

**FACULTY AND FAMILY STUDENT HOUSING,
OPEN SPACE PLAN, AND LRDP AMENDMENT EIR**

4.4 BIOLOGICAL RESOURCES

Section 4.4

4.4.1 Introduction

*Biological
Resources*

This section discusses biological resources within the project area and evaluates the potential for implementation of the proposed project to have a substantial adverse effect on any special-status species; any riparian habitat or other sensitive natural community; or federally or state protected wetlands. In addition, this section evaluates the potential for project implementation to interfere substantially with the movement of any native resident or migratory fish or wildlife species or to conflict with any local applicable policies, existing Habitat Conservation Plans (HCPs), Natural Community Conservation Plans (NCCPs), or other approved local, regional, or state HCPs within and adjacent to the project area. The term “biological resources” designates both botanical and wildlife communities and species.

Information in this section is based on a review of existing literature conducted to identify previous documentation of biological resources within the project area. A search of the California Department of Fish and Game (CDFG) California Natural Diversity Data Base (CNDDDB) was conducted to identify historic records of special-status species and habitats. Aerial photos and maps were utilized to identify resources and historic trends of land uses. Following a careful study of the existing literature, field studies were conducted to confirm and/or re-map resources.

Aquatic and terrestrial habitats are characterized based on the Holland (1986) classification system. Habitat descriptions and maps from existing literature were utilized during the review of the biological conditions within the project area. The habitat map layers from existing literature were re-classified to the Holland system for consistency purposes. Following re-classification, relevant habitat map layers were incorporated into a new database and applied over a September 2002 high resolution aerial photo for complete coverage of the project area. The aerial photo and previous survey habitat layers were printed at one inch equals 200 feet for field verification. Field surveys were conducted by biologists Anne Wells and Will Groves in July through September 2003 to verify and update previous surveys in the project area. Field methods included pedestrian surveys within native and non-native habitats. Specific boundaries of habitats were refined and, where the previous survey classifications overlapped, modifications were made to clarify the boundary. Habitats were re-mapped to reflect a 50-foot minimum mapping unit with the exception of mapping smaller vernal pools, native grassland patches, and jurisdictional wetland boundaries, where mapping was more precise. Habitat acreages were calculated using Geographic Information System (GIS) technology. During the pedestrian surveys, sign (e.g., individuals, dens, burrows, nests, scat, tracks, pellets, skeletal remains) of wildlife species were recorded.

Wetlands and “waters of the United States” under jurisdiction of the U.S. Army Corps of Engineers (ACOE) and wetlands potentially subject to regulation under the California Coastal Act were delineated in August 2000 (Padre Associates, Inc., 2000). The delineation encompassed the North Campus site and proposed developments, including the North Parcel, South Parcel,

FACULTY AND FAMILY STUDENT HOUSING, OPEN SPACE PLAN, AND LRDP AMENDMENT EIR

Section 4.4 and Storke-Whittier Parcel. Fieldwork was conducted by biologist Matt Ingamells of Padre Associates, Inc. on January 11, 18, 24; March 15; and June 13, 2000. A total of 43 sample points were established, most of which were soil pits. The boundary of each wetland was staked in the field on January 27, February 1 and 2, and June 14, 2000. Penfield & Smith Engineers surveyed the location of each stake using standard transit methods. Wetland acreage calculations were generated using AutoCAD. In addition, in order to assess the biotic value of, and potential impacts to, wetland, riparian and willow areas on the North Parcel and the Storke-Whittier Parcel, Wetlands Research Associates (WRA) was retained to prepare a Functional Wetland Assessment of these parcels. In order to prepare the assessment, WRA conducted field visits on January 13 and 14, 2004. Full bibliographic entries for all reference materials appear in Section 4.4.5 (References) of this section.

Biological Resources

Comments related to biological resources were received in response to the NOP circulated for the proposed project, including a letter from the CDFG. The NOP, responses to the NOP, and a summary of issues raised during scoping are included in Appendices A and B of this EIR. The CDFG's letter requests that the EIR include a recent assessment of the following: flora and fauna within/ adjacent to the project area; rare plants and rare natural communities; and sensitive fish, wildlife, reptile, and amphibian species, including those with seasonal variations. The letter requests that the EIR address significant ecological areas, natural areas, environmentally sensitive habitats, wildlife corridors/movement areas, and migratory wildlife.. Also, CDFG requests that the EIR include an analysis of direct, indirect, and cumulative impacts expected to adversely affect biological resources. CDFG also requests that project activities avoid bird-breeding season (March 1 through Aug 15) and that raptor nests have minimum 500-foot buffer. Finally, the letter stated that the EIR should include mitigation measures that address compensation for unavoidable impacts through acquisition and protection of high quality habitat elsewhere.

Responses and comments on the NOP and at the Public Scoping meeting included suggestions that the EIR address: (1) the effects of an increased human population on natural communities and habitat, (2) impacts to wildlife and vegetation, (3) the need for habitat buffers in the protected area as a means to safeguard biological resources; (4) the removal of non-native plant species; (5) the need for mapping wildlife habitats and sensitive species locations (6) creation and/or restoration of new native woodland areas; (7) the impact of household pets on native wildlife species; (8) the relative sensitivities of both the South Parcel and North Parcel with respect to presence of wetlands; (9) the status and proximity of the Ellwood Mesa to the project site; (10) the design of parkways, medians, and planting areas to accommodate large native trees, and (11) the effects on wildlife from night lighting and increased human presence.

Following the close of the review period for NOP, the U.S. Fish and Wildlife Service (USFWS) provided comments on the Open Space Plan, which raise issues that are relevant to the analysis of Biological Resources. Specifically, the USFWS expressed a concern about impacts to the western snowy plover.

FACULTY AND FAMILY STUDENT HOUSING,
OPEN SPACE PLAN, AND LRDP AMENDMENT EIR

4.4.2 Existing Conditions

Section 4.4

4.4.2.1 Regional Overview

Biological
Resources

The University's proposed project area encompasses Devereux Slough and portions of Devereux Creek. The relatively flat coastal terrace commonly referred to as Ellwood Mesa is located adjacent to, and west of, the project area. The habitats and wildlife resources within the project area reflect those found within the coastal plains of southern California. However, previous grading and filling, farming, oil and gas development, informal recreational use and other uses have significantly modified the project area. As a result, habitat values in the project area have been degraded. Habitats within the project area consist of mostly non-native grassland on the mesas, salt marsh around the slough, and freshwater marsh in Devereux Creek. Refer to Table 4.4-1 for a list of habitats and acreages occurring within the University properties.

4.4.2.2 Aquatic and Terrestrial Habitat Types and Conditions

4.4.2.2.1 Aquatic Habitats. The following five aquatic habitat types occur within the University project area: southern vernal pool, coastal freshwater marsh, southern coastal salt marsh, southern riparian scrub, and southern riparian forest. Refer to Figure 4.4-1 for the location of mapped aquatic habitat distribution. A total of 33.3 acres of aquatic habitat types have been identified within the North and West Campuses.

A jurisdictional wetland delineation was conducted for the North and Storke-Whittier parcels by Padre and Associates (2000). In addition, Wetlands Research Associates conducted a functional assessment of wetland and riparian habitats in January 2004. The functional assessment was conducted by evaluating variables that included water storage, nutrient removal, plants communities, upland buffer condition, and potential wildlife use. A rank of between 0.1 and 1 was assigned to each of these variables. All the values were then averaged for a specific wetland to create a wetland rank of between a low of 0.1 and a high of 1 (WRA 2004). According to the functional assessment, wetlands within the University project area range in rank from a high of 0.75 to a low of 0.25 (WRA 2004), however, of the 22 areas identified as aquatic habitat (which combines several proximate areas), only one was rated with a high functional value, three rated with a high-intermediate value, four with a low intermediate value, and fourteen as low value. Wetlands Research Associates concluded that the area along Phelps Ditch was riparian rather than wetland, and accordingly evaluated its value according riparian habitat standards. Padre and Associates had not differentiated the Phelps Ditch habitat from other areas which it characterized as wetland.

Southern Vernal Pool. Vernal pools form as winter rains fill topographic depressions where underlying claypan layers prevent the water from percolating through to the subsurface (Thomson, 1981; ESA, 1992). Eventually these pools become dry due to subsurface drainage, evaporation, and plant evapotranspiration, remaining dry throughout the summer until late fall and winter rains again initiate pool formation. Southern vernal pool habitats are characterized by particular plant associations that are adapted to alternating wet and dry conditions. (Thomson,

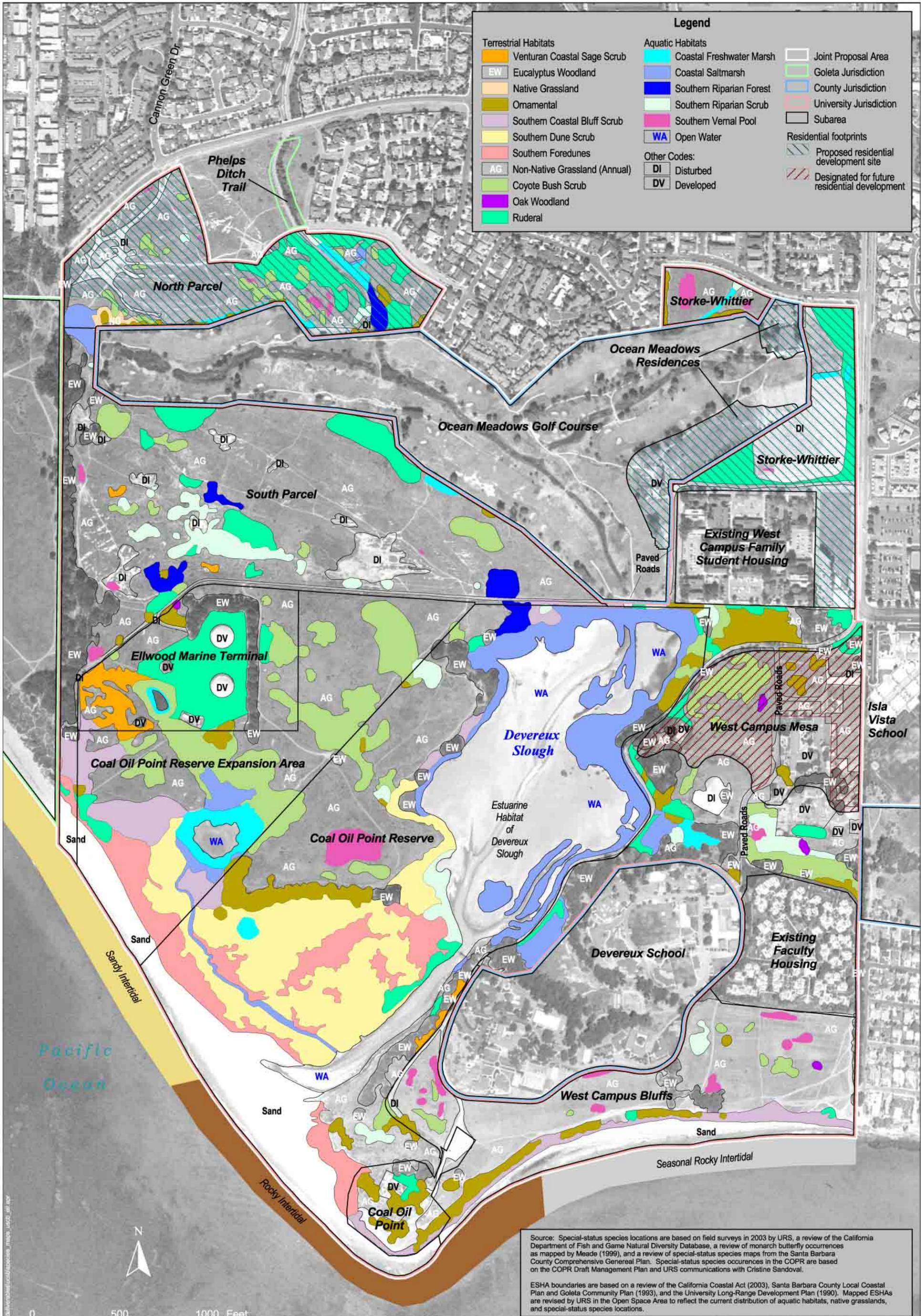
FACULTY AND FAMILY STUDENT HOUSING, OPEN SPACE PLAN, AND LRDP AMENDMENT EIR

Section 4.4 1982; Zedler, 1987). Such plant species characterizing vernal pools include coyote thistle
Biological (*Eryngium vaseyi*), wooly heads (*Psilocarphus brevissimus*) and popcorn flower (*Plagiobothrys undulatus*)
Resources (SAIC, 2000a). These species generally decrease in abundance towards the outer margins of
pools where grasses become dominant.

Vernal pools within the project area are generally small in area, only a few inches deep, and are dominated by ephemeral annual and perennial hydrophytes such as wooly heads, coyote thistle, common spikerush (*Eleocharis macrostachya*), lowland cudweed (*Gnaphalium palustre*), southern tarplant (*Hemizonia parryi* ssp. *australis*), curly dock (*Rumex crispus*), toad rush (*Juncus bufonius* var. *bufonius*), loosestrife (*Lythrum hyssopifolia*), Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*), Italian ryegrass (*Lolium multiflorum*), and rabbitsfoot grass (*Polygonum monspeliensis*). Vernal pools are scattered throughout the flat mesas and intergrade with the non-native annual grassland and native grassland habitats and total 2.8 acres (Table 4.4-1), mostly occurring within the COPR and the West Campus Bluff areas (Figure 4.4-1). According to the functional wetland assessment, the six vernal pools within the North parcel are all low quality habitat ranging in rank between 0.30 and 0.36 (WRA 2004). Vernal pools within the Storke-Whittier parcel all received low ranks (0.25-0.37), reflecting the relatively poor quality of these habitats (WRA 2004).

Coastal Freshwater Marsh. Coastal freshwater marsh is dominated by perennial emergent monocots that typically form completely closed canopies in perennially wet areas (Holland, 1986). Freshwater marsh occurs at sites with relatively little water movement, and where there is prolonged saturation permitting the accumulation of deep, peaty soils. Coastal freshwater marsh within the project area occurs in Devereux Creek, along the margins of ponded water habitats, and in shallow swales totaling 5.2 acres (Table 4.4-1). Common species include bulrush (*Scirpus californicus*), narrowleaved cattail (*Typha domingensis*), umbrella sedge (*Cyperus eragrostis*), rush (*Juncus* sp.), ditch grass (*Paspalum* spp.), creeping bentgrass (*Agrostis stolonifera* var. *palustris*), rabbitsfoot grass, alkali rye (*Leymus triticoides*), meadow barley (*Hordeum brachyantherum*), and sow thistle (*Sonchus asper*). Four areas of freshwater marsh habitat on the North parcel range were ranked as functionally intermediate, ranging from 0.40 to 0.46 (WRA 2004). Additionally, four areas were ranked as low quality habitat with ranks between 0.28 and 0.35 (WRA 2004). In contrast the two areas of freshwater marsh on the Storke-Whittier parcel are of medium quality with ranks of 0.52 (WRA 2004).

Southern Coastal Salt Marsh. Southern coastal salt marsh is dominated by halophytic (salt tolerant) species. Most species in this habitat type are active in summer and dormant in winter and occur in bays, lagoons, and estuaries along the coast (Holland, 1986). Salt marsh occurs along the margins of Devereux Slough and also along Devereux Creek in haline (saline or salty) vernal flats. A total of 16.4 acres occurs within the project area (Table 4.4-1), mostly along slough margins (Figure 4.4-1). Dominant species within the project area include pickleweed (*Salicornia virginica*), saltgrass (*Distichlis spicata*), rush, alkali heath (*Frankenia grandifolia*), spearleaved saltbush (*Atriplex patula* ssp. *bastata*), and alkali weed (*Cressa truxillensis*). Non-native species



Source: Special-status species locations are based on field surveys in 2003 by URS, a review of the California Department of Fish and Game Natural Diversity Database, a review of monarch butterfly occurrences as mapped by Meade (1999), and a review of special-status species maps from the Santa Barbara County Comprehensive General Plan. Special-status species occurrences in the COPR are based on the COPR Draft Management Plan and URS communications with Cristine Sandoval.

ESHA boundaries are based on a review of the California Coastal Act (2003), Santa Barbara County Local Coastal Plan and Goleta Community Plan (1993), and the University Long-Range Development Plan (1990). Mapped ESHAs are revised by URS in the Open Space Area to reflect the current distribution of aquatic habitats, native grasslands, and special-status species locations.

0 500 1000 Feet
 1 Inch = 500 Feet
 Projection: State Plane CA Zone 5, NAD83, Feet

FACULTY AND FAMILY STUDENT HOUSING,
OPEN SPACE PLAN, AND LRDP AMENDMENT EIR

include brass buttons (*Cotula coronopifolia*), curly dock, rabbit's-foot grass, and sow thistle. Salt marsh is found in various portions of the project area, however, it encroaches only onto the southwest corner of the North parcel. This area is the only wetland habitat to receive a functional assessment value that indicates high habitat quality (0.75) (WRA 2004).

Section 4.4
Biological
Resources

Southern Riparian Scrub. Southern riparian scrub is often found in very dense thickets adjacent to creeks and ponded areas, and in less dense stands near seeps and areas with high water tables. This habitat is usually associated with areas of loose, sandy alluvium, and requires frequent flooding or scouring to prevent succession to a riparian forest dominated by cottonwoods and sycamores (Holland, 1986). This habitat occurs along Devereux Creek, tributaries to Devereux Creek, drainage ditches, and gullies totaling 5.9 acres within the project area (Table 4.4-1). Dominant species include arroyo willow (*Salix lasiolepis*) shrubs with occasional patches of mule fat (*Baccharis salicifolia*), Himalaya blackberry (*Rubus discolor*), canary grass (*Phalaris canariensis*), bristly ox-tongue (*Picris echioides*), rabbit's-foot grass, and curly dock. The only riparian scrub on the North parcel (0.3 acres) is a small patch separated from Phelps Ditch by a dirt access road and a lone willow tree in the northwestern portion of the parcel (Figure 4.4-1). The lone willow tree provides no functional riparian habitat value (WRA 2004). The other patch of willow scrub is not specifically addressed within the functional assessment (WRA 2004). However, two facts presented indicate that the quality of this habitat is lower than that of the riparian forest in Phelps Ditch. First, it is separated from the riparian forest along Phelps Ditch, and second, there is not a significant vegetative understory to provide habitat complexity (WRA 2004).

Southern Riparian Forest. Southern riparian forest is a tall, open, broad-leafed winter-deciduous habitat typically occurring along rivers and streams (Holland, 1986). The dominant species require moist, bare mineral soils for germination and establishment. This habitat type is poorly developed within the project area and includes only 2.5 acres of coverage (Table 4.4-1). Of this, 0.4 acres is on the North parcel at the downstream end of Phelps Ditch (Figure 4.4-1). Arroyo willow, ~~black cottonwood (*Populus balsamifera* spp. *trichocarpa*)~~ Fremont cottonwood (*Populus fremontii*), and western sycamore (*Platanus racemosa*) occur in isolated patches within Devereux Creek, tributaries to Devereux Creek, drainage gullies south of the Ocean Meadows Golf Course, and in small patches near Devereux Slough (Figure 4.4-1). Little to no understory vegetation occurs within this habitat in the project area. Where understory vegetation is present, representative species include mostly non-native grasses and forbs. The functional assessment of the riparian community along Phelps Ditch indicated that it was of intermediate value. This conclusion was reached because the community was relatively intact, contained several different species, and provided wildlife habitat in an area where not much habitat remains (WRA 2004).

4.4.2.2 Native Terrestrial Habitats. The following seven native terrestrial habitat types occur within the project area: Venturan coastal sage scrub, coyote bush scrub, native grassland, southern foredune, southern dune scrub, southern coastal bluff scrub, and oak woodland. Refer to Figure 4.4-1 for the mapped locations of native terrestrial habitats.

FACULTY AND FAMILY STUDENT HOUSING, OPEN SPACE PLAN, AND LRDP AMENDMENT EIR

Table 4.4-1. Habitat Acreages

Habitat Types	North Parcel	Storke-Whittier Parcel - South	Storke-Whittier - North	South Parcel	Children's Center	Coal Oil Point	Coal Oil Point Reserve Expansion Area	Coal Oil Point Reserve	Faculty Housing	Student Gardens	Family Student Housing	Ellwood Marine Terminal	Venoco Access Road	West Campus Bluffs	West Campus Mesa - North Slough Finger west campus	Mesa Future Development	Total
Aquatic Types																	
Southern Vernal Pool	0.205	0.019	0.388	0.261	0	0	0	1.219	0	0	0	0	0	0.983	0.118	0	3.19
Coastal Freshwater Marsh	0.62	0.167	0.12	0.31	0.00	0.00	1.88	0.26	0.00	0.00	0.00	0.16	0.00	0.00	0.39	0.00	3.91
Southern Coastal Salt Marsh	0.53	0	0.00	0.48	0.00	0.00	1.44	12.67	0.00	0.00	0.00	0.00	0.00	0.00	1.50	0.00	16.61
Southern Riparian Scrub	0.31	0	0.11	2.90	0.00	0.00	0.04	2.25	0.00	0.10	0.00	0.01	0.32	1.11	0.00	0.00	7.15
Southern Riparian Forest	0.40	0	0.00	1.47	0.00	0.00	0.00	0.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.45
	2.06	0.186	0.62	5.42	0.00	0.00	3.36	16.98	0.00	0.10	0.00	0.16	0.01	1.31	3.12	0.00	33.31
Native Terrestrial Types																	
Venturan Coastal Sage Scrub	0.00	0	0.00	0.17	0.00	0.00	0.16	0.28	0.00	0.00	0.00	1.76	0.00	0.01	0.00	0.00	2.38
Coyote Bush Scrub	1.44	0	0.00	2.06	0.00	0.00	9.42	3.15	0.01	0.33	0.00	2.11	0.00	0.81	1.77	1.88	22.98
Native Grassland	0.29	0	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33
Southern Foredune	0.00	0	0.00	0.32	0.00	0.32	2.46	8.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.27
Southern Dune Scrub	0.00	0	0.00	0.00	0.00	0.00	2.05	18.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	20.10
Southern Coastal Bluff Scrub	0.00	0	0.00	0.62	0.00	0.51	3.69	1.36	0.00	0.00	0.00	0.13	0.00	2.28	0.00	0.00	8.58
Oak Woodland	0.00	0	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.00	0.05	0.09	0.08	0.39
	1.73	0	0.00	3.22	0.00	0.83	17.77	31.01	0.01	0.33	0.00	4.18	0.00	3.15	1.86	1.96	66.05

FACULTY AND FAMILY STUDENT HOUSING, OPEN SPACE PLAN, AND LRDP AMENDMENT EIR

Table 4.4-1. Habitat Acreages

Habitat Types	North Parcel	Storke-Whittier Parcel - South	Storke-Whittier - North	South Parcel	Children's Center	Coal Oil Point	Coal Oil Point Reserve Expansion Area	Coal Oil Point Reserve	Faculty Housing	Student Gardens	Family Student Housing	Ellwood Marine Terminal	Venoco Access Road	West Campus Bluffs	West Campus Mesa – North Slough Finger west campus	Mesa Future Development	Total
Non-Native Terrestrial																	
Eucalyptus Woodland	0.29	0	0.00	6.10	0.28	0.36	0.16	5.14	0.23	0.92	0.00	2.25	0.00	1.48	6.08	1.13	24.40
Ornamental	0.40	0.242	0.17	0.46	0.14	1.48	0.41	3.73	0.04	1.72	0.00	0.33	0.03	1.81	0.62	0.45	12.02
Non-native Grassland	15.55	0	2.92	42.86	0.19	1.30	14.35	20.14	0.00	0.19	0.00	6.12	0.00	21.98	3.92	8.49	138.03
Ruderal	4.25	4.113	0.00	4.41	0.00	0.25	0.51	1.11	0.00	0.69	0.00	3.26	0.00	0.15	1.20	0.47	20.42
	20.48	4.355	3.09	53.84	0.62	3.39	15.44	30.12	0.26	3.52	0.00	11.96	0.03	25.41	11.82	10.53	194.86
Other																	
Sand	0.00	0	0.00	0.77	0.00	0.11	2.52	14.38	0.00	0.00	0.00		0.00	5.94	0.00	0.00	23.72
Open Water	0.00	0	0.00	0.00	0.00	0.00	0.92	32.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	33.01
Disturbed	2.20	5.202	0.00	4.54	0.00	1.45	0.00	0.06	0.00	0.00	0.00	0.11	0.00	0.92	0.65	0.42	15.54
Developed	0.00	3.509	0.10	0.00	2.75	0.31	0.00	0.00	11.61	0.14	11.86	1.08	0.94	0.54	2.26	1.59	36.67
Paved roads	0.00	1.085	0.00	0.88	0.29	0.00	0.00	0.60	0.00	0.61	0.07	0.08	0.22	0.00	0.86	0.42	5.12
Golf Course		0.437															
	2.20	10.23	0.10	6.19	3.04	1.87	3.44	47.14	11.61	0.75	11.93	1.27	1.15	7.39	3.77	2.43	114.07
Total Acreage	26.48	14.77	3.81	68.67	3.65	6.08	40.00	125.26	11.89	4.70	11.93	17.56	1.19	37.25	20.56	14.91	393.95

Note: The acreages are based on GIS calculations and are rounded to the nearest 0.1 acre.

FACULTY AND FAMILY STUDENT HOUSING,
OPEN SPACE PLAN, AND LRDP AMENDMENT EIR

Section 4.4 **Venturan Coastal Sage Scrub.** Drought-deciduous, soft-leaved, aromatic shrubs dominate Venturan coastal sage scrub (Holland, 1986). This habitat occurs on dry, more or less rocky slopes, often at low elevations. It is common within the south coast region below 3,000 feet. Small isolated patches of Venturan coastal sage scrub frequently intergrade with non-native annual grassland and coyote bush scrub in the project area. The most characteristic species found within the project area are coyote brush (*Baccharis pilularis* ssp. *consanguinea*), California sagebrush (*Artemisia californica*), bush sunflower (*Encelia californica*), and giant rye grass (*Leymus condensatus*). Other less common species including saw-toothed goldenbush (*Hazardia squarrosa*), seacliff buckwheat (*Eriogonum parvifolium*), and morning-glory (*Calyptegia macrostegia*). This habitat type is most common south of the Venoco oil tanks and totals 2.6 acres (Table 4.4-1).

Biological
Resources

Coyote Bush Scrub. Coyote bush scrub is a woody habitat dominated by coyote bush and typically occurs on loamy soil. This habitat is an important component of grassland communities, occurring in both relatively dense stands and as individual shrubs creating a mosaic pattern with the grassland habitats throughout the project area. Most of the larger stands of this native shrub are localized along the ephemeral drainages and swales where increased water availability probably increases their ability to compete with the annual grasses, especially during seedling establishment. This scrub habitat totals 29.7 acres in the project area, most of which occurs in the COPR (Table 4.4-1). Other less dominant species that occur in the coyote bush scrub habitat include coastal goldenbush (*Isocoma menziesii* var. *vernonioides*), brome grasses, purple needlegrass (*Nassella pulchra*), and green everlasting (*Gnaphalium californicum*).

Native Grassland. Native grassland habitat is a mid-height (to 2 feet) grassland dominated by perennial, tussock-forming purple needlegrass (Holland, 1986). Native and introduced annuals occur between the perennials, often actually exceeding the bunchgrasses in cover. Native grasslands usually occur on fine-textured (often clay) soils that are moist or even waterlogged during the winter, but very dry in the summer. Historically, native grasslands were much more widespread throughout California than today. The introduction of non-native grasses and forbs (wildflowers), livestock grazing, and alteration of community's natural fire regime are factors that resulted in the displacement of native bunchgrass, other native grasses, and forbs by introduced species (Heady, 1988). As detailed in Table 4.4-1, Native grassland occurs as small remnant patches in the North Parcel along the perimeter of the Ocean Meadows Golf Course (totaling 0.3 acre), and within the northwest portion of the South Parcel that borders the Ocean Meadows Golf Course and the North Parcel (totaling 0.05 acre) (Table 4.4-1a). Native grassland intergrades with non-native annual grassland and coastal scrub habitats. The most abundant native bunchgrass is purple needlegrass. Other native grasses include two subspecies of meadow barley (*Hordeum brachyantherum* ssp. *californicum* and *Hordeum brachyantherum* ssp. *brachyantherum*). Other native grasses occurring as components of the bunchgrass complex within the project area include California brome (*Bromus carinatus*), alkali rye, and blue wild rye (*Elymus glaucus*).

Southern Foredunes. Southern foredunes consists of perennial herbs and low-growing shrubs that occupy wind-blown beach sand and receive salt spray from steady onshore sea breezes (Holland, 1986). It occurs along the immediate coast and intergrades with open beach sand on the ocean side and coastal scrub on the coastal bluffs landward. This dune habitat has been

**FACULTY AND FAMILY STUDENT HOUSING,
OPEN SPACE PLAN, AND LRDP AMENDMENT EIR**

impacted due to the high degree of recreational use that occurs on both the dunes and beach. *Section 4.4*

*Biological
Resources*

FACULTY AND FAMILY STUDENT HOUSING,
OPEN SPACE PLAN, AND LRDP AMENDMENT EIR

Section 4.4
Biological
Resources

Dominant species of the southern foredunes habitat in the project area include sand verbena (*Abronia umbellata*) and beach bursage (*Ambrosia chamissonis*). Other common and characteristic plants include European rocket (*Cakile maritime*), beach primrose (*Camissonia cheiranthifolia* ssp. *suffruticosa*), hottentot fig (*Carpobrotus edulis*), sea fig (*C. chilensis*), and New Zealand spinach (*Tetragonia tetragonoides*). Naturalized iceplant or hottentot fig and sea fig, invasive exotic plants, have colonized portions of this community along the beach and on the coastal bluffs (LSA, 1997; Sandoval, 2003). This habitat comprises 13.6 acres, mostly occurring within the COPR.

Southern Dune Scrub. Southern dune scrub consists of soft woody shrubs with a continuous to open canopy and a sparse ground layer (Holland, 1986). It occurs in areas of sand accumulation along the coast, but usually farther back than the foredune. Characteristic species within the project area include saltbush (*Atriplex lentiformis*), croton (*Croton californicus*), happlopappus (*Haplopappus venetus*), lemonade berry (*Rhus integrifolia*), coyote bush, morning glory (*Calystegia macrostegia*), and California sagebrush. Non-natives such as iceplant, fennel (*Foeniculum vulgare*), black mustard (*Brassica nigra*), non-native grasses, and vetch (*Vicia* spp.) are common in disturbed areas. This dune habitat has been impacted due to the high degree of recreational use that occurs on both the dunes and beach. Dune scrub habitat is well-developed and less disturbed on the southeast edge of the project area in the COPR for a total of 22.3 acres (Table 4.4-1).

Southern Coastal Bluff Scrub. Dwarf shrubs, herbaceous perennials, and annuals dominate southern coastal bluff scrub (Holland, 1986). It occurs on coastal bluffs that are exposed to nearly constant winds with high salt and moisture content. The soil is usually rocky and poorly developed. The density of the vegetation varies with the topography, ranging from sheer cliff faces with little or no vegetation to areas that are less steep and support dense stands of characteristic coastal bluff scrub. Southern coastal bluff scrub occurs on the steep coastal bluffs at Coal Oil Point, COPR, and West Campus Bluffs for a total of 10.9 acres (Table 4.4-1). The dominant species of this habitat type in the project area are Brewer's saltbush (*Atriplex lentiformis* ssp. *breweri*), lemonade berry, and seashore blight (*Suaeda californica* var. *taxifolia*). Other representative native species of this community include coyote brush, sagebrush, haplopappus, and seacliff buckwheat (*Eriogonum parvifolium* var. *parvifolium*). Portions of the coastal bluff habitat have been degraded by foot and bicycle traffic where a number of trails provide access to the beach. This disturbed area supports non-native species of which fennel, pampas grass (*Cortaderia jubata*), hottentot fig, and New Zealand spinach are the most common.

Oak Woodland. Oak woodland typically occupies north-facing slopes, valley and canyon bottoms and along the outer edges of stream courses where soil is well developed (Holland, 1986). Oak woodlands typically are open and sunlit because the 30-foot tall canopies touch, but seldom overlap. Succession requires a long time because oaks are slow growing, long-lived trees requiring 60 to 80 years to mature. Within the project area, oak woodlands comprise 0.3 acre and are dominated by coast live oak (*Quercus agrifolia*) with an open understory dominated by annual grasses. The oak woodland habitat occurs in small, isolated patches on the West Campus Mesa, West Campus Bluff, and the Venoco Lease area (Figure 4.4-1).

FACULTY AND FAMILY STUDENT HOUSING,
OPEN SPACE PLAN, AND LRDP AMENDMENT EIR

Section 4.4 **4.4.2.2.3 Non-Native Terrestrial Habitats.** The following four non-native terrestrial habitat types occur within the project area: eucalyptus woodland, ornamental, non-native grassland, and ruderal. Refer to Figure 4.4-1 for the mapped location of non-native terrestrial habitats.

Biological
Resources

Eucalyptus Woodland. Eucalyptus woodland is a non-native habitat community dominated by an invasive tree introduced to southern California from Australia around the turn of the 19th Century. This tree has spread widely throughout natural and landscaped communities, primarily because of it is a fast-growing attractive tree, with a tenacious nature and affinity for southern California's Mediterranean climate. Many large stands of mature eucalyptus trees along the coastal bluffs in Santa Barbara County comprise winter roosting sites for monarch butterflies (Nagano and Sakai, 1987; Meade, 1999).

Within the project area, large stands of eucalyptus woodland form windrows on the western perimeter of the University property, around the eastern edge of the Ellwood Marine Terminal, around Devereux Slough, and on West Campus Mesa. Eucalyptus woodland forms small stands of wind-sculpted trees on the West Campus Bluffs and Coal Oil Point and adjacent to the Ocean Meadows Golf Course. The project area supports a total of 16.9 acres of eucalyptus woodland habitat (Table 4.4-1). Three species of eucalyptus occurs within the project area including the more dominant blue gum (*Eucalyptus globulus*) and less dominant lemon-scented gum (*E. maculata* var. *citriodora*), and red ironbark (*E. sideroxylon*). Due to the build-up of eucalyptus bark and leaf matter, the dense shade created by the eucalyptus canopy, and the chemicals produced by the bark and leaf matter, understory vegetation is mostly absent.

Ornamental. Ornamental landscaping is not a true habitat classification based on Holland (1986), but occurs in large enough stands to warrant specific analysis. Ornamental habitat within the project area is located in isolated patches usually near abandoned structures or along trails. Common ornamental species observed in the study area include olive (*Olea europeae*), Bailey acacia (*Acacia baileyana*), tamarisk (*Tamarix* sp.), myoporum (*Myoporum laetum*), date palm (*Phoenix* sp.), Monterey pines (*Pinus radiata*), Andean pampas grass, hottentot fig, and sea fig. Ornamental habitat comprises 9.4 acres within the project area.

Non-Native Grassland. European grasses represent the non-native annual grassland habitat present within the project area (Holland, 1986). This habitat typically occurs along road and trails and other disturbed areas. Characteristic species within the project area include wild oats (*Avena* sp.), ripgut brome (*Bromus diandrus*), barley (*Hordeum* sp.), and fescue (*Vulpia* sp.). Filaree (*Erodium botrys*), smooth cat's ear (*Hypochoeris glabra*), fennel, sand spurrey (*Spegularia villosa*), and sow thistle (*Sonchus oleraceus*) are common introduced herbs, while representative native herbs include blue-eyed grass (*Sisyrinchium bellum*), dove weed (*Eremocarpus setigerus*), and tarweed (*Hemizonia fasciculata*). Non-native annual grassland occurs throughout the project area in large stands totaling 134.2 acres.

Ruderal. Though not a true habitat community as defined by Holland (1986), ruderal areas are dominated by highly adaptive and invasive species with few to no native species. Ruderal habitat

**FACULTY AND FAMILY STUDENT HOUSING,
OPEN SPACE PLAN, AND LRDP AMENDMENT EIR**

**Section 4.4
Biological
Resources**

is found most frequently in areas disturbed by human activities. Characteristic ruderal species identified in the project area include mustard, milk thistle (*Silybum marianum*), sweet fennel, cheeseweed (*Malva parviflora*), sweet clovers (*Melilotus* spp.) telegraph weed (*Heterotheca grandiflora*), and ripgut brome. Within the project area, ruderal habitat is associated with highly disturbed areas and is typically located adjacent to and on the infrequently used trails in the project area, and comprises a total of 20.8 acres.

4.4.2.2.4 Unvegetated Resources. Unvegetated habitats within the study area include sand and open water. Other unvegetated resources include developed and disturbed areas and paved roads. None of these resources are true habitat types as defined by Holland (1986), but are described below due to their presence within the project area. Refer to Figure 4.4-1 for the mapped location of these unvegetated resources.

Sand. Sand occurs along the beaches found directly adjacent to the ocean. It is subject to tidal action, and is mostly devoid of vegetation because of frequently moving substrates. Sand totals 26.8 acres in the project area. The sandy beach interfaces with the sandy intertidal, rocky intertidal, and seasonally rocky intertidal marine habitats located immediately adjacent to the project area.

Open Water. Open water occurs within the tidal area of Devereux Slough, a small pond located within the Ellwood Marine Terminal, and at the Coal Oil Point dune pond. The open water resources within the project area are brackish to saline, reflecting high salt content. Open water totals 33.9 acres within the project area, most of which includes the estuarine resources of Devereux Slough.

Disturbed. Disturbed areas occur within the non-native grassland portions of the site and total 14.6 acres. These areas are devoid of vegetation primarily as a result of erosion occurring after removal of topsoil, disturbance from recreational use, and a combination of these two factors.

Developed Areas and Paved Roads. Developed land uses within the project area include the oil storage facilities associated with the Ellwood Marine Terminal, the Coal Oil Point facilities, faculty housing, family student housing, and horseback riding facilities. Dirt and paved roads connect these developed areas. Developed and paved roads total 37.7 acres within the project area (Table 4.4-1).

4.4.2.3 Wildlife Resources

4.4.2.3.1 Wildlife Species Description. The project area supports a variety of wildlife species typical of coastal ecosystems. Avian resources are diverse as the eucalyptus and other woodland habitats provide perching, nesting, and roosting habitat, and grasslands provide foraging resources for a number of bird species. The expanse of open grassland supports small mammals and birds, creating prime foraging territory for birds of prey. Reptile and amphibian diversity is comparatively limited but is typical of disturbed coastal plains (Storrer and Philbrick, 1998).

**FACULTY AND FAMILY STUDENT HOUSING,
OPEN SPACE PLAN, AND LRDP AMENDMENT EIR**

Section 4.4 Common avian resources in terrestrial upland habitats include black phoebe (*Sayornis nigricans*), western kingbird (*Tyrannus verticalis*), cliff swallow (*Petrochelidon pyrrhonota*), American crow (*Corvus brachyrhynchos*), scrub jay (*Aphelocoma coerulescens*), and northern mockingbird (*Mimus polyglottos*). **Biological Resources** The patches of freshwater marsh provide habitat for marsh birds such as Bewick's wren (*Thryomanes bewickii*), house wren (*Troglodytes aedon*), warblers, and American goldfinch (*Carduelis tristis*). Riparian habitats and estuarine habitats provide foraging and breeding areas for a large diversity of species such as great blue heron (*Ardea herodias*), snowy egret (*Egretta thula*), and warblers. Although not restricted to this habitat, many raptor species such as turkey vulture (*Cathartes aura*), white-tailed kites (*Elanus leucurus*), red-tailed hawk (*Buteo jamaicensis*), American kestrel (*Falco sparverius*), barn owl (*Tyto alba*), and great horned owl (*Bubo virginianus*) forage within the grassland habitats in the project area (Storrer and Philbrick, 1998).

Marine birds occurring along the coastline within the vicinity of the project area include western gull (*Larus occidentalis*), western grebes (*Aechmophorus occidentalis*), spotted sandpiper (*Actitis macularia*), willet (*Catoptrophorus semipalmatus*), sanderling (*Calidris alba*), marbled godwit (*Limosa fedoa*), and whimbrel (*Numenius phaeopus*). The western snowy plover (*Charadrius alexandrinus nivosus*), designated as threatened by the federal government, over-winters and nests on the beach near the mouth of Devereux Slough, and California least tern (*Sterna antillarum browni*) has also been observed foraging near the mouth the slough.

Common medium-sized and large mammal species known to occur throughout the project area include opossum (*Didelphis virginianus*), brush rabbit (*Sylvestris bachmanii*), striped skunk (*Mephitis mephitis*), red fox (*Vulpes vulpes*), raccoon (*Procyon lotor*), domestic dog (*Canis familiaris*), and domestic cat (*Felis catus*) (Storrer and Philbrick, 1998). Small mammal fauna occurring in all habitats, including the coastal bluffs and grasslands, includes Botta's pocket gopher (*Thomomys bottae*), Western harvest mouse (*Reithrodontomys megalotis*), house mouse (*Mus musculus*), and California vole (*Microtus californicus*) (Ferren, 1980; Hunt, 1987; Storrer and Philbrick, 1998).

Reptiles and amphibians are present in all habitats within the project area. The Pacific chorus frog (*Pseudacris regilla*), southern alligator lizard (*Gerrhonotus multicarinatus*), western skink (*Eumeces skiltonianus*), and western fence lizard (*Sceloporus occidentalis*) are distributed throughout the habitats within the project area (Hunt, 1987, Storrer and Philbrick, 1998). Common kingsnake (*Lampropeltis getulus*) and gopher snake (*Pituophis catenifer*) occur in grassland habitat. Western terrestrial garter snake (*Thamnophis elegans*) and western rattlesnakes (*Crotalus viridis*) have been found west of Devereux Slough (Hunt, 1987).

4.4.2.3.2 Wildlife Movement. Terms such as habitat corridors, linkages, crossings, and travel routes, are used to describe physical connections that allow wildlife to move between patches of suitable habitat in undisturbed landscapes as well as environments fragmented by urban development. To clarify the meaning of these terms and facilitate the discussion of wildlife movement in this analysis, these terms are defined as follows:

Wildlife corridors link areas of suitable habitat that are otherwise separated by areas of non-suitable habitat such as rugged terrain, changes in vegetation, or human disturbance. Wildlife

**FACULTY AND FAMILY STUDENT HOUSING,
OPEN SPACE PLAN, AND LRDP AMENDMENT EIR**

Section 4.4
Biological
Resources

corridors are essential to the regional ecology of a species because they provide avenues of genetic exchange and allow animals to access alternative territories as dictated by fluctuating population densities. Fragmentation of open space areas by urbanization creates “islands” of wildlife habitat that are more or less isolated from each other. In the absence of habitat linkages that allow movement between habitat islands, studies have concluded that some wildlife species, especially the larger and more mobile mammals, would not persist over time because fragmentation limits infusion of new individuals and erodes genetic diversity. Corridors mitigate the effects of this fragmentation by: 1) allowing animals to move between remaining habitats, thereby permitting depleted populations to be replenished and promoting genetic exchange; 2) providing escape routes from fire, predators, and human disturbances, thus reducing the risk of catastrophic events (such as fire or disease) that could lead to local extinction; and 3) serving as travel routes for individual animals as they move within their home ranges in search of food, water, mates, and shelter. Wildlife corridors are typically relatively small, linear habitats that connect two or more habitat patches that would otherwise be fragmented or isolated from one another.

Wildlife corridors are usually bounded by urban land areas or other areas unsuitable for wildlife. The corridor generally contains suitable cover, food, and/or water to support species and facilitate movement while in the corridor. Larger, landscape-level corridors (often referred to as “habitat or landscape linkages”) can provide both transitory and resident habitat for a variety of species. Although it is commonly used as a synonym for wildlife corridor, a **habitat linkage** refers to a more substantial, or wider, land connection between two habitat areas. Habitat linkages allow for the periodic exchange of animals between habitat areas, which is essential to maintain adequate gene pools. This linkage is most notable among populations of medium-sized and larger animals. A **travel route** is usually a landscape feature (such as a ridgeline, drainage, canyon, or riparian corridor) within a larger natural habitat area that is used frequently by animals to facilitate movement and provide access to necessary resources (e.g., water, food, cover, den sites). The travel route is generally preferred because it provides the least amount of topographic resistance in moving from one area to another. It provides adequate food, water, or cover for individuals moving between habitat areas and provides a relatively direct link between target habitat areas. **Wildlife crossings** are small, narrow areas that are relatively short in length. They allow wildlife to bypass an obstacle or barrier. Crossings typically are manmade and include culverts, underpasses, drainage pipes, bridges, and tunnels to provide access past roads, highways, pipelines, or other physical obstacles. Wildlife crossings often represent “choke points” along a movement corridor.

Wildlife movement activities usually fall into one of three movement categories: 1) dispersal (e.g., juvenile animals from natal areas or individuals extending range distributions); 2) seasonal migration; and 3) movements related to home range activities (foraging for food or water, defending territories, or searching for mates, breeding areas, or cover).

Within a large, open space area in which there are few or no manmade or naturally occurring physical constraints to wildlife movement, wildlife corridors, as defined above, may not yet exist. Given an open space area that is both large enough to maintain viable populations of species

FACULTY AND FAMILY STUDENT HOUSING, OPEN SPACE PLAN, AND LRDP AMENDMENT EIR

Section 4.4 Biological Resources

and provide a variety of travel routes (canyons, ridgelines, riverbeds, and others), wildlife would typically use these “local” routes while searching for food, water, shelter, and mates, and would not need to cross into other open space areas. Based on their size, location, vegetative composition, and availability of food, some of these movement areas (e.g., large drainages and canyons) are used for longer lengths of time and serve as source areas for food, water, and cover, particularly for small- and medium-size animals. This is especially true if the travel route is within larger open space areas. However, once open space areas become constrained and/or fragmented as a result of urban development or construction of physical obstacles, such as roads and highways, the remaining travel routes that connect the larger open space areas can become wildlife corridors as long as they provide adequate space, cover, food, and water, and do not contain obstacles or distractions (e.g., manmade noise, lighting) that would generally hinder wildlife movement.

Dispersal ability is primarily a function of an animal’s body size. Birds contradict this trend by virtue of flight. Wildlife dispersal in this discussion largely concerns ground-dwelling wildlife. Large and medium-sized mammals, such as coyote, grey fox, and brush rabbits, require larger home ranges and can move greater distances than small mammals, such as pocket gophers, meadow voles, and harvest mice.

For ground-dwelling vertebrates, habitats in the project area are more or less isolated from large expanses of similar habitats in the foothills of the Santa Ynez Mountains. Devereux Creek and its northern tributaries, such as Phelps Ditch, are the last remaining physical linkages between the project area and relatively undisturbed and unfragmented habitats to the north. However, these linkages are tenuous at best and may be open, semi-permeable, or impermeable movement corridors for ground-dwelling vertebrates, depending on the species, its body size, dispersal ability, and tolerance for habitat disturbance. The project area is likely large enough to allow populations of common species, such as the Pacific tree frog, western fence lizard, California towhee, and deer mouse to persist. In general, populations of small vertebrates in the project area, such as amphibians, reptiles, and small mammals, may experience dramatic seasonal and annual fluctuations, but persist with little or no influx of individuals from extralimital areas. Populations of medium- to large-size carnivores, such as striped skunk (*Mephitis mephitis*), raccoon (*Procyon lotor*), opossum (*Didelphis virginianus*), bobcat (*Lynx rufus*) and coyote (*Canis latrans*) and small and probably could not persist in the project area without dispersal from outside areas. These species have relatively high reproductive rates and can survive in urbanized or otherwise disturbed environments. However, movement of these species between foothill and montane regions and the project area via the narrow and fragmented habitat linkages provided by Devereux Creek and Phelps Ditch may occur only infrequently because there are many intervening barriers to dispersal, such as transportation corridors and associated culverted undercrossings and residential development.

Although bird flyways are not traditionally considered wildlife movement corridors, Devereux Slough and the adjacent wetlands serve as important habitat for bird species during migration through the Pacific Flyway. Many bird species use these areas as an annual stopover location for

FACULTY AND FAMILY STUDENT HOUSING, OPEN SPACE PLAN, AND LRDP AMENDMENT EIR

several days of rest and feeding prior to continuing migration. These habitats also provide critical staging areas for migratory species.

Section 4.4

Biological
Resources

4.4.2.4 **Jurisdictional Status of Wetland Habitats**

The term wetland is used to describe a particular landscape characterized by inundation or saturation with water for a sufficient duration to support hydric soils and/or wetland vegetation. Wetland areas are characterized by prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands provide habitats that are essential to the survival of many threatened or endangered species as well as other wetland-dependent species. Wetlands also have value to the public for flood retention, storm abatement, aquifer recharge, water quality improvement, and for aesthetic qualities.

Regulatory agencies with jurisdiction over wetlands include the ACOE, with authority to enforce two federal regulations involving wetland preservation; the Clean Water Act (Section 404), which regulates the disposal of dredge and fill materials in waters of the U.S.; and the Rivers and Harbors Act of 1899 (Section 10), which regulates diking, filling, and placement of structures in navigable waterways. State regulatory agencies with jurisdiction over wetlands include the State Water Resources Control Board (SWRCB), which enforces compliance with the Federal Clean Water Act (Section 401) regulating water quality; the California Coastal Commission (CCC), which regulates development within the coastal zone as stated in the California Coastal Act, (Sections 30230, 30231, 30233c, and 30240); and the CDFG, which asserts jurisdiction over waters and wetlands with actions that involve alterations to streams or lakes by issuing Streambed Alteration Agreements under Section 1600 of the Fish and Game Code.

4.4.2.4.1 ACOE Definition. As defined by the ACOE at 33 CFR 328.3(a)(3), “waters of the United States” are those that are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide; tributaries and impoundments to such waters; all interstate waters including interstate wetlands; and territorial seas. Based on the 2001 U.S. Supreme Court decision in *Solid Waste Agency of Northern Cook County v. U.S. ACOE*, and guidance from the ACOE and U.S. EPA, the federal government no longer asserts jurisdiction over isolated waters and wetlands under Section 404 of the Clean Water Act based on the “migratory bird rule.”

Under ACOE and EPA regulations, wetlands are defined as: “*those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.*” In non-tidal waters, the lateral extent of ACOE jurisdiction is determined by the ordinary high water mark (OHWM) which is defined as the: “*line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas*” (33 CFR 328[e]). In tidal waters, the ACOE’s jurisdiction under Section 404 of

**FACULTY AND FAMILY STUDENT HOUSING,
OPEN SPACE PLAN, AND LRDP AMENDMENT EIR**

Section 4.4 the Clean Water Act extends to the high tide line (HTL), which, in the absence of actual data, is defined as “*a line of oil or scum along shore objects, a more or less continuous deposit of fine shells or debris on the foreshore or berm, other physical markings or characteristics, vegetation lines, tidal gages, or other suitable means that delineate the general height reached by a rising tide.*”

Biological Resources

4.4.2.4.2 California Department of Fish and Game Definition. The CDFG uses the U.S. Fish and Wildlife Service (USFWS) definition of wetlands as follows: “*Areas that are periodically or permanently covered by shallow water or dominated by hydrophytic vegetation, or in which the soils are predominantly hydric in nature.*” This wetland definition represents a policy used by the Fish and Game Commission pursuant to Fish and Game Code Section 703. According to the policy, the CDFG wetland definition is the same as the USFWS wetland definition in Cowardin et al. (1979). The CDFG considers this a “one parameter” test. In practice, most wetlands are identified by CDFG by the dominance of hydrophytic vegetation (i.e., when more than 50 percent of the vegetation cover is by obligate, facultative wetland, or facultative plants). In such cases, the CDFG has determined that it is not necessary to determine the presence or absence of wetland hydrology or hydric soils.

4.4.2.4.3 California Coastal Act Definition. The CCC, in conjunction with the CDFG, is responsible for defining wetlands subject to regulation under the Coastal Act. Wetlands are defined in Section 30121 of the Coastal Act as follows: “*Wetlands means lands within the coastal zone which may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, or fens.*” In practice, the CCC wetland definition is commonly considered a “one parameter” definition, in which only one of three wetland attributes (hydrophytic vegetation, hydric soils, or wetland hydrology) needs to be present in order for an area to be considered a wetland.

4.4.2.5 North Campus Wetland Delineation Results

A formal wetland delineation was conducted in the North Campus Parcel to identify areas subject to regulation under the California Coastal Act and Section 404 of the Clean Water Act (Padre Associates, 2000). Table 4.4-2 summarizes the categories of habitat types as identified in the Padre Associates delineation. As discussed earlier and further below, a subsequent functional wetland assessment by Wetlands Research Associated concluded that the area along Phelps Ditch reflected riparian rather than wetland habitat characteristics.

4.4.2.5.1 North Parcel Wetlands. The North Parcel includes Phelps Ditch, trending north-south, and four swales that trend east-west though the site. Phelps Ditch is a flood control channel excavated in the 1930s during a period when adjacent lands to the north and east were being filled for agricultural uses. The ditch was realigned in the 1960s when a portion of Devereux Slough was filled for development of the Ocean Meadows Golf Course and adjacent residential development. Drainage ditches such as this would normally be excluded from ACOE-regulated jurisdictional waters. The three northern swales are poorly defined and quite variable in terms of width, depth, and continuity. However, they appear to drain a portion of this parcel to the east into Phelps Ditch, thus preserving a hydrologic connection and potentially

**FACULTY AND FAMILY STUDENT HOUSING,
OPEN SPACE PLAN, AND LRDP AMENDMENT EIR**

Section 4.4
Biological
Resources

maintaining ACOE jurisdiction. The fourth swale is located along the northern boundary of Ocean Meadows Golf Course, and appears to drain the southern portion of the North Parcel. This fourth swale is discontinuous, ending about 300 feet west of Phelps Ditch and is unlikely to be subject to ACOE jurisdiction because of this lack of hydrologic connection.

Table 4.4-2. North Campus Wetlands^{1,2}

North Campus Parcel Description	Section 404 Wetlands	California Coastal Act Wetlands
North Parcel	1.67	2.95
South Parcel	0.19	2.93
Storke-Whittier North ³	0.48	0.51
Storke-Whittier South ⁴	0.12	0.19
Total Acreage	2.46	6.58

¹ “. Coastal Act wetlands are synonymous with CDFG wetlands.

² Wetland acreages in Table 4.4-2 do not correlate with aquatic habitat acreages in Table 4.4-1. The acreages in Table 4.4-2 are based on surveys by Padre Associates to identify wetlands and are calculated using AutoCAD rather than GIS, which was used to create Table 4.4-1.

³ The Storke-Whittier North parcel is located south of Whittier Drive and west of the parking lot for the Ocean Meadows Golf Course.

⁴ Storke-Whittier South is located north and east of existing Family Student Housing and south and east of the Ocean Meadows Development.

Padre Associates identified a total of 2.95 acres of Coastal Act wetlands and 1.67 acres of ACOE wetlands in the North Parcel (Table 4.4-2).

Subsequently, Wetlands Research Associated evaluated the habitat quality of the wetlands on the North Parcel and the Storke Whittier Parcel. This analysis determined that most (10) of wetlands on the North Parcel are of low quality; four are of intermediate quality, and only one ranked as high quality, the salt marsh in the southwest corner of the North Parcel (WRA 2004). In addition, the Wetlands Research Associates concluded that the habitat in Phelps Ditch does not meet either ACOE or CCC wetland criteria, although it does meet the criteria for riparian habitat according to the CCC definition (WRA, 2004). Based on this analysis, there are approximately 2.02 acres of CCC wetlands and 0.74 acres of ACOE wetlands are present on the North Parcel.

4.4.2.5.2 South Parcel Wetlands. The South Parcel includes four east-west trending swales, all of which constitute California Coastal Act wetlands. The three northern swales are located at the toe of long, linear berms, which focus sheet flow, apparently generating the swale topography. These three swales are unlikely to be considered ACOE-regulated jurisdictional waters due to the absence of a defined bed and bank. The southern swale has a defined bed and bank, with topographic features typical of ephemeral streams. However, the swale is discontinuous, originating in the western portion of this parcel, and terminating at a shallow depression in the eastern portion of the parcel. Due to the defined bed and bank of this swale,

FACULTY AND FAMILY STUDENT HOUSING, OPEN SPACE PLAN, AND LRDP AMENDMENT EIR

Section 4.4 Biological Resources the ACOE is expected to assert jurisdiction of the southern swale. In summary, a total of 2.93 acres of Coastal Act wetlands and 0.19 acre of ACOE wetlands are identified in the South Parcel (Table 4.4-2).

4.4.2.5.3 Storke-Whittier Parcel North Wetlands. The Storke-Whittier North Parcel includes a portion of the southern terminus of a flood control channel and meets the definition of a California Coastal Act wetland. This channel appears to have been excavated on dry land and would not normally be considered an ACOE-regulated jurisdictional water. However, the channel supports ACOE-defined wetlands, such that the ACOE would take jurisdiction. In summary, a total of 0.51 acre of Coastal Act wetlands and 0.48 acre of ACOE wetlands are identified in the Storke-Whittier North Parcel (Table 4.4-2).

4.4.2.5.4 Storke-Whittier Parcel South Wetlands. The Storke-Whittier South Parcel includes three shallow depressions that meet the definition of California Coastal Act wetlands. One depression lacks hydric soil characteristics and is not subject to ACOE jurisdiction. The other two depressions meet the ACOE criteria as jurisdictional wetlands. In summary, a total of 0.19 acre of Coastal Act wetlands and 0.12 acre of ACOE wetlands are identified in the Storke-Whittier South Parcel (Table 4.4-2). Three wetland areas have been identified within the Storke-Whittier South Parcel, two freshwater marshes of intermediate quality (WRA 2004) and one small vernal pool in the southern portion of the property that provides low quality habitat (WRA 2004).

4.4.2.6 Special-Status Species and Habitats

The special-status species and habitats identified in this EIR address those species that are known to occur in the project area boundary. Figure 4.4-2 documents the occurrences of special-status species and identifies the species account observation. Table 4.4-3 lists special-status plants that are potentially present in the project area. Table 4.4-4 lists the special-status wildlife species. Refer to Section 4.4.3 for a complete description of the regulatory framework and definition of special-status species.

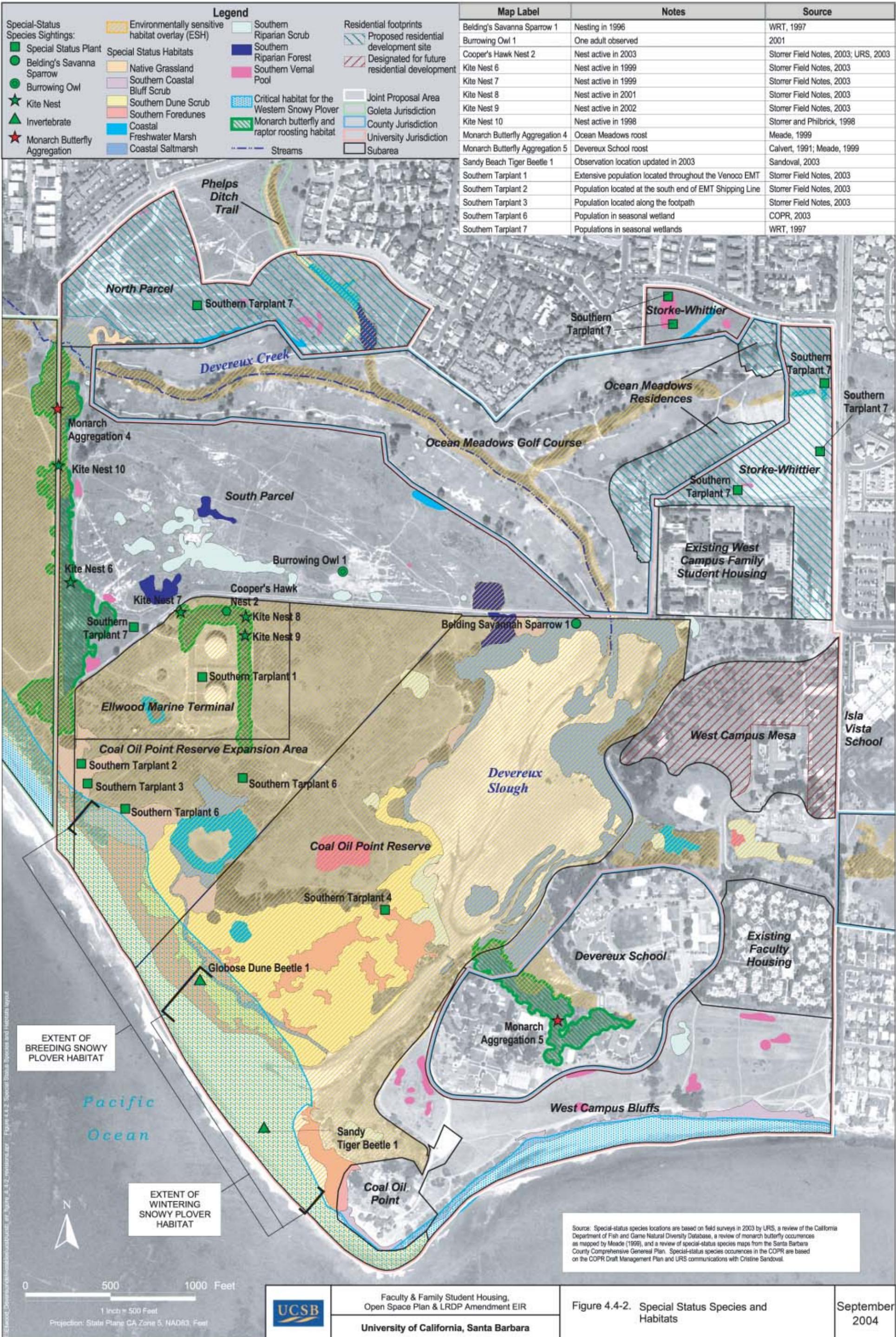
As illustrated on Figure 4.4-2, known special-status species occurrences on the North and Storke-Whittier parcels within the proposed development footprints where residential development is proposed are limited to southern tarplant populations associated with seasonal wetlands. Southern tarplant populations, white-tailed kite roosts and nests, burrowing owls roosts, and American badger sign have been observed on the South Parcel, which would be redesignated from residential to open space as part of the project. A white-tailed kite nest was also observed in 2004 on the on the Goleta Union School District parcel on the east side of Phelps Ditch approximately 400 feet from and outside of the development footprint and outside of the University property on the Goleta Union School District Site in the City of Goleta (Mullane 2004; Hunt 2004). Kites typically select a new nesting location each year although old or previously used nests are sometimes re-used. Consequently, this nest would not be anticipated to be present by the time that construction for the proposed project begins. Within the proposed development footprints Environmentally Sensitive Habitat Area designations occur

**FACULTY AND FAMILY STUDENT HOUSING,
OPEN SPACE PLAN, AND LRDP AMENDMENT EIR**

along Phelps Ditch in the North Parcel, in an area on the South Parcel, and an isolated vernal pool on the Storke-Whittier Parcel.

Section 4.4

*Biological
Resources*



UCSB - Devereux Slough and Coal Oil Point - Figure 4.4-2: Special Status Species and Habitats layout

Source: Special-status species locations are based on field surveys in 2003 by URS, a review of the California Department of Fish and Game Natural Diversity Database, a review of monarch butterfly occurrences as mapped by Meade (1999), and a review of special-status species maps from the Santa Barbara County Comprehensive General Plan. Special-status species occurrences in the COPR are based on the COPR Draft Management Plan and URS communications with Cristine Sandoval.



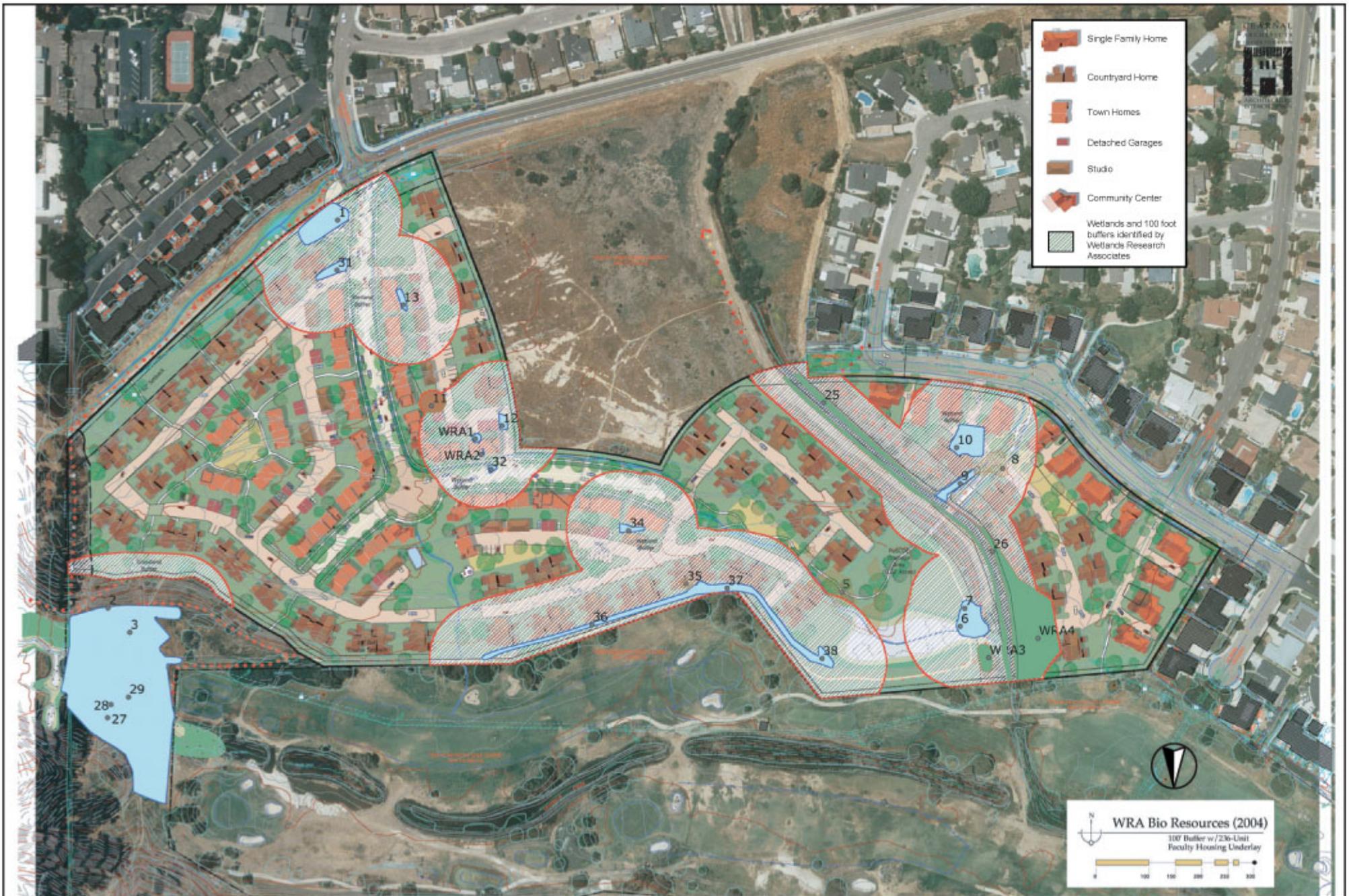


Figure 4.4-4. North Parcel Wetlands Identified by Wetlands Research Associates




 Wetlands and
 100 foot buffers

Source: R.L. Binder F.A.I.A. Architecture & Planning, in Association with Lenvik and Minor Architects



Faculty & Family Student Housing,
 Open Space Plan & LRDP Amendment EIR

University of California, Santa Barbara

Figure 4.4-5. Sierra Madre Wetlands



September
 2004

FACULTY AND FAMILY STUDENT HOUSING,
OPEN SPACE PLAN, AND LRDP AMENDMENT EIR

Table 4.4-3. Special-Status Plants

Section 4.4

Biological
Resources

Common Name Scientific Name	Listing Status ¹ Fed/State/ CNPS	Known Locations in Vicinity	Preferred Habitat	Blooming Period
Known to Occur				
Southern tarplant <i>Hemizonia parryi</i> ssp. <i>Australis</i>	--/--/IB	Known to occur within areas subject to development	Seasonal wetlands and vernal pools	June–Nov
<u>Santa Barbara Honeysuckle</u> <u><i>Lonicera subspicata</i> var. <i>subspicata</i></u>	<u>--/--/IB</u>	<u>Known to occur within the Phelps Ditch riparian corridor</u>	<u>Chaparral, Cismontane woodland, coastal scrub</u>	<u>May–Dec</u>
Known to Occur in Vicinity				
Ventura salt marsh milkvetch <i>Astragalus pycnostachys</i> var. <i>lanosissimus</i>	E/E/IB	Known to occur within the northern boundary of the COPR lagoon; outside of development footprint.	Back dune habitat, coastal meadows and near coastal salt marshes	June–Oct
Coulter’s saltbush <i>Atriplex coulteri</i>	--/--/IB	University campus lagoon; not known to occur in project area	Coastal scrub; alkaline or clay soils	March–Oct
Davidson’s saltbush <i>Atriplex serenana</i> var. <i> davidsonii</i>	--/--/IB	University campus lagoon; not known to occur in project area	Coastal scrub	April–Oct
Plummer’s baccharis <i>Baccharis plummerae</i> ssp. <i>Plummerae</i>	--/--/4	University main campus, Gaviota Pass, Refugio Rd., COPR lagoon	Coastal scrub; rocky soils	Aug–Oct
Contra Costa goldfields <i>Lasthenia conjugens</i>	--/--/IB	Isla Vista reserves; not known to occur in project area	Vernal pools	March–June
Coulter’s goldfields <i>Lasthenia glabrata</i> ssp. <i>coulteri</i>	--/--/IB	Goleta Slough; not known to occur in project area	Salt marsh	Feb–June
Dunedelion <i>Malacothrix incana</i>	--/--/4	Goleta Slough; not known to occur in project area	Dune	April–Aug
Estuary Seablite <i>Suaeda esteroa</i>	--/--/4	Goleta Slough; not known to occur in project area	Coastal scrub; salt marsh	July–Oct
Wooly Seablite <i>Suaeda taxifolia</i>	--/--/4	Coastal bluffs along Ellwood Mesa; not known to occur in project area	Bluff	Jan–Dec

'Key to Codes:

E = Endangered

“--“= no status/not listed

California Native Plant Society (CNPS)

IB = List IB species: rare, threatened, or endangered in California.

4 = List 4 species: plants about which more information is needed to determine their status and plants of limited distribution.

FACULTY AND FAMILY STUDENT HOUSING,
OPEN SPACE PLAN, AND LRDP AMENDMENT EIR

Section 4.4
Biological
Resources

4.4.2.6.1 Special-Status Plants. Several special-status plant species are known to occur in the vicinity of the project area and include southern tarplant (*Hemizonia parryi* ssp. *australis*), Santa Barbara Honeysuckle (*Lonicera subspicata* var. *subspicata*), Ventura salt marsh milkvetch (*Astragalus pycnostachys* var. *lanosissimus*), Coulter's saltbush (*Atriplex coulteri*), Davidson's saltbush (*Atriplex serenana* var. *davidsonii*), Plummer's baccharis (*Baccharis plummerae* ssp. *plummerae*), Contra Costa goldfields (*Lasthenia conjugens*), Coulter's goldfields (*Lasthenia glabrata*), dunedelion (*Malacothrix incana*), estuary seablite (*Suaeda esteroa*), and woolly seablite (*Suaeda taxifolia*). Table 4.4-3 documents the nearest locations and likelihood of presence within the project area. Of these, only the southern tarplant is known to occur in the project area, and this species is described in more detail below.

Southern Tarplant. Southern tarplant is an annual herb that germinates during spring and blooms and sets seed between June and November. It has yellow, daisy-like flowers that occur primarily at the ends of the branches. The California Native Plant Society (CNPS) currently includes this species on List 1B of their inventory of rare and endangered plants in California. The southern tarplant occurs in several small to large populations within the project area. The largest population occurs within the boundary of the Ellwood Marine Terminal. Another small population occurs north of Devereux Creek and the Ocean Meadows Golf Course adjacent to a small vernal pool. Multiple small populations occur in vernal pool or seasonally ponded water habitat on the western boundary of the Ocean Meadows Golf Course south of Phelps Road and west of Storke Road.

4.4.2.6.2 Special-Status Wildlife. Several special-status wildlife species are known to occur in the vicinity of the project area. Table 4.4-4 discusses the nearest locations and likelihood of occurrence in the project area. Each of the species in the table is described in more detail in the species accounts that follow Table 4.4-4. Three species, turkey vulture, western red bat, and American badger, are either locally protected (vulture) or are being considered for protection by CDFG (bat and badger).

4.4.2.6.2.1 Special-Status Invertebrates. Three species of fairy shrimp are recorded as occurring both historically and presently in vernal pools within a five mile radius of the project area. One species, *Lindleriella occidentalis*, a non-regulated species, apparently was common in vernal pools in the Isla Vista area in the 1960s and 1970s (Eriksen and Belk, 1999; Hubbard, 2004). Prior to creation of the Camino Corto Open Space and Del Sol Vernal Pool Reserve, these ephemeral water bodies were routinely subjected to vector control efforts. Even with protection and enhancement of the remaining pools in the mid-1980s, County Vector Control continues to add molt-inhibiting hormones to the pools to control mosquitoes. These hormones are non-specific and may negatively affect many species of arthropods and crustaceans, including fairy shrimp (Hubbard, 2004). These activities may be responsible for the absence of any fairy shrimp observations in these pools throughout the mid- to late 1990s despite routine sampling for vernal pool invertebrates by researchers at UC-Santa Barbara (Hubbard, 2004).

The following two special-status fairy shrimp have been reported from the vicinity of the project area and their potential for occurring in the project area is assessed.

FACULTY AND FAMILY STUDENT HOUSING,
OPEN SPACE PLAN, AND LRDP AMENDMENT EIR

Table 4.4-4. List of Special-Status Wildlife Species

Section 4.4

Biological
Resources

Common Name Scientific Name	Listing Status ¹ Fed/State	Occurrence
Invertebrates		
San Diego fairy shrimp <i>Branchinecta sandiegonensis</i>	E/-	One individual of this species was collected from a vernal pool in Isla Vista in the early 1990s but species has not been observed since despite sampling. This observation has been questioned (Eriksen and Belk, 1999) because species is unlikely to occur so far north of known geographic range. No vernal pool habitat exists within the development footprint. Vernal pools in the Open Space Areas and COPR are capable of supporting this species.
Vernal pool fairy shrimp <i>Branchinecta lynchi</i>	T/-	Species found in man-made depressions along the north side of Union Pacific Railroad tracks, about 5 miles west of the project area. Not found to date in Isla Vista vernal pools. No vernal pool habitat exists within the development footprint; vernal pool in the Open Space Area and COPR are capable of supporting this species.
Globose dune beetle <i>Coelus globosus</i>	SC/-	This species is known to occur southeast of the project area within the foredune habitat in the COPR and southwest of the project area in foredunes between the mouths of Tecolote and Bell Canyon creeks.
Sandy beach tiger beetle <i>Cicindela hirticollis grvida</i>	SC/-	This beetle has been found along the sandy beach in front of the mouth of Devereux Slough, located southeast of the project area. The larvae burrow along wet margin of estuary. Adults feed on flies near the slough mouth.
Monarch butterfly <i>Danaus plexippus</i>	-/CSC	Overwintering aggregations occur in eucalyptus woodland southwest, east, and southeast of the project footprint in the Open Space Area. No known aggregations within development footprint.
Fish		
Tidewater goby <i>Eucylogobius newberryi</i>	E/CSC	Formerly occurred in Devereux Slough (Sandoval, 2003); suitable habitat still exists there; could re-colonize naturally from existing populations in Tecolote and Bell Canyon creeks southwest of project area (Hunt, 2003).
Amphibians		
Red-legged frog <i>Rana aurora draytonii</i>	T/CSC	Nearest known localities are main stem of Devereux Creek between UPRR tracks and Highway 101 (Mullen, 2001), and Tecolote and Bell Canyon creeks south of UPRR tracks (Hunt, 2003). Capable of long-distance overland movements. No suitable habitat within development footprint, although habitat may exist in Devereux Creek and the Dune Pond in COPR. May also use associated riparian corridors in Open Space Area as movement corridor in rainy season.

FACULTY AND FAMILY STUDENT HOUSING,
OPEN SPACE PLAN, AND LRDP AMENDMENT EIR

Section 4.4

Table 4.4-4. List of Special-Status Wildlife Species

Biological
Resources

Common Name Scientific Name	Listing Status ¹ Fed/State	Occurrence
Reptiles		
Southwestern pond turtle <i>Clemmys marmorata pallida</i>	-/CSC	No suitable aquatic habitat exists within development footprint. Historically known from Devereux Slough and tributaries of Devereux Creek north of Highway 101. Capable of long-distance movements within stream corridors (Hunt, 1994). No suitable aquatic habitat occurs in Devereux Creek in the Open Space Area except in association with the Ocean Meadows Golf Course and the freshwater pond in the COPR Expansion Area.
California horned lizard <i>Phrynosoma coronatum frontale</i>	-/CSC	No suitable habitat exists within development footprint. Undocumented sightings from sand dunes around Campus Point and COPR. Low potential for occurrence in dunes west of mouth of Devereux Slough in COPR.
California legless lizard <i>Anniella pulchra pulchra</i>	-/CSC	No suitable habitat exists within development footprint. Suitable habitat occurs in COPR in dunes west of mouth of Devereux Slough in COPR (Hunt, 1987).
Coast patch-nosed snake <i>Salvadora hexalepis virgulata</i>	-/CSC	Rare along the South Coast, but secretive, so actual occurrence may be more common. Low potential for occurrence in development footprint or Open Space Area because only small, fragmented patches of scrub habitat are present in development footprint and Open Space Area (Hunt, 2003).
Two-striped garter snake <i>Thamnophis hammondi</i>	-/CSC	Observed in several small streams and wetlands in the western Goleta area (UCSB and SBMNH museum records). No suitable habitat exists within the development footprint. Suitable habitat may exist in permanently wetted reaches of Devereux Creek and its tributaries in the Open Space Area and near Devereux Slough (Hunt, 2003).
Birds		
Brown pelican <i>Pelecanus occidentalis californicus</i>	E/E	Common mid-summer to spring immediately off-shore and occasionally on beach south of project area. Breeds on Channel Islands.
Light-footed clapper rail <i>Rallus longirostris levipes</i>	E/E,FP	No suitable habitat in development footprint or in Open Space Area. Suitable habitat in saltmarsh vegetation around Devereux Slough in COPR. Formerly occurred in Devereux Slough in the 1940s (Lehman, 1994).

FACULTY AND FAMILY STUDENT HOUSING,
OPEN SPACE PLAN, AND LRDP AMENDMENT EIR

Table 4.4-4. List of Special-Status Wildlife Species

Section 4.4

Biological
Resources

Common Name Scientific Name	Listing Status ¹ Fed/State	Occurrence
California least tern (nesting) <i>Sterna antillarum browni</i>	E/E,FP	No suitable habitat in development footprint or Open Space Area. Former breeder, now mid-summer and fall visitor at mouth of Devereux Slough and occasionally in interior slough mud flats. Unlikely to nest at these locations. One fledged chick and adult were observed foraging at the mouth of Devereux Slough in 2003 (Swarbrick 2004; Sandoval 2003; Lehman 1994).
Western snowy plover <i>Charadrius alexandrinus nivosus</i>	T/CSC	No suitable habitat in development footprint or Open Space Area. Beach around mouth of Devereux Slough supports large wintering aggregation and a successful breeding population (Sandoval, 2003; Lehman, 1994).
Sharp-shinned hawk <i>Accipiter striatus</i>	-/CSC	Uncommon visitor fall through early spring to woodland and scrub habitats throughout the South Coast of Santa Barbara County (Lehman, 1994). Likely to occur in winter in eucalyptus woodlands and forage in open grassland and woodlands in project area.
Cooper's hawk <i>Accipiter cooperi</i>	-/CSC	Relatively common resident in woodlands along South Coast of Santa Barbara County (Lehman, 1994). A few pairs breed locally, including near the Venoco Lease southeast of the development footprint and along a eucalyptus windrow south of the development footprint. Likely to forage in grasslands and woodlands in development footprint and surrounding eucalyptus woodlands.
Northern harrier <i>Circus cyaneus</i>	-/CSC	Regular fall, winter, and spring transient to grasslands and open scrub habitats along South Coast of Santa Barbara County (Lehman, 1994). Likely to forage in degraded grasslands in development footprint and Open Space Area.
Osprey <i>Pandion haliaetus</i>	-/CSC	Uncommon fall and winter visitor to nearshore waters (Lehman, 1994). Unlikely to occur in project area away from the ocean.
Golden eagle <i>Aquila chrysaetos</i>	-/CSC	Very rare visitor to coastal regions of Santa Barbara County (Lehman, 1994). Typically nests and forages inland in more expansive grassland and scrub habitats.
White-tailed kite <i>Elanus leucurus</i>	SC/FP	Commonly forages in grasslands in the development footprint and Open Space Area. Known to nest in eucalyptus woodland east and southeast of the development footprint. <u>One nest observed in 2004 on the Goleta Union School District property, on the east side of Phelps Ditch approximately 400 feet from the proposed project.</u>
Prairie falcon <i>Falco mexicanus</i>	-/CSC	Rare visitor to project area; may rarely forage for shorebirds along beaches south of project area from nest and roost sites

FACULTY AND FAMILY STUDENT HOUSING,
OPEN SPACE PLAN, AND LRDP AMENDMENT EIR

Section 4.4

Table 4.4-4. List of Special-Status Wildlife Species

Biological
Resources

Common Name Scientific Name	Listing Status ¹ Fed/State	Occurrence
		on south slope of Santa Ynez Mountains.
Peregrine falcon <i>Falco peregrinus anatum</i>	SC/E	Sightings recently increasingly common in fall, winter, spring (Lehman, 1994; Hunt, 2003), but still a rare visitor to project area while foraging for shorebirds along beaches from roost sites on south slope of Santa Ynez Mountains.
Merlin <i>Falco columbarius</i>	-/CSC	Rare visitor in fall and winter through spring (Lehman, 1994). May occasionally forage for shorebirds and other birds on beaches and in Open Space Area, from roost sites on south slope of Santa Ynez Mountains.
Burrowing owl <i>Athene cunicularia</i>	SC/PT	Formerly a common wintering and breeding species along the coast, now a rare fall and early winter visitor (Lehman, 1994). Observed wintering in open grasslands on University lands north of COPR in 2001 (Ball, 2003). Suitable foraging and roosting habitat exists in open grasslands in the development footprint and the Open Space Area.
Short-eared owl <i>Asio flammeus</i>	-/CSC	Rare fall and winter visitor to coastal grassy mesas and wetlands. Wintering population declining and absent in some years. Not recently seen at COPR, but recently present in Goleta Slough and More Mesa (Lehman, 1994). Unlikely to nest in project area, but may forage over grasslands in development footprint and Open Space Area from off-site nests or roosts.
Turkey vulture <i>Cathartes aura</i>	*	Known communal roosts occur in eucalyptus woodlands southeast of the project area (Ellwood Mesa); eucalyptus trees and woodland patches along western edge of development footprint used as temporary day roosts; forages throughout the development footprint and Open Space Area.
Loggerhead shrike <i>Lanius ludovicianus</i>	SC/CSC	Regularly observed resident of project area; known to nest in Open Space Area (surveys for this report); unlikely to nest in development footprint because of lack of suitable scrub habitat
California thrasher <i>Toxostoma redivivum</i>	SC/-	Observed in dune scrub and coastal sage scrub southwest and west of Devereux Slough in COPR in late 1980s and early 1990s (Lehman, 1994; Hunt, 2003), but now uncommon. May occasionally forage in coyote bush and other scrub habitats in the Open Space Area, but suitable scrub habitats are relatively small and highly fragmented on site to be suitable for nesting (Hunt, 2003). <u>Documented nesting in COPR 1998–2004 (Musante 2004).</u>
Coast horned lark <i>Eremophilus alpestris actia</i>	-/CSC	Occurs commonly in grasslands throughout project area in late fall through late winter (Hunt, 2003).

FACULTY AND FAMILY STUDENT HOUSING,
OPEN SPACE PLAN, AND LRDP AMENDMENT EIR

Table 4.4-4. List of Special-Status Wildlife Species

Section 4.4

Biological
Resources

Common Name Scientific Name	Listing Status ¹ Fed/State	Occurrence
Yellow warbler <i>Dendroica petechia</i>	-/CSC	Breeds locally in dense willow thickets. Common fall and spring transient and rare winter visitor to South Coast of County (Lehman, 1994). Likely to occur in willow riparian habitat along Devereux Creek during fall and spring migration, but unlikely to breed there because suitable habitat is small and fragmented.
Yellow-breasted chat <i>Icteria virens</i>	-/CSC	Former breeder in dense coastal riparian and willow wetlands along the South Coast, now very rare migrant in area (Lehman, 1994). Unlikely to nest or forage in project area.
Belding's savannah sparrow <i>Passerculus sandwichensis beldingi</i>	-/E	No suitable habitat in development footprint. Known to breed in COPR in Devereux Slough salt marsh habitats (Ball, 2003). Habitat requirements are restrictive and species is unlikely to occur away from suitable habitat. Low to no potential for occurring either in development footprint or Open Space Area.
Tricolored blackbird <i>Agelaius tricolor</i>	SC/CSC	Uncommon and local breeder in Santa Barbara County (Lehman, 1994). Unlikely to nest but possibly could forage in small patches of freshwater marsh habitat present in Devereux Creek and Open Space Area project area and in mixed flocks with other Brewer's blackbird and red-winged blackbird in grasslands near such habitats.
Mammals		
Pallid bat <i>Antrozous pallidus</i>	-/CSC	Grasslands and open scrub habitats in the development footprint and Open Space Area provide excellent foraging habitat and possibly roosting habitat for this species. There are suitable off-site roosts that are within flight distance of the project area. Moderate to high potential for occurrence in project area.
Western red bat <i>Lasiurus blossevillii</i>	-/CSC	There are several records of this migratory species along the South Coast during fall and winter (Pierson et al., 2002). Suitable roost sites are found beneath the exfoliating bark of blue gum eucalyptus trees surrounding the development footprint and in the Open Space Area; suitable foraging habitat occurs along Devereux Creek, Phelps Ditch, Devereux Slough, and other wetland habitats. Moderate to high potential for occurrence in project area.
Yuma myotis <i>Myotis yumanensis</i>	SC/CSC	No suitable roosting or foraging habitat in development footprint for this project. May forage along Devereux Creek, Devereux Slough and other wetland habitats in the project area.

FACULTY AND FAMILY STUDENT HOUSING,
OPEN SPACE PLAN, AND LRDP AMENDMENT EIR

Section 4.4

Table 4.4-4. List of Special-Status Wildlife Species

Biological
Resources

Common Name Scientific Name	Listing Status ¹ Fed/State	Occurrence
Townsend's big-eared bat <i>Corynorhinus townsendi</i>	SC/CSC	Widespread in Santa Barbara County, including along the coast, but roosts have only been found at Vandenberg AFB and in the Santa Ynez Valley within or adjacent to riparian habitats (Pierson et al., 2001). May use the project area as foraging habitat from off-site roosts located along the south slope of the Santa Ynez Mountains. Low potential for occurring in the project area.
Badger <i>Taxidea taxus</i>	-/CSC	No recent observations in the development footprint, but diggings and foraging sign observed in grasslands in the Open Space Area and on University lands to the east in the late 1980s (Hunt, 1987). Current status in project area unknown, but probably low potential for occurring here due to relatively isolated nature of site.

Definitions:

Federal

- E = listed as endangered under the federal Endangered Species Act
- T = proposed for federal listing as threatened under the federal Endangered Species Act
- SC = species which information indicates may warrant listing but for which substantial biological information to support a proposed rule is lacking

State

- E = listed as endangered under the California Endangered Species Act
- CSC = species of special concern in California
- PT = Proposed for listing as threatened in California under the California Endangered Species Act
- FP = fully protected under the California Endangered Species Act
- * = Locally protected species

San Diego Fairy Shrimp (*Branchinecta sandiegonensis*). The San Diego fairy shrimp is listed as endangered by the U.S. Fish and Wildlife Service. It is known from a limited area of coastal mesas in Orange and San Diego counties (Eriksen and Belk, 1999). This fairy shrimp appears when late fall, winter, and spring rains fill small, shallow, unpredictable seasonal vernal pools. Maximum longevity of adults in the field is about 42 days, following a 10 to 20 day maturation period (Eriksen and Belk, 1999). One individual of this species was collected from a vernal pool in Isla Vista in the early 1990s (Fugate, 1993), however, the validity of this record far beyond its known geographic range has been questioned (Eriksen and Belk, 1999; Hubbard, 2004). Surveys for fairy shrimp were conducted at various intervals in the mid- to late 1990s, but failed to find fairy shrimp of any species (see introductory note above). Seasonal wetlands and vernal pools scattered across the project area are probably capable of supporting this species, but given the extralimital nature of the known record, it is unlikely that this species is present in either the project area or Isla Vista vernal pool reserves.

FACULTY AND FAMILY STUDENT HOUSING,
OPEN SPACE PLAN, AND LRDP AMENDMENT EIR

Section 4.4
Biological
Resources

Vernal Pool Fairy Shrimp (*Branchinecta lynchi*). The vernal pool fairy shrimp is listed as threatened by the U.S. Fish and Wildlife Service. This fairy shrimp is widely distributed in grassland vernal pools throughout the Central Valley of California, with disjunct populations elsewhere in the state. Adults have been found between early December and early May. Habitats seem to be of two different types: clear pools found in sandstone outcrops and pools with muddy bottoms found in swales in grasslands. This species frequents pools that are relatively short-lived: 6 to 7 weeks in winter and as little as three weeks in spring at warmer temperatures (Eriksen and Belk, 1999).

Vernal pool fairy shrimp were found in man-made depressions along the north side of the Union Pacific Railroad tracks, approximately 0.5 mile west of Dos Pueblos Canyon in April or May 2001 (Daniels, 2003). This location is approximately five miles west of the project area. Vernal pools within the project area may be capable of supporting this widely distributed species, but they have not been found here to date (but see introductory note).

Globose Dune Beetle (*Coelus globosus*). The globose dune beetle is a federal species of concern. It is one of four species of beetles restricted to coastal sand dunes and beaches along the Pacific Coast. All of the species are strongly fossorial (burrowing). It is distributed in coastal dunes from British Columbia southward to northwestern Baja California Norte, Mexico (Doyen, 1976). Throughout most of its range, it is narrowly restricted to foredunes immediately bordering the ocean and is able to withstand frequent inundation of its substrates by sea water. Globose dune beetles, along with a closely-related congener, *C. ciliatus*, occur in the dunes on COPR and in dunes to the west around Bell Canyon and Tecolote creeks (Sandoval, 2003; Hunt, 2003).

Sandy Beach Tiger Beetle (*Cicindela hirticollis gravida*). The sandy beach tiger beetle is federal species of concern. It is found in open, sandy coastal scrub and beach habitats near estuaries of central and southern California. The larvae burrow along the wet margin of estuaries and adults feed on flies at the high tide zone. These terrestrial, wide-ranging beetles are carnivorous. The sandy tiger beetle occurs in the sandy beach habitat in front of the Devereux Slough mouth in the COPR (Sandoval, 2003) and in the vicinity of Goleta Beach (Nagano, 1982).

Monarch Butterflies (*Danaus plexippus*). The monarch butterfly is a state-protected species of concern and is recognized as a California special resource (1988 Statutes, Chapter 540). Its preservation is supported by a number of groups including the Monarch project of the Xerces Society, the Friends of the Monarch, and the California Monarch Studies. Although the monarch butterfly is not threatened with extinction, its wintering sites are vulnerable.

Each fall, monarch butterflies in the western United States migrate to the coast of California from Mendocino County to Baja California with a few exceptions (Nagano and Lane, 1985). The butterflies arrive at the coast beginning in mid-September in small numbers. As larger numbers begin to arrive, they form temporary bivouacs (encampments) and as winter approaches, they

FACULTY AND FAMILY STUDENT HOUSING, OPEN SPACE PLAN, AND LRDP AMENDMENT EIR

Section 4.4 form permanent roosts, often called over-wintering or wintering colonies. The butterflies will remain until about mid-February, when they generally disperse inland (Nagano and Sakai, 1987).

Biological Resources

A typical wintering site for the monarch butterfly is a grove of trees within a mile of the ocean in creek drainages. Eucalyptus trees are used as wintering sites 90 percent of the time; however, it is not the tree species, but the environmental conditions or microclimate that the trees create that is important to the butterflies. These environmental conditions include protection from winds, a relatively constant mild to cool temperature, a source of drinking water, and a nectar source. A well-developed understory is typically found surrounding the grove providing a “thermal blanket” (Nagano and Sakai, 1987). Butterflies may roost in a number of different tree types, including but not limited to pines, oaks, sycamores, cypresses, palms, and willows. In some cases, the roost trees, namely eucalyptus and willows, also provide a nectar source for the butterflies.

Monarch butterfly aggregations occur west and northwest of the project area on Ellwood Mesa. The Ellwood Monarch Grove, actually a collection of several more or less contiguous stands of eucalyptus woodland, is associated with the main stem and tributaries of Devereux Creek and consistently harbors large numbers of overwintering butterflies. This grove was the largest overwintering site in California in 1988-89, with over 129,000 individuals (Nagano and Sakai, 1987; Calvert, 1991). In 1989-90, this grove was the second largest overwintering site in the County (ESA, 1992), and it consistently harbors between 50,000 and 100,000 butterflies each year (Meade, 1999). A satellite wintering site (Site 5 on Figure 4.4-2) occurs on the western border of the project area along the northwestern edge of the South Parcel and southwestern edge of the North Parcel and is considered to be small temporary bivouac with no more than a few thousand butterflies.

4.4.2.6.2.2 Special-Status Fish.

Tidewater Goby (*Eucyclogobius newberryi*). The tidewater goby is a small estuarine fish, rarely exceeding 2 inches in length that inhabits lagoons and the tidally influenced region of rivers from San Diego County to Del Norte County, California. They are typically found in the upper ends of lagoons in brackish water, usually in salinities of less than 10 parts per thousand (ppt), but have been found in water ranging from 0 to 40 ppt (Swift et al., 1989). Tidewater gobies are bottom dwellers and are typically found at depths of less than 3 feet. Instream, they inhabit low-velocity habitats out of the main current. Tidewater gobies may spawn at anytime of the year, but spawning typically peaks in late April through early May. Spawning takes place in burrows dug 4 to 8 inches deep in coarse sand. Spawning takes place at fairly low to moderate salinities (5 to 10 ppt). After hatching, the larval tidewater goby become planktonic (suspended in the water column) and are associated with aquatic plants in near-shore habitat. Juvenile tidewater goby are benthic dwellers, similar to adults. Habitat for tidewater gobies exists in Devereux Slough; however, they have been extirpated for several years (Sandoval, 2003). The process by which this species colonizes unoccupied watercourses is unknown, but because goby populations appear in drainages that were previously sampled and found not to contain them, dispersal is thought to occur after storm events when high stream flows dilute the salinity of

FACULTY AND FAMILY STUDENT HOUSING, OPEN SPACE PLAN, AND LRDP AMENDMENT EIR

near-shore waters. During these periods of reduced near-shore salinity, gobies may be able to disperse parallel to the shoreline and colonize adjacent drainages (Hunt, 2003). The lower reaches and terminal lagoons of Tecolote Creek and Bell Canyon Creek, located approximately 1.5 air miles and one air mile, respectively, west of the project area, supported high densities of juvenile and adult tidewater gobies in spring and summer 1998 and 1999, and again in 2002 (Hunt, pers. observ.). Although gobies are not currently known from Devereux Slough, this water body could be colonized by this species from nearby populations to the west.

Section 4.4
Biological
Resources

4.4.2.6.2.3 Special-Status Amphibians.

California Red-legged Frog (*Rana aurora draytonii*). The California red-legged frog is a federally-threatened species with a historic range including coastal drainages, Central Valley drainages, and Sierra Nevada drainages between the San Francisco Bay area and Baja California. Once the most abundant ranid frog throughout most of lowland California, *draytonii* occurs in significant numbers only in coastal drainages between Point Reyes and Ventura. South of the Santa Clara River (Ventura County) to the Mexican border, it is known from only four locations (Jennings and Hayes, 1994). It is declining regionally due to habitat modification and destruction (flood control projects, dam construction, etc.) and the introduction of exotic species such as bullfrog (*Rana catesbeiana*), sunfish (*Lepomis spp.*), and mosquitofish (*Gambusia affinis*) (Hunt, 2001, 2002). This frog occurs in Tecolote and Bell Canyon creeks as well as in Los Carneros Creek and other tributaries within the watersheds of Devereux and Goleta sloughs. Historically, this species likely occurred in the project area in association with Devereux Creek and its tributaries. It continues to persist in portions of the main stem of Devereux Creek west and north of the project area (Mullen, 2001), and may be present in freshwater marsh habitats on the COPR Expansion Area. Its presence in these latter areas is uncertain because protocol surveys have not been conducted (Sandoval, 2003; Hunt, 2003). Red-legged frogs are capable of moving two miles or more overland between aquatic sites (Hunt, 2003). Regardless, it is unlikely that this species presently occurs in Phelps Ditch or the unnamed eastern tributary of Devereux Creek because of lack of suitable habitat. The reach of Devereux Creek within and west of the project area does not appear to furnish permanent aquatic habitat for this species, but the creek channel and riparian corridor may function as a movement corridor for this species.

4.4.2.6.2.4 Special-Status Reptiles.

Southwestern Pond Turtle (*Clemmys marmorata pallida*). Southwestern pond turtle is a federal and state species of concern. It formerly occurred from the San Francisco Bay area southward throughout coastal and interior California, generally west of the deserts. They are experiencing declines over at least 75 to 80 percent of this range, and are now known from fewer than 20 populations south of central Ventura County (Jennings and Hayes, 1994). This aquatic turtle is highly adapted to the seasonal flow regimes of coastal California's rivers and streams. They require ponded or slow-water aquatic habitat, and occur in both natural and man-made water features. They typically leave these aquatic sites to reproduce, aestivate, and overwinter. Activity is highly correlated with elevated air and water temperatures, and may be highly seasonal or year-round, depending on local climate. Mating typically occurs in late April or early

FACULTY AND FAMILY STUDENT HOUSING, OPEN SPACE PLAN, AND LRDP AMENDMENT EIR

Section 4.4 May; eggs are laid in terrestrial nests excavated by the female up to thousands, but typically
Biological hundreds, of feet from the aquatic site. The young hatch in the fall, but apparently over-winter in
Resources the nest, then emerge the following spring to make their way back to the aquatic site after storm
flows have subsided. Adult turtles can move distances of more than three miles along
watercourses (Hunt, 1994).

Southwestern pond turtles are known from Devereux Slough (University 1984-1979 record), Goleta Slough (SBMNH 395-1976 record), and Campus Lagoon (University 1985-1978 record). Whether these individuals naturally occurred in these locations or were released captives captured elsewhere is unknown. They have been sighted in Tecolotito Creek (L.E. Hunt, pers. observ., 1999, 2000), Atascadero Creek (L.E. Hunt, pers. observ., 1997), unnamed tributary of Tecolotito Creek near Aero Camino Road and Clyde Adams Road (SBMNH sight record – 1980), and may also occur in the middle and upper portions of Ellwood Canyon, Bell Canyon Creek, and Tecolote Creek, west of the project area. Within the project area, the pond turtle potentially occurs within Devereux Creek, Phelps Ditch, and especially the unnamed pond in the COPR Expansion Area.

California Horned Lizard (*Phrynosoma coronatum*). The horned lizard is a federal and state species of concern. This formerly widespread lizard of central and south-central California is now restricted to the Inner Coast Range, Coast Range, and western Transverse ranges from the San Francisco Bay south through northern Ventura and Los Angeles counties (Jennings and Hayes, 1994). It occurs in habitat ranging from coastal sage scrub, chaparral, grassland, open pine-oak woodland, alluvial fan scrub, and saltbush scrub, with the common denominator that these possess a gravelly-sandy substrate.

Within Santa Barbara County, horned lizards are primarily known from the western, northern, and interior portions of the county. It apparently avoids areas along the coast that have persistent fog (Hunt, pers. observ.). Records of horned lizards from the South Coast are rare and primarily focused along the ridgeline of the Santa Ynez Mountains. There are sight records from More Mesa (University Vertebrate Museum) and a specimen from the dunes east of the mouth of Devereux Slough (Hunt, 2003). There are no recent observations of this species from the study area, despite the presence of apparently suitable dune scrub habitat on the COPR.

Silvery Legless Lizard (*Anniella pulchra pulchra*). The silvery legless lizard is a federal species of concern and occurs mostly in California, ranging from the central and coastal portions of California from the vicinity of Antioch in Contra Costa County south to northern Baja California. Removal of habitat from urban and agricultural development has reduced the population of this species (Jennings and Hayes, 1994). Silvery legless lizards inhabit sand, sandy loam, or loamy soils beneath shrubs and trees that produce abundant leaf litter. Dune scrub, oak woodland, and pine-oak woodlands are some of the habitats that provide suitable habitat for this species. Soil moisture appears to be a key habitat requirement for this species (Jennings and Hayes, 1994). Waldo Abbott, former Curator of Vertebrate Zoology at the Santa Barbara Museum of Natural History reported that this species was “formerly common, now extirpated” from dunes west of the mouth of Devereux Slough in the 1950s (Hunt, 1987). A series of

**FACULTY AND FAMILY STUDENT HOUSING,
OPEN SPACE PLAN, AND LRDP AMENDMENT EIR**

surveys for this species in the late 1980s in this habitat did not find them despite the presence of apparently high-quality habitat (Hunt, 1987). However, this species is frequently difficult to find even at known localities (Hunt, 2003). There is no suitable habitat for this species in the project area or in the rest of the Open Space Area.

Section 4.4
Biological
Resources

Coast Patch-Nosed Snake (*Salvadora hexalepis virgulata*). Patch-nosed snakes are a state species of concern and are typically found in the desert of the southwestern United States. This subspecies occurs in coastal southwestern California and northwestern Baja California Norte, Mexico (Stebbins, 2003). It occurs in coastal sage scrub, dune scrub, chaparral, and other low brushy or shrubby vegetation, where it preys upon whiptail lizards (genus *Cnemidophorus*). It may use small mammal burrows and woodrat nests as refugia and/or over-wintering sites. The natural history and movement ecology of this species is poorly known (Jennings and Hayes, 1994). It is active above-ground between March and October, but appears to be bimodally active, both seasonally and diurnally (individuals are typically found foraging in early to late morning, then again in late afternoon (Hunt, pers. observ.).

Patch-nosed snakes are typically found in interior locations of Santa Barbara County, mimicking the distribution of its prey, which may reflect both species absence from coastal areas that receive persistent convection fog (Hunt, pers. observ.). The nearest locality records shown by Jennings and Hayes (1994) are east and north of the project area around the crest of the Santa Ynez Mountains near San Marcos Pass. Suitable scrub habitat for this species within the project area occurs around Devereux Slough on the COPR; however, there are no records of whiptails from coastal Goleta or Santa Barbara (Hunt, pers. observ.).

Two-striped garter snake (*Thamnophis hammondi*). This snake is a state species of concern. It is restricted to southwestern California and the northern two-thirds of Baja California, Mexico. It occurs in close association with riparian, oak-riparian, and other aquatic and semi-aquatic habitats, where it preys upon larval amphibians, small fish, and aquatic invertebrates. It also occurs in scrub, chaparral, and grassland habitats, possibly seasonally, up to thousands of feet from water features (Hunt, pers. observ.). Two-striped garter snakes are known from several drainages along the south slope of the Santa Ynez Mountains (University and SBMNH records), and it likely occur in freshwater and possibly low-salinity brackish water habitats associated with Goleta and Devereux sloughs. There are no records from the project area, but suitable habitat is found in association with Devereux Creek, Phelps Ditch, and the unnamed pond on the COPR Expansion Area.

4.4.2.6.2.5 Special-Status Birds. The special-status bird species potentially occur within the project area and are discussed below.

California Brown Pelican (*Pelecanus occidentalis californicus*). The California brown pelican was listed as endangered by USFWS in 1970 and by CDFG in 1971. Critical habitat has not been designated to date. This strictly coastal bird frequents open nearshore waters along the coast of California, though many of them leave the area for nesting sites in Mexico in late winter and early spring (Lehman, 1994). The species is still recovering from intense reproductive

**FACULTY AND FAMILY STUDENT HOUSING,
OPEN SPACE PLAN, AND LRDP AMENDMENT EIR**

Section 4.4 failures caused by DDT use during the 1950s through 1970s. California brown pelican is common in the region and is frequently observed diving for fish in the ocean waters adjacent to the project area and roosting in Devereux Slough.

Biological Resources

Light-Footed Clapper Rail (*Rallus longirostris levipes*). The light-footed clapper rail is federal and state endangered species. It inhabits coastal salt and freshwater marshes containing cordgrass, cattails or tules, and rushes and forages in higher marsh vegetation, along vegetation and mudflat interface, and along tidal creeks. Its population declines were due to habitat loss of floodplain river areas and tidal estuaries. It is a former rare vagrant and has not been seen in Devereux Slough since the 1940s (Lehman, 1994).

California Least Tern (*Sterna antillarum ssp. browni*). The California least tern is a medium-sized black and white migratory bird. It is a federal and state-listed endangered species. It breeds along the coast of southern California in abandoned salt ponds, on sandy beaches, and along estuarine shores in San Francisco Bay. This species has been identified foraging in Devereux Slough (Sandoval, 2003). Although nesting populations are not recorded from the project area, one fledged chick and adult were observed at the mouth of the slough in 2003. No nesting was documented (Swarbrick, 2004).

Western Snowy Plover (*Charadrius alexandrinus nivosus*). The Western snowy plover was listed as threatened by USFWS in 1993 and critical habitat was designated in 1999. They have declined as a nesting species throughout California, in part due to human disturbance of sandy beaches typically used for nesting and roosting. Snowy plover nest on sandy beaches and dunes by creating a shallow depression as a nest, using driftwood, rocks, or bushes as cover; nests may also be entirely out in the open. Critical habitat for this species occurs along the beaches and dunes adjacent to the West Campus Bluffs, Coal Oil Point, and the COPR. The mouth of Devereux Slough and adjacent beaches to the west are major wintering localities and nesting sites for this species (Sandoval, 2003). Other south coast beaches inhabited by wintering snowy plovers include Goleta Beach, Santa Barbara Harbor, and Carpinteria State Beach.

Cooper's Hawk (*Accipiter cooperii*). Cooper's hawk breeds throughout most of California. Population declines are attributed to the loss of lowland riparian forests. Cooper's hawks are a local resident nesting species and are a widespread but uncommon winter visitor in Santa Barbara County (Lehman, 1989). The species continues to breed in well-developed riparian areas in the North County. Along the South Coast, the species nests sporadically, with only a few breeding pairs persisting in coastal canyons (Lehman, 1989). Cooper's hawk is expected to occur as an uncommon but regular winter visitor to willow and eucalyptus woodlands to the project area. An active Cooper's hawk nest was observed in a eucalyptus tree in the Ellwood Marine Terminal during field surveys associated with this study.

Northern Harrier (*Circus cyaneus*). The northern harrier is either a permanent or winter resident throughout California, except in the Klamath, Cascade, and Sierra Nevada Ranges and is considered a Species of Special Concern in California by CDFG. In Santa Barbara County, the northern harrier occurs as a winter visitor (Lehman, 1994). Loss of grasslands and wetlands has

**FACULTY AND FAMILY STUDENT HOUSING,
OPEN SPACE PLAN, AND LRDP AMENDMENT EIR**

Section 4.4
Biological
Resources

contributed to the decline of northern harriers in California (Remsen, 1978). Harriers have been observed wintering in the project area (Storrer, 2003). It is unlikely that harriers would nest on the North or Storke-Whittier parcels because of their small size, extent of habitat disturbance, and level of human presence, but they may be able to nest on the more extensive and less-disturbed South Parcel.

Burrowing Owl (*Athene cunicularia*). Burrowing owls historically were found throughout much of California in open habitat, including annual and perennial grasslands, deserts, and arid scrublands (Rich, 1984; Feeney 1992; CDFG, 1995). A key feature of potential habitat is that the canopy cover, as well as the height of the vegetation, is low. The burrowing owl nests in burrows typically dug by fossorial mammals such as badgers and ground squirrels (*Spermophilus beecheyi*). Man-made structures, such as cement culverts and debris piles, may also be used. Burrowing owls exhibit high-site fidelity, reusing the same burrows year after year (Rich, 1984; Feeney 1992; CDFG, 1995). Destruction of California ground squirrel colonies, especially by poisoning, and conversion of pastureland to agricultural and urban development have been the major sources of decline for burrowing owls. Regional declines have been so severe that the CDFG has recently been petitioned to list this species as threatened in the State under the California Endangered Species Act, and a decision is pending. Burrowing owls prefer open, dry and nearly level grassland habitats where they feed on insects, small mammals, and reptiles. It formerly bred along the South Coast and in western Santa Barbara County, but presence in both regions now is restricted to late fall and winter transients from more interior portions of California (Lehman, 1994). They are crepuscular in their foraging habits, and feed on a variety of small arthropods, small mammals, and even amphibians (Hunt, pers. observ.).

Recent sightings of burrowing owls along the South Coast include rocky grassland northeast of Foothill Road and Highway 154 (Hunt, 1999), and the project area on West Campus in 1998 and on University land north of COPR in 2001 (Ball, 2003). The latter record was of a single individual observed in a burrow in heavily disturbed area of southern portion of the South Parcel in winter 2001 (Ball, 2003). Much of the grassland and open scrub portions of the project area provide suitable foraging habitat for this species and California ground squirrel burrows are common in many parts of these areas.

White-tailed Kite (*Elanus leucurus*). The white-tailed kite has a restricted distribution in the United States and occurs only in California, western Oregon, and along the Texas coast (American Ornithologists' Union; 1983). During the early 1900s, the white-tailed kite was almost extirpated from the United States due to illegal shooting, but it has since made a successful recovery (Terres; 1980). The species occurs as a year-round resident breeder at the project area, which serves the kites as foraging, roosting, and nesting habitat.

Grasslands and marshes are the primary foraging habitats in the project area. Diurnally active rodents (e.g., meadow vole and harvest mouse) are the principal dietary components of white-tailed kites. Roost and nest sites are generally occupied from one year to the next and adult birds

FACULTY AND FAMILY STUDENT HOUSING, OPEN SPACE PLAN, AND LRDP AMENDMENT EIR

Section 4.4 *Biological Resources* in the greater Santa Barbara area are not typically migratory.¹ This creates conditions where ~~so~~ that “traditional” local territories ~~are have been~~ maintained for several years. Female kites do all nest construction, typically selecting a new site each year although old or previously used nests are sometimes re-used.² Kites are recorded nesting in the eucalyptus and cypress tree bordering the Ellwood Marine Terminal and in eucalyptus trees west of the South Parcel. Records from the project area indicate that a nest was active for a single season except in the case of 1999 when Nests 6 and 7 were both used, perhaps as a second nesting attempt (Figure 4.4-2). An active nest was reported from one of three trees on the northeastern side of the Goleta Union School District property north of the North Parcel in 2003. These oObservations suggest that open, undeveloped areas south of the Ocean Meadows Golf Course and west of Devereux Slough are the primary foraging territory for kites nesting in the Devereux Slough area and are likely supporting a single pair of kites.

Turkey Vulture (*Cathartes aura*). Communal turkey vulture roost sites are designated “an ecological community of great interest” in the County Comprehensive Plan, Conservation Element, and protection of these sites is recommended. In Santa Barbara County, turkey vultures use eucalyptus trees as communal roosting habitat and these roost sites are protected by County ordinances. The university as a State entity is not subject to local ordinances but it is included here for informational purposes. The nearest large communal roost is in Winchester Canyon at Calle Real (Lehman, 1982). Smaller roosts occur within the large eucalyptus groves northwest of the project area on Ellwood Mesa. Foraging territories typically encompass several miles. The project area is probably included within the foraging territories of several individuals, but the primary foraging areas for birds that roost on site are most likely located on undeveloped ranch lands to the west and north.

Other Raptors. Potential visitors to the project site also include the sharp-shinned hawk, merlin, and short-eared owl (Storrer, 2003; Hunt, 2003). The golden eagle, osprey, peregrine falcon, prairie falcon, short-eared owl, and merlin are uncommon-to-rare winter visitors and uncommon transients to the Santa Barbara region. When sighted locally, they typically are found in open grassland and estuary habitats. The sharp-shinned hawk is fairly common and is expected to frequent the project site as a regular winter visitor.

Loggerhead Shrike (*Lanius ludovicianus*). The loggerhead shrike is a widespread species that breeds throughout much of North America. They tend to congregate at southern latitudes of North America during the fall and winter. The loggerhead shrike is a state and federal species of concern due to concern over apparent regional declines in shrike populations. Loggerhead shrikes use the area as foraging habitat from mid-July through March. Five to seven shrikes have been observed on the Ellwood Mesa during the annual Christmas Count. The number of shrikes observed at the project site is considered high, and is probably related to the presence of extensive, unbroken foraging habitat along Elwood Mesa.

¹ Johnsgard, P.A. 1990. *Hawks, Eagles, and Falcons of North America*. Smithsonian Institution Press.

² Johnsgard, P.A. 1990. *Hawks, Eagles, and Falcons of North America*. Smithsonian Institution Press.

FACULTY AND FAMILY STUDENT HOUSING,
OPEN SPACE PLAN, AND LRDP AMENDMENT EIR

Section 4.4
Biological
Resources

California Thrasher (*Toxostoma redivivum*). The California thrasher is a federal species of concern. It occurs in the coastal slope of California, west of the deserts. It is regionally uncommon in Santa Barbara County, but may be locally and seasonally common in certain areas (e.g., Hollister Ranch in mid-summer; Hunt, personal observation). It is restricted to dune scrub, coastal sage scrub, and chaparral, where it forages on the ground for insects, lizards, and small snakes. It nests in these habitats and is relatively sedentary. This species has been observed in dune scrub and coastal sage scrub within and adjacent to COPR in the late 1980s and early 1990s (Hunt 2003). Nesting behavior including nest building, carrying of food, feeding of fledglings, and active nests, have been observed within the COPR by UCSB staff annually between 1998 and 2004 (Musante 2004). ~~However, it probably does not nest here because habitat patches are relatively small and severely fragmented.~~

California Horned Lark (*Eremophila alpestris actia*). The California horned lark, a state species of concern, is a common to abundant resident in a variety of open habitats, usually where trees and large shrubs are absent. They are typically found from grasslands along the coast and deserts near sea level to alpine dwarf-shrub habitat above treeline. They forage on the ground, eating insects, snails, spiders, and grass seeds when abundant. Historic breeding records on the South Coast are not uncommon, but in recent decades, coastal breeding has not been observed east of Gaviota (Lehman, 1994). Horned larks have declined regionally due to the conversion of open grassland to residential developments. Horned larks are likely to forage in the grasslands within the project area, but are unlikely to breed there.

Belding's Savannah Sparrow (*Passerculus sandwichensis ssp. beldingi*). Belding's savannah sparrow is a small, brown, resident songbird. It is a state-listed endangered species. This sparrow occurs in coastal areas of southern California and Baja California where it is a year-round resident of coastal salt marshes and associated mudflats and salt flats. Dense stands of pickleweed in the upper region of salt marshes that flood only during extremely high spring tides are its preferred nesting habitat. Belding's savannah sparrow forages on insects in the marsh and intertidal zone as well as in nearby mudflats and salt flats. Territorial pairs are present since spring 1990 and breed adjacent to Devereux Slough in pickleweed vegetation south of Venoco Access Road (Sandoval, 2003).

Tricolored Blackbird (*Agelaius tricolor*). The tricolored blackbird is a colonial nester in freshwater marshes and along streams. Preferred nesting habitat is dense bulrush and cattails (National Geographic Society, 1983), although nesting can occur in blackberry thickets, willows, mustard, thistles, nettles, and grasses (Beedy et al., 1991). Foraging occurs in wet meadows, rice fields, and rangelands. Historically, the tri-colored blackbird ranged from northwestern Baja California to south central Oregon, through the interior and coastal valleys of California and along the Modoc Plateau east of the Sierra Nevada range. Currently the range is similar and the population size has declined by an estimated 50 percent or more in the last 60 years (Beedy et al., 1991). This decline is probably consistent with the loss of riparian habitat and alteration of stream and marsh quality. Devereux Creek supports feeding areas for flocks of tricolored blackbirds in the summer and fall (Enviroplan, 1989). It is a rare visitor to the COPR (Sandoval,

FACULTY AND FAMILY STUDENT HOUSING,
OPEN SPACE PLAN, AND LRDP AMENDMENT EIR

Section 4.4 2003). Tricolored blackbirds probably use the open grasslands, pastures, and livestock corrals in the project area as foraging habitat during the summer and fall.

Biological
Resources

Other Riparian Birds. There are a number of sensitive birds which require riparian habitat for nesting that are expected to occur within the project area as common to uncommon spring and fall migrants. Species that fall into this category include yellow warbler and yellow-breasted chat. Neither of these species is expected to nest on the project area due to the absence of adequate riparian woodland/forest nesting habitat.

4.4.2.6.2.6 **Special-Status Mammals**

Pallid Bat (*Antrozous pallidus*). The pallid bat is a state species of concern. Resident and widespread along the South Coast of Santa Barbara County (Hall, 1981), this species forages on the ground at night in grassland and open scrub habitats, where it feeds on scorpions, Jerusalem crickets, beetles, and other large arthropods. Typical roosts include bridges, outbuildings, and other man-made structures. The project area contains suitable foraging habitat and possibly roosting habitat, and there are suitable off-site features that may provide suitable roosting sites within foraging distance of the project area.

Western Red Bat (*Lasiurus blossevillii*). This bat is migratory and occurs throughout lowland and lower montane California. Individuals migrate to coastal portions of California during the winter (Ingles, 1965). It typically roosts on the underside of large leaves or beneath exfoliating bark. It is an aerial forager, feeding on insects within or around water features, freshwater marsh, and riparian habitats. There are several records of this species along the South Coast during the winter. There is suitable foraging habitat in the project area associated with Devereux Creek, Phelps Ditch, Devereux Slough, and the unnamed pond in the COPR.

Yuma Myotis (*Myotis yumanensis*). This small bat is a federal species of concern and is a resident in Santa Barbara County. Its roosting preferences are similar to those of pallid bats and these two species are frequently found roosting together (Hunt, pers. observ.). Yuma myotis are aerial insectivores and have a strong association with open water during foraging. Within the project area, the unnamed pond in the COPR provides suitable year-round foraging habitat.

Townsend's big-eared bat (*Corynorhinus townsendii*). Townsend's big-eared bats are widely distributed in California, with the highest densities occurring in montane and desert regions (Ingles, 1965; Hall, 1981). The closest known roosting records for this species are on Vandenberg Air Force Base and the middle reaches of the Santa Ynez River (Pierson et al., 2002). Foraging habitat typically includes riparian corridors and adjacent woodlands. Although suitable roosting habitat for this species does not occur in the project area, it may occasionally forage along the coastal plain of southern Santa Barbara County, including wetland and grassland habitats in the project area, from roost sites in the Santa Ynez Mountains.

~~**American Badger (*Taxidea taxus*).** The American badger is distributed throughout the western and Midwestern U.S. from Canada to Mexico (Hall, 1981). They occupy a number of~~

FACULTY AND FAMILY STUDENT HOUSING,
OPEN SPACE PLAN, AND LRDP AMENDMENT EIR

~~diverse habitats, including grasslands, savannas, mountain meadows, coastal sage scrub, and riparian scrub, providing that the soils are friable and there is a high density of burrowing rodents. Badger populations have declined dramatically in California since the early 1900s, mostly due to intentional removal (poisoning, trapping, shooting) on agricultural lands and urbanization (Hunt, 2002). This species was considered a species of concern by CDFG, a designation that has been removed in recent years (CDFG 2003). Badgers were formerly relatively common in coastal grasslands between Gaviota and Goleta, but declined steeply in the 1980s and 1990s; records include Arroyo Quemado and Canada de la Guillermo (Hunt, 2002). Burrows were recorded within the COPR (Sandoval, 2003) as late as the mid-1980s, but have not been observed since. The American badger is unlikely to occur in the project vicinity due to the lack of recent observation.~~

Section 4.4
Biological
Resources

4.4.2.6.3 Special-Status Habitats. Special-status habitats are considered important because of their high species diversity, high productivity, limited distribution, declining status, or a combination of these qualities. These habitats are recognized as important by local and state

**FACULTY AND FAMILY STUDENT HOUSING,
OPEN SPACE PLAN, AND LRDP AMENDMENT EIR**

agencies and identified by the CDFG in the CNDDDB and by the County of Santa Barbara in the Goleta Community Plan. Table 4.4-5 lists special-status habitats and general locations of occurrences. Refer to Section 4.4.2.6.4 for a detailed description of the special-status habitat resources.

Section 4.4
Biological
Resources

4.4.2.6.4 Summary of Biological Resources

Summary of Plant Communities and Wildlife Habitats by Subarea. Plant communities and wildlife habitat within the project area are summarized by sub-area or parcel in the following sections.

Table 4.4-5. Special-Status Habitats

Habitat Type ¹	Location
Native Grassland	North Parcel
Southern Coastal Bluff Scrub	Ellwood Marine Terminal, COPR(including Expansion Area), Coal Oil Point, and West Campus Bluffs
Southern Dune Scrub	COPR (including Expansion Area)
Southern Foredune	COPR (including Expansion Area), Coal Oil Point and South Parcel
Southern Vernal Pool	North Parcel, Storke-Whittier, South Parcel, COPR, West Campus Bluffs, and West Campus Mesa
Wetland Habitats	North Parcel, Storke-Whittier, South Parcel, COPR (including expansion area), Ellwood Marine Terminal, West Campus Bluffs, and West Campus Mesa

¹Refer to Figure 4.4-1 for the distribution of special-status habitats.

North Campus (N. Parcel, S. Parcel, and Storke-Whittier). The North Campus includes three parcels: the North Parcel located south of Phelps Road; the South Parcel located south of Ocean Meadows Golf Course; and the Storke-Whittier Parcel located along Storke Road and Whittier Drive.

The North Parcel is dominated by non-native annual grassland with extensive areas of eroded bare soil where topsoil was previously removed during the construction of the golf course. Scattered, isolated patches of freshwater marsh, riparian scrub, and riparian forest occur in the drainage ditches and gullies within these parcels. Several vernal pools occur within this area, possibly remnants of previously graded habitats. Coyote bush scrub and southern coastal bluff scrub occurs in several large stands throughout the parcel. Extensive ruderal patches occur in areas where recreational uses preclude development of native species. A north-south trending eucalyptus windrow is situated along the western boundary of the North Parcel. Ornamental plantings are scattered in isolated patches throughout the North Campus area. As indicated on Figure 4.4-2, known special-status species occurrences in the North Parcel where residential development is proposed are limited to southern tarplant populations associated with seasonal wetlands. An Environmentally Sensitive Habitat (ESH) designation occurs along Phelps Ditch

FACULTY AND FAMILY STUDENT HOUSING, OPEN SPACE PLAN, AND LRDP AMENDMENT EIR

Section 4.4 under the County's Plan, although the functional analysis by Wetlands Research Associates indicates that the riparian habitat found along Phelps Ditch has intermediate functional value.

Biological Resources

The South Parcel is dominated by non-native annual grassland with scattered patches of coyote bush scrub and small, widely scattered patches of coastal sage scrub. Extensive stands of southern riparian scrub and southern coastal bluff scrub occur in the southern, western, and southwestern portions of this parcel. Widely scattered stands of southern riparian forest also are found in the southern and south-central portions of the parcel. A stand of coastal freshwater marsh habitat is associated with drainage ditches bordering Sandpiper Golf Course in the northeast portion of this parcel. Isolated patches of ruderal vegetation are scattered throughout this parcel. Ornamental plantings, associated with the golf course, are scattered along the northern and eastern boundaries of this parcel. Under the proposed project, the South Parcel would be redesignated from residential development to permanently protected open space.

Most of the Storke-Whittier Parcel south of the unnamed eastern tributary of Devereux Creek is bare or nearly bare soil. The unnamed tributary supports coastal freshwater marsh vegetation. Ornamental plantings associated with the golf course occur along the western boundary of the parcel and ruderal vegetation dominates the southwestern and northwestern portions of this parcel. The east end of Sandpiper Golf Course occurs on this parcel north of the unnamed eastern tributary of Devereux Creek. As illustrated on Figure 4.4-2, known special-status species occurrences on the Storke-Whittier Parcel where residential development is proposed are limited to southern tarplant populations associated with seasonal wetlands. No portion of Storke-Whittier Parcel has been designated as an Environmentally Sensitive Habitat area.

West Campus Mesa. The West Campus Mesa sub-area includes a diverse mix of habitats. The North Slough Finger borders the site to the south and is vegetated with coastal salt marsh at the culvert under Devereux Road. This salt marsh wetland receives tidal water exchange from Devereux Slough. In the upstream section of the North Slough Finger, eucalyptus woodland and riparian scrub habitats are the dominant feature. North of the drainage is a non-native annual grassland field disturbed from an adjacent horseback riding facility. Ruderal species, ornamental plantings, and eucalyptus woodland occur in large patches. One small patch of oak woodland and a large stand of coyote brush scrub occur on the western edge of the non-native grassland field bordering Devereux Road.

West Campus Bluffs. Annual grasslands dominate the West Campus Bluffs sub-area with several vernal pools in topographic depressions. A clay layer that collects and retains water during rain events supports these vernal pools. Coyote bush scrub occurs in small patches and one patch of riparian scrub, probably a result of runoff from the adjacent Devereux School. Ruderal species, eucalyptus woodland, and ornamental plantings border the steep ocean bluffs. The bluffs are vegetated with coastal bluff scrub. Erosion along the bluffs limits the development of the bluff scrub habitat.

Coal Oil Point, COPR, and Ellwood Marine Terminal. The Coal Oil Point sub-area is located at the point on the coastal bluff overlooking the Pacific Ocean. Habitat is limited in this

FACULTY AND FAMILY STUDENT HOUSING, OPEN SPACE PLAN, AND LRDP AMENDMENT EIR

sub-area due to the presence of the Cliff House facility, unpaved parking lot, temporary restroom, abandoned sheds and building pads, and a residence. Ornamental plantings and eucalyptus woodland form windbreaks around the structures. Understory vegetation is disturbed annual grassland.

Section 4.4
Biological
Resources

The COPR includes the Expansion Area designated in 1998. This area is rich in resources and forms a continuum of open, undeveloped lands connecting Devereux Slough to the east with Ellwood Mesa to the west. These intact, contiguous habitats enable unobstructed passage for resident wildlife, and contribute to the maintenance of genetic diversity of both plant and animal populations. Habitats within the preserve include coastal salt marsh and open water habitats within the tidal influence of Devereux Slough; the foredune, dune scrub, bluff scrub, coyote bush scrub, riparian scrub, and eucalyptus woodland habitats surrounding the slough; the foredune, dune scrub, and bluff scrub along the beach northwest of the slough; and the vernal pools, freshwater marsh, riparian scrub, coyote bush scrub, annual grassland, eucalyptus woodland, ornamental plantings, and the ruderal habitats on the transition zone from the slough to the Ellwood Mesa.

In addition to Devereux Slough, ponded water features within the COPR include a dune swale pond. This ponded water feature supports adjacent freshwater and saltwater marsh habitats. A small artificial pond is located within the Ellwood Marine Terminal.

Restoration activities are ongoing within the Reserve boundary and include invasive species removal, creation of vernal pools, and other habitat management practices guided by the COPR Management Plan (2003).

4.4.3 Regulatory Framework

Plant and wildlife species are considered “sensitive” if they are classified as rare, threatened, or endangered; proposed for listing as endangered or threatened; or they are candidate species for listing by federal and/or state resource agencies. In addition, other plants identified as sensitive by the CNPS, and wildlife considered species of special concern, special animals, or fully protected in the State of California are also considered “sensitive.” Certain habitat types are also classified as “sensitive” by the CDFG in the California Natural Diversity Data Base (CNDDDB).

For the purposes of this EIR, the term “special status species” includes species federally listed and proposed for listing as Threatened or Endangered, Candidate, and Species of Concern. Special-status species are plant, wildlife, and fish species that are protected by the following regulations and policies:

- Listed or proposed for listing as threatened or endangered under the federal Endangered Species Act (ESA) (50 CFR 17.11 [listed animals], 50 CFR 17.12 [listed plants], and various notices in the Federal Register for proposed species)
- Candidates for possible future listing as threatened or endangered under the federal ESA (58 CFR 188: 51144-51190, September 30, 1993)

FACULTY AND FAMILY STUDENT HOUSING, OPEN SPACE PLAN, AND LRDP AMENDMENT EIR

Section 4.4 • CDFG list of state threatened or endangered species under the California ESA

Biological Resources

Other special status species are species that have “special-status” designations other than state or federal status as threatened, endangered, or candidates for listing as endangered or threatened. Special-status designations indicate species rarity, population declines, or threats to populations that may warrant special consideration or protection, which include federal species of concern (former federal C2 candidates).

In late February 1996, the USFWS published an updated list of plant and animal taxa that it regards as candidates for possible addition to the List of Endangered and Threatened Wildlife and Plants under the Endangered Species Act of 1973, as amended (USFWS, 1996). These candidate species are those for which USFWS has on file sufficient information on biological vulnerability and threats to support a proposed rule to list, but issuance of such a proposed rule is precluded. In general, the currently designated “candidate” species correspond with the “Category 1” candidate species previously designated by USFWS. The USFWS no longer includes the former “Category 2” species as candidates, but does acknowledge these previously designated species as “species of concern.” In addition, it has been the policy of the CDFG to consider the previously designated Category 2 candidates as either California Species of Special Concern or as Special Animals.

4.4.3.1 Federal

4.4.3.1.1 Endangered Species Act of 1973. The federal ESA and implementing regulations, Title 16 United States Code (USC) §1531 et seq. (16 USC 1531 et seq.), Title 50 Code of Federal Regulations (CFR) §17.1 et seq. (50 CFR §17.1 et seq.), includes provisions for the protection and management of federally listed threatened or endangered plants and animals and their designated critical habitats. Section 7 of the ESA requires a permit to take threatened or endangered species during lawful project activities.

The administering agency for the above authority is the USFWS for terrestrial, avian, and most aquatic species. The National Marine Fisheries Service is responsible for administering the federal ESA as it applies to marine species and anadromous fish.

4.4.3.1.2 National Environmental Policy Act (NEPA); 42 USC §4321 et seq. This Act requires analysis of the environmental effects of federal actions. The administering agency for the above authority for the University’s proposed project is expected to be the ACOE associated with permitting under Section 404 of the Clean Water Act.

4.4.3.1.3 Fish and Wildlife Coordination Act. Section 7 of Fish and Wildlife Coordination Act, 16 USC 742 et seq., 16 USC 1531 et seq., and 50 CFR 17 requires consultation if any project facilities could jeopardize the continued existence of an endangered species. Applicability depends on federal jurisdiction over some aspect of the project. The administering agency for these authorities is expected to be the ACOE in coordination with the USFWS.

FACULTY AND FAMILY STUDENT HOUSING,
OPEN SPACE PLAN, AND LRDP AMENDMENT EIR

Section 4.4
Biological
Resources

4.4.3.1.4 Migratory Bird Treaty Act (MBTA). The MBTA (16 USC §§703-711) includes provisions for protection of migratory birds, including the non-permitted take of migratory birds, under the authority of the USFWS and CDFG. The MBTA protects over 800 species including geese, ducks, shorebirds, raptors, songbirds, and many relatively common species.

4.4.3.1.5 Clean Water Act of 1977, Section 404. This section of the Act (33 USC 1251 et seq., 33 CFR §§320 and 323) gives the ACOE authority to regulate discharges of dredge or fill material into waters of the U.S., including wetlands.

4.4.3.1.6 Clean Water Act of 1977, Section 401. This section of the Act requires a state-issued Water Quality Certification for all projects regulated under Section 404. In California, the RWQCB issues Water Quality Certifications with jurisdiction over the project area. The RWQCB – Central Coast Region, issues Section 401 Water Quality Certifications for Santa Barbara County.

4.4.3.2 State

4.4.3.2.1 California Endangered Species Act (CESA) of 1984. The CESA and implementing regulations in the Fish and Game Code, §2050 through §2089, includes provisions for the protection and management of plant and animals species listed as endangered or threatened, or designated as candidates for such listing. Incidental take of an endangered species is permitted by CDFG only under certain conditions and provided that the proper federal permits have been obtained and notifications made to the CDFG as described in Fish and Game Code §2080.1. Plants of California declared to be endangered, threatened, or rare are listed at 14 CCR §670.2. Animals of California declared to be endangered or threatened are listed at 14 CCR §670.5. 14 CCR §15000 et seq. describes the types and extent of information required to evaluate the effects of a proposed project on biological resources of a project site.

4.4.3.2.2 Fish and Game Code of California. The Fish and Game Code provides specific protection and listing for several types of biological resources.

Section 1580 of the Fish and Game Code presents the process and definition for Designated Ecological Reserves. Designated Ecological Reserves are significant wildlife habitats to be preserved in natural condition for the general public to observe and study.

Section 1602 of the Fish and Game Code requires a Streambed Alteration Agreement for any activity that may alter the bed and/or bank of a stream, river, or channel. Typical activities that require a Streambed Alteration Agreement include excavation or fill placed within a channel, vegetation clearing, structures for diversion of water, installation of culverts and bridge supports, cofferdams for construction dewatering, and bank reinforcement

Section 2081(b) and (c) of the CESA allows CDFG to issue an incidental take permit for a state listed threatened and endangered species only if specific criteria are met. These criteria can be

**FACULTY AND FAMILY STUDENT HOUSING,
OPEN SPACE PLAN, AND LRDP AMENDMENT EIR**

Section 4.4 found in Title 14 CCR, Sections 783.4(a) and (b). No Section 2081(b) permit may authorize the take of “fully protected” species and “specified birds.” If a project is planned in area where a species or specified bird occurs, an applicant must design the project to avoid all take; the CDFG cannot provide take authorization under CESA.

Biological Resources

4.4.3.2.3 Native Plant Protection Act of 1977. Native Plant Protection Act of 1977 and implementing regulations in Section 1900 et seq. of the Fish and Game Code designates rare and endangered plants, and provides specific protection measures for identified populations. It is administered by the CDFG.

4.4.3.2.4 Wetlands Resources Policy. This policy provides for the protection, preservation, restoration, enhancement, and expansion of wetland habitats in California. The administering agencies for this authority are the CDFG, the California Environmental Protection Agency (Cal-EPA), and the RWQCB (Regional Water Quality Control Board) – Central Coast Region.

4.4.3.2.5 California Coastal Act §30000 et seq. Chapter 3 of the California Coastal Act contains policies to protect water quality and the biological productivity of coastal waters (30231); avoid and minimize dredging, diking, and filling sediments (30233); and mitigation of wetland impacts (30607.1). Refer to Section 4.6 (Land Use) for a discussion of consistency of the proposed project with the applicable GCP policies.

4.4.3.3 Santa Barbara County

The Goleta Community Plan (GCP) was adopted by the Santa Barbara County Board of Supervisors in July 1993 as the focused policy document for the unincorporated areas of Goleta. Because the area is within the coastal zone, County policies for the area were reviewed and adopted by the California Coastal Commission (CCC). Although lands under the University’s jurisdiction are not subject to the GCP, the University’s proposed development program is generally based on the County of Santa Barbara’s existing and approved plans and standards to ensure continued consistency with the Coastal Act requirements. Refer to Section 4.6 (Land Use) for a discussion of consistency of the proposed project with the applicable GCP policies.

4.4.4 Project Impacts and Mitigations

4.4.4.1 Methodology

The proposed project has the potential to affect special-status habitats, plants, and animals. Consistent with the description of the Joint Proposal area, Table 4.4-6 summarizes the location of these habitat communities and special-status species by sub-area, based on the information provided in the previous setting sections.

Based on the location of the special-status habitats and species and the location of residential development, coastal access improvements, and open space management activities, including habitat restoration, the impact of the proposed project on those resources is identified.

FACULTY AND FAMILY STUDENT HOUSING,
OPEN SPACE PLAN, AND LRDP AMENDMENT EIR

**Table 4.4-6. Summary of Known Occurrences
of Biological Resources by Sub-Area^{1, 2}**

Section 4.4
Biological
Resources

Sub-Area	Special-Status Habitat Communities	Special-Status Plants	Special-Status Vertebrates	Special-Status Invertebrates
North Parcel	Native Grassland Southern Vernal Pool Wetland Habitats	Southern tarplant	Raptor foraging; Shrike foraging	-
South Parcel	Southern Vernal Pool Wetland Habitats Southern Fordune	Southern tarplant	Raptor foraging; Shrike foraging; Monarch butterfly aggregation	-
Storke - Whittier Parcel	Southern Vernal Pool Wetland Habitats	Southern tarplant	Raptor foraging	-
Ellwood Marine Terminal	Southern Coastal Bluff Scrub Wetland Habitats	Southern tarplant	Cooper's hawk nest; Kite nests; Raptor foraging	-
Coal Oil Point Reserve Expansion	Southern Coastal Bluff Scrub Southern Dune Scrub Southern Fore-dune Wetland Habitats	Southern tarplant	Western snowy plover nesting; Raptor foraging; Shrike foraging	Globose dune beetle
Coal Oil Point Reserve	Southern Coastal Bluff Scrub Southern Dune Scrub Southern Fore-dune; Southern Vernal Pool Wetland Habitats	Southern tarplant; Ventura salt marsh milkvetch	<u>California Thrasher</u> ; Belding's savannah sparrow nest; Western snowy plover nesting; California least tern foraging; Raptor foraging; Shrike foraging	Globose dune beetle; Sandy tiger beetle;
Coal Oil Point	Southern Coastal Bluff Scrub Southern Fore-dune	-	Raptor foraging	-
West Campus Mesa	Southern Vernal Pool Wetland Habitats	-	Raptor foraging; Shrike foraging	-
West Campus Bluffs	Southern Coastal Bluff Scrub Southern Vernal Pool Wetland Habitats	-	Raptor foraging; Shrike foraging	-

¹ Refer to Section 4.4.2.5 for acreages of North Campus wetland areas. The biological resources listed in Table 4.4-6 are based on known occurrences from previous surveys.

² No biological resources are identified within the existing West Campus Point Faculty Housing, and the West Campus Family Student Housing, as these areas are mostly developed with small landscaped pockets.

FACULTY AND FAMILY STUDENT HOUSING, OPEN SPACE PLAN, AND LRDP AMENDMENT EIR

Section 4.4 The following assumptions were made in the analysis of potential impacts to biological resources:

Biological Resources

1. The project is consistent with a number of existing LRDP policies (identified below).
2. Development of faculty housing on the North Parcel would occur on approximately 23 of the 26.5 acres of the site. All biological resources within the development site footprint subject to disturbance would be removed.
3. Development of Sierra Madre Family Student Housing on the Storke-Whittier Parcel would occur on approximately 10.7 acres of the site, plus 2.8 acres of lawn area adjacent to the existing West Campus Family Student Apartments. No development would occur west of the parking lot for the Ocean Meadows Golf Course. No direct impacts to wetlands would occur on the Storke-Whittier Parcel and no development would occur within 100 feet of wetlands.
4. The increase in residential occupants, coupled with coastal access improvements, would lead to incrementally increased recreational use of the open space areas.
5. Habitat enhancement and restoration plans discussed in the Open Space Plan will be prepared and implemented by the appropriate qualified professionals.
6. Habitat enhancement and restoration efforts of vernal pools, wetlands, native grasslands, and other sensitive habitats will be successful in the long-term.

A jurisdictional wetland delineation was conducted for the North and Storke-Whittier parcels by Padre and Associates (2000). In addition, Wetlands Research Associates conducted a functional assessment of wetland and riparian habitats in January 2004. The functional assessment was conducted by evaluating variables that included water storage, nutrient removal, plants communities, upland buffer condition, and potential wildlife use. A rank of between 0.1 and 1 was assigned to each of these variables. All the values were then averaged for a specific wetland to create a wetland rank of between a low of 0.1 and a high of 1 (WRA 2004).

When potential impacts to a resource from the project would be either avoided or fully mitigated by implementation of LRDP policies, the impact would be considered less than significant. If application of relevant LRDP policies is not sufficient to reduce or avoid potentially significant impacts, mitigation measures would be required. Mitigation measures are specific to the resource being impacted and include as much specific information about how to reduce impacts as is practical. In general, mitigation measures apply to construction and restoration phases of the project rather than the long-term management of the project area; however, some longer term monitoring plans would be required by specific mitigation measures as needed.

4.4.1.1 LRDP Policies

The Coastal Act Element of the LRDP included a range of policies and standards (herein termed LRDP policies) to demonstrate consistency of the LRDP, and projects implemented under the

**FACULTY AND FAMILY STUDENT HOUSING,
OPEN SPACE PLAN, AND LRDP AMENDMENT EIR**

LRDP, with the statutory requirements of Chapter 3 of the Coastal Act (commencing with Section 30200). The following LRDP policies are relevant to Biological Resources.

*Section 4.4
Biological
Resources*

30210.10. The University will, subject to the availability of funding from the State Coastal Conservancy, provide interpretive signs on North and West Campus, to highlight environmentally sensitive areas which could be damaged by excessive or unauthorized access.

30210.15. The campus shall continue to maintain and improve bicycle and pedestrian access ways to the beach as necessary to protect sensitive habitat areas and public safety.

30230.1. Development in Coal Oil Point Natural Reserve will be kept to a minimum. Only structures that would be used in conjunction with research in the Reserve, or that would enhance the area's usefulness as a natural study area, will be allowed, such as weather stations, observation blinds, and small storage structures.

30230.2. The University shall coordinate with and encourage action by the County of Santa Barbara, City of Santa Barbara, and the RWQCB to see that nearby land uses are established and carried out in a manner which will sustain the biological productivity of campus marine resources.

30231.1. In order to protect identified campus wetlands, environmentally sensitive habitat areas, and coastal waters from sediment transfer or contamination from urban runoff during construction, the following grading and erosion control practices shall be followed:

- a) North and West Campus construction periods shall be scheduled during the dry months of the year (May through October) whenever possible;
- b) If grading occurs during the rainy season (November through April), sediment traps, barriers, covers or other methods shall be used to reduce erosion and sedimentation.
- c) A site-specific erosion control and landscape plan shall be prepared for all new construction.
- d) Whenever practical, land on the North and West Campus is to be developed in increments of workable size which can be completed during a single construction season: erosion and sediment control measures are to be coordinated with the sequence of grading.
- e) Excavated materials shall not be deposited or stored where the material can be washed away by high water or storm runoff.
- f) Grading operations on campus shall be conducted so to prevent damaging effects of sediment production and dust on the site and on adjoining properties.
- g) When vegetation must be removed on campus, the method shall be one that will minimize the erosive effects from the removal.
- h) Exposure of soil to erosion by removing vegetation shall be limited to the area required for construction operations. The construction area should be fenced to define project boundaries.

**FACULTY AND FAMILY STUDENT HOUSING,
OPEN SPACE PLAN, AND LRDP AMENDMENT EIR**

- Section 4.4* i) Removal of existing vegetation on campus is to be minimized whenever possible.
- Biological Resources* j) Temporary mulching, seeding, or other suitable stabilization measures shall be used to protect exposed areas during construction or other land disturbance activities on campus.
- k) Topsoil removed from the surface in preparation for grading and construction on-campus is to be stored on or near the site and protected from erosion while grading operations are underway, provided that such storage may not be located where it would cause suffocation of root systems of trees intended to be preserved. After completion of such grading, topsoil is to be restored to exposed cut and fill embankments of building pads so as to provide a suitable base for seeding and planting.
- l) Slopes, both cut and fill on campus, shall not be steeper than 2:1 unless a geological and engineering analysis indicates that steeper slopes are safe and erosion control measures are specified.
- m) Slopes on campus shall not be constructed so as to endanger or disturb adjoining property.
- n) Sediment basins, sediment traps, or similar sediment control measures shall be installed before extensive clearing and grading operations begin for campus development.
- o) Neither wet concrete, nor slurries thereof, shall be permitted to enter any campus wetlands.

30231.3. Drainage and runoff shall not adversely affect campus wetlands.

- a) The near slopes along the edge of the wetlands shall remain an undisturbed buffer area.
- b) Pollutants shall not be allowed to enter the area through drainage systems (1980 LRDP Development Standard).
- c) Runoff into the wetlands will not increase sediment from campus property.

30240(a)2. Existing and proposed fences, signs and information maps around the perimeter of the Reserve shall be maintained to restrict unauthorized access by pedestrians, dogs, motor vehicles (except service and emergency vehicles) and off-road bicycles.

30240(a)3. Mowing of the grassland in the Reserve is prohibited, except for fire protection, and shall be avoided prior to the time plants go to seed. Mowing shall not exceed the minimum necessary for adequate fire protection.

30240(a)4. To preserve roosting habitat for birds, eucalyptus, pine, and other trees and brush located on the bluff east of Coal Oil Point Natural Reserve outside of the faculty housing development and outside of the Coal Oil Point development will not be removed except where necessary to accommodate new structures or infrastructure.

30240(a)6. Signs prohibiting unauthorized vehicles (except service and emergency vehicles), pedestrians and domestic pets from entering the Reserve shall be posted along its eastern and northwestern boundary. Signs shall be posted when West Campus housing is constructed.

**FACULTY AND FAMILY STUDENT HOUSING,
OPEN SPACE PLAN, AND LRDP AMENDMENT EIR**

*Section 4.4
Biological
Resources*

30240(a)8. Pedestrians and bicycles shall be encouraged to remain on existing trails. Signs shall be posted.

30240(a)10. South-facing ocean bluffs on the Main, and West Campuses shall be left in their present state.

30240(a)15. Unleashed dogs and motor vehicles, except for service and emergency vehicles, shall be prohibited on campus beaches.

30240(a)16. The campus shall use mosquito control methods with the least effects upon non-target organisms. Wetlands shall not be drained for this purpose, nor shall non-native larval predators be introduced.

30240(b)4. All new lighting on the West Campus, Storke Campus, and Main Campus shall be kept at the minimum level which strikes a balance between safety and habitat protection and shall be designed to avoid glare into adjacent properties.

30240(b)6. In order to protect habitats of the Reserve:

- a) The total square footage of current and replacement Coal Oil Point structures shall not exceed the total square footage of current Coal Oil Point structures.
- b) New structures that are constructed as part of the Coal Oil Point project shall be set back a minimum of 50 feet from the bluff edge.
- c) Trees on Coal Oil Point will not be removed except where necessary to accommodate new structures and infrastructure.

30240(b)19. A 200-foot minimum setback between proposed development and the oil company access road on North Campus is required.

30240(b)20. To avoid degradation of habitat values for wildlife in the Coal Oil Point Reserve, screening of automobile headlights along the north edge of the Devereux Slough is required.

30240(b)21. The Ellwood Marine Terminal Facilities shall be removed when the current lease expires in 2016, and the natural habitat values of the site shall be restored to a condition approximating that which existed prior to the initial construction of the facilities.

30240(b)22. The environmentally-sensitive 40-acre area in the southernmost portion of the North Campus site (see Figure 2.0 in the Faculty and Family Student Housing, Open Space Plan and LRDP Amendment EIR) shall be dedicated to the Coal Oil Point Natural Reserve.

30251.7. In order to preserve existing native trees and significant stands of trees which pre-date University acquisition of the campus, to the extent feasible, native trees shall be retained within the overall site area of new development.

**FACULTY AND FAMILY STUDENT HOUSING,
OPEN SPACE PLAN, AND LRDP AMENDMENT EIR**

Section 4.4 **30251.8.** Existing topography, vegetation, and scenic features of the West Campus are to be retained and incorporated into the proposed development whenever possible.

*Biological
Resources*

30251.9. Trees or shrubs may be selectively removed or trimmed to provide views to and along the ocean and scenic coastal areas along the primary view corridors identified in Figure 24 (of the 1990 LRDP) or for safety reasons. Any removal of trees or shrubs shall be timed to avoid the nesting season of local birds (January through June).

30251.10. Specimen trees or groves which contribute to the visual attractiveness of West Campus may not be removed, unless necessary for safety reasons or to provide the least cleared area sufficient to locate and construct approved roads and structures on the site. Selective clearing of vegetation may be permitted where panoramic views may be presently obscured by such vegetation.

30251.14. Tree trimming or removal near heron nest trees shall be timed to avoid the nesting season.

30251.17. Native plant species will be used in all open space areas outside the development areas on North and West Campus, and drought tolerant species will be used within the development areas as much as possible.

30253.3. No development shall be permitted on the bluff face, except for staircases or access ways to provide public beach access and pipelines for instructional or research-oriented use.

30253.11. Pedestrian use of unimproved paths up and down the bluff shall be discouraged. To this end, a fence shall be constructed on the coastal bluff top edge, wherever it does not now exist.

30253.13. Within 50 feet of the bluff top, vegetation shall be maintained or replanted with drought-resistant species, should grading be required to establish proper drainage landward of the bluff.

4.4.4.3 **Thresholds of Significance**

The following thresholds of significance are based on Appendix G of the CEQA Guidelines. For the purposes of this EIR, implementation of the proposed project may have significant adverse impacts to biological resources, if it would result in any if the following:

- Have a substantial adverse effect either directly or through habitat modification, on any species identified as candidate, sensitive, or special-status species in local or regional plans, policies, or regulations; or by the CDFG, or by the USFWS
- Have a substantial adverse effect on any riparian habitat or any other sensitive natural community identified in local plans, policies, or regulations; or by the CDFG; or by the USFWS

FACULTY AND FAMILY STUDENT HOUSING, OPEN SPACE PLAN, AND LRDP AMENDMENT EIR

- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including but not limited to marsh, vernal pool, etc.) through direct removal, filling, hydrological interruption or other means
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites
- Conflict with any local policies or ordinances protecting biological resources
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan

Section 4.4
Biological
Resources

4.4.4.4 Effects Not Found to Be Significant

The Initial Study did not identify any biological resource impacts as “effects not found to be significant”; therefore, all potential biological resource impacts (identified in Appendix G of the CEQA Guidelines) are discussed in this EIR.

4.4.4.5 Impacts and Mitigation Measures

Impact 4.4-1. Implementation of the proposed project could result in adverse impacts to candidate, sensitive, or special status plant and wildlife species. With the inclusion of the identified Mitigation Measures, this impact would be reduced to a *less-than-significant* level.

Amendment of the LRDP to permit residential development on the North Campus, coastal access improvements, and open space management activities, including habitat enhancement and restoration, could result in adverse impacts to candidate, sensitive, or special status plant and wildlife species.

The proposed project would result in development of 236 units of faculty housing on the North Parcel and 151 units of family student housing on the Storke-Whittier Parcel. Implementation of the portion of the Open Space Plan under the University’s jurisdiction would result in coastal access improvements, including: 1) improvement of existing trails and closure of informal trails to protect sensitive resources, 2) improvement of existing beach access points, 3) installation of a new coastal access stairway, 4) provision of additional public parking, and 5) replacement of an existing portable restroom. In addition, approximately 314.3 acres of open space and natural reserve would be managed to protect coastal resources, including enhancement and restoration of sensitive habitats.

Development of housing would result in the grading and disturbance of approximately 23 acres of land on the North Parcel and approximately 13.5 acres of land on the Storke-Whittier Parcel. Improvement of approximately 8.18 miles of existing trails could result in disturbance along trails to provide a level surface and/or to expand the width of the trail. Based on the proposed trail types and widths identified in the Open Space Plan, approximately 6.2 acres of ground area along trails could be graded or disturbed in conjunction with trail improvements. Development

**FACULTY AND FAMILY STUDENT HOUSING,
OPEN SPACE PLAN, AND LRDP AMENDMENT EIR**

Section 4.4 of public parking at up to four locations would result in grading and disturbance of approximately 0.6 acre of land (total for all four locations, including restroom replacement at Coal Oil Point). Thus, the proposed project could result in grading or disturbance of up to 49.8 acres of land, which could result in adverse impacts to candidate, sensitive, or special-status plant and wildlife species, as described more fully below.

Biological Resources

The proposed project is consistent with a number of current LRDP policies that are designed to reduce potential impacts to sensitive species or sensitive habitats that support them by redirecting authorized foot, bicycle, and equestrian traffic away from the sensitive areas; and restrict unauthorized incursions into areas that could impact sensitive resources. Consistent with LRDP Policies 30210.15 and 30240(a)8, the project will close impromptu trails and access points, formalize other existing trails and access points that avoid and protect sensitive areas, and post signage to inform users of sensitive biological resources. Signage prohibiting unauthorized vehicles (except service and emergency vehicles), pedestrians, and domestic pets from entering the COPR, will also be posted, consistent with LRDP policy 30240(a)6. Consistent with LRDP policy 30240(a)2, existing and proposed fences, signs, and information maps along the perimeter of the COPR will be maintained to restrict unauthorized access by pedestrians, dogs, motor vehicles (except service and emergency vehicles) and off-road bicycles. The project would also be consistent with LRDP policy 30251.8 in that the existing topography, vegetation, and scenic features of the West Campus have been and will be retained and incorporated into the proposed development whenever possible. Furthermore, it would protect beach and coastal bluff sensitive species and resources by prohibiting pedestrian use of unimproved paths up coastal bluffs (consistent with LRDP policy 30253.11), prohibiting unleashed dogs and non-emergency motor vehicles from campus beaches (consistent with LRDP policy 30240(a)15), and by discouraging pedestrian use of unimproved paths up coastal bluffs would through the formalization of trails, fencing, and signage in the South Parcel and open space areas (consistent with LRDP policy 30253.11.)

Although a discussion of project-related effects to special status species by project development site is provided below, impacts to special-status (e.g., rare) habitat types are discussed in Impact 4.4-2 and impacts to wetlands are discussed in Impact 4.4-3.

North Campus Faculty Housing. As currently proposed, implementation of the proposed project would result in conversion of the North Parcel from vacant undeveloped land to faculty housing. This parcel supports a single population of southern tarplant, a CNPS List 1B species (Figure 4.4-2). These plants are located within the proposed development footprint and would be removed during project construction. The grasslands of the site, though disturbed and degraded, are potential foraging habitat for raptors and other special-status avian species such as white-tailed kite, Cooper's hawk, sharp-shinned hawk, and loggerhead shrike. Nesting of these species on the North Parcel, including the riparian habitat along Phelps Ditch, has not been documented. However, a white-tailed kite nest was also observed in 2004 on the on the Goleta Union School District parcel on the east side of Phelps Ditch. The vernal pools of the site could provide suitable habitat for vernal pool invertebrates. However, most (10) of wetlands on the

**FACULTY AND FAMILY STUDENT HOUSING,
OPEN SPACE PLAN, AND LRDP AMENDMENT EIR**

North Parcel are of low quality; four are of intermediate quality, and only one ranked as high quality, the salt marsh in the southwest corner of the North Parcel (WRA 2004).

*Section 4.4
Biological
Resources*

Development would occur on approximately 23 of the 26 acres on the North Parcel. The proposed project includes re-engineering and restoration of Phelps Ditch and expansion of the wetlands in the southeast portion of the site. The majority of the parcel would be converted to housing and related infrastructure, resulting in the loss of foraging habitat for raptors and shrikes, the loss of a known population of sensitive plants, and the loss of vernal pools that could provide habitat for sensitive vernal pool species (Table 4.4-6). The salt marsh in the southwest corner of the North Parcel will be preserved as part of the project.

Vegetation removal and ground-clearing activities associated with development could result in the direct mortality of adult birds or their young, nest destruction, or disturbance of nesting bird species that results in nest abandonment and/or the loss of reproductive effort. However, because no sensitive species of birds are known to nest on the North Parcel, the disturbance of active nests would not be considered a significant impact under CEQA..

South Parcel. Approximately 68.7 acres of mostly non-native annual grassland that comprise the South Parcel is to be dedicated as public open space, and habitats will be restored from their currently degraded condition. This parcel is known to support white-tailed kite nesting sites, a monarch aggregation site, and the only recent sighting of the burrowing owls along the coastal plain of southern Santa Barbara County. A population of southern tarplant occurs in the southwest portion of the property, in close proximity to the proposed Anza trail. Because the site is predominantly non-native annual grassland, it provides an abundance of foraging habitat for birds of prey and other grassland species. Vernal pools along the western boundary could provide habitat for sensitive invertebrate species.

The Open Space Plan calls for the designation of the Southern Parcel as a Nature Park, the closure of informal trails to protect sensitive resources, improvement of other trails, and restoration of native habitats within the South Parcel. Restoration and trail activities could have short-term impacts to nesting birds and sensitive plants as vegetation is removed prior to restoration. The long-term effect of implementation of the Open Space Plan on the sensitive and other species in the area is expected to be beneficial as the quality of habitat improves and disturbance of species and habitats is reduced.

The proposed installation of a 60 x 42-inch culvert on Devereux Creek to replace the existing twin 24-inch drain pipes (under the Venoco Access Road) would increase the discharge capacity of Devereux Creek, which could increase sediment transport by the creek and subsequent discharge of sediment into Devereux Slough. A change in sediment transport could affect the slough via habitat modification and alterations in hydrology. To reduce and mitigate the potential effects of installation of the culvert, MM 4.3-3(a), discussed in Impact 4.3-3 (Hydrology and Water Quality) would restrict installation of the culvert during the dry season, from May to October, while MM 4.4-3(b) would require stabilization of the portions of the channel

FACULTY AND FAMILY STUDENT HOUSING, OPEN SPACE PLAN, AND LRDP AMENDMENT EIR

Section 4.4 immediately upstream and downstream of the culvert, and revegetation of areas affected by construction activities.

Biological Resources

Although the proposed restoration of the South Parcel (including revegetation of areas of bare soil and installation of sedimentation basins) and residential development on the North Parcel and Storke-Whittier Parcel (which would implement erosion control measures during construction and include vegetated swales and other measures to reduce runoff) would be expected to reduce sediment loads in Devereux Creek in the long-term; and thus reduce the amount of sediment entering the Devereux Slough. However, the increased discharge capacity of the creek (as a result of culvert installation) could also result in changes in the morphology of the Slough. An increase in sediment flow could decrease the area of the slough, and decrease the functionality of the estuarine system by eliminating or reducing the tidal flux, or reducing the area inundated via infill on newly-deposited sediments. Conversely, a decrease in the sediment transport could reduce the influx of nutrients associated within sediment input.

In addition to the potential increase of sediment into the slough, the increase in impervious surfaces resulting from the residential development, roads and parking could incrementally increase the presence of urban contaminants in stormwater runoff, including oil and grease, coliform bacteria, petroleum hydrocarbons (gas and diesel fuels), nitrogen, phosphorus, heavy metals, pesticides, or herbicides used in landscape maintenance.

Significantly increased sedimentation or pollutants could have a direct impact on the special status species that occupy the slough, and utilize this habitat for either refuge or foraging. Although surface runoff associated with the housing component of the proposed project is not expected to add significant amounts of these pollutants, Mitigation Measure 4.4-1(p) and MM 4.3-3(a), through 4.3-3(c) discussed in Impact 4.3-3 (Hydrology and Water Quality), would be ensure impacts would continue to be *less than significant*.

Sierra Madre Family Student Housing. The Sierra Madre Family Student Housing development is to be constructed on the southern-most of the two Storke-Whittier parcels. This property is primarily non-native grassland and open habitats that have been subject to much disturbance (Figure 4.4-1). One small vernal pool in the southern part of the property could provide habitat for sensitive vernal pool species. The parcel supports three populations of southern tarplant (Figure 4.4-2). Development of the site would require extensive grading that could impact the tarplant populations and the vernal pool. The ruderal habitats may provide limited foraging opportunities for local raptors and other grassland birds. However, with the implementation of associated mitigation measures, these impacts would be less than significant.

Coal Oil Point Reserve, COPR Expansion Area, and West Campus Bluffs. These areas account for over 202 acres of land that will be preserved as open space and natural reserve. This area supports a variety of sensitive species (Figure 4.4-2). Several populations of southern tarplant, and Ventura salt marsh milkvetch occur within the COPR and Expansion Area. The only records of sensitive beetles, globose dune beetle, and sandy tiger beetle are from the sandy areas near the mouth of Devereux Slough. Nesting and wintering western snowy plovers use the

**FACULTY AND FAMILY STUDENT HOUSING,
OPEN SPACE PLAN, AND LRDP AMENDMENT EIR**

**Section 4.4
Biological
Resources**

beaches of the COPR and Expansion area. Belding's savanna sparrow, a state endangered species, routinely nests within the marsh habitats of Devereux Slough, and one occurrence of a successful nesting and fledge of a California least-tern has been documented within the reserve. The extensive dune scrub and coyote bush scrub habitats within this area ~~could~~ could provide nesting habitat for California thrasher and could also support sensitive birds such as the loggerhead shrike ~~and California thrasher~~. The single vernal pool of the COPR could provide habitat for sensitive invertebrates.

The West Campus Bluffs do not support any sensitive species; however, restoration of vernal pools is being conducted, and sensitive species could become established in these pools over the long-term.

The Open Space Plan calls for the closure of informal trails to protect sensitive resources, formalization of other trails, and restoration of native habitats within these areas. Only restricted public access is permitted in the COPR and Expansion Areas, and is limited to research-related activities. Trails around this area will be formalized and improved with an all-weather surface and designated for pedestrian use only. Trails within the West Campus Bluffs will be subject to a similar process, but allow for use by bicycles and pedestrians. All other existing informal trails will be closed and restored with appropriate native habitat, providing a net benefit to area wildlife species. Trails proposed in the Open Space Plan have been located to avoid sensitive species and limit recreational impacts to these species. Restoration and trail construction activities could have short-term impacts to nesting birds and sensitive plants as non-native vegetation is removed prior to restoration and/or mechanized equipment is utilized to prepare areas for restoration and trail formalization. The long-term effect of implementation of the Open Space Plan on the sensitive and other species that use this area is expected to be beneficial as the quality of habitat improves. Although recreational and equestrian activities occur in areas around the COPR, an increase in access and nearby housing could lead to increased disturbance of sensitive species if trail closures are not successful in re-directing recreational users away from sensitive resources.

The beaches of the COPR, Expansion Area, and West Mesa Bluffs are federally designated critical habitat for the western snowy plover (64 FR 68508) (Figure 4.4-2). Impacts to critical habitat can be considered by the USFWS to be the same as a take of the species and a violation of the federal ESA. The project could impact critical habitat and the snowy plover in two ways. First, the Open Space Plan will result in formalization and related construction of beach access points. Unless properly regulated, construction and construction-related noise associated with trail closure and formalization could lead to disturbance of nesting plovers during wintering and breeding seasons that results in loss or disturbance of plovers. Specifically the construction of new boardwalks and formalized stairway access points associated with the Ellwood Bluffs Coastal Trail, the Dune Pond trail, and the Slough Overlook Trail would take place within the areas designated as critical habitat for the snowy plover, which includes wintering and breeding areas (refer to Figure 4.10-3). Second, the formalization of the parking areas within Coal Oil Point, the West Campus Bluffs, the area south of Cameron Hall and the terminus of Phelps Road, trail improvements within Open Space Areas, improvements at coastal access points, and

**FACULTY AND FAMILY STUDENT HOUSING,
OPEN SPACE PLAN, AND LRDP AMENDMENT EIR**

Section 4.4
Biological
Resources

construction of new dwellings in the area could lead to an increase in accessibility and use of the beach by the public and their pets. Unless controlled, off-leash dogs and increased equestrian use of the beach could result in the destruction of nests, disturbance of adults, which exposes nestlings to predation, increased predation of adult plovers, and an overall disturbance of snowy plovers. This would be a violation of the federal ESA and a significant impact.

The California least tern is not known to nest within the project area, but an adult and juvenile were observed foraging within near the mouth of the Devereux Slough. (Sandoval, 2003, Lehman 1994). Although the COPR is not designated as critical habitat for the tern, the ESA protects species listed as threatened or endangered by prohibiting the “take” (harm or harassment) of these species or their habitat without specific written authorization. As the habitat requirements for the tern are similar to that of the snowy plover, open space improvements, including the formalization of trails and related improvement of beach access points; expansion of coastal access parking and development of new faculty and family student residences could lead to an increase in accessibility and recreational use of the beach, and potentially predators or nuisance species that could disturb least terns, resulting in a potentially significant impact.

A population of the federally and State Endangered Ventura salt marsh milkvetch has recently been introduced to the COPR. A current population of about 50 plants exists near the northern boundary of the reserve, on the western side of the slough (Sandoval, 2004.) As this population is within the COPR, they are not located within any undeveloped lands proposed for development or open space improvements. This population would continue to be managed by the COPR under the COPR Management Plan, which implements restoration opportunities and other improvements to protect, enhance, and restore key natural resources and sensitive habitat. With continued implementation of the COPR Management Plan and the mitigation measures discussed below, potential impacts would be less than significant.

To minimize for potential impacts to sensitive species or their habitat, the University shall implement the following Mitigation Measures (MM) as appropriate:

MM 4.4-1(a). Per LRDP policy 30230.1, development in Coal Oil Point Natural Reserve will be kept to a minimum. Only structures that would be used in conjunction with research in the Reserve, or that would enhance the area’s usefulness as a natural study area, will be allowed, such as weather stations, observation blinds, small storage structures, fences, signs, and other gates.

MM 4.4-1(b). ~~(f)~~ Per LRDP policy 30240(a)4, to preserve roosting habitat for birds, eucalyptus, pine, and other trees and brush located on the bluff east of Coal Oil Point Natural Reserve outside of the faculty housing development and outside of the Coal Oil Point development will not be removed except where necessary to accommodate new structures or infrastructure to preserve roosting habitat for sensitive bird species and monarch butterflies, special consideration and care shall be given prior to the removal of any significant nonnative trees such as eucalyptus and some pines that are recognized as roosting areas for sensitive species. Nonnative tree and

**FACULTY AND FAMILY STUDENT HOUSING,
OPEN SPACE PLAN, AND LRDP AMENDMENT EIR**

brush species may be removed if their presence inhibits fulfillment of other LRDP objectives such as protection of view corridors or restoration of native habitat.

Section 4.4

Biological
Resources

~~(ii) This policy shall be extended to the eucalyptus grove adjacent to the south parcel.~~

MM 4.4-1(c). Per LRDP policy 30240(a)16, the campus shall use mosquito control methods with the least effects upon non-target organisms. Wetlands shall not be drained for this purpose, nor shall non-native larval predators be introduced.

MM 4.4-1(d). (Per LRDP policy 30240(b)6, in order to protect habitats of the Reserve:

- a) The total square footage of current and replacement Coal Oil Point structures shall not exceed the total square footage of current Coal Oil Point structures.
- b) New structures that are constructed as part of the Coal Oil Point project shall be set back a minimum of 50 feet from the bluff edge.
- c) Trees on Coal Oil Point will not be removed except where necessary to accommodate new structures and infrastructure.

MM 4.4-1(e). Per LRDP policy 30251.7, existing native trees and significant stands of trees that pre-date University acquisition of the campus, to the extent feasible, shall be retained within the overall site area of new development.

MM 4.4-1(f) Nesting Birds. If no vegetation or tree removal is proposed during the avian nesting period, no surveys are required. If it is not feasible to avoid the nesting period, a survey for special status and MBTA-protected nesting birds should be conducted by a qualified wildlife biologist no earlier than 14 days prior to the removal of trees, shrubs, grassland vegetation, buildings, grading, or other construction activity. Survey results shall be valid for 21 days following the survey. The removal of trees, shrubs, or weedy vegetation should avoid the February 1 through August 31 bird nesting period to the extent possible. The area surveyed should include all construction sites, access roads, and staging areas, as well as areas within 500 feet outside the boundaries of the areas to be cleared or as otherwise determined by the biologist.

Installation of bird netting during the non-nesting season on buildings that are used by swallows will prevent nesting and impacts to these species. If this is done, no building-specific surveys would be required.

In the event that an active nest of a special status and MBTA-protected nesting birds is discovered in the areas to be cleared, or in other habitats within 150 feet (500 feet for raptors) of construction boundaries, clearing and construction should be postponed for at least two weeks or until a wildlife biologist has determined that the young have fledged (left the nest), the nest is vacated, and there is no evidence of second nesting attempts.

**FACULTY AND FAMILY STUDENT HOUSING,
OPEN SPACE PLAN, AND LRDP AMENDMENT EIR**

Section 4.4
Biological
Resources

MM 4.4-1(g) Sensitive Plants. As previously discussed, southern tarplant, a sensitive plant species, would be impacted by the development of both the North and Storke-Whittier parcels. Protocol plant surveys have not been conducted for other portions of the project area and other sensitive plant species (Table 4.4-3) may occur within the project area and be impacted by the project. Therefore, prior to construction or restoration to ensure that no sensitive plants or wetland species would be significantly affected by the project, the University shall conduct plant surveys of the area in accordance with applicable protocols developed by the CDFG. Surveys for sensitive plants should be conducted by a botanist familiar with the species and its flowering status.

If sensitive plant species are observed, a qualified botanist should develop a species-specific replacement plan to be incorporated into any restoration plans. If wetland species are involved, the botanist should work closely with the wetland specialist in creating the restoration plan [MM 4.4-2(i) and MM 4.4-2(j)] to ensure that conditions at newly created wetlands sites meet the needs of the sensitive plant species. This plan should include elements to limit project impacts such as the relocation of individual specimens, the collection of seeds and replanting, or the preservation and movement of topsoil that contains the seed bank.

MM 4.4-1(h) Sensitive Plants—Monitoring. A monitoring program shall be developed by the University and approved by the CDFG to ensure the continued viability of sensitive habitat and/or individual or populations of special-status (CNPS List 1B or greater) plant species that currently occur within the project area. The plan will focus on establishing baseline conditions of the current population(s), creating management and/or enhancement goals, developing a monitoring timeframe, establishing acceptable viability criteria, identifying appropriate remedial actions to be taken if the viability criteria is not met, and a funding mechanism for long-term monitoring, which could include establishment of a fund via development fees.

MM 4.4-1(i) Vernal Pool Invertebrates. Prior to construction or restoration activities that could impact federally protected vernal pool crustaceans, the University shall conduct surveys of the appropriate vernal pools in accordance with current USFWS survey protocol. If these species are found, consultation with the USFWS in accordance with the federal ESA shall occur (typically as part of the CWA permitting process). Restoration and preservation activities could be required by the USFWS should these species be observed before a permit will be issued by the USFWS or the ACOE.

MM 4.4-1(j) Western snowy plover and California least tern—Monitoring. If California least terns are observed within the COPR area, the following measures shall apply to both the snowy plover and the California least tern, however, if no nesting or wintering California least terns are observed, the following will only apply to the snowy plover. To ensure that construction and construction-related noise associated with trail and access point closure and formalization and recreational activities associated with the formalization of trails and access points do not detrimentally impact the breeding and wintering activities of western snowy plovers and California least terns, routine monitoring of nesting snowy plovers and California least terns, if applicable, shall be conducted by a qualified wildlife biologist or trained volunteer.

**FACULTY AND FAMILY STUDENT HOUSING,
OPEN SPACE PLAN, AND LRDP AMENDMENT EIR**

Nesting and roosting areas shall be completely surrounded by exclusion fencing placed under the guidance of a qualified biologist and routinely inspected and repaired as necessary year round. Exclusion fencing shall be adequate for preventing disturbance by people, pets, and horses. Should the plovers relocate their nesting sites, additional fencing shall be installed as required. Informational signs indicating the purpose of the fence shall be installed and maintained through the year. To offset potential impacts to nesting and roosting plovers associated with increased recreational use of Sands Beach, the University shall provide a financial contribution to the COPR to maintain and expand the Snowy Plover Docent Program. Additional measures may be imposed by the COPR Director or the USFWS and would augment or supercede MM 4.4-1(j).

*Section 4.4
Biological
Resources*

**FACULTY AND FAMILY STUDENT HOUSING,
OPEN SPACE PLAN, AND LRDP AMENDMENT EIR**

Section 4.4
Biological
Resources

MM 4.4-1(k) Western snowy plover and California least tern—Construction. If California least terns are observed within the COPR area, the following measures shall apply to both the snowy plover and the California least tern, however, if no nesting California least terns are observed, the following will only apply to the snowy plover. Construction and restoration activities within designated snowy plover critical habitat (Figure 4.4-2) shall only be conducted following approval by the USFWS in coordination with the COPR Director. Once approval has been obtained, all construction and restoration sites shall be surveyed daily by a qualified wildlife biologist during the nesting season to ensure that no plovers have started nesting within restoration or construction areas. If plovers are nesting within a project area, exclusion fencing shall be installed (as described in MM 4.4-1(p)) to prevent disturbance of the nest, and all work shall halt within a buffer zone established by a qualified wildlife biologist until the young have hatched and fledged. If construction occurs outside the nesting season, surveys should be conducted at the request of the USFWS. Additional measures may be imposed by the USFWS and would augment or supercede MM 4.4-1(k).

MM 4.4-1(l) Sensitive Reptiles and Amphibians—Construction. All project-related construction and restoration sites shall include installation of exclusion fencing of sufficient height and extent to prevent these species from entering into the project areas. Fencing shall be installed under the direction of a qualified wildlife biologist, inspected daily to minimize the potential for damaged fence areas allowing these sensitive species entry into the construction zones. The inspections shall be performed by construction crewmembers, and any damage to the fence shall be repaired immediately.

MM 4.4-1(m) Domestic Animals. To prevent disturbance of sensitive animals and habitats, pets shall not be allowed within the COPR or snowy plover habitat, and shall be required to be leashed at Sands Beach, providing they do not disturb the plovers.

MM 4.4-1(n) Special Status Wildlife—Monitoring. Construction and construction-related noise associated with: 1) trail and access point formalization within the South Parcel, West Campus Bluffs, and COPR; 2) recreational and restoration activities within the COPR expansion area, South Parcel and West Campus Bluffs; and 3) recreational activities associated with the formalization of trails and access points within the South Parcel, West Campus Bluffs, and COPR could impact special status wildlife species located within or adjacent to these parcels (Table 4.4-6 and Figure 4.4-2), although due to habitat improvement long-term effects are expected to be beneficial. Effected species would include species such as the white-tailed kite, and other species identified in Table 4.4-6 that are not specifically identified within previous mitigation measures. To minimize impacts, a monitoring program shall be developed by the University and approved by the CDFG and USFWS to ensure the continued viability of individual or populations of special status wildlife that currently occur within the project area. The plan will focus on maintaining baseline conditions of the current population(s) by creating management and/or enhancement goals, developing a monitoring timeframe, establishing acceptable viability criteria, identifying appropriate remedial actions to be taken if the viability criteria are not met, and a development of a funding mechanism to ensure long-term monitoring.

**FACULTY AND FAMILY STUDENT HOUSING,
OPEN SPACE PLAN, AND LRDP AMENDMENT EIR**

Section 4.4 **MM 4.4-1(o) Water Quality.** The design, construction, and operation of residential development and open space improvement shall include Best Management Practices per the Storm Water Management Plan to reduce the discharge of sediment and pollutants in runoff.

Biological Resources

With implementation of MMs 4.4-1(a) through 4.4-1(o), the proposed project would not have a substantial adverse effect either directly or through habitat modification, on any species identified as candidate, on any species identified as a candidate, sensitive or special-status species in local or regional plans, policies, or regulations; or by the CDFG, or by the USFWS, and this impact would be reduced to a *less-than-significant* level.

Impact 4.4-2. Implementation of the proposed project could result in a substantial adverse effect to vegetation communities or habitats that are designated and/or identified as sensitive by the CDFG, USFWS, and/or California Coastal Commission (CCC). With the inclusion of the identified mitigation measures, this impact would be reduced to a *less-than-significant* level.

Amendment of the Long Range Development Plan to permit development of faculty housing on the North Parcel and family student housing on the Storke-Whittier Parcel, and implementation of Open Space Plan improvements, including coastal access improvements. Sensitive vegetation communities and habitat that could be affected include: riparian habitats and their channels on the North and South Parcels; southern vernal pools within the North Parcel, South Parcel, Stoke-Whittier Parcel, the West Campus Bluffs, and COPR parcels; Southern foredune and Southern coastal bluff scrub within the South Parcel, COPR, Coal Oil Point, and West Campus Bluffs parcels; Southern dune scrub within the COPR and Coal Oil Point parcels; and ESHA-designated areas within the project area (Table 4.4-5). The project's potential impacts on riparian habitat and wetlands are discussed in Impact 4.4-3.

The proposed project is consistent with a number of current LRDP policies that are designed to reduce potential impacts to sensitive habitats. Specifically, the proposed project is consistent with LRDP policy 30253.3 in that the alternative does not propose any development on the bluff face, except for staircases or access ways to provide public beach. Furthermore, Consistent with LRDP policy 30253.11 it discourages pedestrian use of unimproved paths up and down the bluff shall by closing existing impromptu trails and access points. Being consistent with LRDP policies 30210.15 and 30240(a)8, the project would preserve existing sensitive habitat; reduce potential inadvertent impacts to sensitive habitat by redirecting authorized foot, bicycle, and equestrian traffic away from the sensitive areas; and restrict unauthorized incursions into areas that could impact sensitive resources. Signage prohibiting unauthorized vehicles (except service and emergency vehicles), pedestrians, and domestic pets from entering the COPR, will also be posted, consistent with LRDP policy 30240(a)6, and consistent with LRDP policy 30240(a)2, existing and proposed fences, signs, and information maps along the perimeter of the COPR will be maintained to restrict unauthorized access by pedestrians, dogs, motor vehicles (except service and emergency vehicles) and off-road bicycles. The propose project would also be consistent with LRDP policy 30251.8 in that the existing topography, vegetation, and scenic features of the West Campus have been and will be retained and incorporated into the proposed development whenever possible. Furthermore, it would protect beach and coastal bluff sensitive

**FACULTY AND FAMILY STUDENT HOUSING,
OPEN SPACE PLAN, AND LRDP AMENDMENT EIR**

species and resources by prohibiting pedestrian use of unimproved paths up coastal bluffs (consistent with LRDP policy 30253.11), prohibiting unleashed dogs and non-emergency motor vehicles from campus beaches (consistent with LRDP policy 30240(a)15), and by discouraging pedestrian use of unimproved paths up coastal bluffs would through the formalization of trails, fencing (consistent with LRDP policy 30253.11).

*Section 4.4
Biological
Resources*

Riparian Habitat and Stream Channels

North Campus Faculty Housing. The North Campus Faculty Housing site contains both a drainage channel and riparian vegetation along Phelps Ditch. Phelps Ditch and its associated vegetation were determined to meet the CCC definition of riparian habitat (WRA 2004). The CCC, through the LCP process (for the Goleta Community Plan), has designated Phelps Ditch as ESHA. The California Coastal Act requires that ESHA areas be protected via a buffer zone. Current policy states that a buffer zone shall be established to prevent, protect, and preserve the ESHA. The designated buffer for riparian habitat is 50-foot wide and is to be maintained in natural condition along the periphery of the channel.

As currently proposed, residential development would occur adjacent to and within the riparian habitat and stream corridor of Phelps Ditch, inside the 50-foot ESHA buffer zone. The project calls for the re-engineering and restoration of Phelps Ditch. This will include:

- The construction of a bridge across Phelps Ditch to allow pedestrian and bicycle access to the site from Marymount Way
- Bank armor along a section of the channel to enable more concentrated flows to safely pass under the bridge
- The modification of the channel cross sections to enable the 100-year storm event to better pass through the ditch without severe scouring or flooding
- The broadening of the riparian ESHA area to increase the capacity of the channel and lessen potential impacts of flooding
- The incorporation of pedestrian and bike trails into the broadened overbank areas

WRA evaluated the quality of riparian habitat within Phelps Ditch and concluded that Phelps Ditch has intermediate functional value as a riparian area, however the value of this habitat “is lessened due to the extensive presence of humans in the vicinity from the adjacent golf course and access road, the fact that the vegetation was relatively sparse when compared to more undisturbed riparian communities found elsewhere, and the likely presence of feral animals from nearby residences.” (WRA 2004) However, direct effects of the project would result in potentially adverse impacts to an ESHA designated area, and the temporary loss of riparian habitat.

FACULTY AND FAMILY STUDENT HOUSING, OPEN SPACE PLAN, AND LRDP AMENDMENT EIR

Section 4.4 As part of the Project a restoration plan for Phelps Ditch is also proposed that would improve the functional value of the riparian habitat that Phelps Ditch provides. The restoration plan proposes to:

Biological Resources

- Enhance the existing natural riparian corridor to support a variety of native plant and animal species by increasing it to 50 feet on each side of the ditch
- Revegetate the riparian corridor with a Cottonwood-Sycamore riparian woodland, a state rare plant community
- Revegetate the understory with native riparian shrubs
- Incorporate bioswales and small seasonal wetlands into the surrounding landscape to prevent water quality degradation of the creek
- Reduce flood scouring and erosion of the banks

Indirect or secondary effects of the project could also result from the proximity of residential development to the habitat after restoration is completed. Impacts to restored riparian habitat could result from intrusion of lighting, introduction of non-native invasive plant species, domestic animals, or human activity (i.e., jogging, walking, biking) into or along the riparian corridor. Trampling of banks could occur when people or construction equipment descend, climb, or encroach upon the banks. Increased trampling would remove vegetation indirectly by causing soil compaction or erosion. Increased human recreational and residential uses could result in an increase in domestic animals, which could impact native wildlife by reducing habitat suitability, increasing wildlife mortality, or degrading the habitat via waste products.

The Phelps Ditch restoration plan would be subject to Section 404 and 401 of Clean Water Act (see subsection 4.4.2.4 of this section) and Section 1602 of the Fish and Game Code of California. This would require the University to apply for and receive these permits prior to performing any work within jurisdictional Waters of the U.S. (33 CFR Part 238) or State of California.

Section 404 of the Clean Water Act enables the Army Corps of Engineers (Corps) to grant permits for certain activities within waterways and wetlands. Construction projects affecting jurisdictional waterways and wetlands in any state cannot proceed until a 404 permit has been issued. In deciding whether to grant or deny a permit, the Corps must follow certain guidelines, which are discussed below.

Section 401 of the Clean Water Act gives EPA the authority to prohibit an activity, including a construction project, if it can impact water quality or have other unacceptable environmental consequences. For most states, EPA has delegated this authority to state environmental agencies, within California, this regulatory function falls to the State Water Quality Control Board

FACULTY AND FAMILY STUDENT HOUSING, OPEN SPACE PLAN, AND LRDP AMENDMENT EIR

Section 4.4
Biological
Resources

These two regulatory activities are usually conducted cooperatively through use of a joint application form. The Army Corps of Engineers reviews permit applications to determine if practical alternatives to the project exist. They also impose mitigation requirements on the applicant and perform a public interest review. The Corps also determines if other environmental laws must be addressed, including the National Environmental Policy Act, Endangered Species Act, and the National Historic Preservation Act. If the Corps' review reveals that the project should not proceed, they have the authority to either deny or condition the project. Then, using their 401 authority, state agencies review the permit application, looking closely at potential water quality impacts. When warranted, the states grant "401 certification," which is needed before a 404 permit can be issued by the Corps.

Under Section 1602 of the Fish and Game Code of California a Streambed Alteration Agreement (SAA) is issued when actions taken by any person, state or local governmental agency, or public utility could substantially adversely affect an existing fish and wildlife resource. Unlike 404 and 401 permits that can be approved or denied, a CDFG agreement cannot be "denied," as it is a negotiated instrument between the Applicant and the CDFG. The SAA includes mitigation for significant impacts to not only the channel itself, but also any riparian vegetation within the channel and the surrounding upland riparian zone.

Securing a SAA from the CDFG, and 404 and 401 permits under the CWA would protect ESHA and riparian corridors within the project and, where feasible and appropriate, enhanced. If impacts to these areas would occur, the University must obtain a CDFG 1602 SSA and/or ACOE Section 404 Permit prior to any grading or construction that may impact riparian area, stream channel, or wetland, as applicable. While the final conditions of the permit or agreement will be determined through coordination with these agencies, the following provisions would be incorporated as part of the permit(s):

- a) Consistent with the Clean Water Act and CDFG policy, no net loss of wetlands shall occur.
- b) Impacted wetlands and/or riparian vegetation that cannot be avoided, including that which is impacted due to brush clearing requirements, are normally replaced at a ratio approved by the ACOE and CDFG. If replacement within the area is not feasible, then an approved mitigation bank or other off-site area is used.
- c) Revegetation of impacted areas or mitigation parcels will be performed by a qualified restoration specialist and shall be conducted only on sites where soils, hydrology, and microclimate conditions are suitable for riparian habitat. First priority is given to areas that are adjacent to existing patches of native habitat.

~~The project's proposed restoration plan would restore and enhance Phelps Ditch and the surrounding riparian vegetation as an ESHA and reduce and avoid the potential impacts of developing. Although the development of the faculty housing complex will result in potential adverse impacts to riparian habitat on the North Parcel, the project's proposed restoration plan would restore and enhance Phelps Ditch and the surrounding riparian vegetation, reducing potential impacts to a less-than-significant level, and enhancing the value of the riparian habitat as an ESHA.~~ Additional stream and riparian protection measures as defined by CDFG SAA, and

**FACULTY AND FAMILY STUDENT HOUSING,
OPEN SPACE PLAN, AND LRDP AMENDMENT EIR**

Section 4.4 Clean Water Act permitting (identified where appropriate for individual impacts) and mitigation measures listed below would reduce potential impacts. Overall, the project would result in beneficial impacts to the riparian habitat of the North Parcel.

Biological Resources

Sierra Madre Family Student Housing. As currently proposed, residential development of the site would be restricted to the southern of the two Storke-Whittier parcels. This parcel includes a portion of the southern terminus of a flood control channel that connects to the northern portion of the Ocean Meadows Gold Course. The channel and its associated marsh vegetation occupy approximately 0.29 acre of the site. This channel does not support any riparian habitat and is not designated as ESHA. A tenth of an acre of southern riparian scrub can be found on the northern Storke-Whittier parcel, but this site will not be impacted as part of this project.

South Parcel. The South Parcel supports approximately 4.4 acres of non-ESHA designated riparian vegetation (Table 4.4-1). The project proposes to expand and restore this habitat type within the South Parcel. Specifically, the project, through the creation of a nature park on the South Parcel, would result in approximately 20 percent of the area being replanted and preserved as riparian scrubland, and an additional 5 percent being restored as vegetated swales. This restoration will be a component of the compensation required for impacts to ESHA riparian habitat within the development footprint of the North Campus Faculty Housing Site at Phelps Ditch. Other restoration activities would be associated with the creation of the University South Parcel Nature Preserve. Included in the riparian restoration activities is a sedimentation pond vegetated with native riparian species. This pond would reduce trap sediment from the South Parcel, and reduce sedimentation of the Devereux slough and loss of lagoon habitat, as identified by the 1990 Campus Wetland Management Plan (CWMP).

The Open Space Plan portion of the project would also lead to the formalization of five trails within the South Parcel totaling approximately 11,873-linear feet, and would remove approximately 15,821-linear feet of informal trails that traverse the site with little regard to sensitive habitat. Although the remaining trails would experience an increase in per capita trail use from both the addition of new housing and the decrease in total number of trails, the formalized trails would be designed such that users would be restricted to areas designated for travel or other passive recreational uses to protect riparian and other sensitive habitat.

In conjunction with residential development, installation of a culvert under the Venoco Access Road is proposed to replace two existing 24-inch corrugated metal pipes and improve the discharge capacity of Devereux Creek. To mitigate the potential for increased erosion from the upstream debris basin, MM 4.3-3, discussed in Impact 4.3-3 (Hydrology and Water Quality) would result in the removal of sediment from the debris basin, which would result in the removal of existing riparian vegetation within the basin, and the subsequent revegetation of the area. A restoration plan for debris basin would be prepared and would include revegetation of the area with native riparian shrubs, such as willows, and other native understory plants, and the provision of drainage features to reduce flood scouring and erosion of the banks and the floor of the debris basin.

**FACULTY AND FAMILY STUDENT HOUSING,
OPEN SPACE PLAN, AND LRDP AMENDMENT EIR**

Section 4.4
Biological
Resources

The Devereux Creek Debris Basin restoration plan would be subject to Section 404 and 401 of the Clean Water Act (see subsection 4.4.2.4 of this section) and Section 1600 of the Fish and Game Code of California. This would require the University to apply for and receive these permits prior to performing any work within jurisdictional Waters of the U.S. (33 CFR Part 238) or State of California, as described above. Overall, implementation of the proposed project, and in particular implementation of the Open Space Plan portion of the project, would result in beneficial impacts to the riparian habitat of the South Parcel.

COPR and Devereux Slough North Finger. The COPR includes the 45-acre Devereux Slough. Habitats with ESHA designations include coastal salt marsh, freshwater marsh, a dune swale pond, and other vegetated swales with surrounding riparian scrub. The expansion of the COPR would lead to the addition of approximately 0.46 acre of ESHA riparian scrub and 3.2 acres of ESHA riparian vegetation that is associated with fresh and saltwater marshes to the COPR.

The proposed project would implement aspects of the Coal Oil Point Natural Reserve Management Plan that would:

1. Protect Devereux Creek, Devereux Slough, and the adjacent upland and marine habitats
2. Preserve and protect identified sensitive habitat areas, including wetland, riparian, and freshwater pond habitat

This area would be preserved in perpetuity under a management plan designed to protect and enhance the area, including ESHA-designated stream channels and riparian vegetation within the COPR and the north finger of the slough.

The proposed project would not directly impact any riparian vegetation within the COPR. However, access to the COPR would be increased via the establishment of new parking lots, the formalization of four access points, and the addition of new residential dwellings within close proximity of the COPR. Increased access could lead to potential impacts associated with increases in litter, disturbance of wildlife, increase in number of off-leash domestic animals, and trespass. The Open Space Plan would close six informal coastal access points and approximately 13,300-linear feet of unregulated informal trails that traverse the site with little regard to sensitive habitat. The project would formalize approximately 8,700-linear feet of trails to control access through sensitive and restricted areas, and reduce potential impacts to sensitive habitats within the reserve. Overall, implementation of the proposed project would result in beneficial impacts to the riparian habitat of COPR and Devereux Slough North Finger.

Riparian Vegetation Impact Summary. The proposed project would reengineer and restore Phelps Ditch, a man-made drainage channel that contains riparian habitat. Though this habitat has been identified as being of intermediate functional value (WRA 2004), it is designated as an ESHA. The loss of this habitat would be a *potentially significant impact*. However, incorporation of planned restoration activities, mitigation and avoidance associated with CWA permitting, and MMs 4.4-2(a) through 4.4-2(u) will reduce impacts to both ESHA and non-ESHA designated

**FACULTY AND FAMILY STUDENT HOUSING,
OPEN SPACE PLAN, AND LRDP AMENDMENT EIR**

Section 4.4 Biological Resources riparian vegetation to *less-than-significant* levels. Furthermore, the restoration of the riparian vegetation along Phelps Ditch and the proposed restoration within the South Parcel would increase functionality of on-site riparian vegetation beyond current levels. This would be a *beneficial* impact.

Native Grassland Habitat. Annual grassland habitat occurs sparsely throughout the project area as either a distinct habitat or as an understory to the woodland habitats. Native grasslands in California are on the decline and recognized as rare by the CDFG and CNPS. Large amounts of native grassland have been converted to annual grassland dominated by non-native annuals primarily of Mediterranean origin. Potential adverse and beneficial impacts to native grasslands within the project areas described below (Table 4.4-5).

North Campus Faculty Housing. Native grassland within the proposed project area is confined to a 0.3-acre section located within the southwestern corner of the North Parcel. The proposed project was designed to avoid impacts and preserve this native habitat, thus no impact is expected by the proposed project. The development site plan avoids any grading or other construction-related activities in the area surrounding this native grassland.

South Parcel. ~~Although the South Parcel does not currently~~ contains approximately any 0.05 acre of native grassland habitat, and the University has identified appropriate areas within the South Parcel as restoration and enhancement areas. These areas include enhancement and restoration of vernal pool/native grassland complexes. In part, this native grassland enhancement and restoration will be a component of the compensation for impacts to on-site vernal pools within the development footprint of the North Campus Faculty Housing Site. The remaining restoration activities would be associated with the implementation of the Open Space Plan. The Open Space Plan portion of the project would also remove informal trails and formalize the remaining five trails through the site to protect restored native grasslands. The creation of native grassland habitat is considered to be a *beneficial* impact.

West Campus Bluffs. Although the West Campus Bluffs does not currently contain any native grassland habitat, the proposed project would result in portions of the area being restored and preserved as native grassland habitat. The Open Space Plan portion of the project would remove approximately 4,873-linear feet of informal trails and coastal access points, formalize approximately 6,830-linear feet of trails through the site, and add one formalized beach access point. This formalization of access would protect restored native grasslands. The creation of native grassland habitat is considered to be a *beneficial* impact.

Native Grassland Impact Summary. The project would preserve a total of 0.3 acre of native grasslands. With incorporation of standard construction Best Management Practices (BMPs) potential inadvertent construction impacts to North Parcel native grasslands would be reduced to *less-than-significant levels*. The project also includes restoration and preservation of approximately 35 percent of the South Parcel and the majority of the West Campus Bluff areas as native grassland complexes. Formalized beach access points and trails would allow users to

**FACULTY AND FAMILY STUDENT HOUSING,
OPEN SPACE PLAN, AND LRDP AMENDMENT EIR**

bypass the existing and restored areas of native grasslands, thereby limiting impacts from recreational users; this would also be a *beneficial impact*.

Section 4.4
Biological
Resources

Incorporation of planned restoration and preservation activities and MMs 4.4-2(c), 4.4-2(d) and 4.4-2(e) will reduce impacts to ESHA-designated native-grasslands to *less-than-significant* levels over the long-term.

Vernal Pools. Vernal pools can be found scattered through most of the parcels within the project area (Table 4.4-5). Details of the vernal pool resources potentially impacted by different project elements are described below. Potential impacts could be both adverse and beneficial.

North Campus Faculty Housing. Field surveys indicate that the North Parcel is the site of seven vernal pools—would be impacted by the proposed project encompassing a total area of 0.205 acre (Table 4.4-1). Under the proposed project, all of the vernal pool habitat on the North Parcel would be removed. These areas were not designated as ESHA and were have been found to be of low habitat value (WRA 2004). Total impacts to vernal pool habitat within the North Parcel would be 0.205 acre (Table 4.4-1). As all of the vernal pool habitat would be removed from the North Parcel, no indirect impacts to this habitat type would occur. Implementation of associated mitigation measures would reduce the impact of the removal of the vernal pools to a less-than-significant level.

Sierra Madre Family Student Housing. Field surveys indicate the one low quality vernal pool within the southern portion of the driving range is not expected to be impacted by the proposed project as the development site plan avoids any grading or other construction-related activities within a 100 foot area surrounding this wetland. Similar to vernal pools on the North parcel, these vernal pools were not designated as ESHA. Impacts to two large vernal pools within the northeastern portion of the site would not be expected as no development is planned for this area.

South Parcel. The South Parcel contains two vernal pools totaling approximately 0.3 acre that are not designated as ESHAs. The University has identified appropriate areas within the South Parcel as restoration and enhancement areas. These areas include restoration of vernal pool/native grassland complexes on approximately 35 percent of the 68.7-acre site. A portion of this restoration will be a component of the compensation required for impacts to on-site vernal pool habitat within the development footprint of the North Campus Faculty Housing Site. The remaining restoration activities would be associated with the creation of the University South Parcel Nature Park. The project, through the Open Space Plan, would also remove informal trails and formalize the remaining five trails through the site to protect restored vernal pool habitat. Although temporary impacts to vernal pools may occur from restoration and/or enhancement activities, they would result in a greater amount of higher quality habitat being established within the South Parcel.

West Campus Bluffs. The West Campus Bluffs currently contain approximately 0.7 acre of non-ESHA-designated vernal pool habitat, distributed among eight vernal pools (Figure 4.4-1).

**FACULTY AND FAMILY STUDENT HOUSING,
OPEN SPACE PLAN, AND LRDP AMENDMENT EIR**

Section 4.4 The University has identified appropriate areas within the West Campus Bluffs for habitat enhancement opportunities as part of the Open Space Plan. These areas include enhancement and restoration of vernal pool/native grassland complexes on portions of the 37.2 acre West Campus Bluffs parcel. Following enhancement and restoration, these areas would be designated as EHSA. The Open Space Plan portion of the project would remove informal trails and coastal access points, and formalize trails and two beach access points to reduce potential impacts to vernal pool habitat. Although temporary impacts to vernal pools may occur from restoration and/or enhancement activities, they would result in a greater amount of higher quality habitat being established within the West Campus Bluffs.

**Biological
Resources**

COPR and Devereux Slough North Finger. The COPR includes a single ESHA designated vernal pool that covers approximately 1.2 acres. The proposed project would implement aspects of the Coal Oil Point Natural Reserve Management Plan which would preserve and protect identified sensitive habitat areas, including wetland, riparian, and freshwater pond habitat. This area would be preserved in perpetuity under a management plan designed to protect and enhance the area, including vernal pool complexes. Further, the implementation of the Open Space Plan would alter the recreational trails around the COPR. Specifically the Open Space Plan portion of the project proposes to remove informal trails, formalize remaining trails, and improve coastal access points. Access to areas around the COPR would be improved via the establishment of a new parking lot and bathroom facilities, the formalization of four coastal access points, and the addition of new residential dwellings within proximity of COPR. Improved public access could lead to potential negative effects associated with increases in litter, disturbance of wildlife, off-leash domestic animals, and trespass within the COPR which is closed to the public.

Vernal Pool Habitat Impact Summary. The direct removal of 0.205 acre of vernal pool habitat on the North Parcel would be considered a *potentially significant* impact. Additionally, indirect impacts to vernal pools could include disturbance from recreation, changes to site topography that disrupt the vernal pool water supply, or erosion of adjacent uplands that causes siltation of the pools.. The project calls for the restoration and creation of substantial areas of vernal pools, on site on the North Parcel, and on the South Parcel. Restoration activities that may cause temporary impacts to existing wetlands during the restoration process and would be considered a *significant impact*.

The vernal pools located within the North Parcel and Stork-Whittier Parcel have low functional value as wetlands (WRA 2004). The project incorporates substantial habitat enhancement and restoration including creation or restoration of wetland complexes on site on the North Parcel, and on the South Parcel. It is anticipated that the restoration proposed by the Project will result in vernal pools of greater functionality. Accordingly, after the implementation of mitigation and planned restoration activities, the project will result in a net increase in the quantity, quality, and functionality of vernal pool habitat and would be a *beneficial impact*.

Once restoration is complete, these areas could be subject to indirect impacts resulting from maintenance, urban runoff, increased human access (i.e., proximity to development, trails, etc.),

**FACULTY AND FAMILY STUDENT HOUSING,
OPEN SPACE PLAN, AND LRDP AMENDMENT EIR**

Section 4.4
Biological
Resources

vandalism, or other human disturbances. However, disturbance from human-related sources is expected to be a *less-than-significant impact*, as formalized trails and signage will route recreational users away from sensitive habitats, including vernal pools. In addition, the proposed project includes measures designed to ensure the long-term viability of vernal pool complexes. The Open Space Plan portion of the project details preservation measures designed to prevent impacts to vernal pools from recreation and passive use. Incorporation of planned restoration activities, CWA 404 and 401 permitting requirements, and MMs 4.4-2(a) and 4.4-2(b) will reduce impacts to both ESHA-designated and non-ESHA designated vernal pool habitat to a *less-than-significant* level.

Southern Dune Scrub, Southern Fore dune, Southern Coastal Bluff Scrub, and Venturan Coastal Sage Scrub. Potential adverse and beneficial impacts to southern dune scrub, southern fore dune, southern coastal bluff scrub, and Venturan coastal sage scrub habitats would occur within the project areas described below.

South Parcel. The South Parcel supports 0.3 acres of ESHA-designated southern fore dune habitat, 0.9 acres of ESHA-designated southern coastal bluff scrub, and 0.3 acres of Venturan coastal sage scrub, and (Table 4.4-1). The Open Space Plan portion of the proposed project would result in approximately 20 percent of the area being replanted with, and preserved as, native coastal bluff and/or Venturan coastal sage scrub. The Open Space Plan portion of the project would also propose to remove informal trails to protect sensitive habitat and formalize remaining trails through the site. Work associated with these improvements, including the Ellwood Bluffs Coastal, could impact the portions of ESHA-designated southern fore dune, and southern coastal bluff scrub vegetation.

COPR. The COPR currently contains approximately 4.8 acres of southern coastal bluff scrub, 20.1 acres of southern dune scrub, and 10.6 acres of southern fore dune. All of these areas are designated as ESHA. The proposed project would implement aspects of the Coal Oil Point Natural Reserve Management Plan that would preserve and protect identified sensitive habitat areas including dune habitats. Additionally, by formalizing the Open Space Plan, the proposed project would add an additional 3.5 acres of southern coastal bluff scrub, 2.2 acres of southern dune scrub, and 2.4 acres of southern fore dune to the COPR, all of which would be designated as ESHA. The Open Space Plan would also remove informal trails to protect sensitive habitat and formalize remaining trails and access points through the site. Unimproved coastal access points for both pedestrians and equestrians can be found in both of these areas. Formalization of these access points would not alter current uses; however, access to the COPR would be increased via the establishment of a new parking lot and bathroom facilities, the formalization of four access points, and the addition of new residential dwellings within close proximity of the reserve areas. Increased access could lead to potential negative effects associated with an increase in litter, disturbance of wildlife, increase in number of off-leash domestic animals, and trespass.

Coal Oil Point. Coal Oil Point currently contains approximately 0.5 acre of southern coastal bluff scrub and 0.3 acre of southern fore dune that are both designated as ESHA. Implementation of the Open Space Plan will add a parking area and restroom to Coal Oil Point.

**FACULTY AND FAMILY STUDENT HOUSING,
OPEN SPACE PLAN, AND LRDP AMENDMENT EIR**

Section 4.4 The project would add a formal beach access point that would bisect Coal Oil Point and allow pedestrian users to by-pass the existing sensitive habitat areas within area (Figure 4.6-1 in Open Space Plan). As these areas currently support unimproved coastal access points for both pedestrian and equestrian uses, the formalization of these access points would reduce impacts to sensitive habitats by precluding equestrian access. Additionally, the Open Space Plan portion of the project would remove informal trails within Coal Oil Point and formalize the remaining trails.

**Biological
Resources**

West Campus Bluffs. The West Campus Bluffs currently contain approximately 1.1 acres of ESHA-designated southern coastal bluff scrub. The area is currently fragmented by informal trails that result in the degradation and loss of this rare habitat. The proposed project would result in the restoration and preservation of the areas currently occupied by southern coastal bluff scrub. The project would also add a rustic beach access point, remove informal trails, and formalize remaining trails on the site. This combination of factors would result in reduced impacts to this sensitive habitat and, over the long-term, coastal bluff scrub should increase its coverage within the West Campus Bluffs.

Southern Dune Scrub, Southern Foredune, and Southern coastal bluff scrub Impact Summary. The housing elements of the project do not propose to remove any southern dune scrub, southern foredune, or southern coastal bluff scrub, and therefore will have *no impact* on this resource. The proposed project would result in approximately 20 percent of the area of the South Parcel being replanted with, and preserved as, native coastal bluff and/or Venturan coastal sage scrub. Additionally, the proposed project would add an additional 3.5 acres of southern coastal bluff scrub, 2.2 acres of southern dune scrub, and 2.4 acres of southern foredune to the COPR, all of which would be designated as ESHA. The project would restore large areas along the West Campus Bluffs with southern coastal bluff scrub. These project elements would result in a *beneficial* impact.

Implementation of the Open Space Plan will formalize beach access points and trails throughout the project area. This would increase the per capita use at these locations. However, formalized trails and access points would reduce impacts to dune and bluff habitats resulting from informal uses and would be designed to restrict users to suitable areas. This, and MM 4.4-2(d) and 4.4-2(e) would result in the reduction of direct and indirect impacts to sensitive bluff habitats to a *less-than-significant* level.

The campus will implement the following mitigation measures to reduce potential impacts to sensitive habitat within the project area.

MM 4.4-2(a). ~~Text associated with this mitigation measure has been deleted. (f) Per LRDP policy 30240(a)3, mowing of the grassland in the Reserve is prohibited, except for fire protection, and shall be avoided prior to the time plants go to seed. Mowing shall not exceed the minimum necessary for adequate fire protection.~~

FACULTY AND FAMILY STUDENT HOUSING,
OPEN SPACE PLAN, AND LRDP AMENDMENT EIR

~~(ii) These mowing restrictions shall be extended to preserved or restored natural habitats within the North and West Campus.~~

Section 4.4

Biological
Resources

MM 4.4-2(b). Per LRDP policy 30251.17, native plant species from genetic stock from the Ellwood-Devereux watershed will be used in all open space areas outside the development areas on North and West Campuses, and drought tolerant species will be used within the development areas as much as possible. Landscaping use of exotic invasive plants listed in the most recent update of the *Exotic Pest Plant of Greatest Ecological Concern in California* (California Invasive Plant Council) shall be prohibited on North and West Campuses.

MM 4.4-2(c). Per LRDP policy 30253.13, within 50 feet of the bluff top, vegetation shall be maintained or replanted with drought-resistant species, should grading be required to establish proper drainage landward of the bluff.

**FACULTY AND FAMILY STUDENT HOUSING,
OPEN SPACE PLAN, AND LRDP AMENDMENT EIR**

MM 4.4-2(d) Wetlands and Environmentally Sensitive Habitat Restoration Plan.

Section 4.4

Biological
Resources

When habitat that is regulated by the Clean Water Act (404) or defined as sensitive by the CDFG, or designated as ESHA would be impacted, either directly or indirectly, a Sensitive Habitat Restoration Plan shall be prepared to detail the specifics of the proposed habitat replacement mitigation. The plan shall be prepared prior to applicable vegetation or habitat modification by a qualified restoration specialist who has appropriate knowledge for each habitat type, shall be approved by CDFG and/or ACOE (depending upon jurisdiction), and shall include all measures for the revegetation and maintenance of on and/or off-site habitat. The plan shall include the following, as necessary:

- a) The details and procedures required to prepare the restoration site for planting (i.e., grading, soil preparations, soil stocking, etc.), including the need for a supplemental irrigation system, if any.
- b) The methods and procedures for the installation of the plant materials. Plant protection measures identified by this document, the project biologist, and/or agency personnel shall be incorporated into the planting design and layout.
- c) Guidelines for the maintenance of the mitigation site during the establishment phase of the plantings. The maintenance program shall contain guidelines for the control of non-native plant species, maintenance of the irrigation system, and replacement of plant species.
- d) The revegetation plan shall include a monitoring plan that when implemented will evaluate developing habitat and/or vegetation such that its final replacement value and ratio shall be at a minimum of 1:1 for non wetlands and 3:1 for ACOE-defined wetlands, or as otherwise mandated. Specific goals for the restored habitat shall be defined by quantitative and qualitative characteristics of similar habitats and plants (e.g., density, cover, species composition, structural development). The monitoring effort shall include an evaluation of not only the plant material installed, but the use of it by wildlife. Monitoring reports of the mitigation site shall be reviewed by the permitting state and federal agency(s).
- e) In the mitigation of vernal pools that would be filled or otherwise disturbed, the University shall preserve and re-use the topsoil from vernal pools to be filled. Topsoil from vernal pools contains both the seed bank for the plant species that occur in that individual pool and any potential vernal pool crustacean cysts for those species that occur there. Removal of topsoil from vernal pools shall either: 1) comply with the most recent ACOE and USFWS guidelines at the time of construction, or 2) consist of removal of the top 2 inches of soil, followed by the next 4 inches of soil, and placement of these layers in constructed vernal pools in reverse order (e.g., first the 4 inches followed by the 2 inches) to approximately reconstruct the natural soil horizon.
- f) For areas designated as ESHA, mitigation ratios shall be no less than 1:1 for both replacement of impacted areas, and new areas shall be designated as ESHA.
- g) Contingency plans and appropriate remedial measures shall also be outlined in the revegetation plan should the plantings fail to meet designated success criteria and planting goals.

**FACULTY AND FAMILY STUDENT HOUSING,
OPEN SPACE PLAN, AND LRDP AMENDMENT EIR**

Section 4.4 **MM 4.4-2(e)** Exotic invasive species shall be prohibited in all open space areas or near ESHA areas and riparian corridors. Landscaping in open space areas and the COPR shall include native species from locally occurring genomes.

Biological Resources

In addition, MM 4.2-2(d) (Erosion Control) and MM 4.9-4(b) (Minimize exterior lighting) would also apply.

With implementation of MMs 4.4-1(a) through 4.4-1(p), and MMs 4.4.2(a) through 4.4-2(e), MM 4.2-2(d), and MM 4.9-4(b) the proposed project would not result in a substantial adverse effect to vegetation communities or habitats that are designated and/or identified as sensitive by the CDFG, USFWS, and/or California Coastal Commission (CCC), and this impact would be reduced to a *less-than-significant* level. Implementation of the Open Space Plan would restore and enhance sensitive habitats and redirect recreational users to designated areas and trails, thereby reducing both indirect and direct impacts to sensitive habitats. This would be a *beneficial impact* of the Open Space Plan portion of the project.

Impact 4.4-3. Residential development could result in a substantial adverse effect on federally protected wetlands through direct removal, filling, or hydrological interruption. With the inclusion of the identified Mitigation Measures, this impact would be reduced to a *less-than-significant* level.

Amendment of the Long Range Development Plan to permit development of faculty housing on the North Parcel, family student housing on the Storke-Whittier Parcel, and implementation of the Open Space Plan, including trail improvements and closures, access improvements, and habitat restoration could result in a substantial adverse effect on state and federally protected wetlands through direct removal, placement of fill, or hydrological interruption. Currently undeveloped areas of the North Parcel that contain wetlands would be converted into residential facilities and associated infrastructure. In addition, enhancement and restoration activities would have the potential to indirectly impact wetlands within the South Parcel and West Campus Bluffs. However, the proposed project would restore and preserve many existing wetlands.

As discussed above in Impact 4.4-1 and 4.4-2, the proposed project is consistent with a range of LRDP policies designed to protect and preserve sensitive habitat, including wetlands. These include LRDP policies 30210.15 and 30240(a)8, which would preserve existing sensitive habitat; reduce potential inadvertent impacts to sensitive habitat by redirecting authorized foot, bicycle, and equestrian traffic away from the sensitive areas; and restrict unauthorized incursions into areas that could impact sensitive resources, and LRDP policy 30251.8 which will ensure that the existing topography, vegetation, and scenic features of the West Campus be retained and incorporated into the proposed development whenever possible

North Campus Faculty Housing. As detailed in Table 4.4-2, a delineation performed by Padre and Associates determined that there was a total of 2.95 acres of Coastal Act wetlands and 1.67 acres of ACOE wetlands in the North Parcel. A subsequent functional wetland analysis performed by Wetland Research Associates determined that, based on current CCC and ACOE

**FACULTY AND FAMILY STUDENT HOUSING,
OPEN SPACE PLAN, AND LRDP AMENDMENT EIR**

wetland definitions, Phelps Ditch is a riparian habitat rather than a wetland area. Based on this more recent assessment, a total of 2.02 acres of CCC wetlands and 0.74 acres of ACOE wetlands are located in the North Parcel.

Section 4.4
Biological
Resources

Based on current project conceptual designs, the majority of wetlands on the North Parcel will be directly impacted project construction, except for the 0.5 acres of saltmarsh at the southwest corner of the parcel which will be retained. Thus, 1.52 acres of CCC wetlands and 0.24 acres of ACOE wetlands on the North Parcel would be directly impacted by residential development. Development on the North Parcel would include on-site restoration of approximately 3.7 acres of wetland habitat and the off-site creation or restoration of wetland habitat on the South Parcel. Temporary impacts will occur as a result of expansion of current on-site wetlands as these areas are modified. The 0.5 acre saltmarsh area was identified as having a high functional value (WRA 2004). Other wetland areas on the North Parcel were identified as having a low to moderate function.

Sierra Madre Family Student Housing. As currently proposed, no development would occur in the northern section of the parcel, Storke-Whittier North (west of the current location of the golf course parking lot). No impacts to wetlands from development of the Sierra Madre Family Student Housing would occur within the Storke-Whittier South Parcel. According to the current site design, housing is to be constructed in an array around the Storke-Whittier South Parcel wetland feature and no grading or construction activities would occur within 100 feet of this wetland.

South Parcel. A total of 2.93 acres of CCC wetlands and 0.19 acres of ACOE wetlands have been identified in the South Parcel (Table 4.4-2). The proposed project is to create a nature park on the South Parcel that would include areas of enhanced, restored, and created wetlands and wetland vegetation on portions of the 68.7-acre site. A portion of these enhancement and restoration activities would be as mitigation for wetland impacts in the North Parcel. Temporary impacts to wetlands resulting from enhancement and restoration would occur, but implementation of the project would ultimately result in higher quality wetlands covering an area several times the size of existing wetlands. In addition, this area will be situated within a large permanently preserved consolidated natural open space area as proposed by the Joint Plan, resulting in enhanced sustainability and viability of the wetlands in the project area. Overall, implementation of the proposed project would result in *beneficial impacts* to the wetlands on the South Parcel.

COPR and Devereux Slough North Finger. As proposed, the expansion of the COPR would lead to the addition of approximately 3.2 acres of wetlands and wetland vegetation to the Reserve (Table 4.4-1). The proposed project would also restore portions of the north finger of the Devereux Slough, potentially including restoring tidal flux. The removal of non-native vegetation and installation of native wetland vegetation within the north finger would lead to a net increase in native wetland vegetation within the Slough, contributing to an overall *beneficial impact* of the project on wetlands in this area.

**FACULTY AND FAMILY STUDENT HOUSING,
OPEN SPACE PLAN, AND LRDP AMENDMENT EIR**

Section 4.4
Biological
Resources

West Campus Bluffs. The habitat enhancement and restoration activities proposed for the West Campus Bluffs would preserve the existing vernal pools and wetland vegetation that exists on the site (0.7 acre) (Table 4.4-1). The project would also enhance and restore portions of the parcel to a mix of vernal pool and grassland habitat. The result would be a net increase in the amount of wetlands and wetland vegetation, an overall *beneficial impact*.

Significance of Impacts to Wetlands. The project could result in the direct removal of approximately 1.52 acres of CCC wetlands and 0.24 acres of ACOE wetlands on the site of the North Campus Faculty Housing. This is considered a *significant impact*. However, the wetlands that are potentially affected have been determined to be of low to intermediate biological value (WRA 2004). Additionally, indirect impacts could occur in wetlands that are adjacent to areas proposed for development. Indirect impacts could include disturbance resulting from recreational activities or changes to hydrological conditions that alter water supply and quality. The project calls for the enhancement, restoration and creation of substantial areas of wetlands on site on the North Parcel, and on the South Parcel. Restoration activities could cause temporary impacts to approximately 3.0 acres of CCC wetlands and 0.26 acre of ACOE wetlands during the restoration process, and would be considered a *significant impact*. However, completion of restoration results in a net increase of wetland habitat quantity and quality, as well as sustainability, and would be a *beneficial impact*. Once restoration is complete, these areas could be subject to further indirect impacts resulting from urban runoff, increased human access (i.e., proximity to development, trails, etc.), vandalism, or other human disturbances. However, because formalized trails will route people away from sensitive habitats, disturbance from human related sources is expected to be a *less-than-significant impact* to restored areas.

Implementation of the Open Space Plan would establish and protect large areas of contiguous open space containing numerous wetland complexes within the South Parcel, West Campus Bluffs, and COPR. The Open Space Plan would also require wetlands restoration within these same parcels. A short-term impact would occur during restoration activities to existing low to moderate quality wetlands within these parcels. However, the long-term effect would be a *beneficial impact* as there will be a net increase in wetland habitat, function, and quality. Additionally, the Open Space Plan requires the redirection of recreational uses to trails either away from sensitive habitats or to trails designed to accommodate use without impacting sensitive habitats. This would reduce both indirect and direct impacts to wetlands, and is considered a *beneficial impact* of the project.

The University will implement the following mitigation measure to reduce potential impacts to wetlands within the project area. In addition to the requirements associated with CWA 404 and 401 permitting and CDFG Section 1600, the University shall implement MMs 4.4-1(a) through 4.4-1(p) which address protection of sensitive resources, including wetlands, in addition to MMs 4.4-2(d) and 4.4-2(e), and MM 4.2-2(d) which would further reduce potential impacts to wetlands. The combination of these measures will reduce both direct and indirect impacts to wetland resources caused by the project.

FACULTY AND FAMILY STUDENT HOUSING,
OPEN SPACE PLAN, AND LRDP AMENDMENT EIR

Impact 4.4-4. Residential development could interfere with the movement of native resident or migratory wildlife species or corridors. With the inclusion of the identified mitigation measures, this impact would be reduced to a *less-than-significant* level.

Section 4.4
Biological
Resources

**FACULTY AND FAMILY STUDENT HOUSING,
OPEN SPACE PLAN, AND LRDP AMENDMENT EIR**

*Section 4.4
Biological
Resources*

The development of new structures, roads, infrastructure, and trail and access modifications throughout the project site could interfere with the movement of native resident or migratory wildlife species or corridors by either directly altering habitat that is associated with an established wildlife corridor, or via indirect impacts that would be related to increased human presence within and adjacent to wildlife corridors. Because wildlife movement must be considered at a landscape level, impact analysis is conducted at the “project” rather than “parcel” level.

The project will result in the conversion of currently undeveloped areas into residential facilities and associated infrastructure, including 23 acres of land on the North Parcel and approximately 13.5 acres of land on the Storke-Whittier Parcel. Implementation of the Open Space Plan would result in the grading of up to 6.2 acres of ground area along trails. Development of coastal access parking at up to four locations would result in disturbance of approximately 0.6 acre of land (total for all four locations, including restroom replacement at Coal Oil Point).

Potential on-site wildlife corridors in this area include Devereux Creek, Phelps Ditch, Devereux Slough, and eucalyptus groves. Additionally, the existing contiguous open space areas would allow wildlife to travel overland from the West Campus Bluffs west to the Ellwood Mesa. The project would also preserve and enhance contiguous open space, and avoid its fragmentation by future development.

The proposed project would be consistent with a range of LRDP policies that would protect wildlife movement through the areas. These include LRDP policies 30210.15 and 30240(a)8 which would preserve existing sensitive habitat for use by wildlife and restrict unauthorized incursions into areas that could impact sensitive resources and wildlife movement. Signage prohibiting unauthorized vehicles (except service and emergency vehicles), pedestrians, and domestic pets from entering the COPR, will also be posted, consistent with LRDP policy 30240(a)6, and consistent with LRDP policy 30240(a)2, existing and proposed fences, signs, and information maps along the perimeter of the COPR will be maintained to restrict unauthorized access by pedestrians, dogs, motor vehicles (except service and emergency vehicles) and off-road bicycles. The proposed project would also be consistent with LRDP policy 30251.8 in that the existing topography, vegetation, and scenic features of the West Campus have been and will be retained and incorporated into the proposed development whenever possible

The Devereux Creek, Phelps Ditch, and Devereux Slough complex allows some movement of wildlife through the North Campus, and could allow movement between the Santa Ynez Mountains and Devereux Slough and coastal habitat. However, as discussed above in Section 4.4.2.3.2, although movement could occur between foothill and montane regions and the project area, the physical properties of the channel and upstream areas (e.g., narrow, fragmented, culverted undercrossings, and concrete-lined sections) have seriously degraded the quality of the habitat linkages traditionally provided by Devereux Creek and Phelps Ditch. Movement would be expected to be infrequent and very limited.

**FACULTY AND FAMILY STUDENT HOUSING,
OPEN SPACE PLAN, AND LRDP AMENDMENT EIR**

Section 4.4 Although the project includes re-engineering of Phelps Ditch, it will be a temporary disruption. **Biological Resources** As Phelps Ditch will be widened and riparian habitat restored to include a Sycamore–Cottonwood riparian woodland wildlife movement opportunities through the channel would be ultimately increased. The installation of a 42 by 60-inch culvert under the Venoco Access Road (to replace existing twin 24-inch drainage pipes) would result in short-term impacts to wildlife movement (during construction and revegetation), but could facilitate wildlife movement between the Devereux Slough and Devereux Creek, the South Parcel, and the Ocean Meadows Golf Course. Development of the North Campus Faculty Housing could increase human use of the Phelps Ditch channel. This could result in direct impacts to the channel proper or indirect impacts of urbanization that would further limit the use of Phelps Ditch by wildlife.

Many bird species use areas adjacent to the South Parcel (e.g., Devereux Slough and the associated wetlands) during migration through the Pacific Flyway. The thin linear groves of eucalyptus trees that border the western portion of the North and South parcels also serve as important stopover locations for the annual fall migration of monarch butterflies. Some movement of wildlife through the trees would be expected because the cover provided by the trees and understory vegetation. Although overland movement of wildlife through the non-native grasslands and disturbed open areas such as those in the North and South parcels currently occurs, it is limited by the high level of disturbance and human activity that currently occurs there.

The area proposed for North Campus Faculty Housing could allow localized overland wildlife movement, but it has been disturbed by grading and contains no distinctive landscape features that would be significantly more attractive as movement corridors than those found in the surrounding open areas to the west and south. Additionally, the North Parcel is bordered on both the northern and eastern sides by residential developments that preclude overland wildlife movement. Because the North Parcel does not act as a sole connection for two undeveloped areas, the development proposed for the North Parcel would not result in further habitat fragmentation or prevention of animal movement between habitats.

The eucalyptus grove along the eastern boundary of the North and South Parcels is of regional importance to bird species and monarch butterflies that use the area during annual migrations. As it is currently designed, the North Campus Faculty Housing would not result in the loss of these trees, or their ability to function as a stopover for migratory birds.

The two areas making up the Sierra Madre Family Student Housing parcel are surrounded by development on the north, south, and east sides. Stork Road, a major thoroughfare, bounds the property on the east. The west side borders the Ocean Meadows Golf Course through which Devereux Creek and Phelps Ditch flow. The northwestern parcel is annual grassland with a freshwater marsh running north–south through the center of the parcel. This channel connects to the ornamental grass areas of the golf course. Opportunities for wildlife movement would be limited to local movement because of surrounding development, roadways, and recreational uses. The eastern parcel is currently used as a golf driving range. Because of these uses and the surrounding development, the current value for wildlife movement across the parcel is extremely

FACULTY AND FAMILY STUDENT HOUSING, OPEN SPACE PLAN, AND LRDP AMENDMENT EIR

low, and no significant movement would be expected. Because of the surrounding development and Storke Road, neither of these two parcels directly connects other existing open space. Development of the northwestern parcel is not planned at this time. Development of the eastern parcel will not result in the further fragmentation of habitat or block any migratory pathways.

Section 4.4
Biological
Resources

Areas proposed to be included in the Open Space Plan contain numerous distinctive landscape features that would be significantly more attractive as movement corridors than those found in the surrounding open areas. The Devereux Slough complex would allow movement of wildlife through the site and into surrounding undeveloped areas, including access to coastal areas and potentially Santa Ynez Mountains. The area is of regional importance to bird species and monarch butterflies that use the area during annual migrations. The addition of the South Parcel Nature Park to the Open Space Plan would be expected to aid in wildlife movement through the project area by adding approximately 72 acres of restored grassland, wetland, and riparian channels to the area. This habitat would be contiguous with surrounding open space, and would increase the permanent connectivity between the West Campus Bluffs and the Ellwood Mesa. Furthermore, the reduction in overall trail length within the entire project area would reduce both direct and indirect effects of informal trails and the human disturbance associated with them, and the project would not result in adverse impacts to wildlife migration.

In general, trails themselves should not restrict the movement of local wildlife. However, installation of fencing to prevent human disturbance of sensitive habitats could restrict the movement of animals depending on the fence design. The Open Space Plan presents several different fence designs each with a specific use. The only two likely to restrict movement of small mammals are the post and rail with welded wire mesh and the fine-spaced welded wire mesh fence. Application of these fencing styles is expected to be minimal. The only conceptual use at this time is for the exclusion of domestic animals from sensitive habitat (e.g., snowy plover nesting areas).

Although development related to the proposed project would reduce the overall area available for movement (e.g., the North Parcel and Storke-Whittier), it would increase the open space areas held in perpetuity or protected under LRDP policy. These new open space areas, particularly the proposed South Parcel Nature Park, would increase the amount of contiguous habitat within the project area and link a large section of the Open Space Plan area with the COPR and West Campus Bluffs. This would increase the connectivity of surrounding landscape and be beneficial to wildlife movement through the preserved areas.

In summary, residential development would not result in direct impacts to wildlife movement because neither site supports movement corridors to adjacent habitat. Lighting associated with residential development could reduce wildlife use of adjacent undeveloped areas, which could result in adverse impacts, however MM 4.4-9 (Visual Resources) addresses spillover and sets standards for minimizing the effects of outdoor lighting. The re-engineering of Phelps Ditch and installation of a culvert on Devereux Creek could result in short-term adverse impacts on wildlife movement, but would ultimately enhance wildlife movement. Implementation of the proposed project and the Open Space Plan will have a *beneficial impact* on wildlife movement

FACULTY AND FAMILY STUDENT HOUSING, OPEN SPACE PLAN, AND LRDP AMENDMENT EIR

Section 4.4 because consolidated permanently preserved open space will be created, habitat will be restored and enhanced, and formalized trails will be reduced in number, and many informal trails will be closed restored to native habitats thereby improving habitat linkages.

Biological Resources

Impact 4.4-5. Development of the proposed project would be in substantial conformance with local applicable policies protecting biological resources. This impact would be *less than significant*.

Amendment of the LRDP to permit residential development of faculty housing and family student housing, and implementation of the Open Space Plan would be in substantial conformance with local applicable policies.

Although as a state entity, UC is not subject to municipal plans, policies, and regulations, such as the County and City General Plans or local ordinances, the University values biological resources and developed project plans so as to be consistent where feasible with the provisions of the Goleta Community Plan. As a land use planning document, consistency with applicable provisions of the Goleta Community Plan is addressed in Section 4.6 (Land Use). As discussed more fully in Impact 4.6-1, the proposed project is consistent with GCP policies related to preservation of biological resources. As such, impacts from the proposed project on local applicable policies protecting biological resources would be *less than significant*.

Impact 4.4-6. Development of the proposed project would be in substantial conformance with local applicable policies protecting biological resources or the provisions of an adopted habitat conservation plan. *No impact* would result.

Amendment of the LRDP to permit residential development of faculty housing and family student housing, and implementation of the Open Space Plan would be guided by a series of LRDP policies and mitigation measures which are described in the impacts above. The policies previously addressed in this section would apply to the management of the open space, but do not relate to Habitat Conservation Plans (HCP), Natural Community Conservation Plans (NCCP), or other local management plans.

There are no existing HCPs, NCCPs, or other approved local, regional, or state habitat conservation plans that are applicable to the proposed project area. Therefore, there ~~will~~would be *no impact* from implementation of the proposed project on HCP, NCCP, or other conservation planning efforts. Implementation of the Open Space Plan ~~will~~would result in a regional plan for management of open space and have a *beneficial* effect on the environment.

4.4.5 Cumulative Impacts to Wildlife Resources

The geographic context for the analysis of Biological Resources impacts is the Devereux Slough Ecological System, which generally includes the area between Sandpiper Golf Course on the west, Stork Road on the east, the Pacific Ocean on the south, and development on the north. The Goleta Community Plan EIR (Ogden, 1991), as well as other EIRs, such as The Residences at Sandpiper Supplemental EIR (SAIC, 2001), concluded that future development of open space

**FACULTY AND FAMILY STUDENT HOUSING,
OPEN SPACE PLAN, AND LRDP AMENDMENT EIR**

parcels within the Devereux Slough Ecological System, which includes the project area, would be significant. Anticipated cumulative impacts on the slough ecosystem from these projects include significant cumulative:

Section 4.4
Biological
Resources

- Loss of upland movement corridors and degradation of Phelps Ditch channel as a movement corridor due to increased development, human presence, and lighting;
- Loss of foraging habitat (grassland) for resident and migratory raptors;
- Impacts to special-status biological resources;
- Degradation of water quality in Devereux Creek and Devereux Slough from increased pollutant runoff and sedimentation;
- Introduction of non-native and/or non-indigenous plants, and;
- Significant beneficial impacts to biological resources from re-designating the South Parcel from residential development to permanent open space.

Project-specific impacts, such as direct impacts to Phelps Ditch and other wetlands, can be feasibly mitigated and in some instances, such as protection of Threatened and Endangered species, a net benefit. ~~However, cumulative losses of open land and degradation of the Devereux Creek and Devereux Slough watershed cannot be feasibly mitigated.~~ In typical development projects, little progress has been made to effectively mitigate loss of native plant communities including native grasslands and coastal sage scrub communities in the foothills and on the coastal plain. In addition, wildlife movement corridors and connectivity between open lands or publicly-owned lands is are not being preserved. The Joint Proposal and Open Space Plan offers the opportunity to address these types of problems.

Implementing the proposed project could increase disturbance to special-status wildlife species, such as western snowy plovers and nesting/foraging raptors, as a result of increased human and pet activity in the Open Space Plan area and adjacent areas. Potential direct impacts, analyzed earlier, could include nest abandonment by adult western snowy plovers and/or direct mortality to plover chicks from increased human and pet presence on the beaches near Coal Oil Point and Devereux Slough; raptor nest abandonment as a result of increased pedestrian traffic in the eucalyptus woodlands at the Ellwood Marine Terminal; disruption of raptor foraging patterns caused by increased human presence; erosion of wildlife species diversity through time because of chronic human presence and noise; increased wildlife mortality from feral cat and dog predation; disturbance of wildlife foraging patterns due to feral cat and dog predation on their prey base; and collecting of wildlife by individuals. Indirect impacts to plants and wildlife would include any form of habitat degradation resulting from human-caused disturbances. However, with implementation of the MMs 4.4-1(a) through 4.4-1(o) and MM 4.4-2(d) and MM 4.4-2(e) which are designed to reduce potential impacts of the proposed project on special status species and habitats, including the snowy plover, direct impacts on special status species will be reduced to a *less than significant* level.

**FACULTY AND FAMILY STUDENT HOUSING,
OPEN SPACE PLAN, AND LRDP AMENDMENT EIR**

Section 4.4
Biological
Resources

Non-native plant material and native plant material of unknown geographic origin used in landscaping and restoration could invade native habitats, and native plant material of unknown geographic origin, has the potential to alter the genetic constitution of indigenous populations that have adapted to local climatic, soil, and hydrologic conditions. This is of particular importance to the Devereux Slough ecosystem and the Coal Oil Point Natural Reserve. The Reserve is at the downstream end of Devereux Slough and thus may be a repository for water—and wind-dispersed propagules or seed. Dune scrub species are also susceptible to hybridization from plant material of unknown origin that may be used in mitigation sites. Since the mission of the Reserve is to protect and enhance the ecological functions of the area, invasive species and hybridization has the potential to affect long-term genetic integrity and persistence of endemic dune scrub vegetation communities within the Reserve. With implementation of MM 4.4-2(e), exotic invasive species shall be prohibited in all open space areas or near ESHA areas and riparian corridors on University property, and landscaping in open space areas and the COPR shall include native species from locally occurring genomes, reducing potential impacts to a less-than-significant level.

Estimates of wetlands that historically existed in California range from 3 to 5 million acres. The current estimate of wetland acreage in California is approximately 450,000 acres; this represents an 85 to 90 percent reduction in total amount of wetlands within California. Within the Devereux Slough Ecological System approximately 85 acres of wetland and wetland vegetation that could be subject to regulation under Section 404 of the Clean Water Act¹ Implementing the proposed Faculty and Family Student Housing project would, in the short-term, remove approximately 1.76 acres of these wetlands. The loss of wetlands would be fully mitigated for at least a one-to-one replacement ratio that will be subject to approval by the CDFG and ACOE. The mitigation would occur through either the restoration of existing degraded wetland habitat or the creation of new wetland complexes within areas that would be ecologically suitable for them. Additionally, implementation of mitigation measures implanted during and after implementation of the proposed project, including MM 4.4-1(a) through 4.4-1(o) and MM 4.4-2(d), would further reduce impacts to wetlands found within the Devereux Slough Ecological System. The end result would be a net increase of wetland quantity, quality and sustainability within the Devereux Slough Ecological System.

Historically, habitats on the coastal plain, foothill, and montane regions of the Santa Ynez Mountains were contiguous. Development has disrupted that contiguity, fragmenting habitats and creating habitat “islands.” Upland movement corridors include open lands that are physically connected to other open lands, have minimal barriers to movement, or are in close proximity to other open lands such that wildlife can easily move between them. Prior to 1990, the Devereux Slough watershed (east of Storke Road/Glen Annie Road) was substantially less developed compared to today. West and north of the urban boundary line open lands are primarily large ranches or agricultural (orchard) operations. For the most part, these ranches and the extensive wildlife habitat they support are not physically connected to open lands in the

¹ Ellwood-Devereux Open Space Plan and Habitat Management Plan, Administrative Draft.

**FACULTY AND FAMILY STUDENT HOUSING,
OPEN SPACE PLAN, AND LRDP AMENDMENT EIR**

Section 4.4
Biological
Resources

Goleta Valley. Previously, a dense patchwork of open lands allowed species such as white-tailed kites, red-tailed hawks, turkey vultures, American kestrels, American badgers, coyotes, bobcats, and mountain lions to satisfy foraging, roosting, and/or nesting/denning requirements within contiguous areas. As the patchwork of open lands in the Valley continues to disappear under development, connections between the foothills and the coastal plain, including the project area, become more tenuous, and force wildlife to either expend more energy and expose themselves to increased mortality moving greater distances between non-contiguous habitat patches or to abandon some patches entirely.

Movement corridors for wildlife have two forms in the region: upland open lands and creeks. Open lands south of Highway 101 already are highly fragmented and form a patchwork of parcels of varying size and habitat quality. Aquatic and riparian corridors associated with the coastal drainages in this area can provide more or less continuous habitat connections between the parcels they traverse, but are frequently fragmented by transportation corridors and other development. Loss of these connections may be particularly significant because most drainages in the Devereux Slough watershed trend in a north-south direction, so these movement corridors allow species to move among seasonally abundant water and food sources throughout all elevations of the watershed. Increased development in the past 10 years, especially south of Highway 101, has resulted in habitat loss and fragmentation, increased presence of humans and domestic (or feral) cats and dogs, and night lighting. Incrementally, these impacts have eliminated or degraded upland and/or drainage migration corridors and connectivity to the Devereux Slough Ecological System. Camino Real Marketplace (open lands, raptor foraging), Glen Annie Townhomes (open space, raptor foraging), Glen Annie Golf Course (Devereux Creek), Crown Collection (Devereux Creek), Mountain View Homes (open lands, Phelps Ditch, raptor foraging, and turkey vulture and monarch butterfly roosts), Winchester Commons (open lands, raptor foraging), and Storke Ranch (unnamed eastern tributary of Devereux Creek, open lands, raptor foraging) are notable examples. These developments had significant and unavoidable impacts by eliminating or degrading drainages and undeveloped upland areas that were used by small and medium-sized mammals and birds, foraging raptors, and aquatic biota as movement corridors prior to development.

Residential development would incrementally contribute to increased recreational use of the South Parcel (re-designated from residential to open space under the current project description), and adjacent beaches. Potential impacts to biotic resources could act synergistically with uses generated by recently constructed developments including Sandpiper Golf Course, Bacara Resort and Spa, Winchester Commons, Storke Ranch, Mountain View Homes, and Glen Annie Townhomes.

The proposed Faculty and Family Student Housing together with the County's Ocean Meadows Residences and the City's Comstock Homes Development would contribute to cumulative effects on biological resources within the Devereux Slough Ecological System on a local and regional scale when considered in combination with existing development and recreational pressures in the overall Goleta and Santa Barbara areas, coastal Santa Barbara County and southern California in general. However, the proposed project is differentiated from other

**FACULTY AND FAMILY STUDENT HOUSING,
OPEN SPACE PLAN, AND LRDP AMENDMENT EIR**

Section 4.4
Biological
Resources

individual development projects in the area in that one of its primary objectives is to avoid or reduce the potential cumulative impacts of development to sensitive coastal resources. The project has been conceived to implement the preservation and restoration concepts articulated in the Joint Proposal for the Ellwood-Devereux Coast Plan as articulated in the resultant Open Space Plan. The Joint Proposal and Open Space Plan are the result of an unprecedented public-private cooperative effort to guide development of the last remaining open coastal lands in western Goleta. The Joint Plan encompasses 44 parcels, which are currently under multiple public and private owners and jurisdictions. It provides the opportunity to plan the preservation, management and development of the Ellwood-Devereux area in a comprehensive rather than piecemeal fashion. Comprehensive planning would allow improved public coastal access, and the preservation and enhancement of 652 consolidated acres of recreational open space, natural reserve, and marine environment resources. Potential development would be reduced from 760 to 570 units and University and private residential development would be clustered adjacent to existing development and infrastructure, and employment centers. Development would be limited to previously disturbed areas that do not have habitat value of high function. The underlying premise of the Joint Proposal is to provide an open space, habitat, and development plan that is, on balance, most protective overall of sensitive natural and coastal resources.

While residential development of 39.5 acres of land in the North and Storke-Whittier parcels would incrementally contribute to the loss of remaining open space in Devereux Slough Ecological System and western Goleta, the comprehensive planning associated with this project would concurrently result in preservation and enhancement of 314.3 acres of open space and natural reserve on University property. When combined with the other proposals from the Joint Proposal and the resultant Open Space Plan, 652 consolidated acres of open space and natural reserve would result. This consolidation would preserve connectivity within the lower Devereux Slough Ecological System and between Devereux Slough and habitats in the foothills and montane regions of the Santa Ynez Mountains. The reengineering and restoration of Phelps Ditch would result in temporary impacts to wildlife movement, but ultimately enhance potential wildlife movement.

The project will result in the loss of approximately 39.5 acres of land that may be used by raptors for foraging. Related to the net losses of upland migration corridors described above, the cumulative loss of native and non-native grasslands in the Goleta Valley in general, and the Devereux Slough watershed in particular, has substantially reduced opportunities for foraging raptors. Foothill and mountain lands are generally more densely vegetated with orchards, chaparral, or woodlands. They may provide suitable nesting opportunities, but do not offer equivalent roosting and foraging values as open, level grasslands and scrub habitats on the coastal plain. Prior to development, coastal plain habitats likely provided raptors with suitable nesting, roosting, and foraging sites in close proximity to each other. Development on the coastal plain has eliminated most raptor nesting and roosting sites and, in general, has increased the distance that must be traveled by raptors moving between these nesting and roosting sites, now located in the foothill and montane areas, and remaining patches of suitable foraging habitat on the coastal plain. As noted above, this project, in combination with other comprehensive planning efforts within the area would allow for the preservation and

FACULTY AND FAMILY STUDENT HOUSING, OPEN SPACE PLAN, AND LRDP AMENDMENT EIR

enhancement of 314.3 acres of open space and natural reserve on University property, and a total of 652 consolidated acres of open space and natural reserve within the Ellwood Devereux area, while limiting development to previously disturbed areas that retains only a portion of its former (non-degraded) biotic potential to support prey species. Areas to be preserved by the project would be removed from future development plans, would be enhanced and restored, and would be permanently available for use as foraging areas for raptors. The project will increase the quantity, quality, and sustainability of wetland areas, and also includes restoration and preservation of approximately 35 percent of the South Parcel and the majority of the West Campus Bluff areas as native grassland complexes. The restoration of these areas, in combination with other preservation and restoration activities within the region would increase the quality of foraging grounds that raptor species depend upon. The improved quality of habitat would be expected to increase the number of prey species within these areas and would result in increased foraging opportunities. Thus, the project's contribution to cumulative impacts associated with loss of raptor foraging impacts would ~~not~~ be reduced to a *less-than-significant* level and may be considered *beneficial*.

Section 4.4
Biological
Resources

Recent land protection along the South Coast, including the Carpinteria Bluffs, the Douglas Family Preserve, and Haskell's Beach in combination with the protection of the Ellwood-Devereux Coast Open Space and Habitat Management Plan area demonstrates that coastal protection is increasing within the region. It is anticipated that the South Parcel and consequently the entire Open Space Area would experience increased numbers of visitors due to the proposed development of the North and Storke-Whittier parcels and trail improvements. The proposed project provides numerous mitigation measures to reduce disturbance to special-status species resulting from increased human densities within and adjacent to the Ellwood-Devereux Coast Open Space and Habitat Management Plan area, including Devereux Slough and the Coal Oil Point Reserve. Specifically, the Open Space Plan includes proposals to control human access to and through the South Parcel and improve wildlife habitat quality. This would be accomplished by closing and revegetating a number of existing trails and establishing several permanent trails to direct human traffic away from special-status resources and reduce habitat fragmentation. Additionally, the proposed Faculty and Family Student Housing and Open Space Plan project together with the Ocean Meadows Residences and Open Space Plan project, the City Comstock Homes Development, and Ellwood Mesa Open Space Plan project would result in similar mitigation benefits to the biological resources within the Ellwood-Devereux Open Space and Management Area.

4.4.1 References

The following is a list of references for this subsection. Please refer to Section 9.0 for the master reference list.

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**FACULTY AND FAMILY STUDENT HOUSING,
OPEN SPACE PLAN, AND LRDP AMENDMENT EIR**

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