

EXISTING CONDITIONS

FSDRIP is a 46-acre open space area resulting from the channelization of a segment of the San Diego River, east of Highway 163 to Qualcomm Way, north of Interstate 8, and the associated mitigation required by CORPS and CDFG (Figure 1). The mitigation required was for the loss of riparian habitat when the river corridor was restructured for flood control purposes. The FSDRIP Revegetation Plan outlined the creation of 26.8 acres of riparian woodland, 9.7 acres of freshwater marsh, and 8.7 acres of open water and included a 20-foot wide buffer zone along most edges of FSDRIP to help protect the wetland vegetation from adjacent land use and development impacts.

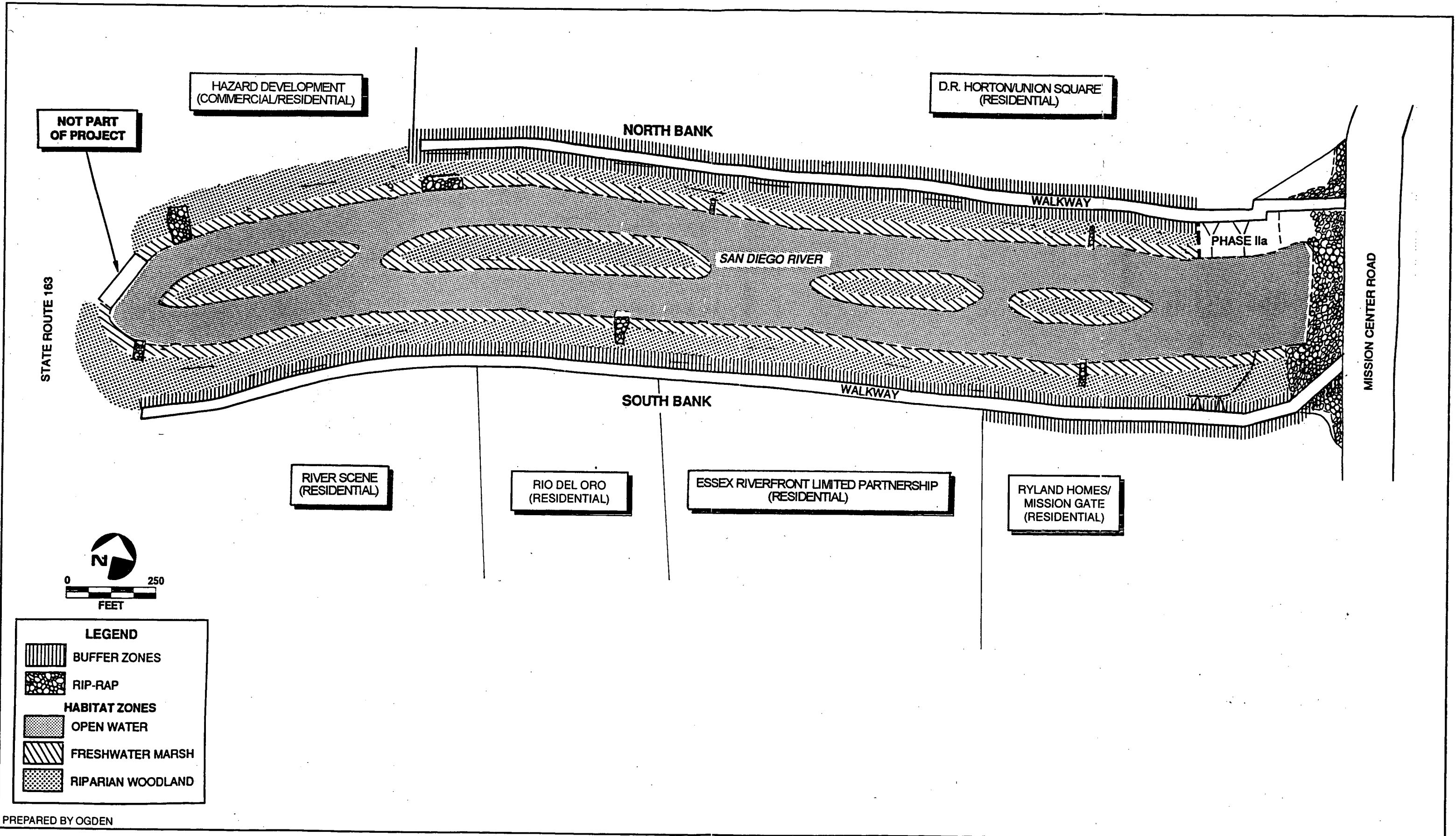
BIOLOGICAL RESOURCES

Annual biological surveys (vegetation, birds and sensitive species) were conducted within FSDRIP from 1987 through 1994. Surveys were conducted by Brad Burkhart, Doug Gettinger, and Leslie Hickson of Ogden Environmental and Energy Services (formerly WESTEC Services, Inc., and ERC Environmental and Energy Services). Species list resulting from these surveys are included in Appendices A and B.

VEGETATION

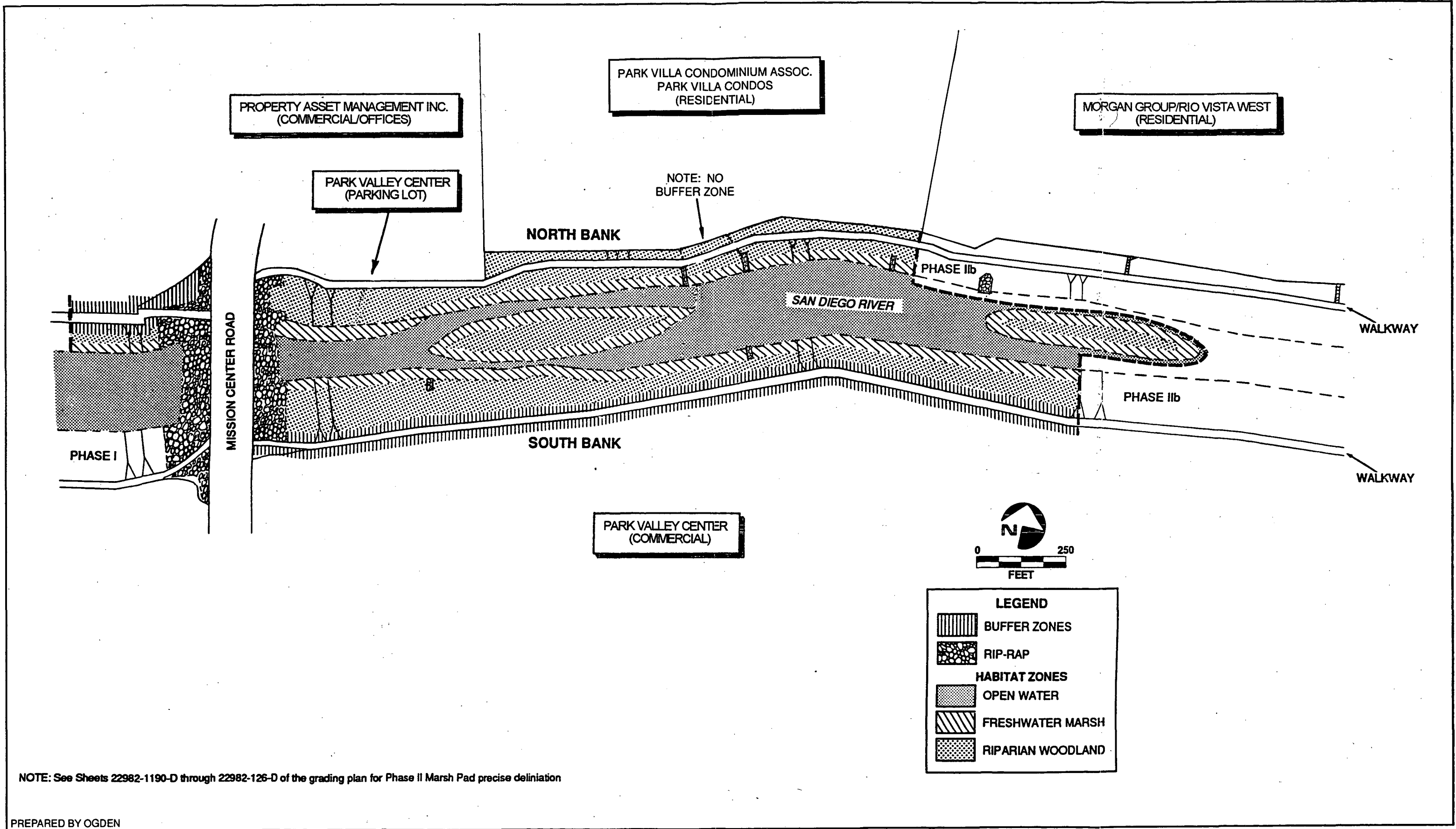
No natural, undisturbed habitat exists at FSDRIP; all is a result of revegetation. Plant communities which have successfully revegetated in FSDRIP include freshwater marsh, riparian woodland, and coastal sage scrub. Riparian scrub and coastal sage scrub species were planted in the buffer zone along with some native ornamental species. These habitats are mapped in Figures 2-4.

Freshwater marsh is dominated by perennial, emergent monocots, 4 to 7 feet tall. Uniform stands of bulrushes (*Scirpus spp.*) or cattail (*Typha spp.*) characterize this habitat. Freshwater



FSDRIP HABITATS - PHASE I





NOTE: See Sheets 22982-1190-D through 22982-126-D of the grading plan for Phase II Marsh Pad precise delineation

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FSDRIP HABITATS - PHASE IIA

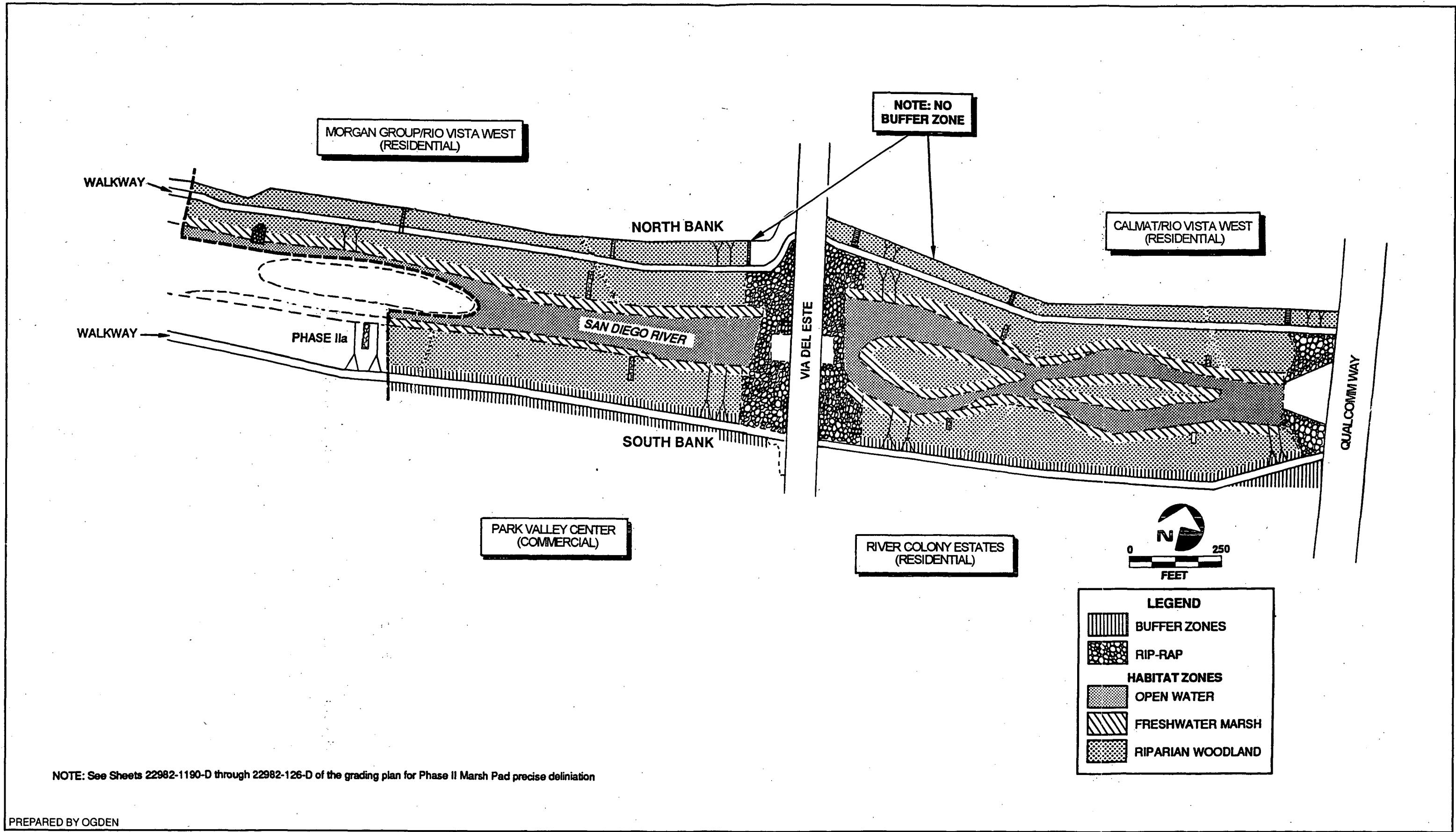


CITY OF SAN DIEGO PARK & RECREATION DEPT.



FIGURE

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FSDRIP HABITATS - PHASE IIB



marsh occurs in wetlands that are permanently flooded by standing fresh water. Freshwater marsh species that occur at FSDRIP include cattail (*Typha latifolia*), California bulrush (*Scirpus californicus*), prairie bulrush (*S. robustus*), Olney's bulrush (*S. olneyi*), yerba mansa (*Anemopsis californica*), yellow nutsedge (*Cyperus esculentus*), and spiny rush (*Juncus acutus*). The edges of freshwater marsh at FSDRIP are also dominated by ludwigia (*Ludwigia peploides*). Ludwigia is a floating aquatic weed that expands to cover the open water areas if unchecked by flood flows or human intervention.

Riparian woodland is a tall, open, broad-leaved, winter-deciduous riparian vegetation association that occurs along permanent streams. The dominant species require moist, bare, mineral soil to germinate and establish themselves. Riparian woodlands in southern California are dominated by Fremont cottonwood (*Populus fremontii*) and several willow species (*Salix* spp.). California sycamore (*Platanus racemosa*) can also be present, with shrubby willow species constituting the understory. The dominant riparian overstory species that occur at FSDRIP are white alder (*Alnus rhombifolia*), western sycamore, Fremont's cottonwood, coast live oak (*Quercus agrifolia*), black willow (*Salix gooddingii*), sandbar willow (*S. exigua*), red willow (*S. laevigata*), yellow willow (*S. lucida lasiandra* ssp), arroyo willow (*S. lasiolepis*), and Mexican elderberry (*Sambucus mexicana*). The dominant understory species that occur are mulefat (*Baccharis salicifolia*), Douglas mugwort (*Artemisia douglasiana*), San Diego sagewort (*A. palmeri*), giant wild rye (*Leymus condensatus*), San Diego marsh elder (*Iva hayesiana*), California rose (*Rosa californica*), California blackberry (*Rubus ursinus*), and desert grape (*Vitis girdiana*).

Open water is considered a habitat because it supports amphibian, fish, and waterfowl. While this seems simple, it should be noted that several qualities of this water are often critical to its success as habitat. First, the depth of water is crucial. Areas with a three-to five-foot depth to bottom are usually the preferred habitat for many of the bottom feeding waterfowl. Some birds, such as herons, need even shallower water to wade and feed. Clarity of water can also be critical to the ability of birds to feed below the surface, and cloudy water has more limited habitat value as a result. Occasionally, surface pollutants can fowl bird feathers and/or suffocate water

dwelling insects used as food. Finally, the distance to shore can often be critical to the value of open water as habitat, for open water protects most water birds from shore-dwelling predators. It also allows room for birds like swallows to catch their insect prey over the water's surface. Because FSDRIP is part of a flowing river system, the open water habitat changes dramatically from day to day and at different seasons of the year. During the winter rainy season the amount of open water habitat increases as the river fills with storm flow and surges through the project. Such fast flows in water often reduce habitat value since they muddy the water and move too quickly for most birds to use. Several non-native surface floating plants are associated with this open water habitat. The dominant aquatic species at FSDRIP are ludwigia and, occasionally, water hyacinth (*Eichornia crassipes*). The presence and amount of these plants at any given time will vary with the velocity of stream flows. Generally, these plants are at their greatest cover during the summer months when water flow is slow. In the winter months, flood flows often flush these species downstream, out of the project or deposit them on the drier banks where they die. Plant fragments of the ludwigia deposited along the water's edge take root and, thus, are more established in the habitat.

Coastal sage scrub intermingles with more drought tolerant riparian tree species along the buffer and upper slope areas at the site. These areas are a transition between the riparian habitat and the ornamental landscapes of adjacent developments. Because of the transitional purpose of this zone, a number of more ornamental and less site specific species and cultivars (horticulturally selected and developed species) were added in the buffer zone. The dominant coastal sage species include California sagebrush (*Artemisia californica*), flat-top buckwheat (*Eriogonum fasciculatum*), lemonadeberry (*Rhus integrifolia*), toyon (*Heteromeles arbutifolia*), broom baccharis (*Baccharis sarothroides*), and California encelia (*Encelia californica*). Other species that were added include carmel creeper (*Ceanothus griseus* 'horizontalis'), saltbush (*Atriplex lentiformis* ssp. *brewerii*), Mexican flannelbush (*Fremontodendron mexicanum*), and leafy burrobush (*Hymenoclea monogyra*).

A list of all plant species found at FSDRIP is provided in Appendix A.

AMPHIBIANS AND REPTILES

Two amphibian species, bullfrog (*Rana catesbeiana*) and Pacific treefrog (*Hyla regilla*), were observed at FSDRIP. The four reptile species observed onsite include red-eared slider (*Pseudemys scripta*), western fence lizard (*Sceloporus occidentalis*), western skink (*Eumeces skiltonianus*), and the southern alligator lizard (*Gerrhonotus multicarinatus*). Other reptiles and amphibians which were not observed but may occur at FSDRIP are African clawed toad (*Xenopus laevis*), Pacific slender salamander (*Batrachoseps pacificus*), California toad (*Bufo boreas haliophilus*), painted turtle (*Chrysemys picta*), side-blotched lizard (*Uta stansburiana*), two-striped garter snake (*Thamnophis hammondi*), San Diego kingsnake (*Lampropeltus zonata pulchra*), striped racer (*Masticophis lateralis*), gopher snake (*Pituophis melanoleucus*), and spiny soft-shell turtle (*Trionyx spiniferus*).

BIRDS

A wide variety of bird species have been observed at FSDRIP. A total of 90 resident and seasonal species of birds were observed at the project during extensive bird surveys performed every year between 1989-1994 (see Ogden 1995, 1994, 1993, 1992, 1991, 1990, 1988).

Appendix B provides a complete bird species list. The most common bird species observed include American coot (*Fulica americana*), mallard (*Anas platyrhynchos*), ruddy duck (*Oxyura jamaicensis*), mourning dove (*Zenaida macroura*), bushtit (*Psaltriparus minimus*), house finch (*Passer domesticus*), common yellowthroat (*Geothlypis trichas*), song sparrow (*Zonotrichia melodia*), and red-winged blackbird (*Agelaius phoeniceus*).

MAMMALS

Eleven species of mammals were observed at FSDRIP including Virginia opossum (*Dipelphis virginiana*), Audubon's cottontail (*Sylvilagus audubonii*), California ground squirrel (*Spermophilus beecheyi*), Botta's pocket gopher (*Thomomys bottae*), Norway rat (*Rattus*

norvegicus), house mouse (*Mus musculus*), gray fox (*Urocyon cinereoargenteus*), raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), coyote (*Canis latrans*), and California sea lion (*Zalophus californianus*). This is not a comprehensive list because these mammals were observed at FSDRIP only during post-installation monitoring/maintenance activities conducted by Ogden Environmental and Energy Services, Park and Recreation, and the landscape contractor. No extensive field surveys were performed. Other species that were not seen but can be expected to occur based on available habitats include California vole (*Microtus californicus*), black rat (*Rattus rattus*), desert shrew (*Notiosorex crawfordi*), western pipistrel (*Pipistrella hesperus*), brush rabbit (*Sylvilagus bachmani*), agile kangaroo rat (*Dipodomys agilis*), California pocket mouse (*Perognathus californicus*), San Diego pocket mouse (*Perognathus fallax*), San Diego desert woodrat (*Neotoma lepida intermedia*), dusky-footed woodrat (*Neotoma fuscipes*), deer mouse (*Peromyscus maniculatus*), and long-tailed weasel (*Mustela frenata*).

SENSITIVE RESOURCES

SENSITIVE HABITATS

Sensitive habitats are those which are considered rare within the region, are listed by the Conservation Element of the General Plan for the County of San Diego (County of San Diego 1980), or support sensitive plants or animals. Riparian woodland and freshwater marsh is considered a sensitive resource by the CDFG and CORPS. These habitats are defined as wetlands by the USFWS (Cowardin et al. 1979). All habitats in FSDRIP are considered sensitive except the buffer zone.

Riparian habitat is considered a valuable but declining resource. This habitat type covered less than 0.2 percent of San Diego County in 1963 (CDFG 1965), and the amount has since declined. Wetland habitat is naturally limited and remaining acreages are important islands of habitat for migrant birds. Many bird species are restricted to riparian habitat and are dependent on it for breeding and foraging. Overall wildlife diversity is normally higher in riparian zones than in surrounding habitats. Such habitat, by occupying natural drainages, also functions to control

water quality and erosion and functions as a wildlife corridor.

SENSITIVE SPECIES

Sensitive species, identified at the time of this document's printing, include those that are listed as endangered, threatened, or rare by the USFWS (1989), CDFG (1990), and CNPS (Skinner and Pavlik 1994). The CNPS Listing is sanctioned by the CDFG and essentially serves as its list of "candidate" species for threatened or endangered plant species.

Species that are federally- or state-listed are afforded a degree of protection which entails a permitting process including specific mitigation measures for any allowed, unavoidable impacts to the species. Species that are proposed for listing are treated similarly to species already listed by USFWS. USFWS recommendations, however, are advisory rather than mandatory in the case of species proposed for listing.

Four sensitive plant and five sensitive bird species listed by an agency or by the Native Plant Society were observed at FSDRIP. These species are discussed in detail below.

Artemisia palmeri

San Diego Sagewort

CNPS rating: List 2, 2-2-1

San Diego sagewort is a summer-blooming (June-September) suffrutescent (obscurely shrubby with very low amount of woodiness) coastal sage scrub perennial that occurs below 1931 ft (600 m) elevation in southwestern San Diego County and northern Baja California (Munz 1974). San Diego sagewort occurs throughout the project area as an understory species in riparian woodland.

Fremontodendron mexicanum

Mexican Flannelbush

USFWS: Proposed for Endangered Species

CDFG: Rare

CNPS rating: List 1B, 3-2-2

This is a frequent component of riparian woodlands growing with alders, willows, Tecate cypress, and several other sensitive plants. It occurs in cool canyons with permanently high groundwater. In the United States, Mexican flannelbush is only found in Cedar Canyon on Otay Mountain. It has been reported to occur in the Jamul Mountains, but has not been seen there recently (Beauchamp 1986). Mexican flannelbush does not occur naturally in this area but was planted in the buffer area for its ornamental value.

Iva hayesiana

San Diego Marsh Elder

USFWS: Candidate for Listing (Category 2)

CNPS: List 2, 2-2-1

This perennial subshrub occurs in southwestern San Diego County and northern Baja California (Munz 1974). It is frequent in low-lying, moist or alkaline places along the coast and has been recorded along intermittent streams. Although rare in the County, this species is apparently more common and widespread south of the border. Reported localities include Rancho Santa Fe, Miramar Reservoir, Penasquitos Canyon, Alvarado Canyon, Proctor Valley, La Presa, Otay, Tijuana River Valley, and Otay Mesa (Beauchamp 1986). San Diego marsh elder is threatened primarily by waterway channelization and development. San Diego marsh elder occurs throughout the project near the water's edge.

Juncus acutus ssp. *leopoldii*

Spiny Rush

CNPS : List 4, 1-2-1

Spiny rush is a relatively common plant associated with moist, saline, or alkaline soils. This species is found in drainages and wetland areas south of Aqua Hedionda to the Otay River Valley. The sensitivity of this plant is due to the decline in wetland habitats throughout the County. Spiny rush occurs throughout the project area on the lower portions of the slope.

Ixobrychus exilis hesperis

Western Least Bittern

USFWS: Candidate for Listing (Category 2)

CDFG: Species of Special Concern (nesting site)

Least bittern inhabits fresh and brackish water marshes, usually near open water sources, and desert riparian habitats. Most of the California bittern population winters in Mexico and migrates in the spring and the summer to scattered locations in the western U. S., including the Colorado River, Salton Sea, and coastal lowlands of southern California, where some populations are resident. Most migration takes place at night. The bittern is mostly diurnal and feeds in the daytime. The species is locally common at the Salton Sea and Colorado River and rare along the coast. Nesting occurs in dense emergent vegetation such as cattails or tules over water, and eggs are laid in mid-April to July (CDFG 1990). The primary threats to the species are habitat reduction and urbanization. In San Diego County, least bitterns have been reported from Mission Valley, San Diego River mouth, Tijuana River mouth, San Luis Rey River, San Pasqual Valley, Baticuitos and San Elijo Lagoon and Guajome Lake. Nesting localities are reported at Mission Valley, San Luis Rey, Guajome Lake, and San Pasqual Valley (Unitt 1984, Ogden unpublished data). As many as six least bitterns have been observed at FSDRIP. A pair was confirmed as nesting in Phase I in 1990, and a pair is likely to nest sporadically in dense marsh vegetation on the islands.

Sterna antillarum browni

California Least Tern

USFWS: Endangered

CDFG: Endangered (nesting colony)

California least tern breeds from San Francisco Bay south to Baja California. In San Diego County, it is a fairly common summer resident from early April to the end of September (Unitt 1984). Wintering areas are thought to be along the Pacific coast of South America. This small migratory tern nests colonially on undisturbed, sparsely vegetated, flat areas with loose, sandy substrate. Human disturbance has displaced the least tern from much of its traditional nesting

habitat. Few beach nesting areas remain and least terns are now found in varied habitats ranging from mudflats to airports. Experienced breeders begin nesting in mid-May, first time breeders begin later in June. A least tern lays from one to four eggs which are incubated for 20 -25 days by both adults. Young fledge 28 days after hatching, and are fed by adults for an additional two weeks. The terns abandon the nesting colonies by mid-August and generally migrated south by mid-September. Banding returns indicate that least terns exhibit a tendency to return to the site where they first bred successfully. They typically forage in areas with water less than 60 feet in depth (Atwood 1983). Prey items include northern anchovy, topsmelt, killifish, mosquitofish, shiner, surfperch and mudflat gobies. Two California least terns were observed foraging at FSDRIP in June 1989. Closest breeding colonies are in Mission Bay Park. California least terns are not expected to breed at FSDRIP but may forage here occasionally.

Agelaius tricolor

Tri-Colored Blackbird

USFWS: Candidate for Listing (Category 2)

CDFG: Species of Special Concern

This nomadic species is locally common in the coastal lowlands of San Diego County. It nests in colonies of 500 to 1,000 in freshwater marsh habitat, usually in cattails or reeds, and forages in a variety of habitats, including agricultural fields, grasslands, lakeshores, and scrub habitats. Tri-colored blackbird populations have declined sharply in recent years as a result of loss of their nesting habitat to agriculture and development. The tri-colored blackbird was seen in large number in June 1990, but has not been observed recently at FSDRIP. This rare species is nomadic in its breeding habits, frequently utilizing a given breeding site only intermittently.

Vireo bellii pusillus

Least Bell's Vireo

USFWS: Endangered

CDFG: Endangered

Formerly common and widespread in California and northwestern Baja California, the species now numbers about 600 pairs north of the border by 1991. It is restricted to riparian woodland and is most frequent in areas that combine an understory of dense young willows or mulefat with a canopy of tall willows. It occurs in a number of riparian habitat types, including cottonwood-willow forests, oak woodland, shrubby thickets, and mulefat scrub, and sometimes will use adjacent upland habitat. The vireo's decline is due to loss of riparian habitat combined with parasitism by the brown-headed cowbird, which lays its eggs in vireo nests. The young cowbirds squeeze out the vireo young, thereby, reducing the vireo's reproductive success. Other predators include scrub jays (*Aphelocoma coerulescens*), Cooper's Hawk (*Accipitii cooperii*), gopher snake rats (*Rattus sp.*), opossum, coyote, and domestic cats. To reconcile conservation of the vireo and its habitat with demands for development, the San Diego Association of Governments (SANDAG) has prepared a Comprehensive Species Management Plan (CSMP) in cooperation with the state and federal wildlife agencies, CORPS, Caltrans, environmental groups, property owners, and sand miners. If the plan is approved it will guide land-use decisions within drainages supporting this species.

The least Bell's vireo arrives in San Diego County in mid-March and early April and leaves for its wintering ground in September. It is known to winter only in southern Baja California. Since the vireos build their nests in average dense shrubbery 3 to 4 feet above the ground (Salata 1984), they require young, successional riparian habitat or older habitat with a dense understory. Riparian plant succession, therefore, is an important factor in maintaining vireo habitat. Nests are also often placed along internal or external edges of riparian thickets (USFWS 1986).

One least Bell's vireo was observed on the north side of Phase IIa on April 21, 1994. The bird did not attract a mate, so it moved on. Two territorial males were observed behind Camino del Este and Stadium Way on April 4, 1995. One male was observed on April 6 and 26. Two males were again seen on June 9, 1995. One of the vireos was with a fledgling estimated to be two to three weeks old.

Polioptila californica californica

California Gnatcatcher

USFWS: Threatened

CDFG: Species of Special Concern

The California gnatcatcher population is estimated between 1800 and 2500 pairs with 1000-1500 pairs remaining in San Diego County (Atwood 1992, USFWS 1993). The primary cause of this species' decline is the cumulative loss of coastal sage scrub vegetation to urban and agricultural development. Little of this species' habitat is formally protected or managed at the present time. This species is probably extirpated from Ventura and San Bernardino counties, and is declining proportionately with the continued loss of coastal sage scrub habitat in the four remaining southern California counties located within the coastal plain. Initial studies suggest that the California gnatcatcher may be highly sensitive to the effects of habitat fragmentation and development activity (Atwood 1990, ERCE 1990a, Ogden unpublished data). The territory size requirements of the gnatcatcher varies with habitat quality. Documented home ranges have varied from 6 to 45 acres in San Diego County (RECON 1987, ERCE 1990a, ERCE unpublished data). Studies of the species' habitat preferences in San Diego County indicate that California sagebrush and flat-topped buckwheat are the primary plants used by gnatcatchers when foraging for insects (RECON 1987, ERCE 1990b, Ogden unpublished data). The USFWS has estimated that coastal sage scrub habitat has been reduced by 70 to 90 percent of its historical extent (USFWS 1991), and little of what remains is protected in natural open space.

A California gnatcatcher was observed at FSDRIP in July 1991 (Ogden 1992). This bird was probably a dispersing juvenile and stopped while in transit. California gnatcatchers are not likely to inhabit FSDRIP because there is not enough coastal sage scrub habitat to support them.

In addition to the agency-listed sensitive species, 12 more species which occur regularly or sporadically in FSDRIP are identified as sensitive species of concern by the California Environmental Quality Act. These species include: double-crested cormorant (*Phalacrocorax auritus*); great egret (*Casmerodius albus*); white egret (*Egretta thula*); green-backed heron (*Butorides striatus*); osprey (*Pandion haliaetus*); Cooper's hawk (*Accipiter cooperi*); Vaux's

swift (*Chaetura vauxi*); downy woodpecker (*Picoides pubescens*); loggerhead shrike (*Lanius ludovicianus*); yellow warbler (*Dendroica petechia*); yellow-breasted chat (*Icteria virens*); and blue grosbeak (*Guiraca caerulea*).

HYDROLOGY

The San Diego River collects water from urban runoff, natural sheet drainage, and storm drains within its watershed. The San Diego River is channelized within FSDRIP for flood control. Flows are low (6.8 cfs) during drier summer months. The channel is designed to accommodate a 100-year flood (estimated at 49,000 cfs). To date, average winter flows range between flows of 57 cfs and 4700 cfs.

LAND USE AND RECREATION

Consistent with its natural resource character and mitigation requirements, improvements within FSDRIP are kept to a minimum. Improvements include picnic tables, sidewalk, waste cans, and signage (interpretive and regulatory). Recreation is primarily passive and includes birdwatching, jogging, walking, bicycling, fishing (in approved areas) and picnicking.

As provided for in the FSDRIP Specific Plan, existing and planned land uses occurring adjacent to FSDRIP include commercial retail, office, residential, hotel, a private recreation facility, and parking.