

R E P O R T

**BIOLOGICAL ASSESSMENT FOR THE  
GREGORY CANYON SAN LUIS REY  
RIVER BRIDGE REPLACEMENT**

*Prepared for*

Gregory Canyon, Ltd. LLC  
249 South Highway 101 #377  
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URS Project No. 27654025.00020

August 31, 2006

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## SECTION 1 INTRODUCTION

This Biological Assessment (BA) has been prepared for Gregory Canyon, Ltd. LLC (project applicant) in support of a request for formal consultation with the U.S. Army Corps of Engineers (Corps) and U.S. Fish and Wildlife Service (USFWS) under Section 7 of the Federal Endangered Species Act (ESA) regarding the Gregory Canyon San Luis Rey River bridge replacement project (the project). The project site is located in northern San Diego County, on State Route 76 (SR 76), approximately three miles east of Interstate 15 (I-15) and two miles southwest of the community of Pala. This BA has been prepared to evaluate the potential effects (direct, indirect, and cumulative) of the project on five (5) Federally listed endangered or threatened species, and designated and proposed Critical Habitat for three (3) of the listed species, including the southwestern willow flycatcher (*Empidonax traillii extimus*), least Bell's vireo (*Vireo bellii pusillus*), arroyo toad (*Bufo californicus*) (aka arroyo southwestern toad), coastal California gnatcatcher (*Polioptila californica californica*), and quino checkerspot butterfly (*Euphydras editha quino*). Two (2) of these species are also State-listed pursuant to the California Endangered Species Act (CESA).

This BA addresses both the immediate project area (the bridge replacement) and the development and operation of the proposed Gregory Canyon Landfill on the property, which collectively comprise the "Federal action area" for purposes of this BA and the Corps Section 404 permit required for construction of the bridge, in an effort to include "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action" (50 C.F.R §402.02; see also USFWS and National Marine Fisheries Service (NMFS) *Endangered Species Consultation Handbook*, March 1998, Figure 4-6, p. 4-18). Figure 1 depicts the location of the bridge replacement project within San Diego County, and Figure 2 delineates the boundary of the entire Gregory Canyon property encompassing the project area and the Gregory Canyon Landfill site.

### 1.1 DESCRIPTION OF THE PROPOSED ACTION

The action area comprises portions of Section 4 and 5 of Township 10 South and Sections 32 and 33 of Township 9 South, Range 2 West of USGS 7.5' Pala Quadrangle. The action area consists of approximately 1,770 acres owned by Gregory Canyon Ltd., LLC, and an additional approximately 14 acres owned by San Diego Gas & Electric that will be conveyed to Gregory Canyon, Ltd. LLC (collectively "the property").

The proposed project is the construction of a new bridge crossing of the San Luis Rey River to accommodate ingress to and egress from the proposed Gregory Canyon Landfill. This bridge crossing will replace the existing low-flow crossing located downstream. The existing crossing must be replaced with a bridge suitable to allow approved access from SR 76 across the San Luis Rey River to the property and also to Gregory Canyon Landfill for vehicles and equipment associated with construction or operation of the landfill. The existing crossing must remain in place during construction of the new bridge to allow temporary equipment ingress and egress to support construction of the new bridge, and the new bridge must be located at a different location to allow concurrent use of the existing bridge during such construction.

## 1.2 ESA SECTION 7 CONSULTATION

This BA has been prepared to evaluate the potential effects of the project on listed species, species proposed for listing, candidate species, designated Critical Habitat, and proposed Critical Habitat within the entire action area pursuant to Section 7 of the ESA. As noted above, the proposed Federal action will affect five (5) listed species, and three (3) designated Critical Habitats. Potential effects on these species and designated or proposed Critical Habitat are evaluated in accordance with the requirements set forth under Section 7 of the ESA (16 United States Code [U.S.C.] 1536) and Section 2081 of the California Fish and Game Code.

The effects of the project within the action area on listed species and designated or proposed Critical Habitat include consideration of and implementation of the Mitigation Measures that the County of San Diego has adopted to avoid and/or reduce the environmental effects from the development and operation of the proposed landfill, as documented in the original Environmental Impact Report (EIR) certified in February 2003 (San Diego County Department of Environmental Health 2003) and in the June 2006 Revised Partial Draft Environmental Impact Report (2006 RPDEIR) for the project (San Diego County Department of Environmental Health (2006)). Additionally, certain mitigation measures required in Proposition C, approved by voters in the County of San Diego in 1994, as well as court imposed measures resulting from the court's decision in *River Watch v. County of SD Dept of Environmental Health*, October 3, 2005, are included in the discussion of mitigation measures in this BA. The mitigation measures that will avoid or minimize take of listed species and modification of designated Critical Habitat are presented in Section 5.0.

## 1.3 SPECIES EVALUATED

The following Federally listed species are known to or have the potential to occur in the action area:

- Arroyo southwestern toad (*Bufo californicus*) – Federally endangered; No Critical Habitat onsite; State Species of Special Concern
- Coastal California gnatcatcher (*Polioptila californica californica*) – Federally threatened; Designated and Reopened Critical Habitat onsite; State Species of Special Concern
- Least Bell's vireo (*Vireo bellii pusillus*) – Federally endangered; Critical Habitat onsite; State endangered
- Quino checkerspot butterfly (*Euphydryas editha quino*) – Federally endangered; No Critical Habitat onsite
- Southwestern willow flycatcher (*Empidonax traillii extimus*) – Federally endangered; Critical Habitat onsite; State endangered

Several surveys were conducted on the property between 1989 and 2006. During this time, three Federally endangered and one Federally threatened species were detected. The Federally endangered species that were detected onsite include southwestern willow flycatcher, least Bell's vireo, and arroyo southwestern toad. Single males of the Federally threatened coastal California gnatcatcher were detected during two separate surveys prior to 1999, but have not been confirmed in subsequent surveys. Host plants for the quino checkerspot butterfly (QCB) have been observed on the property; however, no butterflies were detected during several protocol surveys, the most recent of which were conducted in

2005 by URS. Least Bell's vireo and arroyo southwestern toad were re-confirmed as present onsite during recent surveys of the site in 2005 by URS. The property contains designated Critical Habitat for least Bell's vireo and southwestern willow flycatcher. (59 FR 22 and 70 FR 201.) The USFWS has also reopened the public comment period on proposed Critical Habitat for the coastal California gnatcatcher as of April 24, 2003 (68 FR 79); however, only the Critical Habitat designated on October 24, 2000 for coastal California gnatcatcher (65 FR 206), is currently considered to be in effect (USFWS, personal communication). Both the current designated Critical Habitat and proposed Critical Habitat reopened for comment onsite are evaluated in this Biological Assessment. Species accounts are provided in Section 3.3.

## 1.4 OBJECTIVES

- Identify and describe the biological communities present on the project site.
- Record plant and animal species observed on the project site.
- Evaluate and identify special management status resources and plant and animal species, as well as designated and proposed Critical Habitat that could be affected by project activities.
- Provide conclusions and recommendations.

## SECTION 2 PROJECT DESCRIPTION

### 2.1 PROJECT DESCRIPTION

The project is the construction of a new bridge crossing of the San Luis Rey River to accommodate ingress to and egress from the proposed Gregory Canyon Landfill. This bridge crossing will replace an existing low-flow crossing that is located downstream and is not able to support heavier vehicles, including the required equipment and waste delivery vehicles for the landfill. The existing low-flow crossing will be abandoned after construction of the new bridge is completed and no longer used for traffic.

Figure 3 shows the footprint of the proposed new bridge crossing of the San Luis Rey River, including a temporary construction access corridor on the upstream side of the proposed bridge, and the bridge construction area overlain on a map of jurisdictional waters of the United States (U.S.), including wetlands, that has been confirmed by the Corps. Figure 4 shows the footprint of the proposed new bridge crossing of the San Luis Rey River and the bridge construction area overlain on vegetation habitats identified in the RPDEIR for this project. Figure 5 shows the footprint of the proposed new bridge crossing of the San Luis Rey River and the bridge construction area with mitigation areas identified in the RPDEIR. Plate 1 shows the bridge footprint and bridge construction area overlain on waters of the U.S. and Wetlands. Plate 2 shows vegetation habitats identified in the RPDEIR for the entire property. Plate 3 shows information for threatened and endangered species and areas of designated and proposed Critical Habitat pursuant to the ESA on the entire property.

The area of waters of the U.S. that will be cleared for bridge construction is 0.37 acres. Bridge support piers will permanently fill 0.002 acres of the 0.37 acres of wetland habitat. The remaining 0.368 acres will be restored after construction of the bridge. As part of the project, riparian habitat will be created in the bridge grading area in the uplands adjacent to the San Luis Rey River. This will result in 2.3 acres of additional riparian and wetland habitats on site (Figure 4, Plate 1).

The property contains developed and undeveloped land. Dairies have historically operated on the property. Single family homes are located on the property along SR 76, all but one of which is abandoned. South of the river on the property are open fields historically used for grazing and one abandoned residence.

As set forth in the RPDEIR for the Gregory Canyon Landfill, the following methods and measures are components of the project that also serve to avoid or reduce potential impacts on biological resources:

- The existing low-flow crossing will only be used during initial construction during daylight hours and will be abandoned following completion of the bridge.
- Access road and bridge construction will occur during daylight hours when wildlife movement by species such as mammals is less frequent.
- The bridge pilings will be drilled in place, rather than driven, to minimize construction noise.
- Riparian habitat adjacent to the proposed bridge structure will only be cleared beneath and within 30 feet of the east side of the structure.

- The deck of the bridge will be at least 17.5 feet above the river bed allowing for wildlife movement underneath.
- Reflective strips will be used on the inside structure of the bridge. No lighting will be installed on the bridge.
- Removal of riparian habitat prior to construction will occur between October and December.

## SECTION 3 EXISTING CONDITIONS/ENVIRONMENTAL BASELINE

### 3.1 METHODS

Data from previous surveys, the 2003 EIR and the 2006 RPDEIR for the Gregory Canyon Landfill, recent focused surveys performed by URS biologists at the access bridge site in 2005, and subsequent surveys in 2006 were reviewed to determine the existing conditions and potential impacts specifically resulting from construction of the access bridge on the San Luis Rey River and more generally in the action area.

#### 3.1.1 Vegetation Mapping

Vegetation mapping was completed during the 2003 EIR process. This information was digitized into a GIS by URS in 2005. Vegetation was then confirmed and updated by URS biologists using a 2002 aerial photograph base. Wetland areas and Waters of the U.S. were determined from URS surveys in 2004, confirmed by the Corps, mapped in GIS, and acreages of impacts resulting from construction of the access bridge over the San Luis Rey River were then calculated in GIS. Plate 1 depicts the bridge footprint overlain on Waters of the U.S. Plate 2 depicts the vegetation and Plate 3 depicts special management species and Critical Habitat located on the property.

#### 3.1.2 Listed Species Surveys

In addition to analyzing previously recorded data on each of the listed species discussed above, URS biologists updated existing sighting data or performed protocol surveys of listed species. Permitted URS biologists determined habitat quality and performed USFWS protocol surveys for QCB on the property during the 2005 QCB flight season. Surveys were conducted by URS biologists during the breeding seasons of least Bell's vireo and southwestern willow flycatcher while onsite, which included data collection such as vocalizations and direct observations of these species in the riverbed. Similarly, URS biologists permitted to perform USFWS Protocol California gnatcatcher surveys determined habitat value and surveyed the property for this species throughout the California gnatcatcher breeding season. URS biologists visited the arroyo southwestern toad habitat in the San Luis Rey riverbed in and around the location of the replacement bridge location several times throughout 2005. Data including existence of water, level of flow, habitat quality, and arroyo toad observations were recorded during each visit. Additional observations were made during 2006.

The species accounts presented below were extracted from the 2003 EIR and the 2006 RPDEIR, and updated based on current data and recent surveys of the property. Plate 3 depicts sensitive species locations throughout the property.

### 3.2 VEGETATION OCCURRING IN THE ACTION AREA

A total of eight native vegetation communities occur on the property, along with two unvegetated habitats, four non-native communities, and developed land (URS 2006). Native vegetation communities include coastal sage scrub, coastal sage scrub/chaparral, chaparral (including some with rock outcrops), native perennial grassland, coast live oak woodland, cottonwood-willow riparian forest, mule fat scrub, and southern willow scrub. Unvegetated habitats include open channel (a natural condition) and ponds,

and non-native vegetation communities include annual grassland, disturbed habitat, agricultural land, and agricultural land/developed. (San Diego County Department of Environmental Health 2003). As discussed above, the following descriptions of the vegetation were extracted from the 2003 EIR and the 2006 RPDEIR, and the vegetation mapping was confirmed by URS using aerial photography in 2005. Acreages of existing vegetation were extracted from the 2006 RPDEIR (Plate 2, Figure 4).

### 3.2.1 Coastal Sage Scrub

Coastal sage scrub occurs throughout the property and is characterized by a variety of soft, low, aromatic, drought-deciduous shrubs such as California sagebrush (*Artemisia californica*) and California buckwheat (*Eriogonum fasciculatum*) with scattered evergreen shrubs such as laurel sumac (*Malosma laurina*). This community supports small inclusions of native grassland dominated by purple needlegrass (*Nassella pulchra*) on the property. Annual species occur between the grass tussocks, including blue-eyed grass (*Sisyrinchium bellum*), soft chess (*Bromus hordeaceus*), and virgate cudweed aster (*Corethrogyne filaginifolia* var. *virgata*). A total of 897.6 acres of coastal sage scrub occurs on the property, 1.9 acres of which are disturbed and 226.4 acres of which have burned since 1995.

### 3.2.2 Coastal Sage Scrub/Chaparral

Areas of scrub habitat that could not be easily classified as either coastal sage scrub or chaparral because they supported a heterogeneous mix of species from each association were placed in this category. This habitat type occurs on the lower west-facing slope of Gregory Canyon and on a hill just south of the San Luis Rey River west of the canyon. A total of 73.9 acres of coastal sage scrub/chaparral occurs on the property.

### 3.2.3 Chaparral

Chaparral is a drought- and fire-adapted community of broad-leaved, evergreen shrubs that frequently form dense, often impenetrable stands. This association develops primarily on mesic north-facing slopes and in canyon bottoms and is characterized by crown- or stump-sprouting shrubs that regenerate following burns or other major disturbances. Chaparral occurs primarily along the high slopes east of Gregory Canyon, where it is dominated by chamise (*Adenostoma fasciculatum*) with lesser amounts of mission manzanita (*Xylococcus bicolor*) and holly-leaf redberry (*Rhamnus ilicifolia*). A small amount of chaparral also occurs on the western slope of the canyon. The high slopes of Gregory Mountain (including the west-facing slopes of the canyon) also support massive rock outcrops among patches of chaparral vegetation. This mixture of rocks and vegetation has special value to wildlife. A total of 430.5 acres of chaparral occur on the property.

### 3.2.4 Native Perennial Grassland

Native grassland is characterized by a dense herbaceous cover of perennial, tussock-forming grass species such as foothill stipa (*Nassella lepida*) and purple needlegrass (*Nassella pulchra*). Native and introduced annuals occur between the grasses, often exceeding them in cover (Holland 1986). In addition to *Nassella* species, indicator species present include brome grasses (*Bromus* spp.), blue-eyed grass, blue dicks (*Dichelostemma capitatum*), shooting star (*Dodecatheon clevelandii*), and purple owl's clover (*Castilleja*

*exserta*), among others. Native grassland occurs at the ridgetop near and within the footprint for the Borrow/Stockpile Area B identified in the 2006 RPDEIR. A total of 0.6 acre of native perennial grassland occurs on the property.

### 3.2.5 Coast Live Oak Woodland

Coast live oaks (*Quercus agrifolia*) provide moderate canopy cover along the bottom of Gregory Canyon. The understory is dominated by poison oak (*Toxicodendron diversilobum*), among other species, and is accompanied by a high diversity of herbaceous and shrubby species. Other trees occurring less frequently in Gregory Canyon include Engelmann oak (*Quercus engelmannii*). Coast live oak woodland occurs throughout the main portion of Gregory Canyon and as stands on the upper slopes of the canyon. Other stands of oak woodland are situated in a minor canyon west of Gregory Canyon, on a slope in the southeastern portion of the property, on a steep slope overlooking the San Luis Rey River Valley, and abutting SR 76. A total of 63.9 acres of coast live oak woodland occur on the property.

### 3.2.6 Cottonwood-Willow Riparian Forest

This association is a dense, structurally diverse, riparian habitat dominated by black willow (*Salix gooddingii*) and arroyo willow (*Salix lasiolepis*), with smaller amounts of Fremont cottonwood and western sycamore. The understory consists of mule fat (*Baccharis salicifolia*), and sandbar willow (*Salix exigua*). It occurs along the edges of the San Luis Rey River. A total of 27.0 acres of cottonwood-willow riparian forest occur on the property (1.3 acres of which are disturbed).

### 3.2.7 Mule Fat Scrub

Mule fat scrub is a shrubby, riparian community dominated by mule fat. Mule fat scrub occurs along intermittent streams with a fairly coarse substrate and moderately deep water table (Holland 1986). Understory vegetation is often composed of non-native, weedy species or is lacking altogether. Mule fat scrub occurs in small stands along the drainage channel at the northern end of Gregory Canyon. A total of 0.5 acres of mule fat scrub occur on the property.

### 3.2.8 Southern Willow Scrub

Southern willow scrub is a winter-deciduous riparian community dominated by willows (*Salix* spp.), with most stands being too dense to allow much understory development. This association occurs on loose, sandy, or fine gravelly alluvium deposited near stream channels during floods (Holland 1986). Dominant willow species include arroyo willow and red willow (*Salix laevigata*). Other species associated with this community include black willow, mule fat, Fremont cottonwood, and western ragweed (*Ambrosia psilostachya*). Southern willow scrub occurs along the San Luis Rey River and the drainage channel at the northern end of Gregory Canyon. A total of 33.7 acres of southern willow scrub occur on the property (2.9 acres of the habitat is disturbed).

### 3.2.9 Open Channel

Open channel refers to areas of the sandy, sparsely vegetated, active floodplain of the San Luis Rey River. Although most of these areas lack vegetation, portions of the San Luis Rey River floodplain supports

riparian plant species in an early successional state. A total of 12.5 acres of open channel occur on the property. The areas of open channel mapped within the project's impact area are not jurisdictional waters of the U.S. These areas would be better described as sand bar or open sand; however, the designation of "open channel" was used in the original 2003 EIR and has been retained to avoid confusion for the reader when comparing the earlier EIR for the landfill project.

### 3.2.10 Ponds

Ponds are areas of open water that usually lack emergent vegetation, although the shallow margins may support freshwater marsh vegetation. These areas are associated with the former dairies and are surrounded by disturbed habitat. A total of 0.4 acre of pond occurs on the property.

### 3.2.11 Annual Grassland

Where the native vegetation has been severely or repeatedly degraded by grazing, agriculture, fire, or other perturbation, the native vegetation often becomes annual (non-native) grassland. In these situations, non-native grasses and weeds dominate the vegetation community, and there are few to none of the early successional elements of the former community. Dominant plants in annual grassland include slender wild oat (*Avena barbata*), brome grasses, and fascicled tarweed (*Hemizonia fasciculata*). A total of 34.5 acres of annual grassland occur on the property.

### 3.2.12 Disturbed Habitat

This category includes unpaved roads and areas that have been brushed, graded, or landscaped. These places either support weedy, non-native vegetation, ornamental vegetation, or lack vegetation. A total of 34.0 acres of disturbed habitat occur on the property.

### 3.2.13 Agricultural Land/Developed

The former dairies on the landfill site were mapped as a combination of agricultural land and developed land and occupy 88.3 acres on the property.

### 3.2.14 Developed

Developed land is defined as any area that supports permanent man-made structures or human activities that inhibit the succession of native plant communities or the invasion of non-native species. Areas mapped as developed land include paved roads, houses and yards. A total of 6.2 acres of developed land occur on the property.

### 3.3 LISTED SPECIES AND DESIGNATED OR PROPOSED CRITICAL HABITAT OCCURRING IN THE ACTION AREA

#### 3.3.1 Least Bell's Vireo (*Vireo bellii pusillus*)

##### 3.3.1.1 Status of the Species

The least Bell's vireo is a Federal and State endangered species that occurs in riparian woodlands and riparian scrub containing sunny areas where vegetation is not too dense and contains an understory of dense, young willows or mule fat with a canopy of tall willows.

As described in the 2006 RPDEIR for the landfill project, spring surveys in 1993 and 1995 (Ogden unpub. data, Dudek 1995, as cited in the 2006 RPDEIR) detected from 3 to 4 pairs of breeding least Bell's vireo along the San Luis Rey River on the property. In 1995, two unpaired territorial males were observed in remnant riparian woodland that remained after intensive scouring of the channel during winter and spring flooding. In 1998, four territorial male vireos were identified along the river on the property. In 2000, seven territorial males were identified along the river on the property (Helix Environmental 2002, as cited in the 2003 EIR and 2006 RPDEIR) (Plate 2). Least Bell's vireo were subsequently confirmed in the San Luis Rey River during several surveys of the property by URS in 2004 and 2005.

##### 3.3.1.2 Critical Habitat

Designated Critical Habitat for least Bell's vireo occurs onsite along the San Luis Rey River corridor within Unit 6, Unit Code F (Plate 3). The USFWS (59 FR 22) has determined that the physical and biological habitat features that comprise the primary constituent elements of the Critical Habitat designated for least Bell's vireo are riparian woodland vegetation that generally contains both canopy and shrub layers, and includes some associated upland habitats. The USFWS states that most of the survival and reproductive needs for least Bell's vireo occur with the riparian zone in most areas.

The primary constituent elements for least Bell's vireo Critical Habitat on the greater property onsite are largely contained within the ordinary high water mark (OHWM) of the San Luis Rey River, and in a few areas beyond the OHWM that are usually within the 5- to 10-year floodplain, but may also extend to the approximate 25-year floodplain of the river. Primary constituent elements for least Bell's vireo Critical Habitat are generally not present beyond these limits along the San Luis Rey River. Therefore, although the description of Critical Habitat for least Bell's vireo in 59 FR 22 includes Sections and/or Subsections from USGS quad maps that may extend slightly beyond these areas that are generally within the 25-year floodplain in some cases onsite, the primary constituent elements for the Critical Habitat occur within these areas that are generally within the approximate 25-year floodplain onsite.

### 3.3.2 Southwestern Willow Flycatcher (*Empidonax traillii extimus*)

#### 3.3.2.1 Status of the Species

The southwestern willow flycatcher is a Federal and State endangered species that occurs in dense riparian woodlands of willow, cottonwood, and other deciduous shrubs and trees, usually near freshwater streams. In general, the riparian habitat of this species tends to be in rare, isolated, small, and/or linear patches, separated by vast expanses of arid lands.

As described in the 2006 RPDEIR, three individuals were observed on the property in 1995 (Dudek 1995). These individuals are believed to be migrants because they occurred only during the first two weeks of surveys, and no nesting was observed. This species was not observed during focused surveys in spring/summer 1998; however, two pairs of flycatchers were detected by Jeff Wells (TW Biological Services, as cited in the 2006 RPDEIR) and confirmed by Peter Beck (Ecological Ornithologist at San Diego State University) in July 1998 in the vicinity of the Highway 76/Couser Canyon Road junction west of, but not located on the property. A nest was found for one of the pairs. In 2000, two calling male flycatchers were observed immediately west of the existing low-flow crossing on the property. This species was not detected during 2005 surveys of the property.

#### 3.3.2.2 Critical Habitat

Designated Critical Habitat for southwestern willow flycatcher occurs onsite along the San Luis Rey River corridor within the San Luis Rey River complex of the San Diego Management Unit. The USFWS (70 FR 201) has determined primary constituent elements for southwestern willow flycatcher as:

*“The southwestern willow flycatcher currently breeds in relatively dense riparian habitats in all or parts of six southwestern states, from near sea level to over 2438 meters (m) (8000 feet) (USFWS 2002: D-1) (Munzer et al. 2005). The southwestern willow flycatcher breeds in riparian habitats along rivers, streams, or other wetlands, where relatively dense growths of trees and shrubs are established, near or adjacent to surface water or underlain by saturated soil. Habitat characteristics such as dominant plant species, size and shape of habitat patch, canopy structure, vegetation height, and vegetation density vary widely among sites. Southwestern willow flycatchers nest in thickets of trees and shrubs ranging in height from 2 m to 30 m (6 to 98 ft). Lower-stature thickets (2-4 m or 6-13 ft tall) tend to be found at higher elevation sites, with tall-stature habitats at middle and lower elevation riparian forests. Nest sites typically have dense foliage at least from the ground level up to approximately 4 m (13 ft) above ground, although dense foliage may exist only at the shrub level, or as a low dense canopy. Nest sites typically have a dense canopy. As a neotropical migrant (migrating between Central and South America and the United States), migration stopover areas for the southwestern willow flycatcher, even though not used for breeding, are critically important, (i.e., essential) resources affecting productivity and survival (Sogge et al. 1997b; Yong and Finch 1997; Johnson and O'Brien 1998; McKernan and Braden 1999; and USFWS 2002: E-3 and 19). Use of riparian habitats along major drainages in the Southwest during migration has been documented (Sogge et al. 1997; Yong and Finch 1997; Johnson and O'Brien 1998; McKernan and Braden 1999; Koronkiewicz et al. 2004, McLeod et al. 2005, Munzer et al. 2005). Many of the willow flycatchers found migrating through riparian areas are detected in riparian habitats or patches that would be unsuitable for breeding (e.g., the vegetation structure is too short or sparse, or the patch is too*

*small). Migrating flycatchers use a variety of riparian habitats, including ones dominated by native or exotic plant species, or mixtures of both (USFWS 2002: E-3). Willow flycatchers, like most small passerine birds, require food-rich stopover areas in order to replenish energy reserves and continue their northward or southward migration (Finch et al. 2000; USFWS 2002: E-3 and 42). ...*

*Southwestern willow flycatchers have higher site fidelity than nest fidelity and can move among sites within drainages and between drainages (Kenwood and Paxton 2001). Within-drainage movements are more common than between-drainage movements (Kenwood and Paxton 2001). From nearly 300 band recoveries, within-drainage movements generally ranged from 1.6 to 29 kilometers (km) (1 to 18 miles (mi)), but were as long as 40 km (25 mi) (E. Paxton, USGS, e-mail). Movements of birds between drainages are more rare, and the distances are more varied. Banding studies have recorded 25 between-drainage movements ranging from 40 km (25 mi) to a single movement of 443 km (275 mi) (average = 130 km or 81 mi) (E. Paxton, USGS, e-mail). ...*

*All the PCEs of Critical Habitat for the southwestern willow flycatcher are found in the riparian ecosystem within the 100-year floodplain or flood prone area. Southwestern willow flycatchers use riparian habitat for nesting, feeding, and sheltering while breeding, migrating, and dispersing. Because riparian vegetation is prone to periodic disturbance, flycatcher habitat is ephemeral and its distribution is dynamic in nature (USFWS 2002: 17). In other words, riparian trees and shrubs used by flycatchers will be altered by flood waters, drought, or possibly succumb to fire, but will be replaced by new trees or shrubs which grow in their place (but not necessarily in the same location). Sapling riparian trees and shrubs must germinate and grow to reach the appropriate height and structure to be used by flycatchers. After reaching appropriate structure for nesting, flycatcher habitat may become unsuitable for breeding through maturation or disturbance, but suitable for migration or foraging (though this may be only temporary, and patches may cycle back into suitability for breeding) (USFWS 2002: 17). Over a five-year period, southwestern willow flycatcher habitat can, in optimum conditions, germinate, be used for migration or foraging, continue to grow, and eventually be used for nesting. Therefore, the riparian vegetation used by flycatchers is part of a gradually changing system, not only in its rapid growth due to its proximity to water, but its location within the floodplain due to the dynamic riverine environment. As a result of this dynamic riverine environment, it is not realistic to assume that any given breeding habitat patch will remain suitable over the long-term, or persist in the same location (USFWS 2002: 17), or always be used for the same purpose by flycatchers. Feeding sites and migration stopover areas are essential components of the flycatcher's survival, productivity, and health, and they can also be areas where new breeding habitat develops as established nesting sites are lost or degraded (USFWS 2002: 42). Thus, habitat that is not currently suitable for nesting at a specific time, but useful for foraging and/or migration can be essential to the conservation of the flycatcher. Therefore, the germination and growth of riparian vegetation (i.e. succession) in this dynamic environment is integral for developing and maintaining appropriate habitat for use by southwestern willow flycatchers. ...*

*The natural hydrologic regime (i.e., river flow frequency, magnitude, duration, and timing) and supply of (and interaction between) surface and subsurface water will be a driving factor in the maintenance, growth, recycling, and regeneration of southwestern willow flycatcher habitat (USFWS 2002:16). As streams reach the lowlands, their gradients typically flatten and surrounding terrain open into broader floodplains (USFWS 2002: 32). Combine this setting with the integrity of stream flow frequency, magnitude, duration, and timing (Poff et al. 1997), and conditions will occur that provide for proper river*

*channel configuration, sediment deposition, periodic inundation, recharged aquifers, lateral channel movement, and elevated groundwater tables throughout the floodplain that develop flycatcher habitat (USFWS 2002:16). Maintaining existing river access to the floodplain when overbank flooding occurs is integral to allow deposition of fine moist soils, water, nutrients, and seeds that provide essential material for plant germination and growth. An abundance and distribution of fine sediments extending farther laterally across the floodplain and deeper underneath the surface retains much more subsurface water, which in turn supplies water for the development of flycatcher habitat and micro-habitat conditions (USFWS 2002:16). The interconnected interaction between groundwater and surface water contributes to the quality of riparian community (structure and plant species), and will influence the germination, density, vigor, composition, and ability to regenerate and maintain itself (AZ Department of Water Resources 1994). ...*

#### *Water*

*Flycatcher nesting habitat is largely associated with perennial (i.e., persistent) stream flow that can support the expanse of vegetation characteristics needed by breeding flycatchers. However, flycatcher nesting habitat can also persist on intermittent (i.e., ephemeral) streams that retain local conditions favorable to riparian vegetation (USFWS 2002: D-12). The range and variety of stream flow conditions (frequency, magnitude, duration, and timing) (Poff et al. 1997) that will establish and maintain flycatcher habitat can arise in different types of both regulated and unregulated flow regimes throughout its range (USFWS 2002: D-12). Also, flow conditions that will establish and maintain flycatcher habitat can be achieved in regulated streams, depending on scale of operation and the interaction of the primary physical characteristics of the landscape (USFWS 2002: D-12).*

*In the Southwest, hydrological conditions at a flycatcher breeding site can vary remarkably within a season and between years (USFWS 2002: D-12). At some locations, particularly during drier years, water or saturated soil is only present early in the breeding season (i.e., May and part of June) (USFWS 2002: D-12). At other sites, vegetation may be immersed in standing water during a wet year, but be hundreds of meters from surface water in dry years (USFWS 2002: D-12). This is particularly true of reservoir sites such as the Kern River at Lake Isabella, CA, Roosevelt Lake, AZ, and Elephant Butte Reservoir, NM (USFWS 2002: D-12). Similarly, where a river channel has changed naturally there may be a total absence of water or visibly saturated soil for several years (Sferra et al. 1997). In such cases, the riparian vegetation and any flycatchers breeding within it may persist for several years (USFWS 2002: D-12).*

*In some areas, natural or managed hydrologic cycles can create temporary flycatcher habitat, but may not be able to support it for an extended amount of time, or may support varying amounts of habitat at different points in the cycle. Some dam operations create varied situations that allow different plant species to thrive when water is released below a dam, held in a lake, or removed from a lakebed, and consequently, varying degrees of flycatcher habitat are available as a result of dam operations (USFWS 2002: 33).*

*The riparian vegetation that constitutes southwestern willow flycatcher breeding habitat requires substantial water (USFWS 2002: D-12). Because southwestern willow flycatcher breeding habitat is often where there is slow moving or still water, these slow and still water conditions may also be important in influencing the production of insect prey base for flycatcher food (USFWS 2002: D-12)*

### *Sites for Germination or Seed Dispersal*

*Subsurface hydrologic conditions may, in some places (particularly at the more arid locations of the Southwest), be equally important to surface water conditions in determining riparian vegetation patterns (Lichivar and Wakely 2004). Where groundwater levels are elevated to the point that riparian forest plants can directly access those waters it can be an area for both breeding, and non-breeding, territorial, dispersing, foraging, and migrating southwestern willow flycatchers, and elevated groundwater helps create moist soil conditions believed to be important for nesting conditions and prey populations (USFWS 2002: 11 and 18), as further discussed below.*

*Depth to groundwater plays an important part in the distribution of riparian vegetation (AZ Department of Water Resources 1994) and consequently, southwestern willow flycatcher habitat. The greater the depth to groundwater below the land surface, the less abundant the riparian vegetation (AZ Department of Water Resources 1994). Localized perched aquifers (i.e., a saturated area that sits above the main water table) can and do support some riparian habitat, but these systems are not extensive (AZ Department of Water Resources 1994)...*

### *Reproduction and Rearing of Offspring*

*Southwestern willow flycatchers nest in thickets of trees and shrubs ranging in height from 2 m to 30 m (6 to 98 ft) (USFWS 2002: D-3). Lower-stature thickets (2-4 m or 6-13 ft tall) tend to be found at higher elevation sites, with tall-stature habitats at middle- and lower-elevation riparian forests (USFWS 2002: D-2). Nest sites typically have dense foliage at least from the ground level up to approximately 4 m (13 ft) above ground, although dense foliage may exist only at the shrub level, or as a low, dense tree canopy (USFWS 2002: D-3).*

*Riparian habitat characteristics such as dominant plant species, size and shape of habitat patches, tree canopy structure, vegetation height, and vegetation density are essential qualities of southwestern willow flycatcher breeding habitat, although they may vary widely at different sites (USFWS 2002: D-1). The accumulating knowledge of flycatcher breeding sites reveals important areas of similarity which constitute the basic concept of what is suitable breeding habitat (USFWS 2002: D-2). These habitat features are generally discussed below.*

*Regardless of the plant species composition or height, breeding sites usually consist of dense vegetation in the patch interior, or an aggregate of dense patches interspersed with openings (USFWS 2002: 11). In most cases this dense vegetation occurs within the first 3 to 4 m (10 to 13 ft) above ground (USFWS 2002: 11). These dense patches are often interspersed with small openings, open water or marsh, or shorter/sparser vegetation, creating a mosaic that is not uniformly dense (USFWS 2002: 11).*

*Common tree and shrub species currently known to comprise nesting habitat include Goodings willow (*Salix gooddingii*), coyote willow (*Salix exigua*), Geyers willow (*Salix geyerana*), arroyo willow (*Salix lasiolepis*), red willow (*Salix laevigata*), yewleaf willow (*Salix taxifolia*), pacific willow (*Salix lasiandra*), boxelder (*Acer negundo*), tamarisk (*Tamarix ramosissima*), and Russian olive (*Eleagnus angustifolia*) (USFWS 2002: D-2, 11). Other plant species used for nesting have been buttonbush (*Cephalanthus occidentalis*), cottonwood, stinging nettle (*Urtica dioica*), alder (*Alnus rhombifolia*, *Alnus oblongifolia*, *Alnus tenuifolia*), velvet ash (*Fraxinus velutina*), poison hemlock (*Conium maculatum*), blackberry*

*(Rubus ursinus), seep willow (Baccharis salicifolia, Baccharis glutinosa), oak (Quercus agrifolia, Quercus chrysolepis), rose (Rosa californica, Rosa arizonica, Rosa multiflora), sycamore (Platanus wrightii), giant reed (Arundo donax), false indigo (Amorpha californica), Pacific poison ivy (Toxicodendron diversilobum), grape (Vitis arizonica), Virginia creeper (Parthenocissus quinquefolia), Siberian elm (Ulmus pumila), and walnut (Juglans hindsii) (USFWS 2002: D-3, 5, and 9). Other species used by nesting southwestern willow flycatchers may become known over time as more studies and surveys occur.*

*Nest sites typically have a dense tree and/or shrub canopy (USFWS 2002: D-3). Canopy density (the amount of cover provided by tree and shrub branches measured from the ground) at various nest sites ranged from 50 percent to 100 percent.*

*Southwestern willow flycatcher breeding habitat can be generally organized into three broad habitat types--those dominated by native vegetation (willow and cottonwood), by exotic (i.e., non-native) vegetation (salt cedar), and those with mixed native and exotic plants (salt cedar and willow). These broad habitat descriptors reflect the fact that southwestern willow flycatchers inhabit riparian habitats dominated by both native and non-native plant species. Salt cedar and Russian olive are two exotic plant species used by flycatchers for nest placement and also foraging and shelter (USFWS 2002: D-4). ...*

#### *Food*

*The willow flycatcher is somewhat of an insect generalist (USFWS 2002: 26), taking a wide range of invertebrate prey including flying, and ground-, and vegetation-dwelling species of terrestrial and aquatic origins (Drost et al. 2003). Wasps and bees (Hymenoptera) are common food items, as are flies (Diptera), beetles (Coleoptera), butterflies/moths and caterpillars (Lepidoptera), and spittlebugs (Homoptera) (Beal 1912; McCabe 1991). Plant foods such as small fruits have been reported (Beal 1912; Roberts 1932; Imhof 1962), but are not a significant food during the breeding season (McCabe 1991). Diet studies of adult southwestern willow flycatchers (Drost et al. 1997; DeLay et al. 1999) found a wide range of prey taken. Major prey items were small (flying ants) (Hymenoptera) to large (dragonflies) (Odonata) flying insects, with, Diptera and Hemiptera (true bugs) comprising half of the prey items. Willow flycatchers also took non-flying species, particularly Lepidoptera larvae. From an analysis of southwestern willow flycatcher diet along the South Fork of the Kern River, CA, (Drost et al. 2003) flycatchers consumed a variety of prey from 12 different insect groups. Willow flycatchers have been identified targeting seasonal hatchings of aquatic insects along the Salt River arm of Roosevelt Lake, AZ (E. Paxton, USGS, e-mail).*

*Southwestern willow flycatcher food availability may be largely influenced by the density and species of vegetation, proximity to and presence of water, saturated soil levels, and microclimate features such as temperature and humidity (USFWS 2002). Flycatchers forage within and above the canopy, along the patch edge, in openings within the territory, over water, and from tall trees as well as herbaceous ground cover (Bent 1960; McCabe 1991). Willow flycatchers employ a "sit and wait" foraging tactic, with foraging bouts interspersed with longer periods of perching (Prescott and Middleton 1988).*

*Pursuant to our regulations, we are required to identify the known physical and biological features or PCEs, essential to the conservation of the southwestern willow flycatcher, together with a description of any Critical Habitat that is designated. Based on our current knowledge of the life history, biology, and*

*ecology of the species and the requirements of the habitat to sustain the essential life history functions of the species, we have determined that the southwestern willow flycatcher's primary constituent elements are: (1) Riparian habitat in a dynamic successional riverine environment (for nesting, foraging, migration, dispersal, and shelter) that comprises: (a) Trees and shrubs that include Gooddings willow (*Salix gooddingii*), coyote willow (*Salix exigua*), Geyers willow (*Salix geyerana*), arroyo willow (*Salix lasiolepis*), red willow (*Salix laevigata*), yewleaf willow (*Salix taxifolia*), pacific willow (*Salix lasiandra*), boxelder (*Acer negundo*), tamarisk (*Tamarix ramosissima*), Russian olive (*Eleagnus angustifolia*), buttonbush (*Cephalanthus occidentalis*), cottonwood (*Populus fremontii*), stinging nettle (*Urtica dioica*), alder (*Alnus rhombifolia*, *Alnus oblongifolia*, *Alnus tenuifolia*), velvet ash (*Fraxinus velutina*), poison hemlock (*Conium maculatum*), blackberry (*Rubus ursinus*), seep willow (*Baccharis salicifolia*, *Baccharis glutinosa*), oak (*Quercus agrifolia*, *Quercus chrysolepis*), rose (*Rosa californica*, *Rosa arizonica*, *Rosa multiflora*), sycamore (*Platanus wrightii*), false indigo (*Amorpha californica*), Pacific poison ivy (*Toxicodendron diversilobum*), grape (*Vitis arizonica*), Virginia creeper (*Parthenocissus quinquefolia*), Siberian elm (*Ulmus pumila*), and walnut (*Juglans hindsii*). (b) Dense riparian vegetation with thickets of trees and shrubs ranging in height from 2 m to 30 m (6 to 98 ft). Lower-stature thickets (2 to 4 m or 6 to 13 ft tall) are found at higher elevation riparian forests and tall-stature thickets are found at middle- and lower-elevation riparian forests; (c) Areas of dense riparian foliage at least from the ground level up to approximately 4 m (13 ft) above ground or dense foliage only at the shrub level, or as a low, dense tree canopy; (d) Sites for nesting that contain a dense tree and/or shrub canopy (the amount of cover provided by tree and shrub branches measured from the ground) (i.e., a tree or shrub canopy with densities ranging from 50 percent to 100 percent); (e) Dense patches of riparian forests that are interspersed with small openings of open water or marsh, or shorter/sparser vegetation that creates a mosaic that is not uniformly dense. Patch size may be as small as 0.1 ha (0.25 ac) or as large as 70 ha (175 ac); and (2) A variety of insect prey populations found within or adjacent to riparian floodplains or moist environments, including: flying ants, wasps, and bees (Hymenoptera); dragonflies (Odonata); flies (Diptera); true bugs (Hemiptera); beetles (Coleoptera); butterflies/moths and caterpillars (Lepidoptera); and spittlebugs (Homoptera).*

*The discussion above outlines those physical and biological features essential to the conservation of the southwestern willow flycatcher and presents our rationale as to why those features were selected. The primary constituent elements described above are results of the dynamic river environment that germinates, develops, maintains, and regenerates the riparian forest and provides food for breeding, non-breeding, dispersing, territorial, and migrating southwestern willow flycatchers. Anthropogenic factors such as dams, irrigation ditches, or agricultural field return flow can assist in providing conditions that support flycatcher habitat. Because the flycatcher exists in disjunct breeding populations across a wide geographic and elevation range, and is subject to dynamic events, Critical Habitat river segments described below are essential for the flycatcher to maintain metapopulation stability, connectivity, gene flow, and protect against catastrophic loss. All river segments designated as southwestern willow flycatcher Critical Habitat are within the geographical area occupied by the species and contain at least one of the primary constituent elements. It is important to recognize that the PCEs are present throughout the river segments selected (PCE 1a and 2), but the specific quality of riparian habitat for nesting (PCE 1b, 1c, 1d, 1e), migration (PCE 1), foraging (PCE 1 and 2), and shelter (PCE 1) will not remain constant in their condition or location over time due to succession (i.e., plant germination and growth) and the dynamic environment in which they exist. ...”*

Most of the habitat onsite that supports the primary constituent elements for southwestern willow flycatcher is within the approximate 25-year floodplain of the San Luis Rey River. A few areas may extend beyond the approximate 25-year floodplain, but are within the 50- to 100 year floodplains. The designated Critical Habitat onsite for southwestern willow flycatcher is similar to the designated Critical Habitat onsite for least Bell's vireo.

### 3.3.3 Arroyo Southwestern Toad (*Bufo californicus*)

#### 3.3.3.1 Status of the Species

The arroyo toad is a Federal endangered species, and State Species of Special Concern that is found in shallow pools and open sand and gravel flood terraces of medium- to large-sized intermittent or perennial streams that are flooded on a fairly regular basis. They are known to breed in smaller streams and deep canyons and use upland habitats as juveniles, subadults, and adults (USFWS 1999, as cited in the 2006 RPDEIR).

In 1995 surveys, numerous tadpoles and newly emerged toadlets were observed along the San Luis Rey River and its banks (Dudek 1995). Male toads were also heard calling from the river in and adjacent to the property in 1993 and 1995. Dudek biologists estimated approximately 25 male toads calling in the segment of the San Luis Rey River between Pala and I-15 in a single night, including a breeding population in the Fenton sand mine bordering the property to the east and a male calling from the river at the existing low-flow crossing on the property. The population along this segment of the river is considered a major population on a range-wide level. In 1998, three calling juvenile male toads were observed along the San Luis Rey River on the property, two of which occurred at the project area. In 2000, 3 to 9 toads were observed, the majority of which were observed along the SDCWA aqueduct road south of the San Luis Rey River (San Diego County Department of Environmental Health 2003). Several (7-15) arroyo toads were confirmed in the San Luis River during multiple visits to the property by URS biologists in 2005.

#### 3.3.3.2 Critical Habitat

There is no designated or proposed Critical Habitat onsite or within San Diego County for arroyo toad.

### 3.3.4 Coastal California Gnatcatcher (*Poliophtila californica californica*)

#### 3.3.4.1 Status of the Species

The coastal California gnatcatcher is a Federal threatened species and State Species of Special Concern that has been observed twice on the property, at the proposed landfill site (Plate 2). A single male was seen in late July 1995, north of Highway 76 (Dudek 1995). A second single male was observed on the property on one occasion in April 1998 during protocol surveys in the footprint of Borrow/Stockpile Area B (County of San Diego Department of Environmental Health 2002). Biologists permitted to perform gnatcatcher surveys were subsequently on site in gnatcatcher habitat 6 additional times during the 1998 breeding season and no gnatcatchers were observed or detected. Previous surveys for the gnatcatcher in 1989, 1991, 1992, and 1993 (Butler Roach Group 1990; PSBS 1991; MBA 1992; Ogden unpub. data

1993, as cited in the 2006 RPDEIR) on the property were negative. In 2000, gnatcatcher survey results were also negative (Appendix L of the 2006 RPDEIR). The limited sightings and the absence of nearby core populations (Mock 1993, 1998, 2004) suggest the property is of low to marginal value for gnatcatchers (Ogden 1995) (San Diego County Department of Environmental Health 2002). In 2005, URS biologists permitted to perform gnatcatcher surveys did not detect gnatcatchers while on site during the breeding season and confirmed that the habitat continued to be of low value for gnatcatchers.

### 3.3.4.2 Critical Habitat

Critical Habitat for the coastal California gnatcatcher that was designated on October 24, 2000 (65 FR 206) occurs onsite (Plate 3). The USFWS reopened proposed Critical Habitat for coastal California gnatcatcher on April 24, 2003 (68 FR 79) for public comment. Pending a final designation after the April 24, 2003 reopening for comment, the USFWS is using the Critical Habitat designated on October 24, 2000 as Critical Habitat. This Biological Assessment shows both the current designated Critical Habitat from October 24, 2000 and the proposed Critical Habitat reopened for comment from April 24, 2003, both of which are within Unit 5, on Plate 3. The USFWS has determined primary constituent elements for coastal California gnatcatcher to include:

*“The primary constituent elements for the coastal California gnatcatcher are those habitat components that provide for foraging, nesting, rearing of young, intraspecific communication, roosting, dispersal, genetic exchange, or sheltering (Atwood 1990). Primary constituent elements are provided in undeveloped areas that support, through natural successional processes (e.g., post-fire recovery), various types of sage scrub or chaparral, grassland, and riparian habitats where they may be utilized for biological needs such as breeding, foraging, or dispersal (Atwood et al. 1998; Campbell et al. 1998). Primary constituent elements associated with the biological needs of dispersal are also found in undeveloped areas that provide connectivity or linkage between larger core areas, including open space and ruderal (weedy areas that contain introduced plant species) disturbed areas that may receive only periodic use. Probable dispersing individuals have been documented in vegetation dominated by such species as Brass[chyph]ica spp. (wild mustard), annual grasses, Salsola tragus (Russian thistle), Baccharis salicifolia (mule fat), Salix spp. (willow), and Tamarix spp. (salt cedar) (Campbell et al. 1998). Some of these species may also be used seasonally by territorial birds as coastal sage scrub dries during the summer drought (Campbell et al. 1998).*

*Primary constituent elements include, but are not limited to, the following plant communities: Venturan coastal sage scrub, Diegan coastal sage scrub, maritime succulent scrub, Riversidean sage scrub, Riversidean alluvial fan scrub, southern coastal bluff scrub, and coastal sage-chaparral scrub (Holland 1986; Kirkpatrick and Hutchinson 1977; Westman 1983). Based upon dominant species, these communities have been further divided into series such as black sage, brittlebush, California buckwheat, California buckwheat-white sage, California encelia, California sagebrush, California sagebrush-black sage, California sagebrush-California buckwheat, coast prickly-pear, mixed sage, purple sage, scalebroom, and white sage (Sawyer and Keeler-Wolf 1995). Dominant species within these plant communities include Artemisia californica, Eriogonum fasciculatum, Encelia californica, Salvia mellifera, S. apiana, and S. leucophylla. Other commonly occurring plants include Isocoma menziesii (coast goldenbush), Viguiera laciniata (San Diego sunflower), Baccharis pilularis (coyote brush), Baccharis sarothroides (broom baccharis), Mimulus aurantiacus (bush monkeyflower), Sambucus*

*mexicana* (Mexican elderberry), *Isomeris arborea* (bladderpod), *Lotus scoparius*, *Malosma laurina* (laurel sumac), *Rhus integrifolia* (lemonadeberry), and *Rhus ovata* (sugarbush). Species such as *Lycium* spp. (boxthorn), *Euphorbia misera* (cliff spurge), *Simmondsia chinensis* (jojoba), and *Opuntia littoralis* (prickly pear), *O. prolifera* (cholla), and *Ferocactus viridescens* (coast barrel cactus), and *Dudleya* spp. (live-forever) are represented in maritime succulent scrub, coast prickly-pear scrub, and southern coastal bluff scrubs. In areas of coastal influence, chamise chaparral has also been documented to support breeding pairs (Campbell et al. 1998). Mesic sites dominated by *Baccharis salicifolia* and other *Baccharis* species such as *Baccharis pilularis* and *Baccharis sarathroides* may also support breeding pairs (Campbell et al. 1998).”

The areas of Critical Habitat onsite designated by the USFWS in 2000 generally contain vegetation types consistent with the primary constituent elements identified by the USFWS, although portions of the areas do not (especially along the San Luis Rey River within the historic grazing areas and lands formerly developed for the dairies, housing, and the like). The areas of proposed Critical Habitat that were reopened for comment in 2003 include the eastern half of the proposed landfill site within Gregory Canyon plus a sizeable portion of Gregory Mountain east of the proposed landfill site (Plate 3). This additional area reopened for comment in 2003 generally lacks the vegetation types consistent with the primary constituent elements identified by the USFWS, and instead, consists of dense chaparral and large areas of rock outcrops on the steep mountainside. Coastal California gnatcatcher have never been observed in these additional areas during prior surveys for the species.

### 3.3.5 Quino Checkerspot Butterfly (*Euphydryas editha quino*)

#### 3.3.5.1 Status of the Species

Quino checkerspot butterfly is protected as a Federal endangered species. Host plants (dot-seed plantain [*Plantago erecta*] and owl's clover [*Castilleja exserta*]) for the QCB have been observed on the property (Figure 3). However, surveys conducted during the 1998 and 2000 flight seasons determined that QCB is not present on the property (San Diego County Department of Environmental Health 2003). QCB also were not observed at the property during protocol surveys in 2005. Potential habitat existed in very small patches scattered within the survey area as observed by URS in 2005; however, many of the areas were located along the roads and in previously disturbed habitat, and as the butterfly flight season progressed, annual grasses further degraded these potential habitat areas.

#### 3.3.5.2 Critical Habitat

There is no Critical Habitat for quino checkerspot butterfly onsite.

## SECTION 4 IMPACTS

This section addresses impacts of the project on listed species and designated Critical Habitat that may result from the project relative to the environmental baseline described in Section 3.0. Direct impacts are those impacts that will occur as a result of constructing and operating the project, including implementation of mitigation measures. Indirect impacts are defined by the USFWS as those effects that are caused by or will result from the proposed action and are later in time, but are still reasonably certain to occur (USFWS 1998). A summary of impacts on vegetation habitats within the action area from URS (2006) and the 2006 RPDEIR is provided in Table 1. Note that the final EIR will be updated to reflect impacts on 0.4 acres of southern willow scrub, 0.4 acres of disturbed southern willow scrub, and 0.2 acres of open channel, which is not jurisdictional waters of the U.S.

Cumulative effects are defined as those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the Federal action area (this definition applies only to Section 7 of the Federal Endangered Species Act and should not be confused with the broader use of this term in the National Environmental Policy Act or other environmental laws) (USFWS 1998). An extensive cumulative effects analysis was prepared in the 2003 EIR and the 2006 RPDEIR (Appendix C) that addressed potential cumulative effects within the Federal action area and a much larger area within the region. This assessment of cumulative effects is considered in the discussion below.

### 4.1 EFFECTS OF THE ACTION ON LEAST BELL'S VIREO

#### 4.1.1 Direct, Indirect, and Cumulative Impacts

There will be direct impacts within the action area of 0.4 acres of southern willow scrub, 0.2 acres of cottonwood-willow riparian forest, 0.4 acres of disturbed southern willow scrub, and 0.2 acres of open channel (not jurisdictional waters of the U.S.) (Table 1). There will be 0.368 acres of temporary impact and 0.002 acres of permanent impact on wetland waters of the U.S. (0.37 acres total) as a result of bridge construction, which are included within the total of 0.4 acres of southern willow scrub affected by the project. The 0.4 acres of impact on southern willow scrub is derived from rounding 0.37 acres to the nearest 1/10<sup>th</sup> of an acre. Impact acreage was rounded to the nearest 1/10<sup>th</sup> of an acre for CEQA review. All of these areas are within Critical Habitat for least Bell's vireo (Plate 3) and are the areas of Critical Habitat that support the primary constituents elements for this species. There will be a total of 0.368 acres of temporary impact and 0.002 acres of permanent impact on Critical Habitat that support the primary constituent elements for least Bell's vireo. The bridge project will also result in the creation of 2.3 acres of riparian habitat, which is a beneficial effect of the project.

The 0.4 acres of southern willow scrub that will be affected by the project has been demonstrated to support least Bell's vireo nesting. Depending upon the location of nesting territories at the time of construction of the bridge, 1 or 2 nesting territories may be affected. Revegetation in the disturbance areas and creation of 2.3 acres of riparian habitat at the bridge will ensure that such effects are temporary and that no nesting territories will be lost in the long term at the bridge.

Temporary impacts on Critical Habitat will be of short duration and revegetation in these riparian areas is expected to occur within 3 to 5 years. The same amount of time is expected to be required to establish

riparian habitat within the 2.3 acres of creation area associated with the bridge. Therefore, the project will result in a net increase in Critical Habitat supporting primary constituent elements for least Bell's vireo onsite.

The project has the potential to indirectly affect least Bell's vireo during construction and operation. However, design features have been incorporated in the project and also recommended by the County of San Diego and incorporated in mitigation measures in the 2006 RPDEIR that will minimize impacts from human activity and the associated noise to avoid adverse effects on least Bell's vireo from construction noise, daily equipment operation, and truck traffic on the access road to the landfill including the bridge. These measures are described in Section 5.0.

The landfill project will also result in increased traffic along SR 76, as addressed in the 2006 RPDEIR and by URS (2006), with increased noise generated by the traffic associated with the landfill. This increase in noise will be an indirect effect of the project and includes the opportunity for a cumulative effect within the Federal action area for the project. The analysis provided within the 2006 RPDEIR and URS (2006) includes consideration of these indirect and/or cumulative effects. The noise contour above 60 dBA  $L_{eq}$  resulting from operation of the landfill project and beyond the existing environmental baseline will result in noise impacts on 7.1 acres of riparian habitat (4.0 acres of southern willow scrub and 3.1 acres of cottonwood-willow riparian forest) on the greater landfill property, plus an additional 12.9 acres of riparian habitat offsite between the landfill site and I-15, for a total of 20 acres. Mitigation for these noise effects is described in Section 5.0.

Least Bell's vireo are expected to continue to use the riparian habitat and Critical Habitat in the vicinity of the bridge and within the area of noise impacts along SR 76 at levels that are the same as, or greater than the existing environmental baseline, and no loss of potential to support breeding is expected to occur. The bridge and the landfill will not prevent vireo from using the area or moving through the area along existing migration corridors. Therefore, the project will not result in fragmentation of Critical Habitat or habitat for least Bell's vireo in general and will not contribute to cumulative effects within the action area or region in general. Implementation of the mitigation measures described in Section 5.0 will result in a net benefit to the species as a result of the project; thus, fully compensating for impacts on the species and its Critical Habitat and not jeopardizing the continued existence of the species.

## **4.2 EFFECTS OF THE ACTION ON SOUTHWESTERN WILLOW FLYCATCHER**

### **4.2.1 Direct, Indirect, and Cumulative Impacts**

There will be direct impacts within the action area of 0.4 acres of southern willow scrub, 0.2 acres of cottonwood-willow riparian forest, 0.4 acres of disturbed southern willow scrub, and 0.2 acres of open channel (not jurisdictional waters of the U.S.) (Table 1), which are the same areas described for least Bell's vireo. There will be 0.368 acres of temporary impact and 0.002 acres of permanent impact on wetland waters of the U.S. (0.37 acres total) as a result of bridge construction, which are included within the total of 0.4 acres of southern willow scrub affected by the project. The 0.4 acres of impact on southern willow scrub is derived from rounding 0.37 acres to the nearest 1/10<sup>th</sup> of an acre. Impact acreage was rounded to the nearest 1/10<sup>th</sup> of an acre for CEQA review. All of these areas are within Critical Habitat

for southwestern willow flycatcher (Plate 3) and are the areas of Critical Habitat that support the primary constituent elements for this species. There will be a total of 0.368 acres of temporary impact and 0.002 acres of permanent impact on Critical Habitat that support the primary constituent elements for southwestern willow flycatcher. The bridge project will also result in the creation of 2.3 acres of riparian habitat, which is a beneficial effect of the project.

The 0.4 acres of southern willow scrub that will be affected by the project may support southwestern willow flycatcher and one nesting territory may be affected. Revegetation of the disturbance areas and creation of 2.3 acres of riparian habitat at the bridge will ensure that such effects are temporary and that no nesting territories will be lost in the long term at the bridge.

Temporary impacts on Critical Habitat will be of short duration and revegetation in these riparian areas is expected to occur within 3 to 5 years. The same amount of time is expected to be required to establish riparian habitat within the 2.3 acres of creation area associated with the bridge. Therefore, the project will result in a net increase in Critical Habitat supporting primary constituent elements for southwestern willow flycatcher onsite.

The project has the potential to indirectly affect southwestern willow flycatcher during construction and operation. However, design features have been incorporated in the project and also recommended by the County of San Diego and incorporated in mitigation measures in the 2006 RPDEIR that will minimize impacts from human activity and the associated noise to avoid adverse effects on southwestern willow flycatcher from construction noise, daily equipment operation, and truck traffic on the access road to the landfill including the bridge. These measures are described in Section 5.0.

The landfill project will also result in increased traffic along SR 76, as addressed in the 2006 RPDEIR and by URS (2006), with increased noise generated by the traffic associated with the landfill. This increase in noise will be an indirect effect of the project and includes the opportunity for a cumulative effect within the action area for the project. The analysis provided within the 2006 RPDEIR and URS (2006) includes consideration of these indirect and/or cumulative effects. The noise contour above 60 dBA  $L_{eq}$  resulting from operation of the landfill project and beyond the existing environmental baseline will result in noise impacts on 7.1 acres of riparian habitat (4.0 acres of southern willow scrub and 3.1 acres of cottonwood-willow riparian forest) on the greater landfill property, plus an additional 12.9 acres of riparian habitat offsite between the landfill site and I-15, for a total of 20 acres. Mitigation for these noise effects is described in Section 5.0.

Southwestern willow flycatcher are expected to continue to use the riparian habitat and Critical Habitat in the vicinity of the bridge and within the area of noise impacts along SR 76 at levels that are the same as, or greater than the existing environmental baseline, and no loss of potential to support breeding is expected to occur. The bridge and the landfill will not prevent vireo from using the area or moving through the area along existing migration corridors. Therefore, the project will not result in fragmentation of Critical Habitat or habitat for southwestern willow flycatcher in general and will not contribute to cumulative effects within the action area or region in general. Implementation of the mitigation measures described in Section 5.0 will result in a net benefit to the species as a result of the project; thus, fully compensating for impacts on the species and its Critical Habitat and not jeopardizing the continued existence of the species.

### 4.3 EFFECTS OF THE ACTION ON ARROYO SOUTHWESTERN TOAD

#### 4.3.1 Direct, Indirect, and Cumulative Impacts

Information about arroyo toad (*Bufo californicus*) in the Gregory Canyon Landfill 2003 EIR and Final Biological Technical Report was reviewed. Information reviewed included arroyo toad location data, as well as potential impacts on the species. In addition, impacts described in the 2003 EIR were re-evaluated using the same assumptions that were originally used in the 2003 EIR and Final Biological Technical Report to quantify the impacts on the species to arrive at updated arroyo toad impact acreages. The assumptions used in the 2003 EIR and Final Biological Technical Report, and in this review, to quantify impacts on arroyo toad follow guidance from the U.S. Fish and Wildlife Service (USFWS) recovery plan for the arroyo toad (USFWS 1999).

According to the 2003 EIR and Final Biological Technical Report, the quantified direct impacts on arroyo toad resulting from the construction of the landfill are as follows:

*“...Direct [significant] impacts resulting in the loss of approximately 3.1 acres of toad riparian breeding habitat would occur from construction of the bridge. Only 0.005 acre of this would be permanent impact due to bridge pilings...”*

*“...Direct significant impacts resulting in the loss of approximately 306 acres of potential toad upland habitat would occur from construction of the landfill and related facilities...These upland habitat impacts were calculated assuming that any upland habitat disturbance within 2.0 kilometers of the river channel on site would be significant...”*

*“...These upland habitat impacts were calculated assuming that any upland habitat disturbance within 2.0 kilometers of the river channel on site would be significant. However, it should be noted that toads commonly travel up to 0.5 kilometer from the stream and that the distance toads travel from breeding sites depends on topography and the extent of suitable habitat (USFWS 1999). Suitable upland habitats must contain substantial areas of fine sand for burrowing (USFWS 1999c). If only impacts to upland areas within 2.0 kilometers of the river channel that contain fine sand (consisting of Tujunga sand [TuB], Visalia sand loams [VaA and VaB] and Fallbrook sandy loam [FaD2] as depicted in Figure 4.2-4) are considered, the potential loss of toad upland habitat used for burrowing would be reduced to approximately 32 acres. The majority of this acreage would occur primarily in grassland, agricultural, and oak woodland habitats where the access road, facilities area, desilting basins, and parts of Borrow/Stockpile Area A are located...”*

Other potential impacts mentioned in the 2003 EIR and Final Biological Technical Report include roadkill because of increased traffic, loss of individuals from implementation of arroyo toad habitat creation/enhancement areas, attraction of arroyo toad predators to the project area, water quality-related impacts, and night lighting-related impacts. Of these, increased traffic and attraction of arroyo toad predators are labeled as potentially significant impacts.

It is important to note that the 2003 EIR and Final Biological Technical Report differentiate between potential arroyo toad upland habitat and suitable arroyo toad upland habitat. According to the 2003 EIR and Final Biological Technical Report, potential arroyo toad upland habitat occurs within 2 kilometers of

the river channel. Suitable arroyo toad upland habitat is defined as areas within 2 kilometers of the stream supporting fine sand. The 2003 EIR and Final Biological Technical Report designate the areas that contain fine sand as being the following soil types: Tujunga sand [TuB], Visalia sand loams [VaA and VaB] and Fallbrook sandy loam [FaD2]. Both potential and suitable arroyo toad upland habitat are addressed in this current evaluation.

URS re-evaluated impacts on arroyo toad using the assumptions from the 2003 EIR and Final Biological Technical Report. The USFWS (1999) states that arroyo toad upland habitat generally refers to non-riparian habitat up to two kilometers away from breeding habitat. According to Table 4.9-4 in the 2003 EIR, the total acreage impacted by the landfill is 308.2 acres. If the riparian-associated vegetation communities that were identified in the 2003 EIR are subtracted from this total, 0.2 acres of mule fat scrub, 2.4 acres of southern willow scrub, and 0.2 acres of open channel, the assumed total arroyo toad upland habitat impacts are 305.4 acres, which if rounded up, appears to correspond to 306 acres of potential arroyo toad habitat referred to in the 2003 EIR and Final Biological Technical Report.

The approximately 306 acres of potential toad upland habitat indicated in the 2003 EIR and Final Biological Technical Report that would be affected by construction of the landfill and related facilities is unlikely to actually represent actively, or even casually used arroyo toad upland habitat. The 2003 EIR and Final Biological Technical Report, which combine data gathered since 1989, do not report arroyo toads as occurring farther than approximately 0.5 miles from the San Luis Rey River. Furthermore, the data from these studies show that the arroyo toad point locations are strongly associated with the soil types mentioned in the 2003 EIR text presented above, in specific locations onsite where the preferred soil conditions are actually present. In addition, surveys conducted by URS in 2005 did not detect arroyo toads in the uplands beyond the San Luis Rey River floodplain (Table 2). Therefore, arroyo toads are most likely distributed within 0.5 miles of the San Luis Rey River where appropriate soils are present as shown in 2003 EIR Exhibit 4.9-2, and Figure 6.

The soils present in the uplands beyond the greater San Luis River floodplain are not suitable for arroyo toad burrowing. Arroyo toads burrow into fine sands to avoid desiccation and predation. According to the NRCS soils map, the soil types present in the majority of these uplands include Acid igneous rock (AcG), Las Posas stony fine sandy loam, 30 to 65 percent slopes (LrG), Cieneba-Fallbrook rocky sandy loams (CnG2), Cieneba coarse sandy loam, 30 to 65 percent slopes, eroded (CIG2), and Cieneba very rock coarse sandy loam, 30 to 75 percent slopes (CmrG). The soil type descriptions indicate these are generally shallow soils in steep areas with a hard texture and numerous rock outcrops (NRCS 1973), which is representative of conditions onsite. URS surveys in the southern portion of the project area generally confirm the NRCS soil descriptions, and observed that dense chaparral and coastal sage scrub vegetation dominates the project area. Mammal burrows were observed in these areas, and “although California toads [*Bufo boreas halophilus*] will use small mammal burrows in areas where soils are compacted, arroyo toads apparently will not.” (W.E. Haas *et al. in litt.* 1998, as referenced in USFWS 1999). Therefore, the soil types present in the uplands beyond the greater San Luis Rey River floodplain should not be considered potential arroyo toad upland habitat because these areas are not suitable for burrowing.

URS conducted a GIS analysis to confirm, if possible, the 32 acres of impacts on suitable arroyo toad upland habitat stated in the 2003 EIR and Final Biological Technical Report using the assumptions from

the 2003 EIR and Final Biological Technical Report. The entire project impact footprint exists within two kilometers from the San Luis Rey River. The riparian habitat boundary (i.e., arroyo toad non-upland habitat) associated with the San Luis Rey River was mapped within the property using a 2002 aerial photo. This riparian habitat boundary was excluded from the URS suitable arroyo toad upland habitat acreage total. In addition to the aerial photo, property boundary, and riparian habitat boundary, the NRCS soils map for the project area, and the current project impact footprint were overlaid within the GIS layout. Areas of suitable arroyo toad upland habitat impacts were measured where the project footprint intersects with the suitable arroyo toad soil types as mentioned in the 2003 EIR and Final Biological Technical Report (i.e., Tujunga sand [TuB], Visalia sand loams [VaA and VaB] and Fallbrook sandy loam [FaD2]) outside of the riparian habitat boundary. The sum of these areas is 17.5 acres of suitable arroyo toad upland habitat impacts (Table 3). Figure 6 shows the location of these areas.

We are unable to verify or reproduce the 32 acres stated in the 2003 EIR and Final Biological Technical Report. As shown in Figure 6, the mapped riparian habitat boundary contains little project impact acreage. Therefore, the impact area does not approach the 32 acres even if the riverine and riparian habitat boundary were included in the calculations (there will be 0.0368 acres of temporary impact and 0.0002 acres of permanent impact on waters of the U.S. where bridge pilings will be placed). The impact on potentially suitable arroyo toad upland habitat based on NRCS soil data is 17.5 acres.

Many portions of the suitable arroyo toad upland habitat impact area actually are unsuitable for arroyo toad burrowing because of local soil conditions, and the 17.5 acres is an overestimate of actual suitable arroyo toad upland habitat impacts. Unsuitable areas included in the analysis are existing paved and dirt roads and other developed areas that will be affected by the project. Specifically, a portion of State Route 76 will be realigned, and an access road through the Lucio Dairy and associated buildings will be constructed. These are developed areas that exist within the soil types shown in Table 3, and they are not suitable for arroyo toad burrowing.

Another area included in this analysis that is likely unsuitable arroyo toad upland habitat is found in Borrow Area A in the western portion of the project site (Figure 6). According to the NRCS soils map, a portion of Borrow Area A supports Visalia sandy loam, 0 to 2 percent slopes (VaA), among other non-suitable arroyo toad soil types. Based on field observations in December 2005, Borrow Area A is highly disturbed from prior agricultural use. Topographically, the VaA area exists in a shallow swale that slopes west-northwest towards the San Luis Rey River floodplain. Adjacent to the swale are steeper hills supporting coastal sage scrub to the north, east, and southeast, with agriculture to the west within the San Luis Rey River floodplain. As of the December 2005 visit, the area supported dense ruderal vegetation and the ground showed evidence of historic mechanical plowing or disking. The 2002 aerial used in the GIS analysis shows the area as plowed and devoid of vegetation. The soils were hard and high in fine silt in this area, and generally did not reflect the soil type description for Visalia sandy loam. Therefore, the majority of this area is not suitable as arroyo toad upland habitat based on the degree of disturbance and the fact that the native soils mapped here have been substantially modified by historic uses.

Much of the suitable arroyo toad upland habitat as indicated by the soils in Table 3 is dominated by non-native grassland and ruderal vegetation communities. These vegetation communities are generally considered unsuitable for arroyo toads because the dense grasses and ruderal species may provide a barrier to arroyo toad movement and their roots may make burrowing difficult. Furthermore, according to

the data compiled in the 2003 EIR, it appears that the majority of the arroyo toads detected in the uplands (i.e. outside the riparian habitat) were observed on roads. In our experience, arroyo toads will preferentially move along roads and paths devoid of vegetation during their nocturnal activity period, but cannot burrow into the roads or paths unless the soils are substantially loose and soft with appropriate grain size. The existing roads onsite are generally hard-packed soil that is not suitable for burrowing by arroyo toads. Therefore, it is likely that the 17.5 acres of suitable arroyo toad upland habitat determined based on the NRCS soils maps is an overestimate of actual impacts on arroyo toads. In addition, major portions of these areas supporting dense non-native grassland and ruderal vegetation communities is proposed to be enhanced and preserved onsite to provide more suitable arroyo toad upland habitat. If the suitable arroyo toad upland habitat impacts within developed areas and a portion of Borrow Area A are not included because they are not actually suitable, we estimate the project will more accurately result in impacts on approximately 10.5 acres of suitable arroyo toad upland habitat. This acreage number was attained based on the assumptions provided in 2003 EIR and Final Biological Technical Report, which in turn are based on guidance published in the USFWS recovery plan for the arroyo toad (1999).

In light of the preceding, the acreage of suitable arroyo toad upland habitat impacts is 10.5 acres. Studies to date have not documented use of this upland habitat by arroyo toads, except for a sighting on one of the existing dirt roads onsite. These impacts of 10.5 acres (or even 17.5 acres or 32 acres as described in the 2003 EIR) will be mitigated to a level below significance by habitat enhancement and/or creation planned for 88 acres of upland habitat onsite as described in MM 4.9-4 and Exhibit 4.9-6 of the 2006 RPDEIR. This mitigation of 88 acres would occur in addition to riparian habitat mitigation at the bridge and proposed open space dedication. This mitigation could occur within the 134.5 acres of upland habitat identified as available for creation of vegetation communities onsite and outside of the right of way of the pipelines as part of the current analysis (see Section 2.0). This 88 acres of mitigation is consistent with the level of mitigation provided in the 2003 EIR. In addition, it is our opinion that this level of mitigation fully compensates for impacts on arroyo toad from the project.

Finally, the acreage of riparian toad impacts has been reduced as a result of revisions in the design of the landfill access road bridge, and are now 0.0368 acres, with only 0.002 acres of permanent impact. This is less than the impacts described in the 2003 EIR. These impacts of 0.0368 acres will likewise be mitigated to a level below significance by habitat enhancement and/or creation planned for at least 88 acres of upland habitat onsite and 81.2 acres of riparian habitat as described in MM 4.9-4, and MM 4.9-18, as shown in Exhibit 4.9-6 of the 2006 RPDEIR.

Water quality in the San Luis Rey River was evaluated in the 2006 RPDEIR as a potential long-term issue that could indirectly affect the arroyo southwestern toad. However, during initial landfill construction, the manure associated with the former dairies is being removed, greatly improving the water quality of the river. Furthermore, the landfill is designed to prevent the release of contaminants to surface water and ground water. These and other actions described in the 2006 RPDEIR will minimize potential impacts on water quality in the San Luis Rey River thereby avoiding and mitigating impacts on the arroyo toad (San Diego County Department of Environmental Health 2003). Furthermore, the requirements of the California Integrated Waste Management Board/San Diego County Department of Environmental Health Solid Waste Facility Permit 37-AA-0032, and the pending Regional Water Quality Control Board Waste Discharge Requirements will ensure no degradation of water quality from the landfill.

Another potential indirect impact on the arroyo southwestern toad is the attraction of nuisance animal species to the landfill that could increase rates of toad predation and decrease the toad population. However, the vector control plan and placement of daily cover will mitigate these impacts. Impacts from some species could occur, however, from the riprap associated with the access road bridge, as this riprap could harbor predators of the arroyo toad (USFWS 1999c). However, the mitigation measures provide that gaps in the riprap will be filled with concrete. Moreover, riprap already occurs over a very large area along the river along the Verboom Dairy. This riprap will be removed, thus providing additional mitigation. The mitigation actions described above will result in no adverse affects on southwestern arroyo toad, and the development and operation of the landfill will not jeopardize the continued existence of this species.

The greater landfill project will result in a net beneficial impact on arroyo toad upland habitat through the removal of the dairies onsite and creation of upland habitat that will be suitable for arroyo toad use north of the San Luis Rey River and south of SR 76 onsite. Arroyo toads have not been observed in these areas during prior surveys, and this appears to be the result of a number of factors, including dense soils that are compacted in most locations and unsuitable for burrowing, paved areas, and dense turf grasses and other dense vegetation that render the soils unsuitable for burrowing by adult toads. Restoration of these areas will improve the suitability of the soils to support adult arroyo toads. Construction of mitigation in these areas is not expected to adversely affect arroyo toads because they are not expected to occur within these areas and mitigation measures are provided to survey the area to further ensure that arroyo toads found onsite can be moved out of harms way prior to implementation of habitat restoration in these areas. Similar measures would be implemented in areas subject to potential habitat creation south of the river in the grazing fields as described in Section 5.0. Also, these measures are included for activities for the rest of the landfill project, even though it is highly unlikely that arroyo toads occur within the landfill site, the borrow areas, or other facilities within the greater landfill project.

The bridge will pass the 100-year flood flow, and the entire area under the bridge will allow arroyo toads to move freely upstream and downstream along the primary river corridor. Mitigation measures are described in Section 5.0 to construct toad passages under the access roads so that arroyo toads can move from one side of the access road to the other in upland areas. Therefore, arroyo toads will be able to move along the San Luis Rey River corridor as is the case at the present time, and additional upland habitat will be created onsite to support arroyo toads. Therefore, this project is expected to provide a net benefit for arroyo toads within the Action Area and within the region in general and will not contribute to cumulative effects in the action area or region. Impacts on the species will be fully compensated by mitigation measures, and the project will not jeopardize the continued existence of the species.

#### **4.4 EFFECTS OF THE ACTION ON COASTAL CALIFORNIA GNATCATCHER**

##### **4.4.1 Direct, Indirect, and Cumulative Impacts**

The development and operation of the landfill will directly impact approximately 224 acres of sage scrub and sage scrub/chaparral habitat types; however, the more recent focused surveys have failed to detect residents of this species on the property (San Diego County Department of Environmental Health 2003). No gnatcatchers were detected during the most recent surveys of the property by URS biologists in 2005.

Furthermore, the coastal sage scrub in the property is considered of low to marginal value for gnatcatchers (Ogden 1995). Because the coastal sage scrub on the property has never been used by resident gnatcatchers, no adverse effects on coastal California gnatcatcher will occur as a result of habitat loss, and the development and operation of the landfill will not jeopardize the continued existence of this species.

The Critical Habitat designated in 2000 approximately covers the western half of the landfill site, the borrow areas, part of the non-native grassland and ruderal vegetation in the cattle grazing field south of the San Luis Rey River, portions of access roads, including existing access roads onsite, and parts of SR 76 and adjacent land that is developed in its existing state (Plate 3). The primary constituent elements for coastal California gnatcatcher are absent in the developed lands onsite and the cattle grazing fields south of the San Luis Rey River. Primary constituent elements superficially appear to be present onsite in the western half of the landfill and portions of the borrow areas that support coastal sage scrub communities (224 acres of impact). However, coastal California gnatcatcher have never been identified as nesting in these areas. There are no human-induced factors that would prevent coastal California gnatcatcher from nesting in these areas, such as human disturbance or severe depression of their population in the local vicinity, and coastal California gnatcatcher would be expected to nest onsite if the habitat were truly suitable. Gregory Canyon is located over three miles east of Interstate 15 in an area that is generally lacking occupation by coastal California gnatcatcher. Suitable sage scrub habitat is present in the project vicinity; however, coastal California gnatcatcher sightings are few and typically consist of single individuals sighted during the post-breeding dispersal period (late summer and fall). The San Diego County Bird Atlas database shows only two recorded coastal California gnatcatcher sightings in the southern survey cell (E10) that also includes the southern half of the project area (P. Mock in Unitt 2004; see attached figure from the bird atlas). There were no coastal California gnatcatcher detections in the northern survey cell (D10) during the atlas study period (1997-2002). The distribution map in the atlas indicates no confirmed breeding in either cell, although cell E10 was categorized as “breeding possible.” Most of the atlas survey cells west of the project area have more frequent detections of coastal California gnatcatchers and most survey cells west of the project area are categorized as breeding behavior confirmed or as being highly likely. There are few coastal California gnatcatcher detections east of the project area.

The project area is located in an area that constrains the coastal California gnatcatcher breeding distribution because of highly variable weather conditions. The eastern (uphill) margin of the range approximates an isotherm of January low temperatures of 2.5° C, suggesting that the species' eastern distribution is limited by winter mortality at higher elevations (Mock 1998). Thus, despite the presence of apparently suitable habitat (*Artemisia*-dominated sage scrub) with slope gradients less than 40% (Figure 7), the lack of breeding coastal California gnatcatchers can be explained by the local winter weather pattern that precludes the establishment of a sustainable breeding population near the Gregory Canyon Landfill project area (Mock 1993, 1998, P. Mock in Unitt 2004). The USFWS Habitat Model apparently used regional vegetation data that was not accurate for the Gregory Canyon project vicinity. Approximately 243 acres of the Gregory Canyon project site were incorrectly identified as potentially suitable gnatcatcher habitat by this model, mostly in areas north of the San Luis Rey River. The Habitat Model also used climate data that does not reflect the true winter weather conditions that are relevant to California gnatcatcher distribution limits. The USFWS model used an isotherm of 5 °C (instead of 2.5 °C) as well as precipitation data that was not related to the known gnatcatcher distribution (McKinney 2006,

pers. comm.). Winter precipitation is a relevant factor rather than the annual mean precipitation data used by the USFWS model (Mock 1993, Pattern and Rotenberry 1999). Therefore, the project area does not appear to support all required primary constituent elements for coastal California gnatcatcher, and the areas designated as Critical Habitat onsite that do support coastal sage scrub communities appear to be unsuitable for supporting coastal California gnatcatcher breeding now or in the future without the project.

Construction of the bridge and the greater landfill project is not expected to result in the loss of Critical Habitat that actually supports the primary constituent elements for the species or can support the species at present or the foreseeable future. Therefore, construction and operation of the landfill and the bridge project is not expected to result in a reduction of regional or local populations of coastal California gnatcatcher, even though portions of these areas are within designated Critical Habitat.

The areas of potential Critical Habitat reopened for public comment in 2003 include the eastern one half of the landfill site, in addition to the areas designated as Critical Habitat in 2000. The additional areas onsite within the eastern half of the landfill are mixed coastal sage scrub/chaparral and chaparral habitats that are for the most part less suitable than the coastal sage scrub habitat to the west that has never supported nesting coastal California gnatcatcher. The reopened 2003 proposed Critical Habitat also extends further eastward to include large areas dominated by unvegetated rock outcrops with intersperse chaparral vegetation, and these areas are highly unsuitable for coastal California gnatcatcher. These additional areas within the reopened 2003 proposed Critical Habitat do not currently support coastal California gnatcatcher and lack the primary constituent elements to support coastal California gnatcatcher. Therefore, construction and operation of the landfill and the bridge project is not expected to result in a reduction of regional or local populations of coastal California gnatcatcher, even though portions of these areas are within the reopened 2003 proposed Critical Habitat.

A coastal California gnatcatcher was observed moving through the site in the vicinity of the borrow areas. Indirect effects of the landfill project include the potential to affect movement of coastal California gnatcatcher between areas of suitable habitat in the region. The landfill will result in removal of several large areas of coastal sage scrub habitat onsite; however, other areas alongside these facilities will remain as coastal sage scrub. The areas remaining should serve to allow coastal California gnatcatcher to pass through the areas while providing habitat for resting, foraging while they pass through, and general cover. The landfill and borrow areas themselves should not prevent a barrier or obstacle to movement and coastal California gnatcatcher should be able to move through the area without substantial impedance. Therefore, the bridge and greater landfill project should not result in a take of individual coastal California gnatcatcher or in fragmentation of Critical Habitat or other fragmentation of habitat that would adversely affect the species in the local area or region.

Mitigation measures are described in Section 5.0 that will further avoid, minimize, and compensate for potential effects of the project on coastal California gnatcatcher such that the continued existence of the species will no be jeopardized. These measures include potential preservation of habitat offsite and onsite creation of habitat that will favor the species.

## **4.5 EFFECTS OF THE ACTION ON QUINO CHECKERSPOT BUTTERFLY**

### **4.5.1 Direct, Indirect, and Cumulative Impacts**

Although host plant species exist on the property, the habitat is not suitable for quino checkerspot butterfly. This species has not been detected during numerous focused surveys on site since 1995. Critical Habitat for quino checkerspot butterfly does not occur onsite. No take of quino checkerspot butterfly will result from this project. Therefore, no adverse effects, whether direct, indirect, and/or cumulative, on this species will occur, and the development and operation of the landfill will not jeopardize the continued existence of this species.

## SECTION 5 MITIGATION AND MONITORING

### 5.1 MITIGATION MEASURES AND PROJECT DESIGN

The development and operation of the landfill, including implementation of mitigation measures, will impact listed species through habitat loss, potential loss of individuals, and indirect effects associated with landfill construction and operation activities. The following mitigation measures were developed as part of the 2006 RPDEIR to address the impacts described above, including impacts on Critical Habitat. For completeness, URS has included all of the mitigation measures from the 2006 RPDEIR in their entirety, although many address issues beyond the listed species addressed in this BA. Please note that the 2006 RPDEIR, which was undertaken pursuant to State law, may use different terminology than that used in this BA in describing the areas included in the development and operation of the Gregory Canyon Landfill. The terminology used in this BA was chosen expressly to correspond with definitions contained in the CFR and Federal guidance documents. For instance, under State law the term “project” is used to describe the broader development and operation of the Gregory Canyon Landfill.

Included in the project, 2.3 acres of riparian habitat will be created in the bridge grading area adjacent the San Luis Rey River. This will result in 2.3 acres of additional riparian and wetland habitats onsite as a self-mitigating action. Additionally, mitigation measures required in Section 5N of Proposition C relative to potential biological impacts (Proposition C was approved by voters in the County of San Diego in 1994) are included.

**MM 4.9.C5N:** All sensitive species and habitat impacted by the project shall be mitigated in accordance with requirements imposed by the USFWS as part of the Section 7 consultation.

**MM 4.16.C5C:** At least five (5) days each week, the Applicant shall inspect for, and clean up, all litter and illegal dumping which occurs on, or adjacent to, the landfill access road and that portion of Highway 76 between the intersection with Interstate 15 and the site. The clean up team shall consist of at least one truck with a minimum crew of two persons.

#### **Project Design Features**

##### **Construction Features:**

- Dairy removal will occur as part of the initial construction phase, which will enhance wildlife foraging opportunities, remove a significant cowbird attractant and reduce existing edge effects adjacent to the river.
- Borrow/Stockpile Area A will only be used during the initial construction period and then during landfill closure beginning in approximately year 25 and will be revegetated with native species between use periods and after final landfill closure.
- The haul road to Borrow/Stockpile Area A will only be used during the initial nine-month construction period and at final landfill closure beginning in approximately year 25. No improvements to the internal haul road are required; the only grading will occur where turnouts are proposed on the site plan.

- The low-flow crossing will only be used during initial construction during daylight hours and will be abandoned following completion of the bridge.
- Access road and bridge construction will occur during daylight hours when wildlife movement by species such as mammals is less frequent.
- The bridge pilings will be drilled in place, rather than driven, to minimize construction noise.
- Riparian habitat adjacent to the proposed bridge structure will only be cleared beneath and within 50 feet of the east side of the structure.

**Operational Features:**

- The dedication of a minimum of 1,313 acres of land for permanent open space will occur prior to operation and the open space will be managed in perpetuity for the protection of sensitive habitat and species.
- Upon final closure, the remaining undedicated portions of the landfill site will be placed in open space in perpetuity.
- Excavation and filling of the landfill will be phased to minimize ground disturbance and will only occur during the operational hours of the landfill.
- Native vegetative cover will be established on disturbed areas, including the borrow/stockpile areas and landfill footprint.
- Landfill perimeter fencing will allow for wildlife movement where topography is the barrier to human access during the life of the landfill. The chain link fencing will be replaced with three to five strand wire fencing at the time of closure of the landfill.
- The block of habitat between the two borrow/stockpile areas will be maintained to provide for riparian to upland movement opportunities for most species.
- The deck of the bridge will be 17.5 feet above the river bed allowing for wildlife movement underneath.
- Reflective strips will be used on the inside structure of the bridge. No lighting will be installed on the bridge.
- Slow traffic speeds will be required on the access road and bridge to reduce potential impacts to wildlife.
- The entire access road (including bridge) will be gated and locked to prevent human access during the non-operational hours of the landfill.
- Low impact, focused, and shielded lighting will be installed at the facilities area for security.
- A minimum of a 100-foot riparian buffer will be maintained between the landfill operations and the river habitat, except where the access road/bridge crosses the river.
- Rock crushing/processing and tire shredding will occur within the landfill footprint at least 1,500 feet from the nearest least Bell's vireo and southwestern willow flycatcher habitat.

- Vector control measures, including the use of daily cover, will be implemented to prevent nuisance species attracted to the landfill to cause predation impacts on native species. The methods for controlling or deterring nuisance species will be compatible with native species protection.
- No permanent sources of standing or flowing water will be produced on site to prevent increased amphibian predation by non-native ants and bullfrogs.
- An 18- to 20-foot berm will be constructed and maintained along the northern edge of the landfill footprint between the facilities area and the landfill footprint to reduce Phase I daily operational noise levels to sensitive habitat.

### 5.1.1 Additional Mitigation Measures

In addition to the mitigation measure contained in Proposition C, more specific mitigation measures have been developed to reduce potential biological impacts from project implementation identified in the environmental analysis of the 2006 RPDEIR.

*Note that the Final EIR will be updated to reflect impacts on 0.4 acres of southern willow scrub, 0.4 acres of disturbed southern willow scrub, and 0.2 acres of open channel.*

**Impact 4.9-1:** The following sensitive resources would be significantly impacted by the landfill project and related activities: 170.8 acres of coastal sage scrub, 1.7 acres of disturbed coastal sage scrub, 51.5 acres of coastal sage scrub/chaparral, 22.6 acres of coastal live oak woodland, 27.4 acres of chaparral, 15.8 acres of non-native grassland, 0.6 acres of native perennial grassland, 0.5 acres of southern willow scrub, 0.1 acres of open channel and 0.2 acres of cottonwood willow riparian forest.

**MM 4.9-1a:** Impacts to 170.8 acres of coastal sage scrub, 1.7 acres of disturbed coastal sage scrub, and 51.5 acres of coastal sage scrub/chaparral shall be mitigated at a minimum ratio of 2:1 through onsite creation or enhancement of 63.6 acres of coastal sage scrub habitat or coastal sage scrub/chaparral habitat, and the offsite acquisition of 384.4 acres of coastal sage scrub or coastal sage scrub/chaparral habitat. The onsite creation or enhancement of this resource shall be in a dedicated open space area. Offsite acquisitions may occur anywhere within the unincorporated area of San Diego County and a conservation easement shall be placed across the mitigation area to permanently protect the resource. Offsite acquisitions may occur either through a direct purchase or through mitigation credits from a habitat manager, mitigation bank, or environmental group. The landfill operator shall prepare and submit for approval a Habitat Resource Management Plan or equivalent with respect to any offsite properties for which management practices in accordance with County requirements have not already been established. The implementation of this mitigation shall be prior to or concurrent with the first construction that disturbs the coastal sage scrub habitat on site or as determined in consultation with the resource agencies.

**MM 4.9-1b:** Impacts to 22.6 acres of coast live woodland shall be mitigated at a minimum ratio of 3:1 by the onsite creation of 67.8 acres of coast live oak woodland. The onsite creation or enhancement of this resource shall be in a dedicated open space area. The implementation of this mitigation shall be prior to or concurrent with the first construction that disturbs coast live oak woodland or as determined in consultation with the resource agencies.

**MM 4.9-1c:** Impacts to 0.6 acres of native perennial grassland shall be mitigated at a minimum ratio of 3:1 through offsite acquisition of 1.8 acres of native perennial grassland. The offsite acquisition may occur anywhere within the unincorporated area of San Diego County and a conservation easement shall be placed across the mitigation area to permanently protect the resource. Offsite acquisitions may occur either through a direct purchase or through mitigation credits from a habitat manager, mitigation bank, or environmental group. The landfill operator shall prepare and submit for approval a Habitat Resource Management Plan or equivalent with respect to any offsite properties for which management practices in accordance with County requirements have not already been established. The implementation of this mitigation shall be prior to or concurrent with the first construction that disturbs the native perennial grassland on site or as determined in consultation with the appropriate agencies.

**MM 4.9-1d:** Impacts to 0.2 acres of southern willow scrub and 0.3 acres of disturbed southern willow scrub shall be mitigated at a minimum ratio of 4:1 by the onsite creation or enhancement of 2.0 acres of southern willow scrub habitat. Onsite creation or enhancement shall be in an area dedicated as open space. The implementation of this mitigation shall be prior to or concurrent with the first construction that disturbs the southern willow scrub or as determined in consultation with the resource agencies. *Note that this will be updated in the FEIR to reflect, impacts on 0.4 acres of southern willow scrub and 0.4 acres of disturbed southern willow scrub with mitigation of 3.2 acres onsite creation and/or enhancement.*

**MM 4.9-1e:** Impacts to 0.1 acre of open channel shall be mitigated through implementation of the Wetland Mitigation and Habitat Enhancement Plan described in MM 4.9-18 to restore habitat in the San Luis Rey River watershed onsite. *Note that this will be updated in the FEIR to reflect impacts on 0.2 acres of open channel, which is not jurisdictional waters of the U.S.*

**MM 4.9-1f:** Impacts to 0.2 acres of cottonwood willow riparian forest shall be mitigated at a minimum ratio of 4:1 by the onsite creation or enhancement of 0.8 acres of cottonwood willow riparian forest. Onsite creation or enhancement shall be in an area dedicated as open space. The implementation of this mitigation shall be prior to or concurrent with the first construction that disturbs the cottonwood-willow riparian forest on site, or as determined in consultation with the appropriate agencies.

**MM 4.9-1g:** Impacts to 27.4 acres of chaparral and 15.8 acres of non-native grassland shall be mitigated at a minimum ratio of 0.5:1 through offsite acquisition of 13.7 acres of chaparral and 7.9 acres of non-native grassland. Offsite acquisitions may occur anywhere within the unincorporated area of San Diego County and a conservation easement shall be placed across the mitigation area to permanently protect the resource. Offsite acquisitions may occur either through a direct purchase or through mitigation credits from a habitat manager, mitigation bank, or environmental group. The landfill operator shall prepare and submit for approval a Habitat Resource Management Plan or equivalent with respect to any offsite properties for which management practices in accordance with County requirements have not already been established. The implementation of this mitigation shall be prior to or concurrent with the first construction that disturbs the chaparral or non-native grassland habitat on site or as determined in consultation with the resource agencies.

**MM 4.9-1h:** Temporary construction fencing shall be erected under the supervision of a qualified biologist outside the delineated boundary of dedicated open space where it interfaces with impact areas and permanent fencing marked with signs shall be installed around the mitigation areas. Where impact areas are adjacent to coast live oak woodland, fencing shall be erected outside the canopy area at a

distance of 1.5 times the canopy radius of the outer trees. This fencing shall be erected prior to commencement of brushing or grading activities. The fencing (for example, strand wire or split rail) shall restrict human and equipment access but shall allow for wildlife movement.

### Animal Species

**Impact 4.9-2:** A total of 25 Engelmann oaks would be directly impacted as a result of the project. Since 100% of the population would be impacted, this impact would be significant.

**MM 4.9-2:** A 3:1 minimum replacement acreage (based on canopy area) of Engelmann oak trees shall be created by onsite creation or enhancement of this replacement acreage within the same area designated for creation or enhancement of coast live oak woodland, if possible. Otherwise, a separate acquisition of Engelmann oak trees at 3:1 minimum replacement acreage shall be required. Any onsite creation or enhancement shall be in an area dedicated as open space. Offsite acquisitions may occur anywhere within the unincorporated area of San Diego County and a conservation easement shall be placed across the mitigation area to permanently protect the resource. Offsite acquisitions may occur either through a direct purchase or through mitigation credits from a habitat manager, mitigation bank, or environmental group. The landfill operator shall prepare and submit for approval a Habitat Resource Management Plan or equivalent with respect to any offsite properties for which management practices in accordance with County requirements have not already been established. This acreage shall then be subtracted from the coast live oak woodland mitigation requirement (MM 4.9-1b) to avoid duplicate mitigation. The implementation of this mitigation shall be prior to or concurrent with the first construction that disturbs Engelmann oak or as determined in consultation with the resource agencies.

**Impact 4.9-3:** The loss of approximately .0002 acre of arroyo southwestern toad riparian breeding habitat from construction of the bridge would be significant.

**MM 4.9-3a:** In addition to the riparian habitat creation or enhancement described in MM4.9-1d and f, implementation of the Wetland Mitigation and Habitat Enhancement Program described in MM 4.9-18 shall be undertaken to mitigate impacts to arroyo southwestern toad riparian breeding habitat.

**MM 4.9-3b:** The removal of toad riparian breeding habitat from riparian vegetation clearing and channel excavation for the bridge shall occur from October through December to minimize potential impacts to breeding adults (including potential sedimentation impacts to toad eggs) and disbursing juveniles.

**Impact 4.9-4:** The project would result in the loss of approximately 17.5 acres of suitable arroyo southwestern toad upland habitat on the project site.

**MM 4.9-4:** Impacts to the 17.5 acres of suitable arroyo southwestern toad upland habitat on site impacted by the project shall be mitigated at a minimum ratio of 5:1 through on site creation or enhancement of 88 acres of arroyo toad habitat . The onsite creation or enhancement of this resource shall be in a dedicated open space area. The implementation of the mitigation shall be prior to or concurrent with the first construction that impacts the upland arroyo toad habitat on site or as determined in consultation with the resource agencies.

**Impact 4.9-5:** Individual toads may be lost from construction of the landfill and related facilities and the access road/bridge. In addition, individual toads may be lost from roadkill due to traffic on the access road, haul road to Borrow/Stockpile Area A, and low-flow crossing.

**MM 4.9-5a:** The construction zone for the bridge shall be fenced with exclusion fencing to prevent toad access to the construction zone. The fencing shall be a silt-screen type barrier comprised of a minimum 24-inch high fence with the remainder (minimum 12 inches) anchored firmly against the ground. The fence may be buried if necessary to exclude toad access. The fence locations shall be identified by a qualified biologist and adjusted as necessary. Exclusion fencing shall be monitored daily by a qualified biologist, and maintained in its original condition by construction personnel for the entire length of the construction period.

**MM 4.9-5b:** Pre- and post-exclusion fencing surveys within the construction zone for the bridge shall be conducted for arroyo southwestern toads by a biologist permitted by the USFWS to handle the toad. Prior to construction commencement, a minimum of three surveys shall be conducted by this biologist following installation of the fencing. Daily surveys shall be conducted each morning prior to construction activity. Any toads found shall be relocated to appropriate similar habitat outside project impact areas and in dedicated open space.

**MM 4.9-5c:** Exclusion fencing shall be installed along both sides of the access road for its entire length (except where sides of bridge act as barrier) as part of access road construction. The same exclusion fencing shall also wrap around the northern edge of the facilities area and continue east and south around the [1.8]-acre desiltation basin. The fencing shall continue until the topography becomes too steep or rocky on the east side of the landfill footprint as determined by a qualified biologist. The fencing shall be of a corrugated metal or other similar durable material and shall be a minimum of 24 inches high.

**MM 4.9-5d:** A minimum of three surveys shall be conducted by a biologist permitted by the USFWS to handle the arroyo southwestern toad following installation of the exclusion fencing along the access road and prior to access road use. Any toads found shall be relocated to appropriate similar habitat outside project impact areas and in dedicated open space.

**MM 4.9-5e:** A minimum of three surveys shall be conducted by a biologist permitted by the USFWS to handle the arroyo southwestern toad following installation of exclusion fencing around the facilities area and desiltation basin as described in MM 4.9-5c. Up to three additional surveys shall be conducted if favorable temperature and moisture conditions for toad activity have not already occurred during the first three surveys. Any toads found shall be relocated to appropriate similar habitat outside project impact areas and in dedicated open space.

**MM 4.9-5f:** At least one road undercrossing shall be installed in the fill beneath the access road north and south of the river. The design of the undercrossings shall be approved by the USFWS.

**MM 4.9-5g:** Exclusion fencing of the material and design described in MM 4.9-5c shall be installed on the north side of the haul road to Borrow/Stockpile Area A. The fencing shall be installed prior to initial project construction and shall be removed when initial project construction is complete, and the haul road is no longer in use. The exclusion fencing shall be re-installed prior to the use of Borrow/Stockpile Area

A, which begins again in approximately year 25. The fencing shall be removed once the landfill is completely closed and the haul road is no longer in use.

**MM 4.9-5h:** A minimum of three surveys shall be conducted by a biologist permitted by the USFWS to handle the arroyo southwestern toad following installation and re-installation of the exclusion fencing along the access road to Borrow/Stockpile Area A prior to its use. Up to three additional surveys shall be conducted during the use period if favorable temperature and moisture conditions for toad movement have not already occurred during the three original surveys. Any toads found shall be relocated to appropriate similar habitat outside project impact areas and in dedicated open space.

**MM 4.9-5i:** Exclusion fencing of the material and design described in MM 4.9-5c shall be installed along both sides of the low-flow crossing until the road connects with the haul road described in MM 4.9-5g. The fencing shall be installed during initial project construction and shall be removed when initial project construction is complete, and the crossing is no longer in use. A minimum of three surveys shall be conducted by a biologist permitted by the USFWS to handle the arroyo southwestern toad following installation of the fencing, and daily surveys shall be conducted each morning prior to use of the low-flow crossing. Any toads found shall be relocated to appropriate similar habitat outside project impact areas and in dedicated open space.

**Impact 4.9-6:** Direct loss of individual toads could occur in association with proposed landfill project mitigation measures to create, restore and/or enhance riparian habitats and riparian/upland transition habitats on the landfill site as described in MM 4.9-18.

**MM 4.9-6:** The USFWS (1999c) has indicated in the Final Recovery Plan for the species that short-term negative effects to individual toads from such activities may be offset by the long-term positive effects of implementing such a habitat enhancement program. Therefore, the habitat enhancement plan described in MM 4.9-18 shall be implemented. The final plan shall include precautions where possible to avoid impacts to the arroyo southwestern toad.

**Impact 4.9-7:** Riprap associated with the access road bridge could harbor potential predators of the arroyo toad.

**MM 4.9-7:** Prior to final design, the bridge abutment design specifications shall indicate that gaps in the riprap be filled with concrete.

**Impact 4.9-8:** If the northernmost SDG&E transmission tower is replaced during the critical breeding period of the golden eagle (December through May), the eagle may be affected.

**MM 4.9-8:** The northernmost tower shall be replaced during the period of July through October to avoid the golden eagle breeding season.

**Impact 4.9-9:** Abandonment of the golden eagle nest site and territory could occur due to the project.

**MM 4.9-9a:** Access to the Gregory Canyon nesting site(s) shall be restricted to eagle specialists and researchers conducting monitoring.

**MM 4.9-9b:** Prior to ground disturbance, a pre-construction survey for the eagle pair shall be conducted to determine if and where the eagles are nesting on site. Weekly monitoring of the eagle pair shall be conducted by an eagle specialist during the breeding season (December through May) to confirm the eagle pair is exhibiting reproductive behavior patterns, such as nest building. After one year of construction activity, if the monitoring determines that the eagles have abandoned the site, the applicant shall create a habitat acquisition fund for purchase and preservation of off-site known or potential golden eagle nesting habitat or shall purchase an equivalent amount of golden eagle nesting habitat to be included in the MSCP Preserve. The amount of funding or habitat purchase shall be negotiated with the County.

**MM 4.9-9c:** Initial landfill construction activity less than 2,000 feet from the eagle's nest shall begin as close to the end of the eagle breeding season in June to allow the eagle pair on site to become conditioned to the activity prior to the next breeding season starting in December.

**Impact 4.9-10:** Movement of the southernmost SDG&E tower proposed for relocation while the red-tailed hawk nest is active (likely between December and May) will not be allowed under the Migratory Bird Treaty Act. Likewise, removal of any raptor nest while it is active will not be allowed under the act.

**MM 4.9-10:** The southernmost tower shall be moved during the period of June through November or at any time when the nest is not active. Likewise, any raptor nest removal shall only occur when the nest is inactive. A qualified biologist shall determine whether or not a raptor nest is active.

**Impact 4.9-11:** Direct impacts to least Bell's vireo and southwestern willow fly catcher habitat including 0.5 acres of southern willow scrub or disturbed southern willow scrub during the breeding season would be significant.

**MM 4.9-11a:** Removal of any riparian habitat shall only occur from October through December to avoid the breeding seasons of these bird species and to minimize potential impacts to the arroyo southwestern toad.

**MM 4.9-11b:** Impacts to vireo and flycatcher habitat shall be mitigated through riparian habitat creation as described under MM 4.9-1d. The Wetland Mitigation and Habitat Enhancement Plan described under MM 4.9-18 would also benefit these species.

**MM 4.9-11c:** The project applicant shall provide funding for cowbird trapping along the San Luis Rey River on the project site for a period of five years from initial landfill operation.

**Impact 4.9-12:** Initial construction, including the use of the low-flow crossing, and bridge construction could produce short-term construction noise that will potentially exceed the 60 dB(A)  $L_{eq}$  threshold during the vireo breeding season (March 15 through September 15) and the southwestern willow flycatcher breeding season (late April through mid-September).

**MM 4.9-12a:** Daily noise monitoring by a qualified acoustician shall be conducted between March 15 and September 15 during initial construction to verify that noise levels are below 60 dB(A)  $L_{eq}$  in vireo and flycatcher habitat. If the 60 dB(A)  $L_{eq}$  is exceeded, the acoustician shall work with the construction contractor to make operational changes and/or barriers designed by the acoustician shall be installed prior to March 15 or immediately if during the breeding season, to reduce noise levels during the breeding

season. Weekly noise monitoring shall occur following operational changes and/or installation of barriers to ensure their effectiveness. If ineffective, the acoustician shall work with the construction contractor to make additional operational changes or to install other barriers that will reduce noise to less than 60 dB(A)  $L_{eq}$ .

**MM 4.9-12b:** The low-flow crossing shall only be used between September 15 and March 15. Use of the crossing could occur outside of that time period if daily monitoring by a qualified biologist determines that vireos and flycatchers have not yet arrived on site or have migrated out of the area early, or if operational changes can be made and/or barriers designed by an acoustician can be installed prior to March 15 to reduce noise levels to less than 60 dB(A)  $L_{eq}$  in the vireo and flycatcher habitat. Daily noise monitoring shall be conducted in accordance with MM 4.9-12a and noise reduction measures contained in MM 4.9-12a shall be implemented, if necessary.

**MM 4.9-12c:** Bridge construction shall only occur between September 15 and March 15 unless daily monitoring by a qualified biologist during the breeding season determines that vireos and flycatchers have not yet arrived on site or have migrated out of the area early or if operational changes can be made and/or barriers designed by an acoustician can be installed prior to March 15 to reduce noise levels to less than 60 dB(A)  $L_{eq}$  in vireo and flycatcher habitat. Daily noise monitoring shall be conducted in accordance with MM 4.9-12a and noise reduction measures contained in MM 4.9-12a shall be implemented, if necessary.

**Impact 4.9-13:** Implementation of the riparian habitat creation and restoration and/or enhancement program (required as mitigation to offset direct impacts to the least Bell's vireo and southwestern willow flycatcher) could affect these species through excessive equipment noise if installation occurs during their breeding seasons.

**MM 4.9-13:** Mitigation activities shall only occur between September 15 and March 15 unless operational changes can be made and/or barriers designed by an acoustician can be installed prior to March 15 to reduce noise levels to less than 60 dB(A)  $L_{eq}$  in vireo and flycatcher habitat. Daily noise monitoring shall be conducted between March 15 and September 15 to verify that the measures are effective. If the 60 dB(A)  $L_{eq}$  is exceeded, the acoustician shall work with the contractor to make additional operational changes or to install additional barriers that will reduce noise to less than 60 dB(A)  $L_{eq}$ .

**Impact 4.9-14:** A total of 20.0 acres of vireo and flycatcher habitat would be significantly impacted by traffic noise caused by the project.

**MM 4.9-14:** Indirect impacts to a total of 20.0 acres of vireo and flycatcher habitat caused by project traffic noise shall be mitigated through onsite creation or enhancement of 17.1 acres of vireo and flycatcher habitat, and the offsite acquisition of 2.9 acres of vireo and flycatcher habitat. Onsite and offsite mitigation areas would not be affected by noise levels of 60 dB (A)  $L_{eq}$  or greater as a result of project-generated or cumulative traffic. Any onsite creation or enhancement shall be in area dedicated as open space. Any offsite acquisition may occur anywhere within the unincorporated area of San Diego County and a conservation easement shall be placed across the area to permanently protect the resource. Offsite acquisitions may occur either through a direct purchase or mitigation credits from a habitat manager, mitigation bank or environmental group. The landfill operator shall prepare and submit for

approval a Habitat Resource Management Plan or equivalent with respect to any offsite properties for which management practices in accordance with County requirements have not already been established. The implementation of this mitigation shall be prior to or concurrent with construction that impacts vireo or flycatcher habitat or as otherwise determined in consultation with the resource agencies.

**Impact 4.9-15:** Noise produced by landfill equipment operating at the closest point to vireo and flycatcher habitat within the landfill footprint and Borrow/Stockpile Area A (approximately 520 feet away) will potentially create noise levels in excess of 60 dB(A)  $L_{eq}$  in that habitat, and may affect the vireo and flycatcher during their breeding seasons.

**MM 4.9-15a:** A temporary 12-foot high wall or berm shall be constructed along the northern edge of Borrow/Stockpile Area A outside the vireo/flycatcher breeding season (March 15 to September 15) and prior to the use of Borrow/Stockpile Area A. The barrier can be removed once topography provides the necessary noise barrier to reduce noise levels in the habitat during the breeding seasons to less than 60 dB(A)  $L_{eq}$ .

**MM 4.9-15b:** Noise monitoring shall be conducted weekly for up to one month by a qualified acoustician to verify that operational noise levels are below 60 dB(A)  $L_{eq}$  in vireo and flycatcher habitat. If noise levels equal or exceed 60 dB(A)  $L_{eq}$ , a 16-foot high permanent noise wall shall be installed prior to the vireo breeding season (March 15 to September 15, includes flycatcher breeding season) or immediately if during the breeding season. If noise levels exceed 60dB(A)  $L_{eq}$  during the breeding season, operational changes shall be made to reduce noise levels to less than 60 dB(A) while the noise wall is being constructed. The noise wall shall be constructed east of the knoll between the internal haul road and the top of slope for the facilities area to block truck noise emanating into the habitat.

### General Impacts

**Impact 4.9-16:** Potential impacts from potential human activities will occur because of the edge effects these activities could create.

**MM 4.9-16:** Throughout the life of the project, access routes shall be restricted to existing roads, and entry into non-impact areas shall be restricted by the landfill operator. Areas not directly impacted by the project shall be posted with signs precluding access due to habitat sensitivity. A public education program shall be developed by a qualified biologist and shall be implemented to inform landfill staff and visitors about access restrictions and the sensitivity of habitats on site.

**Impact 4.9-17:** The potential for non-native plant species invasion will increase for the area of channel excavation associated with construction of the bridge and for temporary and permanent slopes.

**MM 4.9-17a:** Control of invasive, exotic plant species shall occur as described in the habitat enhancement plan presented in MM 4.9-18 and shall include the channel excavation area associated with construction of the bridge.

**MM 4.9-17b:** Temporary and permanent slopes shall be revegetated with native plant species to inhibit the growth of non-natives.

**Impact 4.9-18:** Loss of habitats, habitat fragmentation, decreased water quality, night lighting, human activity, and the introduction of non-native plant species are cumulatively significant impacts to which the project would contribute. In addition, during the life of the landfill, cumulatively significant indirect traffic noise impacts that could affect the breeding success of endangered bird species inhabiting this portion of the river could occur. Finally, landfill operations and cell construction could be on-going throughout the Pipeline No. 6 construction period and could lead to periodic cumulative impacts.

**MM 4.9-18:** The project applicant shall implement a habitat enhancement plan to improve the San Luis Rey River watershed on site as described below and within the enhancement area shown in Exhibit 4.9-6 of this document in accordance with the Wetland Mitigation and Habitat Enhancement Plan set forth in Appendix L, as updated and modified.

Beyond the mitigation obligation associated with compensating for direct and indirect project impacts to vegetation communities, the project applicant for the Gregory Canyon Landfill shall be required to implement a habitat enhancement program for improvements to the San Luis Rey River watershed. In addition to the proposed open space dedication (1,313 acres), the project applicant shall create or enhance 131.4 acres of upland areas and 81.2 acres of riparian areas within the portion of the San Luis Rey River corridor contained on site (Exhibit 4.9-6). The restoration would likely be phased and would not occur all at one time.

The habitat enhancement program shall focus on the restoration of riparian and upland habitats within the San Luis Rey River floodplain on site, in the areas indicated on Exhibit 4.9-6, above and beyond the project's direct mitigation obligations for vegetation community impacts. The San Luis Rey River has been identified as one of the most easily restorable rivers in southern California (ACOE 1981). This portion of the program shall consist of the restoration of lost and/or damaged habitat and water quality caused by the long-term agricultural use of the property and the removal of highly invasive, exotic plant species. The project applicant is proposing to remove the existing Verboom dairy operations and most structures and all equipment associated with the Verboom and Lucio dairies from the site in concert with the initial construction of the landfill. Under this enhancement program, man-made berms and weed seed banks in the river's watershed shall be excavated to restore more historic river flows and invasive, non-native plant species would be replaced with native plantings. The excavation shall be focused on bringing the ground elevations down to a level that would connect the areas hydrologically with the existing groundwater system and to create a series of terraces that taper into the existing upland habitat. The excavation would be done in a manner that would prevent adverse effects on upstream and downstream properties. All upland and drier riparian areas shall be planted with tree species known from the site and hand-seeded to initiate native plant reestablishment. Weed control and monitoring shall be implemented regularly during the first five years of the project to prevent the reestablishment of non-native plant species. The goal of the restoration shall be to provide breeding and upland habitat for endangered species and widen the vegetative buffer around the riparian corridor present on site.

The dedicated open space onsite, including the restored river corridor, shall be managed with a financial contribution provided by the project applicant. The project applicant shall work with the USFWS and the CDFG to identify a qualified conservancy or other non-profit organization to be responsible for implementing long-term management activities for the restored river. The type of management activities shall depend upon the condition of the site, the resources present, and the funds available to manage those

resources. Management activities shall include restriction of vehicular and human access through the installation of fencing and signs, control of exotic species (e.g., brown-headed cowbirds and giant reed (*Arundo donax*)), control of illegal dumping and monitoring endangered species populations. The landfill operator shall prepare and submit for approval a Habitat Resource Management Plan or equivalent with respect to onsite dedicated open space, or created or enhanced habitat areas.

**Impact 4.9-19:** Construction impacts to 9.5 acres of coastal sage scrub and 0.8 acre of coast live oak woodland will occur from relocation of the First San Diego Aqueduct pipelines. In addition, potential impacts could occur during construction to wildlife, in particular the arroyo southwestern toad, least Bell's vireo, and southwestern willow flycatcher.

**MM 4.9-19a:** The construction easement (minus permanent access road) shall be revegetated with coastal sage scrub immediately following completion of the pipeline relocation on the landfill site. The landscape plans shall incorporate this revegetation requirement.

**MM 4.9-19b:** Impacts to coastal sage scrub shall be mitigated at a minimum ratio of 2:1 through offsite acquisition of 19.0 acres of coastal sage scrub. The offsite acquisition may occur anywhere within the unincorporated area of San Diego County and a conservation easement shall be placed the mitigation area to permanently protect the resource. Offsite acquisitions may occur either through a direct purchase or through mitigation credits from a habitat manager, mitigation bank, or environmental group. The landfill operator shall prepare and submit for approval a Habitat Resource Management Plan or equivalent with respect to onsite dedicated open space, or created or enhanced habitat areas.

**MM 4.9-19c:** Coast live oak woodland shall be mitigated at a 2:1 ratio by the off-site acquisition of 1.6 acres of existing coast live oak woodland of like quality. The off-site acquisition shall occur in an unincorporated area of San Diego County. A conservation easement shall be placed across the off-site mitigation area to permanently protect the resource. If possible, individual oak trees shall be salvaged from the impact area and transplanted to appropriate open space habitat on the landfill site. The implementation of this mitigation shall be prior to or concurrent with construction or as otherwise determined in consultation with the County. *Note that the 2006 RPDEIR inadvertently did not update this condition to provide for a 3:1 ratio and 2.4 acres of mitigation. This will be updated in the Final EIR for the project.*

**MM 4.9-19d:** Temporary construction fencing shall be erected under the supervision of a qualified biologist outside the delineated boundary of dedicated open space (Figure 3b) where it interfaces with impact areas. Where impact areas are adjacent to coast live oak woodland, fencing shall be erected outside the canopy area at a distance of 1.5 times the canopy radius of the outer trees. This fencing shall be erected prior to commencement of brushing or grading activities. The fencing (for example, strand wire or split rail) shall restrict human and equipment access but shall allow for wildlife movement.

**MM 4.9-19e:** Impacts to potential arroyo southwestern toad upland habitat, including designated Critical Habitat, from the relocation of the pipelines shall be mitigated through the Wetland Mitigation and Habitat Enhancement Plan to be implemented as part of the landfill project.

**MM 4.9-19f:** Temporary erosion control measures such as silt fencing, sand bags, and straw matting shall be used to reduce potential siltation of drainage courses including the San Luis Rey River.

**MM 4.9-19g:** The pipeline easement shall be fenced within two kilometers of the San Luis Rey River with exclusion fencing to prevent arroyo southwestern toad access to the construction zone. The fencing shall be a silt-screen type barrier comprised of a minimum 24-inch high fence with the remainder (minimum 12 inches) anchored firmly against the ground. The fence may be buried if necessary to exclude toad access. The fence locations shall be identified by a qualified biologist and adjusted as necessary. Exclusion fencing shall be monitored by a qualified biologist and maintained in its original condition by construction personnel for the entire length of the construction period.

**MM 4.9-19h:** Pre- and post-exclusion fencing surveys within the construction zone shall be conducted for arroyo southwestern toads by a biologist permitted by the USFWS to handle the toad. Prior to construction commencement, a minimum of three surveys shall be conducted by this biologist following installation of the fencing. Any toads found shall be relocated to appropriate similar habitat outside project impact areas and in dedicated open space on the landfill site.

**MM 4.9-19i:** The trench dug for relocation of the pipelines shall be securely covered at the end of construction each day such that wildlife does not become trapped in the trench.

**MM 4.9-19j:** Construction noise shall not result in exceedances of 60 dB(A)  $L_{eq}$  on least Bell's vireo and southwestern willow flycatcher habitat between March 15 and September 15 unless noise attenuation measures designed by an acoustician are implemented to reduce noise levels in vireo/flycatcher habitat to below 60 dB(A)  $L_{eq}$ .

**Implementation of Court's Order.** In the event any final judgment is entered determining that the creation or enhancement of habitat on the landfill site within the 1313 acres of dedicated open space provided by Proposition C violates any provision of Proposition C, any of these mitigation measures permitting the creation or enhancement of habitat on-site shall be construed to mandate offsite acquisition of this habitat. The offsite acquisition may occur anywhere within the unincorporated area of San Diego County and a conservation easement shall be placed across the mitigation area to permanently protect the resource. Offsite acquisitions might occur either through a direct purchase or through mitigation credits from a habitat manager, mitigation bank, or environmental group. The landfill operator shall prepare and submit for approval a Habitat Resource Management Plan or equivalent with respect to onsite dedicated open space, or created or enhanced habitat areas.

### 5.1.2 LEVEL OF SIGNIFICANCE AFTER MITIGATION

The 2006 RPDEIR concluded that with implementation of the mitigation measures for significant impacts to sensitive biological resources including coastal sage scrub, coastal sage scrub/chaparral, southern willow scrub, chaparral, non-native grassland, open channel, coast live oak woodland, native perennial grassland, Engelmann oak, arroyo southwestern toad, least Bell's vireo, southwestern willow flycatcher, and golden eagle, the project impacts to sensitive biological resources would be rendered less than significant since all habitat impacted would be mitigated through creation or enhancement of habitats on site or through offsite acquisition at appropriate mitigation ratios, and precautions would be taken to avoid impacts to sensitive habitat and species. With implementation of MM 4.9-18, onsite creation or enhancement, or offsite acquisition, the project's contribution to cumulative impacts to biological resources would be less than significant.

**SECTION 6 CONCLUSION**

The proposed development and operation of the landfill is not likely to adversely affect federally listed or State-listed species, including designated or proposed Critical Habitat. The construction of the bridge replacement and the development and operation of the landfill will not jeopardize the continued existence of these species, as impacts to these species and Critical Habitat will be offset with the implementation of the proposed mitigation measures (see Section 5.0).

California gnatcatcher has not occurred on the property in recent years, and QCB have not occurred on the property even though potential habitat exists. Least Bell's vireo, southwestern willow flycatcher, and arroyo southwestern toad occur on the property and are primarily associated with the riparian habitat and aquatic habitat along the San Luis Rey River. Implementation of the proposed mitigation measures will avoid, minimize, and compensate for impacts on these species and/or their Critical Habitat, and the continued existence of these species will not be jeopardized.

**SECTION 7 REFERENCES**

- 59 FR 22. 1994. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Least Bell's Vireo. February 2, 1994.
- 65 FR 206. 2000. Endangered and Threatened Wildlife and Plants; Final Determination of Critical Habitat for the Coastal California Gnatcatcher. October 24, 2000.
- 68 FR 79. 2003. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Coastal California Gnatcatcher (*Polioptila californica californica*) and Determination of District Vertebrate Population Segment for the California Gnatcatcher (*Polioptila californica*); Proposed Rule. April 24, 2003.
- 70 FR 201. 2005. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Southwestern Willow Flycatcher (*Empidonax traillii extimus*); Final Rule. October 19, 2005.
- Butler Roach Group. 1990. Draft Environmental Impact Report/Environmental Impact Statement for the proposed North County Class III landfill. Prepared for: County of San Diego Dept. of Public Works and Bureau of Land Management, California Desert District. January 1990.
- Dudek and Associates (Dudek). 1995. Biological Resources Report for the Gregory Canyon Landfill Project, San Diego County, California. Prepared for: Gregory Canyon Ltd. August 1995.
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- Holland, R.F. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California, State of California. The Resources Agency. 156 pp.
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- San Diego County Department of Environmental Health. 2003. Gregory Canyon Landfill EIR. State Clearinghouse No. 1995061007.
- San Diego County Department of Environmental Health. 2006. Gregory Canyon Landfill Revised Partial Draft EIR. State Clearinghouse No. 1995061007. July 2006.
- U.S. Fish and Wildlife Service (USFWS). 1997. Coastal California Gnatcatcher Habitat Model.
- U.S. Fish and Wildlife Service (USFWS). 1999. Arroyo Southwestern Toad (*Bufo microscaphus californicus*) Recovery Plan. Portland, Oregon. 119 pp. 1999.
- U.S. Fish and Wildlife Service and National Marine Fisheries Service. 1998. Endangered Species Act Consultation Handbook, Procedures for Conducting Section 7 Consultation and Conferences. March 1998.
- URS. 2006. Biology Technical Report for Gregory Canyon Landfill CEQA Update. June 16, 2006.



**Table 1**  
**Vegetation Impacts and Mitigation Requirements**

Vegetation Type	Acreage of Impacts	Mitigation Ratio	Mitigation Acreage
Agricultural Land	9.9		0.0
Agriculture/Developed	2.5		0.0
Chaparral	27.4	0.5	13.7
Rock Outcrop/Chaparral	1.6		0.0
Coastal Sage Scrub/Chaparral	51.5	2	103.0
Coastal Sage Scrub	170.8	2	341.6
Burned Coastal Sage Scrub	0.0	2	0.0
Disturbed Coastal Sage Scrub	1.7	2	3.4
Coast Live Oak Woodland	22.6	3	67.8
Southern Willow Scrub*	0.4	4	1.6
Cottonwood-willow Riparian Forest	0.2	4	0.8
Disturbed Southern Willow Scrub*	0.4	4	1.6
Open Channel * **	0.2		0.0
Native Perennial Grassland	0.6	3	1.8
Non-Native Grassland	15.8	0.5	7.9
Olives	0.3		0.0
Ornamental	0.4		0.0
Disturbed Habitat	2.3		0.0
<b>Total*</b>	<b>308.6</b>	<b>NA</b>	<b>543.2</b>

\* Impact and mitigation areas have been updated from the 2006 RPDEIR, and the values in the 2006 RPDEIR will be updated in the Final EIR.

\*\*Note that "Open Channel" does not indicate jurisdictional waters of the U.S. Open Channel in this sense is the same as open sand.

**Table 2**  
**Results of URS 2005 Arroyo Toad Surveys Within the**  
**Action Area**

Survey Date	16-Mar-05	6-Apr-05	2-May-05	17-May-05
Time Onsite	1950-2200	2120-2340	2100-2330	2040-2130
Survey Conditions	57-52°F clear, winds 0-1 mph	60-57°F, clear, winds 0-1 mph	62-60°F, Overcast, winds 0-2 mph	64°F, clear, winds 0- 2 mph
No. of Arroyo Toads Detected*	4	11 to 15**	3	2
Location***	San Luis Rey River	San Luis Rey River	San Luis Rey River	San Luis Rey River

\*Includes arroyo toads directly observed and detected aurally.

\*\*A range is provided because an exact number could not be determined based on aural detection.

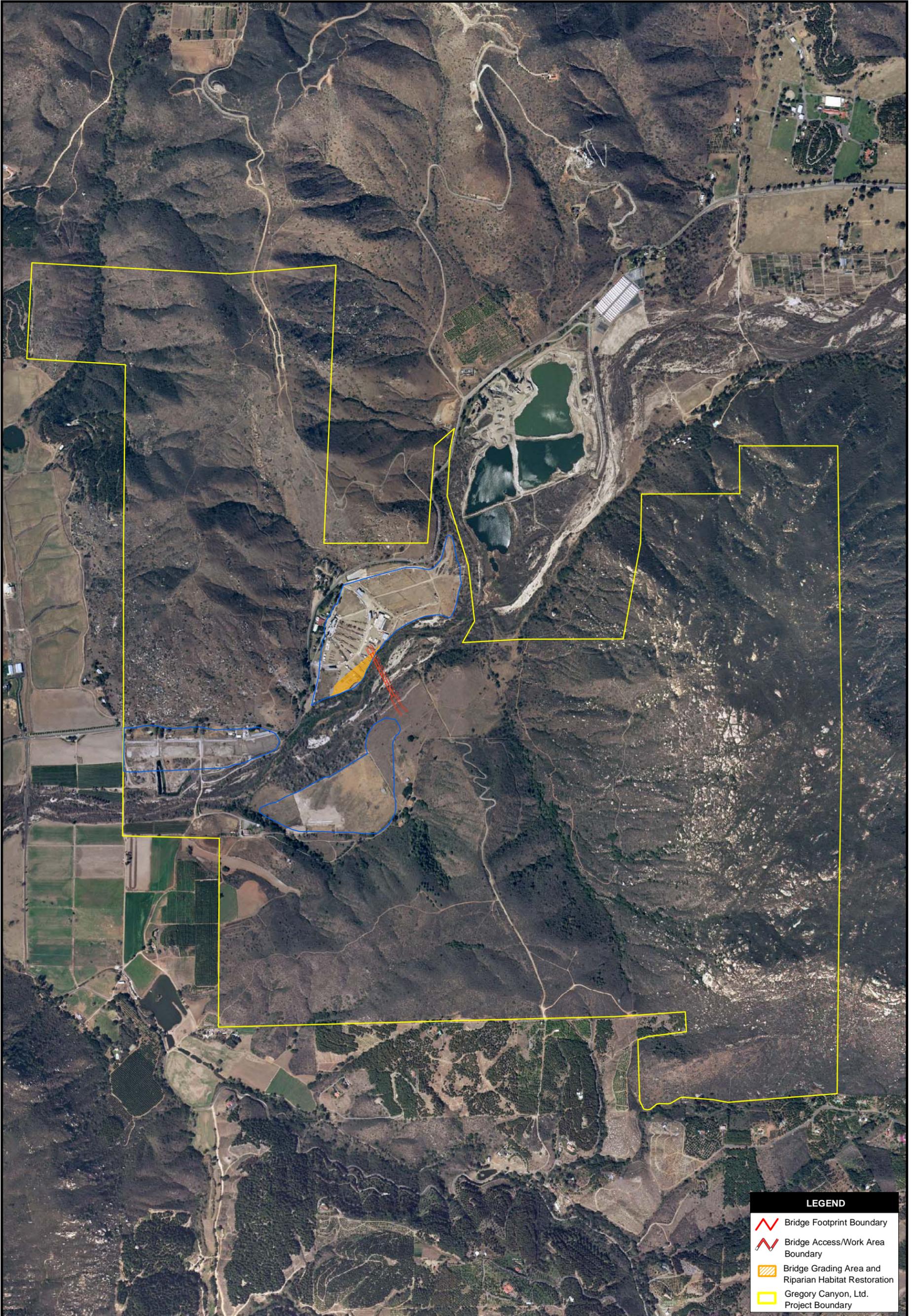
\*\*\*Locations of observed toads plotted on Figure 2-1.

**Table 3**  
**Acres of Suitable Arroyo Toad Soil Types Based on NRCS Mapping**  
**Within the Project Impact Footprint, Including the Landfill and Excluding Riparian Habitat**

Soil Type	Soil Code	Acres
Fallbrook sandy loam, 9 to 15 percent slopes, eroded	FaD2	9.9
Tujunga sand, 0 to 5 percent slopes	TuB	3.5
Visalia sandy loam, 0 to 2 percent slopes	VaA	3.5
Visalia sandy loam, 2 to 5 percent slopes	VaB	0.6
<b>Total:</b>		<b>17.5</b>







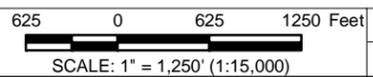
**LEGEND**

-  Bridge Footprint Boundary
-  Bridge Access/Work Area Boundary
-  Bridge Grading Area and Riparian Habitat Restoration
-  Gregory Canyon, Ltd. Project Boundary



SOURCES: LENSKA (2002 Aerial Photograph), HELIX (Project Boundary, 1999), Herzog (Bridge Design, 2004); Nolte (Bridge Grading, 2005).

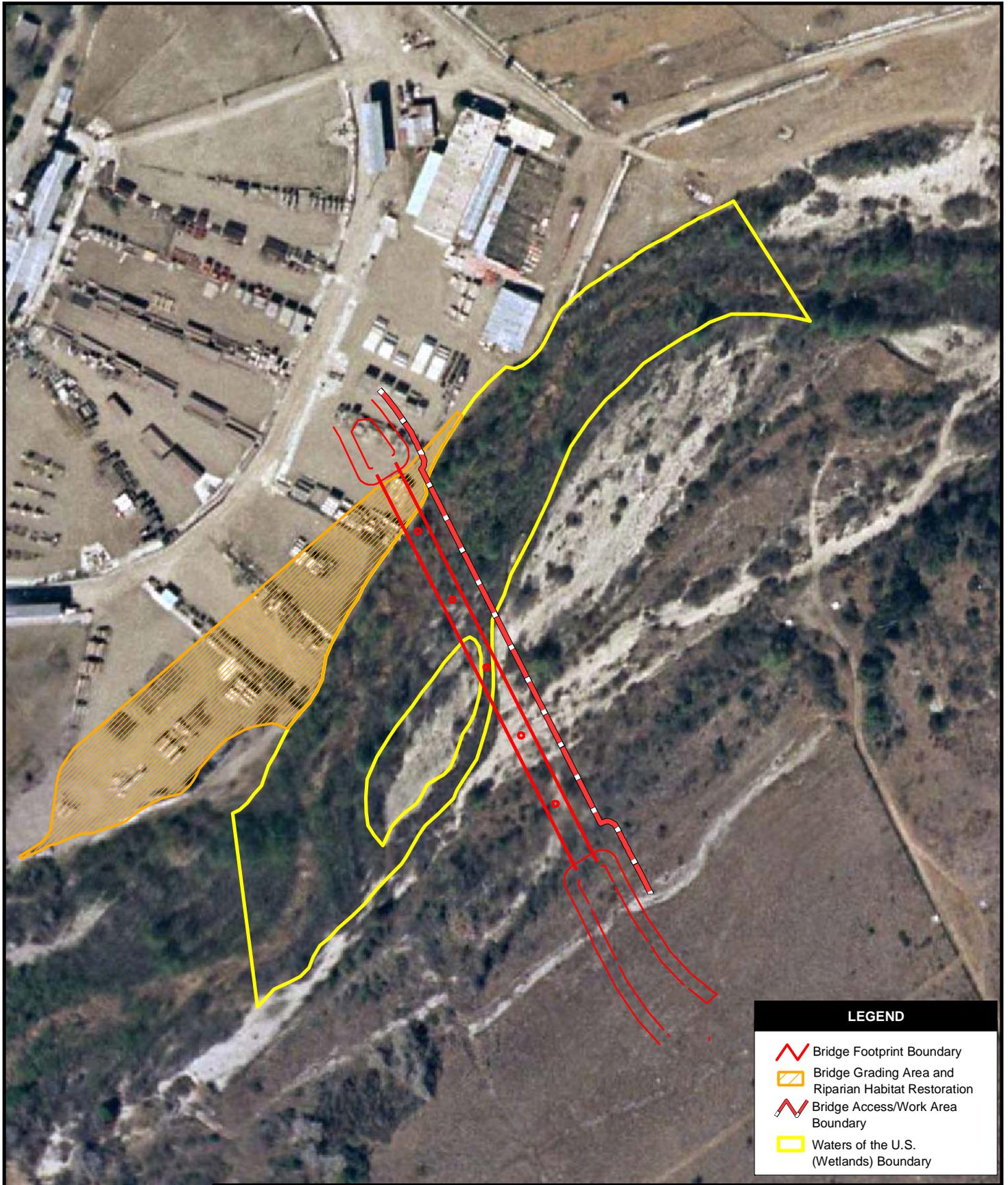
**PROJECT BOUNDARY  
GREGORY CANYON LTD. LLC**



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FIG. NO:  
2



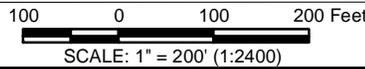
**LEGEND**

-  Bridge Footprint Boundary
-  Bridge Grading Area and Riparian Habitat Restoration
-  Bridge Access/Work Area Boundary
-  Waters of the U.S. (Wetlands) Boundary



SOURCES: LENSKA (2002 Aerial photograph), Herzog (bridge design, 2004), URS (Waters of the U.S.), Nolte & Assoc. (bridge grading 2005)..

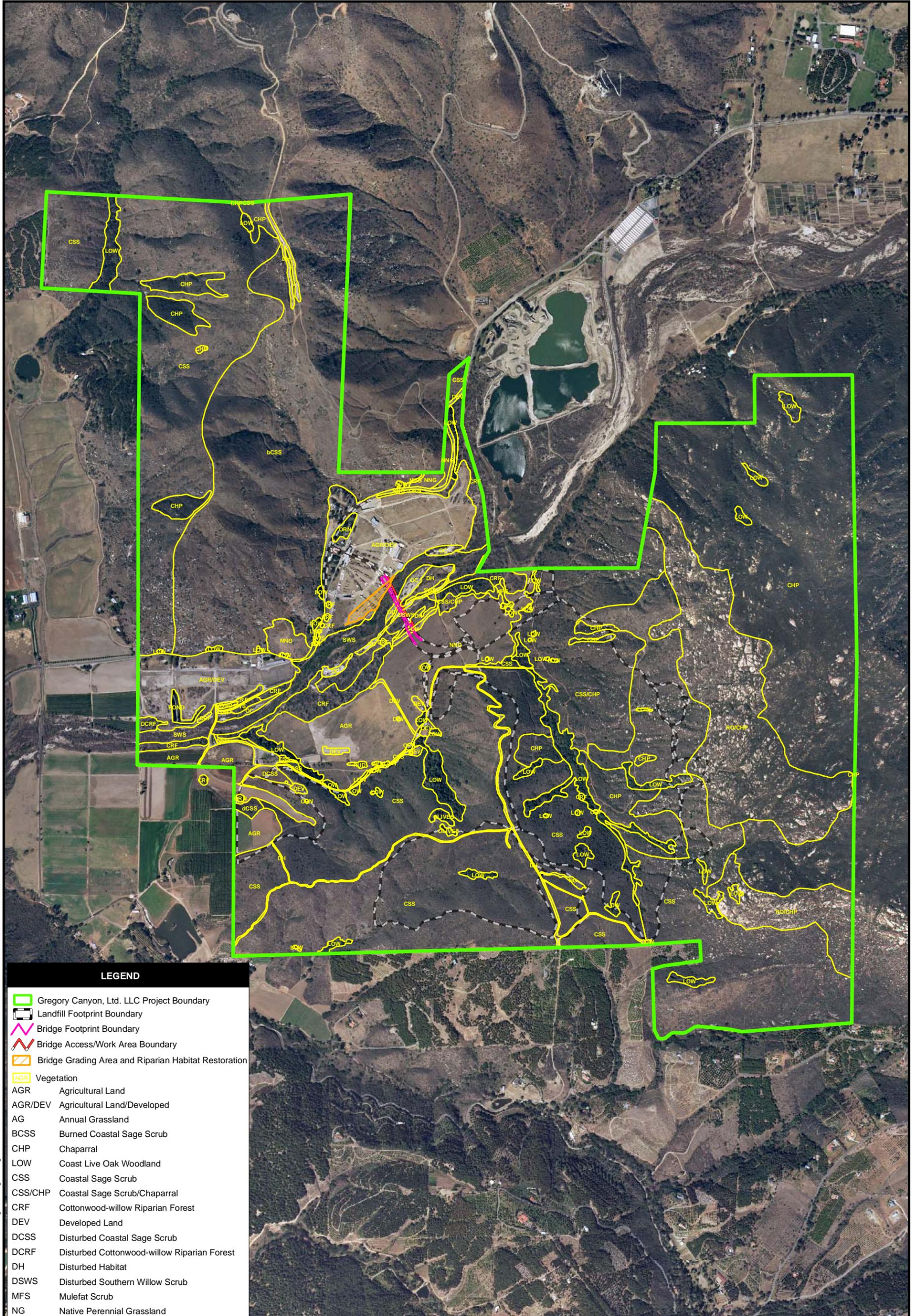
**BRIDGE FOOTPRINT OVERLAIN ON WATERS OF THE U.S.**



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FIG. NO:  
**3**



**LEGEND**

- ▭ Gregory Canyon, Ltd. LLC Project Boundary
- Landfill Footprint Boundary
- ▬ Bridge Footprint Boundary
- ▬ Bridge Access/Work Area Boundary
- ▭ Bridge Grading Area and Riparian Habitat Restoration
- Vegetation
- AGR Agricultural Land
- AGR/DEV Agricultural Land/Developed
- AG Annual Grassland
- BCSS Burned Coastal Sage Scrub
- CHP Chaparral
- LOW Coast Live Oak Woodland
- CSS Coastal Sage Scrub
- CSS/CHP Coastal Sage Scrub/Chaparral
- CRF Cottonwood-willow Riparian Forest
- DEV Developed Land
- DCSS Disturbed Coastal Sage Scrub
- DCRF Disturbed Cottonwood-willow Riparian Forest
- DH Disturbed Habitat
- DSWS Disturbed Southern Willow Scrub
- MFS Mulefat Scrub
- NG Native Perennial Grassland
- OLIVES Olives
- OC Open Channel
- POND Ponds
- RO/CHP Rock Outcrop/Chaparral
- SWS Southern Willow Scrub



SOURCES: LENSKA (2002 Aerial Photograph), HELIX (Project Boundary, 1999), Herzog (Bridge Design, 2004), Nolte & Assoc. (bridge grading 2005).

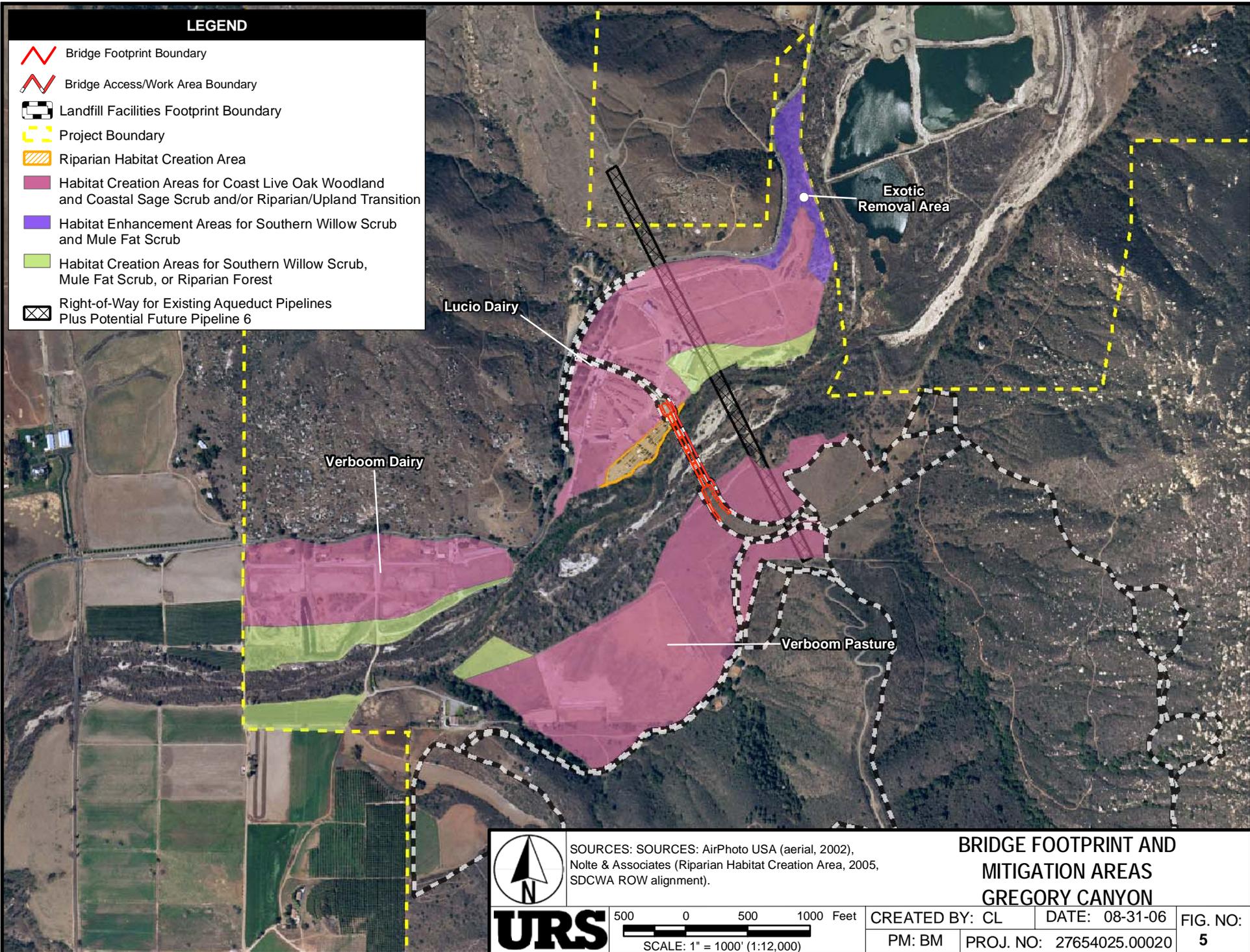


625 0 625 1250 Feet  
 SCALE: 1" = 1,250' (1:15,000)

**BRIDGE FOOTPRINT OVERLAIN ON VEGETATION HABITATS**

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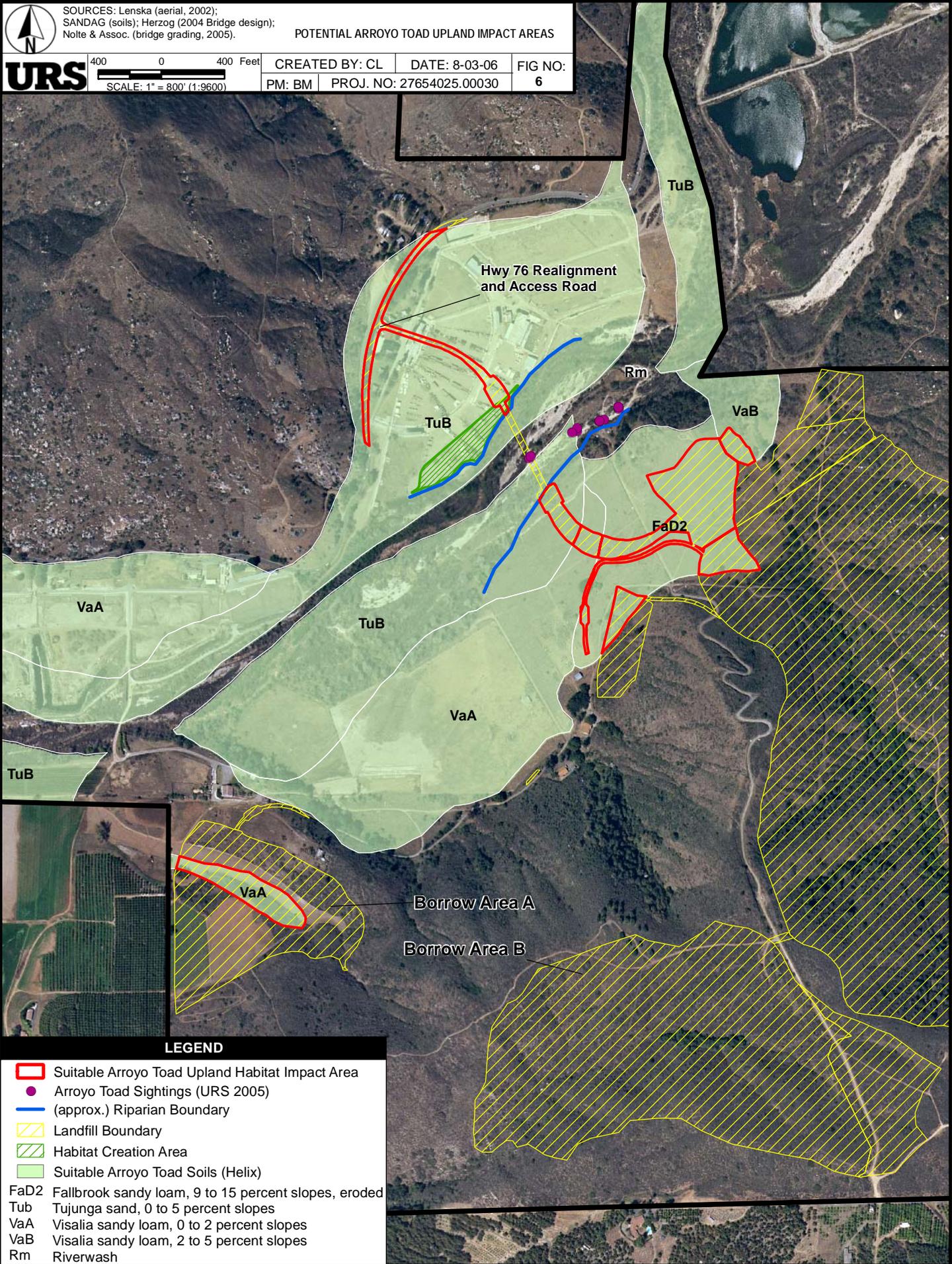
SOURCES: Lenska (aerial, 2002);  
 SANDAG (soils); Herzog (2004 Bridge design);  
 Nolte & Assoc. (bridge grading, 2005).

POTENTIAL ARROYO TOAD UPLAND IMPACT AREAS



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 SCALE: 1" = 800' (1:9600)

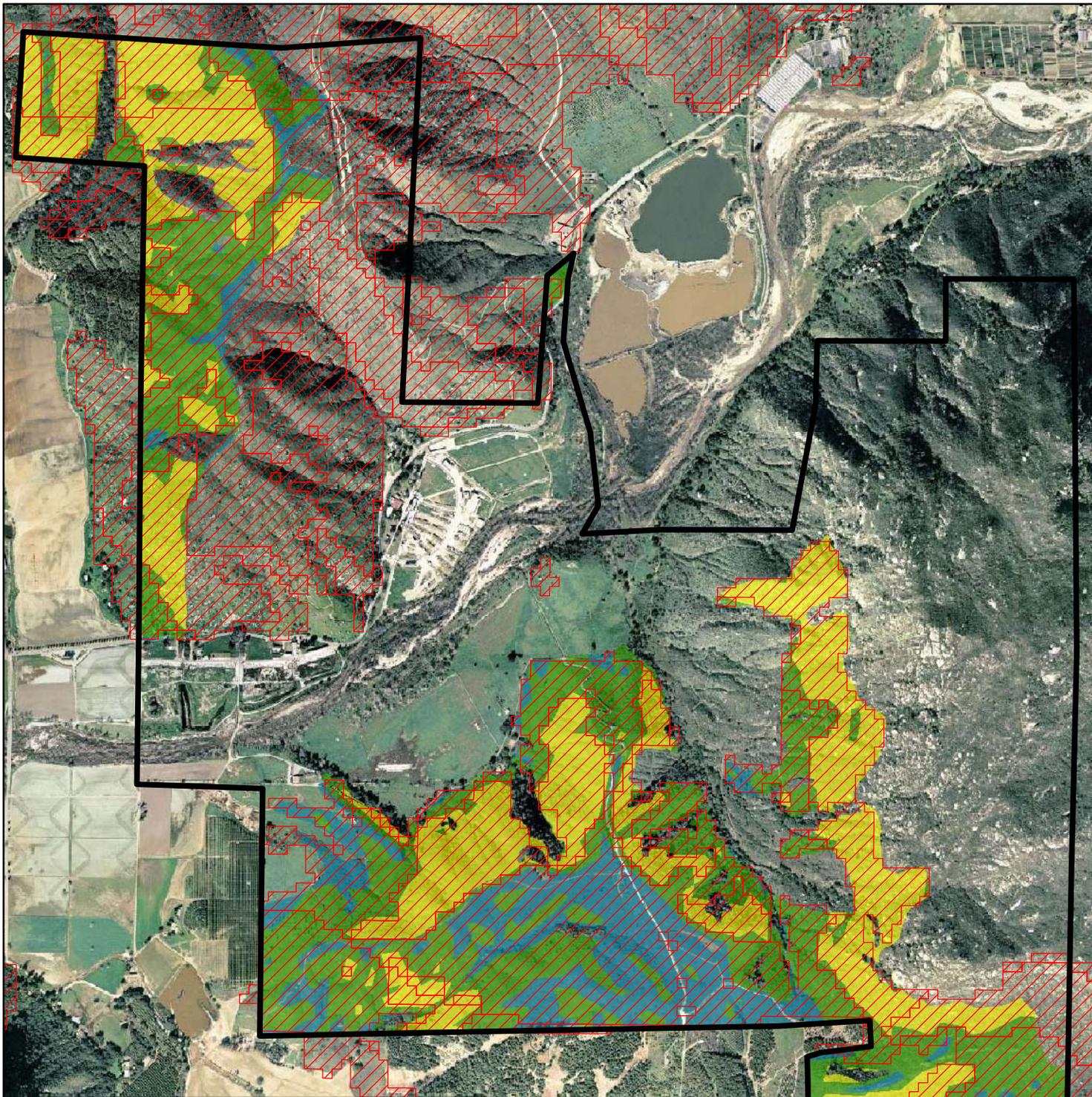
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LEGEND

- Suitable Arroyo Toad Upland Habitat Impact Area
- Arroyo Toad Sightings (URS 2005)
- (approx.) Riparian Boundary
- Landfill Boundary
- Habitat Creation Area
- Suitable Arroyo Toad Soils (Helix)
- FaD2 Fallbrook sandy loam, 9 to 15 percent slopes, eroded
- TuB Tujunga sand, 0 to 5 percent slopes
- VaA Visalia sandy loam, 0 to 2 percent slopes
- VaB Visalia sandy loam, 2 to 5 percent slopes
- Rm Riverwash

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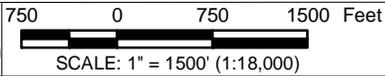


**LEGEND**

-  Project Boundary
-  Sage Scrub with Gradients < 20% (119.18 ac)
-  Sage Scrub with Gradients between 20% and 40% (290.33 ac)
-  Sage Scrub with Slope Gradients > 40% (255.7 ac)
-  USFWS Modeled Habitat Categorized as Moderate, High and Very High



SOURCES: Gnatcatcher Model (USFWS 1997),  
Slope (SANDAG DEMs, various dates).



**POTENTIAL COASTAL CALIFORNIA  
GNATCATCHER VEGETATION HABITAT  
GREGORY CANYON PROPERTY**

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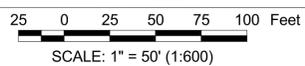
**LEGEND**

- Wetland/Waters of the U.S. Boundary
- Bridge Grading Area and Riparian Habitat Restoration
- Bridge Boundary
- Bridge Access/Work Area Boundary



SOURCES: AirPhotoUsa  
(March 2002 Aerial);  
Herzog (2004 Bridge design).

**BRIDGE FOOTPRINT OVERLAIN ON  
WATERS OF THE U.S.  
GREGORY CANYON, LTD LLC**

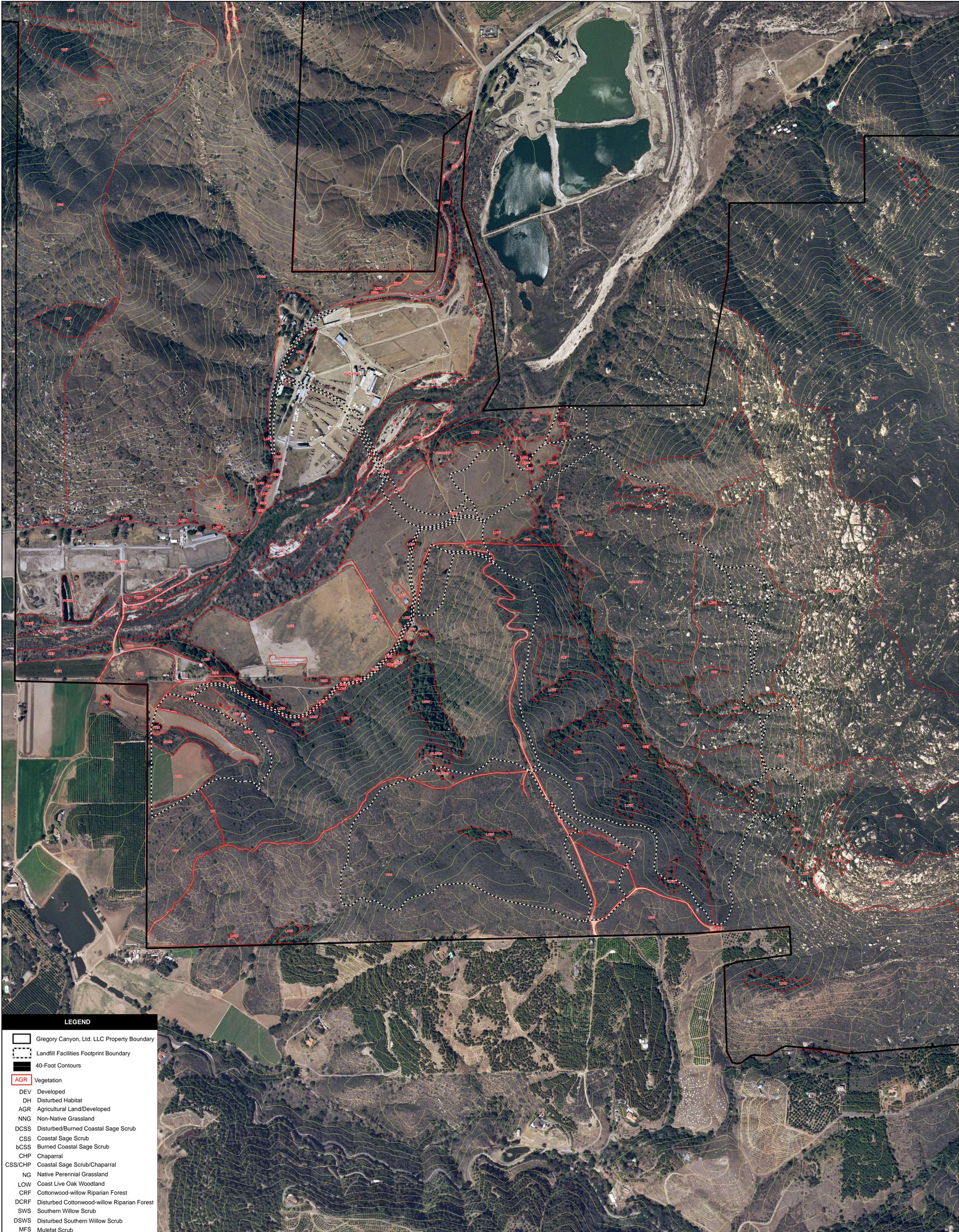


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Diameter of Support  
Piers = 10 ft

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**LEGEND**

-  Gregory Canyon, Ltd. LLC Property Boundary
-  Landfill Facilities Footprint Boundary
-  40-Foot Contours
-  **AGR** Vegetation
- DEV Developed
- DH Disturbed Habitat
- AGR Agricultural Land/Developed
- NNG Non-Native Grassland
- DCSS Disturbed/Burned Coastal Sage Scrub
- CSS Coastal Sage Scrub
- tCSS Burned Coastal Sage Scrub
- CHP Chaparral
- CSS/CHP Coastal Sage Scrub/Chaparral
- NG Native Perennial Grassland
- LOW Coast Live Oak Woodland
- CRF Cottonwood-willow Riparian Forest
- DCRF Disturbed Cottonwood-willow Riparian Forest
- SWS Southern Willow Scrub
- DSWS Disturbed Southern Willow Scrub
- MFS Mulefat Scrub
- OLIVES Olives
- OC Open Channel
- POND Ponds
- RO/CHP Rock Outcrop/Chaparral
- ORN Ornamental
- RUD Ruderal



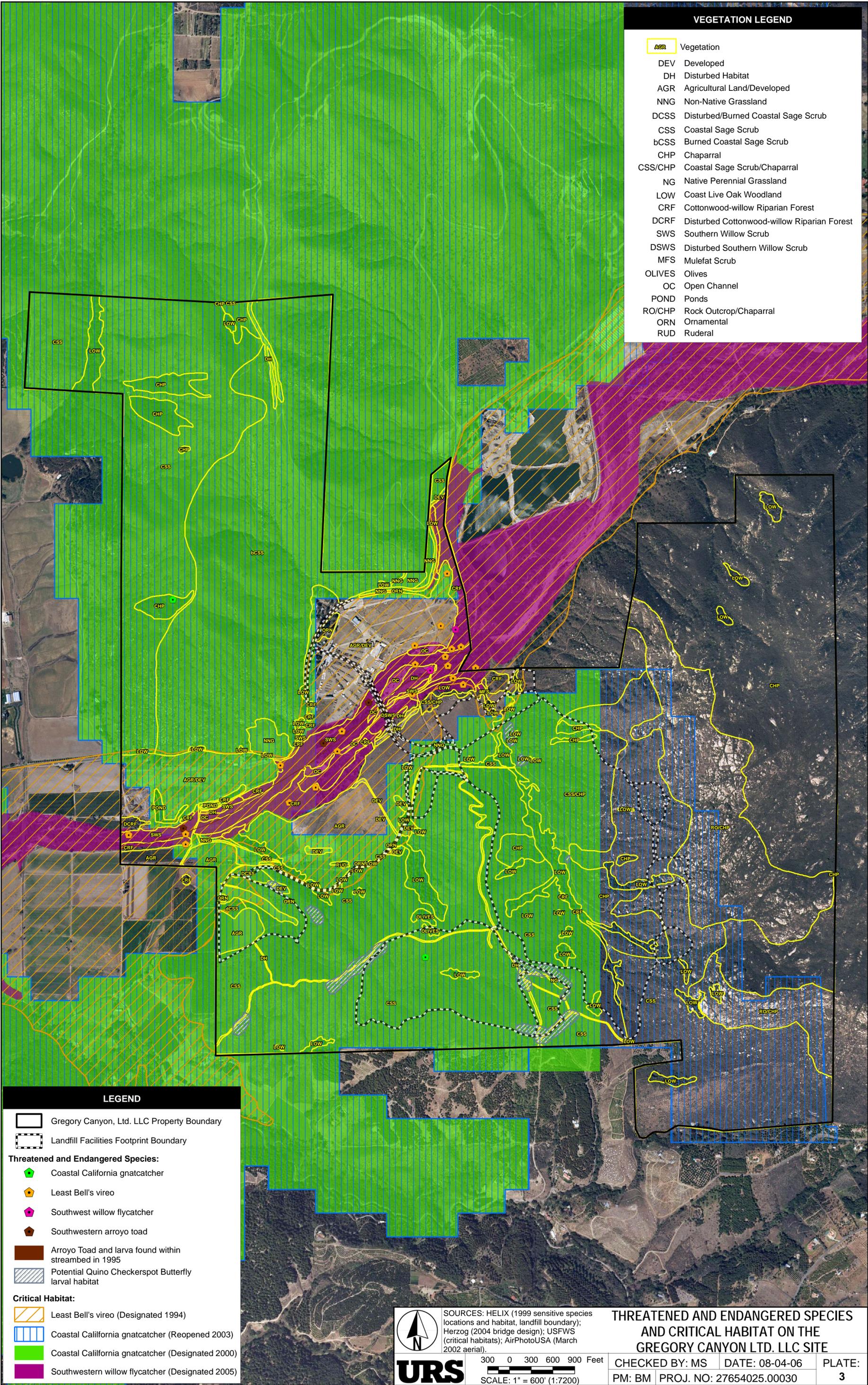
SOURCES: HELIX (1999 Vegetation, landfill boundary); URS (2005 Vegetation update); Herzog (2004 Bridge design).

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**VEGETATION HABITATS ON THE GREGORY CANYON, LTD. LLC SITE**

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**VEGETATION LEGEND**

- AGR Vegetation
- DEV Developed
- DH Disturbed Habitat
- AGR Agricultural Land/Developed
- NNG Non-Native Grassland
- DCSS Disturbed/Burned Coastal Sage Scrub
- CSS Coastal Sage Scrub
- bCSS Burned Coastal Sage Scrub
- CHP Chaparral
- CSS/CHP Coastal Sage Scrub/Chaparral
- NG Native Perennial Grassland
- LOW Coast Live Oak Woodland
- CRF Cottonwood-willow Riparian Forest
- DCRF Disturbed Cottonwood-willow Riparian Forest
- SWS Southern Willow Scrub
- DSWS Disturbed Southern Willow Scrub
- MFS Mulefat Scrub
- OLIVES Olives
- OC Open Channel
- POND Ponds
- RO/CHP Rock Outcrop/Chaparral
- ORN Ornamental
- RUD Ruderal

**LEGEND**

- Gregory Canyon, Ltd. LLC Property Boundary
- Landfill Facilities Footprint Boundary
- Threatened and Endangered Species:**
- ◆ Coastal California gnatcatcher
- ◆ Least Bell's vireo
- ◆ Southwest willow flycatcher
- ◆ Southwestern arroyo toad
- Arroyo Toad and larva found within streambed in 1995
- Potential Quino Checkerspot Butterfly larval habitat
- Critical Habitat:**
- Least Bell's vireo (Designated 1994)
- Coastal California gnatcatcher (Reopened 2003)
- Coastal California gnatcatcher (Designated 2000)
- Southwestern willow flycatcher (Designated 2005)



SOURCES: HELIX (1999 sensitive species locations and habitat, landfill boundary); Herzog (2004 bridge design); USFWS (critical habitats); AirPhotoUSA (March 2002 aerial).



300 0 300 600 900 Feet  
SCALE: 1" = 600' (1:7200)

**THREATENED AND ENDANGERED SPECIES AND CRITICAL HABITAT ON THE GREGORY CANYON LTD. LLC SITE**

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