the covered species.” 50 C.F.R. § 17.3. If the Service determines that an Unforeseen Circumstance has occurred and that additional land, land restrictions, or financial compensation beyond that required under the MSHCP are needed to conserve the Covered Species, then the Permittees will not be obligated to provide the additional measures without the Permittees’ consent.

Pursuant to Sections 7 and 10 of the FESA, the Service retains the authority to revoke the Permit, in response to an Unforeseen Circumstance or otherwise, if we find that continuation of the take permitted under the Permit is likely to jeopardize the continued existence of a Covered Species. The Service, any federal, state or local agency, or a private entity may take additional actions at their own expense to protect or conserve a Covered Species within the MSHCP Plan Area.

Changes made between Draft and Final MSHCP

The public comment period on the draft MSHCP (County et al. 2002) and its associated environmental documents enabled the Service to gather comments from interested parties. The process of reviewing and considering these comments led to the development of changes to the original proposed MSHCP. The final version of the MSHCP was made available to the public in

July 2003. These changes were clarifications, updates and additional information, and are summarized as follows:

Volume I, Part 1, Section 3: Management entities in the listed Core Areas were specified. References to the guidelines applicable to existing Core Areas, Proposed Constrained Linkages and Proposed Linkages were added.

Volume I, Part 1, Section 3, Table 3.4: A minor revision was made to constituent cells in the Elsinore Core Area.

Volume I, Part 1, Section 3.3.10 and Table 3-11, Section 3.3.15 and Table 3-16: “Special linkage areas” discussions were added.

Volume I, Part 1, Section 4.6.1: Language was added to allow “in-lieu payments” to a mitigation bank.

Volume I, Part 1, Section 5.2.1: “Adaptive Management hypothesis testing” was added.

Volume I, Part 1, Section 5.3.6: Discusses “surrogate species” monitoring as a cost effective management tool.

Volume I, Part 2, Section 6.1: The Draft Plan established a form for City adoption of a plan implementation mechanism; the Final Plan established that the implementation mechanism must be adopted within 6 months of execution of the IA.

Volume I, Part 2, Section 6.1.2: Certain plant species were added to the list of species important to conserve. These species were already on the Covered Species list. Fairy shrimp based survey requirements were added to the riparian/riverine vernal pool survey discussion.

Volume I, Part 2, Section 6.1.3: Language was added detailing the circumstances for the discontinuance of certain surveys and the release of “90 percent avoidance areas” upon adequate conservation of specified species.

Volume I, Part 2, Section 6.2: Certain new agricultural uses were exempted from a 5-year non-development period following that reclassification to new agricultural use.

Volume I, Part 2, Section 6.4: A consultation requirement with the California Department of Forestry concerning fire-related activities in State Responsibility Areas was added.

Volume I, Part 2, Section 7.2.2: A list of planned Circulation Element roads was added.

Volume I, Part 2, Section 7.2.5: Maintenance of public facilities in existing Public/Quasi-Public lands within the existing disturbed area of each existing facility, and without any changes to operating characteristics that may affect Covered Species, is a covered activity.

Volume I, Part 2, Section 7.2.6: Existing agricultural uses in Public/Quasi-Public lands are now generally covered.

Volume I, Part 2, Section 7.3.5: Table 7-4 lists roadways in particularly sensitive areas.

Volume I, Part 2, Section 7.3.7: Maintenance of flood control facilities in Public/Quasi-Public lands or the Criteria Area is now covered pursuant to CDFG permit and/or a memorandum of understanding.

Volume I, Part 2, Section 7.3.8: Waste management activities in Public/Quasi-Public lands is now covered in existing, disturbed areas at inactive sites.

Volume I, Part 2, Section 7.3.9: Certain limited future facilities are now allowed in Public/Quasi-Public lands subject to environmental compensation requirements; a list of named wastewater facilities was replaced by a more general list; and allowed electric utilities now include new transmission and generation facilities.

Volume I, Part 2, Section 7.4.1: More detailed circumstances regarding take allowed pursuant to management activities, and take allowed pursuant to scientific research or monitoring activities in the MSHCP Conservation Area were added.

Volume I, Part 2, Section 7.5.1: Siting and design guidelines for planned roads within the Criteria Area and Public/Quasi-Public lands were added.

Volume I, Part 2, Section 7.5.2: Wildlife crossing construction guidelines were added.

Volume I, Part 2, Section 7.5.3: General construction guidelines were added.

Volume I, Part 2, Section 8.5.1: Clarified that both new capital construction and maintenance of regional flood control projects are Covered Activities and are expected to contribute 3-5 percent of capital costs towards mitigation, depending upon the project's impact.

Volume I, Part 2, Section 9.1: Specifies amount of American Indian lands.

Volume I, Part 2, Section 9.2: Table 9-2 has additional information regarding Delhi sands flower-loving fly species objectives, including survey requirement changes.

Volume I, Part 2, Section 9.3: Table 9-3 sets forth the requirements for adequate conservation for certain species.

Volume I, Part 2, Appendix E: Specifically details the circumstances for the discontinuance of certain surveys and the release of "90 percent avoidance areas" upon adequate conservation of specified species (see Section 6.1.3, above).

Figures throughout the MSHCP were updated as necessary to reflect the above changes.

II. PUBLIC COMMENT

A Notice of Intent to prepare the EIS for the federal action associated with the Project was published in the **Federal Register** on September 7, 2001 (65 FR 48609). Public comments on the scope of the Alternatives and environmental effects to be examined for the proposed Project

were requested by October 9, 2001. Thirty comment letters were received. Major issues and responses are summarized in the Scoping Report included as Appendix A to the final EIR/EIS.

A Notice of Availability of the Draft EIR/EIS and Draft MSHCP, with a public review period of 60 days, was published in the **Federal Register** on November 15, 2002 (67 FR 69236).

Comments were requested by January 15, 2003. The public comment period was reopened on February 13, 2003 with Notice of Availability published in the **Federal Register** closing on March 14, 2003 (68 FR 9093). In total, 110 comment letters were received, and a response to each comment is included in the Final EIR/EIS.

A Notice of Availability of the Final EIR/EIS was published in the **Federal Register** on October 7, 2003 (68 FR 57924). Four comment letters were received. None of the comments received presented significant new issues or identified effects of the action that were not previously addressed in the Draft and Final EIR/EISs and in the responses to comments on the Draft EIR/EIS included in the Final EIR/EIS.

III. INCIDENTAL TAKE PERMIT CRITERIA - ANALYSIS AND FINDINGS

1. The taking will be incidental.

The Service finds that the taking of Covered Species under the MSHCP will be incidental to otherwise lawful activities. The activities for which incidental take coverage are sought under the permit include private and public urban development, maintenance and construction of roadways, maintenance and construction of public facilities, maintenance, construction and use of recreational use sites, maintenance and construction of flood control facilities, operation and construction of waste management facilities, agricultural uses, the conversion of natural lands to agricultural uses, and the management of the conserved lands. Any take resulting from the broad range of Covered Activities will be incidental to, not the purpose of, these otherwise lawful activities.

2. The Permittees will, to the maximum extent practicable, minimize and mitigate the impacts of taking of covered animal species and the effects to other Covered Species that may occur within the Permit Areas.

The Service finds that the Permittees will minimize and mitigate the impacts of take of the Covered Species to the maximum extent practicable. The Permittees have developed the MSHCP and IA pursuant to the incidental take permit requirements codified at 50 CFR 17.22(b)(2) and 50 CFR 17.32(b)(2), which require measures to minimize and mitigate the effects of issuing permits. Under the provisions of the MSHCP, the impacts of the take will be minimized, mitigated and monitored in accordance with the requirements of Permit #TE-088609-0 through the measures identified above in the Conservation Strategy section.

Because the Additional Reserve Lands (153,000 acres) from within the 310,000-acre Criteria Area have not been mapped but rather relies on the interpretation of the written conservation Criteria as a whole, we are unable to distinguish the acres of Permittee mitigation (103,000 acres) from that of State and Federal purchases (50,000 acres) on a species by species basis. Although individual land parcels acquired towards assembly of Additional Reserve lands will not contribute equally to any one species conservation needs, we have assumed for analysis purposes

that the Permittees' mitigation of a 103,000 will contribute to approximately 66 percent (103,000/153,000 acres) of the Additional Reserve Lands and hence that percentage to individual species habitat conservation needs. The remaining 50,000 acres of the Additional Reserve Lands, assembled from State and Federal land purchases, are considered a complement to the Permittees mitigation and are not considered additive to the mitigation for the purpose of making a finding of minimize and mitigate to the maximum extent practicable.

The abundance and distribution of a species within an area is unknown in the absence of species-specific focused surveys. However, in general, individual species depend on certain necessary elements within the environment for survival. This suite of elements, some of which are better understood and/or more important than others, constitutes the habitat for a species. However, the vegetation communities in which the species occurs can generally serve as a useful surrogate for describing a species' habitat needs, recognizing that some species' habitats are better described by inclusion of certain specific physical environments or attributes (*e.g.*, wetland types, soil associations, elevation). We acknowledge that due to the landscape approach of the vegetation mapping it is not possible to precisely capture the extent of all vegetation communities or habitat types; therefore, some vegetation communities may be overestimated while others are under represented. In general, the use of vegetation communities likely over represents the extent of habitat that an individual species uses and does not represent the abundance or distribution of a species within those area.

LISTED SPECIES

CRUSTACEANS

Riverside and Vernal Pool Fairy Shrimp

Riverside fairy shrimp and vernal pool fairy shrimp are narrowly distributed and restricted to vernal pools and vernal pool-like ephemeral ponds. Populations of both species in the Plan Area are important for their conservation range-wide.

Riverside fairy shrimp occurs in suitable habitat in Ventura, Los Angeles, Orange, San Diego, and Riverside counties in southern California, and Bajamar in Baja California, Mexico. With the exception of the Riverside County populations and the population at Cruzan Mesa in Los Angeles County, all known populations are within 10 miles of the coast over a north-south distance of approximately 125 miles. In the Plan Area, there are seven naturally occurring populations, one population in created pools, and one population proposed to be relocated into created pools. The seven naturally occurring populations include two populations where only cysts and no adult fairy shrimp have been detected and two populations whose status has not been recently verified.

The vernal pool fairy shrimp is endemic to the Central Valley, Coast Ranges, and a limited number of sites in the Transverse Range and the Santa Rosa Plateau of California. The vernal pool fairy shrimp has a sporadic distribution within vernal pool complexes in its range. Most pools in its range are not occupied by this species. Riverside County records for the species represent the southernmost extent of the species range and are separated from the more northern localities by 177 miles. The largest valley vernal pool remaining in all of southern California is

occupied by the species and is located at the Barry Jones Wetland Mitigation Bank within the Plan Area; the species is also found in seven pools located on the Santa Rosa Plateau Ecological Reserve and at the Stowe Pool in the Salt Creek Vernal Pool Complex.

The vernal pool model was used to identify habitat for the Riverside fairy shrimp and vernal pool fairy shrimp. The Plan Area includes 42,349 acres of modeled vernal pool habitat for these species. Approximately 8,831 acres (21 percent) of modeled vernal pool habitat for these species are within PQP Lands. The PQP Lands include: two of the three known populations of vernal pool fairy shrimp; two natural populations of Riverside fairy shrimp; the population of Riverside fairy shrimp relocated into created pools; and the area where another relocation of Riverside fairy shrimp into created pools is proposed. The Wildlife Agencies are expected to conserve an additional 2,512 acres (6 percent) of the modeled vernal pool habitat for these species. Therefore, Covered Activities are not expected to significantly affect approximately 27 percent of the modeled vernal pool habitat for these species in the Plan Area.

The conservation objectives for the Riverside fairy shrimp provide that 11,942 acres of landscape habitat that might contain suitable vernal pool habitat and five Core Areas will be included within the MSHCP Conservation Area, including Core Areas at Santa Rosa Plateau Ecological Reserve, Skunk Hollow, Murrieta, and Lake Elsinore; the fifth Core Area is not described. The Plan also indicates that additional areas within the Criteria Area important for the Riverside fairy shrimp, identified through implementation of the Riparian/Riverine Areas and Vernal Pools Policy, will be included within the MSHCP Conservation Area.

The conservation objectives for vernal pool fairy shrimp provide that the MSHCP Conservation Area will include 476 acres of vernal pool and playa habitat within the west Hemet portion of Salt Creek, Santa Rosa Plateau Ecological Reserve, and Skunk Hollow and at least 2,647 acres of alkali playa habitat in the floodplain of the San Jacinto River and west Hemet portion of Salt Creek. Also, at least three Core Areas of occupied vernal pools and their watersheds will be within the MSHCP Conservation Area, including the west Hemet portion of Salt Creek, Santa Rosa Plateau Ecological Reserve, and Skunk Hollow.

While 25,832 acres (61 percent) of modeled vernal pool habitat will be subject to development and other proposed Covered Activities over the permit term, we expect the impacts of Covered Activities on listed fairy shrimp to be greatly minimized with implementation of the Riparian/Riverine Areas and Vernal Pools policy. This policy requires that habitat for these species be mapped during the implementation of Covered Activities throughout the Plan Area and avoided if feasible. If avoidance of fairy shrimp habitat is not feasible, surveys for the species are to be conducted. When the species are detected, direct effects to the fairy shrimp will be limited to loss of 10 percent of the occupied area with long-term conservation value for the species.

To mitigate for this taking, the Permittees will protect and manage 5,174 acres or 12 percent of modeled habitat in perpetuity. Additionally, when listed fairy shrimp are detected as a result of surveys conducted under the Riparian/Riverine Areas and Vernal Pools policy, 90 percent of the occupied area determined to have long-term conservation value for the species will be conserved and managed. This, in addition to the species' conservation objectives, will ensure that viable

populations of the species persist in the MSHCP Conservation Area in the long term. Based on the protection and management of modeled habitat and the avoidance throughout the Plan Area of no less than 90 percent of the fairy shrimp habitat with long-term conservation value for the species, we believe that the take of these species will be low and is mitigated by the long-term conservation proposed.

INSECTS

Delhi Sands Flower-Loving Fly

The Delhi Sands flower-loving fly occurs in Delhi soils within southwestern San Bernardino County and northwestern Riverside County, California. Within the Plan Area, this species has been observed in the Mira Loma area, the Jurupa Hills, and along Agua Mansa Road where it crosses the San Bernardino County line. Of the 2,615 acres of modeled habitat, 100 acres (4 percent) are within PQP Lands, and the Wildlife Agencies are expected to conserve an additional 5 acres (less than 1 percent) of modeled habitat. Thus, Covered Activities are not expected to significantly affect 105 acres (4 percent) of modeled habitat for the Delhi Sands flower-loving fly.

Within modeled habitat determined to include suitable habitat for the Delhi Sands flower-loving fly within the Plan Area, surveys will be conducted prior to groundbreaking activities to determine presence or absence of this species. Seventy-five percent of occupied areas at any site will be avoided. If it is determined that the 75 percent avoidance of an occupied site is not feasible and the Service concurs that onsite conservation will not contribute to the long-term conservation of the Delhi Sands flower-loving fly, then off-site conservation will be pursued at a 3:1 ratio (*i.e.*, 3 acres conserved for every acre impacted). In the Agua Mansa area, no surveys will be required for this species. Instead, in this area, the Permittees will conserve at least 50 acres of Delhi Sands flower-loving fly habitat. If a total of 220 acres of Delhi Sands flower-loving fly habitat are conserved as a result of implementation of the Plan, surveys will no longer be required, and any additional incidental take of this species will be authorized within the Plan Area. Based on our field work, we estimate that between 220 and 240 acres of high quality, suitable habitat remain in the Plan Area primarily within the Mira Loma, Jurupa Hills, and Agua Mansa areas of the Plan Area. Protection and management of up to 220 acres in these priority areas would provide substantial conservation for this species.

With the surveys and associated avoidance measures developed under the Plan, there will be conservation at all occupied sites for the Delhi Sands flower-loving fly unless the long-term conservation of the occupied site is determined with Service concurrence to be unattainable and the loss is compensated through off-site conservation or 220 acres are conserved. Conservation of 220 acres would nearly double the amount of land currently conserved for the Delhi Sands flower-loving fly. Overall, the take of occupied habitat for this species is expected to be low. With the conservation proposed, the status of the species in Riverside County is expected to at least be maintained and could benefit through management actions. Thus, the surveys and long-term protection of occupied habitat in conjunction with management activities proposed by the Permittees minimizes and mitigates the impacts to the Delhi Sands flower-loving fly.

Quino checkerspot butterfly

Historically the range of the Quino checkerspot butterfly included much of coastal areas south of Ventura County and the inland valleys south of the Tehachapi Mountains in California, and the coastal areas of northern Baja California, Mexico. Today, more than 75 percent of its historic range has been lost, including more than 90 percent of its coastal mesa and bluff distribution. The Quino checkerspot butterfly is now known only from western Riverside County, southern San Diego County, and northern Baja California, Mexico. The Plan Area encompasses 27 known occurrence complexes, including 7 core complexes, and 4 recovery and critical habitat units. Within the Plan Area, the butterfly is known from numerous areas. These areas are the Gavilan Hills, Canyon Lake, Menifee Valley, Winchester, Diamond/ Domenigoni Valley, Brown Canyon, Scott Road area, Wildomar (*i.e.*, Clinton Keith Road and I-15), Warm Springs Creek/Hogbacks, Temecula, Rancho California, French Valley, Lake Skinner/Skinner Reserve (including Bachelor Mountain and adjacent to Skunk Hollow), Sage, San Ignacio, Rocky Ridge, south of SR-79 south and east of I-15, Black Hills, Oak Mountain, Pauba Valley, Vail Lake, Butterfield/Radec, Wilson Valley, Aguanga, Durasno Valley, Spring Canyon (*i.e.*, also known as Iron Spring Canyon), Anza, Silverado, the southern edge of Garner Valley (including Pine Meadow and Lookout Mountain), and the southern edge of the San Bernardino National Forest (including the Santa Rosa Summit).

The Plan Area includes 209,551 acres of modeled habitat for the Quino checkerspot butterfly . An additional 58,211 acres (28 percent) of modeled habitat for the Quino checkerspot butterfly will remain in PQP Lands, which likely will be managed for the species. The Wildlife Agencies are expected to conserve an additional 17,157 acres (8 percent) of the modeled habitat. Thus, Covered Activities are not expected to significantly affect 36 percent of the modeled habitat for the coastal California gnatcatcher in the Plan Area.

While 98,839 acres (47 percent) of modeled habitat will be subject to development and other proposed Covered Activities outside of the MSHCP Conservation Area over the life of the permit term, 110,712 acres (53 percent) of the modeled habitat for the Quino checkerspot butterfly will be conserved or remain in the Plan Area. This modeled habitat includes 348 of the 393 (89 percent) of the Quino checkerspot butterfly point locations in our dataset and, at least, 96 percent of the Quino checkerspot butterfly occurrence complexes identified in the Plan Area. Moreover, we expect that all 7 core occurrence complexes will be conserved by the Plan, and that implementation of the avoidance, minimization, and management prescriptions identified in the Plan and our proposed a permit term and condition will sustain the Quino checkerspot butterfly in the Plan Area. We anticipate that 26 of the 27 Quino checkerspot butterfly occurrence complexes within the MSHCP Plan Area will persist and that the conservation objectives for this butterfly will be met as stated in the Plan for the 110,712 acres of the modeled habitat within the existing PQP Lands and the anticipated Additional Reserve Lands. The Plan will also ensure that the conserved occurrence complexes will be monitored and adaptively managed cooperatively to benefit this species. As stated in the Recovery Plan, survival and recovery of the Quino checkerspot butterfly not only depends on protection, and restoration and management of habitat within the range of the species, but augmentation of extant populations and reintroduction or discovery of populations in areas not known to be occupied.

To mitigate for this taking, the Permittees will conserve and manage 35,344 acres (17 percent) of modeled habitat in the anticipated Additional Reserve Lands to mitigate the impact of the taking. Because of the low level of impacts (4 percent to occurrence complexes and 11 percent to point locations in our dataset from the Plan Area) and the conservation of 52,502 acres of modeled habitat within the anticipated Additional Reserve Lands with management prescriptions that will benefit the Quino checkerspot butterfly, the Permittees minimized and mitigated the impacts to the Quino checkerspot butterfly.

FISH

Santa Ana Sucker

The Santa Ana sucker currently is distributed in portions of Big Tujunga Creek, a tributary of the Los Angeles River, between the Big Tujunga and Hansen dams; the west, east, and north forks of the San Gabriel River above the Morris Dam; and reaches of the Santa Ana River between the City of San Bernardino and the City of Anaheim. Within the Plan Area, the Santa Ana sucker occupies the entire length of the Santa Ana River within Riverside County, as well as Sunnyslope Creek. Approximately 6,827 acres (88 percent) of modeled habitat exists within PQP Lands, and the Wildlife Agencies are expected to conserve an additional 170 acres (2 percent) of modeled habitat. Thus, Covered Activities are not expected to significantly affect 90 percent of the modeled habitat for the Santa Ana sucker in the Plan Area.

Only 443 acres (6 percent) of modeled habitat will be subject to development and other proposed Covered Activities, and we expect impacts from these activities to be greatly minimized with implementation throughout the Plan Area of the Riparian/Riverine Areas and Vernal Pools policy. We believe that the current distribution of Santa Ana sucker within the mainstem of the Santa Ana River is largely within PQP Lands. Therefore, impacts to the known occurrences of this species and its modeled habitat are expected to be low.

Within the Plan Area, a multi-agency partnership of Federal and local government agencies and the private sector form the Santa Ana Sucker Conservation Program (Conservation Program). Riverside County Water Conservation and Flood Control District (RCWCFCFD) is a member of the Conservation Program and a Permittee under the Plan. The Conservation Program encourages a river-wide approach that aims to increase the knowledge base to implement recovery strategies for the sucker, ensures that each participating agency minimizes, to the extent possible, the effects of routine activities on the sucker, and develops habitat restoration and enhancement techniques for degraded habitat. In addition to RCWCFCFD's participation in the Conservation Program, the Permittees will assess threats to the sucker from degraded habitat (*e.g.*, water quality, non-native invasive plants and animals, loss of habitat); identify areas necessary for successful spawning; identify areas for creation of stream meander, pool/riffle complexes, and reestablishment of native riparian vegetation as appropriate and feasible; assess barriers to sucker movement and the need for connectivity, and identify measures to restore connectivity to be implemented as feasible; and identify and implement management measures to address threats and protect critical areas.

To mitigate the taking of modeled sucker habitat, the Permittees will protect in perpetuity 350 acres (4 percent) of modeled habitat of the Santa Ana sucker and implement the conservation

activities noted above. While there will be loss of habitat for the sucker with implementation of the Plan, the loss is likely restricted to minor tributaries and disjunct areas on margins of the Santa Ana River. Therefore, the Santa Ana sucker is expected to persist in the Plan Area and benefit from the conservation measures proposed by the Permittees. Overall, the take of this species is expected to be low, and the long-term protection of modeled habitat in conjunction with extensive management activities proposed by the Permittees mitigates the impacts to the Santa Ana sucker.

AMPHIBIANS

Arroyo Toad

Arroyo toad occurs in suitable habitat from the upper Salinas River system in Monterey County to the Arroyo San Simeon system southeast of San Quintin, Baja California, Mexico. They have been extirpated from an estimated 75 percent of their former range in the U.S. and now occur primarily in small, isolated areas in the middle to upper reaches of streams. In the Plan Area, the arroyo toad is not widely distributed and has been recorded in shallow, slow-moving streams and riparian areas with natural flood disturbance regimes in the San Jacinto, Santa Ana, San Mateo, and Santa Margarita River watersheds with 42 recorded observations in 12 drainages. The populations of arroyo toad in the Plan Area make up a small portion of the species' remaining distribution.

The Plan Area includes 20,259 acres of modeled arroyo toad habitat. Nineteen percent of the modeled habitat for this species (3,793 acres), including all or a portion of eight of the occupied drainages is within PQP Lands. The Wildlife Agencies are expected to conserve an additional 1,929 acres (10 percent) of the modeled habitat. Thus, Covered Activities are not expected to significantly affect 29 percent of the modeled habitat for arroyo toad in the Plan Area.

Because the arroyo toad is not considered widely distributed within the Plan Area and detailed distribution data are lacking, the MSHCP requires surveys within a defined arroyo toad survey area for all Covered Activities. In addition, specific conservation objectives are provided in the MSHCP to ensure that suitable habitat and extant populations of the arroyo toad will persist. The conservation objectives provide that the MSHCP Conservation Area will include 1,602 acres of suitable breeding habitat, 7,005 acres of suitable upland habitat, and at least 9 Core Areas for arroyo toad including at least portions of San Juan Creek, Los Alamos Creek, San Jacinto River, Indian Creek, Bautista Creek, Wilson Creek, Temecula Creek, Arroyo Seco, and Vail Lake. These conservation objectives support the recovery goals identified in our Recovery Plan for the arroyo toad, which include conservation of least one existing population on non-Federal lands in San Juan Creek and the Santa Margarita River and any found in the Santa Ana/San Jacinto River basin.

There are approximately 10,564 acres (52 percent) of modeled arroyo toad habitat outside the MSHCP Conservation Area; of that 2,695 acres (25 percent or 13 percent of total modeled habitat) occur within the arroyo toad survey area. Until such time that the Additional Reserve Lands are assembled and conservation objectives for this species are met, surveys for arroyo toad within the arroyo toad survey area will be conducted where suitable habitat is present. Where the species is detected, direct effects to arroyo toad will be limited to 10 percent of the area with

long-term conservation value for this species. Surveys will continue in suitable habitat within the survey areas until the conservation objectives for the species are met. We anticipate that the Permittees will consider newly detected arroyo toad occurrences determined to be important to the overall conservation of the species for inclusion in the MSHCP Conservation Area.

Any arroyo toads within the remaining 7,905 acres (75 percent or 39 percent of totaled modeled habitat) outside of the MSHCP Conservation Area will be subject to impacts of development and other proposed Covered Activities. The Riparian/Riverine Areas and Vernal Pools policy requires that Covered Activities avoid riparian habitat when feasible. Implementation of this policy will minimize direct loss of arroyo toad breeding habitat. However, most of the modeled habitat outside of the Conservation Area is uplands (non-breeding) and includes some portion of the feeding, dispersing and aestivating habitat adjacent to all but one of the known occupied drainages in the Plan Area. Toads present in these areas during development activities are not expected to survive.

To mitigate the impact of the taking, the Permittees will protect and manage 3,974 acres (20 percent) of modeled habitat in the Plan Area. This includes all or a portion of the four occupied drainages outside of PQP Lands. Mitigation lands conserved by the Permittees will compliment and expand existing core habitat where the majority of the known arroyo toad populations in the Plan Area occur and will also conserve suitable habitat that may support additional occurrences of this species. The Permittees will also implement specific management and monitoring measures, including maintenance of hydrological processes and verification of breeding activity to protect and manage arroyo toad within the MSHCP Conservation Area. The long-term management and protection of arroyo toad habitat will provide the aquatic and upland components needed to support the toad's essential behavioral patterns, and thus, we expect populations of arroyo toad in the MSHCP Conservation Area to be viable in the long term. Because the MSHCP compliments and supports the conservation of the arroyo toad in core areas identified as important to the recovery of the species (San Juan Creek,, upper Santa Margarita River, San Jacinto River and Bautista Creek), the impact of the taking is mitigated by the conservation proposed.

California Red-legged and Mountain Yellow-legged Frogs

Both species of frog were historically widespread in California and have suffered severe declines in range. Mountain yellow-legged frogs were historically abundant in high-elevation lakes, ponds, and meadows with permanent pools and, to a lesser extent, streams above 2,000 meters throughout the Sierra Nevada. The Southern California distinct vertebrate population segment of the mountain yellow-legged is known from only eight localities (streams). Two of them, Fuller Mill Creek and a tributary of Dark Canyon Creek are in the Plan Area, in upper tributaries of the North Fork of the San Jacinto River. One of the populations is on both private and Forest Service land, the other is on Forest Service land.

The California red-legged frog is endemic to California and Baja California, Mexico. The California red-legged frog was historically known to occur in 46 counties. Currently, the taxon is known to occur in 243 drainages in 22 counties, primarily in the central coastal region of California. In the Plan Area, the only known population consists of two males on the Santa Rosa

Plateau Ecological Reserve. This population is the only known extant population in the United States south of Ventura County.

The majority of both species' modeled habitat is on PQP Lands, which Covered Activities are not expected to significantly affect. The MSHCP requires surveys for both species in their respective survey areas for all Covered Activities. Outside the MSHCP Conservation Area, most of the modeled habitat for the California red-legged frog and mountain yellow-legged frog (100 percent and 85 percent, respectively) and all known populations are within the survey areas for these species.

Within the survey areas, when frogs are detected, provisions in the MSHCP require that only 10 percent of the area with long-term conservation value for the species will be lost to individual project development. The loss of modeled habitat with long-term conservation value may affect frog breeding, feeding, and sheltering. We do not anticipate that individual frogs will be killed. Surveys will continue in suitable habitat within the survey areas until the conservation objectives for the species are met.

To offset the impact of the taking, the Permittees will protect and manage, in perpetuity, modeled habitat for the California red-legged frog and mountain yellow-legged frog (796 acres or 2 percent and 1,234 acres or 4 percent, respectively). The MSHCP's survey requirements may result in the detection and management of new populations of these species. When populations of frogs are detected with their respective survey areas, 90 percent of the area with long-term conservation value for the species will be avoided. We anticipate that the Permittees will consider newly detected California red-legged frog or mountain yellow-legged frog occurrences determined to be important to the overall conservation of the species for inclusion within the MSHCP Conservation Area. Additionally, implementation of the Riparian/Riverine Areas and Vernal Pools policy will provide protection to these species' breeding habitat by avoiding and/or minimizing direct loss of riparian and riverine areas and will minimize disruption to the natural hydrological processes that the frogs are dependent upon. Because the overall loss of modeled habitat with long-term conservation value for these species is expected to be low and frogs are not expected to be killed, the conservation and additional survey measures required in the MSHCP will minimize and mitigate the impacts to these species.

BIRDS

Bald Eagle

The Plan Area represents only a minor portion of the breeding and wintering distribution for the bald eagle. Bald eagles breed from Alaska east to Newfoundland, south to Baja California and Sonora, Mexico and Florida. The species winters in the large majority of the breeding range. Within mainland southern California, the species primarily winters at larger bodies of water in the lowlands and mountains, including at Lake Mathews in the Plan Area. Breeding has only recently been documented at Lake Hemet in the Plan Area. Modeled habitat for the bald eagle in the Plan Area includes riparian woodlands near open water, as well as marshes, lakes, and reservoirs, with most modeled habitat (13,255 acres or 77 percent) occurring within PQP Lands. The Wildlife Agencies are expected to conserve an additional 676 acres (4 percent) of modeled

habitat. Thus, Covered Activities are not expected to significantly affect 81 percent of the modeled habitat for the bald eagle in the Plan Area.

Approximately 1,801 acres (11 percent) of modeled habitat for the bald eagle, including the nesting area at Lake Hemet, will be subject to impacts associated with development and other proposed Covered Activities. However, since the bald eagle is a Fully Protected Species in the State of California and is protected under the Federal Bald and Golden Eagle Protection Act, no mortality of adult bald eagles, eggs or nestlings is anticipated from implementation of the Plan. In addition, the eagle nest site is located on lands owned by the Lake Hemet Municipal Water District (District), which is not a Permittee under the Plan. The District would need to apply to the Regional Conservation Authority and Wildlife Agencies for inclusion as a Special Participating Entity to cover any activities that may harm the bald eagles that nest at Lake Hemet. Should the District request a certificate of inclusion for take coverage under the MSHCP, protection of the nest site will need to be addressed.

To mitigate the impacts of the taking, the Permittees will protect and manage in perpetuity 1,392 acres (8 percent) of the modeled habitat for the bald eagle. We expect the Covered Activities to result in an overall low level of impact to feeding, breeding and sheltering habitat with long-term conservation value for the species, and that no individuals will be killed. Therefore, the conservation proposed by the Permittees minimizes and mitigates the impacts to the bald eagle.

Coastal California Gnatcatcher

The coastal California gnatcatcher is restricted to the coastal slopes of southern California, from southern Ventura County southward through Los Angeles, Orange, Riverside, San Bernardino, and San Diego counties into Baja California, Mexico to approximately 30 degrees North latitude near El Rosario. An evaluation of the historic range of the subspecies, the listed entity, indicates that about 41 percent of its latitudinal distribution is within the United States, while 59 percent is within Baja California, Mexico (Atwood 1990). Of the estimated 41 percent of its latitudinal distribution within the United States, the Service estimated in 1993 that 10.2 percent of the gnatcatchers within the United States occurred in Riverside County. Within the Plan Area, the largest blocks of habitat remain in three geographical regions; the southeast portion of the Plan Area (e.g., Wilson Valley, Vail Lake, Hogbacks, Lake Skinner), east of Lake Elsinore (e.g., Railroad Canyon, Sedco Hills, Quail Valley, Wasson Canyon, North Peak/Meadowbrook), and northwest portion of the Plan Area (e.g. Lake Mathews, Estelle Mountain).

The Plan Area includes 133,801 acres of modeled habitat for the coastal California gnatcatcher. An additional 27,334 acres (20 percent) of modeled habitat for the coastal California gnatcatcher will remain in PQP Lands, which likely will be managed for the species. The Wildlife Agencies are expected to conserve an additional 14,331 acres (11 percent) of the modeled habitat. Thus, Covered Activities are not expected to significantly affect 31 percent of the modeled habitat for the coastal California gnatcatcher in the Plan Area.

While 62,613 acres (47 percent) of modeled nesting and foraging habitat will be subject to development and other proposed Covered Activities outside of the MSHCP Conservation Area over the life of the permit term, the Permittees will conserve and manage 29,522 acres (22

percent) of modeled habitat in the anticipated Additional Reserve Lands to mitigate the impact of the taking. Conserving these lands, including those lands remaining in PQP Lands and those lands conserved by the Wildlife Agencies, will help maintain large blocks of nesting and foraging habitat and interconnecting linkages necessary to sustain the coastal California gnatcatcher in the Plan Area. This conservation includes large blocks of habitat in the southeastern portion of the Plan Area, such as Wilson Valley, Vail Lake, Hogbacks, and Lake Skinner, which total 84,410 acres within the MSHCP Conservation Area. Significant portions of these acres include are sage scrub habitats with sizeable gnatcatcher populations. In addition, conservation includes an interconnected series of core areas east of Lake Elsinore including Railroad Canyon, Sedco Hills, a portion of Quail Valley, Wasson Canyon, and the North Peak/Meadowbrook area, which total 15,730 acres within the MSHCP Conservation Area. The northern core areas conserved by the Plan include Lake Mathews and Estelle Mountain totaling 23,710 acres within the MSHCP Conservation Area. At least 13 of the identified 16 core gnatcatcher areas and interconnecting linkages are included in the MSHCP Conservation Area, whereas the excluded gnatcatcher areas in the Plan are highly fragmented by urbanization and/or outside proposed and designated critical habitat.

Management and monitoring proposed for the gnatcatcher includes the evaluation of the condition of the sage scrub within the core areas and a program to maintain or enhance and/or create coastal sage scrub within the core areas to keep the percent cover of coastal sage scrub vegetation within 10 percent of the baseline value within 77, 070 acres of suitable habitat in Riverside Lowland and San Jacinto Foothill Bioregions. In addition, management and monitoring proposed for the gnatcatcher will maintain occupancy of at least 80 percent of the occupied gnatcatcher habitat, as determined using existing information and baseline surveys, within each core area. The Plan also will maintain continued use and successful reproduction within the core areas. Despite the loss of some nesting and foraging habitat and an undeterminable reduced efficiency of some linkages, viable coastal California gnatcatcher populations are expected to be sustained in the Plan Area. Since the loss of modeled habitat is offset by conserving large blocks of nesting and foraging habitat and interconnecting linkages necessary to sustain the coastal California gnatcatcher in the Plan Area, the impact of the taking is mitigated by the long-term protection and conservation proposed by the Permittees for the coastal California gnatcatcher.

Least Bell's Vireo

The least Bell's vireo is currently restricted to southern California south of the Tehachapi Mountains and northwestern Baja California. The largest concentration of least Bell's vireos is in San Diego County along the Santa Margarita River on Marine Corps Base Camp Pendleton. In the Plan Area, the vireos at Prado Basin and the adjacent Santa Ana River represent a major population within the species' distribution, second only to the San Diego County populations. Vireos arrive in southern California breeding areas by mid-March to early April and generally remain until late September.

The Plan Area supports approximately 12,518 acres of modeled habitat for the least Bell's vireo. In the Plan Area, the least Bell's vireo typically occurs in suitable riparian scrub/woodland habitats below 3,000 feet (914 meters) in elevation within all bioregions, although they can occur

at higher elevations. Approximately 6,683 acres (53 percent) of modeled habitat are within PQP Lands, including the Prado Basin/Santa Ana River critical habitat unit and vicinity where 580 of the 690 point locations occur for this species in the Plan Area. The Wildlife Agencies are expected to conserve an additional 990 acres (8 percent) of the modeled habitat. Thus, Covered Activities are not expected to significantly affect 61 percent of the modeled habitat for least Bell's vireo in the Plan Area.

Approximately 2,804 acres (22 percent) of total modeled habitat will be subject to development and other proposed Covered Activities. There are four modeled habitat areas outside the MSHCP Conservation Area that are considered important to the vireo: 1) drainages north and east of Lake Mathews, west of Trautwein Road, and south of the 91 Freeway including Mockingbird Canyon, a Core Area for vireo as identified in the Plan; 2) the Canyon Lake area; 3) occupied habitat along Coldwater Canyon just west of I-15; and 4) occupied habitat on the Santa Ana River along the Green River Golf Club at the Riverside/Orange county border. The loss of breeding and foraging habitat for least Bell's vireos may impact overall population numbers of the vireo within the Plan Area over the long term by reducing the number of areas suitable for use as foraging and nesting sites. Loss of active nests, including eggs and nestlings, is anticipated both inside and outside the Criteria Area; however, impacts to occupied habitats and active nests will be minimized through implementation of the Riparian/Riverine Areas and Vernal Pools policy, which requires wetland mapping/surveys of vireo habitat and 90 percent avoidance and protection of occupied habitats that provide for long-term conservation value for the least Bell's vireo. This protection will include 328 feet (100 meters) of undeveloped landscape adjacent to conserved habitat.

To offset the impact of the taking, the Permittees will protect and manage in perpetuity 3,031 acres (24 percent) of modeled breeding and foraging habitat, including areas with known observations of least Bell's vireos. Conserving these lands will help maintain large blocks of breeding and foraging habitat and interconnecting linkages necessary to sustain the least Bell's vireo in the Plan Area, including the Prado Basin/Santa Ana River and Vail Lake/Lake Skinner-Diamond Valley Lake areas. Despite the loss of some breeding, feeding, and sheltering habitat, viable least Bell's vireo populations are expected to be sustained in the Plan Area. Since the loss of modeled habitat and overall impacts to the species are expected to be low, these impacts are mitigated by the long-term protection and conservation proposed by the Permittees for the least Bell's vireo.

Southwestern Willow Flycatcher

The breeding range of the southwestern willow flycatcher includes southern California, southern Nevada, Arizona, New Mexico, western Texas, southwestern Colorado, and extreme northwestern Mexico. The drainages in California that support permanent breeding populations include the Kern, Santa Ana, Santa Margarita, and San Luis Rey rivers. The Santa Margarita and San Luis Rey River populations, and to a lesser extent, the Prado Basin population likely act as source populations for outlying southwestern willow flycatcher breeding territories in coastal southern California and, thus, contribute to the potential expansion of this species' range.

The Plan Area supports approximately 13,049 acres of modeled habitat for the southwestern willow flycatcher. Flycatcher modeled habitat occurs in suitable riparian scrub/woodland/forest habitats within all bioregions of the Plan Area. Approximately 7,102 acres (54 percent) of the modeled habitat are within PQP Lands, including the Prado Basin where the only confirmed breeding territories of southwestern willow flycatchers occur in the Plan Area. The Wildlife Agencies are expected to conserve an additional 954 acres (7 percent) of the modeled habitat. Thus, Covered Activities are not expected to significantly affect 61 percent of the modeled habitat for the southwestern willow flycatcher in the Plan Area.

Approximately 3,027 acres (23 percent) of total modeled habitat will be subject to development and other proposed Covered Activities. The loss of breeding and foraging habitat may preclude the establishment of southwestern willow flycatcher breeding territories in these modeled habitat areas. However, the only known breeding location in the Plan Area is within the Prado Basin, and Covered Activities will not affect this site. Moreover, impacts to potential breeding habitats will be minimized through implementation of the Riparian/Riverine Areas and Vernal Pools policy, which requires wetland mapping and surveys of riparian scrub and woodland habitat and 100 percent avoidance and protection of occupied habitats that provide for long-term conservation value for the southwestern willow flycatcher. This protection will include 328 feet (100 meters) of undeveloped landscape adjacent to conserved habitat.

To mitigate the loss of breeding and foraging habitat for this species, the Permittees will protect and manage in perpetuity 1,966 acres (15 percent) of modeled breeding and foraging habitat, including areas with known observations of southwestern willow flycatchers. Conserving these lands will help maintain large blocks of breeding habitat and interconnecting linkages necessary to sustain the flycatcher in the Plan Area, including the Prado Basin/Santa Ana River and Vail Lake/Santa Rosa Plateau/Santa Margarita River linkages. We expect that the overall loss of modeled habitat and impacts to the species will be low and that southwestern willow flycatchers and suitable habitat for new and expanded territories will be sustained in the Plan Area. Thus, the long-term protection and conservation proposed by the Permittees mitigates the impacts to the southwestern willow flycatcher.

MAMMALS

San Bernardino Kangaroo Rat

San Bernardino kangaroo rats are known from approximately six widely scattered areas in eastern San Bernardino and western Riverside counties in sandy washes and drainages with low to moderate perennial vegetative cover. Within the Plan Area, the San Bernardino kangaroo rat is known to occur in the San Jacinto River and Bautista Creek drainages. The San Jacinto River and Bautista Creek populations are two of the three larger known populations. Approximately 3,690 acres (22 percent) of modeled habitat are within PQP lands, and the Wildlife Agencies are expected to conserve an additional 2,667 acres (16 percent) of the modeled habitat. Thus, Covered Activities are not expected to significantly affect 39 percent of modeled habitat for the San Bernardino kangaroo rat in the Plan Area.

Because the San Bernardino kangaroo rat is not considered widely distributed within the Plan Area and detailed distribution data are lacking, the MSHCP requires surveys for this species for all public and private development projects within a defined San Bernardino kangaroo rat survey area. In addition, specific conservation objectives are provided in the MSHCP to ensure that suitable habitat and extant populations of the San Bernardino kangaroo rat will persist. The species-specific conservation objectives require that, within the occupied and suitable San Bernardino kangaroo rat habitat in the MSHCP Conservation Area, at least 75 percent of the area is occupied and that at least 20 percent of the occupied habitat supports medium to high San Bernardino kangaroo rat densities. Surveys will continue in suitable habitat within the survey area until the conservation objectives for the species are met.

Approximately 359 acres (2 percent of totaled modeled habitat) with known occurrences of San Bernardino kangaroo rat occur within the survey area. While this is a small proportion of the modeled habitat, the survey area includes all but one of the known observations and the habitat with the highest probability of supporting San Bernardino kangaroo rats outside the MSHCP Conservation Area. If San Bernardino kangaroo rat populations are found during the required surveys, impacts to these populations will be limited to 10 percent of the area with long-term conservation value to the species. Surveys will continue in suitable habitat within the survey area until the conservation objectives for the species are met.

Approximately 4,198 acres (26 percent) of total modeled habitat is outside of both the MSHCP Conservation Area and the San Bernardino kangaroo rat survey area and will be subject to impacts associated with development and other proposed Covered Activities. San Bernardino kangaroo rats are not expected to survive in developed areas; however, we currently know of no substantial populations in these areas that may be affected by the proposed Covered Activities.

To mitigate the effects of the taking, the Permittees will protect and manage in perpetuity 5,495 acres (33 percent) of modeled habitat for this species including known occurrences of San Bernardino kangaroo rats. In addition, in order to provide and maintain suitable habitat for the San Bernardino kangaroo rat, the Permittees will maintain or restore ecological processes through management actions within the historic floodplains of the San Jacinto River, Bautista Creek and their tributaries, and other localities in the MSHCP Conservation Area determined to be occupied by San Bernardino kangaroo rats. Additionally, within the survey area, when the species is detected, 90 percent of the portion of the property with long-term conservation value will be avoided until the species conservation objectives are met. We anticipate that the Permittees will consider occurrences determined to be important to the overall conservation of the species for inclusion in the Additional Reserve Lands.

The MSHCP Conservation Area and the San Bernardino kangaroo rat survey area encompass all but one of the known observation records of the San Bernardino kangaroo rat in the Plan Area. With proposed avoidance of occupied habitat, proposed conservation of modeled habitat and known occurrences, and implementation of the identified management activities, we expect populations of the San Bernardino kangaroo rat in the MSHCP Conservation Area to be viable in the long term. Thus, we believe the long-term conservation and management proposed by the Permittees mitigates the take of this species.

Stephens' Kangaroo Rat

The Stephens' kangaroo rat occurs in relatively dry inland valleys of the Peninsular Ranges of San Bernardino, Riverside and San Diego counties of California. This species typically inhabits areas characterized by low perennial and annual cover and large areas of bare ground. The majority of the species range occurs within the Plan Area. Stephens' kangaroo rat populations are protected within seven core reserves designated under the *Habitat Conservation Plan for the Stephens' Kangaroo Rat in Western Riverside County* (SKR HCP), which covers approximately 533,954 acres within the central portion of the MSHCP Plan Area. Our analysis is restricted to the areas within the MSHCP Plan Area but outside the SKR HCP boundary. There are 68,600 acres of modeled habitat within the Plan Area but outside the SKR HCP boundary, of which 3,995 acres (6 percent) are within PQP Lands. The Wildlife Agencies are expected to conserve 5,154 acres (8 percent) of modeled habitat outside of the SKR HCP boundary. Thus, Covered Activities are not expected to significantly affect 14 percent of the modeled habitat for the Stephens' kangaroo rat within the Plan Area but outside the SKR HCP boundary. The Wildlife Agencies are also expected to conserve 5,776 acres of modeled habitat inside of the SKR HCP boundary.

Approximately 49,142 acres (72 percent) of the modeled habitat for SKR outside the SKR HCP boundary will be subject to impacts from development and other proposed Covered Activities. Stephens' kangaroo rats are not expected to survive in developed areas. While the percentage of habitat to be developed is high and therefore, presumably, a large number of Stephens' kangaroo rats will be taken, most of the modeled habitat that will be affected by Covered Activities is within or adjacent to developed or developing areas and separated from existing or proposed cores. Thus, the long term viability of the populations affected has already been reduced.

To mitigate for this taking, the Permittees will protect and manage in perpetuity 10,308 acres (15 percent) of modeled habitat outside the SKR HCP boundary and 12,095 acres of modeled habitat inside the SKR HCP boundary. The 12,095 acres of protected and managed modeled habitat inside of the SKR HCP boundary would have been subject to take under the terms of the SKR HCP. In total, the Permittees will protect and manage 22,403 acres of modeled habitat in a configuration that includes the largest blocks of habitat, the establishment of three new large areas of modeled habitat greater than 1,000 acres, the expansion of existing Core Areas, and improvement of some linkages among the Core Areas. We expect populations of Stephens' kangaroo rat in the MSHCP Conservation Area to be viable in the long term, and the long-term conservation proposed by the MSHCP to mitigate impacts to this species.

PLANTS

California Orcutt Grass

The current range of California Orcutt grass is from Moorpark in Ventura County, south to the vernal pools around San Quintin, Baja California, Mexico. Its elevational range is from 15 to 625 meters. In Riverside County, which represents the eastern-most extension of the species' range, the species is known from four vernal pools or vernal pool complexes at the Santa Rosa Plateau, Skunk Hollow, in the Murrieta area, and in the Hemet area. Approximately 42,349

acres of modeled habitat (vernal pools/playas and clayey, alkali and Santa Rosa Plateau basalt flow soils) with the potential to harbor vernal pools suitable for the species occur within the Plan Area. Approximately 8,831 acres (21 percent) of modeled habitat for California Orcutt grass and the occurrences at Skunk Hollow and the Santa Rosa Plateau occur within PQP Lands. The Wildlife Agencies are anticipated to conserve an additional 2,512 acres (6 percent) of modeled habitat. Thus, Covered Activities are not expected to significantly affect 27 percent of the modeled habitat for this species in the Plan Area.

Because California Orcutt grass is not widely distributed within the Plan Area and detailed distribution data are lacking, the MSHCP requires surveys for this species for all public and private development projects within the Narrow Endemic Plant Species Survey Areas (NEPSSA) 1, 2, 3, 3a, 4 and 9. Specific conservation objectives are provided in the MSHCP to ensure that suitable habitat and extant populations of the California Orcutt grass will persist. The conservation objectives provide that at least three of the known locations of California Orcutt grass at the Santa Rosa Plateau, Skunk Hollow, and the upper Salt Creek drainage west of Hemet will be included as Conserved Habitat within the MSHCP Conservation Area, and the hydrologic processes of the pool complexes associated with these known locations will be maintained to provide for persistence of the species. In addition, at least 6,680 acres of playas and vernal pools within the Riverside Lowlands Bioregion will be included within the MSHCP Conservation Area. Surveys will continue in suitable habitat within the survey areas until the conservation objectives for the species are met.

There are 25,832 acres (61 percent) of total modeled habitat outside the MSHCP Conservation Area; of that 24,046 acres (93 percent or 57 percent of total modeled habitat) occur within the Narrow Endemic Plant Species Survey Areas (NEPSSA) 1, 2, 3, 3a, 4 and 9. Until such time that the Additional Reserve Lands are assembled and conservation objectives for this species are met, surveys for California Orcutt grass will be conducted where suitable habitat is present. Where the species is detected, direct effects to California Orcutt grass will be limited to 10 percent of the area with long-term conservation value for this species. We anticipate that occurrences determined to be important to the overall conservation of the species will be considered for long-term conservation under the MSHCP.

Any individual plants or populations of California Orcutt grass within the remaining 1,786 acres (7 percent or 4 percent of totaled modeled habitat) outside of the MSHCP Conservation Area and outside the NEPSSA for California Orcutt grass will be subject to impacts of development and other proposed Covered Activities. However, we anticipate that these impacts will be minimized with implementation of the Riparian/Riverine Areas and Vernal Pools policy.

To offset the impacts to California Orcutt grass, the Permittees will manage and protect in perpetuity 5,174 acres (12 percent) of total modeled habitat, which will be conserved in large contiguous areas and include playa and vernal pool habitat. These lands will be managed to prevent alteration of hydrology and floodplain dynamics that are vital to the species and to implement appropriate responses to grazing, off-road vehicle use and non-native species. While 61 percent of modeled habitat is outside the MSHCP Conservation Area, 93 percent of this habitat is within the NEPSSA for California Orcutt grass. Thus, impacts to existing or any newly discovered populations important to the long-term conservation of the species are expected to be low. In addition, required surveys for California Orcutt grass may result in newly discovered

occurrences being included in the MSHCP Conservation Area, and other locations of California Orcutt grass may be conserved indirectly through the Permittees' efforts to meet the conservation objective of conserving 6,680 acres of playas and vernal pools within the MSHCP Conservation Area. We anticipate that populations of California Orcutt grass will persist in the Plan Area over the long term and believe the long-term protection and management proposed by the Permittees, along with implementation of the surveys and procedures for Narrow Endemic Plant Species, mitigates and minimizes the impacts to this species.

Munz's Onion

Munz's onion is endemic to southwestern Riverside County, where there are 16 known extant occurrences in scattered populations from the Gavilan Plateau and Estelle Mountain area southeast through the foothills north and northwest of Lake Elsinore, to the Paloma Valley, Skunk Hollow, and Lake Skinner area. In the Plan Area, modeled habitat for this species includes all vegetation types on clay soils between elevations of 984 and 3,281 feet in the Santa Ana Mountains and Riverside Lowlands bioregions. The Plan Area supports approximately 5,338 acres of modeled habitat for the Munz's onion. Approximately 1,386 acres (26 percent) of this modeled habitat occurs within PQP Lands, and the Wildlife Agencies are expected to conserve an additional 214 acres (4 percent). Thus, Covered Activities are not expected to significantly affect 31 percent of the modeled habitat for Munz's onion in the Plan Area.

Because Munz's onion has specialized habitat requirements and a limited geographic distribution within the Plan Area, the MSHCP requires surveys for this species for all public and private development projects within the Narrow Endemic Plant Species Survey Areas (NEPSSA) 1, 3, and 4. Also, conservation objectives are provided in the MSHCP to ensure that suitable habitat and extant populations of the Munz's onion will persist. The conservation objectives state that at least 13 localities within Temescal Valley and the southwestern portion of the Plan Area and at least 21,260 acres of suitable habitat will be included within the MSHCP Conservation Area. Surveys will continue in suitable habitat within the survey areas until the conservation objectives for the species are met.

There are 3,296 acres (62 percent) of modeled habitat outside the MSHCP Conservation Area; of that 2,972 acres (90 percent or 56 percent of total modeled habitat) occur within NEPSSA 1, 3, and 4. Until such time that the Additional Reserve Lands are assembled and conservation objectives for this species are met, surveys for Munz's onion will be conducted where suitable habitat is present. Where the species is detected, direct effects to Munz's onion will be limited to 10 percent of the area with long-term conservation value for this species. We anticipate that occurrences determined to be important to the overall conservation of the species will be considered for long-term conservation under the Plan. Any individual plants or populations of Munz's onion within the remaining 324 acres (10 percent or 6 percent of totaled modeled habitat) outside of the MSHCP Conservation Area will be subject to impacts of development and other proposed Covered Activities. However, we anticipate that these impacts will be minimized with implementation of the Riparian/Riverine Areas and Vernal Pools policy.

To offset the impacts to Munz's onion, the Permittees will protect in perpetuity 442 acres (8 percent) of modeled habitat. These lands will be managed to prevent alteration and to implement appropriate responses to non-native plant species, clay mining, off-road vehicle use and discing

activities. Required surveys for Munz's onion may result in newly discovered occurrences being included in the MSHCP Conservation Area, and other locations of Munz's onion may be conserved directly and indirectly through efforts to meet the conservation objectives of conserving 13 localities and 21,260 acres of suitable habitat within the MSHCP Conservation Area. Impacts to occupied habitat are expected to be low as a result of the surveys and procedures developed under the Plan to minimize loss of significant populations of narrow endemic plants, such as the Munz's onion; therefore, we anticipate that Munz's onion will persist in the Plan Area in the long term, and we believe the long-term protection and management proposed by the Permittees offsets the impacts to Munz's onion.

Nevin's Barberry

Nevin's barberry is endemic to southwestern cismontane southern California from the foothills of the San Gabriel Mountains of Los Angeles County to near the foothills of the Peninsular Ranges of southwestern Riverside County. At the time of this species' listing, it was known historically from fewer than 30 scattered occurrences within Los Angeles, San Bernardino, and Riverside counties. Of these, at least seven occurrences are extirpated, mostly due to factors associated with urban development. Other occurrences have been identified since this species became federally listed, primarily within the Agua Tibia Mountains and San Jacinto Foothill bioregions that include the Vail Lake area.

The Plan Area includes 11,775 acres of modeled habitat for the Nevin's barberry (chaparral and Riversidean alluvial fan sage scrub communities between 300 and 659 meters in elevation). Approximately 2,252 acres (19 percent) of the modeled habitat occur within PQP Lands, and the Wildlife Agencies are expected to conserve an additional 1,663 acres (14 percent). Thus, Covered Activities are not expected to significantly affect 33 percent of the modeled habitat for Nevin's barberry in the Plan Area.

Because the Nevin's barberry is not widely distributed within the Plan Area and detailed distribution data are lacking, the MSHCP requires surveys for this species for all public and private development projects within Criteria Area Species Survey Areas (CASSA) 5 and 6. Also, conservation objectives are provided in the MSHCP to ensure that suitable habitat and extant populations of the Nevin's barberry will persist. The conservation objectives state that at least 49 locations supporting Nevin's barberry within 8,000 acres of habitat will be included within the MSHCP Conservation Area. Surveys will continue in suitable habitat within the survey areas until the conservation objectives for the species are met.

There are 4,434 acres (38 percent) of total modeled habitat for Nevin's barberry outside the MSHCP Conservation Area; of that 2,427 acres (55 percent or 21 percent of total modeled habitat) occur within the Criteria Area Species Survey Areas (CASSA) 5 and 6. Until such time that the Additional Reserve Lands are assembled and conservation objectives for this species are met, surveys for Nevin's barberry within CASSA 5 and 6 will be conducted where suitable habitat is present. Where the species is detected, direct effects to Nevin's barberry will be limited to 10 percent of the area with long-term conservation value for this species. We anticipate that occurrences determined to be important to the overall conservation of the species will be considered for long-term conservation within the MSHCP Conservation Area. Any

individual plants or populations of Nevin's barberry within the remaining 2,007 acres (45 percent or 17 percent of totaled modeled habitat) outside of the MSHCP Conservation Area will be subject to impacts of development and other proposed Covered Activities. However, we know of no records of Nevin's barberry outside of the MSHCP Conservation Area that are also outside of the CASSA for the Nevin's barberry.

To offset the impacts to the Nevin's barberry, the Permittees will protect in perpetuity 3,426 acres (29 percent) of total modeled habitat, which support known occurrences of this species. These lands will be conserved in large contiguous areas and managed to control non-native species and to implement appropriate responses to flood control activities and natural fire regime. The majority of the documented occurrences will be protected or will remain within the MSHCP Conservation Area. Criteria Area Species Surveys and procedures developed under the Plan will minimize loss of any significant populations, and impacts to Nevin's barberry are expected to be low. In addition, required surveys for Nevin's barberry may result in newly discovered occurrences being included in the MSHCP Conservation Area. Thus, we anticipate that the species will persist in the Plan Area over the long-term, and we believe the long-term protection and management proposed by the Permittees, along with implementation of the Criteria Area Species Surveys and procedures, mitigates and minimizes the impacts to the Nevin's barberry.

San Diego Ambrosia

San Diego ambrosia is distributed from western Riverside County and western San Diego County, California, south in widely scattered populations along the west coast of Baja California, Mexico, to the vicinity of Cabo Colonet, and in the central highlands of Baja California, in the vicinity of Laguna Chapala near Catavina. There are currently 15 extant native occurrences of this species. Of the 15 extant occurrences, 12 are in San Diego County and 3 are known from Riverside County: one north and one south of Alberhill Mountain, and one at Skunk Hollow. The Plan Area supports about 18,688 acres of modeled habitat for the San Diego ambrosia (all vegetation types except disturbed/developed lands, agriculture, and open water in the Riverside Lowlands within the 100-year or 500-year floodplain between elevations of 200 and 500 meters and all vegetation types at Skunk Hollow, regardless of elevation or flood limits).

Approximately 5,019 acres (27 percent) of the modeled habitat occurs within PQP Lands (the Skunk Hollow occurrence is on PQP Lands), and the Wildlife Agencies are expected to conserve an additional 2,137 acres (11 percent) of modeled habitat. Thus, Covered Activities are not expected to significantly affect 38 percent of the modeled habitat for San Diego ambrosia in the Plan Area.

Because San Diego ambrosia has a limited geographic distribution and specialized habitat and management requirements, the MSHCP requires surveys for this species for all public and private development within Narrow Endemic Plant Species Survey Areas (NEPSSA) 1, 2, 3, 3a, 4 and 7. Also, specific conservation objectives are provided in the MSHCP to ensure that suitable habitat and extant populations of the San Diego ambrosia will persist. The conservation objectives state that at least two of the three known locations (South of Alberhill Mountain and Skunk Hollow) and at least 21,800 acres of suitable habitat at appropriate elevations in the

Riverside Lowlands will be included within the MSHCP Conservation Area. Surveys will continue in suitable habitat within the survey areas until the conservation objectives for the species are met.

There are 7,130 acres (38 percent) of modeled habitat for the San Diego ambrosia outside the MSHCP Conservation Area; of that, 3,327 acres (47 percent or 18 percent of total modeled habitat) occur within NEPSSA 1, 2, 3, 3a, 4 and 7. Until such time as the Additional Reserve Lands are assembled and conservation objectives for this species are met, surveys for San Diego ambrosia will be conducted for public and private development projects where suitable habitat is present. Where the species is detected, direct effects to San Diego ambrosia will be limited to 10 percent of the area with long-term conservation value for this species. We anticipate that occurrences determined to be important to the overall conservation of the species will be considered for long-term conservation under the MSHCP. The largest population of the three extant San Diego ambrosia occurrences in the Plan Area is outside the MSHCP Conservation Area but within the NEPSSA for this species. Surveys will continue in suitable habitat within the survey areas until the conservation objectives for the species are met.

Any individual plants or populations of San Diego ambrosia within the remaining 3,803 acres (53 percent or 20 percent of modeled habitat) outside of the MSHCP Conservation Area will be subject to impacts of development and other proposed Covered Activities. However, we anticipate that these impacts will be minimized with implementation of the Riparian/Riverine Area and Vernal Pools Policy.

To mitigate the impacts to the San Diego ambrosia, the Permittees will protect and manage in perpetuity 4,402 acres (24 percent) of its modeled habitat, which will be conserved in large contiguous areas and will include the second largest population of San Diego ambrosia in the Plan Area. The third and smallest population of San Diego ambrosia is within PQP Lands that will not be affected by proposed Covered Activities. Required surveys for San Diego ambrosia may result in newly discovered occurrences being included in the MSHCP Conservation Area, and other locations of San Diego ambrosia may be conserved indirectly through efforts to meet the conservation objective of conserving 21,800 acres of suitable habitat within the MSHCP Conservation Area. Implementation of management actions including management of non-native species and trampling will help to avoid and minimize adverse effects to San Diego ambrosia. Potential impacts to known populations of San Diego ambrosia are expected to be low as a result of the surveys and procedures developed under the MSHCP to minimize loss of significant populations of narrow endemic plants. Thus, we anticipate that the species will persist within the Plan Area, and we believe the long-term protection and management proposed by the Permittees minimizes and mitigates the impacts to this species.

San Diego Button-Celery

San Diego button-celery occurs in vernal pools and surrounding habitat from the Santa Rosa Plateau in Riverside County, California, south to the mesas north of Ensenada, Mesa de Colonet, and San Quintin in Baja California, Mexico. Within the Plan Area, the species is known only from vernal pools and drainages on and near the Santa Rosa Plateau Ecological Reserve. Of the total modeled habitat, 1,330 acres (52 percent) are within PQP Lands, and the Wildlife Agencies are expected to conserve an additional 295 acres (11 percent). Thus, Covered Activities are not

expected to significantly affect 63 percent of the modeled habitat in the Plan Area.

Only 342 acres (13 percent) of modeled habitat for San Diego button-celery will be subject to impacts associated with development and other proposed Covered Activities, and this impact will be minimized by implementation of the Riparian/Riverine Areas and Vernal Pools policy. All of the four known occurrences for the species occur on PQP Lands. Therefore, impacts to the known occurrences of this species and its modeled habitat due to implementation of the MSHCP are expected to be low.

To mitigate the impacts to San Diego button-celery, the Permittees will protect and manage in perpetuity 607 acres (24 percent) of modeled habitat that may support additional occurrences of San Diego button-celery. Management actions by the Permittees, such as maintaining the watershed and hydrologic conditions of the known vernal pool complexes on the Santa Rosa Plateau, will help maintain San Diego button-celery habitat. Thus, we anticipate that the species will persist in the Plan Area, and the long-term protection and management of modeled habitat for the San Diego button-celery by the Permittees mitigates the impacts to this species.

San Jacinto Valley Crownscale

The San Jacinto Valley crownscale is endemic to western Riverside County, California, and is known from the San Jacinto, Perris, Menifee, and Elsinore valleys. It is associated with alkali vernal plains within the floodplain areas of the San Jacinto River, Salt Creek, and Temescal Creek. Rarely, the species is found associated with vernal pools outside of floodplain areas. The spatial distribution of San Jacinto Valley crownscale shifts over time as environmental conditions and the seed bank distribution change. Crownscale occupying seasonal wetland habitat is dependent on adjacent transitional wetlands and marginal wetlands within the watershed for dispersal. Thus, more habitat than is occupied during any one season is necessary to maintain population dynamics and microhabitat diversity within a watershed. Thus, activities that would modify the hydrology supporting San Jacinto Valley crownscale habitat are a primary threat to this species.

The Plan Area includes approximately 8,955 acres of modeled habitat for San Jacinto Valley crownscale (the intersection of Domino/Traver/Willow soils series with grassland and playa/vernal pool habitat on any soil in the Riverside lowlands). Approximately 3,065 acres (34 percent) of modeled habitat fall within PQP Lands, and the Wildlife Agencies are expected to conserve an additional 1,328 acres (15 percent). Thus, Covered Activities are not expected to significantly affect 49 percent of the modeled habitat for San Jacinto Valley crownscale in the Plan Area.

Because the San Jacinto Valley crownscale is not widely distributed within the Plan Area and detailed distribution data are lacking, the MSHCP requires surveys for this species for all public and private projects within Criteria Area Species Survey Areas (CASSA) 2, 3, and 3a. Also, specific conservation objectives are provided in the MSHCP to ensure that suitable habitat and extant populations of the San Jacinto Valley crownscale will persist. The conservation objectives state that the MSHCP Conservation Area will include two core areas of crownscale along the San Jacinto River, a core area at Upper Salt Creek, and a known location at Alberhill. In addition, at least 6,900 acres of grassland and playa and vernal pool habitat within the San

Jacinto River, Mystic Lake and Salt Creek areas will be included within the MSHCP Conservation Area. Floodplain areas along the San Jacinto River will be included to preserve floodplain processes important to the survival of the San Jacinto Valley crownscale. Salt Creek floodplain in its existing condition (from Warren Road to Newport Road) and vernal pools in Upper Salt Creek will be included within the MSHCP Conservation Area and floodplain processes maintained to provide for persistence of the species. Surveys will continue in suitable habitat within the survey areas until the conservation objectives for the species are met.

There are 1,824 acres (20 percent) of total modeled habitat outside of the MSHCP Conservation Area; of that, approximately 869 acres (48 percent or 10 percent of total modeled habitat) occur within CASSA 2, 3, and 3a. Until such time that the Additional Reserve Lands are assembled and conservation objectives for this species are met, surveys for San Jacinto Valley crownscale will be conducted where suitable habitat is present. Where the species is detected, direct effects to San Jacinto Valley crownscale will be limited to 10 percent of the area with long-term conservation value for this species. We anticipate that occurrences determined to be important to the overall conservation of the species will be considered for long-term conservation under the MSHCP. Any individual plants or populations of San Jacinto Valley crownscale within the remaining 955 acres (52 percent or 10 percent of totaled modeled habitat) outside of the MSHCP Conservation area will be subject to impacts of development and other proposed Covered Activities. However, we expect these impacts to be greatly minimized with implementation of the Riparian/Riverine Area and Vernal Pools policy.

To mitigate the impacts to San Jacinto Valley crownscale, the Permittees will protect in perpetuity 2,736 acres (31 percent) of its modeled habitat, which supports known occurrences of San Jacinto Valley crownscale. These lands will be conserved in large contiguous areas that support the hydrologic processes important to the species' survival and managed to prevent alteration of hydrology and floodplain dynamics that are vital to the species and to implement appropriate responses to grazing, off-road vehicle use and non-native species. Because the majority of the modeled habitat and documented occurrences will be protected or will remain within the MSHCP Conservation Area, impacts to San Jacinto Valley crownscale are expected to be low. In addition, required surveys for San Jacinto Valley crownscale may result in newly discovered occurrences being included in the MSHCP Conservation Area. Other locations of San Jacinto Valley crownscale may be conserved indirectly through efforts to meet the conservation objectives of conserving 6,900 acres of alkali playa and vernal pool habitat within the MSHCP Conservation Area. Therefore, we anticipate that the species will persist within the Plan Area and that the long-term protection and management proposed by the Permittees minimizes and mitigates the impacts to this species.

Santa Ana River Woolly-Star

Historically, Santa Ana River woolly-star occupied about 60 miles of habitat along the Santa Ana River from the base of the San Bernardino Mountains, through Riverside County, to about the vicinity of Santa Ana Canyon in Orange County. No individuals have been located in Orange County during recent decades, but the subspecies has been detected within Riverside County just downstream of the San Bernardino-Riverside county border. Woolly-star is a pioneer species that colonizes washed sand deposits created by sporadic stream flow action.

Woolly-star grows primarily in Riversidean alluvial fan sage scrub habitat in sandy soils from 360 to 630 meters (1,200 to 2,000 feet) in elevation. The majority of the plants of this subspecies occur within the reaches of the Santa Ana River floodplain in San Bernardino County; a disjunct occurrence remains in Lytle Creek within the Santa Ana River floodplain. Within the Plan Area, woolly-star is known from only three locations: two occurrences of Santa Ana River woolly-star are located near Market Street in the City of Riverside, west of Fairmont Park and contain fewer than 10 individual plants, and the third occurrence was located in 2000 on a remnant sandy alluvial terrace surrounded by urban (likely commercial) development and disturbed, ruderal habitat. The first two occurrences fall within PQP Lands.

The Plan Area includes approximately 2,468 acres of modeled habitat for the Santa Ana River woolly-star. Approximately 728 acres (29 percent) of this modeled habitat is within existing PQP Lands, and the Wildlife Agencies are expected to conserve an additional 322 acres (13 percent). Thus, Covered Activities are not expected to significantly affect 42 percent of the modeled habitat for Santa Ana River woolly-star in the Plan Area.

Approximately 754 acres (31 percent) of total modeled habitat for the Santa Ana River woolly-star will be subject to development and other proposed Covered Activities. However, we expect these impacts to be greatly minimized with implementation of the Riparian/Riverine Area and Vernal Pools Policy. Impacts from Covered Activities will be mitigated by protection and management in perpetuity of 664 acres (27 percent) of modeled habitat that may support additional occurrences of Santa Ana River woolly-star.

A species-specific conservation objective for this species within the Plan Area is to include at least three occurrences of the Santa Ana River woolly-star along the Santa Ana River within the MSHCP Conservation Area. Therefore, this conservation objective is dependent upon either inclusion of the currently-known third location or the future detection and inclusion of at least one additional occurrence within the MSHCP Conservation Area. Another species-specific conservation objective for woolly-star is to include 2,340 acres of suitable habitat within the MSHCP Conservation Area. We anticipate that these conservation objectives will be met over the life of the permit. Other management actions proposed by the Permittees will help maintain woolly-star habitat, such as managing the natural river bottom and banks within 500 feet of the Santa Ana River to allow for changes in species distribution over time and preventing alteration of hydrology and floodplain dynamics. The overall impact to known occurrences is anticipated to be low, and we anticipate that Santa Ana River woolly-star will persist within the Plan Area. Thus, the long-term protection and management by the Permittees mitigates the impacts to this subspecies.

Slender-Horned Spine Flower

Slender-horned spine flower is endemic to southwestern cismontane California, ranging from central Los Angeles County east to San Bernardino County, and south to southwestern Riverside County in the foothills of the Transverse and Peninsular Ranges, at 656 to 2,296 feet in elevation. Within western Riverside County, this species is known from a location in the San Jacinto River wash, at least two locations in Bautista Creek, a location in the Temescal Wash at Indian Creek, and multiple locations in the Arroyo Seco and Kolb Canyon drainages in the Agua

Tibia Wilderness/Vail Lake area. While the single occurrence in the San Jacinto River wash is one of the largest single occurrences in terms of spatial extent, the multiple occurrences in the Vail Lake area cover the greatest geographic area of any remaining populations within the County and species' range. The Plan Area includes 10,381 acres of modeled habitat for the slender-horned spine flower (chaparral and Riversidean alluvial fan sage scrub vegetation types within the San Jacinto Foothills and the Agua Tibia Mountains between 656 and 2,296 feet in elevation). Approximately 3,419 acres (33 percent) of this modeled habitat is within existing PQP Lands, and the Wildlife Agencies are expected to conserve an additional 1,260 acres (12 percent). Thus, Covered Activities are not expected to significantly affect 45 percent of the modeled habitat for slender-horned spine flower in the Plan Area.

Because slender-horned spine flower has a specialized habitat requirements and limited distribution within the Plan Area, the MSHCP requires surveys for this species for all public and private development projects within Narrow Endemic Plant Species Survey Areas (NEPSSA) 1 and 5. Also, specific conservation objectives are provided in the MSHCP to ensure that suitable habitat and extant populations of the slender-horned spine flower will persist. The conservation objectives state that at least 11 of the known locations and at least 8,350 acres of suitable habitat will be included within the MSHCP Conservation Area. In addition, the floodplain along Arroyo Seco and Kolb creeks, Temescal Wash at Indian Creek, central Bautista Creek and the San Jacinto River upstream from Valle Vista will be included in the MSHCP Conservation Area and alluvial processes will be maintained to provide for the species' distribution to shift over time as hydrologic conditions and seed bank sources change. Surveys will continue in suitable habitat within the survey areas until the conservation objectives for the species are met.

There are 3,170 acres (30 percent) of total modeled habitat outside the MSHCP Conservation Area; of that 2,666 acres (84 percent or 26 percent of total modeled habitat) occur within NEPSSA 1 and 5. Until such time that the Additional Reserve Lands are assembled and conservation objectives for this species are met, surveys for slender-horned spine flower will be conducted for all public and private projects where suitable habitat is present. Where the species is detected, direct effects to slender-horned spine flower will be limited to 10 percent of the area with long-term conservation value for this species. We anticipate that occurrences determined to be important to the long-term conservation of the species will be considered for conservation under the MSHCP. Surveys will continue in suitable habitat within the survey areas until the conservation objectives for the species are met.

Any individual plants or populations of slender-horned spine flower within the remaining 504 acres (16 percent or 5 percent of total modeled habitat) outside of the MSHCP Conservation Area will be subject to impacts of development and other proposed Covered Activities. However, we anticipate that these impacts will be minimized with implementation of the Riparian/Riverine Areas and Vernal Pools policy.

To mitigate the impacts to slender-horned spine flower, the Permittees will protect and manage in perpetuity 1,260 acres (12 percent) of its modeled habitat that will be conserved in large contiguous areas that provide alluvial processes important to the species. Management actions by the Permittees will help maintain slender-horned spine flower habitat, such as management of flood control measures, sand and gravel mining, trampling, off-road vehicle use and competition

from non-native plants. Required surveys for slender-horned spine flower may result in newly discovered occurrences being included in the MSHCP Conservation Area, and other locations of slender-horned spine flower may be conserved indirectly through efforts to meet the conservation objective of conserving 8,350 acres of suitable habitat within the MSHCP Conservation Area. Impacts to occupied habitat are expected to be low as a result of the surveys and procedures developed under the MSHCP to minimize loss of significant populations of narrow endemic plants, such as the slender-horned spine flower. Thus, we anticipate that the species will persist within the Plan Area and believe the long-term protection and management proposed by the Permittees mitigates the impacts to this species.

Spreading Navarretia

Spreading navarretia is distributed from northwestern Los Angeles County and western Riverside County, south through coastal San Diego County to northwestern Baja California, Mexico. Nearly 60 percent of the known populations are concentrated in three locations: Otay Mesa in southern San Diego County, along the San Jacinto River in western Riverside County, and near Hemet in Riverside County. The two largest populations occur in Riverside County; however, each of these populations occupies less than 3 hectares (8 acres) of habitat.

Approximately 42,349 acres of modeled habitat for spreading navarretia occur within the Plan Area (vernal pools and playas and clayey, alkali, and Santa Rosa Plateau basalt flow soils within the Riverside Lowlands and the Santa Ana Mountains bioregions). Approximately 8,831 acres (21 percent) of the modeled habitat for spreading navarretia occur within PQP Lands, and the Wildlife Agencies are expected to conserve an additional 2,512 acres (6 percent). Thus, Covered Activities are not expected to significantly affect 27 percent of the modeled habitat for spreading navarretia in the Plan Area.

Because spreading navarretia is not widely distributed within the Plan Area, the MSHCP requires surveys for this species for all public and private development projects within Narrow Endemic Plant Species Survey Areas (NEPSSA) 1, 2, 3, 3a, 4 and 9. In addition, specific conservation objectives are provided in the MSHCP to ensure that suitable habitat and extant populations of the spreading navarretia will persist. The conservation objectives state that at least 13 of the known locations and at least 6,900 acres of suitable habitat will be included within the MSHCP Conservation Area. Surveys will continue in suitable habitat within the survey areas until the conservation objectives for the species are met.

There are 25,832 acres (61 percent) of modeled habitat outside the MSHCP Conservation Area; of that 24,046 acres (93 percent or 57 percent of total modeled habitat) occur within NEPSSA 1, 2, 3, 3a, 4 and 9. Until such time that the Additional Reserve Lands are assembled and conservation objectives for this species are met, surveys for spreading navarretia will be conducted where suitable habitat is present. Where the species is detected, direct effects to spreading navarretia will be limited to 10 percent of the area with long-term conservation value for this species. We anticipate that occurrences determined to be important to the overall conservation of the species will be considered for long-term conservation under the MSHCP. Any individual plants or populations of spreading navarretia within the remaining 1,786 acres (7 percent or 4 percent of totaled modeled habitat) outside of the MSHCP Conservation Area will

be subject to impacts of development and other proposed Covered Activities. However, we anticipate that these impacts will be minimized with implementation of the Riparian/Riverine Areas and Vernal Pools policy.

To offset the impacts to spreading navarretia, the Permittees will protect and manage in perpetuity 5,174 acres (12 percent) of modeled habitat, which will be conserved in large contiguous areas. These lands will be managed by the Permittees to prevent alteration of hydrology and floodplain dynamics that are vital to the species and to implement appropriate responses to farming, fire and fire suppression activities, off-road vehicle use, grazing and competition from non-native plants. While up to 61 percent of modeled habitat is outside the MSHCP Conservation Area, 93 percent of this area is within the NEPSSA for spreading navarretia. Thus, impacts to existing or any newly discovered populations are expected to be low. In addition, required surveys for spreading navarretia may result in newly discovered occurrences being included in the MSHCP Conservation Area, and other locations of spreading navarretia may be conserved indirectly through efforts to meet the species-specific objective of conserving 6,900 acres of suitable habitat within the MSHCP Conservation Area. Therefore, we anticipate that the species will persist within the Plan Area, and we believe the long-term protection and management proposed by the Permittees mitigates the impacts to this species.

Thread-Leaved Brodiaea

Thread-leaved brodiaea is endemic to southwestern cismontane California, ranging from the foothills of the San Gabriel Mountains in Los Angeles County, east to Arrowhead Hot Springs in the western foothills of the San Bernardino Mountains of San Bernardino County, and south through eastern Orange and western Riverside counties to northwest San Diego County. About half of the extant populations at the time of listing in 1998 occurred in northern San Diego County or the Santa Rosa Plateau in southwestern Riverside County. Over its entire range, the species is thought to occupy about 825 acres of suitable habitat, with fewer than 2,000 individuals being observed at most populations. The largest extant population in Riverside County is about 30,000 individuals on about 38 acres on the Santa Rosa Plateau.

The Plan Area includes approximately 11,482 acres of modeled habitat (the intersection of clay and alkali soils series with grassland and playa/vernal pool habitats) for thread-leaved brodiaea. Approximately 3,866 acres (34 percent) of modeled habitat fall within PQP Lands, and the Wildlife Agencies are expected to conserve an additional 1,462 acres (13 percent). Thus, Covered Activities are not expected to significantly affect 47 percent of the modeled habitat for thread-leaved brodiaea in the Plan Area.

Because thread-leaved brodiaea has a limited geographic distribution and specialized habitat requirements, the MSHCP requires surveys for this species for all public and private development projects within Criteria Area Species Survey Areas (CASSA) 1, 2, 3, 3a and 4. In addition, specific conservation goals are provided in the MSHCP to ensure that suitable habitat and extant populations of the thread-leaved brodiaea will persist. The conservation goals state that at least 11 core locations supporting thread-leaved brodiaea and 6,900 acres of suitable habitat will be included within the MSHCP Conservation Area, and the floodplain processes important to the species' distribution will be maintained along the San Jacinto River. Surveys

will continue in suitable habitat within the survey areas until the conservation objectives for the species are met.

There are 3,231 acres (28 percent) of modeled habitat outside the MSHCP Conservation Area; of that, approximately 1,296 acres (39 percent or 11 percent of total modeled habitat) occur within CASSA 1, 2, 3, 3a and 4. Until such time that the Additional Reserve Lands are assembled and conservation objectives for this species are met, surveys for thread-leaved brodiaea will be conducted where suitable habitat is present within CASSA 1, 2, 3, 3a and 4. Where the species is detected, direct effects to thread-leaved brodiaea will be limited to 10 percent of the area with long-term conservation value for this species. We anticipate that occurrences determined to be important to the overall conservation of the species will be considered for long-term conservation under the MSHCP. Any individual plants or populations of thread-leaved brodiaea within the remaining 1,935 acres (61 percent or 17 percent of totaled modeled habitat) outside of the MSHCP Conservation Area will be subject to impacts of development and other proposed Covered Activities. However, we anticipate that these impacts will be minimized with implementation of the Riparian/Riverine Areas and Vernal Pools policy.

To mitigate the impacts to thread-leaved brodiaea, the Permittees will protect and manage in perpetuity 2,924 acres (25 percent) of its modeled habitat that will be conserved in large contiguous areas. These areas will be managed by the Permittees to support hydrologic and floodplain processes important to the species and to implement appropriate responses to farming, grazing, fire and fire suppression activities, off-road vehicle use and non-native species. In addition, required surveys for thread-leaved brodiaea may result in newly discovered occurrences being included in the MSHCP Conservation Area, and other locations of thread-leaved brodiaea may be conserved indirectly through efforts to meet the conservation objective of conserving 6,900 acres of suitable habitat within the MSHCP Conservation Area. Impacts to occupied habitat are expected to be low as a result of the surveys and procedures developed under the MSHCP to minimize loss of significant populations of the thread-leaved brodiaea. Therefore, we anticipate that the species will persist within the Plan Area, and we believe the long-term protection and management proposed by the Permittees mitigates the impacts to this species.

Vail Lake Ceanothus

Vail Lake ceanothus is endemic to southwestern Riverside County, and all known occurrences are within the Plan Area. Approximately 16,466 acres of modeled habitat for Vail Lake ceanothus occur within the Plan Area (chaparral in the Vail Lake and Agua Tibia Wilderness bioregions). Approximately 8,783 acres (53 percent) of this modeled habitat is within existing PQP Lands, and the Wildlife Agencies are expected to conserve an additional 1,309 (8 percent). Thus, Covered Activities are not expected to significantly affect 61 percent of the modeled habitat for Vail Lake ceanothus in the Plan Area.

Because Vail Lake ceanothus is highly restricted in its geographic distribution in the Plan Area, the MSHCP requires surveys for this species for all public and private projects within Criteria Area Species Survey Areas (CASSA) 5. Also, specific conservation objectives are provided in the MSHCP to ensure that suitable habitat and extant populations of the Vail lake ceanothus will persist. The conservation objectives state that at least three core locations in the vicinity of Vail

Lake and the Agua Tibia Wilderness Area and at least 13,290 acres of suitable habitat for Vail Lake ceanothus will be included within the MSHCP Conservation Area. Surveys will continue in suitable habitat within the survey areas until the conservation objectives for the species are met.

There are 3,679 acres (22 percent) of modeled habitat for Vail Lake ceanothus outside the MSHCP Conservation Area; of that 1,988 acres (54 percent or 12 percent of total modeled habitat) occur within CASSA 5. Until such time that the Additional Reserve Lands are assembled and conservation objectives for this species are met, surveys for Vail Lake ceanothus will be conducted where suitable habitat is present. Where the species is detected, direct effects to Vail Lake ceanothus will be limited to 10 percent of the area with long-term conservation value. Any individual plants or populations of Vail Lake ceanothus within the remaining 1,691 acres (46 percent or 10 percent of total modeled habitat) outside of the MSHCP Conservation Area will be subject to impacts of development and other proposed Covered Activities.

To offset the loss of modeled habitat for the Vail Lake ceanothus, the Permittees will protect in perpetuity 2,696 acres (16 percent) of its modeled habitat, which will be conserved in large contiguous areas and will be managed to control non-native species and to implement appropriate responses to flood control activities and natural fire regime. In addition, required surveys for Vail Lake ceanothus may result in newly discovered occurrences being included in the MSHCP Conservation Area. Because all known locations of Vail Lake ceanothus that are outside of the MSHCP Conservation Area occur within CASSA 5, impacts to known locations of Vail Lake ceanothus with long-term conservation value are expected to be low. Therefore, we anticipate that the species will persist within the Plan Area, and we believe the long-term protection and management proposed by the Permittees mitigates the impacts to this species.

UNLISTED SPECIES

CRUSTACEANS

Santa Rosa Plateau Fairy Shrimp

The Santa Rosa Plateau fairy shrimp is endemic to western Riverside County at an elevation of 625 meters and is known only from vernal pools on the Santa Rosa Plateau. Approximately 1,330 acres (52 percent) of the modeled habitat and all known Santa Rosa Plateau shrimp observations are within PQP Lands, and the Wildlife Agencies are expected to conserve an additional 295 acres (11 percent) of modeled habitat. Thus, Covered Activities are not expected to significantly affect 63 percent of the modeled habitat for the Santa Rosa Plateau fairy shrimp in the Plan Area.

Only 342 acres (13 percent) of modeled habitat will be subject to development and other proposed Covered Activities, and we expect impacts from these activities to be greatly minimized with implementation throughout the Plan Area of the Riparian/Riverine Areas and Vernal Pools policy. As a result of this policy, we expect only a 10 percent loss of those Santa Rosa Plateau fairy shrimp habitats determined to have long-term conservation value for the

species and that occurrences of Santa Rosa Plateau fairy shrimp discovered as a result of required surveys will be considered for inclusion in the MSHCP Conservation Area. In addition, no vernal pools known to be occupied by the Santa Rosa Plateau fairy shrimp will be impacted. Therefore, impacts to the known occurrences of this species and its modeled habitat are expected to be low.

The Permittees will protect and manage in perpetuity 607 acres (24 percent) of modeled habitat that may support additional occurrences of Santa Rosa Plateau fairy shrimp. Management will ensure support functions of the habitat by maintaining and/or preserving watersheds of known and future identified vernal pools and maintaining hydrology for those pools. Thus, the loss of modeled habitat and anticipated low level of take are mitigated by the long-term protection and conservation proposed by the Permittees for the Santa Rosa Plateau fairy shrimp.

FISH

Arroyo Chub

The native range of the arroyo chub includes the Los Angeles, San Gabriel, San Luis Rey, Santa Ana, and Santa Margarita rivers and also Malibu and San Juan creeks. It is largely coincident with the Los Angeles metropolitan area where most streams are degraded and populations are reduced and fragmented. This species is still relatively common in the upper Santa Margarita River and some of its tributaries, the Santa Ana River in Riverside County, Trabuco Creek below O'Neill Regional Park and San Juan Creek drainage, and Malibu Creek. It is present, but scarce, in Big Tujunga Canyon (Pacoima Creek above Pacoima Reservoir) and the Sepulveda Flood Control Basin; and is present in the upper San Gabriel River drainage.

In the Plan Area, the arroyo chub exists within the Santa Ana River and Santa Margarita River watersheds. The Plan Area contains 9,026 acres of modeled habitat for the arroyo chub. Approximately 7,157 acres (79 percent) of modeled habitat exist within PQP Lands, and the Wildlife Agencies are expected to conserve an additional 402 acres (4 percent) of modeled habitat. Thus, Covered Activities are not expected to significantly affect 83 percent of the modeled habitat for the arroyo chub in the Plan Area.

Only 638 acres (7 percent) of modeled habitat will be subject to development and other proposed Covered Activities, and we expect impacts from these activities to be greatly minimized with implementation throughout the Plan Area of the Riparian/Riverine Areas and Vernal Pools policy. We believe that the current distribution of arroyo chub within the mainstem and tributaries of the Santa Ana River and within the Santa Margarita River watershed is largely within PQP Lands. Therefore, impacts to the known occurrences of this species and its modeled habitat are expected to be low.

To mitigate the take of this species, the Permittees will protect and manage, in perpetuity, 829 acres (9 percent) of modeled habitat for arroyo chub. Management actions will be implemented by the Permittees including assessing barriers to arroyo chub movement and the need for connectivity and identifying measures to restore connectivity to be implemented as feasible; assessing threats to the arroyo chub from degraded habitat (*e.g.*, water quality, non-native invasive plants and animals); identifying areas necessary for successful spawning; identifying

areas for creation of stream meander, pool/riffle complexes, and reestablishment of native riparian vegetation as appropriate and feasible; and identifying and implementing management measures to address threats and protect critical areas. We expect the arroyo chub to persist within the Plan Area. The loss of modeled habitat and low level of take are mitigated by the long-term protection and conservation proposed by the Permittees for the arroyo chub.

AMPHIBIANS

Coast Range Newt

The coast range newt is found along the western coast of California from Humboldt County to San Diego County from near sea level to 6,000 feet in elevation. It has been extirpated from San Diego County and has reportedly suffered marked population declines in southern California due to human activity. The coast range newt breeds in ponds, reservoirs, and slow moving streams but spends much of the year away from water in terrestrial habitats (grassland, woodland and forest). The greatest threat to this species is the introduction of crayfish and mosquito fish, as these exotic species are apparently unaffected by the potent neurotoxin produced by coast range newts. In the Plan Area, the coast range newt is thought to only occur within the Santa Ana Mountains from the Santa Ana to the Santa Margarita Rivers.

There are 119,948 acres of modeled habitat for the coast range newt in the Plan Area. The modeled habitat consists of 21,524 acres of breeding habitat and 98,424 acres of terrestrial habitat. Most of the modeled habitat (13,801 acres or 64 percent of modeled breeding habitat and 65,237 acres or 66 percent of modeled terrestrial habitat) are within PQP Lands. There are confirmed populations of newt on PQP Lands within the Cleveland National Forest and on the Santa Rosa Plateau Ecological Reserve. The Wildlife Agencies are expected to conserve an additional 512 acres (2 percent) of modeled breeding habitat and 1,412 acres (1 percent) of modeled terrestrial habitat. Thus, Covered Activities are not expected to significantly affect 66 percent of the modeled breeding habitat or 67 percent of the modeled terrestrial habitat (68 percent of all modeled habitat) for the coast range newt.

Approximately 35,021 acres of all modeled habitat (29 percent of both modeled breeding and terrestrial habitat) will be subject to impacts from development and other proposed Covered Activities. We do not expect coast range newts to survive in most development areas. Coast range newts are site tenacious. They also apparently travel between their terrestrial and breeding habitats along the same route each year. Individual newts or populations of newts within rural mountainous areas may survive and reproduce if their terrestrial habitat is not lost to development and there is no barrier on the route to their breeding habitat. Approximately 29,660 acres (85 percent) of the proposed impact area is within the rural/mountainous lands. Loss of breeding habitat will be minimized by implementation of the Riparian/Riverine Areas and Vernal Pools policy.

The Permittees will protect and manage, in perpetuity, 1,055 acres (5 percent) of modeled breeding habitat and 2,909 acres (3 percent) of modeled terrestrial habitat (3 percent of all modeled habitat) for the coast range newt. Conserving these lands will help maintain large blocks of habitat necessary to sustain the coast range newt in the Plan Area. In addition, the conserved lands will be managed to maintain ecological processes, including predator control, in

occupied areas and other appropriate locations, which will address the primary threats to this species. The habitat loss in the Plan Area represents only a portion of the coast range newt habitat along the California coast, and we expect viable populations of the newt to persist within the Plan Area. Thus, the long-term conservation proposed by the Permittees will mitigate impacts to this species.

Western Spadefoot Toad

Western spadefoot toad ranges from south of the San Francisco Bay area to northwestern Baja California, Mexico. In the Plan Area, the toad is widely distributed and has been recorded throughout the Riverside Lowlands and San Jacinto Foothills bioregions. There are 673,356 acres of modeled western spadefoot toad habitat in the Plan Area. This includes 7,074 acres of breeding habitat and 666,282 acres of upland habitat. Approximately 36 percent of modeled habitat and 48 percent of the recorded toad observations are within PQP Lands, and the Wildlife Agencies are expected to conserve an additional 43,748 (6 percent) of the modeled habitat. Thus, Covered Activities are not expected to significantly affect 42 percent of the modeled habitat for the western spadefoot toad in the Plan Area.

Only 985 acres (14 percent) of wetland (breeding) habitat will be subject to development and other proposed Covered Activities. The loss of wetland habitat will be mitigated by protection and management in perpetuity of 2,273 acres (32 percent) of modeled wetland habitat in the Plan Area. Additionally, implementation of the Riparian/Riverine Area and Vernal Pools policy will provide protection to this species' breeding habitat by avoiding and/or minimizing direct loss of riparian, riverine, and vernal pool areas and will minimize disruption to the natural hydrological processes that the toad is dependent upon. Therefore, the loss of wetland toad habitat in the Plan Area and the level of take anticipated to breeding animals are expected to be low.

The greatest impact to the western spadefoot toad from the MSHCP will be the loss of 297,016 acres (45 percent) of modeled upland habitat in the Plan Area. However, the toad uses upland habitats represented by a wide range of vegetation communities; thus, the modeled upland habitat, particularly, overestimates the extent of suitable habitat for this species in the Plan Area. This impact will be mitigated by protection and management, in perpetuity, of 87,848 acres (13 percent) of modeled upland habitat, including areas with suitable foraging and aestivating habitat and known occurrences of the western spadefoot. Because the western spadefoot toad is widely distributed in the Plan Area in suitable habitat, we expect that the conservation of modeled habitat, where toads have been observed, will include extant populations of this species. The long-term management and protection of western spadefoot toad habitat will provide the aquatic and upland components needed to support the toad's essential behavioral patterns. Thus, we expect viable populations of the western spadefoot toad to persist within the Plan Area, and the impacts to this species are mitigated by the conservation proposed.

REPTILES

Granite Outcropping Associated Lizards

Granite spiny lizard, granite night lizard, and San Diego banded gecko are all associated with boulders and rock outcroppings in a variety of chaparral, sage scrub, and woodland habitats.

Granite spiny lizard and granite night lizard are endemic to the slopes of the Peninsular Ranges from southern San Bernardino County and western Riverside County south to the tip of Baja California, Mexico. The San Diego banded gecko occurs predominantly in shrub habitats in coastal and cismontane southern California from interior Ventura County south to the desert edge. The Plan area constitutes a moderate to large portion of these species' ranges.

Within the Plan Area, granite spiny lizard has been recorded in all bioregions where granite outcrops are present; granite night lizards have been recorded in the eastern portion of the Plan Area in arid and semi-arid habitats on the coastal and desert slopes in the San Jacinto and Santa Rosa mountains; and the San Diego banded gecko has been recorded in appropriate habitat in the Riverside Lowlands, Santa Ana Mountains, and San Jacinto Foothills bioregions. We modeled habitat for all of these species based on their known elevational ranges and vegetation community associates. We did not have data layers showing boulders and rock outcroppings so the modeled habitat for these species greatly overestimates the extent of suitable habitat in the Plan Area. We modeled 631,401 acres, 504,126 acres, and 363,359 acres of granite spiny lizard, granite night lizard and San Diego banded gecko habitat, respectively.

A sizeable portion of these species' modeled habitats are within PQP Lands (284,252 acres or 45 percent for granite spiny lizard, 199,400 acres or 40 percent for granite night lizard and 118,718 acres or 33 percent for San Diego banded gecko), and the Wildlife Agencies are expected to conserve an additional portion (33,516 acres or 6 percent for granite spiny lizard, 36,558 acres or 7 percent for granite night lizard and 30,961 acres or 9 percent for San Diego banded gecko). Thus, Covered Activities are not expected to significantly affect a substantial portion of each of these species' modeled habitats (51 percent for granite spiny lizard, 47 percent for granite night lizard and 42 percent for San Diego banded gecko). There are also confirmed of each species on PQP Lands.

These lizards will be subject to loss of modeled habitat associated with development and other proposed Covered Activities, including up to 229,290 acres (36 percent) of modeled granite spiny lizard habitat, 192,859 acres (38 percent) of modeled granite night lizard habitat, and 149,902 acres (41 percent) of modeled San Diego banded gecko habitat. Mortality of lizards within areas affected by Covered Activities is expected. However, a substantial portion of each lizard's modeled habitat that could be affected by Covered Activities is within the rural/mountainous designation (39 percent for granite spiny lizard, 31 percent for granite night lizard, and 48 percent for San Diego banded gecko) where development is expected to occur at lower densities. It is likely that the modeled habitat within rural/mountainous areas contain the rock outcrop microhabitat conditions important for these species, and individuals and populations of each of these lizards may persist in rural/mountainous areas.

To mitigate the take of these lizards, the Permittees will protect and manage, in perpetuity, modeled habitat: 79,343 acres (13 percent) for granite spiny lizard, 75,309 acres (15 percent) for granite night lizard, and 63,779 acres (18 percent) for San Diego banded gecko, including areas with recorded observations of granite spiny lizard and San Diego banded gecko. Because these lizards are widely distributed in the Plan Area in suitable habitat, we expect that the conservation of modeled habitat will include extant populations of these species. Lands conserved by the Permittees will complement and expand existing core habitat for these species and provide for the conservation that will contribute to the maintenance of viable populations of these species in

the Plan Area. Thus, the long-term protection and management of these species' modeled habitats by the Permittees mitigates the impact of the taking.

Western Pond Turtle

The western pond turtle occurs in San Luis Obispo, Santa Barbara, Ventura, Kern, Los Angeles, Orange, Riverside, San Bernardino, and San Diego counties, California. Within the Plan Area, the western pond turtle is known from seven drainages. Genetic exchange between populations in these drainages is precluded in most cases by existing development or flood control structures. The southern subspecies of the western pond turtle prefers pools within streams. Upland habitat is also used for nesting, overland dispersal, cover, protection, and over-wintering.

The Plan Area provides approximately 92,042 acres of western pond turtle habitat. The modeled habitat consists of 81,679 acres of upland habitat and 10,363 acres of wetland habitat. Four of the occupied drainages and most of the pond turtle habitat in the Plan Area (71 percent or 7,401 acres of modeled wetland habitat, and 50 percent or 41,082 acres of modeled upland habitat) are within PQP Lands. The Wildlife Agencies are expected to conserve an additional 633 acres (6 percent) of modeled wetland habitat and 4,574 acres (6 percent) of modeled upland habitat. Therefore, Covered Activities are not expected to affect approximately 56 percent of modeled wetland habitat and 77 percent of modeled upland habitat (59 percent of all modeled habitat) for western pond turtle in the Plan Area.

Approximately 27,625 acres of modeled western pond turtle habitat (10 and 33 percent of modeled wetland and upland habitat, respectively), including 10,618 acres within the rural mountainous designation, will be subject to development and other proposed Covered Activities. However, the proposed impact area does not include the portions of any of the drainages (wetland habitats) known to be occupied by western pond turtle. Implementation of the Riparian/Riverine Area and Vernal Pools Policy will provide additional protection to this species' wetland habitat by avoiding and/or minimizing direct loss of riparian and riverine areas and minimizing disruption to the natural hydrological processes that the turtle is dependent upon. Most of the modeled habitat that will be lost due to implementation of the MSHCP is uplands adjacent to suitable breeding habitat. This includes some portion of the upland feeding, dispersing, nesting and hibernating habitat adjacent to all of the known occupied drainages in the Plan Area. Thus, turtles and their nests and eggs could be impacted by development in these areas.

To mitigate the take of this species, the Permittees will protect and manage in perpetuity 9,423 acres (12 percent) of modeled upland habitat and 1,304 acres (13 percent) of modeled wetland habitat (12 percent of all modeled habitat) in areas that provide important foraging, nesting and over-wintering habitat for known populations of the pond turtle. Importantly, the Permittees will secure habitat that will provide for genetic exchange between the Cole Creek and San Mateo Creek populations by inclusion of Proposed Linkage 9 within the MSHCP Conservation Area. Management actions will be implemented by the Permittees including maintaining ecological processes within occupied habitat and in suitable new areas within the MSHCP Conservation Area by limiting livestock access to streams, limiting recreation use of certain areas, managing for urban-related predators, and removing exotic vegetation and aquatic species. The conservation of known populations of western pond turtle and its habitat combined with the

management proposed by the Permittees should provide both the aquatic and upland components needed to support pond turtles' essential behavioral patterns. Thus, the take of individual pond turtles and its associated habitat are mitigated by the long-term conservation proposed by the Permittees.

FINDINGS FOR REMAINING REPTILES ARE BELOW IN "WIDESPREAD, RANGE-RESTRICTED ANIMAL SPECIES" OR "FOREST SERVICE MOU ANIMAL SPECIES"

BIRDS

Black Swift

The black swift breeds from southeastern Alaska, south through Mexico and Central America to Costa Rica, east to Colorado and in the West Indies. Known nesting localities are sparsely distributed within the breeding range and include approximately 80 specific sites. The winter range of the black swift is not precisely known but is presumed to include portions of north and west South America and the West Indies.

Five ecological features that describe the majority of black swift nest sites include the presence of water, high relief, inaccessibility, darkness, and unobstructed flyways. The black swift nests, roosts, and rests in moist locations, usually associated with water, on sea cliffs above the surf, or on cliffs, behind or adjacent to waterfalls, in deep canyons. During the breeding season it ranges widely to forage aerially over many habitats, primarily for flying insects. In California, it breeds up to 2,300 meters in elevation and is expected to occur in the San Jacinto Mountains and San Bernardino Mountains from early May through September.

The amount of historic potential black swift breeding habitat is unknown, but potential waterfall nest sites are currently not abundant and may represent a limiting resource for this species in the Plan Area. The total available breeding habitat that meets these specifications for the black swift in the Plan Area is not currently known. Thus, we did not generate a vegetation-based model for this species because vegetation alone does not appear to be predictive of the known nesting locations in southern California and foraging occurs aerially, apparently incidental to the vegetation community below.

Survey information indicates that there are three black swift nest sites (Upper Strawberry Grotto, Lawler Falls, and Four Falls) in the MSHCP Plan Area. Upper Strawberry Grotto is on PQP Lands within the San Bernardino National Forest. Although the large open rocks around the Upper Strawberry Grotto nesting location appear to be frequented by the public, the nesting sites are not easily accessible, and we do not anticipate direct impacts here from recreational activities.

Lawler Falls and Four Falls occur outside of the MSHCP Conservation Area on private inholdings within the San Bernardino National Forest boundary, but we have no information that indicates these sites are vulnerable to a construction or water project that would diminish the value of these sites for breeding black swifts. Four suitable, but unoccupied, nest sites have been identified within the PQP Lands in San Bernardino National Forest at upper and lower Fuller

Mill Creek Falls, Marion Mountain Creek Falls, and Lower Strawberry Grotto. The MSHCP identifies management measures to address access to the existing and potential nest sites to minimize any potential for direct impacts from recreation.

We anticipate that this species will persist at three known nesting locations in the Plan Area and has the potential to expand into four currently unoccupied nesting locations. Because most of the existing and potential nests sites are within PQP Lands and there is a very low likelihood for impacts to any of the sites due to their inaccessibility, no take of black swifts, including nests and nestlings, is expected. The overall conservation proposed by the Permittees will benefit this species by maintaining suitable areas of foraging habitat.

Raptors

The following raptors have a wide distribution in North America and the Plan Area: ferruginous hawk, golden eagle, merlin, northern harrier, prairie falcon, sharp-shinned hawk, Swainson's hawk, turkey vulture, and white-tailed kite. Each of these species has a large distribution such that their occurrence in the Plan Area represents only a fraction of their range. The modeled habitat for these species generally consists of open or shrubby areas, where prey or carrion is available. These species are known to forage in a variety of habitat associations throughout the Plan Area, and we modeled large areas of habitat for each species, between approximately 305,000 and 770,000 acres. Large areas of modeled habitat for these species are within PQP Lands, between approximately 55,000 and 310,000 acres (15 and 45 percent of total modeled habitat). The Wildlife Agencies are expected to conserve an additional 25,000 to 45,000 acres (6 to 8 percent) of modeled habitat. Thus, Covered Activities are not expected to significantly affect 22 to 51 percent of modeled habitat for these raptors.

Because the ferruginous hawk, merlin, prairie falcon, sharp-shinned hawk and Swainson's hawk are not known to breed within the Plan Area, we do not anticipate mortality during breeding season of these species in association with development or other proposed Covered Activities. No take of individuals (including eggs and young) of white-tailed kites or golden eagles is allowed because these species are Fully Protected Species in the State of California and the golden eagle is further protected under the Federal Bald and Golden Eagle Protection Act. Northern harriers and turkey vultures are thought to rarely breed within the Plan Area, but no take of nests, eggs, or young is anticipated due to compliance by the Permittees with the Migratory Bird Treaty Act of 1918.

The greatest impact to these raptors will be loss of foraging habitat, between approximately 170,000 and 375,000 acres (36 and 65 percent). Loss of foraging habitat for these species within the Plan Area is not expected to result in mortality of these birds because the impact will be distributed throughout the Plan Area and will occur gradually over the permit term, and we expect that individual raptors will be able to shift their feeding areas. Some may disperse to rural mountainous areas where development impacts are anticipated to occur at lower densities. Birds forced to disperse may experience increased competition for the remaining suitable habitat.

The Permittees will protect and manage between 50,000 and 95,000 acres (12 and 16 percent) of modeled habitat for these species. The habitat loss expected represents a small fraction of the

habitat available to these species throughout their ranges, and the conserved lands will help maintain large blocks of habitat with the necessary prey base to support these species in the Plan Area. The loss of habitat may impact the overall numbers of these species that can be supported by remaining habitats in the Plan Area; however, the species are expected to persist within the Plan Area, and the long-term conservation proposed by the Permittees mitigates the impacts to these nine species of raptors.

Five other raptors are proposed for coverage by the Plan. These species also have a wide distribution in the Plan Area, but they have more restricted habitat requirements for breeding or foraging than the raptors discussed above. These other raptors are Cooper's hawk, northern goshawk, osprey, peregrine falcon, and burrowing owl. Individual findings for these species are included below.

Burrowing Owl

The burrowing owl has a widely distributed breeding and/or wintering range from southern Canada through the western and central United States and south to central Mexico and El Salvador. In California, burrowing owls are restricted to the Central Valley extending from Redding south to the Grapevine, east through the Mojave Desert and west to San Jose, the San Francisco Bay area, the outer coastal foothills area which extends from Monterey south to San Diego, and the Sonoran desert. This species prefers dry, level grasslands and open areas with suitable nesting substrates, so our modeled habitat (grassland, agricultural land, and playas/vernal pools within the Riverside Lowlands) likely overestimates the amount of suitable nesting and foraging habitat within the Plan Area. Approximately 25,611 acres (12 percent) of modeled habitat for burrowing owl occur within PQP Lands, and the Wildlife Agencies are expected to conserve an additional 6,504 acres (3 percent). Thus, Covered Activities are not expected to significantly affect 15 percent of the modeled habitat for burrowing owl in the Plan Area.

Because information on the burrowing owl in the Plan Area is limited, the MSHCP requires surveys for this species for all public and private projects within the defined Burrowing Owl Survey Area. In addition, conservation objectives are provided in the MSHCP to ensure that suitable habitat and extant populations of the burrowing owl will persist, including an objective that Core Areas should support a combined total breeding population of approximately 120 burrowing owls with no fewer than 5 pairs in any one Core Area.

Up to 164,910 acres (78 percent) of modeled habitat will be subject to impacts associated with development and other proposed Covered Activities; however, the entire area of modeled habitat falls within the Burrowing Owl Survey Area. Therefore, if burrowing owls are detected within the Burrowing Owl Survey Area and the site is within the Criteria Area, at least 90 percent of the area with long-term conservation value will be included in the MSHCP Conservation Area. Outside of the Criteria Area where burrowing owls are detected and until such time as the species-specific conservation objectives for the species are met, at least 90 percent of areas larger than 35 acres with long-term conservation value for the species will be conserved onsite; otherwise, birds will be actively or passively relocated to other suitable Conserved Habitat. Under the Plan, the take of active nests is not allowed; therefore, we do not anticipate the loss of active nests, including eggs and young, as a result of Covered Activities.

The Permittees will protect and manage in perpetuity 13,398 acres (6 percent) of modeled habitat for this species. We expect additional occupied habitat will be conserved as a result of the survey requirements and that translocation sites for the burrowing owl will be created in the MSHCP Conservation Area for the establishment of new colonies. Despite the potential loss of significant areas of modeled foraging and breeding habitat, impacts to occupied habitat and mortality of individuals is expected to be low, and viable populations of burrowing owl are expected to persist in the Plan Area. Thus, the long-term conservation proposed by the Permittees, combined with the burrowing owl surveys and procedures, minimizes and mitigates the impacts to this species.

Cooper's Hawk

Cooper's hawks breed from British Columbia east to Nova Scotia and south to Florida and northern Mexico. Cooper's hawks are present year-round nearly throughout California, except along the Colorado River and in desert areas, where the species is reportedly extirpated as a nester but is generally a transient and winter visitor. Although the Cooper's hawk breeds in southern California and has a year-round resident population, it also occurs in the region as a spring and fall migrant and as a winter resident. Approximately 47,968 acres (66 percent) of modeled habitat (riparian scrub, woodland, forest; woodlands and forests; and montane coniferous forest habitats) occur on existing PQP Lands. The Wildlife Agencies are anticipated to conserve an additional 1,901 acres (3 percent) of modeled habitat. Thus, Covered Activities are not expected to significantly affect 69 percent of the modeled habitat in the Plan Area.

Approximately 18,680 acres (26 percent) of total modeled habitat for the Cooper's hawk, of which 5,173 acres (28 percent) occur within rural/mountainous areas, will be subject to impacts associated with development and other proposed Covered Activities. Loss of breeding and foraging habitat due to Covered Activities is not expected to result in mortality of adult Cooper's hawks because the habitat loss will be distributed across the Plan Area and will not occur at once, but over the permit term, allowing hawks to redistribute across the landscape. Loss of perch and nesting trees may preclude the establishment of nesting sites, especially since this species is known to reoccupy the same nesting area year after year. Birds forced to disperse may experience increased competition for the remaining suitable habitat and decreased fitness due to increased energy and time spent locating new habitats. However, it is likely that some habitat for Cooper's hawk will persist in rural/mountainous areas where development is anticipated to occur at lower densities, and some habitat will remain in areas avoided as a result of the Riparian/Riverine Areas and Vernal Pools Policy. No take of nests, eggs, or young is anticipated due to compliance by the Permittees with the Migratory Bird Treaty Act of 1918.

To mitigate the impacts to this species, the Permittees will protect and manage in perpetuity 3,917 acres (5 percent) of modeled breeding and foraging habitat for the Cooper's hawk. The Cooper's hawk is a wide-ranging species, and the habitat loss expected in the Plan Area represents only a fraction of the habitat available to the species throughout its range. The conserved lands will help maintain large blocks of breeding and foraging habitat necessary to sustain the Cooper's hawk in the Plan Area. Thus, the long-term conservation proposed by the Permittees offsets the impacts to the Cooper's hawk.

Northern Goshawk

Northern goshawks breed in North America locally from Alaska east to Newfoundland and south to southern California; New Mexico; mainland, central and Baja California, Mexico; and the Gulf Coast. Within southern California, the species breeds only in Ventura County, the San Bernardino Mountains, and the San Jacinto Mountains. Northern goshawks casually occur in winter along the coast, throughout the foothills, and in the northern deserts where it may be found in pinyon-juniper and low-elevation riparian habitats. A majority of the approximately 33,539 acres (78 percent) of modeled habitat (woodland and forests and montane coniferous forest) occurs within PQP Lands. The Wildlife Agencies are expected to conserve an additional 93 acres (less than 1 percent) of modeled habitat. Thus, Covered Activities are not expected to significantly affect 78 percent of the modeled habitat in the Plan Area.

Approximately 9,347 acres (22 percent) of modeled habitat for the northern goshawk will be subject to impacts associated with development and other proposed Covered Activities; however, mortality of adult birds from the loss of breeding and foraging habitat is not expected because of the limited distribution of the species in the Plan Area. No take of nests, eggs, or young is anticipated due to compliance by the Permittees with the Migratory Bird Treaty Act of 1918.

The Permittees will protect and manage in perpetuity 192 acres (less than 1 percent) of modeled habitat. The northern goshawk is a wide-ranging species, and the habitat loss expected in the Plan Area represents only a fraction of the habitat available to the species throughout its range. The loss of modeled habitat for the northern goshawk is not expected to result in any significant impact to the species. The Permittees will implement specific management measures that will address the primary threat to this species' breeding habitats within the MSHCP Conservation Area through buffering from human disturbance the known and future nest locations. Therefore, because the overall impact to the species is expected to be low, the long-term conservation and management proposed by the Permittees mitigates the impacts to the northern goshawk.

Osprey

The osprey is found on every continent except Antarctica. Within North America, its range extends from northwestern Alaska to Florida and Baja California, Mexico. Wintering habitat begins in the southern United States extending south to Peru and Brazil. Within California, breeding populations reside in the Cascade and Sierra mountain ranges. Although widely seen on the coast, these birds are rare transients in the interior portions of southern California. Ospreys typically build their nests above the canopy, in older trees and snags, generally near open water that provides foraging habitat. Due to the absence of large trees or snags within certain habitat types, the modeled habitat likely overestimates the extent of suitable perching or nesting habitats for the species within the Plan Area. Approximately 13,416 acres (69 percent) of modeled habitat (suitable vegetation types within 984 feet of open or standing water) for osprey occur within PQP Lands, and the Wildlife Agencies are expected to conserve an additional 982 acres (5 percent). Thus, Covered Activities are not expected to significantly affect 74 percent of the modeled habitat for osprey in the Plan Area.

Approximately 3,062 acres (16 percent) of total modeled habitat will be subject to impacts associated with development and other proposed Covered Activities; however, we expect these impacts to be minimized with implementation of the Riparian/Riverine Area and Vernal Pools policy, which requires avoidance of riparian habitat when feasible. The loss of 16 percent of the modeled breeding and foraging habitat for osprey distributed throughout the Plan Area is not expected to result in mortality of adult birds. However, some birds may be forced to disperse as a result of development and other Covered Activities, and loss of perch and nesting trees may preclude the establishment of nesting sites. Since the osprey is not documented as a successful breeding bird within western Riverside County, no impacts to nests, eggs, or young were anticipated by the MSHCP. Overall, impacts to osprey in the Plan Area are expected to be minimal.

To mitigate impacts to the osprey, the Permittees will protect and manage in perpetuity 2,023 acres (10 percent) of the modeled habitat for osprey in the Plan Area. Also, a 100-meter buffer will be established around the known or future-identified nest sites in the MSHCP Conservation Area. Because we do not anticipate take of adult osprey or active nests and because the level of habitat loss is expected to be low, the long-term conservation proposed by the Permittees will mitigate any impacts to this species.

Peregrine Falcon

The peregrine falcon has a worldwide distribution that is more extensive than any other bird. The species breeds in North America from Alaska, east to Labrador, southward to southern California and Baja California, central Arizona and Mexico. The species winters from southern Alaska to Tierra del Fuego in southernmost South America. In California, the peregrine falcon is a very uncommon breeding resident and uncommon as a migrant or as winter resident. Active nesting sites of this species within California are known from the northern Channel Islands, along the coast from San Diego County to north of Santa Barbara, in the Sierra Nevada Mountains, and other mountains of northern California. There is one known nesting pair located within the Plan Area on the County Building in downtown Riverside. Breeding habitat was not modeled since the data were not able to adequately capture cliff faces that are a preferred nesting substrate.

Approximately 13,988 acres (81 percent) of the modeled foraging habitat (open water and riparian scrub, woodland, and forest) occur within PQP Lands, and the Wildlife Agencies are expected to conserve an additional 514 acres (3 percent). Thus, Covered Activities are not expected to significantly affect 84 percent of modeled foraging habitat for the peregrine falcon in the Plan Area.

Approximately 1,668 acres (10 percent) of modeled foraging habitat will be subject to impacts associated with development and other proposed Covered Activities. This minimal loss of habitat distributed over the Plan Area is not expected to reduce the overall prey base to a level that would result in mortality of adult birds. In addition, the peregrine falcon is a Fully Protected Species in the State of California; therefore, no take of peregrine falcons, including nests, eggs, or young, is anticipated.

To mitigate impacts to the peregrine falcon, the Permittees will protect and manage, in

perpetuity, 1,059 acres (6 percent) of its modeled foraging habitat in the Plan Area. The Plan also includes a species-specific conservation objective to identify, protect and buffer from disturbance a 100-meter buffer around open water bodies as these areas are incorporated into the MSHCP Conservation Area. This buffer will reduce disturbance effects at potential peregrine falcon foraging locations. Because impacts to peregrine falcon foraging habitat and prey base are minimal and no take of nests is expected, the species' distribution in the Plan Area will not be significantly affected by implementation of the MSHCP. The long-term conservation proposed by the Permittees will mitigate any impacts to this species.

Western Yellow-Billed Cuckoo

The yellow-billed cuckoo summers and nests from interior California east to New Brunswick and sporadically southward to southern Mexico. The species presumably migrates throughout much of North America and winters primarily from northern to central South America. The northern limit of breeding in the coastal states of the *western* yellow-billed cuckoo subspecies is now in Sacramento Valley, California, and the northern limit of breeding in the western interior states is southern Idaho. It is an uncommon to rare summer resident of valley foothill and desert riparian habitats in scattered locations in California. The western yellow-billed cuckoo was formerly much more common and widespread throughout lowland California. The only known recent records of this subspecies within the Plan Area away from Poorman Reservoir were from the Prado Basin and adjacent areas along Chino Creek.

The western yellow-billed cuckoo in California requires dense, wide, riparian woodlands with well-developed understories for breeding. It occurs in densely foliated, deciduous trees and shrubs, especially willows, which are required for roost and nest sites. Breeding is restricted to river bottoms and other mesic habitats where humidity is high and dense understory abuts slow-moving watercourses, backwaters, or seeps. The Plan Area supports 4,613 acres of modeled breeding habitat for the western yellow-billed cuckoo within the Riverside Lowlands, Santa Ana Mountains, and San Jacinto Foothills bioregions, including 4,250 acres (92 percent) within PQP Lands. All of the known or suspected breeding locations occur on PQP Lands. The Wildlife Agencies are expected to conserve an additional 94 acres (2 percent); thus, Covered Activities are not expected to significantly affect 4,344 acres (94 percent) of the modeled habitat for the western yellow-billed cuckoo.

Approximately 77 acres (2 percent) of modeled habitat for western yellow-billed cuckoo occur outside the MSHCP Conservation Area and will be subject to impacts from development and other Covered Activities. However, impacts to occupied habitats will be minimized through implementation of the Riparian/Riverine Areas and Vernal Pools policy, which requires surveys in potential cuckoo habitat and 100 percent avoidance and protection of the occupied portions of areas that provide long-term conservation value for the cuckoo. This protection will include 328 feet (100 meters) of undeveloped landscape adjacent to conserved habitat. Breeding territories for the cuckoo are not currently documented outside of PQP Lands. The impact of this habitat loss to overall cuckoo reproduction and distribution in the Plan Area is likely minimal, and no mortality of adults, eggs or nestling western yellow-billed cuckoos is expected.

To mitigate the loss of breeding and foraging habitat for this species, the Permittees will protect and manage in perpetuity 193 acres (4 percent) of the modeled breeding and foraging habitat for

the western yellow-billed cuckoo. Conserving these lands will help maintain large blocks of breeding habitat, including Prado Basin, and interconnecting linkages necessary to sustain the cuckoo in the Plan Area. The potential loss of cuckoo habitat is minimal and suitable habitat for new and expanded cuckoo territories will be sustained in the Plan Area. Thus, the long-term protection and conservation proposed by the Permittees mitigates the impacts to the western yellow-billed cuckoo.

Scrub and Grassland Birds

For the purpose of this analysis, we have designated the following seven bird species as those that predominantly use scrub or grassland habitats within the Plan Area: Bell's sage sparrow, cactus wren, California horned lark, loggerhead shrike, mountain plover, mountain quail, and southern California rufous-crowned sparrow. None of these species is federally or State-listed.

We modeled areas of habitat for each species (from approximately 7,043 to 453,587 acres). Our models likely overestimate the amount of suitable habitat due to the fairly gross level of vegetation mapping available and because some species' habitat associations (*e.g.*, cactus patches where cactus wrens would be localized or mountain quail associated with very dense chaparral and scrub within coniferous forests) are not distributed throughout all of the potential vegetation communities. This wide range of modeled habitat among the species is also due to some species' relatively greater use of grassland habitats (*e.g.*, California horned lark) or agricultural areas (*e.g.*, loggerhead shrike) than other species. The primary conservation threat for all of these species is generally the loss, degradation and fragmentation of suitable breeding, migration and wintering habitat, and/or alterations to fire regimes. Blocks of modeled habitat for these species are within PQP Lands (2,682 to 197,407 acres; between 17 and 68 percent of total modeled habitat). The Wildlife Agencies are expected to conserve an additional 1,103 to 36,637 acres or 2 to 16 percent of total modeled habitat. Therefore, Covered Activities are not expected to significantly affect 23 to 69 percent of modeled habitat for these species.

These bird species will be subject to impacts associated with development and other proposed Covered Activities within large areas of modeled habitat. For Bell's sage sparrow, cactus wren, California horned lark, loggerhead shrike, and southern California rufous-crowned sparrow the impacts will be between 62,678 and 295,626 acres (42 to 65 percent of total modeled habitat). For mountain plover and mountain quail the impact to modeled habitat will be 985 and 78,315 acres (14 and 27 percent of total modeled habitat), respectively. It is anticipated that most of the habitat for these scrub and grassland species in the development areas will be lost, although some habitat for California horned lark, mountain plover and loggerhead shrike (wetland areas such as playas and vernal pools, alkali marsh, and desert riparian) may remain in areas avoided as a result of the Riparian/Riverine Areas and Vernal Pools policy, which requires avoidance of wetland habitat when feasible. Some habitat for all these species except mountain plover may also remain in rural/mountainous areas where development is anticipated to occur at lower densities.

The loss of modeled habitat may decrease the use of the Plan Area by these species over the long term by reducing the number of areas suitable for breeding, foraging, and migratory stopovers. We expect mortality of individual adult birds of all species as a result of this habitat loss, except

the mountain plover, which will lose only 14 percent of its wintering habitat in the Plan Area. However, with the exception of the mountain quail, which is not protected by the Migratory Bird Treaty Act of 1918, no take of nests, eggs, or young is anticipated due to compliance by the Permittees with the Migratory Bird Treaty Act.

The Permittees will protect and manage in perpetuity between 2,273 and 79,049 acres (4 to 32 percent) of modeled habitat for these species. Bell's sage sparrow, cactus wren, and southern California rufous-crowned sparrow are patchily distributed in the Plan Area; however, the Permittees will protect and manage in perpetuity between 16 to 23 percent of the modeled habitat for these species including areas with known observations of the species. Conserving these lands will help maintain large blocks of breeding and foraging habitat, as well as interconnecting linkages between suitable habitats necessary to sustain these species.

The impact in terms of acres is high for some of these species, in particular for California horned lark and loggerhead shrike. However, the California horned lark and loggerhead shrike are more wide-ranging species, and the habitat loss in the Plan Area represents only a fraction of the habitat available within their ranges. The conservation proposed will contribute to the protection of large blocks of modeled habitat, including functional linkages among these blocks for dispersal and migration. In addition, the long-term conservation and management proposed by the Permittees will help reduce the effects of fragmentation on these species within the Plan Area. With the conservation proposed, we expect these species to persist within the Plan Area; thus, the impact of the loss is mitigated by the conservation.

Wetland Birds

The following bird species are associated with wetland habitats within the Plan Area: American bittern, black-crowned night heron, double-crested cormorant, and great blue heron. Each species' range extends well beyond the Plan Area. Due to their precise habitat requirements, these species breed in very restricted areas within the Plan Area. With the exception of the American bittern, which has not been recently documented to breed in the Plan Area, the only known breeding locations for all of these species are on PQP Lands. A substantial portion of these species' foraging habitats also occurs on existing PQP Lands or in areas the Wildlife Agencies are expected to conserve.

Some loss of breeding and foraging habitat is expected for each of these species (from 6 to 20 percent of modeled habitats). However, these species will commute up to several miles to forage, so loss of foraging habitat distributed over the Plan Area and over the permit term is not expected to result in mortality of adult birds. Loss of nesting habitat may preclude the establishment of new breeding colonies outside of the MSHCP Conservation Area. However, most of the large wetland areas in the Plan Area are within PQP Lands, and all known occurrences of nesting for these species are on PQP Lands, either in the Prado Flood Control Basin, at Lake Skinner, or at the San Jacinto Wildlife Area. Thus, impacts to nesting habitat are expected to be low, and no take of nests, eggs, or young is anticipated due to compliance by the Permittees with the Migratory Bird Treaty Act of 1918.

To mitigate the loss of foraging and nesting habitats, the Permittees will conserve and manage, in perpetuity, appropriate nesting and foraging habitat (10 to 31 percent of their respective modeled habitats) in the Plan Area. The most significant additions will be in the Vail Lake area and upstream along Temecula Creek. Additionally, implementation of the Riparian/Riverine Areas and Vernal Pools policy will help minimize the impacts to these species and their breeding and foraging habitats by requiring avoidance of wetland habitat when feasible. These species are wide-ranging and even transient in the Plan Area, and the level of take is expected to be low. Thus, populations of these species are expected to persist within the Plan Area, and the long-term conservation proposed by the Permittees mitigates the impacts to these species.

Wetland Birds that Forage in Agricultural Areas

White-faced ibis and tricolored blackbird are associated with wetland habitats and agricultural areas within the Plan Area. These species breed in very restricted wetland areas within the Plan Area but are often present in agricultural areas. The only known breeding locations for both species are on PQP Lands.

The tricolored blackbird has a relatively restricted range, breeding from southern Oregon and the Modoc Plateau of northeastern California, south through the lowlands of California west of the Sierra Nevada to northwestern Baja California, Mexico. The species is a highly colonial, itinerant breeder; following the breeding season it becomes nomadic. The characteristics of the nesting locations include accessible water; protected nesting sites (either flooded or surrounded by thorny or spiny vegetation); and suitable foraging areas with adequate insect prey within a few kilometers of the nesting colony. There are many potential breeding areas for the tricolored blackbird within the Plan Area. Flocks consisting of hundreds of tricolored blackbirds have been detected in the Prado Basin during the breeding season but currently the only confirmed nesting colony is in/near the San Jacinto Wildlife Area.

Migrant and wintering white-faced ibises may be found foraging in shallow lacustrine waters, muddy ground of wet meadows, marshes, ponds, lakes, rivers, and flooded fields, in the Riverside Lowlands Bioregion of the Plan Area, but currently the only known nesting location is in the Prado Basin.

We modeled approximately 235,849 acres of tricolored blackbird habitat (389 acres of nesting habitat and 235,460 acres of foraging habitat) in the Plan Area. Approximately 217 acres of modeled nesting habitat (54 percent) and 32,891 acres of modeled foraging habitat (4 percent or 14 percent of total modeled habitat) are within PQP Lands and the Wildlife Agencies are expected to conserve an additional 41 acres (10 percent) of modeled nesting habitat and 9,182 acres (4 percent) of modeled foraging habitat (4 percent of total modeled habitat). Thus, Covered Activities are not expected to significantly affect 64 percent of modeled nesting habitat or 8 percent of modeled foraging habitat (18 percent of total modeled habitat) for the tricolored blackbird in the Plan Area.

We modeled 21,971 acres of white-faced ibis habitat in the Plan Area (302 acres of nesting habitat and 220,335 acres of foraging habitat). Approximately 55 acres (18 percent) of modeled nesting habitat and 21,916 acres (10 percent) of modeled foraging habitat occurs within PQP Lands (10 percent of total modeled habitat), and the Wildlife Agencies are expected to conserve

an additional 70 acres (23 percent) of modeled nesting habitat and 10,169 acres (5 percent) of modeled foraging habitat (5 percent of total modeled habitat). Thus, Covered Activities are not expected to significantly affect 41 percent of modeled nesting habitat and 15 percent of modeled foraging habitat (15 percent of total modeled habitat) for the white-faced ibis in the Plan Area.

Modeled nesting and foraging habitat for both species will be subject to development and other proposed Covered Activities. Approximately 46 acres (12 percent) and 32 acres (11 percent), respectively, of modeled nesting tricolored blackbird and white-faced ibis habitat are within the area to be affected by Covered Activities. Loss of suitable nesting habitat may preclude the establishment of new breeding colonies outside of the MSHCP Conservation Area. However, most of the large wetland areas in the Plan Area and the only currently known breeding locations for these species are within PQP Lands. Thus, impacts to nesting habitat are expected to be low, and no take of nests, eggs, or young is anticipated due to compliance by the Permittees with the Migratory Bird Treaty Act.

Approximately 174,404 acres (74 percent) and 167,300 acres (76 percent) of modeled tricolored blackbird and white-faced ibis foraging habitat, respectively, is within the area that will be subject to development and other Covered Activities. This is a substantive loss for both species. However, most of the modeled foraging habitat is agricultural lands (54 and 55 percent for tricolored blackbird and white-faced ibis, respectively), and not all of these agricultural lands represent suitable foraging habitat for these species. For example, white-faced ibis is not expected in non-irrigated fields and tricolored black birds usually forage in fields in some proximity to the nesting colony. Thus, our modeled habitat likely overestimates the area of foraging habitat for these species outside of the MSHCP Conservation Area.

Because agricultural land used as foraging habitat is rapidly being urbanized in the areas surrounding the Prado Basin and San Jacinto Wildlife Area, development and other Covered Activities could reduce the success of nesting colonies due to a reduction of food resources. The wholesale loss of agricultural lands available for foraging is not anticipated over the permit term and these species will commute up to several miles to forage. In addition to mitigate the loss of foraging habitat the Permittees will conserve 18,983 acres or 8 percent and 21,042 acres or 10 percent of modeled tricolored blackbird and white-faced ibis, respectively. We anticipate that tricolored blackbird and white-faced ibis populations in the Plan Area will persist over the long-term despite the loss of foraging habitat.

Loss of nesting habitat is the most significant threat to tricolored blackbird. Loss of nesting habitat coupled with DDT contamination is the most significant threat to white-faced ibis. Thus, the conservation of nesting habitat is particularly important to these species. To mitigate the loss of nesting habitats, the Permittees will conserve and manage, in perpetuity, 85 acres or 22 percent of modeled tricolored blackbird nesting habitat and 145 acres or 48 percent of modeled white-faced ibis nesting habitat. The most significant additions will be in the Vail Lake area and upstream along Temecula Creek. Additionally, implementation of the Riparian/Riverine Areas and Vernal Pools policy will help minimize the impacts to these species and their breeding and foraging habitats by requiring avoidance of wetland habitat when feasible. Because the level of take of nesting habitat is expected to be low and the loss of foraging habitat should not substantially affect these species, the long-term conservation proposed by the Permittees mitigates the impacts to these species.

Widespread, Woodland-Associated Birds

The following eight bird species are widespread species that predominantly use woodland areas (riparian woodland, oak woodland, coniferous forest) and/or wetland or scrub habitats as sub-associations within those woodland categories: downy woodpecker, MacGillivray's warbler, Nashville warbler, purple martin, tree swallow, Wilson's warbler, yellow-breasted chat, and yellow warbler. These species can be present throughout the Plan Area, and they all have large ranges such that the Plan Area represents a small fraction of their distribution across North America. The primary threat to conservation of these species is generally the loss or degradation of a specific habitat element necessary to their life cycles such as the loss of nesting snags or tree cavities, the reduction or degradation of riparian habitats, and/or the presence of the brood-parasitic brown-headed cowbird. None of these species is federally or State-listed.

We modeled habitat for each of these birds based on their known elevational ranges and vegetation community associations. Our models probably overestimate the area of suitable habitat due to the fairly gross level of vegetation mapping available and because some species' microhabitat associations (*e.g.*, riparian/woodland areas with appropriate large snags for nesting and roosting) are not distributed evenly throughout the mapped vegetation communities. These species have a wide range of modeled habitats in the Plan Area (from approximately 11,463 for yellow breasted chat to 644,171 acres Nashville warbler). This large spread of modeled habitat is due to some species' (*e.g.*, MacGillivray's and Nashville warblers) relatively greater use of chaparral or scrub habitats and/or their use of a wider range of habitats during migration and wintering than during the breeding season. Also, some of these species are not present in the Plan Area for either nesting or wintering.

Large blocks of modeled habitat for these species are within PQP Lands (5,570 to 291,162 acres; between 22 and 66 percent of the modeled habitats). The Wildlife Agencies are expected to conserve an additional 1,017 to 39,530 acres or 3 to 9 percent of the modeled habitats. Therefore, Covered Activities are not expected to significantly affect 31 to 70 percent of these birds' modeled habitats.

These widespread bird species will be subject to impacts associated with development and other proposed Covered Activities within large areas of modeled habitat, between approximately 2,581 and 232,044 acres (23 to 51 percent of total modeled habitat). It is anticipated that most of the habitat for these species in development areas will be lost, although some habitat may remain in areas avoided as a result of the Riparian/Riverine Areas and Vernal Pools policy, which requires avoidance of riparian and wetland habitat when feasible. Loss of modeled habitat may decrease the use of the Plan Area by these species over the long term by reducing the number of areas suitable for breeding, foraging, and migratory stopovers. Displacement of birds by Covered Activities may result in mortality. Displaced birds that are unable to locate suitable habitat will experience increased rates of predation or otherwise die or be injured due to loss of their foraging, breeding, and sheltering habitat (*e.g.*, roosting cavities, or established territories). For species that breed in the Plan Area, no take of nests, eggs, or young is anticipated due to compliance by the Permittees with the Migratory Bird Treaty Act of 1918.

To mitigate the take of these species, the Permittees will protect and manage, in perpetuity, between 2,095 and 81,432 acres (5 to 18 percent) of modeled habitat for these species. Because these species are widespread throughout the Plan Area in suitable habitat, we expect that the conservation proposed will include extant populations of these species. This conservation will contribute to the protection of large blocks of modeled habitat, including functional linkages among these blocks for dispersal and migration. In addition, the long-term conservation and management proposed by the Permittees will help reduce the effects of fragmentation and isolation on these species within the Plan Area. The impact in terms of loss of acres of modeled habitat is high for some of these species; however, the habitat loss in the Plan Area represents only a fraction of their ranges. Because the reserve configuration compliments other areas of modeled habitats on PQP Lands, we expect populations of these species to remain viable in the MSHCP Conservation Area in the long term. Thus, the impacts of the taking are mitigated by the conservation proposed by the Permittees.

FINDINGS FOR REMAINING BIRDS ARE BELOW IN "FOREST SERVICE MOU ANIMAL SPECIES"

MAMMALS

Aguanga Kangaroo Rat

Aguanga kangaroo rats have been observed from eastern San Diego County and the Anza area of Riverside County. This species appears to be associated with sandy washes and drainages with sparse cover of Riversidean sage scrub, chaparral, redshank chaparral and non-native grassland vegetation. Approximately 747 acres (8 percent) of modeled habitat are within PQP Lands, and the Wildlife Agencies are expected to conserve an additional 2,027 acres (21 percent) of the modeled habitat. Thus, Covered Activities are not expected to significantly affect 28 percent of modeled habitat for the Aguanga kangaroo rat in the Plan Area.

Because the Aguanga kangaroo rat is not considered widely distributed within the Plan Area and detailed distribution data are lacking, the MSHCP requires surveys for this species for all public and private development projects within a defined Aguanga kangaroo rat survey area (MSHCP, Section 6.3.2). In addition, species-specific conservation objectives are provided in the MSHCP to ensure that suitable habitat and extant populations of the Aguanga kangaroo rat will persist. These goals require that, within the occupied and suitable Aguanga kangaroo rat habitat in the MSHCP Conservation Area, at least 75 percent of the area is occupied and that at least 20 percent of the occupied habitat supports medium to high Aguanga kangaroo rat densities.

Approximately 2,890 acres (29 percent) of total modeled habitat will be subject to impacts associated with development and other proposed Covered Activities; however, of this modeled habitat, 2,460 acres (85 percent or 25 percent of totaled modeled habitat) occur within the survey area for the Aguanga kangaroo rat. Within the survey area, when Aguanga kangaroo rats are detected, provisions in the MSHCP require that only 10 percent of the area with long-term conservation value for the species will be lost to individual project development. Surveys will continue in suitable habitat within the survey areas until the conservation objectives for the species are met. In addition, significant populations discovered as a result of surveys may be

considered for long-term conservation under the MSHCP. The loss of modeled habitat with long-term conservation value may affect breeding, feeding, and sheltering and loss of individual Aguanga kangaroo rats is expected. However, only 430 acres (4 percent of total modeled habitat) within the Plan Area is both outside the MSHCP Conservation Area and outside the survey area for the Aguanga kangaroo rat; thus impacts to occupied habitat is expected to be low.

To mitigate the take of this species, the Permittees will protect and manage, in perpetuity, 4,175 acres (42 percent) of the modeled habitat for the Aguanga kangaroo rat. Impacts to occupied habitat and take of individuals are expected to be low as a result of this level of conservation combined with the surveys and procedures developed under the MSHCP to minimize loss of significant populations of this species. Viable populations of the Aguanga kangaroo rat are expected to persist in the Plan Area, and the species will benefit from the significant conservation proposed by the Permittees. Thus, the conservation proposed minimizes and mitigates the impacts to the Aguanga kangaroo rat.

Brush Rabbit

The brush rabbit is known from west of the Cascade and Sierra Nevada mountain ranges from the Columbia River south to the southern tip of Baja California, Mexico. Brush rabbits inhabit dense, brushy cover most commonly in chaparral vegetation but also in early successional stages of oak and conifer habitats. This species is thought to be widespread throughout the Plan Area in appropriate habitats associations. Approximately 262,516 acres (44 percent) of the modeled habitat are within PQP Lands, and the Wildlife Agencies are expected to conserve an additional 37,306 acres (6 percent) of the modeled habitat. Thus, Covered Activities are not expected to significantly affect 50 percent of the modeled habitat for the brush rabbit in the Plan Area.

Approximately 217,745 acres (37 percent) of the total modeled habitat, of which 89,221 acres (41 percent) are within rural/mountainous areas, will be subject to impacts from development and other proposed Covered Activities. This will result in mortality and displacement of brush rabbits due to loss of breeding, feeding and sheltering habitat. Some animals may be able to escape to adjacent habitats, and some will survive in rural/mountainous areas where development is expected to occur at lower densities.

To mitigate the impacts of the taking, the Permittees will protect and manage in perpetuity 76,851 acres (13 percent) of modeled habitat for the brush rabbit. The brush rabbit is a wide-ranging species in Oregon, California, and Baja California, Mexico, and the habitat loss expected in the Plan Area represents only a fraction of the habitat available to the species throughout its range. While the expected loss of modeled habitat is large, the reserve has been configured to provide large blocks of suitable habitat for the brush rabbit. The lands conserved by the MSHCP will contribute to several existing and proposed habitat complexes containing modeled habitat for the species and linkages among these complexes. Because the brush rabbit is considered widespread throughout the Plan Area in suitable habitat, we expect that the conservation proposed will include extant populations of this species. Thus, we expect populations of brush rabbit to remain viable in the Plan Area in the long term, and we believe the impact of the taking is mitigated by the conservation and management proposed for the species by the Permittees.

Los Angeles Pocket Mouse

Los Angeles pocket mice are thought to occur from Burbank and San Fernando in Los Angeles County east to the City of San Bernardino, San Bernardino County. This species' range extends eastward to the vicinity of the San Geronio Pass in Riverside County, southeast to Hemet and Aguanga, and possibly to Oak Grove in north-central San Diego County. This species appears to be associated with sandy soils in low-density shrub and grassland habitats. Approximately 19,143 acres (29 percent) of modeled habitat are within PQP Lands, and the Wildlife Agencies are expected to conserve an additional 6,998 acres (11 percent) of the modeled habitat. Thus, Covered Activities are not expected to significantly affect 40 percent of modeled habitat for the Los Angeles pocket mouse in the Plan Area.

Because the Los Angeles pocket mouse is not considered widely distributed within the Plan Area and detailed distribution data are lacking, the MSHCP requires surveys for this species for all public and private development projects within a defined Los Angeles pocket mouse survey area. Within the survey area, when Los Angeles pocket mice are detected, provisions in the MSHCP require that only 10 percent of the area with long-term conservation value for the species will be lost to individual project development. In addition, species-specific conservation objectives are provided in the MSHCP to ensure that suitable habitat and extant populations of the Los Angeles pocket mouse will persist. The conservation objectives require that a minimum of 7 cores areas each with 2,000 or more acres of suitable habitat be conserved in the MSHCP Conservation Area. The Los Angeles pocket mouse must occupy a minimum of 30 percent of the area within each of these Core Areas. Surveys will continue in suitable habitat within the survey area until the conservation objectives for the species are met.

Approximately 24,832 acres (38 percent) of total modeled habitat will be subject to impacts associated with development and other proposed Covered Activities; of this modeled habitat, 21,906 acres (88 percent or 34 percent of totaled modeled habitat) occur within the survey area for the Los Angeles pocket mouse. If Los Angeles pocket mouse populations are found during the required surveys, impacts to these populations will be largely avoided (*i.e.*, loss allowed of up to only 10 percent of the area with long-term conservation value for this species) until the species conservation objectives are met. In addition, significant populations discovered as a result of surveys may be considered for long-term conservation under the MSHCP. The loss of modeled habitat with long-term conservation value may affect breeding, feeding, and sheltering, and loss of individual Los Angeles pocket mice is expected. However, only 2,926 acres (4 percent of total modeled habitat) within the Plan Area is both outside the MSHCP Conservation Area and outside the Los Angeles pocket mouse survey area; thus, impacts to occupied habitat is expected to be low.

To mitigate the take of Los Angeles pocket mice, the Permittees will protect and manage, in perpetuity, 14,416 acres (22 percent) of its modeled habitat. Impacts to occupied habitat and take of individuals are expected to be low as a result of the conservation proposed and the surveys and procedures developed under the MSHCP to minimize loss of significant populations of the Los Angeles pocket mouse. Viable populations of the Los Angeles pocket mouse are expected to persist in the Plan Area, and the long-term protection and management of modeled habitat proposed by the Permittees offsets the impacts to the Los Angeles pocket mouse.

Widespread, Wide-Ranging Mammals

For the purpose of this analysis, we have designated the following species as widespread, wide-ranging mammals: bobcat, coyote, long-tailed weasel and mountain lion. These species are all widespread throughout the Plan Area and the Plan Area represents only a fraction of these species' overall distribution. None of these species is federally or State-listed. Each is found in a variety of habitat associations throughout the Plan Area. They are mobile, predatory species and the isolation and fragmentation of suitable habitat is the primary threat to their long-term persistence in the Plan Area. We modeled habitat in the Plan Area for each of these species based on their known elevational ranges and vegetation community associations.

Bobcats are found in a variety of habitat associations where prey density is high enough to support the species. This species is found throughout Canada and the United States southward to Rio Mescale, Mexico. The conservation needs of the bobcat include the persistence of large tracts of suitable habitat with functional habitat linkages and movement corridors. We modeled 784,798 acres of bobcat habitat in the Plan Area. Approximately 315,964 acres (40 percent) of the modeled habitat for bobcat are within PQP Lands, and the Wildlife Agencies are expected to conserve an additional 46,948 acres (6 percent) of modeled habitat. Thus, Covered Activities are not expected to significantly affect 46 percent of the modeled habitat for the bobcat in the Plan Area.

Coyotes are known from the contiguous United States, western Canada and eastern Alaska, north to Hudson Bay and south throughout Central America. Coyotes are found in a variety of habitat associations and are often found in urban areas adjacent to open land. We modeled 932,423 acres of coyote habitat in the Plan Area. Approximately 327,012 acres (35 percent) of the modeled habitat for coyote are within PQP Lands, and the Wildlife Agencies are expected to conserve an additional 49,037 acres (5 percent) of modeled habitat. Thus, Covered Activities are not expected to significantly affect 40 percent of the modeled habitat for the coyote in the Plan Area.

Long-tailed weasels are known from southern Canada to Bolivia in a variety of habitat associations where prey density is high enough to support the species. The conservation needs of the long-tailed weasel include the persistence of large tracts of suitable habitat with functional habitat linkages and movement corridors. The Plan Area supports approximately 932,423 acres of modeled habitat for the long-tailed weasel. Approximately, 325,913 acres (35 percent) of the modeled habitat are within PQP Lands, and the Wildlife Agencies are expected to conserve an additional 47,943 acres (5 percent) of this modeled habitat. Thus, Covered Activities are not expected to significantly affect 40 percent of the modeled habitat for the long-tailed weasel in the Plan Area.

Mountain lions occur in a wide variety of habitats, from deserts to tropical rainforests to cold, coniferous forests. Historically, mountain lions ranged from northern British Columbia to southern Chile and Argentina, and from coast to coast in North America; however, within the United States, their range is now restricted primarily to relatively unpopulated regions in the west, mainly due to hunting pressures and changes in land management practices. The

conservation needs of the mountain lion include the protection of large tracts of suitable habitat with functional habitat linkages and movement corridors, including restrictions on hunting. There are 536,224 acres of modeled mountain lion habitat in the Plan Area, of which approximately 276,954 acres (52 percent) are within PQP Lands. The Wildlife Agencies are expected to conserve an additional 27,578 acres (6 percent) of this modeled habitat. Thus, Covered Activities are not expected to significantly affect 58 percent of the modeled habitat for the mountain lion in the Plan Area.

These widespread, wide-ranging mammals will be subject to impacts associated with development and other proposed Covered Activities within large areas of their modeled habitats: 325,173 acres (41 percent) for bobcat, 464,273 acres (49 percent) for coyote, 459,808 acres (49 percent) for long-tailed weasel, and 165,952 acres (31 percent) for mountain lion. Loss of habitat will result in mortality and displacement from loss of suitable breeding, feeding, and sheltering habitat. Mortality of immobile young is anticipated from the crushing or removal of dens during clearing, grading, and associated construction activities that occur during the rearing season.

The primary threat to these species is fragmentation of habitat. The MSHCP Conservation Area, which builds upon existing areas with conservation value (PQP Lands) to achieve a Plan Area-wide system of cores and linkages to support populations and provide for the movement of species, was configured to reduce this threat and mitigate for the take of individuals and associated loss of habitat for these species. The goal of the MSHCP Conservation Area is to provide large blocks of habitat with viable linkages for these species.

The Permittees will protect and manage in perpetuity 98,762 acres (11 percent) of modeled habitat for long-tailed weasel in a configuration that provides 8 additional Core Areas for the species and contributes to the expansion of 10 existing Core Areas. Given the mobility of the long-tailed weasel and its willingness to use drainages and culverts, it is expected to be able to use most, if not all, of the unconstrained and constrained linkages in the MSHCP Conservation Area.

The Permittees will protect and manage 101,015 acres (11 percent) of modeled coyote habitat. This area will include 11 new linkages between large blocks of suitable habitat. Some of the linkage areas are expected to provide live in habitat for coyote populations and others may only serve as conduits for movement. Coyotes are common, if not abundant, throughout the Plan Area, so specific Core Areas were not identified for this species. The conservation goals of the Plan for coyote focused on ensuring that coyotes are able to move via functional linkages between large blocks of habitat.

The Permittees will protect and manage in perpetuity 12 percent of modeled bobcat and mountain lion modeled habitat (96,713 and 62,821 acres, respectively) in a configuration that contributes to the expansion of 7 existing Core Areas and connectivity between the Core Areas and provides 2 additional Core Areas. The Plan additionally provides that the function of dispersal routes will be maintained or improved by Reserve Managers within the MSHCP Conservation Area. Existing road undercrossings in key areas will be evaluated for their adequacy and improved as necessary to convey bobcats. Five key crossings on SR-91, I-15, SR-

60 and I-10 are identified. Maintaining and improving the function of dispersal routes and road crossings is also identified as a management action to be taken for the bobcat and mountain lion. The configuration of the MSHCP Conservation Area also provides for connectivity to mountain lion and bobcat habitat outside the Plan Area.

In addition to the areas conserved, substantial acreages of each of these mammals' modeled habitat (101,104 acres for bobcat, 108,426 acres for coyote, 108,420 acres for long-tailed weasel and 68,653 acres for mountain lion) within the area to be affected by Covered Activities are within the rural/mountainous designation where development is expected at lower densities. We expect that long-tailed weasel and coyote individuals and populations will persist in most rural/mountainous areas and that bobcat and mountain lion individuals are likely to use these areas where human habitation is low.

To mitigate the take of these mammals, the Permittees will protect and manage in perpetuity modeled habitat for these species in a configuration that contributes to the protection of large blocks of modeled habitat with functional linkages among these blocks as described above. Because these species are generally widespread throughout the Plan Area in suitable habitat, we expect that the conservation of modeled habitat will result in the conservation of extant populations of these species within the Plan Area. Although the MSHCP will result in a large loss of modeled habitat in terms of acres for each of these mammals, the Plan Area represents only a fraction of their distributions and the MSHCP Conservation Area has been configured to provide for these species in the long term. The long-term conservation and management proposed by the Permittees will help minimize the effects of habitat fragmentation and isolation on these species within the Plan Area. With the conservation proposed, we expect viable populations of these mammals to persist within the Plan Area, and thus the impacts to these mammals and their habitats are mitigated by the conservation proposed by the Permittees.

WIDESPREAD, RANGE-RESTRICTED ANIMAL SPECIES

Species that are widespread in Plan Area, but are not widely distributed outside of the Plan Area (*i.e.*, their ranges are restricted to southern California or southern California and Baja California, Mexico), we identified as widespread, range-restricted species. The following species are widespread in the Plan Area, but range-restricted: the Dulzura kangaroo rat, northwestern San Diego pocket mouse, San Diego black-tailed jackrabbit, San Diego desert woodrat, Belding's orange-throated whiptail, the coastal western whiptail, northern red diamond rattlesnake, and San Diego horned lizard. None of these species are federally listed, but several are California Species of Special Concern. We modeled habitat in the Plan Area for each of these species based on their known elevational ranges and vegetation community associations.

The San Diego desert woodrat is thought to occur from San Luis Obispo, California to San Fernando in Baja California, Mexico, in rock outcroppings, boulders, cacti, or areas of dense undergrowth within a variety of shrub and desert habitats. A potential long-term threat to the species is isolation and fragmentation of habitat. The woodrat is relatively sedentary and may not be capable of dispersing long distances between suitable habitat patches. Approximately 243,467 acres (43 percent) of modeled habitat for the San Diego desert woodrat are within PQP Lands, and the Wildlife Agencies are expected to conserve an additional 37,740 acres (7 percent)

of modeled habitat. Thus, Covered Activities are not expected to significantly affect 49 percent of the modeled San Diego desert woodrat habitat.

The San Diego black-tailed jackrabbit is confined to coastal regions from approximately Santa Barbara, California, to Ensenada in Baja California, Mexico. The black-tailed jackrabbit is primarily found in arid regions with open, sparsely vegetated habitats. The primary threat to this species is the loss of large, interconnected habitat blocks. Approximately 70,623 acres (17 percent) of its modeled habitat are within PQP Lands, and the Wildlife Agencies are expected to conserve an additional 26,319 acres (6 percent) of its modeled habitat. Thus, Covered Activities are not expected to significantly affect 23 percent of the modeled San Diego black-tailed jackrabbit habitat.

Northwestern San Diego pocket mouse is known from southwestern San Bernardino County, Riverside County, and eastern San Diego County. This species is relatively common in suitable habitat (open sandy areas of sage scrub, chaparral and non-native grassland) throughout the Plan Area with 80 documented occurrences. Approximately 265,283 acres (38 percent) of the modeled habitat and 25 percent of recorded San Diego pocket mouse observations are within PQP Lands, and the Wildlife Agencies are expected to conserve an additional 43,943 acres (6 percent) of the modeled habitat. Thus, Covered Activities are not expected to significantly affect 44 percent of the modeled habitat for Northwestern San Diego pocket mouse in the Plan Area.

The Dulzura kangaroo rat is thought to occur from the foothills east of Ventura and north of the Santa Clara River Valley south to the Magdalena Plain in Baja California, Mexico. The species is considered common in shrub and grassland habitats at elevations below approximately 2,600 feet. Approximately 101,789 acres (30 percent) of the modeled habitat are within PQP Lands, and the Wildlife Agencies are expected to conserve an additional 29,945 acres (9 percent) of the modeled habitat. Thus, Covered Activities are not expected to significantly affect 39 percent of the modeled habitat for the Dulzura kangaroo rat in the Plan Area.

The San Diego horned lizard is one of two subspecies of the coast horned lizard that occur in California. The coast horned lizard is found in a wide variety of vegetation types but occurs most commonly in shrub-dominated communities. Key habitat elements include loose, fine soils with a high sand fraction, an abundance of native ants, open areas with limited overstory for basking, and areas with low, dense shrubs for refuge. In California, the San Diego horned lizard currently ranges from the Transverse Ranges south to the Mexican border west of the deserts and in scattered sites along the extreme western desert slope of the Peninsular Ranges. It is distributed throughout scrub, grassland, and forest habitats of the Plan Area. Approximately 308,045 acres (40 percent) of modeled habitat for the San Diego horned lizard are within PQP Lands, and the Wildlife Agencies are expected to conserve an additional 45,735 acres (6 percent). Thus, Covered Activities are not expected to significantly affect 46 percent of the modeled habitat for the subspecies in the Plan Area.

Belding's orange-throated whiptail occurs in suitable habitat (primarily open coastal sage scrub, but also open chaparral, and oak woodland) in Riverside, San Bernardino, San Diego and Orange Counties, and throughout Baja California, Mexico. Belding's orange-throated whiptail is widely distributed in the Plan Area and has been recorded in suitable habitat in all bioregions. The Plan Area supports approximately 380,334 acres of modeled habitat for the Belding's orange-throated

whiptail, including 123,632 acres (33 percent) that are within PQP Lands. The Wildlife Agencies are expected to conserve an additional 32,954 acres (9 percent) of the modeled habitat. Therefore, Covered Activities are not expected to affect approximately 42 percent of the modeled Belding's orange-throated whiptail habitat in the Plan Area.

Coastal western whiptail occurs in suitable habitat (open spaces in coastal sage scrub, chaparral, desert scrub, Riversidean alluvial fan scrub, playas/ vernal pools, and peninsular juniper woodland/scrub habitats) on the coastal side of the Transverse and Peninsular Ranges from Santa Barbara County south to Baja California, Mexico. This subspecies is widely distributed in appropriate habitat in the Plan Area. Approximately 267,996 acres (38 percent) of modeled habitat and 17 percent of the recorded coastal western whiptail observations are within PQP Lands, and the Wildlife Agencies are expected to conserve an additional 45,047 acres (6 percent) of the modeled habitat. Thus, Covered Activities are not expected to significantly affect 44 percent of the modeled habitat for coastal western whiptail in the Plan Area.

The northern red diamond rattlesnake occurs most commonly in dense chaparral in the foothills, cactus or boulder associated coastal sage scrub and desert slope scrub associations associated with heavy brush and large rocks or boulders from Pioneertown and Morongo Valley in San Bernardino County southward on both coastal and desert sides of the Peninsular Ranges and the Santa Ana Mountains, to Loreto, Baja California, Mexico. The northern red diamond rattlesnake has been recorded in appropriate habitat throughout the Plan Area. The Plan Area supports approximately 547,945 acres of modeled habitat for the northern red diamond rattlesnake, including 222,234 acres (41 percent) within PQP Lands. The Wildlife Agencies are expected to conserve an additional 37,585 acres (7 percent) of modeled habitat. Thus, Covered Activities are not expected to significantly affect 48 percent of the modeled habitat for the subspecies in the Plan Area.

We anticipate that these widespread, range-restricted species will be subject to impacts associated with development and other proposed Covered Activities within large areas of modeled habitat. Approximately 143,411 acres (43 percent) of modeled Dulzura Kangaroo rat habitat, 305,508 acres (43 percent) of modeled northwestern San Diego pocket mouse habitat, 268,662 acres (64 percent) of modeled San Diego black-tailed jackrabbit habitat, 213,821 acres (37 percent) of modeled San Diego desert woodrat habitat, 155,863 acres (41 percent) of modeled Belding's orange-throated whiptail habitat, 306,492 acres (43 percent) of modeled coastal western whiptail habitat, 210,698 acres (38 percent) of modeled northern red diamond rattlesnake habitat, and 323,543 acres (42 percent) of modeled San Diego horned lizard habitat are within the area expected to be affected by development and other Covered Activities. Loss of modeled habitat will result in mortality and displacement of these animals due to loss of breeding, feeding and sheltering habitat. However, some individuals and populations of these species are expected to survive outside of the MSHCP Conservation Area within rural/mountainous areas where development is expected to occur at lower densities.

To mitigate the take of these species, the Permittees will protect and manage in perpetuity modeled habitat for these species. Approximately 61,686 acres (18 percent) of modeled Dulzura kangaroo rat habitat, 90,523 acres (13 percent) of modeled northwestern San Diego pocket mouse habitat, 53,155 acres (13 percent) of modeled San Diego black-tailed jackrabbit habitat, 77,744 (14 percent) of modeled San Diego desert woodrat habitat, 67,885 acres (18 percent) of

modeled Belding's orange-throated whiptail habitat, 92,796 acres (13 percent) of modeled coastal western whiptail habitat, 77,426 acres (14 percent) of modeled northern red diamond rattlesnake habitat, and 94,183 acres (12 percent) of modeled San Diego horned lizard habitat will be protected and managed by the Permittees. Because these species are widespread throughout the Plan Area in suitable habitat, we expect that the conservation proposed by the Permittees will include extant populations of these species. In addition, this conservation will contribute to the protection of large blocks of modeled habitat and functional linkages among these blocks, thus reducing the effects of isolation and fragmentation on these species within the Plan Area. With the conservation proposed, we expect populations of these species to be viable in the MSHCP Conservation Area in the long term. Thus, we believe the take of these species is mitigated by the conservation and management proposed by the Permittees.

FOREST SERVICE MOU ANIMAL SPECIES

Six animal species require a Memorandum of Understanding (MOU) between the Permittees and the Forest Service to become Covered Species Adequately Conserved. Currently known occurrences of these species are restricted either primarily or entirely to National Forest Lands. The six animals are California spotted owl, Williamson's sapsucker, San Bernardino mountain kingsnake, San Diego mountain kingsnake, southern rubber boa, and southern sage brush lizard. The MOU would commit the Forest Service, in cooperation with the Permittees, to management actions that address threats to the species as identified in Table 5-2 of the MSHCP. The MSHCP funding plan includes a provision to allocate available funding for monitoring and management actions on Forest Service and other non-Permittee PQP Lands to further the conservation goals of the MSHCP. Should any of the species become listed, take authorization and no surprises assurances would only be provided if the MOU were executed.

The California spotted owl is one of three subspecies of spotted owl (*S. occidentalis*). The California spotted owl occupies habitats dominated by hardwoods, primarily oak and oak-conifer woodlands, with old growth structural components. The California spotted owl ranges from the southern Cascade Range and northern Sierra Nevada from Pit River, Shasta County, California south through the remainder of the western Sierra Nevada and Tehachapi Mountains to Lebec, Kern County. The California spotted owl is found sparsely east of the Sierra Nevada crest. It occurs in the California coastal ranges from Monterey County south to Santa Barbara County, and in the Transverse Ranges and Peninsular Ranges south to Sierra San Pedro Martir in northern Baja California, Mexico. In the Plan Area, the species is primarily found on Forest Service lands in the San Jacinto Mountains, where an average of 10 pairs were detected during surveys between 1988 and 1994.

The Williamson's sapsucker typically inhabits forests with large trees and sparse to moderate canopy cover at middle to high elevation generally between 1,500 and 3,200 meters in several regions including the Pacific Northwest, Rocky Mountains, Great Basin, southern California west of the Mojave Desert and in Mexico. The only two confirmed observations we are aware of are thought to be incidental or transitory occurrences. The literature for the southern California area documents that the species is an uncommon to fairly common local resident in the higher mountains west of the deserts; within the Plan Area, this would include the San Bernardino and San Jacinto mountains between 1,700 and 2,900 meters.

The San Bernardino mountain kingsnake occurs in well-illuminated canyons with rocky outcrops or talus slopes in chaparral and coniferous forest associations in the San Gabriel, San Bernardino, and San Jacinto mountains of southern California. The San Bernardino mountain kingsnake occurs in higher elevation forests and riparian areas, which, in the Plan Area, are primarily on Forest Service lands in the San Jacinto and San Bernardino mountain bioregions. Our records contain no confirmed observations of San Bernardino mountain kingsnake; but, according to the MSHCP, known populations for this subspecies occur in Idyllwild and south of Banning in the San Jacinto Mountains.

The San Diego mountain kingsnake occurs primarily in rock outcrops or talus slopes in woodland associations, usually above the lower edge of the coniferous forest in the Santa Monica, Santa Ana, Santa Rosa, Corte Madera, Cuyamaca, Hot Springs, Laguna, and Palomar mountains of southern California. Our information on the distribution of the San Diego mountain kingsnake in the Plan Area is limited, but according to the MSHCP, known populations of this subspecies occur within the Plan Area in the Santa Ana Mountains.

The southern rubber boa inhabits moist coniferous forests and woodland habitats in the San Gabriel, San Bernardino and San Jacinto mountains of southern California. It is a State-listed species. According to the MSHCP, in the Plan Area, the southern rubber boa is known only from the San Bernardino National Forest in the San Jacinto Wilderness and San Jacinto Management Area.

The southern sage brush lizard is widely distributed in montane chaparral, hardwood and conifer habitats and juniper habitats from the San Jacinto Mountains to Sierra San Pedro Martir in Baja California, Mexico. In the Plan Area, the southern sage brush lizard is known to occur within the San Jacinto Mountains and Santa Rosa Mountains above 4,921 feet (1,500 meters) in elevation.

Most of the modeled habitat (68 to 84 percent) of these six species is within the San Bernardino or Cleveland National Forests, and the known and historic occurrences of these species are also largely confined to Forest Service lands. Therefore, loss of 16 to 24 percent of modeled habitat and loss of individual animals resulting from Covered Activities is expected to be relatively low. We do not have confirmed observations of the reptiles in our records; however, all the species are generally known to occur on the respective forests, and there is no reason to believe they will be more or less common on inholdings than on Forest Service lands. Populations and individuals of these species may persist in rural/mountainous areas where there is appropriate habitat, since development in rural/mountainous areas is expected at relatively lower densities.

The Permittees propose little or no conservation of modeled habitat for these species; however, additional monitoring and management to address threats to these species within Forest Service Lands would occur if the MOU with the Forest Service were executed. Because the level of take and/or loss of modeled habitat for these species are expected to be low, the status of the species on Forest Service Lands and throughout the Plan Area is not expected to significantly change as a result of Covered Activities. The proposed cooperative long-term management of Forest Service Lands under a signed MOU with the Permittees would benefit these species and mitigate the anticipated low level of impact.

PLANTS

Engelmann Oak

The vast majority of extant Engelmann oak woodlands (93 percent) exist in San Diego County, while Riverside and Orange counties contain 6 and 0.5 percent, respectively. Engelmann oak is associated with alluvial fans, interior valleys and occasionally slopes with a mesic aspect below 4,300 feet in elevation in areas that receive at least 15 inches of precipitation per year, rarely receive frost and have warm or hot summers. Extant populations are threatened by grazing, which is known to severely limit recruitment.

There are 27,413 acres of modeled habitat for the Engelmann oak in the Plan Area, of which approximately 13,374 (49 percent) are within PQP Lands. The Wildlife Agencies are expected to conserve an additional 1,706 acres (6 percent). Thus, Covered Activities are not expected to significantly affect 55 percent of the modeled habitat for the Engelmann oak.

Approximately 8,818 acres (32 percent) of modeled habitat and 31 of 40 known occurrences will be subject to impacts from development and other proposed Covered Activities. This habitat loss may be minimized to some degree with implementation of the Riparian/Riverine Areas and Vernal Pools policy, which requires avoidance of wetland habitat when feasible. The Permittees will protect and manage, in perpetuity, 3,515 acres (13 percent) of modeled habitat for the Engelmann oak. Some individual trees may be avoided in rural mountainous areas; however, landscaping practices may severely limit the potential for recruitment of seedlings in these areas. Conserving these lands by the Permittees will help maintain large blocks of habitat necessary to sustain the Engelmann oak in the Plan Area. These conserved lands, in combination with PQP Lands and those conserved by the Wildlife Agencies, will include areas most likely to support the species and will include 9 of the 40 known locations of Engelmann oak. In addition, the lands conserved by the Permittees will be managed to maintain ecological processes, including grazing control in occupied areas, which will address a primary threat to this species.

The stronghold for this species is within San Diego County, and the largest population of Engelmann oak known from Riverside County is within PQP Lands that will not be affected by Covered Activities. The Engelmann oak is expected to persist within the Plan Area within lands conserved by the Permittees and within the overall MSHCP Conservation Area and to benefit from management actions proposed by the Permittees such as maintaining recruitment at a minimum of 80 percent of the conserved populations. Thus, the impacts to this species are mitigated by the conservation proposed.

Intermediate Mariposa Lily

Intermediate mariposa lily is known from Ventura, Los Angeles, Orange, and Riverside counties; Ventura and Los Angeles counties each contain only one known location. Most of the known populations of intermediate mariposa lily are found in the foothill regions of Orange County, occur primarily in chaparral and coastal sage scrub, and are currently the most viable populations of the intermediate mariposa lily. An estimated 89,000 individuals occur within conserved areas in the NCCP Central Subregion of Orange County. There are historic records for this variety from Sierra Peak, Santa Ana Mountains and from the lower Santa Ana River on Oak Flat Fire

Road, Riverside County. For the purposes of our analysis, we considered six recent records in the Plan Area for the intermediate mariposa lily: one known record in the Santa Ana Mountains (south of Corona, vicinity of Hagadoor Canyon) and five records in the San Jacinto Foothills Bioregion.

Modeled habitat for the intermediate mariposa lily includes 339,291 acres of coastal sage scrub, chaparral, and valley/foothill grasslands at elevations between 394 and 2,789 feet (120 and 850 meters) in the Riverside Lowlands, Santa Ana Mountains, and San Jacinto Foothills bioregions of the Plan Area. Due to the species' microhabitat associations (*i.e.*, dry, rocky, open slopes and rock outcrops), the modeled habitat likely overestimates the extent of suitable habitat for this species in the Plan Area. Approximately 105,438 acres (31 percent) of this modeled habitat occur within PQP Lands. Additionally, the Wildlife Agencies are expected to conserve 29,033 acres (9 percent) of modeled habitat. Therefore, Covered Activities are not expected to affect approximately 40 percent of the modeled intermediate mariposa lily habitat in the Plan Area.

The species will be subject to proposed impacts associated with residential, commercial, urban, and agricultural development within 145,012 acres (43 percent) of the modeled habitat that is outside of the MSHCP Conservation Area, which would include impacts to 5 of the 6 known occurrences for the intermediate mariposa lily in the Plan Area. To mitigate the impacts to intermediate mariposa lily, the Permittees will protect and manage in perpetuity 59,808 acres (18 percent) of its modeled habitat in the Plan Area.

We have proposed a permit condition that the intermediate mariposa lily shall be considered a "Species Adequately Conserved" only after the species-specific conservation objectives are met. Through compliance with this permit condition, we anticipate that the Permittees will meet the species-specific conservation objective of conserving 2 to 3 occurrences of intermediate mariposa lily within the MSHCP Conservation Area. In addition, the Permittees may conserve suitable habitat for the species and potential occurrences indirectly through conservation of modeled habitat. Thus, the long-term conservation proposed by the Permittees will mitigate impacts to the species and contribute to the maintenance of the species in the Plan Area.

Long-Spined Spine Flower

The long-spined spine flower is associated primarily with heavy, often rocky, clay soils in southern needlegrass grassland and openings in coastal sage scrub and chaparral. It occurs from western Riverside County south through San Diego County to the vicinity of Oso Negros, east of Ensenada in Baja California, Mexico.

Due to the difficulty in capturing appropriate soil types in a habitat model for this species, we did not use a habitat model in our analysis of effects to the long-spined spine flower. There are 56 known records for long-spined spine flower in the Plan Area. We estimate that 32 of 56 (57 percent) of these known records are found in PQP Lands, and Covered Activities are not expected to significantly affect these occurrences. The Wildlife Agencies are expected to conserve additional habitat that may also harbor additional occurrences of long-spined spine flower.

Thirty percent (17 of 56) of the known locations of long-spined spine flower will be subject to impacts associated with development and other proposed Covered Activities. To mitigate this impact, the Permittees will protect and manage habitat that supports between 5 and 7 known occurrences (9 to 12.5 percent) of the long-spined spine flower and possibly other occurrences of the long-spined spine flower. Conserving these lands will complement large blocks of habitat on PQP Lands that support existing occurrences of the long-spined spine flower. In addition, the Permittees may conserve suitable habitat for the species and potential occurrences indirectly through conservation of modeled habitat. The long-spined spine flower is expected to persist within the Plan Area within lands conserved by the Permittees and within the overall MSHCP Conservation Area and to benefit from exotic weed control and other management actions proposed by the Permittees. Thus, the impacts to this species are mitigated by the conservation proposed.

Vernal Barley

Vernal barley is found in coastal dunes, coastal scrub, mesic grasslands, vernal pools, and large saline flats or depressions in scattered locations bordering the Central Valley of central California, southwestern California, and northwestern Baja California, Mexico. In southern California it has been reported from the Channel Islands and Orange, Riverside, and San Diego counties. Most mainland occurrences in California are reported as extirpated by development and others are threatened. In the Plan Area, vernal barley is found in the Domino, Willows and Traver soils series and is associated with alkali flats and flood plains within the alkali vernal plains community. There are approximately 42,349 acres of modeled vernal barley habitat in the Plan Area and 30 confirmed occurrences. Eleven of the known occurrences and approximately 8,831 acres (21 percent) of modeled habitat are within PQP Lands. Additionally, the Wildlife Agencies are expected to conserve 2,512 acres (6 percent) of modeled habitat. Therefore, Covered Activities are not expected to affect approximately 27 percent of the modeled vernal barley habitat in the Plan Area.

Approximately 25,831 acres (61 percent) of total modeled habitat and 6 of the 30 known occurrences will be subject to development and other proposed Covered Activities. To offset the impacts to vernal barley, the Permittees will protect and manage, in perpetuity, 5,174 acres (12 percent) of its modeled habitat in the Plan Area, including up to 13 confirmed occurrences at three important Core Areas for the species. In addition, the Permittees may conserve suitable habitat for the species and potential occurrences indirectly through conservation of modeled habitat. We anticipate this species will also benefit from the implementation of the Riparian/Riverine Areas and Vernal Pools policy, which requires avoidance of vernal pool habitat when feasible.

The lands proposed for conservation by the Permittees include core locations of confirmed occurrences of vernal barley in the Plan Area, and the species will benefit from management actions such as preventing alteration of hydrology and floodplain dynamics, off-road vehicle use, grazing and competition from non-native plants. Thus, the long-term conservation proposed by the Permittees will mitigate impacts to the species and contribute to the maintenance of the species in the Plan Area.

“LOW IMPACT” PLANT SPECIES

The following eight species are grouped and analyzed based on the anticipated low level of impact to modeled habitat and/or known occurrences from implementation of the MSHCP. These species are California beardtongue, California black walnut, Hall’s monardella, Orcutt’s brodiaea, Palomar monkeyflower, Parish’s meadowfoam, Payson’s jewelflower, and prostrate spine flower. None of these species are federally or State-listed except for Parish’s meadowfoam, which is State-listed as endangered.

We modeled areas of habitat for each species (from approximately 2,365 to 270,758 acres). Our models likely overestimate the amount of suitable habitat due to the fairly gross level of vegetation and soils mapping available and because some species’ habitat associations (*e.g.*, sandy or gravelly soil for Palomar monkeyflower and ephemeral wetlands for Parish’s meadowfoam) are not distributed evenly throughout all potential vegetation communities. This wide range of modeled habitat among the species is also due to some species’ elevation restrictions (*i.e.*, below 2,600 feet for prostrate spine flower and below 3,000 feet for California black walnut) relative to other species’ wider distributions.

The primary conservation threats for these species are generally the loss, degradation and fragmentation of habitat from urbanization, off-trail traffic leading to trampling of seedlings or mature plants, grazing, and alterations to fire regimes or hydrology. Blocks of modeled habitat for these species will remain within PQP Lands (1,277 to 172,009 acres; between 35 and 72 percent of total modeled habitat). The Wildlife Agencies are expected to conserve an additional 376 to 13,952 acres or 1 to 12 percent of total modeled habitat. Therefore, Covered Activities are not expected to significantly affect a large portion (45 to 74 percent) of modeled habitat for these species.

These plant species will be subject to impacts associated with development and other proposed Covered Activities within modeled habitat areas of between 223 to 65,069 acres (9 to 37 percent of total modeled habitat). It is anticipated that most of the habitat for these species in the development areas will be lost, although some habitat for California black walnut (wetland areas such as riparian scrub, woodland and forest) and Orcutt’s brodiaea and Parish’s meadowfoam (playas and vernal pools) may remain in areas avoided as a result of the Riparian/Riverine Areas and Vernal Pools policy, which requires avoidance of wetland habitats when feasible. Some habitat for California beardtongue, Palomar monkeyflower, Parish’s meadowfoam and Payson’s jewelflower may also remain in rural/mountainous areas where development is anticipated to occur at lower densities.

To mitigate the impacts to these species, the Permittees will protect and manage in perpetuity between 582 and 28,742 acres (3 to 25 percent) of their modeled habitats. The conservation of lands by the Permittees will help maintain large blocks of habitat supporting confirmed populations, and these lands may also include new occurrences of these species in the Plan Area.

The conserved lands, in combination with PQP Lands and those conserved by the Wildlife Agencies, will include the only known population of Parish’s meadowfoam, three of four known locations of Payson’s jewelflower, two of four known occurrences of prostrate spine flower, the

two recent records of Orcutt's brodiaea and will include areas most likely to support naturally occurring California black walnut stands. PQP Lands contain all known occurrences of Hall's monardella and all but one of the known occurrences of California beardtongue and Palomar monkeyflower. Thus, the overall impact to known occurrences of these species and their modeled habitat is anticipated to be low. The long-term conservation proposed by the Permittees will mitigate impacts to the species and contribute to the maintenance of the species in the Plan Area.

“MODERATE IMPACT” PLANT SPECIES

The following three species are grouped and analyzed based on the anticipated moderate level of impact to their modeled habitats from implementation of the MSHCP. These species are Jaeger's milk-vetch, Palmer's grappling hook, and small-flowered morning glory. None of these species are federally or State-listed.

Except for Palmer's grapplinghook, we modeled areas of habitat for each species (from approximately 228,119 to 456,857 acres). Our models likely overestimate the amount of suitable habitat due to the fairly gross level of vegetation and soils mapping available and because some species' habitat associations (*e.g.*, dry ridges and valleys, and open sandy, rocky slopes within a variety of vegetation types for Jaeger's milk-vetch) are not distributed evenly throughout all potential vegetation communities. The primary conservation threats for these species are generally the loss, degradation and fragmentation of habitat from urbanization and agriculture, grazing, alterations to hydrology, and competition from non-native invasive plants. Blocks of modeled habitat for these species will remain within PQP Lands (44,640 to 135,842 acres; between 20 and 30 percent of total modeled habitat). The Wildlife Agencies are expected to conserve an additional 16,831 to 35,397 acres or 7 to 8 percent of total modeled habitat. Therefore, Covered Activities are not expected to significantly affect 27 to 38 percent of modeled habitat for these species.

These plant species will be subject to impacts associated with development and other proposed Covered Activities within areas of modeled habitat of between 131,975 to 212,701 acres (47 to 58 percent of total modeled habitat). It is anticipated that most of the modeled habitat for these species in the development areas will be lost, but some habitat for Jaeger's milk-vetch and small-flowered morning glory may remain in rural/mountainous areas where development is anticipated to occur at lower densities.

To mitigate the impacts to these species, the Permittees will protect and manage in perpetuity between 34,672 to 72,919 acres (15 to 16 percent) of their modeled habitats. Conservation of these lands by the Permittees will help maintain large blocks of habitat supporting confirmed populations, and these lands may also include new occurrences of these species in the Plan Area. These conserved lands, in combination with PQP Lands and lands conserved by the Wildlife Agencies, will include 25 of 39 known locations of Palmer's grapplinghook, 9 to 11 of the 13 known occurrences of Jaeger's milk-vetch, and 14 of 20 known locations of small-flowered morning glory in the Plan Area. While loss of modeled habitat is moderate, the overall impact to known occurrences of these species is low. We expect these species to persist within the Plan Area in lands conserved and managed by the Permittees and within the overall MSHCP

Conservation Area. Thus, the impacts to these species are mitigated by the conservation proposed.

FOREST SERVICE MOU PLANT SPECIES

Six plant species require a Memorandum of Understanding (MOU) between the Permittees and the Forest Service to become Covered Species Adequately Conserved. The six plant species are California bedstraw, Cleveland's bush monkey flower, lemon lily, ocellated Humboldt lily, shaggy-haired alumroot and sticky-leaved dudleya. Known occurrences of these species are restricted either primarily or entirely to National Forest lands. The MOU would commit the Forest Service, in cooperation with the Permittees, to management actions that address threats to the species as identified in Table 5-2 of the MSHCP. The MSHCP funding plan includes a provision to allocate available funding for monitoring and management actions on Forest Service and other non-Permittee PQP Lands to further the conservation goals of the MSHCP. Should any of the species become listed, no surprises assurances would only be provided if the MOU were executed.

In western Riverside County, the California bedstraw occurs on granitic or sandy soils in shaded areas at the ecotone of chaparral and lower montane coniferous forest and in the lower edge of the pine belt on the western side of the San Jacinto Mountains in the San Bernardino National Forest. The only currently known occurrence of California bedstraw in the Plan Area is in Alvin meadows in the San Jacinto Mountains on Forest Service lands. Historically, this population extended onto private lands within the Forest boundary.

Cleveland's bush monkey flower occurs mostly at elevations above 3,000 feet in chaparral and lower montane coniferous forests, especially on peaks and ridgelines in the Santa Ana and Agua Tibia Mountains southward into northern Baja California, Mexico. The confirmed observations of Cleveland's bush monkey flower in our records fall within PQP Lands.

Lemon lily occurs in mesic habitats within lower and upper montane coniferous forests, meadows and seeps, and riparian scrub in the San Gabriel Mountains, San Jacinto Mountains, Agua Tibia and San Bernardino mountains in California; the Santa Rita, Huachuca, and Chiricahua Mountains in Arizona; and the Sierra Los Ajos in northern Sonora, Mexico. In the Plan Area, all known occurrences are located in the northeastern portion of the San Jacinto Mountains. Six of the 10 occurrences are on PQP Lands.

Ocellated Humboldt lily is associated with openings in chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, and riparian woodland from elevations of 30 to 1,800 feet in San Luis Obispo, Santa Barbara, Ventura, Los Angeles, San Bernardino, Orange, Riverside, and San Diego counties and on Anacapa, Santa Rosa and Santa Cruz islands. In the Plan Area, the ocellated Humboldt lily primarily occurs in canyons along the eastern slope of the Santa Ana Mountains and on the northern slope of the Palomar Mountains.

Shaggy-haired alumroot occurs in rocky areas in subalpine coniferous forests and upper-montane coniferous forests in the San Jacinto Mountains and Santa Rosa Mountains in Riverside County. The known occurrences of shaggy-haired alumroot in the Plan Area are within PQP Lands (either on Forest Service lands or within San Jacinto State Park).

Sticky-leaved dudleya occurs on mesic, mostly north-facing, and often steep, rocky canyon slopes in chaparral, sage scrub, and coastal bluff scrub in the San Mateo area of the Santa Ana Mountains. The known occurrences of sticky-leaved dudleya in the Plan Area are within San Mateo Canyon.

Most of the modeled habitat (78 to 94 percent) for the California bedstraw, Cleveland's bush monkey flower, lemon lily and shaggy haired alumroot is within the San Bernardino or Cleveland National Forests, and the known and historic occurrences of these species are also largely confined to Forest Service lands. Therefore, loss of 16 to 24 percent of their modeled habitats and loss of individual plants resulting from Covered Activities is expected to be relatively low.

For sticky-leaved dudleya, 48 percent of the modeled habitat and all three confirmed observations in our records fall within PQP Lands. The Wildlife Agencies are expected to conserve an additional 3 percent of this species modeled habitat. Thus, Covered Activities are not expected to impact 51 percent of the modeled habitat for sticky-leaved dudleya. Due to sticky-leaved dudleya's specific microhabitat associations (*i.e.*, cliffs and banks with mesic exposures), the modeled habitat likely overestimates the amount of suitable habitat for this species.

We did not model habitat for ocellated Humboldt lily because our digital layer for the vegetation communities in which the species is known to occur did not correspond well to the documented distribution of the species. Of the three known records of this plant, one is on Forest Service lands and another is anticipated to be conserved within the Additional Reserve Lands; the remaining occurrence is within the area subject to impacts associated with development and other proposed Covered Activities. The Permittees will provide conservation of one of the known occurrences and, through the MOU, we anticipate that another will be monitored and managed cooperatively with the Forest Service.

Four of 10 occurrences of lemon lily and 1 of the 3 occurrences of ocellated Humboldt lily are within the area to be affected by Covered Activities. However, populations and individuals of these species may persist in rural/mountainous areas where there is appropriate habitat, since development in rural/mountainous areas is expected at relatively low densities.

The Permittees will protect and manage, in perpetuity, 1,750 acres (6 percent) of modeled habitat for sticky-leaved dudleya in the Plan Area. The Permittees propose little or no conservation of habitat for California bedstraw, Cleveland's bush monkey flower, lemon lily and shaggy-haired alumroot; however, additional monitoring and management for these species within Forest Service lands would occur if the MOU with the Forest Service is executed. Because the impacts to these species are expected to be low, the proposed cooperative long-term management of Forest Service lands under an executed MOU is expected to mitigate the impacts to these species.

NARROW ENDEMIC PLANT SPECIES SURVEY AREA / CRITERIA AREA SURVEY AREA (NEPSSA/CASSA) SPECIES

Brand's phacelia and Hammitt's clay-cress

Both Brand's phacelia and Hammitt's clay-cress have very limited distributions in the Plan Area and are known only from PQP Lands; thus, Covered Activities are not expected to significantly affect any known occurrences of these species. Due to the difficulty in capturing appropriate soil types in a habitat model for these species, we did not use a habitat model in our effects analysis for Brand's phacelia or Hammitt's clay-cress.

Brand's phacelia is primarily associated with coastal dunes and/or coastal scrub between elevations of 5 and 400 meters. This species typically occurs in sandy openings, sandy benches, dunes, sandy washes, or floodplains of rivers. Undeveloped dunes may also provide suitable habitat for this species. Brand's phacelia is a small herbaceous annual in the Hydrophyllaceae (water-leaf) family historically found in Los Angeles, Riverside, and San Diego counties and coastal Baja California, Mexico. There are records of several populations in Baja California, but none are known to be extant. Currently, Brand's phacelia is known only from three populations in the U.S.; in Riverside County, the species appears restricted to a single half-acre site on sandy benches along the Santa Ana River where it occurs on PQP Lands.

Hammitt's clay-cress occurs on clay soils derived from basalt outcrops or gabbro granite within valley and foothill grasslands and openings in chaparral habitats at elevations between 730 and 1,065 meters. This species is recently described and currently known only from the Cleveland National Forest in Riverside and San Diego counties in the Santa Ana, Poser, and Viejas mountains. Within the Plan Area, all of the known occurrences are within the Cleveland National Forest (on or near Elsinore Peak). The Elsinore Peak location is the only known location of this species that was not affected by wildfire in October 2003. It may occur elsewhere and is expected in basalt outcrops on the Santa Rosa Plateau.

These species have extremely restricted distributions in the Plan Area. Thus, until such time that the Additional Reserve Lands are assembled and species-specific conservation objectives for these species are met, surveys for each species will be conducted as part of the project review process for public and private projects where suitable habitat is present within the Narrow Endemic Plant Species Survey Area (NEPSSA) 7 for Brand's phacelia and NEPSSA 1, 2 and 9 for Hammitt's clay-cress. The recorded historic occurrences of Brand's phacelia are within NEPSA 7, which increases the likelihood that the required surveys will be successful in identifying any other extant populations existing in the Plan Area. Implementation of the Riparian/Riverine Areas and Vernal Pools policy is expected to minimize impacts to habitat potentially supporting Brand's phacelia by requiring avoidance of riparian habitat when feasible. Where either species is detected, 90 percent of the portion of property with long-term conservation value will be avoided until the conservation objectives for that species are met. We anticipate that the Permittees will consider occurrences determined to be important to the overall conservation of the species for inclusion in the Additional Reserve Lands and that at least some of the avoided areas might be maintained as open space habitat. Surveys will continue in suitable habitat within the survey areas until the conservation objectives for the species are met.

Any individual plants or populations of Brand's phacelia or Hammitt's clay-cress outside of NEPPSA 7 or NEPSSA 1, 2, and 9, respectively, and outside of the MSHCP Conservation Area will be subject to impacts of development and other proposed Covered Activities. However, as stated above, all of the known extant populations of both species are within PQP Lands. Thus, no significant impacts from Covered Activities to existing populations are expected.

Other locations of Brand's phacelia may be conserved by the Permittees through efforts to meet the species-specific objective of conserving 6,100 acres of suitable habitat for Brand's phacelia within the MSHCP Conservation Area. Other locations of Hammitt's clay-cress may be conserved by the Permittees through efforts to meet the species-specific objective of conserving at least 21,260 acres of suitable habitat for Hammitt's clay-cress within the MSHCP Conservation Area. Since the overall loss of these species' habitat will be limited to 10 percent of areas with long-term conservation value for the species until conservation objectives are achieved, the impacts to these species are minimized and mitigated by the conservation and management proposed by the Permittees.

Smooth Tarplant

Smooth tarplant occurs at elevations up to 480 meters in heavy, alkaline soils, in a variety of habitats including chenopod scrub, meadows and seeps, playas, valley/foothill grasslands, and riparian woodlands in southwestern California and northwestern Baja California, Mexico. The Plan Area accounts for 89 percent of the reported occurrences. It is found at scattered, low elevation locations throughout much of the Riverside Lowlands Bioregion.

There are approximately 42,349 acres of modeled smooth tarplant habitat in the Plan Area and 81 occurrences in our records. We used the vernal pool model to capture smooth tarplant habitat because it occurs in places with seasonally damp heavy soils. Our vernal pool model could not include some appropriate types of alkali soils where the species is known to occur (*e.g.*, Chino silt loam and Grangeville sandy loam) due to the limitations of our data layers, and our model included some soils where the species is not expected (*e.g.*, basalt flows). Fifty-four percent of the occurrences in our records for smooth tarplant fall outside of modeled habitat.

Nine of the 81 known occurrences (11 percent) and approximately 8,831 acres (21 percent) of modeled habitat are within PQP Lands. Additionally, the Wildlife Agencies are expected to conserve 2,512 acres (6 percent) of modeled habitat. Therefore, Covered Activities are not expected to significantly affect approximately 27 percent of the modeled smooth tarplant habitat and 9 known occurrences in the Plan Area.

Because the vast majority (98 percent) of the existing smooth tarplant populations occur within the Plan Area, the MSHCP requires surveys for this species for all public and private projects within the Criteria Area Species Survey Areas (CASSA) 1, 2, 3, 3a, 4 and 6. In addition, species-specific conservation objectives are provided in the MSHCP to ensure that suitable habitat and known populations will persist in the Plan Area. As one objective, the MSHCP will conserve at least 3,990 acres of grassland and playas and vernal pools in two core areas at the middle segment of the San Jacinto River and upper Salt Creek. An additional objective is to

include floodplain areas along the San Jacinto River in this acreage total to preserve floodplain processes important to the survival of smooth tarplant. Floodplain processes in upper Salt Creek will also be maintained to provide for persistence of the species there.

Approximately 9,711 acres (23 percent) of modeled smooth tarplant habitat and 11 of the known occurrences (13 percent) are outside of the MSHCP Conservation Area but within CASSA 1, 2, 3, 3a, 4 and 6. Surveys will be conducted for smooth tarplant within CASSA 1, 2, 3, 3a, 4 and 6 where suitable habitat is present until such time that the Additional Reserve Lands are assembled and conservation objectives for this species are met. Where the species is detected, direct effects to smooth tarplant would be limited to loss of 10 percent of the area with long-term conservation value for this species until the conservation objectives for this species are met.

Smooth tarplant will be subject to impacts associated with development and other proposed Covered Activities within approximately 16,121 acres (38 percent) of modeled habitat that are outside of the MSHCP Conservation Area and outside of CASSA 1, 2, 3, 3a, 4 and 6. This area includes 47 (58 percent) of the known occurrences. We expect that most of the populations in this area will be impacted. However, the Riparian/Riverine Area and Vernal Pools policy requires that Covered Activities avoid vernal pools and riparian areas when feasible, so some populations in association with vernal pools or riparian areas may persist.

To mitigate the impacts to the smooth tarplant, the Permittees will protect and manage, in perpetuity, 5,174 acres (12 percent) of modeled habitat in the Plan Area, including some of the known occurrences and two Core Areas for smooth tarplant. Within the 9,711 acres (23 percent) of modeled smooth tarplant habitat where surveys will be conducted, when the species is detected, 90 percent of the portion of property with long-term conservation value will be avoided until the species' conservation objectives are met. We anticipate that occurrences determined to be important to the overall conservation of the species will be considered for inclusion in the Additional Reserve Lands and that at least some of the avoided areas may be maintained as open space habitat or included in the MSHCP Conservation Area to meet the conservation objectives. Therefore, we believe that the smooth tarplant will persist within the Plan Area in the long term and that the conservation and management proposed by the Permittees will mitigate impacts to the species in the Plan Area.

Yucaipa Onion

Yucaipa onion occurs at elevations from 60 to 1,065 meters in clay openings in chaparral habitat in the Yucaipa area of the southern San Bernardino Mountains in San Bernardino County and the Beaumont and Calimesa areas in western Riverside County. The only known occurrence of this species in the Plan Area is in the Calimesa area on the south side of the Interstate 10 right-of-way. There are approximately 8,335 acres of modeled Yucaipa onion habitat in the Plan Area. This includes 1,094 acres (13 percent) that are within PQP Lands. Additionally, the Wildlife Agencies are expected to conserve 212 acres (3 percent) of modeled habitat. Therefore, Covered Activities are not expected to affect approximately 16 percent of the modeled Yucaipa onion habitat in the Plan Area.

Because the Yucaipa onion is not widely distributed within the Plan Area, the species is considered a Narrow Endemic Plant Survey Species in the MSHCP and will be subject to surveys within the Narrow Endemic Plant Species Survey Area (NEPSSA) 8. All modeled Yucaipa onion habitat that falls outside of the MSHCP Conservation Area (6,591 acres or 79 percent) is within NESSPA 8. Surveys will be conducted for Yucaipa onion within NEPSSA 8 where suitable habitat is present until such time that the Additional Reserve Lands are assembled and conservation objectives for this species are met. Where the species is detected, 90 percent of the portion of property with long-term conservation value will be avoided until the species-specific conservation objectives are met. We anticipate that occurrences determined to be important to the overall conservation of the species will be considered for inclusion in the Additional Reserve Lands and that at least some of the avoided areas might be maintained as open space habitat.

Any Yucaipa onion individuals or populations outside of the survey area and outside of the MSHCP Conservation Area would be subject to impacts associated with development and other proposed Covered Activities. However, all known populations and historic records in the Plan Area fall within the survey area. Thus, based on current knowledge of the distribution of the species, effects to Yucaipa onion would be limited to loss of 10 percent of the areas with long-term conservation value for this species where the species is detected. The known occurrence of this species is within survey area; therefore, we anticipate that this location will be either included within the MSHCP Conservation Area or that it will be subject to the avoidance measures described above.

To mitigate impacts to this species, the Permittees will protect and manage, in perpetuity, 437 acres (5 percent) of modeled habitat for the species in the Plan Area. In addition, the surveys and procedures developed under the Plan will minimize and mitigate impacts to the one known occurrence of Yucaipa onion and any others identified through the survey requirements.

Vernal Pool Associated NEPSSA/CASSA Species

Little mousetail, Wright's trichocoronis, Parish's brittle scale, Davidson's salt scale and Coulter's goldfields are all associated with vernal pools or playas. We used the same criteria to model habitat for all of these species. The MSHCP requires surveys for these species within designated Narrow Endemic Plant Species Survey Areas (NEPSSA) or Criteria Area Species Survey Areas (CASSA) until such time that the Additional Reserve Lands are assembled and the MSHCP's conservation objectives for these taxa are met.

Little mousetail is found in vernal pools and alkali playa habitats in scattered locations in Orange, Riverside, San Bernardino and San Diego counties. It is also known from Oregon and several sites in Baja California, Mexico. In the Plan Area, it has been recorded in Santa Rosa Plateau, Lake Elsinore, Hemet, and upper Salt Creek areas. The population at upper Salt Creek is the largest population of the subspecies known.

Davidson's salt scale has been reported from coastal Santa Barbara County, within Ventura County, three locations in Los Angeles, western Orange, and Riverside counties, and possibly three locations in San Diego County; however, it is currently considered extremely rare outside of Riverside County. In Riverside County, Davidson's salt scale is found in the Domino,

Willows and Travers soils series in association with the alkali vernal pools, alkali annual grassland, alkali playa, and alkali scrub components of alkali vernal plains.

Wright's trichocoronis is found in alkali vernal plains and is associated with alkali playa, alkali annual grassland, and alkali vernal pool habitats. Its historic range includes the Great Valley of central California, western Riverside County, and the Edwards Plateau of central Texas and adjacent Mexico. It appears to be extirpated from central California and California plants may represent a distinct species from the plants of Texas and north central Mexico. In the Plan Area, it has been recorded in the San Jacinto River floodplain at Mystic Lake and south of the Ramona Expressway.

Historically, Parish's brittlescale was distributed sporadically in cismontane southern California from Los Angeles, Orange and Riverside counties. Parish's brittlescale was also known from Cushenbury Springs in the Mojave Desert of San Bernardino County and was reported in northwestern Baja California, Mexico, from Tijuana south to the eastern Sierra Juarez. Parish's brittlescale was considered extinct, as it had not been observed since 1974. The species was rediscovered in western Riverside County in 1993. The CNPS considers the species extirpated from Los Angeles, Orange, San Bernardino, and San Diego counties, but it is probably still extant in Baja California.

Coulter's goldfields is distributed from coastal San Luis Obispo County south to northwestern Baja California, Mexico; the species has also been reported from Santa Rosa Island. Interior valley populations have been recorded from the Carrizo Plain of San Luis Obispo County south through Kern County, San Bernardino County, and western Riverside County to the Ojos Negros Valley east of Ensenada, Mexico. This species may occur in coastal salt marshes and swamps, playas and vernal pools up to elevations of 1,220 meters. It occurs primarily in the alkali vernal plains community, which are habitats forming mosaics largely dependent on salinity and micro-elevational differences. Coulter's goldfields is restricted to wetter areas within the alkali habitat, particularly lake margins, playa borders, and vernal pools. In the Plan Area, Coulter's goldfields is known primarily from along the San Jacinto River just north of Nuevo Road, up through the San Jacinto Wildlife Area to the southern shores of Mystic Lake. There are smaller populations in alkali wetlands near Nichols Road in the City of Lake Elsinore, in the vicinity of upper Salt Creek along the Colorado Aqueduct, and northeast of the intersection of Van Buren Boulevard and Mockingbird Canyon Road.

There are approximately 42,349 acres of modeled habitat for these species in the Plan Area. Approximately 8,831 acres (21 percent) of the modeled habitat are within PQP Lands. The area within PQP lands includes 3 of the 24 known occurrences of little mousetail, the only occurrence of Parish's brittlescale, 1 of the 2 known occurrences of Wright's trichocoronis, 2 of the 11 occurrences of Davidson's saltscale and 11 occurrences of Coulter's goldfields including portions of the 2 most important populations remaining in its range. The Wildlife Agencies are expected to conserve 2,512 acres (6 percent) of modeled habitat. Therefore, Covered Activities are not expected to affect approximately 27 percent of the modeled habitat for these species in the Plan Area.

Because these species are not widely distributed within the Plan Area, they will be subject to surveys as a part of the development approval process within their designated survey areas. Within the designated survey area for each species, surveys will be conducted where suitable habitat is present until such time that the Additional Reserve Lands are assembled and conservation objectives for each species are met. When any of the species are detected, losses will be limited to 10 percent of the area with long-term conservation value for that species. The little mousetail survey area is Criteria Area Survey Areas (CASSA) 1, 2, 3, 3a, and 4 and encompasses 43 percent of the species' modeled habitat and two of the known occurrences. Surveys for Wright's trichocoronis will be conducted in Narrow Endemic Plant Species Survey Areas (NEPSSA) 1, 2, 3, 3a, 4 and 9, which includes approximately 57 percent of the modeled habitat for this species and 1 of the 2 known occurrences of the species. The Coulter's goldfields, Davidson's saltscale and Parish's brittlescale survey areas are CASSA 1, 2, 3, 3a, 4 and 7. These areas encompass 23 percent of the modeled habitat for these species and 8 known occurrences of Coulter's gold fields and 1 known occurrence of Davidson's saltscale.

All of these species will be subject to impacts associated with development and other proposed Covered Activities within the portion of their modeled habitat that is outside of the MSHCP Conservation Area and outside of their designated survey areas. For little mousetail this area includes 38 percent of the modeled habitat and 7 confirmed records. Approximately 38 percent of Coulter's goldfields, Davidson's saltscale and Parish's brittlescale modeled habitat and 3 of the known Davidson's salt scale and 8 of the known Coulter's goldfields occurrences are in the impact area. Approximately 4 percent of modeled Wright's trichocoronis habitat is in the impact area. We expect that most populations outside of the MSHCP Conservation Area and the designated survey areas will be impacted or lost to development. However, some populations may be avoided through implementation of the Riparian/Riverine Area and Vernal Pools policy, which requires that Covered Activities avoid vernal pools when feasible.

To mitigate impacts to these species, the Permittees will protect and manage, in perpetuity, 5,174 acres (12 percent) of their modeled habitats in the Plan Area. This area includes 11 of the known occurrences of little mousetail, 5 of the known occurrences of Davidson's saltscale, and 10 of the known occurrences of Coulter's goldfields. Additionally, within each designated survey area, when these species are detected, 90 percent of the portion of property with long-term conservation value will be avoided until the conservation objectives for that species are met. We anticipate that occurrences determined to be important to the overall conservation of the species will be considered for inclusion in the Additional Reserve Lands and that at least some of the avoided areas might be maintained as open space habitat.

The MSHCP includes species-specific conservation objectives to ensure that suitable habitat and extant populations of these species will persist. The conservation objectives provide that known occurrences outside of PQP Lands be conserved as Additional Reserve Lands (some occurrences of little mousetail, Coulter's gold fields and Davidson's saltscale are expected to be lost, as discussed above). In addition, at least 3,990 acres of grassland and playas and vernal pools within the San Jacinto River and upper Salt Creek Areas will be included in Additional Reserve Lands. Floodplain areas along the San Jacinto River will be included in this acreage total to preserve floodplain processes important to the survival of these species. The upper Salt Creek and San Jacinto River floodplains are noted in the MSHCP as Core Areas for some of these

species and support the most important (largest and most stable) known populations of little mousetail, Davidson's saltscale and Coulter's goldfields. These areas are also contiguous to existing PQP Lands, which support important populations of all of these species, including Wright's trichocoronis and Parish's brittlescale. The conservation achieved in upper Salt Creek and along the San Jacinto River will contribute to the long-term viability of the populations on PQP Lands. We anticipate these species will also benefit from the implementation of the Riparian/Riverine Area and Vernal Pools policy. With the protection and management proposed by the Permittees, we expect populations of these species to be viable in the Plan Area in the long term. Thus, we believe the long-term conservation and the surveys and procedures developed under the Plan will minimize and mitigate impacts to these species.

NEPSSA Species With All Known Occurrences Within PQP Lands or Survey Areas

Johnson's rockcress, Munz's mariposa lily, and San Jacinto Mountains bedstraw are endemic to the San Jacinto Mountains of Riverside County. The bulk of these species' ranges are within the Plan Area. They are designated as Narrow Endemic Plant Survey Species under the MSHCP and until such time that the Additional Reserve Lands are assembled and the species-specific conservation objectives for each species are met, surveys for these species will be conducted within the Narrow Endemic Plant Species Survey Area (NEPSSA) 6 where suitable habitat is present.

San Jacinto Mountains bedstraw occurs in partially shady, open mixed forest and lower montane coniferous forest on the western side of the San Jacinto Mountains. Munz's mariposa lily occurs on seasonally-moist, fine granitic loam on exposed knolls in the shade of lower montane coniferous forest (yellow pine forest) and on moist, sandy clay in chaparral and meadows in the San Jacinto Mountains. Johnson's rockcress occurs at elevations from 1,400 meters to 2,150 meters on eroded clay soils in open areas of chaparral and lower montane coniferous forest in the San Jacinto Mountains. In the Plan Area, most of the modeled habitat for all three plants (68, 79 and 80 percent, respectively) is within PQP Lands, which Covered Activities are not expected to significantly affect.

The modeled habitat for all three of these plants that is outside of PQP Lands is within NEPSSA 6. When any of these plants are detected through required surveys, impacts would be limited to loss of 10 percent of the area with long-term conservation value for the species until the species-specific conservation objectives are met. All known populations and historic records of these plants in the Plan Area are either on Forest Service lands or within NEPSSA 6. Thus, direct effects to these species are expected to be low based on current knowledge of their distributions and implementation of surveys and procedures to minimize loss of significant populations of these narrow endemic plants.

The species-specific objectives for the three species require conservation of populations on PQP Lands in Conserved Habitat; no additional conservation of populations through Additional Reserve Lands is proposed by the MSHCP. However, we anticipate that the Permittees will consider occurrences, located through required surveys and determined to be important to the overall conservation of these species, for inclusion in the Additional Reserve Lands and that at least some of the avoided areas might be maintained as open space habitat. The overall loss of

these species' habitat will be limited to 10 percent of areas with long-term conservation value for the species until protection and management of occurrences on Conserved Habitat is assured for these species within the MSCHP Conservation Area. Because the overall impacts are anticipated to be low and the species are anticipated to persist within the Plan Area, the impacts to these species are mitigated by the conservation proposed by the Permittees.

Other NEPPSA and CASSA Species

San Miguel savory, mud nama, many-stemmed dudleya, heart-leaved pitcher sage, prostrate navarretia and round-leaved filaree are not widely distributed in the Plan Area. Therefore, the MSHCP requires surveys for these species within identified survey areas as a part of the project approval process for all public and private projects.

San Miguel savory is primarily restricted to rocky, gabbroic, and metavolcanic substrates in coastal sage scrub, chaparral, cismontane woodland, riparian woodland, and valley and foothill grasslands between 120 and 1,005 meters in elevation. It occurs in Orange, Riverside, and San Diego counties in California and in Baja California, Mexico. It is an extremely rare shrub with very few recent recorded occurrences. In the Plan Area, it is found in the Santa Ana Mountains Bioregion on and around the Santa Rosa Plateau.

Mud nama occurs within muddy embankments of marshes and swamps and within lake margins and riverbanks at elevations between 5 and 500 meters in Orange, Riverside, and San Diego counties; San Clemente Island; Arizona; southern Texas; and Baja California, Mexico. The species is thought to be extirpated in Imperial and Los Angeles counties. In the Plan Area, mud nama is known to occur at Mystic Lake on and off of PQP Lands.

Many-stemmed dudleya is associated with clay soils in barrens, rocky areas and ridgelines usually in coastal sage scrub or open coastal sage scrub but also in openings in chaparral and southern needlegrass grasslands. It occurs from southwestern California in western Los Angeles County, through extreme southwestern portions of San Bernardino and Orange counties, and western Riverside County south to the northern edge of San Diego County. The species is considered fairly rare throughout its range. It is found in scattered occurrences in appropriate habitat throughout the western portion of the Plan Area.

Heart-leaved pitcher sage occurs in closed-cone coniferous forest, chaparral and cismontane woodland in the Santa Ana Mountains in Orange and Riverside counties, the Peninsular Ranges (Iron Mountain) in San Diego County, and the coastal mountains of northern Baja California, Mexico. The majority of the records for heart-leaved pitcher sage are from western Riverside County and from along the border between Orange and Riverside counties. In the Plan Area, most of the current and historic records for the species are in the Cleveland National Forest.

The prostrate navarretia occurs in vernal pools, in coastal sage scrub and valley and foothill grassland (alkaline) habitats below 2,300 feet in elevation. It is known to occur in Los Angeles, Merced, Monterey, Orange, Riverside, and San Diego counties and is thought to be extirpated from Alameda and San Bernardino counties. In the Plan area, it is known only from the Santa Rosa Plateau Ecological Reserve, but it may be present in suitable habitat off of the reserve.

Round-leaved filaree is restricted to open cismontane chaparral, woodland and valley and foothill grassland communities on very friable clay soils (typically Bosanko clay) between elevations of 15 and 1,200 meters. It occurs from southern Utah to northern Mexico. In California, it is found in the Sacramento Valley, northern San Joaquin Valley, central western California, the south coast, and Santa Cruz Island. In the Plan Area, it is known from the Riverside Lowlands and Santa Ana Mountains bioregions.

We modeled habitat in the Plan Area for all five of these species based on their known elevations and vegetative community associations. They all have a significant portion of their modeled habitat and known occurrences within existing PQP Lands. The Wildlife Agencies are also expected to conserve habitat for these species. In the Plan Area Covered Activities are not expected to significantly affect the modeled habitat on PQP Lands or the area conserved by the Wildlife Agencies. The percentage of modeled habitat either on PQP Lands and/or expected to be acquired by the Wildlife Agencies and occurrence information are as follows: San Miguel savory, 67 percent and 5 of the 6 known occurrences; mud nama, 58 percent and 2 of the 3 known occurrences; many-stemmed dudleya, 41 percent and 6 of the 19 known occurrences; heart-leaved pitcher sage, 79 percent and 1 of the 2 known occurrences; prostrate navarretia, 63 percent and all known occurrences; and round-leaved filaree, 24 percent and 5 of the 7 known occurrences.

Outside of the MSHCP Conservation Area, all five of these species will be subject to surveys within their designated survey areas where suitable habitat is present and until such time that the Additional Reserve Lands are assembled and conservation objectives for each species are met. The percentage of modeled habitat that will be surveyed and the designated survey areas are as follows: San Miguel savory, 19 percent within Narrow Endemic Plant Species Survey Area (NEPSSA) 1, 7, and 9; mud nama, 5 percent within Criteria Area Species Survey Areas (CASSA) 3 and 3a; many-stemmed dudleya, 17 percent within NEPSSA 1, 2, 3, 3a, 4, 5, 7 and 8 (this area includes 5 of the known occurrences); heart-leaved pitcher sage, less than 1 percent within CASSA 7 and 8; prostrate navarretia, 6 percent within CASSA 7; and round-leaved filaree, 5 percent within CASSA 1, 2, 3, 3a, 4, 5, 6, and 7 (this area includes 2 of the known occurrences). Where any of these species are detected, direct effects will be limited to loss of 10 percent of the area with long-term conservation value for these species until the species-specific conservation objectives are met. Surveys will continue in suitable habitat within the survey areas until the conservation objectives for the species are met.

Populations of these plants that are outside of the survey areas and the MSHCP Conservation Area will be subject to impacts associated with development and other proposed Covered Activities. The percentage of modeled habitat outside the survey areas and the MSHCP Conservation Area and associated occurrence information are as follows: San Miguel savory, 10 percent and 1 occurrence; mud nama, 13 percent and 1 occurrence; many-stemmed dudleya, 38 percent and 4 occurrences; heart-leaved pitcher sage, 19 percent and no occurrences; prostrate navarretia, 29 percent and no occurrences; and round-leaved filaree, 63 percent and no occurrences.

To mitigate for these impacts, the Permittees will protect and manage, in perpetuity, modeled habitat for these species as follows: San Miguel savory, 3 percent; mud nama, 23 percent; many

stemmed dudleya, 13 percent (including known occurrences); heart-leaved pitcher sage, 1 percent; prostrate navarretia, 24 percent; and round-leaved filaree, 8 percent habitat. Because these species are not widely distributed within the Plan Area, species-specific conservation objectives are provided in the MSHCP to ensure that suitable habitat and known populations are conserved. Meeting these objectives will result in protection and management of known occurrences of these species on Conserved Habitat with PQP Lands and/or Additional Reserve Lands. In addition, the MSHCP conservation objectives for the mud nama include the preservation of floodplain processes and hydrology in the San Jacinto River to provide for the distribution of the species to shift over time as hydrologic conditions and seed bank sources change. Mud nama and prostrate navarretia may also benefit from the Riparian/Riverine Areas and Vernal Pools policy, which requires that Covered Activities avoid wetland habitat when feasible.

Within the survey areas, when the species is detected, 90 percent of the portion of the property with long-term conservation value will be avoided until the species-specific conservation objectives for that species are met. We anticipate that the Permittees will consider occurrences determined to be important to the overall conservation of the species for inclusion within the Additional Reserve Lands and that at least some of the avoided areas might be maintained as open space habitat. The overall loss of these species' habitat will be limited to 10 percent of areas with long-term conservation value for the species until conservation (as defined under the MSHCP) is assured within the MSHCP Conservation Area. Thus, we expect viable populations of these species to remain in the Plan Area within the MSHCP Conservation Area and the impacts to the species to be mitigated by the conservation and management proposed by the Permittees.

PLANT SPECIES NOT ADEQUATELY CONSERVED UNTIL SPECIES-SPECIFIC CONSERVATION OBJECTIVES ARE MET

Thirteen non-listed plant species will not be considered Covered Species Adequately Conserved by the MSHCP until species-specific conservation objectives are met. The species-specific objectives require demonstrating that a specified level of conservation has been achieved within the MSHCP Conservation Area on Conserved Habitat. Conserved Habitat within the MSHCP Conservation Area is land that is permanently protected and managed in its natural state for the benefit of the Covered Species under legal arrangements that prevent its conversion to other land uses, and the institutional arrangements that provide for its ongoing management.

These plant species are beautiful hulsea, California muhly, chickweed oxytheca, cliff cinquefoil, Coulter's matilija poppy, Fish's milkwort, graceful tarplant, Mojave tarplant, Parry's spine flower, peninsular spine flower, Plummer's mariposa lily, rainbow manzanita, and small-flowered microseris. Should any of these species become listed, no surprises assurances would only be provided if the species-specific conservation objectives have been met and the Service has shifted the species to the list of Covered Species Adequately Conserved.

Most of the species-specific conservation objectives require the inclusion within the MSCHP Conservation Area of a minimum of 10 localities supporting the species with a minimum of 1,000 individuals for annuals (chickweed oxytheca, graceful tarplant, Parry's spine flower, peninsular spine flower, and small-flowered microseris) and 50 individuals for perennials

(California muhly, Fish's milkwort, and rainbow manzanita). A locality under the MSHCP is defined as not less than a quarter-section (as delineated by surveys conducted under the U.S. Public Land Survey System) or 160 acres, so that, for example, if a contiguous population of annuals consisted of more than 1,000 individuals, it could not be divided and counted as two localities. Similarly, if a population was spread out in groups over a large area, it would only count as one occurrence unless it was distributed across an area larger than a quarter-section.

A description of the other five species' population conservation objectives follow. The standards were chosen to provide for the long-term conservation needs of these species in the Plan Area.

Beautiful hulsea is required to have 16 localities with at least 50 individuals because the MSHCP identifies 16 records for this species that are to be conserved.

Cliff cinquefoil is only required to be present in 5 localities because it is a cliff dwelling species that is restricted to high mountain rock faces and was probably never abundant enough in the Plan Area to be present in 10 localities as we have defined locality.

Coulter's matilija poppy is required to be present in 30 localities because it is a southern California endemic, and the Plan Area is important to its long-term conservation.

Mojave tarplant is required to be present in four localities within an aggregated area of not less than 100 acres. It is probably not abundant enough in the Plan Area to be present in 10 localities as we have defined locality. The Mojave tarplant is associated with drainages, and populations tend to be distributed linearly, so an aggregated area was used as a standard instead of population size.

Plummer's mariposa lily is required to be present in at least 6 localities of 500 individuals or greater. This species is a bulb and as such can be tightly aggregated. The standard of 500 individuals was used to ensure that each locality contained a diversity of microclimates to provide for the species in the long term. There are only 6 localities known of Plummer's mariposa lily in the Plan Area.

Modeled habitat for all thirteen species, except cliff cinquefoil, occurs outside of the MSHCP Conservation Area and is expected to be affected by development and other Covered Activities. Confirmed occurrences of 6 of the 13 species are in the impact area and are thus expected to be lost including: beautiful hulsea, 1 of 2 occurrences; Coulter's matilija poppy, 13 of 17 occurrences; Fish's milkwort, 1 of 5 occurrences; Parry's spine flower, 14 of 21 occurrences; Plummer's mariposa lily, 3 of 7 occurrences; and small-flowered microseris, 7 of 15 occurrences. These confirmed occurrences and any other occurrences of these and the other 6 species that may be present in the impact area will be subject to impacts from Covered Activities.

A significant portion (approximately 50 percent) of the modeled habitat outside of the MSHCP Conservation Area for 9 of these species (beautiful hulsea, California muhly, Coulter's matilija poppy, Fish's milkwort, graceful tarplant, Parry's spine flower, peninsular spine flower, Plummer's mariposa lily and rainbow manzanita) is within the rural/mountainous designation where development activities are expected to occur at lower densities. Depending on land use, some occurrences of these species may persist in rural/mountainous areas. Cliff cinquefoil is a

cliff dwelling species that is only known from cliffs on Mt. San Jacinto; therefore, Covered Activities are not expected to affect cliff cinquefoil.

To mitigate impacts to these species, the Permittees propose to protect and manage, in perpetuity, these species on Conserved Habitat to the standards identified in the species-specific conservation objectives. The standards in the species-specific objectives were chosen to provide for the long-term conservation of the species in the Plan Area. A substantial portion of each of these species' modeled habitat is within the MSHCP Conservation Area. There are known or recorded occurrences of all of these species within this area. We anticipate that the species-specific conservation objectives can be met for all of these species within the MSHCP Conservation Area and, if they are met, populations of these species will be viable in the Plan Area in the long term. Thus, the impacts of the Covered Activities will be mitigated by the conservation and management proposed by the Permittees for each of these species.

ANIMAL SPECIES NOT ADEQUATELY CONSERVED UNTIL SPECIES-SPECIFIC CONSERVATION OBJECTIVES ARE MET

Grasshopper Sparrow

The grasshopper sparrow has a wide distribution in the United States. The subspecies breeding in California, *Ammodramus savannarum perpallidus*, occurs locally in appropriate habitats west of the deserts and has nested to 1,500 meters in the San Jacinto Mountains. The grasshopper sparrow generally prefers dry or well-drained grassland, especially native grassland with a mix of grasses and forbs for foraging and nesting, as well as patchy bare ground for foraging. The species was formerly more widespread through the Riverside area to Beaumont, but apparently now occurs within western Riverside County in select, scattered habitat areas within the Riverside Lowlands, Santa Ana Mountains, and San Jacinto Foothills bioregions.

The grasshopper sparrow will not be considered a Covered Species Adequately Conserved by the MSHCP until the MSHCP Conservation Area includes at least 8,000 acres in 7 identified Core Areas, 3 of which will consist of a minimum of 2,000 acres of grassland habitat or grassland-dominated habitat (< 20 percent shrub cover). The other 4 Core Areas may be smaller but will consist of at least 500 acres of habitat. Five of the 7 Core Areas must demonstrate the support of at least 20 grasshopper sparrow pairs with evidence of successful reproduction within the first 5 years after permit issuance. Take will not be authorized and no surprises assurances will not be provided for this subspecies until these conservation goals are met.

The Plan Area supports 118,653 acres of modeled habitat for the grasshopper sparrow. Approximately 19,549 acres (16 percent) of this modeled habitat occurs within PQP Lands, and the Wildlife Agencies are expected to conserve an additional 5,677 acres (5 percent) of modeled habitat. Thus, Covered Activities are not expected to significantly affect 25,226 acres (21 percent) of modeled habitat.

Approximately 81,733 acres (69 percent) of totaled modeled habitat for grasshopper sparrow, of which 10,603 acres (13 percent) are within rural/mountainous areas, will be subject to impacts associated with development and other proposed Covered Activities. The loss of breeding and foraging habitat for the grasshopper sparrow will displace birds from their territories; some birds

may be able to disperse to adjacent habitats, particularly rural mountainous areas where development impacts are anticipated to occur at lower densities. However, the proposed impact area includes 61 percent of the grasshopper sparrow observation in our dataset, and not all displaced birds are expected to survive.

The Permittees will protect and manage, in perpetuity, 11,694 acres (10 percent) of modeled habitat, including areas with known observations of grasshopper sparrows. Conserving these lands will help maintain large blocks of breeding habitat necessary to sustain the grasshopper sparrow in the Plan Area. In addition, Core Areas will be managed to enhance, restore, and/or create grassland, with an emphasis on native grasslands, to keep the percent cover of grassland within Core Areas to 10 percent of their baseline value. Because the grasshopper sparrow is dependent on grassland habitats, this measure will help ensure that habitat to support this species' life history requirements is sustained within the Plan Area. Thus, the long-term conservation proposed by the Permittees mitigates the impacts to the grasshopper sparrow.

Lincoln's Sparrow

The Lincoln's sparrow summers in Alaska, Canada, the northern United States and the mountains of the West. In southern California, it breeds in the San Gabriel Mountains, the San Bernardino Mountains, the San Jacinto Mountains, and on Mount Pinos. The species winters along the Pacific coast of British Columbia, Washington, Oregon and California, the central United States, in Baja California, Mexico, and along the Gulf Coast. The Lincoln's sparrow is a common migrant and winter visitor throughout California with some breeding populations in the northern mountains. Individuals arrive in southern California in late September and depart in late April.

The Lincoln's sparrow will not be considered a Covered Species Adequately Conserved by the MSHCP until the MSHCP Conservation Area includes at least 100 acres in three identified Core Areas, which will all consist of a minimum of 50 acres of montane meadow, wet montane meadow, and edges of montane riparian and riparian scrub. The Core Areas must demonstrate the support of at least 20 Lincoln's sparrow pairs with evidence of successful reproduction within the first 5 years after permit issuance. In addition, occupancy must be maintained within the three Core Areas in at least one year out of any five consecutive-year period. Take under the MSHCP will not be authorized for this species until these conservation goals are met.

The Plan Area supports 742,621 acres of modeled habitat for the Lincoln's sparrow. The majority of modeled habitat within the Plan Area consists of migratory stopover or wintering habitat for the Lincoln's sparrow, and only 565 acres are suitable Lincoln's sparrow breeding habitats. Approximately 292,064 acres (39 percent) of modeled habitat occurs within PQP Lands, and the Wildlife Agencies are expected to conserve an additional 44,784 acres (6 percent) of the modeled habitat. Thus, Covered Activities are not expected to significantly affect 45 percent of total modeled habitat; of this 111 acres are suitable breeding habitat for the Lincoln's sparrow. Historical breeding locations within the San Bernardino Mountains and the San Jacinto Mountains at Tahquitz and Round Valleys may be conserved as Core Areas by the MSHCP.

Approximately 313,519 acres (42 percent) of totaled modeled habitat for the Lincoln's sparrow will be subject to impacts associated with development and other proposed Covered Activities.

Approximately 101,072 acres (32 percent) of these lands are within rural/mountainous areas and 432 acres are modeled breeding habitat. Most of this habitat represents migratory stopover and wintering habitat; thus direct mortality of Lincoln's sparrows is not expected. In addition, implementation of the Riparian/Riverine and Vernal Pools Policy may benefit the Lincoln's sparrow and help to minimize the impacts to this species and its breeding habitat.

The Permittees will protect and manage in perpetuity 92,255 acres (12 percent) of modeled habitat, including areas with known observations of Lincoln's sparrows. The habitat loss expected in the Plan Area represents only a fraction of the habitat available to this species throughout its range. The conserved lands will help maintain large blocks of habitat necessary to sustain Lincoln's sparrows that breed, migrate through and winter in the Plan Area. Thus, the long-term conservation proposed by the Permittees offsets the impacts to the Lincoln's sparrow.

San Bernardino Flying Squirrel

The San Bernardino flying squirrel is 1 of 25 subspecies of the northern flying squirrel. Relatively little is known about the distribution of habitat actually occupied by the San Bernardino flying squirrel in southern California. The San Bernardino flying squirrel is known from coniferous forests in the San Bernardino Mountains. Although this subspecies has not been found in the Plan Area recently, historic records indicate that it once inhabited similar habitat in the San Jacinto Mountains.

Approximately 20,883 acres (75 percent) of modeled habitat for the San Bernardino flying squirrel are within PQP Lands, and the Wildlife Agencies are expected to conserve an additional 7 acres (< 1 percent) of modeled habitat. Thus, Covered Activities are not expected to significantly affect 75 percent of the modeled habitat for the San Bernardino flying squirrel in the Plan Area.

The San Bernardino flying squirrel will not be considered a Covered Species Adequately Conserved by the MSHCP until occupation of 2,470 acres (1,000 hectares) of habitat with a mean density of at least two individuals per 2.47 acres (2 hectares) is confirmed within the MSHCP Conservation Area within the San Jacinto Mountains and 247 acres (100 hectares) of occupied habitat is confirmed within the San Bernardino Mountains. Under the terms of the MSHCP, if these objectives are met, approximately 6,763 acres (25 percent) of total modeled habitat for the San Bernardino flying squirrel will be subject to impacts from development and other proposed Covered Activities.

The Permittees will protect and manage, in perpetuity, 15 acres (< 1 percent) of modeled habitat for the San Bernardino flying squirrel. Because most of the habitat for this subspecies is within PQP Lands, the potential impact to this species is expected to be relatively low despite the loss of 25 percent of its modeled habitat in the Plan Area. In addition, confirmation that the species-specific conservation objectives have been met prior to providing take coverage for this subspecies will ensure that impacts authorized under the MSHCP are mitigated.

Alternatives Carried Forward

The Final EIS describes the MSHCP Alternative (identified as the NEPA preferred alternative in the Final EIS), which is to issue the Permit as requested by the prospective Permittees as described above, and four alternatives that were considered by the Service prior to issuance of the Permit. The four alternatives, in addition to the MSHCP alternative, are the following: (1) Listed, Proposed, and Strong Candidate Species Alternative; (2) Listed and Proposed Species Alternative; (3) Existing Reserves Alternative; and, (4) No Project Alternative.

Listed, Proposed and Strong Candidate Species Alternative

This alternative depicts a conservation scenario that would address species that are already listed or proposed for listing under either the federal or the state ESA, as well species that the MSHCP Advisory Committee identified as “strong candidates” for potential future listing. This alternative would cover the 32 federal and state listed and proposed species that occur in the MSHCP Plan Area (Swainson’s hawk, mountain plover, western yellow-billed cuckoo, southwestern willow flycatcher, peregrine falcon, bald eagle, coastal California gnatcatcher, least Bell’s vireo, San Bernardino kangaroo rat, Stephens’ kangaroo rat, arroyo toad, California red-legged frog, mountain yellowlegged frog, southern rubber boa, Quino checkerspot butterfly, Delhi Sands flower-loving fly, Riverside fairy shrimp, vernal pool fairy shrimp, Santa Ana sucker, Mohave tarplant, Munz’s onion, Parish’s meadowfoam, San Diego ambrosia, San Jacinto Valley crowscale, Nevin’s barberry, thread-leaved brodiaea, Vail Lake ceanothus, slender-horned spine flower, Santa Ana River woollystar, San Diego button-celery, spreading navarretia, and California Orcutt grass). In addition to these listed and proposed species, this alternative would also cover the conservation needs for the following seven “strong candidate” species: tricolored blackbird (breeding colony), cactus wren, burrowing owl, western pond turtle, San Bernardino mountain kingsnake, San Diego mountain kingsnake and Los Angeles pocket mouse.

This alternative would focus largely on the conservation of these 39 listed, proposed and strong candidate species and would give less consideration to the Planning Agreement language and broad-based ecosystem conservation. Large habitat blocks and broad linkages are incorporated in this alternative in some areas to provide for an MSHCP Conservation Area scenario that would address the conservation needs of the 39 covered species, but overall fails to conserve habitat in functional blocks due to the lack of several crucial cores and linkages that are necessary to create a fully functioning reserve. Under this alternative a total of 465,830 acres would be conserved, including 346,530 acres within existing conserved lands and 119,300 acres of currently private land outside of existing reserves. This alternative would provide less ecosystem conservation for the broad list of Covered Species and their habitat, than the MSHCP Preferred Alternative.

Listed and Proposed Species Alternative

Under this alternative the conservation scenario would address only federal and state listed and proposed species. As indicated above in the discussion of the Listed, Proposed and Strong Candidates alternative, a total of 32 listed and proposed species occur in the MSHCP Plan Area. This alternative focuses largely on the conservation of the 32 listed and proposed species within

the MSHCP Plan Area, with less consideration of the broad-based NCCP biological tenets. While large habitat blocks and broad linkages are incorporated in this alternative in some areas to provide for a conservation scenario that would address the conservation needs of the listed and proposed species, this alternative places less emphasis on broad-based ecosystem conservation. Under this alternative, a total of 439,140 acres would be conserved, including 346,530 acres within existing conserved lands and 92,610 acres of currently private land outside existing reserves. This alternative would provide less ecosystem conservation for the broad list of Covered Species and their habitat, than the MSHCP Preferred Alternative.

Existing Reserves Alternative

Under this alternative, conservation focuses on Existing Reserves only. Under this scenario, there would be no MSHCP or associated federal and state Permit authorizing incidental take. This alternative offers no additional conservation or management within the existing reserves, beyond that currently occurring or what might occur in the future with implementation of the USFS Southern California Conservation Strategy.

Of the 32 federal and state listed and proposed species, only 2 bird species (peregrine falcon and western yellow-billed cuckoo) would be considered conserved under this alternative. One mammal species, Stephens' kangaroo rat, would be conserved based on an already permitted HCP in the area. In addition, two amphibian species (mountain yellowlegged frog and California red-legged frog) and three plant species (San Diego button-celery, Mojave tarplant, and Parish's meadowfoam) could be considered conserved based on conservation on Santa Rosa Plateau and on USFS lands. The remaining 24 listed and proposed species would not be conserved under this alternative. This alternative would provide less ecosystem conservation for the Covered Species and their habitat, than the MSHCP Preferred Alternative.

No Project/No MSHCP Alternative

Under the No Project/No MSHCP Alternative, a regional Permit pursuant to the following state and federal regulations would not be issued: 1) Section 10(a)(1)(B) under the Federal Endangered Species Act; and 2) Section 2835 of the NCCP Act (California Fish and Game Code). Activities involving take of state and/or federal listed species would require individual permitting on a project-by-project basis, as is currently the case. Land use changes and policies that are being contemplated to implement the MSHCP would not occur. However, planning currently being conducted under the RCIP for the General Plan and county-wide circulation element could still be adopted. Implementation of the various elements of those plans resulting in take of listed species and regulated habitats would need to be permitted separately under the applicable state and federal processes. Existing reserves would be retained with existing management strategies under the No Project/No MSHCP Alternative.

Impacts resulting from development activities are currently subject to a variety of local, state and federal regulatory processes. Under the No Project/No MSHCP Alternative, these existing processes and the resulting project modifications and mitigation are anticipated to result in some conservation of habitat and species within the Plan Area. Biological resources that are afforded the greatest level of protection under existing regulations and policies are those species that are federally listed as threatened or endangered, and those species and habitats associated with

wetland systems, as further discussed below.

Based on application of existing regulations, certain species and some potential wetland locations would likely receive protection under the No Project/No MSHCP Alternative. Conservation of species and habitats provided through mitigation and compensation under the existing regulatory framework would likely result in a pattern of conservation that is fragmented and managed in a piecemeal fashion. There would not be a coordinated system of linkages provided to connect MSHCP Conservation Areas, and the ability to provide linkages through project-by-project mitigation may be precluded over time through continued development.

Although the aforementioned regulations and policies would continue to be applied throughout the Plan Area in the absence of a comprehensive MSHCP, history has demonstrated that application of these regulations and policies would not avoid the decline of species in the Plan Area that has resulted in increased listings of species in recent years. Based on historic trends, it is anticipated that under the No Project/No MSHCP Alternative, new species would continue to be listed in the future, and regulation of those species and their habitats would continue under the current regulatory processes.

Alternatives Analysis and Conclusion

The analysis presented in the EIR/EIS compared the predicted environmental consequences of each of the alternatives against the No Action Alternative. Of the five alternatives analyzed in the EIR/EIS, the Service finds that the combination of land acquisition, reserve configuration, reserve management, and monitoring under the MSHCP Alternative most effectively offsets the anticipated levels of take and the impacts of that take on the Covered Species, and can be practicably implemented by the Permit Applicants. The MSHCP conserves the greatest number of acres of habitat in usable configurations with cores and linkages, conserves the most species, and would provide a management structure for maintaining the viability of habitat for the Covered Species. The Existing Reserves and No Action Alternatives would conserve land on a project-by-project basis, and there would be no system for management or reserve configuration in place. The Listed, Proposed, and Strong Candidate Species and Listed and Proposed Species Alternatives would conserve less habitat than the MSHCP Alternative. The No Action Alternative would result in piecemeal, scattered mitigation of far less value to the Covered Species than the interconnected system of managed, high quality habitat reserves to be established under the MSHCP Alternative. The Service believes the conservation provided under the proposed MSHCP Alternative accurately accounts for the take anticipated from authorized development in the Plan Area as analyzed in the EIR/EIS and the Biological and Conference Opinion, most effectively minimizes and mitigates the impacts of that take, and does so in a manner that can be practicably implemented by Permittees. For these reasons, the Service finds that the MSHCP Alternative minimizes and mitigates the effects of the taking to the maximum extent practicable.

In addition, the analysis in the EIR/EIS evaluated the relative effects of the Alternatives on other resources in western Riverside County, including biological resources, agricultural and extractive resources, population, housing and employment, public services, traffic/circulation, and growth-inducing effects. The adverse impacts to biological resources would be greater under all Alternatives except the MSHCP Alternative. Impacts to agricultural and extractive resources

were less under the MSHCP Alternative and No Action Alternative. Impacts to population and housing were the least under the Existing Reserves and No Action Alternatives. Therefore, when considering effects to the environment overall, we find that the MSHCP alternative represents the best balance between minimizing and mitigating effects to natural resources versus other aspects of the human environment.

Loss of existing or potential habitat will occur within the MSHCP boundaries as development occurs over the 75 year life of the plan. The Service has determined that the MSHCP will effectively conserve the Covered Species by securing 158,000 acres of mitigation land (103,000 acres of Additional Reserve Lands plus 55,000 acres of Public/Quasi-Public Lands) to be managed in perpetuity for the benefit of the Covered Species, in addition to the cumulative value of the MSHCP Conservation Area, to be managed and monitored for the 75-year life of the permit for the benefit the Covered Species.

The MSHCP Alternative effectively minimizes and mitigates the impacts of the take of covered species resulting from Covered Activities, in addition to providing the most conservation and viable long-term habitat than the Existing Reserves Alternative and the No Action Alternative. By adopting the Final MSHCP Alternative with its Conservation Strategy, all practical means to avoid or minimize environmental harm from implementation of the selected Alternative have been adopted.

3. The applicant(s) will ensure that adequate funding for the plan and procedures to deal with unforeseen circumstances will be provided.

The Service finds that the Western Riverside County Regional Conservation Authority, County of Riverside, Riverside County Flood Control and Water Conservation District, Riverside County Regional Parks and Open Space District, Riverside County Waste Management District, Riverside County Transportation Commission, City of Banning, City of Beaumont, City of Calimesa, City of Canyon Lake, City of Corona, City of Hemet, City of Lake Elsinore, City of Moreno Valley, City of Murrieta, City of Norco, City of Perris, City of Riverside, City of San Jacinto, City of Temecula, CalTrans, and California State Parks will ensure funding adequate to carry out the implementation of the MSHCP. Funding for land acquisition, land management, monitoring, adaptive management and program administration will be financed through a combination of Local Development Mitigation Fees, Density Bonus Fees, regional infrastructure project contribution and landfill tipping fees, as described in MSHCP section 8.0. The Local Permittees are responsible for securing 97,000 acres of land (56,000 acres purchased, plus 41,000 acres dedicated) for mitigation and the 2 State agency permittees are responsible for securing 6000 acres of land for mitigation. In addition to the land acquisition and dedication, funding will be provided by the Local Permittees, through the 4 funding elements identified above, to manage, monitor and administer 152,000 acres for mitigation, which includes the 97,000 acres, plus 55,000 acres of already existing local conservation lands. The CalTrans will provide funding to purchase 3000 acres of mitigation using the State Transportation Improvement Program funds. Management and monitoring of these 3000 acres will be done by 2 staff positions in CDFG funded by CalTrans. The State Parks will contribute 3000 acres for mitigation which will be managed and monitored by funding 2 CDFG positions or dedicating 2 State Park positions to the task.

MSHCP Costs

Costs associated with implementation of the MSHCP are divided by the four main program elements - land acquisition, land management, adaptive management and program administration. The MSHCP is anticipated to cost approximately \$1.076 billion to implement over the first 25-years. Funding for the remaining 50-years is dealt with through 2 approaches identified in the MSHCP section 8.8 and summarized later in this section. The following sections describe the projected costs and expenditures for the 4 program elements.

Land Acquisition: Using 2002 dollars, the acquisition of 56,000 acres will cost approximately \$733.6 million. The additional 41,000 acres of new mitigation land will be conserved through the development review process and dedication of the land by owners; therefore no land acquisition funds are necessary to secure this acreage. Land acquisition costs for the 2 State agencies are expected to be \$78.6 million for 6000 acres of mitigation.

Land Management: The cost to manage the 152,000 acres of local mitigation lands, 97,000 acres plus 55,000 acres of already existing conserved lands, will cost approximately \$110.9 million over the next 25-years. This cost includes \$55 per acre per year for the 97,000 acres of newly secured lands and \$17 per acre per year for existing conserved lands that already have management programs in place. Management of the 6000 acres of State agency mitigation lands is expected to cost the equivalent of a portion of 2 State agency staff positions

Monitoring: The monitoring program for the MSHCP is expected to cost \$1.6 to \$2.4 million per year (\$40-60 million over the first 25-years). The Local Permittees are funding \$1.0 to \$1.5 million per year (\$25-37.5 million over the first 25-years) with CDFG taking on responsibility for the remainder of the funding through dedicated staffing to the monitoring effort for the first eight years of MSHCP implementation

Adaptive Management: The adaptive management program MSHCP encompasses the response to changed circumstances (MSHCP section 6), and establishment of the endowment, in addition to the overall adaptive management program, as identified in MSHCP section 5. The Local Permittees will provide \$100 million, by the end of the first 25-years, for adaptive management and the endowment. Approximately \$70 million of the \$100 million is to be placed in an endowment for adaptive management over the life of the permit and beyond. Once fully funded, the endowment will provide in perpetuity approximately \$3.5 million annually, at a 5 percent return rate. For the first 25-years of implementation, funds will be made available for adaptive management proportional to the amount of acquired mitigation lands. At the end of the 75-year Permit term, the endowment for Adaptive Management will be maintained in a non-wasting account per FESA 10(a) Permit Term and Condition 8.

Program Administration: The program administration costs are going to be funded at \$1.2 million annually for the first 25-years of implementation (\$30 million), including staffing by the Regional Conservation Authority. After the land acquisition phase is completed, after 25-years, the program administration costs will drop to \$500,000 annually for the remainder of the life of the permit (\$25 m).

Funding Strategy

The diversified MSHCP funding strategy will be used to implement the four program elements described above. The following are summaries of the four different funding components and the long term funding approaches to be utilized by the Local Permittees – Local Development Mitigation Fees, Density Bonus Fees, regional infrastructure project contributions, and landfill tipping fees. The Service believes the use of a variety of funding sources ensures long-term viability of the overall funding program, as a temporary revenue decline from one source may be offset by revenue increases in others.

Local Development Mitigation Fees: This fee has been imposed by the County and the participating Cities pursuant to California Government Code Section 66000 et seq., which allows cities and counties to charge new development for the costs of mitigating the impacts therefrom. Reserve land acquisition costs, which are the most significant portion of the overall MSHCP program costs over the next 25 years, along with program administration expenditures, will be financed with Local Development Mitigation Fee funds as they become available. The County and the participating Cities have adopted ordinances to implement the fee. The Cities' and the County fee ordinances provide for a CPI adjustment, and include fee adjustment provisions, should the total fee amounts collected fall short of the amounts needed, though that is not anticipated. The projected revenues over the first 25-years of implementation are \$540 million.

Density Bonus Fees: The Density Bonus Fees and incentives program utilizes the Rural Incentives Program and the Density Incentives Program in the Riverside County General Plan to provide a portion of the MSHCP mitigation. The Rural Incentives Program generally provides rural landowners a density bonus to conserve all or portions of their land. The Density Incentives Program generally provides conservation by larger developers through non-acquisition means, including the payment of density bonus fees by developers. Density bonus fees are projected to generate \$58 million over the first 25-years of implementation.

Infrastructure Projects: The regional and local infrastructure projects are projected to contribute \$371 million to funding implementation of the MSHCP. Specifically, Measure A reauthorization (Riverside County's ½ cent sales tax for transportation) will allocate \$121 million for MSHCP implementation mitigation for local infrastructure projects. New regional infrastructure projects will generate approximately \$250 million through planning for 35 percent of their construction budgets to go for MSHCP implementation over the first 25-years. If, as expected, public utilities and agencies carrying forward regional utility projects participate in the MSHCP as "Participating Special Entities", they will also contribute financially to MSHCP implementation. No estimate of the number of projects or the scope, or costs is available at this time.

Landfill tipping fees: The County has committed over \$100 million from landfill tipping fees collected from waste imported from outside Riverside County for conservation and implantation of the MSHCP. Over the first 25-years, approximately \$90 million is expected to be generated from the privately owned El Sobrante Landfill. County landfills are expected to generate \$10 million. The Eagle Mountain Landfill, once operation begins, will also generate and contribute funds for MSHCP implementation, but no revenues have yet been projected.

Long term financing for management activities beyond the 25-year acquisition period is a two-fold approach. After a three-year trial period the Regional Conservation Authority will determine which of the two approaches is the most practicable to fund implementation beyond the first 25-years. Under either approach, land acquisition, land management, monitoring, and adaptive management costs will increase over time, while acquisition costs will decline as the MSHCP Conservation Area nears completion. When the acquisition process has been completed, funding that was earmarked for acquisition will be shifted as allowed by law to support management, adaptive management, monitoring, and administrative programs.

The costs of acquiring mitigation lands, with monitoring, adaptive management and the other costs of implementing the MSHCP were fully evaluated in a Nexus Study. (See Final Mitigation Fee Nexus Report for the Western Riverside County Multiple Species Habitat Conservation Plan, prepared by David Taussig & Associates (July 1, 2003).) The Nexus Study, which is part of the Service’s administrative record, exhaustively details both the anticipated costs of the MSHCP program as well as the funding sources to pay for those costs. The Nexus Study used a planning horizon of 25 years – at the end of which time the Permittees plan to have the MSHCP Conservation Area fully assembled – and used total updated anticipated costs of nearly \$1.1 billion. Of this amount, more than \$876 million would be used to acquire the remaining 53,546 acres of reserve land (by the time the Nexus Study was finalized, 2,454 acres of reserve land of the local component had already been acquired).

Adequacy

The cost of the first 2,454-acres of land acquisition by the Permit Applicants has already been assured because these lands have been purchased. An additional 41,000 acres of land will be conserved through the development review process and dedication by landowners.

Remaining costs for the life of the permit total approximately \$1.02 to 1.04 billion. These costs are exceeded by projected income of approximately \$1.07 billion from fees and taxes.

<u>Estimated Costs</u>	<u>Projected Income</u>
Land acquisition, \$812.2 million	Mitigation fees, \$540 m
Land management, \$110.9 m	Density bonus fees, \$58 m
Monitoring, \$40-60 m	Infrastructure project taxes and budgeting, \$371 m
Program administration, \$55 m	Landfill tipping fees, \$100 m
Total cost: \$1.0181 – 1.0381 b	Total income: \$1.069 b

Through an annual review process, the Regional Conservation Authority will approve the use of collected Local Development Mitigation Fund and other funds and allocate available funds to the continuous benefit of the MSHCP. During the early years of MSHCP Conservation Area assembly, debt financing strategies may also be used to ensure the substantial cash flows needed to carry out the plan to acquire the maximum additional reserve acreage as early on in the process as possible. During the first three years, the Regional Conservation Authority will

develop a strategy for financing debt to support the MSHCP acquisition program. Also, the Permittees and the Wildlife Agencies will annually evaluate the performance of the funding mechanisms and, notwithstanding other provisions of the MSHCP, will develop any necessary modifications to the funding mechanisms to address additional funding needs.

If deficiencies are identified during the annual review process, the Permittees and the Wildlife Agencies will develop strategies to address any additional funding needs consistent with the terms and conditions of the MSHCP. Additional funding needs may occur for the following reasons: land acquisition costs increasing faster than revenues; management or monitoring costs increasing faster than revenues; unanticipated increases in Adaptive Management costs; or a need to acquire more than 56,000 acres of new mitigation lands. If a need for additional funding is projected based upon any event listed above, then local funding sources may be adjusted to cover the need by identifying new funding sources to supplement existing funding, utilizing contingency funds on a short-term basis, implementing new tools to achieve conservation, and/or advancing endowment funds on a short-term basis.

The local funding plan is intended to keep the acquisition of Additional Reserve Lands to support Reserve Assembly roughly proportional with the amount of development occurring in the Plan Area. The MSHCP employs a schedule to determine if additional conservation is needed to keep development and conservation in “rough proportionality” over the 25-year “acquisition period.” If at the end of any five (5) year period the “rough proportionality” test has not been met, the Permittees and the Wildlife Agencies will meet within 90 days to address the balance between conservation and development.

The Service finds that the MSHCP includes adequate procedures to address Unforeseen Circumstances. The MSHCP and IA include procedures for determining the occurrence of, and responses to, both changed and unforeseen. The Permittees identified, described, and provided responses in the MSHCP for five changed circumstances that may affect Covered species and their habitat, and can reasonably be anticipated and planned for in the MSHCP. The MSHCP changed circumstances are short-interval return fire, flood, drought, invasions by exotic species, and the listing of a new species not covered by the plan. The MSHCP uses the Adaptive Management strategy and funding to respond to the specified changed circumstances event. In accordance with the Service’s “No Surprises” regulations at 50 CFR 17.22(b)(5) and 17.32(b)(5), in the event of an unforeseen circumstance, and assuming the MSHCP is being properly implemented, the Permittees may be required to make modifications within the conserved lands or to the plan’s Operating Conservation Program, but only if such modification will not involve the commitment of additional land, water, or financial compensation or additional restrictions on the use of the land, water, or other natural resources beyond the level agreed to under the MSHCP, unless the Permittees consent to such additional mitigation.

4. The taking will not appreciably reduce the likelihood of the survival and recovery of the species in the wild.

The Service finds that the taking to be authorized under the proposed Permit will not appreciably reduce the likelihood of the survival and recovery of the federally listed Covered Species in the wild. The FESA’s legislative history establishes the intent of Congress that this issuance criterion be identical to a finding of “no jeopardy” pursuant to section 7(a)(2) of the FESA and the

implementing regulations pertaining thereto (50 C.F.R. 402.02). As a result, the Service has reviewed the MSHCP under section 7 of the FESA. In a Biological and Conference Opinion (Service 2004), which is incorporated herein by reference, the Service reviewed the current status of the Covered Species; the environmental baseline for each of the Covered Species in the action area; and, the direct, indirect and cumulative effects of the proposed action, including the adverse effects and conservation. The Service concludes in the Biological and Conference Opinion (2004) that the proposed Permit will not appreciably reduce the likelihood of the survival and recovery of the 16 endangered and 8 threatened Covered Species in the wild. The Service also concludes that should the 1 proposed Covered Species or any of the 121 unlisted Covered Species be listed in the future, issuance of the proposed Permit will not appreciably reduce the likelihood of the survival and recovery of these species in the wild. In addition, the Service concludes that critical habitat for the endangered Quino checkerspot butterfly, endangered least Bell's vireo, endangered San Bernardino kangaroo rat, and threatened coastal California gnatcatcher will not be destroyed or adversely modified by the proposed Permit.

5. Other measures, as required by the Director of the Fish and Wildlife Service, as necessary or appropriate for purposes of the plan will be met.

The Service finds that all additional measures required by the Service as necessary or appropriate for the MSHCP are included in the MSHCP, IA and/or the Permit. In particular, the IA, an agreement among the Service, CDFG, and the Permittees that governs implementation of the MSHCP, binds the Permittees to fully implement and fund the MSHCP.

6. The Service has received the necessary assurances that the plan will be implemented.

The Service finds that the MSHCP and IA provide the necessary assurances that the MSHCP will be carried out by the Permittees. By accepting their Permit, the Western Riverside County Regional Conservation Authority, County of Riverside, Riverside County Flood Control and Water Conservation District, Riverside County Regional Parks and Open Space District, Riverside County Waste Management District, Riverside County Transportation Commission, City of Banning, City of Beaumont, City of Calimesa, City of Canyon Lake, City of Corona, City of Hemet, City of Lake Elsinore, City of Moreno Valley, City of Murrieta, City of Norco, City of Perris, City of Riverside, City of San Jacinto, City of Temecula, California Department of Transportation, California Department of Parks and Recreation are bound to fully implement the provisions of the MSHCP in accordance with the IA.

I. MIGRATORY BIRD SPECIAL PURPOSE PERMIT

Pursuant to the Migratory Bird Treaty Act, 16 U.S.C. 703 - 712, and 50 C.F.R. 21.27, the Service finds that the prospective Permittees have made a sufficient showing, in combination with the draft Permit Terms and Conditions, that each of the 44 Covered Species currently listed under the Migratory Bird Treaty Act will benefit from the conservation measures included in the MSHCP to minimize disturbance and enhance the habitat of these species. The Section 10(a)(1)(B) permit applications submitted by the Permittees, including the MSHCP, provide detailed information regarding the MBTA related activities, the purpose of such activities, the permit areas, the effects of those activities on the MBTA Covered Species, and other information

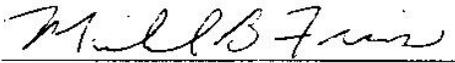
relevant to the issuance of the Special Purpose Permits required under 50 C.F.R. 21.27. Therefore, the Section 10(a)(1)(B) Permit, if issued, shall also constitute Special Purpose Permits under the MBTA and 50 C.F.R. 21.27 for each MBTA Covered Species that may become listed under the FESA during the term of the Section 10(a)(1)(B) Permit. Such Special Purpose Permit shall become effective concurrent with the listing of the MBTA Covered Species under the FESA.

II. GENERAL CRITERIA AND DISQUALIFYING FACTORS — FINDINGS

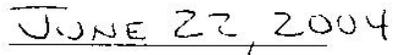
The Service has no evidence that the Permit applications should be denied on the basis of the criteria and conditions set forth in 50 C.F.R. 13.21(b) - (c).

III. RECOMMENDATION ON PERMIT ISSUANCE

Based on the foregoing findings with respect to the proposed action, I recommend approval of the issuance of Permit Number #TE-088609-0 in accordance with the MSHCP and its supporting IA.



for D. Kenneth McDermond
Deputy Manager
California/Nevada Operations Office



Date

References

- County of Riverside, Western Riverside County Regional Conservation Authority, Riverside County Flood Control and Water Conservation District, Riverside County Regional Parks and Open Space District, Riverside County Waste Management District, Riverside County Transportation Commission, City of Banning, City of Beaumont, City of Calimesa, City of Canyon Lake, City of Corona, City of Hemet, City of Lake Elsinore, City of Moreno Valley, City of Murrieta, City of Norco, City of Perris, City of Riverside, City of San Jacinto, City of Temecula, California Department of Transportation, and California Department of Parks. 2002. Draft Western Riverside County Multiple Species Habitat Conservation Plan and Implementation Agreement. Riverside, California. Prepared for the U.S. Fish and Wildlife Service and the California Department of Fish and Game. November 15, 2002.
- County of Riverside, Western Riverside County Regional Conservation Authority, Riverside County Flood Control and Water Conservation District, Riverside County Regional Parks and Open Space District, Riverside County Waste Management District, Riverside County Transportation Commission, City of Banning, City of Beaumont, City of Calimesa, City of Canyon Lake, City of Corona, City of Hemet, City of Lake Elsinore, City of Moreno Valley, City of Murrieta, City of Norco, City of Perris, City of Riverside, City of San Jacinto, City of Temecula, California Department of Transportation, and California Department of Parks. 2003. Final Western Riverside County Multiple Species Habitat Conservation Plan and Implementation Agreement. Riverside, California. Prepared for the U.S. Fish and Wildlife Service and the California Department of Fish and Game. June 17, 2003.
- County of Riverside. 2004. Letter from Richard Lashbrook, County of Riverside Transportation and Land Management Agency to Jim Bartel, U.S. Fish and Wildlife Service regarding the Western Riverside County Multiple Species Habitat Conservation Plan Errata. Riverside, California. May 21, 2004.
- U.S. Fish and Wildlife Service. 2002. Draft Environmental Impact Statement/Environmental Impact Report – Draft Western Riverside County Multiple Species Habitat Conservation Plan. Carlsbad, California. November 15, 2002.
- U.S. Fish and Wildlife Service. 2003. Final Environmental Impact Statement/Environmental Impact Report – Final Western Riverside County Multiple Species Habitat Conservation Plan. Carlsbad, California. June 17, 2003.
- U.S. Fish and Wildlife Service. 2004. Intra-Service Biological and Conference Opinion on Issuance of an Incidental Take Permit for the Western Riverside County Multiple Species Habitat Conservation Plan (File FWS-WRIV- 870.19). Carlsbad, California. June.