SECTION 3
BIOLOGICAL RESOURCES

3.1 METHODS

Biological resource information was obtained by compiling existing biological data into a spatially explicit database and conducting field surveys in those areas where additional data were required.

3.1.1 Existing Information

There were three sources of existing biological information used in compiling biological resources data for the SAP: (1) the regional MHCP digital database, originally developed by SANDAG and subsequently updated; (2) environmental documents provided by the City, and (3) field observations. The regional database provided the following map layers: vegetation communities, sensitive species locations (primarily sightings from 1985 through 2007), roads and parcel boundaries, topography, and other features. This database was updated using environmental documents provided by the City's Planning Department, aerial photograph interpretation, and information gathered during field reconnaissance. Documents included environmental impact reports, biological technical reports, letter reports detailing results of biological surveys, mitigation plans, and habitat management plans that provided sensitive species locations and vegetation maps.

3.1.2 Biological Surveys

Biological surveys were conducted at selected locations that had not been previously or recently surveyed, that had undergone significant recent changes in land use, or that were considered potentially important to regional metapopulation connectivity for gnatcatchers. In general, survey efforts were concentrated in an east-west swath associated with the San Luis Rey River and adjacent uplands, and a north-south swath (roughly 2 to 3 miles wide) through the central portion of the City. The north-south swath was centered roughly on El Camino Real and included vacant lands considered to have the greatest potential for gnatcatcher habitat connectivity between MCB Camp Pendleton and Carlsbad. In addition, biologists field-checked vegetation mapping throughout the City, including scattered vacant areas outside of the two general study swaths described above. Vacant lands considered least likely to support significant biological resources and

totally isolated by urban development received the least attention; lands with high potential to support sensitive species or to otherwise contribute to Preserve design received the greatest attention.

Existing vegetation maps were spot-checked from roadsides and updated as required. More intensive surveys were conducted on foot to gather more detailed vegetation and sensitive species data in selected areas. At each survey area, biologists mapped vegetation and sensitive species, recorded wildlife species observed, and evaluated habitat for its potential to support sensitive species. This type of survey was also used to assess potential gnatcatcher dispersal corridors. Disturbed areas were evaluated and ranked for their potential to be restored to native vegetation.

Field surveys were conducted during the spring and summer of 1996. Intensive surveys were conducted on April 30, May 2, 14, 15, 16, and June 12, 17, and 19. Biologists Wayne Spencer, Ph.D., Patrick Mock, Ph.D., and Kristine Preston, accompanied by Diane Van Leggelo from the City's Planning Department, participated in the first survey. The second survey included Patrick Mock and Kristine Preston. Subsequent surveys were conducted by Kristine Preston and Leslie Hickson, a restoration ecologist. Surveys were conducted between the hours of 0630 and 1630. Weather conditions varied, with temperatures ranging from 60 to 75°F, winds from 0 to 15 mph, and skies from overcast to clear. Additional spot checks were performed by Wayne Spencer, Leslie Hickson, and David King on various dates throughout the planning effort to verify site-specific information. In addition, gnatcatcher surveys were performed in June and July 1999 on several key properties in the northern portion of the City (Benet Canyon and Prince of Peace Abbey) by Kristine Preston according to USFWS protocols.

3.1.2.1 Vegetation Mapping

Vegetation was originally mapped in the field onto 1:6,000-scale (1 inch = 500 feet) GIS base maps showing existing MHCP vegetation mapping. For the San Luis Rey River channel and surrounding floodplains, 1:6,000-scale aerial photographs were used to assist with mapping onto GIS maps. Vegetation classification follows MHCP vegetation categories, which are based on Holland's plant community descriptions (Holland 1986). For areas not field-checked, environmental documents and aerial photography, where available, were used to confirm vegetation types. As part of the update for the Final SAP in 2008, the City's biologist, in conjunction with the wildlife agencies, conducted a

comprehensive verification of the vegetation layer through aerial interpretation. This effort resulted in an updated 2008 vegetation layer that is used in all reporting and conservation analyses provided in this document.

3.1.2.2 Sensitive Species

The SANDAG MHCP database includes point locality data for sensitive species that occur in the MHCP study area. The MHCP database was originally updated for the City with data gathered from fieldwork and from environmental documents. Sensitive species locations were mapped onto 1:6,000-scale GIS base maps.

As part of the update for the Final SAP in 2008, the SANDAG MHCP database was updated with species point locality data up to 2007, which was compiled from the USFWS GIS species point database (for federally listed species) and from the California Natural Diversity Database (for non federally listed species). All new sensitive species locations were digitized into the GIS database with corresponding information on the source of the data point, the year and month of the survey, the population size, and any comments about the species observation. If a sensitive species was observed at an already mapped location, the new information was entered into the database and the older, redundant information was coded in the GIS so that it was not used in subsequent analyses. Thus, redundant data are still retained in the database, but coded as duplicate points to avoid over-estimating species abundance. To interpret whether new sensitive species locations were redundant with previous data for gnatcatcher and least Bell's vireo (vireo; *Vireo bellii pusillus*), two processes were used: point proximity and redundant/outdated data review. For point proximity, a radius of 200 feet for the gnatcatcher and 100 feet for the vireo was drawn around each observation point. If the new location was within this radius, it was considered a redundant location; if it was outside this radius, it was considered a new location. The 200-foot radius for the gnatcatcher reflects an approximate 3.0-acre territory, and the 100-foot radius for the vireo represents an approximate 0.7-acre territory. These territory sizes are typical for the high densities at which these species occur in coastal areas of northern San Diego County (Newman 1992; Preston et al. 1998). Additionally, all data for these species was reviewed for redundant/outdated survey information. Where older data co-occurred with new survey data, the older data was coded as redundant. Where older survey data occurred in areas that are currently developed or areas known to no longer support habitat, the data was coded as outdated. For vireo, Dr. Barbara Kus, a local species

expert, was contacted to obtain information on previous and ongoing survey efforts, survey coverage areas, data reliability, and data applicability. This information was used during the redundant/outdated data review for the species.

3.1.2.3 Habitat Linkages and Dispersal Corridors

Potential wildlife movement corridors and habitat linkages were evaluated initially using vegetation maps, sensitive species locations, MHCP habitat evaluation maps, and aerial photographs. Potential corridors were then assessed via roadside and walking surveys. Driving surveys were used to assess habitat connectivity and quality throughout the City. Corridors with the highest potential to facilitate gnatcatcher movement were walked to map vegetation and sensitive species and to evaluate their potential to support breeding or dispersing gnatcatchers. Factors considered in this assessment included topography, quantity and quality of native habitats, and line-of-sight connectivity between habitat patches. Existing land uses on and adjacent to undeveloped patches were also evaluated relative to their potential effects on gnatcatcher nesting habitat and gnatcatcher dispersal. Potential obstacles to gnatcatcher movement along corridors or between habitat patches were also addressed (e.g., tall buildings that might block line-of-sight connectivity between habitat patches). Photographs were taken at vantage points to provide overviews of habitat quality and connectivity and to illustrate potential corridor constraints and areas critical to corridor function.

This corridor evaluation provided a supplement to the Biological Core and Linkage Area (BCLA) analysis conducted for the MHCP study area. The BCLA identified all large contiguous areas of habitat, areas supporting major and critical species populations or habitat areas, and important functional linkages and movement corridors between them. Figure 2-4 of MHCP Volume I shows the BCLA for the MHCP study area, including Oceanside. MHCP Volume I provides an evaluation of how the MHCP program preserves the BCLA.

Additionally, in 2007, an independent science review panel was formed to evaluate the effectiveness of the northern part of the gnatcatcher "stepping stone" corridor that follows the SDG&E corridor along El Camino Real. The *Science Review Panel Consensus Report for the Pavilion Development Site* (prepared by Drs. Patrick Mock and Wayne Spencer, July 2007, Appendix X) concluded that the functionality of the corridor would not be negatively affected if the portion of the corridor that crosses the Pavilion site (formerly

the old drive-in theater) is moved from the center of the property, as originally planned in the draft SAP and MHCP, to its eastern border, provided that the corridor maintains a minimum width of 200 feet (100 feet of the SDG&E corridor plus 100 feet of the project site) and is restored with coastal sage scrub. Additionally, the panel recommended that the part of the regional corridor that consists of steep undeveloped slopes running west along Mesa Drive from the existing SDG&E substation on El Camino Real to the San Luis Rey River be restored with coastal sage scrub. According to the panel's report, "these two routes provide the redundancy needed for such a critical regional habitat linkage, and presumably will allow for relatively unconstrained development on the remainder of the Pavilions site."

3.1.2.4 Evaluation of Habitat Restoration/Enhancement Potential

Disturbed areas and nonnative habitats within potential movement corridors were evaluated in the field and ranked for their potential to be restored to coastal sage scrub. Variables evaluated included existing vegetation structure and species composition, topography, aspect, hydrology, soils, erosion potential, extent of introduced plant species (particularly invasive annuals), and signs of past disturbance of the soil and vegetation.

Habitat restoration potential was ranked into three categories—low, moderate, and high—defined as follows:

- *Low*: extremely steep topography (greater than 40 percent), or any combination of two or more of the following factors:
    1. moderately steep slopes (20 to 40 percent)
    2. high abundance of nonnative invasive vegetation
    3. highly erodable soils
    4. heavily compacted soils
    5. unfavorable hydrological conditions
- *Moderate*: one of the above-numbered factors
- *High*: none of the above-numbered factors

Areas were next ranked for priority of restoration. This ranking was based on the importance of restoration for facilitating gnatcatcher movement or for providing breeding habitat in stepping-stone patches.

3.2 RESULTS

3.2.1 Vegetation Mapping

Oceanside is largely an urban city encompassing approximately 26,991 acres. Because some areas of the City (i.e. highway corridors and Guajome Park) are not a part of this Subarea Plan, the plan area addresses approximately 26,186 acres, of which approximately 4,026 acres is natural vegetation (Table 3-1; Figure 3-1). Substantial areas of undeveloped land have been converted to agriculture (12.3 percent) or are disturbed by recent land use practices (4.0 percent). Relatively large areas of natural habitat still remain along the San Luis Rey River and on slopes along the southern boundary of MCB Camp Pendleton, including Whelan Lake and the Pilgrim Creek area (Figure 3-1). Undeveloped lands also remain along slopes south of Mission Avenue, along Loma Alta Creek, along slopes south of Oceanside Boulevard, on the City-owned El Corazon parcel (east of El Camino Real and north of Oceanside Boulevard), and surrounding Guajome Lake and Buena Vista Lagoon. Other smaller habitat fragments are scattered throughout the planning area.

Table 3-1

OCEANSIDE VEGETATION COMMUNITIES

Vegetation Communities	Total Acres[1,2]	Percent of Total
Coastal sage scrub	1,195	4.61
Coastal sage-chaparral scrub mix	10	0.04
Chaparral	45	0.17
Grassland[4]	1,234	4.71
Alkali marsh	11	0.04
Freshwater marsh	146	0.56
Riparian forests	216	0.82
Riparian woodland	6	0.02
Riparian scrub	644	2.46
Coast live oak woodland	5	0.02
Open Water - Freshwater	129	0.49
Open Water - Estuarine	24	0.09
Open Water – Marine	40	0.15
Disturbed wetland	14	0.05
Natural Floodchannel/Streambed	262	1.00
Beach[3]	44	0.17
Saltpan/Mudflats	0	0.00
SUBTOTAL NATURAL HABITATS	**4,026**	**15.42**
Agriculture	3,226	12.31
Disturbed	1,059	4.04
Eucalyptus woodland	61	0.23
SUBTOTAL VACANT LANDS	**4,346**	**16.58**
Urban/Developed	17,814	68.00
SUBTOTAL DEVELOPED LANDS	**17,814**	**68.00**
GRAND TOTAL	**26,186**	**100.0%**

[1] Numbers may not sum to total due to rounding.
[2] Acreage values may vary slightly between tables due to the use of multiple data sources and differing GIS calculation methods.
[3] The vegetation database does not differentiate groomed beach from natural beach habitats. Beach sands in the City are groomed for recreational use and are not considered natural habitat for target species.
[4] Includes both native grasslands and non-native grasslands. Available City-wide / regional datasets are not specific enough to reliably provide separate acreages for these two categories.

Source: 2008 Updated SAP Vegetation GIS database.

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Figure 3-1 11 x 17 page 1 of 2

Figure 3-1 11 x 17 page 2 of 2

The most abundant natural habitat in the planning area is grassland (primarily non-native/annual as opposed to native perennial grasslands), followed in order of decreasing abundance by coastal sage scrub, riparian habitats, and other wetlands. Those habitats regulated by the CDFG, USFWS, and ACOE within the planning area include coastal sage scrub, alkali marsh, freshwater marsh, riparian habitats, and habitats that are known to support species listed under either State or Federal endangered species acts. There are about 1,037 acres of wetland vegetation in the City (not including open freshwater, marine, or estuarine waters, or nonvegetated channels or floodways) and about 1,205 acres of coastal sage scrub (including about 10 acres mapped as mixed coastal sage-chaparral scrub).

In the process of finalizing this SAP, the vegetation mapping was updated through a joint effort between project biologists and staff from the USFWS and CDFG. The update process was based on overlaying existing vegetation mapping onto 2007 high-resolution aerial photography and visually interpreting changes. In most cases, the updated vegetation mapping identified areas that had been converted to urban/developed since the original baseline vegetation mapping was completed. The changes were digitized into the vegetation layer used for all mapping and conservation analysis used throughout this document. .

3.2.2 Sensitive Species

Sensitive species include those that are considered sensitive by State or Federal agencies and environmental groups, that are classified as MHCP species, or that occur on a California Native Plant Society (CNPS) watch list. A total of 61 sensitive species have been documented in the City and 56 of these species are proposed for take authorization under this SAP (Tables 3-3 and 3-4). The 56 species include 23 plant, 4 invertebrate, 2 amphibian, 2 reptile, 20 bird, and 5 mammal species. Coverage of the 56 species in the City is contingent on MHCP implementation in the controlling cities, if any, and the City meeting criteria for coverage for each species as described in Appendix A and MHCP Volume II (SANDAG 2003).

3.2.2.1 **Sensitive Plants**

MHCP plant species recorded or potentially occurring in the City were originally described in the MHCP Biological Goals, Standards, and Guidelines (Ogden 1998) and

were subsequently updated in Volume II of the MHCP (SANDAG 2003). As part of the update for the Final SAP in 2008, new data was added to the database as described in Section 3.1.2.2. Locations for MHCP plants species recorded in the City are mapped in Figure 3-2. Although not explicitly mapped, a large population of San Diego barrel cactus is also known to occur on south-facing slopes near the mouth of the San Luis Rey River.

The MHCP Volume II (SANDAG 2003) also identifies major and critical plant populations within the MHCP study area. Major populations are those considered sufficiently large to be self-sustaining with a minimum of active or intensive management intervention, and hence are important to Preserve design. Critical populations are those locations that must be substantially conserved for a species to be considered covered by the MHCP or a subarea plan. Six plant species have populations within the City that are considered both major and critical:

- Sticky dudleya: Populations on bluffs near the mouth of the San Luis Rey River.
- Nuttall's lotus: Populations near the mouth of the San Luis Rey River.
- San Diego barrel cactus: Populations on the north bank of the San Luis Rey River.
- San Diego ambrosia: Populations near Mission Avenue near the City's eastern boundary.
- Blochman's dudleya: A population discovered near I-5 north of Oceanside Boulevard.
- Thread-leaved brodiaea: A population west of El Camino Real north of Mesa Drive is estimated to include 2,800 flowering individuals in 2004 is considered major (Roberts 2008). In addition, a population located south of Oceanside Boulevard and west of El Camino Real (i.e., on the Eternal Hills property) was estimated to be at least 1,000 individuals in 2003 and is considered major (Scheidt 2003). The Darwin/Taylor population located in the eastern portion of the City is also considered critical and major. A population on the Colucci property, at the northeast intersection of Melrose Dr. and Oceanside Blvd, is estimated to include over 600 individuals in 2005 and is considered major.

Figure 3-2 11 x 17 page 1 of 2

Figure 3-2 11 x 17 page 2 of 2

Table 3-3

SENSITIVE SPECIES OCCURRING OR POTENTIALLY OCCURRING IN OCEANSIDE

Scientific Name	Common Name	Fed./State Status	CNPS, RED List, Code	MHCP Evaluated Sp.	Occurrence Potential	Habitat
Plants						
Acanthomintha ilicifolia	San Diego thorn-mint	FT/CE	1B,2-3-2	X, NE	D	G, CSS
Adolphia californica	California adolphia	None	2,1-2-1		D	CSS, CHP, G, (Clay)
Ambrosia pumila	San Diego ambrosia	FE/-	1B,3-3-2	X, NE	D	CSS
Aphanisma blitoides	Aphanisma	FSC/-	1B,2-2-2	X	L	MSS
Arctostaphylos glandulosa var. *crassifolia*	Del Mar manzanita	FE/-	1B,3-3-2	X, NE	L	CSS, southern maritime CHP
Baccharis vanessae	Encinitas baccharis	FT/CE	1B,2-3-3	X, NE	L	Mixed CHP
Brodiaea filifolia	Thread-leaved brodiaea	FT/CE	1B,3-3-3	X, NE	D	VP, G, WM
Brodiaea orcuttii	Orcutt's brodiaea	FSC/-	1B,1-3-2	X	M	VP, WM
Ceanothus verrucosus	Wart-stemmed ceanothus	FSC/-	2,1-2-1	X	L	S. Mixed CHP, S. Maritime CHP
Chorizanthe orcuttiana	Orcutt's spineflower	FE/CE	1B,3-3-3	X, NE	VL	S. Maritime CHP
Comarostaphylis diversifolia ssp. *diversifolia*	Summer-holly	FSC/-	1B,2-2-2	X	M	CHP
Corethrogyne filaginifolia var. *linifolia*	Del Mar Mesa sand aster	FSC/-	1B,3-2-3	X, NE	D	CHP (Openings)
Dichondra occidentalis	Western dichondra	None	4, 1-2-1		D	CSS, CHP, G
Dudleya blochmaniae ssp. *blochmaniae*	Blochman's dudleya	FSC/-	1B,2-2-2	X	D	SB
Dudleya blochmaniae ssp. *brevifolia*	Short-leaved dudleya	FSC/CE	1B,3-3-3	NE	L	CSS
Dudleya variegata	Variegated dudleya	FSC/-	1B,2-2-2	X, NE	L	CSS
Dudleya viscida	Sticky dudleya	FSC/-	1B,3-2-3	X	D	CSS, CHP
Ericameria palmeri ssp. *palmeri*	Palmer's ericameria	FSC/-	2,2-2-1	X	L	RW (Edges), CSS, FL
Eryngium aristulatum var. *parishii*	San Diego button-celery	FE/CE	1B,2-3-2	X, NE, WO	D	VP (Clay)
Euphorbia misera	Cliff spurge	None	2,2-2-1	X	L	MSS, SB
Ferocactus viridescens	San Diego barrel cactus	FSC/-	2,1-3-1	X	D	CSS
Harpagonella palmeri	Palmer's grapplinghook	FSC/-	2,1-2-1		D	CSS, CHP, G
Hazardia orcuttii	Orcutt's goldenbush	FSC/CT	1B,3-3-2	X, NE	L	CHP
Iva hayesiana	San Diego marsh-elder	FSC/-	2,2-2-1	X	H	AM, RW
Juncus acutus	Southwestern spiny rush	None	4,1-2-1		D	FWM, AM, CD
Lepechinia cardiophylla	Heart-leaved pitcher sage	FSC/-	1B,3-2-2	X	L	CHP
Lotus nuttallianus	Nuttall's lotus	FSC/-	1B,3-3-2	X, NE	D	CD, SH
Monardella hypoleuca ssp. *lanata*	Felt-leaved monardella	None	1B,2-2-2	X	M	CHP
Muilla clevelandii	San Diego goldenstar	FSC/-	1B,2-2-2	X, NE	M	G, CHP & CSS (Openings)
Myosurus minimus ssp. *apus*	Little mousetail	FSC/-	3,2-3-2	X, NE, WO	L	VP
Navarretia fossalis	Spreading navarretia	FT/-	1B,2-3-2	X, NE, WO	L	VP
Orcuttia californica	California Orcutt grass	FE/CE	1B,3-3-2	X, NE, WO	L	VP
Quercus dumosa	Nuttall's scrub oak	FSC/-	1B,2-3-2	X	H	S. Maritime CHP
Selaginella cinerascens	Ashy spike-moss	None	4,1-2-1		D	CSS, CHP
Senecio ganderi	Gander's butterweed	FSC/CR	1B,3-2-3	X	L	CHP

Table 3-3

SENSITIVE SPECIES OCCURRING OR POTENTIALLY OCCURRING IN OCEANSIDE

Scientific Name	Common Name	Fed./State Status	CNPS, RED List, Code	MHCP Evaluated Sp.	Occurrence Potential	Habitat
Invertebrates						
Branchinecta sandiegoensis	San Diego fairy shrimp	FE/CSA		X, NE, WO	L	VP
Cicindela hirticollis gravida	Sandy beach tiger beetle	FSC/-		X	L	SH
Cicindela latesignata obliviosa	Oblivious tiger beetle	FSC/-		X, NE	L	SH, EST, CD
Coelus globosus	Globose dune beetle	FSC/-		X	L	CD
Euphydryas editha quino	Quino checkerspot	FE/-			L	CSS, VP, NG
Euphyes vestris harbisoni	Harbison's dun skipper	FSC/-		X, NE	L	RW, RS, OW
Lycaena hermes	Hermes copper	FSC/-		X	L	CSS, CHP
Panoquina errans	Salt marsh skipper	FSC/-		X, WO	H	SM
Streptocephalus woottonii	Riverside fairy shrimp	FE/CSA		X, NE, WO	L	VP
Fishes						
Eucyclogobius newberryi	Tidewater goby	FE/CE			D	OC, EST
Amphibians and Reptiles						
Bufo californicus	Arroyo toad	FE/CSC		X	M	CSS, CHP
Clemmys marmorata pallida	Southwestern pond turtle	FSC/CSC		X, WO	D	PON, RW
Cnemidophorus hyperythrus beldingi	Orange-throated whiptail	FSC/CSC		X	D	CSS, CHP, G
Crotalus ruber ruber	Northern red diamond rattlesnake	FSC/CSC			H	CSS, CHP
Eumeces skiltonianus interparietalis	Coronado skink	FSC/CSC			H	CSS, CHP, OW, RW
Phrynosoma coronatum blainvillei	San Diego horned lizard	FSC/CSC		X	D	CSS, CHP
Salvadora hexalepis virgultea	Coast patch-nosed snake	FSC/CSC			H	CSS, CHP
Scaphiopus hammondi	Western spadefoot toad	FSC/CSC		X	D	PON, WM, VP, G
Thamnophis hammondii	Two-striped garter snake	FSC/CSA			D	PON, RW
Birds						
Accipiter cooperii	Cooper's hawk	- /CSC		X	D	OW, CHP
Accipiter striatus	Sharp-shinned hawk	- /CSC			D	OW, CHP
Agelaius tricolor	Tricolored blackbird	FSC/CSC		X	D	FWM, G
Aimophila ruficeps canescens	So. Cal. rufous-crowned sparrow	FSC/CSC		X	D	CSS
Ammodramus savannarum	Grasshopper sparrow	None		X	D	G
Amphispiza belli belli	Bell's sage sparrow	FSC/CSC		X	L	CSS, CHP
Aquila chrysaetos	Golden eagle	BEPA/CFP		X	D	CSS, CHP, G
Ardea herodias	Great blue heron	- /CSA			D	FWM, EST, RW, PON, AG

Table 3-3

SENSITIVE SPECIES OCCURRING OR POTENTIALLY OCCURRING IN OCEANSIDE

Scientific Name	Common Name	Fed./State Status	CNPS, RED List, Code	MHCP Evaluated Sp.	Occurrence Potential	Habitat
Asio flammeus	Short-eared owl	- /CSC			L	SM, G
Asio otus	Long-eared owl	- /CSC			L	RW, OW
Buteo regalis	Ferruginous hawk	FSC/CSC			L	G, AG
Buteo swainsoni	Swainson's hawk	- /CT			L	AG
Campylorhyncus brunneicapillus	Cactus wren	FSC/CSC		X, NE	L	CSS, Cactus patches
Charadrius alexandrinus nivosus	Western snowy plover	FT/CSC		X	D	OC, SH, EST
Charadrius montanus	Mountain plover	PT/CSC			L	AG, G
Chlidonias niger	Black tern	FSC/CSC			D	EST, PON
Circus cyaneus	Northern harrier	- /CSC		X	D	G, SM
Coccyzus americanus californicus	Western yellow-billed cuckoo	- /CE		X	VL	RW
Dendroica petechia	Yellow warbler	- /CSC			D	RW
Elanus caeruleus	White-tailed kite	- /CFP			D	RW, OW, G
Empidonax traillii	Southwestern willow flycatcher	FE/CE		X, WO	D	RW
Eremophila alpestris actia	California horned lark	- /CSC			D	G, RUD
Falco mexicanus	Prairie falcon	- /CSC			D	G
Falco peregrinus anatum	American peregrine falcon	- /CE, CFP		X	D	G, AG, CLF
Icteria virens	Yellow-breasted chat	- /CSC		X, WO	D	RW
Ixobrychus exilis hesperis	Western least bittern	FSC/CSC			D	FWM
Lanius ludovicianus	Loggerhead shrike	FSC/CSC			D	G
Larus californicus	California gull	- /CSC			D	OC, EST, PON,AG
Laterallus jamaicensis coturniculus	California black rail	FSC/CT			VL	SM
Mycteria americana	Wood stork	- /CSC			D	FWM, EST, SM, PON
Numenius americanus	Long-billed curlew	FSC/CSC		X	D	SM
Nycticorax nycticorax	Black-crowned night heron	- /CSA			D	FWM, EST, PON, RW
Pandion haliaetus	Osprey	- /CSC		X, WO	D	OC, EST, PON
Passerculus sandwichensis beldingi	Belding's savannah sparrow	FSC/CE		X, WO	D	SM
Passerculus sandwichensis rostratus	Large-billed savannah sparrow	FSC/CSC		X, WO	VL	SM
Pelecanus erythrorhynchos	American white pelican	- /CSC			D	EST, PON
Pelecanus occidentalis	Brown pelican	FE/CE, CFP		X, WO	D	OC, EST
Phalacrocorax auritus	Double-crested cormorant	- /CSC			D	EST, PON
Piranga rubra	Summer tanager	- /CSC			D	RW, ORN
Plegadis chihi	White-faced ibis	FSC/CSC		X, WO	D	FWM, EST, SM
Polioptila californica californica	California gnatcatcher	FT/CSC		X	D	CSS
Rallus longirostris levipes	Light-footed clapper rail	FE/CE, CFP		X, WO	D	SM
Riparia riparia	Bank swallow	- /CT			D	AE
Rynchops niger	Black skimmer	- /CSC			L	EST

Table 3-3

SENSITIVE SPECIES OCCURRING OR POTENTIALLY OCCURRING IN OCEANSIDE

Scientific Name	Common Name	Fed./State Status	CNPS, RED List, Code	MHCP Evaluated Sp.	Occurrence Potential	Habitat
Sialia mexicana	Western bluebird	None		X	D	OW (edges), G
Speotyto cunicularia hypugaea	Burrowing owl	FSC/CSC		X	D	G, SH, AG
Sterna antillarum browni	California least tern	FE/CE, CFP		X	D	OC, SH, EST
Sterna elegans	Elegant tern	FSC/CSC		X, WO	D	SM
Vireo bellii pusillus	Least Bell's vireo	FE/CE		X, WO	D	RW
Mammals						
Antrozous pallidus	Pallid bat	- /CSC			L	CAV, CRE, CSS, CHP, OW, RW, G
Chaetodipus californicus femoralis	Dulzura pocket mouse	FSC/CSC			L	CSS, CHP,G
Chaetodipus fallax fallax	Northwestern San Diego pocket mouse	FSC/CSC		X	M	CSS, CHP, G
Choernycteris mexicana	Mexican long-tongued bat	FSC/CSC			VL	ORN
Dipodomys stephensi	Stephens' kangaroo rat	FE/CT		X	D	G, Sparse CSS
Euderma maculatum	Spotted bat	FSC/CSC			VL	CRE, RW, PON, G
Eumops perotis californicus	California mastiff bat	FSC/CSC		X	L	CAV, CRE
Felis concolor	Mountain lion	-/SPM		X	L	CSS, CHP, RW
Lepus californicus bennettii	San Diego black-tailed jackrabbit	FSC/CSC		X	D	CSS, G, CHP
Macrotus californicus	California leaf-nosed bat	FSC/CSC			VL	CAV, BUI, RW
Neotoma lepida intermedia	San Diego desert woodrat	FSC/CSC			H	CSS, CHP
Odocoileus hemionus fuliginata	Southern mule deer	-/CA REG		X	D	CSS, CHP, RW
Onychomys torridus ramona	Southern grasshopper mouse	- /CSC			D	G, Sparse CSS
Perognathus longimembris pacificus	Pacific pocket mouse	FE/CSC		X, NE	L	Sparse CSS, G, RUD
Plecotus townsendii pallescens	Townsend's western big-eared bat	FSC/CSC		X	L	CAV, CRE, BUI, OW, G
Taxidea taxus	American badger	- /CSC			M	G

Legend

Fed./State Status

FE = Federally endangered
FT = Federally threatened
PE = Proposed for federal listing as endangered
PT = Proposed for federal listing as threatened
C = Candidate for federal listing
FSC = Federal Species of Concern
BEPA = Bald Eagle Protection Act

CE = State endangered
CR = State rare
CT = State threatened
CFP - California Fully Protected
CSA = California Special Animal
CSC = California Species of Special Concern
SPM = California Special Protected Mammal
CA REG = Regulated as a game species

CNPS Status:

CNPS List Codes:
1B = Species is rare or endangered in California and elsewhere (meets CDFG criteria for rare or endangered listing)
2 = Rare or endangered in California, more common elsewhere
3 = Plants about which more information is needed
4 = Plants of limited distribution

Table 3-3

SENSITIVE SPECIES OCCURRING OR POTENTIALLY OCCURRING IN OCEANSIDE

Scientific Name	Common Name	Fed./State Status	CNPS, RED List, Code	MHCP Evaluated Sp.	Occurrence Potential	Habitat

CNPS R-E-D Codes:
R - Rarity:
1 = Rare, but found in sufficient numbers and distributed widely enough that the potential for extinction or extirpation is low
2 = Occurrences confined to several populations or one extended population
3 = Occurrence limited to one or a few highly restricted populations, or present in such small numbers that it is seldom reported

E - Endangerment:
1 = Not endangered
2 = Endangered in a portion of its range
3 = Endangered throughout its range

D - Distribution:
1 = More or less widespread outside of California
2 = Rare outside of California
3 = Endemic to California

Occurrence Potential:
D = Detected/Occurs in Oceanside
H = High potential to occur in Oceanside
M = Moderate potential to occur in Oceanside
L = Low potential to occur in Oceanside
VL = Very low potential to occur in Oceanside

MHCP Codes
X = Considered for Coverage
NE = Narrow Endemic
WO = Wetland Obligate

Habitat Codes:
AE = Aerial
AG = Agricultural field
AM = Alkalai marsh
BUI = Abandoned buildings, bridges, and other structures used by roosting bats
CAV = Caves and mines
CD = Coastal dunes
CHP = Chaparral
CLF = Cliff
CRE = Rock crevices
CSS = Coastal sage scrub
EST = Estuaries and lagoons
FL = Floodplains
FWM = Freshwater marsh
G = Grassland
MSS = Maritime succulent scrub
OC = Ocean
ORN = Ornamental plantings, landscaped areas
OW = Oak woodland
PON = Ponds, lakes
RUD = Ruderal habitats
RW = Riparian forest, woodland, and scrub
SB = Sea bluff
SH = Ocean shoreline, sandy beach, coastal strand
SM = Salt marsh
VP = Vernal pool
WM = Wet meadows, seeps

Table 3-4

PROPOSED COVERED SPECIES FOR THE OCEANSIDE SUBAREA PLAN[1]

Scientific Name	Common Name	Coverage in Oceanside Subarea Contingent upon approved Subarea Plan in[2]:
	Plants	
Acanthomintha ilicifolia	San Diego thorn-mint	Carlsbad, Encinitas, Escondido,
Ambrosia pumila	San Diego ambrosia	
Brodiaea filifolia	Thread-leaved Brodiaea	Carlsbad, San Marcos
Dudleya blochmaniae ssp. *blochmaniae*	Blochman's dudleya	Carlsbad
Dudleya viscida	Sticky dudleya	
Ferocactus viridescens	San Diego barrel cactus	
Hazardia orcuttii	Orcutt's hazardia	Encinitas
Iva hayesiana	San Diego marsh-elder	Encinitas, San Marcos
Lotus nuttallianus	Nuttall's lotus	
Quercus dumosa	Nuttall's scrub oak	Carlsbad, Encinitas
	Invertebrates	
Panoquina errans	Salt marsh skipper	Carlsbad, Encinitas
	Amphibians and Reptiles	
Bufo californicus	Arroyo toad	
Clemmys marmorata pallida	Southwestern pond turtle	
Cnemidophorus hyperythrus	Orange-throated whiptail	
Scaphiopus hammondi	Western spadefoot toad	
	Birds	
Accipiter cooperii	Cooper's hawk	Escondido, San Marcos
Aimophila ruficeps canescens	So. Cal. rufous-crowned sparrow	Carlsbad, Escondido
Amphispiza belli belli	Bell's sage sparrow	Carlsbad, Escondido
Aquila chrysaetos	Golden eagle	
Charadrius alexandrinus	Western snowy plover	
Empinodax traillii	Southwestern willow flycatcher	
Falco peregrinus	Peregrine falcon	
Icteria virens	Yellow-breasted chat	
Pandion haliaetus	Osprey	
Passerculus sandwichensis beldingi	Belding's savannah sparrow	Carlsbad, Encinitas
Passerculus sandwichensis rostratus	Large-billed savannah sparrow	Carlsbad, Encinitas
Pelecanus occidentalis	Brown pelican	

Table 3-4

PROPOSED COVERED SPECIES FOR THE OCEANSIDE SUBAREA PLAN[1]

Scientific Name	Common Name	Coverage in Oceanside Subarea Contingent upon approved Subarea Plan in[2]:
Plegadis chihi	White-faced ibis	
Polioptila californica	Coastal California gnatcatcher	Carlsbad
Rallus longirostris levipes	Light-footed clapper rail	
Sterna elegans	Elegant tern	Carlsbad, Encinitas
Sterna antillarum browni	California least tern	
Vireo bellii pusillus	Least Bell's vireo	
	Mammals	
Dipodomys stephensi	Stephens' kangaroo rat	
Chaetodipus fallax fallax	Northwestern San Diego pocket mouse	Escondido
Lepus californicus bennettii	San Diego black-tailed jackrabbit	Escondido

[1] Criteria for the coverage of these species is provided by MHCP Volume II (SANDAG 2003); species-specific criteria are summarized in Appendix A.

[2] Coverage for the species within the Oceanside Subarea may be contingent on other MHCP cities that control major/critical locations or the majority of the species or its habitat. The controlling MHCP cities (listed here in the contingency column) must meet all Section 10(a), NCCP, and MHCP criteria within their boundaries in order for the species to be covered within the Oceanside Subarea. If no city is listed as a contingency, then the species will be covered within the Oceanside Subarea when Oceanside meets all Section 10(a), NCCP, and MHCP criteria within its boundaries.

* Assumes conservation of critical locations in major amendment area.

3.2.2.2 Sensitive Animals

MHCP animal species recorded or potentially occurring in the City were originally described in the MHCP Biological Goals, Standards, and Guidelines (Ogden 1998), and were subsequently updated in Volume II of the MHCP (SANDAG 2003). As part of the update for the Final SAP in 2008, new data was added to the database as described in Section 3.1.2.2. Locations for key MHCP animal species recorded in the City are mapped in Figures 3-3 through 3-5.

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Figure 3-3 11 x 17 page 2 of 2

Figure 3-4 11 x 17 page 1 of 2

Figure 3-4 11 x 17 page 2 of 2

Figure 3-5 11 x 17 page 1 of 2

Figure 3-5 11 x 17 page 2 of 2

The MHCP Volume II (SANDAG 2003) also identifies major and critical animal populations within the MHCP study area. Major populations are defined for animals as those that support enough breeding individuals to contribute reliably to the overall metapopulation stability of the species. Critical locations are areas that must be substantially conserved for a species to be considered adequately conserved. Major populations and critical locations have been identified for some animal species in the City:

- Salt marsh skipper butterfly: remaining salt marshes and saltpans near the coast (major populations and critical locations)
- Southwestern pond turtle: Buena Vista Lagoon, Whelan Lake, and San Luis Rey River (major populations and critical locations)
- California brown pelican: coastal areas with restricted human access (e.g., jetties, private marinas) and shallow coastal waters used for foraging (critical locations)
- White-faced ibis: Buena Vista Lagoon (major population and critical location)
- Northern harrier: Marsh and grassland habitats adjacent to MCB Camp Pendleton, agricultural fields in San Luis Rey River Valley, and lagoons (critical locations)
- Cooper's hawk: San Luis Rey River, Pilgrim Creek (critical locations)
- Osprey: lagoons and estuaries (critical locations)
- American peregrine falcon: coastal wetland areas (critical locations)
- Light-footed clapper rail: salt marshes, especially Buena Vista Lagoon (critical locations)
- Western snowy plover: San Luis Rey River mouth and lagoons (foraging location)
- California least tern: San Luis Rey River mouth, lagoons (foraging location)
- Burrowing owl: grasslands adjacent to MCB Camp Pendleton provide potentially suitable habitat.
- Southwestern willow flycatcher: San Luis Rey River near Whelan Lake and Guajome Lake, and Pilgrim Creek near Foss Lake (major populations and critical locations)
- Coastal California gnatcatcher: northern portion of the City near MCB Camp Pendleton (major population and critical location), and regional stepping-stone linkage across central portion of the City (critical location)

- Least Bell's vireo: San Luis Rey River, Pilgrim Creek, and Loma Alta Creek east of El Camino Real (major populations and critical locations)
- Yellow-breasted chat: San Luis Rey River and Pilgrim Creek (major populations and critical locations)

3.2.3 Habitat Linkages and Dispersal Corridors

Despite the high degree of urbanization and resultant fragmentation of natural habitats in the City, some undeveloped portions of the City play an important role in regional habitat connectivity and species conservation due to strategic geographic locations and onsite biological resources. This section describes the distribution of these key undeveloped areas and their role in facilitating regional habitat connectivity and animal movement. This section provides a biological interpretation of existing conditions; the actual preserve design is discussed in Section 4.

3.2.3.1 Distribution of Natural Open Space

Due to the highly developed condition of the City, there are no broad north to south habitat linkages remaining in the subarea (Figure 3-1). The remaining natural open space is characterized by relatively small and fragmented patches of habitat, often disturbed, and either isolated or tenuously connected to adjacent habitat patches. A substantial proportion of the remaining gnatcatcher habitat consists of east to west oriented fingers of open space associated with steep slopes or drainages south of Mission Avenue, north and south of Oceanside Boulevard, and along the northwestern boundary of the study area. The San Luis Rey River, in the northern third of the City, provides a habitat connection extending from the ocean to the eastern boundary. However, the functionality of this connection is degraded in a number of areas by adjacent land uses (e.g., agriculture and development) and habitat disturbance associated with ACOE flood control measures. The San Luis Rey River is still connected to relatively large areas of open space at the northwestern corner of the study area (e.g., Tuley and Benet Canyons), at Guajome Lake, and at the eastern edge of the study area in the vicinity of Jeffries Ranch. The Pilgrim Creek watershed (including Foss Lake) in northeast Oceanside is connected with MCB Camp Pendleton, but is partially isolated from the San Luis Rey River and other natural habitats to the south.

3.2.3.2 Gnatcatcher Dispersal Corridors

This section describes the current biological and land use conditions within the City as they relate to habitat connectivity and dispersal corridors for gnatcatchers. The actual preserve design is discussed in Section 4.

Regional Corridor

The most likely regional gnatcatcher corridor (i.e. habitat linkage) links core gnatcatcher populations in northern Carlsbad to MCB Camp Pendleton. This approximately 5-mile-long corridor is located in the western half of the City. Figure 3-6 provides a regional overview of the corridor, showing its relationship to gnatcatcher-occupied areas north and south of the City; Figure 3-7 provides a closer view of the corridor and identifies particular areas of constraint (see Section 3.2.3.3).

The regional corridor encompasses portions of the existing SDG&E electric transmission corridor that provide linkages between stepping-stone patches of occupied breeding habitat. Starting in Carlsbad, the regional corridor begins south of SR-78 at Buena Vista Creek. The creek and adjacent slopes to the south comprise an expanse of vacant habitat land that is linked to core gnatcatcher populations to the southeast at Calavera Heights and Lake Calavera.

Heading north, the regional corridor crosses SR-78 on the east side of El Camino Real. The corridor continues northwest through approximately 1,000 feet of ornamental plantings along the southwest side of El Camino Real Golf Course and undeveloped parcels within and adjacent to the SDG&E electric transmission corridor east of El Camino Real. The electric transmission corridor is bordered on the east side by an undeveloped knoll, which is visible from south of SR-78. The regional corridor continues north along the SDG&E transmission corridor up to Fire Mountain Drive. In this segment, the regional corridor ranges in width from approximately 100 to 500 feet, depending on the amount of development (e.g., parking lots) or undeveloped land adjacent to the 150- or 200-foot-wide electric transmission corridor .

An alternate or secondary route may exist along the east side of the El Camino Real Golf Course, between SR-78 and Avenida de Loyala. This alternate route includes remnant coastal sage scrub habitat within the Country Club Estates development, joining the

easterly transmission corridor. Compared to the regional corridor described above, this alternative is considered less functional due to greater intervening development and less line-of-sight connectivity.

North of Fire Mountain Drive, relatively large blocks of occupied breeding habitat are found on both sides of El Camino Real (e.g., the Eternal Hills Cemetery and City-owned Myers property), sufficient to support approximately 5 or more pairs of gnatcatchers on each side. These habitats are connected by line-of-site to other habitat patches north of Oceanside Boulevard, on the west end of the City-owned El Corazon parcel. Habitats on El Corazon may support an additional 8 to 10 breeding territories. In concert with breeding habitat south of Oceanside Boulevard, this area could represent a major stepping stone halfway between the Calavera core area in Carlsbad and MCB Camp Pendleton.

At the northwest corner of the El Corazon parcel, the corridor joins the easterly SDG&E electric transmission corridor and crosses northwest through the intersection of El Camino Real and Mesa Drive. Continuing north, the westerly and easterly electric transmission corridors converge at the SDG&E's San Luis Rey Substation. The regional gnatcatcher corridor continues north around the west side of the substation and crests the southern slope of the San Luis Rey River Valley. At the top of this slope, the regional corridor splits into two routes that may be used by dispersing gnatcatchers, one continuing north and the other heading west.

The north-heading corridor continues down a steep slope along the west side of El Camino Real, following the two parallel electric transmission corridors to Mission Avenue (Figure 3-7). This area, the Vista de la Valle Mitigation Area, forms a northern stepping-stone habitat patch, which supports four to six breeding gnatcatcher territories. The two electric transmission corridors converge to the northeast and northwest at the bottom of the slope, next to an elementary school and residential development located south of Mission Avenue. These two electric transmission corridors provide alternate routes around the existing development.

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Figure 3-6 11 x 17 page 2 of 2

Figure 3-7 11 x 17 page 1 of 2

Figure 3-7 11 x 17 page 2 of 2

At Mission Avenue, El Camino Real veers northeast while the more westerly corridor alignment crosses north over Mission Avenue and the new SR-76 to the San Luis Rey River. The corridor that continues north to the San Luis Rey River (through the Pavilion property mentioned in Section 3.1.2.3) includes the two parallel electric transmission corridors. At the San Luis Rey River, gnatcatchers have several alternative routes for reaching breeding habitat adjacent to and within MCB Camp Pendleton: north along the electric transmission corridor, northeast along the river to Whelan Lake and beyond, or west along the river channel to Tuley and Benet Canyons. This habitat is also contiguous with MCB Camp Pendleton gnatcatcher populations to the north.

The western corridor segment heads west from the SDG&E's San Luis Rey Substation along the steep southern slope of the San Luis Rey River Valley. This slope separates residential development above from the river valley floor below. The corridor crosses Foussat Road and continues west to Mission Avenue. The corridor then crosses Mission Avenue and continues west along a small embankment bordered by commercial and residential development, which eventually connects with steep slopes of coastal sage scrub north of Mission Avenue and east of Mesa Drive. The corridor crosses north over SR-76 to the San Luis Rey River and beyond to coastal sage scrub habitat in Benet and Tuley Canyons. This western segment of the corridor provides access to breeding habitat in the northwestern corner of the City and in the southwestern corner of MCB Camp Pendleton.

Local Corridors Associated with the Regional Gnatcatcher Corridor

There are several east to west local, or "feeder" corridors, which connect with the north-south regional corridor. Habitats on slopes above Loma Alta Creek and Oceanside Boulevard, between College Avenue and I-5, connect with the regional corridor south of El Corazon, both from the east and from the west. This nearly continuous strip of undeveloped habitat includes patches of gnatcatcher breeding habitat as well as a riparian corridor that facilitates dispersal. A shorter local corridor on the north side of El Corazon is similarly associated with slopes above riparian habitat and includes some gnatcatcher breeding habitat. A northern local corridor is more fragmented and includes undeveloped slopes south of Mission Avenue and east of El Camino Real. This corridor provides additional gnatcatcher breeding habitat, especially at the eastern end.

3.2.3.3 Constrained Segments of the Regional Corridor

There are several locations along the regional corridor where gnatcatcher movement is constrained. A constrained location is defined as an area where gnatcatcher movement might be inhibited by existing development or lack of scrub habitat. Constrained corridor locations are identified as letters in Figure 3-7 and described below:

- Location A - Corridor Crossing at SR-78. Although large patches of coastal sage scrub do not currently exist on the north side of the SR-78 crossing, gnatcatchers have been observed in small patches of coastal sage scrub east of Location A, north and adjacent to SR-78 near the intersection of Rancho del Oro and Vista Way. Approximately half of this occupied patch is within the regional corridor. SR-78 is below grade at the El Camino Real freeway overcrossing; however, to the east it gradually becomes elevated. A slope with coastal scrub on the south side of a two-lane road bordering SR-78 to the south and tall willow riparian scrub adjacent to the south side of the highway are also present to aid in movement through this area. These elevated vantage points may help gnatcatchers crossing SR-78 gain some altitude above the road. However, vehicular traffic may pose some risk for gnatcatchers crossing SR-78.

- Location B - North of SR-78 at El Camino Real Golf Course. There is a 1,000-foot segment of ornamental plantings between the small patch of undeveloped land north of SR-78 and the power line corridor. This narrow strip of ornamental shrubs and trees is between the southwestern corner of the El Camino Real Golf Course and commercial businesses and parking lots fronting Vista Way and El Camino Real. Gnatcatchers must traverse along this strip of shrubs or through the golf course to reach natural habitats within the electric transmission corridors. Currently, the open space is annual grassland and does not support coastal sage scrub other than a few scattered shrubs, such as coyote bush. Gnatcatchers appear capable of dispersing up to 6.5 miles through developed landscapes (Atwood et al. 1995; Bailey and Mock in press), although the rate of dispersal through constrained landscapes is expected to be less than routes having continuous swaths of scrub vegetation.

- Location C - Corridor Crossing at Fire Mountain Road and El Camino Real. Near the top of the ridge bordering Fire Mountain Road, coastal sage scrub is patchy with ornamental plantings and bare earth. There is coastal sage scrub on a slope on the east

side of El Camino Real north and south of Fire Mountain Road and on the west side of El Camino Real north of Fire Mountain Road. However, the visibility of these patches is limited. For gnatcatchers crossing El Camino Real within the electric transmission corridor, there is a narrow fringe of coastal sage scrub along the embankment at the northwest corner of the intersection. The majority of visible habitat within this portion of the transmission corridor is disturbed. Due to the discontinuity in coastal sage scrub, gnatcatchers may be inhibited from crossing the Fire Mountain Road and El Camino Real intersection. However, once gnatcatchers cross the intersection, there is sufficient coastal sage scrub habitat to facilitate movement north and south of the intersection.

- Location D - Corridor Crossing at Oceanside Boulevard. An approximately 1,500-foot-wide swath of natural habitat is present on the south side of Oceanside Boulevard where the corridor crosses the road north onto the City-owned El Corazon parcel, and there is a 50- to 60-foot-tall slope along the west side of El Corazon that is sparsely vegetated with exotic species (e.g., tamarisk). There are a few coastal sage scrub patches on both sides of Oceanside Boulevard in the vicinity of this crossing. The topography on both sides of the road allows gnatcatchers to fly over this busy road.

- Location E - Local Corridor South of Oceanside Boulevard near Skylark Drive. Fragmentation by existing development causes the local corridor west of El Camino Real to be discontinuous. The Loma Alta Creek channel and landscaping associated with adjacent residential development may be used by dispersing birds.

- Location F - Corridor Crossing at El Camino Real and Mesa Drive Intersection. Gnatcatchers have to cross between the northwest and southeast corners of this intersection, both of which are visible from each direction. On the northwest side of the intersection, the electric transmission corridor includes a disturbed patch on a slope below the SDG&E substation. This disturbed area is bordered by El Camino Real to the east and apartments to the west. The southeast corner of the intersection is a mixture of riparian scrub, disturbed, and coastal sage scrub that is located in the northwest corner of the El Corazon parcel. There are also some nonnative shrubs with structure similar to larger native shrubs (e.g., lemonadeberry) in the northeast corner of the intersection that might facilitate gnatcatchers crossing along the east side of the intersection.

- Location G - Corridor Crossing of SR-76 and Mission Avenue. The corridor is potentially restricted by the SR-76 crossing over Mission Avenue. The new highway is elevated for more than 1,500 feet from the westerly electric transmission corridor to east of the El Camino Real overpass. This elevated portion of the highway is about 30 feet tall with an additional 8-foot sound wall along most of its length. There are large dirt embankments at each end of the overpass and an underpass with pillars over Mission Avenue.

  This road configuration could deter gnatcatcher movement north and south due to the enlarged width of the combined roadways and elevated grade of the overpass. The width of the road crossing is 100 feet to 250 feet. Other factors potentially inhibiting gnatcatcher movement include the absence of topography to aid the birds in gaining altitude above the overpass, the lack of visibility of natural habitats on either side of the road, and increased traffic and noise levels. In 2007, an independent science review panel issued a consensus report evaluating the "stepping stone" corridor around this location. The consensus report recommended a 200-foot-wide gnatcatcher movement corridor (with appropriate habitat restoration) along the eastern boundary of the old drive-in theater site (also known as the Pavilions Development site) to facilitate movement from south of SR-76 to the San Luis Rey River. This recommended preserve design component has been incorporated into the SAP and is a development standard for any future development of that site.

- Location H - SR-76 East of El Camino Real. The SR-76 crosses former open space adjacent to the east side of El Camino Real between existing commercial and residential development. This may hinder east-west gnatcatcher movement at El Camino Real. It is possible that gnatcatchers east of El Camino Real could disperse northwest to the river and then west to the regional corridor via the river.

- Location I - Local Corridor South of Mission Avenue between Rancho Del Oro Road and Mission Gate Drive. The slopes south of Mission Avenue provide gnatcatcher breeding habitat and may allow movement of birds east and west between El Camino Real and College Boulevard. However, the segment between Rancho Del Oro Road and occupied habitat at the Canyon Vista Estates Project is fragmented by development. There is a narrow connection still remaining to the west at the south end

of the Canyon Vista Estates site. Development may inhibit movement through this area.

3.2.3.4 Conservation Priorities within the Regional Corridor

The preceding analysis reveals priority areas for conservation and enhancement to ensure the viability of the regional gnatcatcher stepping-stone corridor by providing sufficient breeding habitat and adequate connectivity for dispersal between stepping stones. Priority areas for conservation in the corridor are numbered below and correspond to numbered locations in Figure 3-7.

1. Several undeveloped parcels zoned Residential and/or Commercial, between SR-78 and Fire Mountain Road, east of El Camino Real. This is probably the most highly constrained portion of the regional corridor. Restoration or enhancement of coastal sage scrub is recommended to ensure functionality for gnatcatcher dispersal.

2. Oceanside Boulevard crossing location - approximately 1,500 feet of open space south of Oceanside Boulevard and east of El Camino Real, between the school and the cement plant; and corresponding open space across Oceanside Boulevard on the El Corazon parcel. This is the optimal location for the corridor to cross Oceanside Boulevard because it provides the most direct route, has the best topography for elevating gnatcatchers above the road, and is compatible with the proposed development plans for El Corazon.

3. Western end of El Corazon. Gnatcatcher breeding habitat shall be restored and enhanced within the proposed El Corazon natural open space area to increase the breeding population within this major stepping stone.

4. SDG&E electric transmission corridors between Mesa Drive and the substation. Restoration of portions of SDG&E's electric transmission corridor (easements and fee-owned rights-of-way) north of Mesa Drive and open space west of the substation will help to maintain connectivity between El Corazon and breeding habitat to the north.

5. Steep slopes west of El Camino Real and north and south of Mission Avenue. Steep undeveloped slopes beginning north of the SDG&E San Luis Rey Substation and west

of El Camino Real, extending northwest across Mission Avenue and north to SR-76, are crucial to maintain the western fork of the regional corridor. These slopes connect existing gnatcatcher breeding areas north of the SDG&E San Luis Rey Substation with the San Luis Rey River and other breeding habitat at Tuley and Benet Canyons. This alternative fork is especially important given the potential blockage of the eastern fork of the corridor at SR-76.

6. SDG&E electric transmission corridor from Mission Avenue and SR-76, north to the San Luis Rey River. This electric transmission corridor provides alternative crossing locations for the combined SR-76 and Mission Avenue alignments. Connectivity with the San Luis Rey River is essential for providing the gnatcatchers with several dispersal routes to the core gnatcatcher population in MCB Camp Pendleton. Portions of SDG&E's electric transmission corridor that are fee-owned in this area and have open space easements or wildlife corridor easements with the Wildlife Agencies will remain as open space between the northern stepping stone and the San Luis Rey River.

Critical Stepping Stones

7. Stepping-stone habitat along Oceanside Boulevard. To provide breeding habitat and foraging resources for dispersing gnatcatchers, it is necessary to conserve a large block of open space along Oceanside Boulevard, east and west of El Camino Real. This stepping stone consists of open space south of Oceanside Boulevard, between Rancho Del Oro Road and residential development west of El Camino Real, and includes a majority of the western end of the El Corazon parcel. Maintaining open space along the east side of El Camino Real between Fire Mountain Road and Oceanside Boulevard is especially important in funneling gnatcatchers into the corridor crossing of Oceanside Boulevard. Habitat west of El Camino Real is important because of the high occupancy by gnatcatchers. Along with the western portion of El Corazon, these areas along Oceanside Boulevard comprise the stepping stone that has the largest amount of open space within the 5-mile corridor.

8. Stepping-stone habitat south of Mission Avenue. This northern block of stepping-stone habitat is critical for providing a respite area for dispersing gnatcatchers and for providing breeding habitat. All of the open space south of Mission Avenue and between residential development to the west and El Camino Real to the east has been

preserved to provide a large stepping stone (the Vista de la Valle Mitigation Area). This includes the portion of the SDG&E electric transmission corridor that is owned in fee by SDG&E and will be held in wildlife corridor easement by CDFG.

3.2.4 Habitat Restoration Priorities within the Regional Corridor

Priority areas for habitat restoration within the regional stepping-stone corridor have been identified (Figure 3-8). These sites were selected based on conservation priority, as discussed above in Section 3.2.3, and their restoration potential, as presented in Section 3.1.2. Restoration polygons mapped in Figure 3-8 do not necessarily mean that the entire area need be restored. Circles shown in Figure 3-8 depict general locations for restoration and not the size or shape of the restoration site. The priority sites for restoration and the approximate net acreage of the restoration efforts are summarized in Table 3-5. As indicated, both disturbed lands and lands supporting annual grassland have been identified for restoration. If a coastal sage scrub restoration project is completed on a site where annual grassland habitat has been preserved as mitigation for past project implementation, the restoration acreage may be used to meet the 164-acre coastal sage scrub restoration requirement described below; however, it may not be used again to satisfy habitat mitigation obligations associated with implementation of a new development project.

The City is responsible for restoring a minimum of 164 acres of coastal sage scrub restoration (see Section 4.4). However, because site constraints or other limitations may be encountered in conducting the actual restoration program, 171 acres of potential restoration areas have been identified in the City (Table 3-5),. Nevertheless, when a total of 164 acres consisting of any combination of potential sites (Table 3-5) have been restored with viable and self-sustaining coastal sage scrub and these areas are managed as part of the Preserve with conservation easements recorded over them, the requirements for habitat restoration under this SAP and the MHCP will be considered complete. Coastal sage scrub restoration projects located on manufactured slopes will be given credit toward the 164-acre target only if 1) the City or other accepted party provides long-term management of the area, and 2) a conservation easement is recorded over the restoration area that includes a clear description of the party responsible for repair of the slope and the restored habitat in the event of a slope failure.

Restoration activities have already commenced or are planned to be completed for some of the areas shown in Table 3-5. These are noted in Table 3-5 as "Planned" or "In progress". For example, after the release of the draft SAP, the City, with funding from Proposition 13 ("Safe Drinking Water, Clean Water, Watershed Protection, and Flood Protection Bond Act" of 2000), acquired the former "Myers Property" and commenced restoration of coastal sage scrub on a portion of the site. No estimates of restoration or enhancement cost are provided for these areas.

For all other areas, restoration cost was estimated according to "restoration intensity", a classification system developed by a restoration biologist and utilized in the Final MHCP Plan (SANDAG 2003). Three categories of restoration or enhancement effort are described in this SAP. *High-intensity restoration* consists of initial weed control, site preparation potentially including grading, temporary irrigation, container plants, and seeding. *Low-intensity restoration* consists of initial weed control and seeding only. Low intensity restoration is classified further into two subcategories, *Low-intensity less than 10 acres* and *Low-intensity greater than 10 acres* to account for economy of scale savings on larger projects. All restoration categories assume maintenance and monitoring at different cost schedules for 3 to 5 years after completion. Cost estimates used in the MHCP have been updated to 2008 prices.

Figure 3-8 11 x 17 page 1 of 2
Priority Areas for Restoration in the Regional Stepping-stone Corridor.

Figure 3-8 11 x 17 page 2 of 2

Table 3-5

PRIORITY AREAS FOR HABITAT RESTORATION OR ENHANCEMENT

Site[1]	Net CSS Acres[2]	Mapped Veg[3]	Restoration Status or Potential[4]	Restoration Intensity[5]	Comments
1	10	AnnG	Unknown	Low-10	Not explicitly mapped; acreage estimated. (34, 37)
2	3	AnnG	Completed	n/a	Acreage estimated. Potential for *Dudleya viscida* in coastal sage scrub. Completed restoration work in association with Wanis Project. (40, 42)
3	8	Dist	Unknown	Low	Pala Road connection through site. (38)
4	37	AnnG/ Dist	High	Low	Includes some SDG&E[7] right-of-way outside Vista de la Valle mitigation area, where the existing restoration obligation is about 25 acres. Potential for *Brodiaea filifolia* and *Ambrosia pumila*. (56)
4A	3	Dist/ CSS	Planned	n/a	Monarch project offsite restoration. (52)
4B	2.75	Dist	Planned	n/a	Ocean Point project restoration (137)
5	8	AnnG	Planned	n/a	Potential for *Brodiaea filifolia*. Mesa Ridge project will preserve this area as open space; and undertake restoration work. (54)
6	8	AnnG	Moderate	Low-10	Undeveloped private property. (67)
7	5	Dist	Low	Low-10	El Corazon open space with restoration potential. (71)
8	39	Dist	Mod-High	Low	El Corazon open space with restoration potential. (71)
8A	20	Dist	Low-Mod	High	El Corazon open space with restoration potential. (71)
9	11.7	Dist/ AnnG	High	Low	MHCP maps as Disturbed; Scheidt (2003) as annual grasslands with native grassland inclusions. Restoration shall avoid native grassland and narrow endemic species, including complete avoidance of the major *Brodiaea filifolia* population that occurs on the northeastern portion of the site. (104)
9A	1.6	Dist/ CSS	Completed	n/a	Former Myers Property; restoration funded from Prop. 13 (Safe Drinking Water). Area represents seeding with CSS mix, as reported by "As-Built (Time Zero) Report" (2007). (107)
10	4	Dist	High	Low-10	A portion of this property is now developed (Ambassador Family Church Project ID D-8-00, C-27-00; approved January 2001 [Resolution 2001-P01]), but enhancement potential exists in preserved area onsite. (102)
11	5	AnnG	Moderate	Low-10	*Brodiaea filifolia* onsite. (100)
12	1	Dist	High	Low-10	Restoration potential on City-owned land. (112)
13	0.2	Dist	Planned	n/a	Restoration planned for El Camino Executive Center (114)
14	4	Dist	Moderate	High	South slope and SDG&E[7] corridor have restoration potential. (116)
Total	**171.25 acres** (This is the total acreage of potential restoration areas; however, total restoration targeted by this Plan is 164 acres.)[6]				

Estimated Future Cost of Publicly Funded Restoration [5]

Intensity	Acres	Cost /Acre	Total
High	24	$140,250	$3.4 mill.
Low-10	33	$54,800	$1.8 mill.
Low	95.7	$48,800	$4.7 mill.
Subtotal	**152.70**		**$9.8 mill.**
n/a	10.35	--	--
Total	**171.25**	**--**	

Note: Figures may not add to totals as shown due to rounding.. Number in parentheses shows approximate location of restoration site by habitat patch number (Unique ID number; see Appendix Table A-5)

AnnG Annual Grassland
CSS Coastal Sage Scrub
Dist Disturbed
n/a Restoration work is already completed, in progress, or planned by others; no additional funding will be required.

[1] See Figure 3-8 for locations.
[2] Net coastal sage scrub acreage assumed to be restored, excluding areas already mapped as coastal sage scrub.
[3] Predominant vegetation as shown in MHCP database. Actual vegetation may vary based on plant succession or other factors since mapping was conducted.
[4] Restoration potential ranked based on the following:
Low: a. extremely steep topography (>40%), or
b. any combination of two or more of the following factors:
1. moderately steep slopes (20-40%),
2. high abundance of nonnative invasive vegetation,
3. highly erodible soils,
4. heavily compacted soils, or
5. unfavorable hydrological conditions.
Moderate: one of the above numbered factors.
High: none of the above numbered factors.
In Progress or Planned: Restoration work is already in progress or planned as part of project implementation, hence will not require additional funding.
[5] The three levels of restoration intensity—High, Low, and Low-10 (i.e., Low with less than 10 acres)—reflect intensity of restoration effort for the purpose of estimating restoration costs. The levels of restoration intensity are the same as those cited in Final MHCP Plan (March 2003). However, costs have been newly estimated for this final SAP, however, costs have been newly estimated for this final SAP.
[6] Under this SAP, a minimum of 164 acres of coastal sage scrub will be restored. This table shows potential acres of restoration associated with specific sites in the City. As noted, some restoration work has already been initiated and/or completed since the draft SAP was distributed for public comment. Other areas represent opportunities for additional restoration work, which may be accomplished under public or private initiative.
[7] Any restoration planned for SDG&E fee-title land or easements requires SDG&E approval prior to approval of the restoration plan.