padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

SIMI VALLEY LANDFILL EXPANSION PROJECT
REVISED BIOLOGICAL IMPACT ANALYSIS

Prepared by:

Padre Associates, Inc.
5450 Telegraph Road, Suite 101
Ventura, California 93003

Prepared for:

TRC

and

Simi Valley Landfill and Recycling Center
2801 Madera Road
Simi Valley, California 93065

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1.0 STUDY APPROACH AND METHODS

Biological resources were assessed based upon field surveys and literature research. Field surveys for plants and wildlife were conducted by walking transects of opportunity through all habitat types. Botanical and general wildlife observations were conducted on April 15 and May 28, 1998. A rare plant survey was conducted on June 25, 1998 to verify the presence of Plummer's mariposa lily. California gnatcatcher surveys were conducted from April 21 through May 28, 1998.

Due to the addition of the western expansion area (UNOCAL parcel) in 2000, additional surveys were conducted, including California gnatcatcher surveys (April 19 to June 13, 2000), rare plant survey (June 2000) and habitat assessment (June 2000). A wetland delineation and follow-up rare plant survey was conducted on June 28, 2001. A bird inventory was compiled as a result of these surveys. The literature research included reviewing the following documents:

- Report on Arroyo Simi Characterization (Montgomery Watson, 1995);
- Final Master Environmental Impact Report for the West End Community Development Project and West End Specific Plan (ENSR/Fugro West, 1997);
- Final Environmental Impact Report for the Expansion of the Simi Valley Landfill (McClelland Engineers, 1989);
- California Native Plant Society (CNPS) Electronic Inventory (Skinner and Pavlik, 1994);
- Personal computer version (RAREFIND 2) of the California Department of Fish and Game (CDFG) Natural Diversity Data Base (NDDB, 2001); and
- Other environmental documents prepared for projects in eastern Ventura County.

2.0 PROJECT DESCRIPTION

2.1 LOCATION

The Simi Valley Landfill and Recycling Center (SVLRC) is located at 2801 Madera Road in Simi Valley, California. The property boundary lies about 100 feet north of State Route 118. The SVLRC is located between Alamos Canyon and Brea Canyon at an elevation of about 800 to 1060 feet above mean sea level. For the purposes of this impact analysis, the term "project site" refers to the SVLRC property, adjacent slope easements and the western expansion area.

2.2 PROJECT PURPOSE

The purpose of the project is to increase the long-term solid waste disposal capacity of the landfill. This would be accomplished by expanding the permitted refuse footprint into undeveloped areas. These areas primarily consist of a new expansion area located immediately west of the current disposal area, and slopes surrounding the existing permitted refuse footprint. Support facilities including office trailers and the landfill gas flare would be located on SVLRC property immediately southeast of the proposed refuse footprint.

3.0 SETTING

3.1 VEGETATION

The vegetation of the project site is comprised of northern mixed chaparral, Venturan coastal sage scrub, coyote brush scrub, annual grassland, disturbed and planted communities (Figure 1). Planted areas refers to sites dominated by ornamental plantings, aesthetics mitigation plantings or hydroseeded slopes.

A total of 161 vascular plant species were identified during the field surveys and are listed in Appendix A. Plants observed on the project site consisted of 106 (66 percent) native taxa, 41 (25 percent) non-native naturalized taxa, and 14 (9 percent) ornamental or planted taxa. The percentage of non-native taxa is greater than for the State as a whole (17.4 percent), reflecting the relatively high level of disturbance associated with adjacent landfill development.

The generalized map of plant communities of the project site and vicinity (Figure 1) is based on inspection of color aerial photographs (Walker & Associates 591-1011, 1:6000) taken November 3, 1997 and field surveys conducted by Padre.

3.1.1 Northern Mixed Chaparral

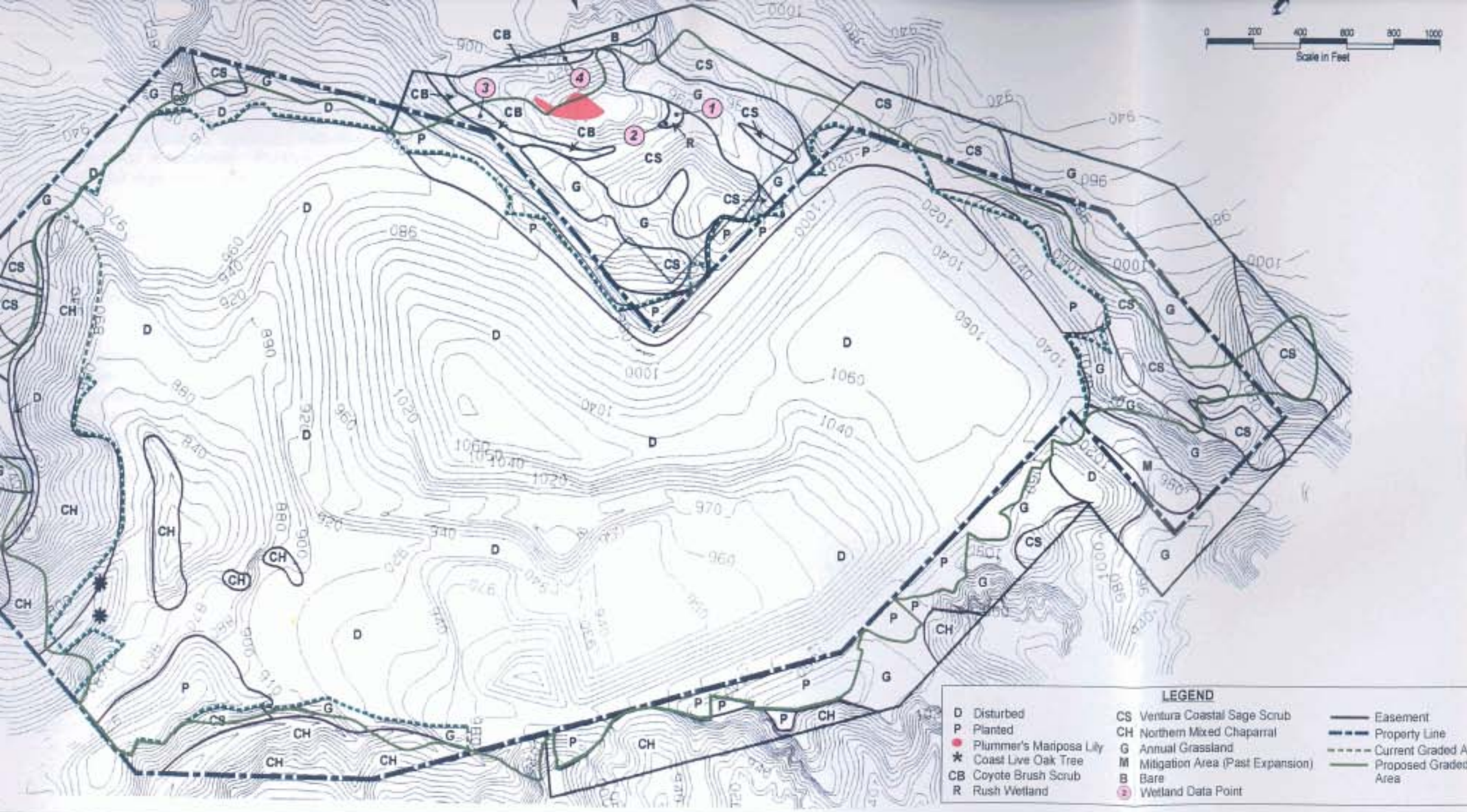
This community occurs on undisturbed slopes to the south and southeast of the existing landfill disposal area. Northern mixed chaparral is very dense with an average canopy height of 6 to 8 feet. Northern mixed chaparral is dominated by scrub oak (*Quercus berberidifolia*), with lesser cover of toyon (*Heteromeles arbutifolia*), lemonade berry (*Rhus integrifolia*) and holly-leaf redberry (*Rhamnus ilicifolia*). Black sage (*Salvia mellifera*) forms locally dense patches within this community. Other species characteristic of coastal sage scrub may also occur within these patches including purple sage (*Salvia leucophylla*) and California bush sunflower (*Encelia californica*). The understory of this community is sparse, due to the dense canopy, and is dominated by eucrypta (*Eucrypta chrysanthemifolia*).

3.1.2 Venturan Coastal Sage Scrub

This community occurs on undisturbed slopes north, northeast and west of the current landfill disposal area. Venturan coastal sage scrub is dominated by California sagebrush (*Artemisia californica*), purple sage, black sage, and chaparral bush mallow (*Malacothamnus fasciculatus*). Other common species include lemonade berry, giant wild-rye (*Leymus condensatus*), silver bush lupine (*Lupinus albifrons*), morning glory (*Calystegia cyclostegia*), and wallflower (*Erysimum capitatum*). This community is more dense on north-facing slopes of the western expansion area, with a greater frequency of shrub species typically associated with chaparral, including toyon and holly-leaf redberry. This community exhibits high species diversity, supporting at least 92 plant species on the project site.

3.1.3 Coyote Brush Scrub

This community is limited to the bottom of seasonal drainages, of the western expansion area (see Figure 1). This community is composed of dense stands of coyote brush (*Baccharis pilularis*), with scattered patches of giant wild-rye. Portions of this community are codominated by mulefat (*Baccharis salicifolia*).



VEGETATION OF THE SIMI VALLEY LANDFIL

3.1.4 Basket Rush

This community is represented by a 0.10 acre patch of basket rush (*Juncus texilis*) located at the mouth of a small canyon (see mapping unit R on Figure 1). Alkali heath (*Frankenia salina*) occurs along the southern margin of this area, and is included in this mapping unit.

3.1.5 Annual Grassland

This community occurs on relatively level sites along the periphery of the existing landfill disposal area. It is likely that these sites are a result of grazing activities, predating the landfill. Annual grassland is dominated by non-native species, including wild oats (*Avena fatua, A. barbata*), ripgut grass (*Bromus diandrus*), black mustard (*Brassica nigra*) and fleshy lupine (*Lupinus succulentus*). However, native species are scattered within this community, including fascicled tarplant (*Hemizonia fasciculata*), three-pod milkvetch (*Astragalus trichopodus*) and narrow-leaf milkweed (*Asclepias fascicularis*). Portions of this community include scattered shrubs characteristic of coastal sage scrub, primarily purple sage.

3.1.6 Disturbed

This designation is applied to areas that have been disturbed within the past few years, but have not recovered sufficiently to form a recognizable community. Disturbed areas are dominated by annual grasses (mostly wild oats), yellow sweet-clover (*Melilotus indica*), tocalote (*Centaurea melitensis*) and fleshy lupine.

3.1.7 Planted Areas

This designation is applied to areas that have been seeded to prevent erosion or have been planted using container plants. These areas occur as manufactured slopes along the perimeter access road, past disposal areas and landscaping around structures and along the paved access road. Dominant plants include yellow sweet-clover, fleshy lupine, bur clover (*Medicago polymorpha*), California poppy (*Eschscholzia californica*) and cape marigold (*Dimorphotheca sinuata*). Container planting is part of an ongoing aesthetics mitigation program and includes both native and non-native species.

In addition, an area adjacent to the northeast corner of the SVLRC (see mapping unit "M" on Figure 1) was planted in 1998 with mostly riparian species as mitigation for loss of 0.8 acres of wetlands associated with construction of the sediment retention basin (0.3 acres) and future use of a soil stockpile area (0.5 acres).

3.2 WETLANDS

3.2.1 Definition

The U.S. Army Corps of Engineers (Corps) has jurisdiction over waters of the United States (U.S.). The limit of jurisdiction in non-tidal waters extends to the ordinary high water mark and include all adjacent wetlands. Waters of the U.S. are defined as:

> "All waters which 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; including all interstate waters including interstate wetlands, all other waters such as intrastate lakes, rivers, streams, mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce."

The Corps and U.S. Environmental Protection Agency define wetlands 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."

Ventura County (Ventura County General Plan; Goals, Policies and Programs) defines wetlands as:

> "Lands which are transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is periodically covered with shallow water. The frequency of occurrence of water is sufficient to support a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction. Wetlands include marshes, bogs, sloughs, vernal pools, wet meadows, river and stream overflows, mudflats, ponds, springs and seeps."

3.2.2 Methodology

The purpose of the wetland delineation was to identify wetlands meeting the Ventura County and California Environmental Quality Act (CEQA) definition, and not necessarily to determine the jurisdiction of the Corps under Section 404 of the Clean Water Act. Therefore, as part of future permitting activities, the Corps may require additional field work to fully determine the extent of Corps jurisdiction. Data forms are provided in Appendix C.

Based on the County definition, areas supporting wetland (hydrophytic) vegetation and defined drainage channels were considered wetlands. Jurisdictional wetlands were determined to be present if evidence of all three Federal criteria were observed (hydrophytic vegetation, hydric soils, and wetland hydrology). However, the U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Game (CDFG) wetland definition requires that only one of the wetland criteria be present to define a wetland.

As part of the preliminary wetland delineation, four data points were established within the western expansion area to identify County and Corps-defined wetlands (see Figure 1). These data points included all three drainage swales. Two data points were established within the basket rush area, and one data point was established at a representative location within each of the other two drainage swales.

Federal Jurisdiction Determination. The limit of Corps jurisdiction in non-tidal waters extends to the ordinary high water mark and includes all adjacent wetlands. The ordinary high water (OHW) mark was established along poorly defined swales within the western expansion area, using drift lines and bank shelving patterns. Drift lines (organic materials deposited along the banks) are direct evidence of the highest water elevation of the most recent rain year. Bank shelving patterns (eroded benches) indicate long-term patterns in high water elevation. The width of waters of the U.S. (distance between OHW marks) was measured along each of the three swales within the project site.

Hydrophytic Vegetation. The predominance of hydrophytic (water-loving) vegetation was established by identifying dominant species within a 10-foot radius circle (sample plot) at each of the transects and determining the hydrophytic class (i.e., facultative, facultative-wetland or obligate wetland species) listed in Reed (1988).

Hydric Soils. Soil pits were excavated at each data point. Soils at three of the four data points (two at the basket rush, and one within a swale supporting coyote brush scrub) are mapped as Badlands by Edwards et al. (1970), which is a generalized term for steep eroded slopes. Drainages with this soil type are listed as supporting hydric soils by the Natural Resources Conservation Service (1992). However, the excavation and examination of on-site soils is a more accurate method to identify hydric soils, such that soil data collected on-site is used to determine hydric status. The fourth data point is mapped as San Benito clay loam by Edwards et al. (1970), and is not considered a hydric soil series by the Natural Resources Conservation Service (1992).

Wetland Hydrology. Observations were conducted at each transect and sample plot to identify evidence of inundation or soil saturation, such as drift lines, sediment deposits, drainage patterns and oxidized roots.

3.2.3 Results

Federal Jurisdictional Determination. The area of waters of the U.S. that may be affected by project implementation would be about 0.4 acres. However, a more detailed delineation would be required to fully determine the area of Corps jurisdiction. These values were calculated based on a single measurement of the distance between OHW marks at each swale, and the estimated channel length impacted.

Hydrophytic Vegetation. Data point 1 supports basket rush, an obligate wetland species. Data point 2 also supports alkali heath, a facultative wetland species. Therefore, data points 1 and 2 meet the hydrophytic vegetation criterion of the wetland definition. Data points 3 and 4 are located within coyote brush scrub, in areas codominated by mulefat. These two data points do not meet the hydrophytic vegetation criterion of the Wetland Delineation Manual (Environmental Laboratory, 1987).

Hydric Soils. Soils found at Data points 1, 2 and 3 were considered hydric due to dark colors (chroma of 2) with mottling. Soil at Data point 4 did not exhibit dark soil color or mottling.

Hydrology. The three swales within the western expansion area are inundated for brief periods following storm events. However, due to sandy substrate and small watershed, it is unlikely the period of inundation is sufficient to meet the wetland hydrology criterion of the Wetland Delineation Manual (Environmental Laboratory, 1987). However, due to the lack of data, it is assumed these swales exhibit wetland hydrology.

Wetland Determination. Only Data points 1 and 2 meet all three criteria of the Wetland Delineation Manual (Environmental Laboratory, 1987), and are considered Corps-defined wetlands. This area is also considered County-defined wetlands. Data points 3 and 4 do not support hydrophytic vegetation and are not considered Corps-defined or County-defined wetlands. The area of wetlands affected by proposed landfill expansion is 0.10 acres.

3.2.4 Wetland Significance

Policy 1.5.2-4 of the Ventura County General Plan requires discretionary development to be sited a minimum of 100 feet from significant wetland habitats. Wetland habitats within the proposed expansion areas were evaluated to determine their significance, based on the potential to perform the following functions:

- Groundwater recharge;
- Flood flow alteration;
- Sediment stabilization;
- Sediment/toxicant retention;
- Ecosystem production export; and
- Wildlife habitat (aquatic and terrestrial).

The basket rush area (Data points 1 and 2, Figure 1) is inundated only for brief periods and is not considered a significant wetland habitat for the following reasons:

- The watershed area is less than 9 acres, preventing any meaningful groundwater recharge or flood flow alteration;
- Sediment stabilization is not a valuable function of the wetland, due to its small size, and very brief period and intensity of surface flow;
- The wetland may retain some sediment and pollutants; however, this function is not significant due to the very small watershed affected;
- The wetland is a dense monoculture of basket rush without surface water, and very limited habitat diversity. It is isolated from other wetland habitats, does not support breeding pools for amphibians and aquatic insects, or provide drinking water for vertebrates. Therefore, its value for ecosystem export or wildlife habitat is limited.

SPECIAL-STATUS PLANT SPECIES

Special-status plant species are either listed as endangered or threatened under the Federal, or California Endangered Special Acts, or rare under the California Native Plant Protection Act, or considered to be rare (but not formally listed) by resource agencies, professional organizations (California Native Plant Society), and the scientific community.

The Ventura County Zoning Ordinance (Section 8107-25) defines all oak trees as protected if their girth exceeds 9.5 inches (6.5 inches for multiple trunks). The County requires an oak tree permit for removal or encroachment of protected trees. For the purposes of this project, special-status plant species are defined in Table 1.

The literature search conducted for this impact analysis indicates that 12 special-status plant species occur in the project region. Table 2 lists these species, current regulatory status, and nearest known location.

Special-status plant species observed on the project site during field surveys were limited to coast live oak, Catalina mariposa lily and Plummer's mariposa lily. Two coast live oak trees occur on the banks of the sediment retention basin (Figure 1). Tree no. 1 has three trunks; 10, 8, 13 inches in diameter, breast-high (dbh) and is located on the southeastern bank. Tree no. 2 has four trunks; 20, 12, 15 and 16 inches dbh and is located on the northwestern bank. About 300 individuals of Catalina mariposa lily were observed on SVLRC property and slope easements, concentrated in several subpopulations along the southern and northern property lines. Plummer's mariposa lily was observed in two patches; about 8 individuals near the southern property line (in 1998) and about 19 individuals in the western expansion area (in 2001).

No other special-status plant species listed in Table 2 were observed on the project site during field surveys. Each of these plant species would have been detectable at the time of the surveys, but were not observed. A field visit to a known population of Lyon's pentachaeta was conducted to verify the detectability of this species at the time of the survey. Based on lack of observation during field surveys, it is assumed that no other special-status plant species occur on the project site.

3.4 SENSITIVE HABITATS

The California Natural Diversity Data Base (NDDB) has inventoried natural communities and ranked them according to their rarity and potential for loss. However, the NDDB does not presently track Venturan coastal sage scrub as a sensitive community. Coastal sage scrub communities are becoming increasingly rare throughout their range and are considered endangered by much of the scientific community (Westman, 1981; Westman, 1986; Atwood, 1990). It is estimated that 70 to 90 percent of pre-settlement coastal sage scrub has been lost (O'Leary, 1990). Davis et al. (1995) consider coastal sage scrub a natural community at risk because less than five percent of this community is protected in parks, reserves, and conservation easements. Therefore, Venturan coastal sage scrub will be considered a sensitive community for the purposes of this impact analysis.

Table 1. Definitions of Special-Status Plant Species

Special-Status Plant Species
➢ Plants listed or proposed for listing as threatened or endangered under the Federal Endangered Species Act (50 CFR 17.12 for listed plants and various notices in the Federal Register for proposed species).
➢ Plants that are candidates for possible future listing as threatened or endangered under the Federal Endangered Species Act (Federal Register Vol. 62, No. 182, pp. 49397-49411, September 19, 1997).
➢ Plants that meet the definitions of rare or endangered species under the CEQA Guidelines (Section 15380).
➢ Plants considered by the CNPS to be "rare, threatened, or endangered" in California (Lists 1B and 2 in Skinner and Pavlik, 1994).
➢ Plants listed by CNPS as plants about which we need more information and plants of limited distribution (Lists 3 and 4 in Skinner and Pavlik, 1994).
➢ Plants listed or proposed for listing by the State of California as threatened or endangered under the California Endangered Species Act (14 CCR 670.5).
➢ Plants listed under the California Native Plant Protection Act (California Fish and Game Code 1900 et seq.).
➢ Plants considered sensitive by other Federal agencies (i.e., U.S. Forest Service, Bureau of Land Management), state and local agencies or jurisdictions.
➢ Plants considered sensitive or unique by the scientific community or occurring at the limits of their natural range (*State CEQA Guidelines*).

Table 2. Special-Status Plant Species of the Project Area

Common Name (*Scientific Name*)	Status	Nearest Known Location
Coast live oak (*Quercus agrifolia*)	TPO	On-site: sediment retention basin
Lyon's pentachaeta (*Pentachaeta lyonii*)	SE, FE, List 1B	Reagan Library: 2.3 miles to the southwest (NDDB, 2001)
Brauntons milk vetch (*Astragalus brauntonii*)	FE, List 1B	Palo Comado Canyon: 6 miles to the south (NDDB, 2001)
Many-stemmed dudleya (*Dudleya multicaulis*)	List 1B	Chatsworth Reservoir: 10 miles to the southeast (NDDB, 2001)
Conejo buckwheat (*Eriogonum crocatum*)	SR, List 1B	Hill Canyon: 8 miles to the southwest (personal observation, 1997)
Conejo dudleya (*Dudleya abramsii ssp. parva*)	FT, List 1B	Reagan Library: 2.3 miles to the southwest (NDDB, 2001)
Santa Monica Mountains dudleya (*Dudleya cymosa ssp. ovatifolia*)	FT, List 1B	Triunfo Canyon: 11 miles to the south (NDDB, 2001)
Santa Susana tarplant (*Hemizonia minthornii*)	SR, List 1B	Simi Peak: 5 miles to the south (NDDB, 2001)
California orcutt grass (*Orcuttia californica*)	SE, FE, List 1B	Near intersection of SR 23 and Tierra Rejada Road: 3.4 miles to the southwest (NDDB, 2001)
Spiny rush (*Juncus acutus ssp. leopoldii*)	List 4	Alamos Canyon: 0.8 miles to the northwest (Marsh, 1981)
Catalina mariposa lily (*Calochortus catalinae*)	List 4	On-site
Plummer's mariposa lily (*Calochortus plummerae*)	List 1B	On-site

Status Codes:

FE	Federal Endangered (USFWS)
FT	Federal Threatened (USFWS)
List 1B	Plants rare, threatened, or endangered in California and elsewhere (CNPS)
List 4	Plants of limited distribution (CNPS)
SE	State Endangered (CDFG)
SR	State Rare (CDFG)
TPO	Tree protection ordinance (Ventura County)

The project site is located immediately adjacent to the existing landfill, surrounding areas to the north (Big Mountain), west (Alamos Canyon) and east (Brea Canyon) are undeveloped and provide a diversity of wildlife habitats including coastal sage scrub, chaparral, grassland, oak woodland and riparian forest.

The wildlife habitat value of expansion areas is considered moderate, due to the disturbed nature of much of the project site and indirect impacts of the existing landfill (noise, lighting, road kills and dust). Wildlife observed during field surveys or expected to occur on the project site is presented in Table 3 by taxonomic class.

Table 3. Numbers of Wildlife Species Observed or Expected on the Project Site

Species Group	Observed	Expected
Amphibians	0 species	4 species
Reptiles	2 species	14 species
Birds	68 species	102 species
Mammals	9 species	43 species

3.5.1 Wildlife of the Project Site

Observed vertebrate species include those seen or detected by track, scat, burrows or voice during field surveys conducted for this project. Vertebrate taxa expected for the area are based on sight records from other environmental documents and range maps including Zeiner et al. (1988, 1990a, 1990b), and Garrett and Dunn (1981). A listing of observed and expected fauna for the project area are provided in Appendix B.

Accurate assessment of wildlife populations would require extended periods of site research, trapping, and census taking. It is particularly difficult to detect nocturnal, rare or reclusive species to obtain accurate estimates of population size and geographical distribution. Other complications in the quantitative assessment of vertebrate (and invertebrate) populations include:

- Many species may occur in the area only for short periods during migrations;
- Many species of amphibians and reptiles become inactive during one or more seasons; and
- Seasonal or annual fluctuations in climate or weather patterns may confound observations.

Wildlife observations were conducted on the project site during the spring and early summer; therefore, winter migrants would have not been recorded.

No amphibians were observed during field surveys. Aquatic habitats on the project site are limited to a small pond (about one-third acre) and the small drainage along the eastern property boundary. The pond stores run-off from the sewage sludge dumping area and surrounding areas for about 6 months per year. The drainage provides surface water about one to eight weeks per year. Although water quality of the pond is expected to be poor due to percolation through sewage sludge, it is possible that common amphibians such as Pacific treefrog or bullfrog breed here. However, suitable habitat for special-status amphibians such as California newt, California red-legged frog and arroyo toad does not occur on the project site.

Reptiles observed during field surveys were limited to western fence lizard and side-blotched lizard, mostly observed on road cuts and other open areas within Venturan coastal sage scrub.

A total of 68 birds were observed during wildlife and California gnatcatcher surveys. Bird species confirmed as breeding in the immediate vicinity of the project site include mallard, ash-throated flycatcher, Cassin's kingbird, bushtit, Bewick's wren, California quail, blue-gray gnatcatcher, wrentit, Anna's hummingbird, starling, California thrasher, roadrunner, mourning dove, common yellowthroat, black-headed grosbeak, blue grosbeak, lazuli bunting, rufous-sided towhee, California towhee, rufous-crowned sparrow, lark sparrow, song sparrow, red-winged blackbird, brewer's blackbird, brown-headed cowbird, northern oriole, house finch and lesser goldfinch.

Bird species that may also breed in the vicinity of the project site include killdeer, raven, Costa's hummingbird, California horned lark, black phoebe, rock wren, northern mockingbird, and house sparrow.

Mammals observed during field surveys included coyote (scat and tracks), gray fox (tracks), striped skunk (tracks), bobcat (tracks), black-tailed deer (tracks and scat), pocket gopher (burrows), dusky-footed woodrat (nest), and brush rabbit (scat). Coyote and deer tracks were abundant along northern and southern ridgelines of the project site and the eastern drainage.

3.5.2 Wildlife Corridors

Wildlife migration corridors are generally defined as connections between habitat patches that allow for physical and genetic exchange between otherwise isolated animal populations. Migration corridors may be local such as between foraging and nesting or denning areas, or they may be regional in nature. Migration corridors are not unidirectional access routes; however, reference is usually made to source and receiver areas in discussions of wildlife movement networks. "Habitat linkages" are migration corridors that contain contiguous strips of native vegetation between source and receiver areas. Habitat linkages provide cover and forage sufficient for temporary inhabitation by a variety of ground-dwelling animal species. Wildlife migration corridors are essential to the regional ecology of an area as they provide avenues of genetic exchange and allow animals to access alternative territories as fluctuating dispersal pressures dictate.

The Simi Hills form a topographic bridge between the Santa Monica Mountains and the Santa Susana Mountains, but are isolated by State Route (SR) 23 to the west, SR 118 to the north, U.S. 101 to the south and SR 405 to the east. Within the regional wildlife network, these lands function as a genetic and population reservoir that is important in maintaining species and genetic diversity through migration between areas (Lieberstein, 1987).

Edelman (1990) conducted studies of the actual and potential movement of ground-dwelling animals at "choke points" between the coastal portions of the Santa Susana Mountains and the Simi Hills along SR 118, and between the Simi Hills and the Santa Monica Mountains along U.S. 101. Edelman (1990) mapped the entire regional wildlife corridor network that includes actual and potential corridors for animal movement throughout the Santa Susana and San Gabriel Mountains, the Simi Hills and the Santa Monica Mountains.

SR 118 is an elevated freeway with travel speeds exceeding 65 mph. It is a formidable barrier to wildlife attempting to move between the Simi Hills and the Santa Susana Mountains. The only viable habitat linkages between the Simi Hills and the Santa Susana Mountains are Alamos Canyon Road and an equestrian tunnel by Santa Susana Pass because they allow wildlife movement under SR 118. Although numerous drainage culverts cross under SR 118, many are small and obstructed by vegetation, making them unsuitable for larger mammals such as foxes, badgers, coyotes, deer, bobcats and mountain lions.

The project area is part of a 150 square mile habitat block delimited by SR 23 to the west, SR 126 to the north, Interstate 5 to the east and SR 118 to the south. Due to difficulty in crossing SR 118, wildlife in the project area are likely to have originated in this habitat block or arrived from Los Padres National Forest and other open space areas north of SR 126. Wildlife corridors in the project area are expected to include Alamos Canyon, Happy Camp Canyon, and Tapo Canyon. The fire roads along the southern and northern perimeter of the landfill and the eastern drainage appear to be used as local movement corridors. Black-tailed deer, coyote, bobcat and gray fox tracks were found in the eastern drainage.

3.6 SPECIAL-STATUS WILDLIFE SPECIES

Special-status wildlife species are defined in Table 4. The potential for these species to occur in the vicinity of the project site was determined by review of sight records from other environmental documents and range maps including Zeiner et al. (1988, 1990a, 1990b), and Garrett and Dunn (1981). Table 5 lists special-status species that have the potential to occur on the project site for at least a portion of their life cycle, and provides a discussion of the potential for each special-status species to occur on the project site. "High" potential is defined as a probability of occurrence exceeding 67 percent, "Moderate" potential is defined as a probability of occurrence between 33 and 67 percent, and "Low" potential is defined as a probability of occurrence less than 33 percent. "Occurrence" is defined as supporting a breeding population or providing a substantial amount of foraging resources.

Table 4. Definitions of Special-Status Wildlife Species

Special-Status Wildlife Species
➢ Animals listed or proposed for listing as threatened or endangered under the Federal Endangered Species Act (50 CFR 17.11 for listed animals and various notices in the Federal Register for proposed species).
➢ Animals that are candidates for possible future listing as threatened or endangered under the Federal Endangered Species Act (Federal Register Vol. 62, No. 182, pp. 49397-49411, September 19, 1997).
➢ Animals that meet the definitions of rare or endangered species under the CEQA Guidelines (Section 15380).
➢ Animals listed or proposed for listing by the State of California as threatened and endangered under the California Endangered Species Act (14 CCR 670.5).
➢ Animal species of special concern to the CDFG (Remsen, 1978 for birds; Williams, 1986 for mammals).
➢ Animal species that are fully protected in California (California Fish and Game Code, Section 3511 [birds], 4700 [mammals], and 5050 [reptiles and amphibians]).

Aquatic habitats on the project site do not support riparian habitat or provide permanent surface water. Therefore, arroyo chub, southwestern pond turtle and two-striped garter snake are not expected to occur on the project site.

Coast horned lizard may occur in the openings of Venturan coastal sage scrub and northern mixed chaparral on the project site. However, prey (native ants) nests were not observed during field surveys. Therefore, if present, population density of coast horned lizard is likely to be low. Coastal western whiptail is relatively common in the region, and may occur on the project site within Venturan coastal sage scrub and northern mixed chaparral.

San Bernardino ringneck snake is found in most habitats, but typically where soil moisture is available (DeLisle et al., 1986). Coast patch-nosed snake prefers rocky canyons and edges of chaparral. Both of these species may occur within Venturan coastal sage scrub and northern mixed chaparral on the project site.

The project site does not support riparian habitat; therefore, least Bell's vireo, Cooper's hawk, yellow warbler and yellow-breasted chat are not expected to occur here. Coastal cactus wren may occur within patches of prickly pear cactus in Alamos Canyon located west of the project site. However, no nests were observed and habitat for this species does not occur on the project site.

The only records of coastal California gnatcatcher in Simi Valley are egg sets collected in 1902 and 1904 (Atwood, 1990). However, this species was found breeding in the Moorpark area in 1996, about 4 miles northwest of the project site. This species was recorded in October 1997 and April 1998 near the intersection of SR 23 and Tierra Rejada Road, about 2.2 miles northwest of the project site, but breeding has not been confirmed. It appears that this species may be expanding its range to re-occupy former breeding areas. Suitable habitat (Venturan coastal sage scrub) on the project site may be too high in elevation (1,000 to 1,100 feet) because 94 percent of the known populations of California gnatcatcher occurs below 800 feet elevation (Atwood, 1990).

Table 5. Special-Status Wildlife Species of the Project Area

...Name (Scientific Name)	Status	Nearest Known Location	Potential to Occur on the Project Site
...	CSC, FSC	Arroyo Simi: 2,500 feet to the west (Montgomery Watson, 1995)	None, no surface water on-site
...western pond turtle (...marmorata pallida)	CSC, FSC, P	Arroyo Simi (NDDB, 2001)	Very low, nearest habitat is 2,500 feet to south
...coat horned lizard (Phrynosoma coronatum frontale) (Fo...)	CSC, FSC, P	Near intersection of SR 23 and Tierra Rejada Road: 2.5 miles to the southwest (Impact Sciences, 1993)	Moderate, may occur in openings within and adjacent to Venturan coastal sage scrub
Coastal western whiptail (Cnemidophorus tigris multiscutatus)	FSC	Near terminus of Cochran Road: 1,300 feet to the south-southwest (ENSR, 1997)	High, suitable habitat present and species found in immediate area
Silvery legless lizard (Anniella pulchra pulchra)	CSC, FSC	Grimes Canyon Road: 7 miles to the west-northwest	Low, soils mostly unsuitable (clay loam)
Two-striped garter snake (Thamnophis hammondi)	CSC, P	Arroyo Simi: 3,000 feet to the south (NDDB, 2001)	Very low, nearest habitat is 2,500 feet to south
San Bernardino ringneck snake (Diadophis punctatus modestus)	FSC	Santa Monica Mountains: 11 miles to the south (DeLisle et al., 1986)	Moderate, may occur in chaparral on-site
Coast patch-nosed snake (Salvadora hexalepis virgultea)	CSC, FSC	Santa Monica Mountains: 10 miles to the south (DeLisle et al., 1986)	Moderate, may occur in chaparral on-site
Least Bell's vireo (Vireo bell pusillus)	FE, SE, CSC, BMC	Arroyo Simi: 2.7 miles to the west (NDDB, 2001)	Very low, may forage on-site, but no breeding habitat present
Coastal cactus wren (Campylorhynchus brunneicappillus sandiegoense)	CSC	North of Tierra Rejada Road: 2.6 miles to the west-southwest (Impact Sciences, 1991)	Moderate, may forage on-site, but no breeding habitat present
Cooper's hawk (Accipiter cooperi)	CSC	Arroyo Simi (MWD, 1994)	Moderate, may forage on-site, but no breeding habitat present
Coastal California gnatcatcher (Polioptila californica californica)	FT, CSC	Moorpark: 4 miles to the west (NDDB, 2001)	Very low, not observed during focused surveys
Yellow warbler (Dendroica petechia brewsteri)	CSC	Arroyo Simi: 3.4 miles to the west (Montgomery Watson, 1995)	Low, may forage on-site, but no breeding habitat present
Yellow-breasted chat (Icteria virens)	CSC, BMC	Arroyo Simi: 3.4 miles to the west (Montgomery Watson, 1995)	Low, may forage on-site, but no breeding habitat present
Loggerhead shrike (Lanius ludovicianus)	CSC, FSC, AWL	1,500 feet to the south (Montgomery Watson, 1995)	Moderate, may forage on-site, but breeding habitat minimal
California horned lark (Eremophila alpestris actia)	CSC	On-site	Present, observed foraging on-site
Golden eagle (Aquila chrysaetos)	CSC, FP	Wood Ranch: 2 miles to the south (Pacific Southwest Biological Services, 1989)	Low, may forage on-site, but no breeding habitat present
White-tailed kite (Elanus caeruleus)	BMC, FP	Santa Clara River: 9 miles to the northwest	Low, may forage on-site, but no breeding habitat present

Table 5. Continued

Common Name (*Scientific Name*)	Status	Nearest Known Location	Potential to Occur on the Project Site
Northern harrier (*Circus cyaneus*)	CSC	Wood Ranch: 2 miles to the south (Pacific Southwest Biological Services, 1989)	Low, may forage on-site, but species does not breed in the region
Peregrine falcon (*Falco peregrinus anatum*)	SE, FE, FP	Anacapa Island: 37 miles to the west-southwest	Low, may forage on-site, but species does not breed in the region
Prairie falcon (*Falco mexicanus*)	CSC, AWL	Wood Ranch: 2 miles to the south (Pacific Southwest Biological Services, 1989)	Low, may forage on-site, but does not breed in the area
Sharp-shinned hawk (*Accipiter striatus*)	CSC	Lake Piru: 14 miles to the north (McClelland Consultants, 1990b)	Low, may forage on-site, but species does not breed in the region
Burrowing owl (*Athene cunicularia*)	CSC, FSC, BMC	Upper Dry Canyon: 4 miles to the east-northeast (NDDB, 2001)	Low, may forage on-site, but no breeding habitat present
Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*)	CSC, FSC, AWL	On-site	Present, breeds on-site
Bell's sage sparrow (*Amphispiza belli belli*)	CSC, FSC, AWL	Tierra Rejada Road: 2 miles to the southwest (MWD, 1994)	Low, may forage on-site, but no breeding habitat present
Pale big-eared bat (*Plecotus townsendi pallescens*)	CSC, FSC	Los Padres National Forest	Low, may forage on-site, but no breeding habitat present
Pallid bat (*Antrozous pallidus*)	CSC	Unknown	Low, may roost in vicinity of Big Mountain/Oak Ridge north of site
California mastiff bat (*Eumops perotis californicus*)	CSC, FSC	Piru Creek: 15 miles to the north (NDDB, 2001)	Low, may roost in vicinity of Big Mountain/Oak Ridge north of site
San Diego black-tailed jackrabbit (*Lepus californicus bennettii*)	CSC, FSC	One mile to the west (Marsh, 1981)	Low, may forage on-site, but no breeding habitat present
American badger (*Taxidea taxus*)	SA	1.3 miles to the east-southeast (Marsh, 1981)	Low, may forage on-site, but no breeding habitat present
San Diego desert woodrat (*Neotoma lepida intermedia*)	CSC, FSC	1.7 miles to the west (NDDB, 2001)	Moderate, may occur within Venturan coastal sage scrub on-site

Status Codes:

AWL	California Watch List (Audubon Society)
BMC	Migratory Non-game Birds of Management Concern (USFWS)
CSC	California Species of Special Concern (CDFG)
FSC	Federal Species of Concern (USFWS)
FE	Federal Endangered (USFWS)
FP	Fully protected under Fish and Game Code (CDFG)
FT	Federal Threatened (USFWS)
P	Protected under California Code of Regulations (CDFG)
SA	Special Animal (CDFG)
SE	State Endangered (CDFG)

Six California gnatcatcher surveys was conducted between April 21 and May 28, 1998 by Mr. Jim Greaves, a recognized ornithologist with a Section 10 survey permit issued by the U.S. Fish and Wildlife Service (USFWS). The surveys addressed all but the western expansion area, and included playing a tape recording of California gnatcatcher vocalizations to elicit a response from resident gnatcatchers. No California gnatcatchers responded to the tape recording; therefore, it is assumed this species is absent from the project site. The California gnatcatcher surveys were repeated by Mr. Greaves from April 19 to June 13, 2000, and also included the western expansion area. However, based on approval from Mr. Rick Farris of USFWS, only four surveys were conducted. Again, no California gnatcatchers responded to the tape recording; therefore, it is assumed this species is absent from the project site.

Loggerhead shrike frequents open habitats with sparse shrubs and is known for impaling insect prey on thorns and barbed wire fences (Zeiner et al., 1990a). Loss of grasslands and natural perches have resulted in the concentration of loggerhead shrike along fence lines. Sixteen of 27 pairs of loggerhead shrike banded in a field study nested within 30 feet of a fence line (Yosef, 1994). Fence lines occur along most of the southern and western boundaries of the project site and this species may breed in grassland north of the project site.

California horned lark and burrowing owl are found in grasslands and other open areas with low, sparse vegetation (Zeiner at al., 1990a). Suitable grassland habitat occurs north of the project site; however, intensive cattle grazing in this area may prevent nesting. Due to the lack of suitable habitat on the project site, California horned lark and burrowing owl are not expected to breed here.

Golden eagle, white-tailed kite, northern harrier, peregrine falcon, prairie falcon and sharp-shinned hawk may forage in the project area, but nesting habitat does not occur on the project site.

Southern California rufous-crowned sparrow prefers relatively steep slopes vegetated with sparse brush intermixed with grassy areas. Two broods of recently fledged young were observed during the 1998 California gnatcatcher surveys, indicating that this species breeds on the project site.

Bell's sage sparrow prefers to nest in low, dense chamise-dominated chaparral. Suitable habitat on the project site is limited to a tiny patch (about 0.1 acres) on a small knoll overlooking SR 118. Therefore, it is not expected to breed here.

Pallid bat is most common in open, dry habitats with rocky areas for roosting. This species roosts in caves, rock crevices, mines, hollow trees and buildings. The project area may provide rock crevices and potentially several dozen hollow trees for roosting. Pale big-eared bat roosts in caves, mines, tunnels, and buildings (Zeiner et al., 1990b), which do not occur on the project site. Western mastiff bat generally occurs in semi-arid to arid habitats with cliffs, high buildings, trees or tunnels for roosting. Suitable breeding and foraging habitat (rock crevices and hollow trees) for this species does not occur on the project site. The distribution of bat species is poorly known and the status of these three species on the project site is unknown. However, it is possible that all three species forage over the project site and pallid bat and western mastiff bat may breed in the project region. Regardless, breeding habitat for these bats does not occur on the project site.

San Diego black-tailed jackrabbit prefers open shrub and tree habitats and is relatively easy to detect. This species was not observed on the project site and suitable breeding habitat is limited to small patches. Therefore, San Diego black-tailed jackrabbit probably does not frequent the project site.

American badger prefer herbaceous, shrub and open stages of most habitats that have dry, friable soils (Zeiner et al., 1990b). Suitable badger habitat occurs within Venturan coastal sage scrub and annual grassland on the project site. However, evidence (tracks, scat, burrows) of this species has not been observed on the project site. Therefore, it is assumed to be absent.

San Diego desert woodrat prefers rock outcrops and rocky cliffs in mixed and chamise chaparral and coastal sage scrub. Evidence of this species (scat, tracks, nest) was not observed on the project site. However, suitable habitat is present on the project site and San Diego desert woodrat could occur here in low density.

4.0 IMPACT ANALYSIS

When development occurs in natural areas, the biological resources of the site and the surrounding area are affected. These effects may take the form of direct impacts which include habitat loss and fragmentation, introduction of barriers to movement, and the conversion of native plant communities to structures and decorative landscaping or ruderal areas. Development may also result in indirect impacts that affect the quality of habitats on and surrounding the project site. These impacts may include:

- Invasion of weedy or landscape plants into natural areas;
- Introduction of feral predators or other exotic animals;
- Light intrusion into natural areas;
- Noise disturbances;
- Declines in air quality;
- Changes in the quality and quantity of water resources;
- Erosion and sedimentation; and
- Intentional or accidental depredations of biological resources by human beings.

Impacts are assessed by establishing existing conditions and determining the direct and indirect effects of the proposed project on biological resources. Impact assessment is based on the removal or modification of populations and habitat that could be reasonably attributed to the proposed project. Direct project impacts are based on the limits of grading as shown on Figure 1.

4.1 THRESHOLDS OF SIGNIFICANCE

The significance of identified impacts is based on the State CEQA Guidelines and the Ventura County Initial Study Assessment Guidelines (Ventura County, 2000). Applicable thresholds of significance include:

- Conflict with adopted environmental plans and goals of the community;
- Directly or indirectly reduce the population, habitat area or restrict reproductive capacity of endangered, threatened or rare species (as defined in Section 15380 of the State CEQA Guidelines);
- Directly reduce the area or result in substantial indirect impacts to a significant wetland habitat (as defined in General Plan Policy 1.5.2);
- Interfere substantially with the movement of any resident or migratory fish or wildlife species; and
- Substantially diminish habitat for fish, wildlife or plants.

4.2 VEGETATION

Clearing and grading required to expand the refuse footprint, perimeter roads, associated facilities and adjacent slopes would result in the loss of wildlife habitat and plant communities from the project site. These losses are summarized in Table 6. Note that Table 6 does not include planted or disturbed areas because these would be replaced as the SVLRC perimeter is expanded.

Table 6. Summary of Vegetation Loss

Plant Community	Acres Removed
Venturan coastal sage scrub	18.7
Northern mixed chaparral	11.6
Coyote brush scrub	0.5
Annual grassland	9.5
Total	40.3

4.3 WETLANDS

The proposed project would result in the loss of 0.10 acres of County-defined and Corps-defined wetlands.

4.4 SPECIAL-STATUS PLANT SPECIES

Impacts to special-status plant species are limited to loss of Catalina mariposa lily and coast live oak. About 100 Catalina mariposa lilies and two coast live oak trees would be removed as part of this project. Catalina mariposa lily is relatively common in Ventura County, not identified as declining in any part of its range, and would not meet the CEQA definition of rare or endangered. Therefore, impacts to this species are considered less than significant. Based on the Ventura County Zoning Code, loss of coast live oak trees is considered a significant impact.

Plummer's mariposa lily was found within the proposed limits of grading (Figure 1), and would be removed as part of landfill expansion. In addition, the small subpopulation of this species along the southern property boundary may be inadvertently impacted by grading activities. The NDDB lists 58 occurrences of Plummer's mariposa lily, with 7 in Ventura County, and one in Simi Valley (Santa Susana Pass). The Santa Susana Pass occurrence dates back to 1928, and may not currently exist, such that the population of Plummer's mariposa lily on the project site may be the only one in Simi Valley. Therefore, the loss of this population is considered a significant impact.

4.5 SENSITIVE HABITATS

The project-related loss of a 18.7 acres of sensitive habitat (Venturan coastal sage scrub) is considered a significant impact.

4.6 WILDLIFE

Local wildlife populations would be adversely affected by the loss of food, cover and nesting/denning habitat. Wildlife would be displaced into adjacent habitat and may experience greater competition for food and nest sites. These impacts to common species are considered adverse, but less than significant due to the mobility of most species and availability of similar habitat in surrounding areas. However, rare species may be more severely affected and are addressed on a species-by-species basis under "Special-Status Wildlife Species".

Grading and waste disposal activities would cause indirect impacts to plant communities and wildlife habitat not directly affected (removed). These impacts include noise, lighting, dust and poor air quality (equipment exhaust). Noise levels above 75 dBA are known to produce adverse physiological affects in wildlife (Fletcher, 1971). Noise from grading and waste disposal equipment may exceed 75 dBA within undisturbed habitat, adversely affecting wildlife foraging or breeding in this area. However, the area of habitat affected by noise is not expected to substantially increase. Therefore, noise impacts are considered less than significant.

Dust may reduce growth and reproduction of vegetation and kill prey of small vertebrates (e.g., insects). However, the project would comply with existing dust control requirements of Conditional Use Permit 3142. In addition, the area of habitat affected by dust is not expected to substantially increase. Overall, dust impacts are considered less than significant.

Lighting associated with nighttime activities may limit foraging and breeding activity of nocturnal mammals and increase predation rates by exposing prey. However, Conditional Use Permit 3142 limits hours of operation to 6 a.m. to 8 p.m. such that lighting impacts are considered less than significant.

Elevated ambient concentrations of particulates, hydrocarbons, carbon monoxide and nitrogen oxides generated by construction equipment may adversely affect wildlife populations. However, noise from construction equipment is likely to cause wildlife to avoid the area, also reducing exposure to air pollutants. Air quality impacts to wildlife are expected to be less than significant.

The drainage along the eastern property line is considered a wildlife movement corridor; however, current expansion plans are focused on the western expansion area (UNOCAL parcel), such that this drainage would not be impacted. Landfill expansion would result in filling the swales in the western expansion area. However, these swales generally terminate at the existing landfill, such that they are not critical wildlife movement corridors. Overall, impacts to wildlife movement are considered less than significant.

4.7 SPECIAL-STATUS WILDLIFE SPECIES

Potential impacts to each special-status wildlife species listed in Table 5 as either present (sighted during field surveys), or having a "moderate" or "high" potential to occur on the project site are discussed in the following section.

The project-related loss of Venturan coastal sage scrub would be considered loss of suitable habitat for coast horned lizard. Baharav (1975) found that the mean capture distance for a related species (*Phrynosoma solare*) was 30 meters for males and 15 meters for females. These data appear to represent high density in optimal habitat. Based on an average home range diameter of 22.5 meters, the home range of coast horned lizard is 0.1 acres and loss of 18.7 acres of habitat may result in the loss of a maximum of 187 individuals due to mortality during land clearing or competition for resources in remaining habitat. However, this estimate assumes that all suitable habitat on the project site is saturated and this species would have been easily observed during field surveys. Since coast horned lizard was not observed, it is expected that this species (if present) occurs at much less than maximum density. Overall, project-related direct loss (crushing by heavy equipment) and loss of habitat has the potential to jeopardize the continued existence of this species in the immediate project area. Therefore, project impacts to coast horned lizard are considered significant.

Coastal western whiptail is likely to occur on the project site and loss of Venturan coastal sage scrub, northern mixed chaparral and coyote brush scrub represents a loss of habitat for this special-status species. In addition, this species becomes inactive in winter and could be crushed during clearing and excavation associated with the project. Jorgensen and Tanner (1963) reported a home range size of 0.18 acres for males. Therefore, a maximum of 171 coastal western whiptails would be crushed or displaced as a result of the project. However, this estimate assumes that all suitable habitat on the project site is saturated and this species would have been easily observed during field surveys. Since coastal western whiptail was not observed, it is expected that this species (if present) occurs at much less than maximum density. Overall, project-related direct loss (crushing by heavy equipment) and loss of habitat has the potential to jeopardize the continued existence of this species in the immediate project area. Therefore, project impacts to coastal western whiptail are considered significant.

The distribution of San Bernardino ringneck snake in the project area is unknown. Project implementation would result in the loss of about 12.1 acres of suitable habitat (chaparral and coyote brush scrub) for this species. However, habitat lost to grading would be considered low quality due to adjacent landfill activities and rarity of moist soils and prey habitat. Therefore, impacts to San Bernardino ringneck snake are considered less than significant.

The distribution of coast patch-nosed snake in the project area is unknown. However, this species is considered a habitat generalist and is expected to be widely distributed. Project implementation would result in the loss of about 12.1 acres of suitable habitat (chaparral and coyote brush scrub) for this species. Since many square miles of suitable habitat is present in the region, this loss is considered a less than significant impact.

Coastal cactus wren occurs in the project area and suitable breeding habitat occurs in the area. However, no breeding habitat occurs on the project site and impacts would be limited to loss of foraging habitat. This species forages widely in both cactus scrub and coastal sage scrub, which is common in the region. Therefore, the loss of about 18.7 acres of foraging habitat is not expected to substantially reduce the reproductive success of locally nesting individuals. Therefore, impacts to coastal cactus wren are considered less than significant.

Cooper's hawk is commonly observed in the project area, and probably nests in Alamos Canyon. The project site may be within the home range of this species, and loss of 40 acres of vegetation represents a loss of foraging habitat. However, this impact is considered less than significant because habitat lost is of low quality compared to surrounding undeveloped areas, and the amount lost would represent less than 8 percent of a home range of a single pair of Cooper's hawk.

Loggerhead shrike was not observed during numerous bird surveys of the project site. However, this species may breed in grasslands north of the project site. The project-related loss of foraging habitat would be 9.5 acres of grassland on easements north and west of the proposed expanded refuse footprint. Impacts to loggerhead shrike are considered less than significant, based on the low probability that this species breeds in the immediate area.

California horned lark was observed foraging in disturbed portions of the SVLRC and may breed in the area. The project-related loss of foraging habitat would be 9.5 acres of grassland on easements north and west of the proposed expanded refuse footprint. Impacts to California horned lark are considered less than significant, based on the low quality of this habitat associated with intensive cattle grazing and occasional equestrian use. In addition, the area of disturbed grassy slopes would expand as the landfill expands, enlarging potential habitat area for this species.

Southern California rufous-crowned sparrow was observed breeding on the project site. The project-related loss of Venturan coastal sage scrub would be considered loss of suitable habitat for this species. Bent (1968) reports that average territory size of rufous-crowned sparrow in coastal sage scrub in southern California is 2.0 acres. These data appear to represent high density in optimal habitat. Based on these data, habitat loss may result in the loss of up to 9 individuals due to mortality during land clearing or competition for resources in remaining habitat. Although this species has also been observed by the author in Moorpark and Thousand Oaks, suggesting it is common in southeastern Ventura County, impacts are considered significant due to continuing decline of coastal sage scrub habitat in California.

Project-related loss of Venturan coastal sage scrub would represent loss of habitat for San Diego desert woodrat. In coastal sage scrub habitat, density of this species varies from 1.4 to 12 per acre (MacMillen, 1964, Bleich and Schwartz, 1975). Based on these data, habitat loss may result in the loss of 13 to 224 individuals due to mortality during land clearing or competition for resources in remaining habitat. However, nests of San Diego desert woodrat were not observed on the project site, such that it is expected to be absent or at low density. Therefore, actual losses of this species would be much less than 224 individuals. Impacts to San Diego desert woodrat are considered significant due to continuing decline of coastal sage scrub habitat in California.

5.0 MITIGATION MEASURES

5.1 WETLANDS

A wetland of at least 0.15 acres should be created at the confluence of two swales, located approximately 400 feet downstream (west) of Data point 3 (see Figure 1). The area should be excavated to a depth of about 2 feet, and planted with basket rush rhizomes collected from the existing basket rush wetland. The created wetland should be planted in the fall, and irrigated as needed during the first dry season, to reduce mortality. However, the Simi Valley Landfill and Recycling Center does not own this property, and it may not be available for mitigation. Therefore, an alternative site may need to be identified, and a wetland mitigation plan prepared.

5.2 SPECIAL-STATUS PLANT SPECIES

The loss of coast live oak trees should be mitigated according to the tree replacement guidelines of the Ventura County Zoning Ordinance. The Ordinance requires planting oak trees with an equal or greater cross-sectional area as those removed. The two coast live oak trees to be removed have an aggregate cross-sectional area of 1067 square inches. Therefore, 38 six-inch dbh sapling coast live oaks (28.3 square inches each) should be planted. However, a smaller number of larger trees or larger number of smaller trees may be planted to meet the requirements of the Ordinance. Replacement trees should be planted within the existing mitigation area, as shown on Figure 1.

The northern subpopulation of Plummer's mariposa lily should be re-located to the same site as the southern subpopulation. Relocation should include flagging of flowering plants in June or July, and transplantation of the bulbs in fall. Transplantation should be conducted with a small trowel to avoid impacts to adjacent native vegetation. The southern population of Plummer's mariposa lily should be fenced to prevent inadvertent loss due to grading-related activities. Relocation of this species has not been proven as a mitigation measure, and some mortality during transplantation of bulbs may occur. However, if conducted by experienced individuals, sufficient bulbs would likely survive, and the population of Plummers' mariposa lily in the vicinity of the Landfill is expected to persist in the long-term.

5.3 SENSITIVE HABITATS

The loss of Venturan coastal sage scrub should be mitigated through off-site preservation or restoration of this community. SVLRC has acquired 61.9 acres of easements surrounding the existing landfill. However, these easements are used as slope easements (manufactured slopes linking disposal areas to natural topography) (45.4 acres), mitigation site for past expansion (4.1 acres) or soil borrow area (12.4 acres). Therefore, acquisition of additional lands will be required for mitigation.

Option A or Option B should be fully implemented to offset the long-term loss of Venturan coastal sage scrub. Alternatively, some combination of Options A and B may be implemented.

Option A. SVLRC should provide a conservation easement on at least 18.7 acres of lands that support Venturan coastal sage scrub. Grazing should be prohibited within the mitigation area. Criteria for selection of such lands include:

1. Must be contiguous with Venturan coastal sage scrub;
2. Must be located at least 250 feet from active or future disposal areas, or the flare; and
3. Access should be restricted by barbed wire fencing and locked gates.

Option B. SVLRC should restore at least 28.1 acres (1.5:1 mitigation:impact ratio) of areas supporting scattered shrubs associated with coastal sage scrub. Grazing should be prohibited within the mitigation area. A restoration plan shall be prepared and identify restoration sites and restoration methods.

5.4 SPECIAL-STATUS WILDLIFE SPECIES

Preservation or restoration of Venturan coastal sage (see above) would also mitigate impacts to coast horned lizard, coastal western whiptail, southern California rufous-crowned sparrow and San Diego desert woodrat. However, a net loss of suitable habitat, individuals and genetic variation of these species would occur.

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