

HUNTINGTON BEACH WETLANDS HABITATS AND SENSITIVE SPECIES

Prepared for:

Moffatt & Nichol
250 West Wardlow
Long Beach, CA 90807
Attention: Mr. Chris Webb

Prepared by:
Merkel & Associates, Inc.
5434 Ruffin Road
San Diego, CA 92123
Contact: Mr. Adam H. Behle
Phone: (858) 560-5465
Fax: (858) 560-7779

August 18, 2004

Keith W. Merkel, Principal Consultant

Rachel A. Woodfield, Senior Biologist

TABLE OF CONTENTS

Introduction	1
Habitats	1
COASTAL SALT MARSH.....	5
MUDFLAT/INTERTIDAL SAND BAR	6
OPEN WATER.....	6
EELGRASS	6
RELICTUAL COASTAL SALT MARSH	7
SALT PANNE	8
SOUTHERN WILLOW SCRUB	8
MULE FAT SCRUB	9
COASTAL SCRUB	10
ALKALI MARSH	10
FRESHWATER MARSH.....	11
DISTURBED HABITAT	11
URBAN/DEVELOPED.....	11
Sensitive Biological Resources	11
References.....	25

LIST OF TABLES

Table 1. Acreage summary of habitats within the study area.....	5
Table 2. Sensitive species known from the vicinity with potential to occur.....	12
Table 3. Status of known and potentially occurring species.....	15

LIST OF FIGURES

Figure 1. Locator Map.....	2
Figure 2a. Huntington Beach Wetlands Habitats – Western Portion	3
Figure 2b. Huntington Beach Wetlands Habitats – Eastern Portion	4
Figure 3. Huntington Beach Wetlands CNDB Records of Sensitive Species Occurrence.	13
Figure 4a. Sensitive Species Habitats – Western Portion	22
Figure 4b. Sensitive Species Habitats – Western Portion	23
Figure 5. Belding's Savannah Population trends at Huntington Beach Wetlands.....	24

HUNTINGTON BEACH WETLANDS CONCEPTUAL RESTORATION PLAN
HABITATS AND SENSITIVE SPECIES
Merkel & Associates, Inc.
August 2004

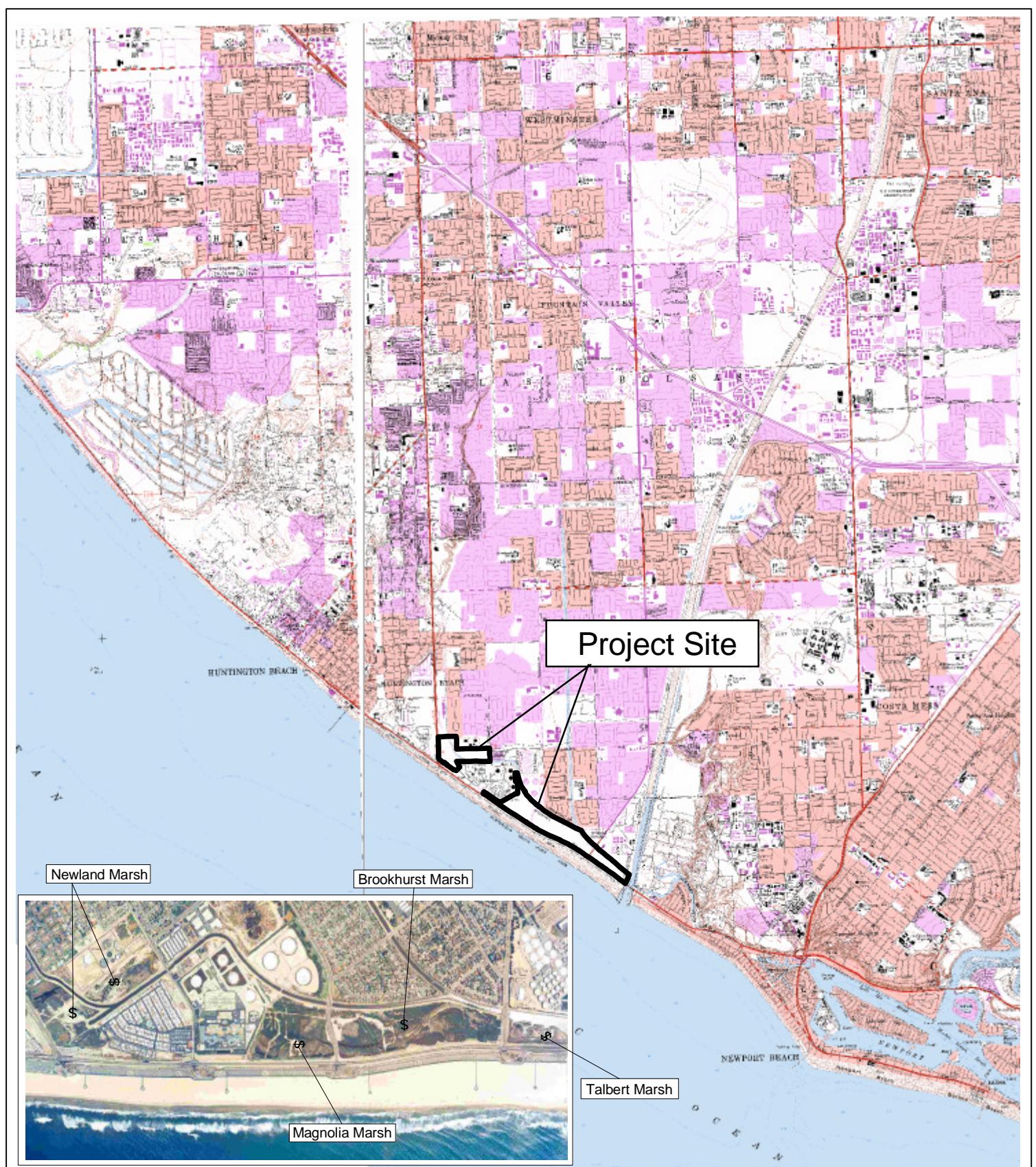
INTRODUCTION

In support of the Huntington Beach Wetlands Conceptual Restoration Plan, Merkel & Associates, Inc. (M&A) conducted habitat assessments at the Huntington Beach Wetlands during two visits in July and August 2004. From data collected on those visits, a habitat map was prepared, indicating the vegetation types present on site and noting the location of any sensitive species either observed during the survey, or known from prior investigations of the site. A rare plant survey was not conducted at this time due to the field work occurring outside of the appropriate season for detecting most species of rare plants. A discussion of each of the habitat types presented in the vegetation maps is included below.

The Huntington Beach Wetlands study site is located in the City of Huntington Beach, in Orange County between Newport Beach and Bolsa Chica (Figure 1). The study site wetland parcels are referred to in this document as Talbert Marsh, Brookhurst Marsh, Magnolia Marsh, and Newland Marsh.

HABITATS

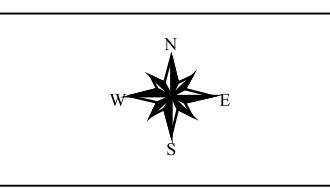
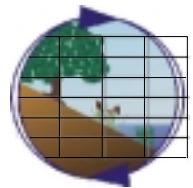
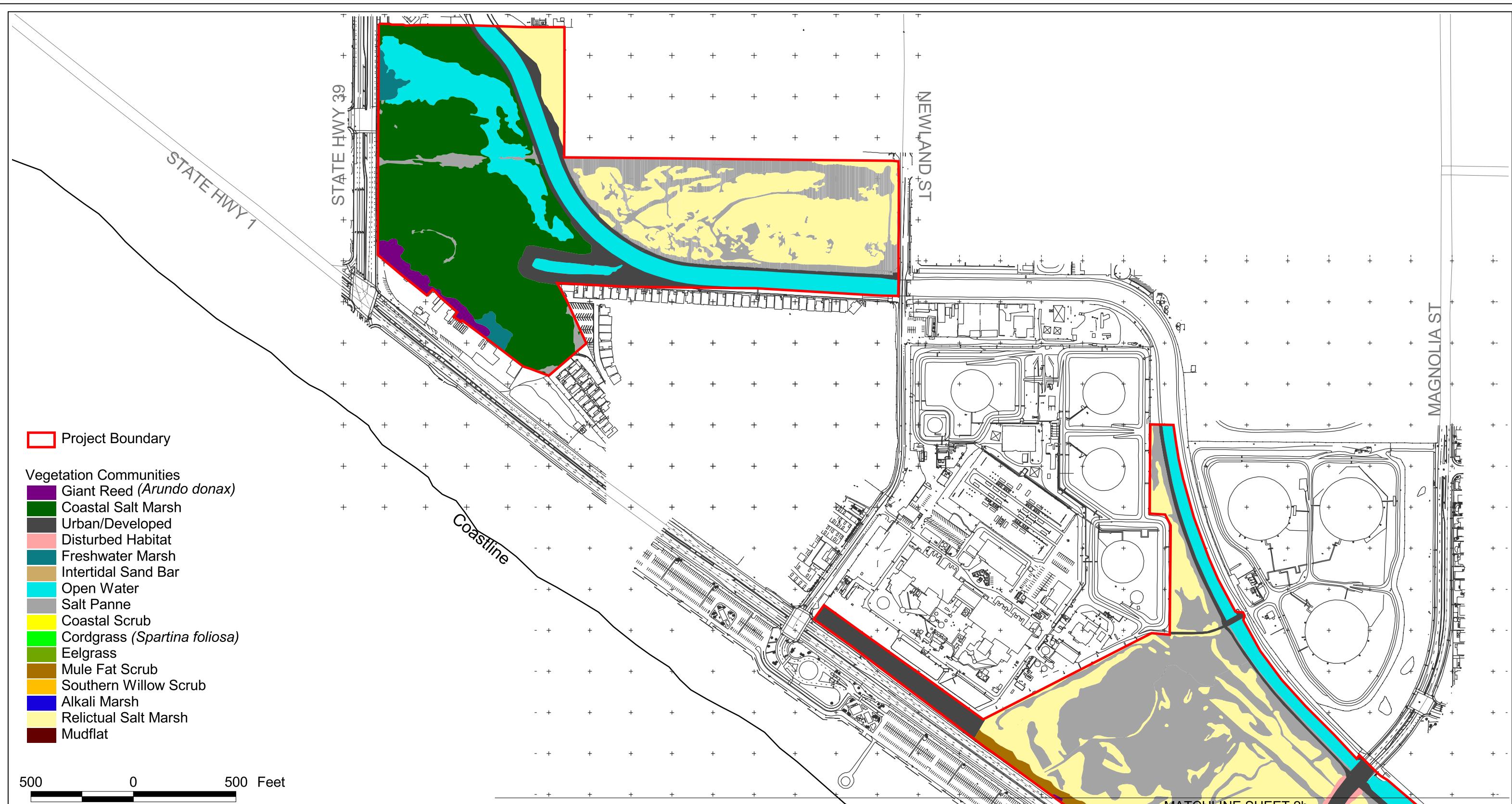
Thirteen habitats were mapped at the Huntington Beach Wetlands: southern willow scrub, mule fat scrub, coastal scrub, alkali marsh, freshwater marsh, open water, eelgrass bed, disturbed wetland, disturbed habitat, and urban/developed land. Despite the long history of alternating neglect and care given to much of this site, the majority of the habitat is of moderate to high quality, with a minimal amount of disturbed habitat and an enormous potential for restoration. Invasive species are present in much lower numbers than might be expected for a degraded wetland. Figures 2a and 2b show the habitats mapped on-site, and Table 1 summarizes the acreage of each. The following text describes each in detail.



Project Vicinity Map

Huntington Beach Wetlands
Source: USGS 7.5' Newport Beach Quadrangle

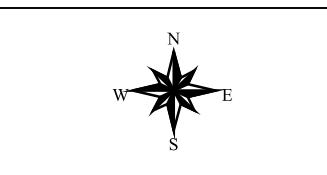
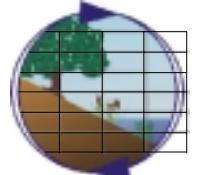
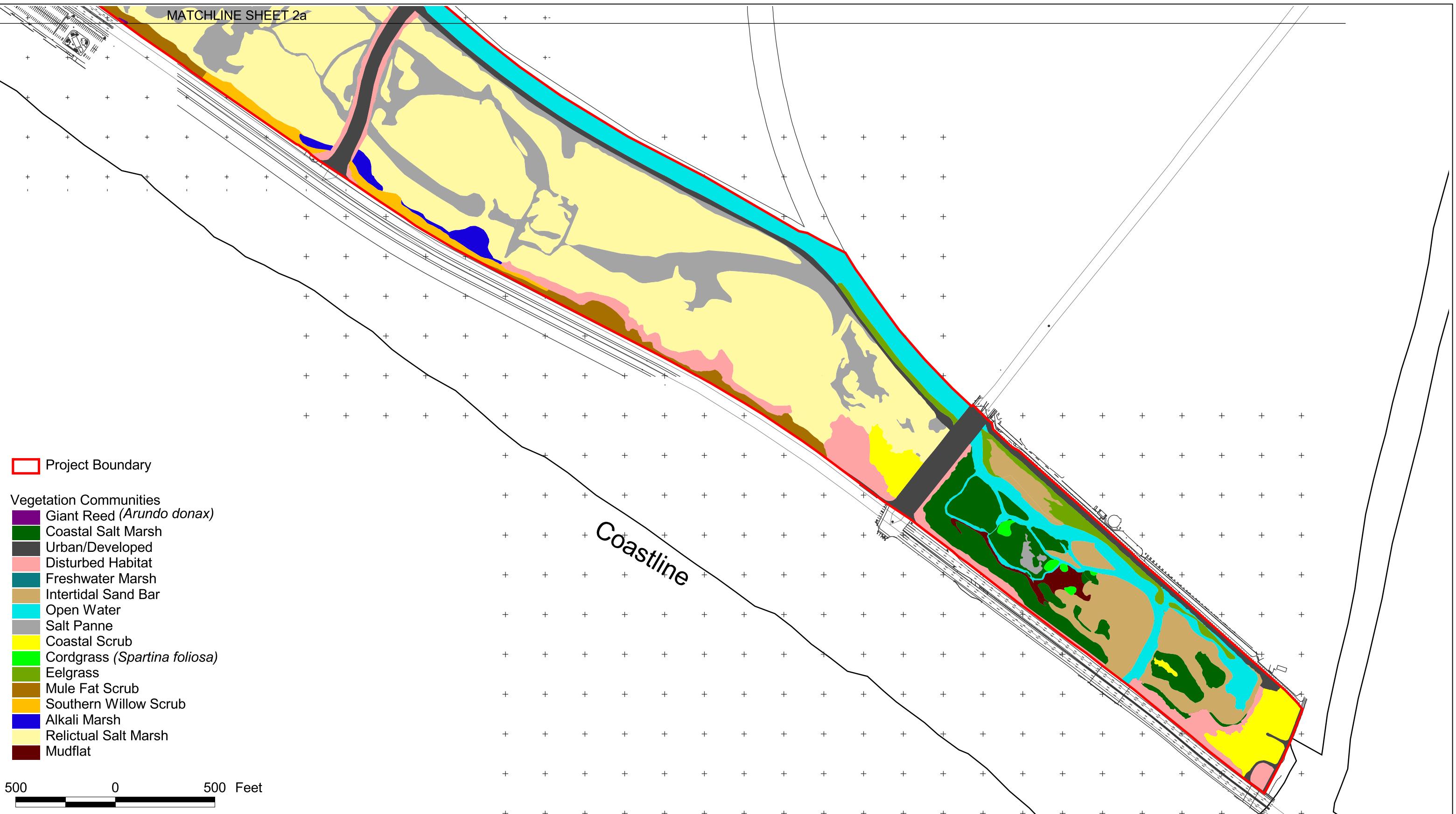
Figure 1



Huntington Beach Wetlands
Vegetation Communities
Western Portion

Figure 2a

MATCHLINE SHEET 2a



Huntington Beach Wetlands
Vegetation Communities
Eastern Portion

Figure 2b

Table 1. Acreage summary of habitats within the study area

Vegetation Community	Acreage
Coastal salt marsh	25.68
Mud flat/intertidal sand bar	7.38
Open water	23.62
Eelgrass	1.97
Relictual salt marsh	68.00
Salt panne	35.58
Southern willow scrub	1.80
Mule fat scrub	3.75
Coastal scrub	3.45
Alkali marsh	0.99
Freshwater marsh	0.75
Disturbed habitat	6.70
Urban/developed	13.80

COASTAL SALT MARSH

While the majority of the habitat within the Huntington Beach Wetlands can be considered coastal salt marsh, only Talbert Marsh supports a truly intertidal marsh, one that experiences the daily tidal influence of seawater. The marsh supports two distinct zones: low marsh that is inundated by nearly every high tide and supports primarily pickleweed (*Salicornia virginica*), but also cordgrass (*Spartina foliosa*); and middle marsh, which is inundated by the higher tides and also dominated by pickleweed with small amounts of salt grass (*Distichlis spicata*) and alkali-heath (*Frankenia salina*). Cordgrass occurs in five patches as a result of two experimental transplants conducted in 1990 and 1995, however there is no evidence that the transplant has spread to other areas of the marsh. The suitability of this marsh for nesting by the Endangered Light-footed Clapper Rail (*Rallus longirostris levipes*) or the Belding's Savannah Sparrow (*Ammodramus sandwichensis beldingi*) is discussed below.



The western portion of the Newland Marsh is also dominated by coastal salt marsh. This site currently experiences a muted tidal influence due to seawater entering the marsh through culverts to the flood control channel. At the time of the July 2004 visit to the site, it appeared that the gates on the culverts were jammed open, allowing seawater to enter and leave the marsh. This marsh also receives freshwater input from the Little Shell wetland on the west side of Beach Boulevard.

MUDFLAT/INTERTIDAL SAND BAR

These habitats are also mapped only in Talbert Marsh and are both features of a tidally influenced system. Both are unvegetated and generally exposed at lower tides and inundated during high tides. Mudflats are composed of finer grained, less mobile sediment particles, while sand bars are formed by coarse-grained sands and tend to be less stable, shifting over time based on currents generated by both tidal flows and freshwater inflows from the flood control channel. These areas provide valuable loafing and foraging habitat for both resident and migratory birds.

OPEN WATER

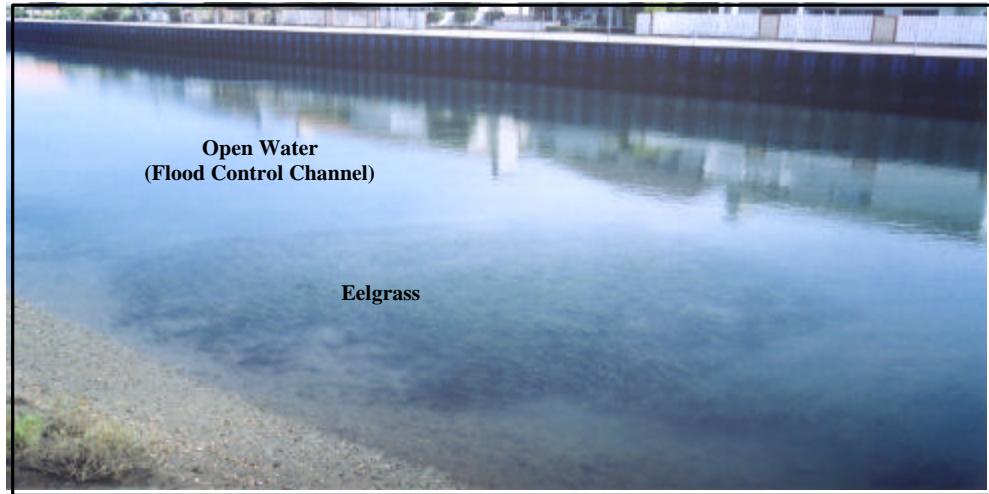
Open water habitat occurs in Talbert Marsh and in Newland Marsh. In Talbert Marsh, the open water is generally shallow saltwater from the ocean. The open water area is suitable for California least tern (*Sterna antillarum browni*) foraging. Open water is also mapped in the flood control channel, which for at least the portion in the study area is under tidal influence the majority of the year. This shallow, marine, low-energy environment has allowed the colonization and persistence of eelgrass (*Zostera marina*) in the channel to the west of Brookhurst Street.



EELGRASS

Much of the open water of Talbert Marsh support beds of eelgrass. Eelgrass was originally introduced to the marsh in 1995 through an experimental transplant. The eelgrass fringes much of

the intertidal sand bar area. Eelgrass beds are a protected and important ecological community in shallow bays and estuaries because of their multiple biological and physical values. Eelgrass habitat functions as an important structural environment for resident bay and estuarine species, offering both refuge from predation and a food source.



Since the time of the transplant, eelgrass has spread up from Talbert Marsh into the flood control channel, growing primarily on the southern shore of the channel. These beds are likely seasonal and subject to disturbance during heavy storm flows.

RELICTUAL COASTAL SALT MARSH

Within the majority of the study site, recognizable zonation of the salt marsh is no longer present due to the absence of tidal influence. Continuing to persist in these areas are species that are tolerant of highly saline soils. This relictual marsh is nearly entirely composed of large expanses of pickleweed. The pickleweed quality varies throughout the site from tall and robust, to short in stature and desiccated. On the margins of the pickleweed occurs salt grass, saltwort (*Batis maritima*), and alkali heath (*Frankenia salina*). During field visits in July 2004, Belding's Savannah Sparrows were observed in nearly all of the relictual coastal salt marsh within the study site (Newland Marsh east, Magnolia Marsh, and Brookhurst Marsh).



The majority of this salt marsh habitat is of high quality in respect to its wide expanses and very minimal invasion by exotic species. However, there is very little plant diversity, likely due to the hypersaline sediment conditions and the environmental extremes experienced in the marsh between wet and dry seasons. In a few areas the salt marsh is degraded, particularly just east of the Huntington Beach Generating Station at the western end of Magnolia Marsh, with various iceplant species (*Mesembryanthemum* spp.), unauthorized recreational use, and dumped fill dirt and concrete scraps further degrading the area.

The areas mapped as relictual coastal salt marsh have a high potential to benefit from restoration efforts involving reintroduction of tidal influence.

SALT PANNE

Remaining in much of Magnolia Marsh and Brookhurst Marsh are areas of unvegetated salt panne. These are areas historically inundated by seawater that have dried to form large areas of hyperaline soils with a surface veneer of salt. Although pickleweed has colonized much of the salt panne areas, the areas lowest in elevation that pool water for long periods, remain unvegetated. Evidence of large algal mats dried over some of these areas indicates that these areas collect water during rainy months, only to rapidly dry, leaving conditions that are inhospitable to most marsh plants. Comparisons of photographs of Magnolia Marsh from 1997 and 2004 show the expansion of pickleweed into many of the salt panne areas. It is unlikely that the lowest, most saline areas will become vegetated in the near future under the current hydrological conditions.



SOUTHERN WILLOW SCRUB

Along the southern boundary of the Magnolia and Brookhurst marshes there is a raised berm just north of Pacific Coast Highway that was created in the past as part of a dune restoration program. This area does not, however, currently support a dune vegetation community. It is dominated by several other vegetation communities, including the wetland habitat southern willow scrub. The southern willow scrub is dominated by arroyo willow (*Salix lasiolepis*), Goodding's black willow

(*Salix gooddingii*) and narrow-leaved willow (*Salix exigua*). Also occurring within this habitat are mule fat (*Baccharis salicifolia*), and the exotic and invasive Myoporum (*Myoporum laetum*), black mustard (*Brassica nigra*), and hottentot fig (*Carpobrotus edulis*).



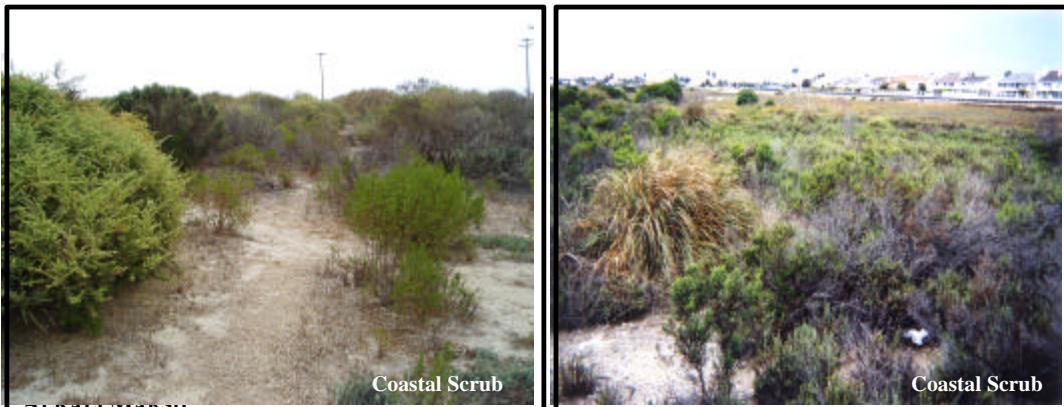
MULE FAT SCRUB

Mule fat scrub is the other dominant wetland habitat type growing in the dune restoration area. Although mule fat is the dominant plant, the lower portions of the berm are commonly covered by hottentot fig. The habitat also has occasional myoporum and narrow-leaved willow. Remaining elements of the dune restoration work are sporadically evident with occasional dune ragweed (*Ambrosia chamissonis*) and goldenbush (*Isocoma menziesii*). Mapped within this habitat is a single patch of the highly invasive exotic giant reed (*Arundo donax*).



COASTAL SCRUB

Two areas support a variety of coastal scrub plants. The upland area east of Talbert Marsh is a mix composed primarily of four-wing saltbush (*Atriplex canescens*), Australian saltbush (*Atriplex semibaccata*), coyote brush (*Baccharis pilularis*), broom baccharis (*Baccharis sarothroides*), and salt heliotrope (*Heliotropium curassavicum*). The second area mapped as coastal scrub occurs in the southwest corner of Brookhurst Marsh and is composed primarily of goldenbush, broom baccharis, and coyote brush, with occasional myoporum and the invasive exotic pampas grass (*Cortaderia jubata*).



Generally occurring in Magnolia and Brookhurst marshes between the coastal salt marsh and the band of mule fat/southern willow scrub along Pacific Coast Highway are areas of alkali marsh. This habitat generally includes bulrush (*Scirpus maritimus*), prairie bulrush (*Scirpus robustus*), yerba mansa (*Anemopsis californica*), and in some areas many southwestern spiny rush (*Juncus acutus*).





FRESHWATER MARSH

One small area of freshwater marsh was mapped in western Newland Marsh. The freshwater marsh is composed of a monotypic stand of broad-leaved cattail (*Typha latifolia*) with a small patch of prairie bulrush (*Scirpus robustus*) nearby. This small freshwater marsh persists in the coastal salt marsh due to a freshwater input at Beach Boulevard.

DISTURBED HABITAT

The areas immediately adjacent to the streets bordering the marshes were mapped as disturbed habitat and consisted of a mix of roadside weeds and a few native species such as goldenbush. The lee side of the “restored dune” also was mapped with large expanses of disturbed habitat, dominated by myoporum and also including small amounts of pampas grass, hottentot fig, olive (*Olea europaea*), black mustard, and castor-bean (*Ricinus communis*). These areas typically were also heavily littered. Although the disturbed habitat at the study site is of low ecological quality, it is limited enough in distribution that it could be restored to higher quality through exotic plant removal and minor enhancement efforts.

URBAN/DEVELOPED

The areas designated at Urban/developed are comprised of paved streets, access roads, and recreational paths.

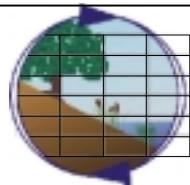
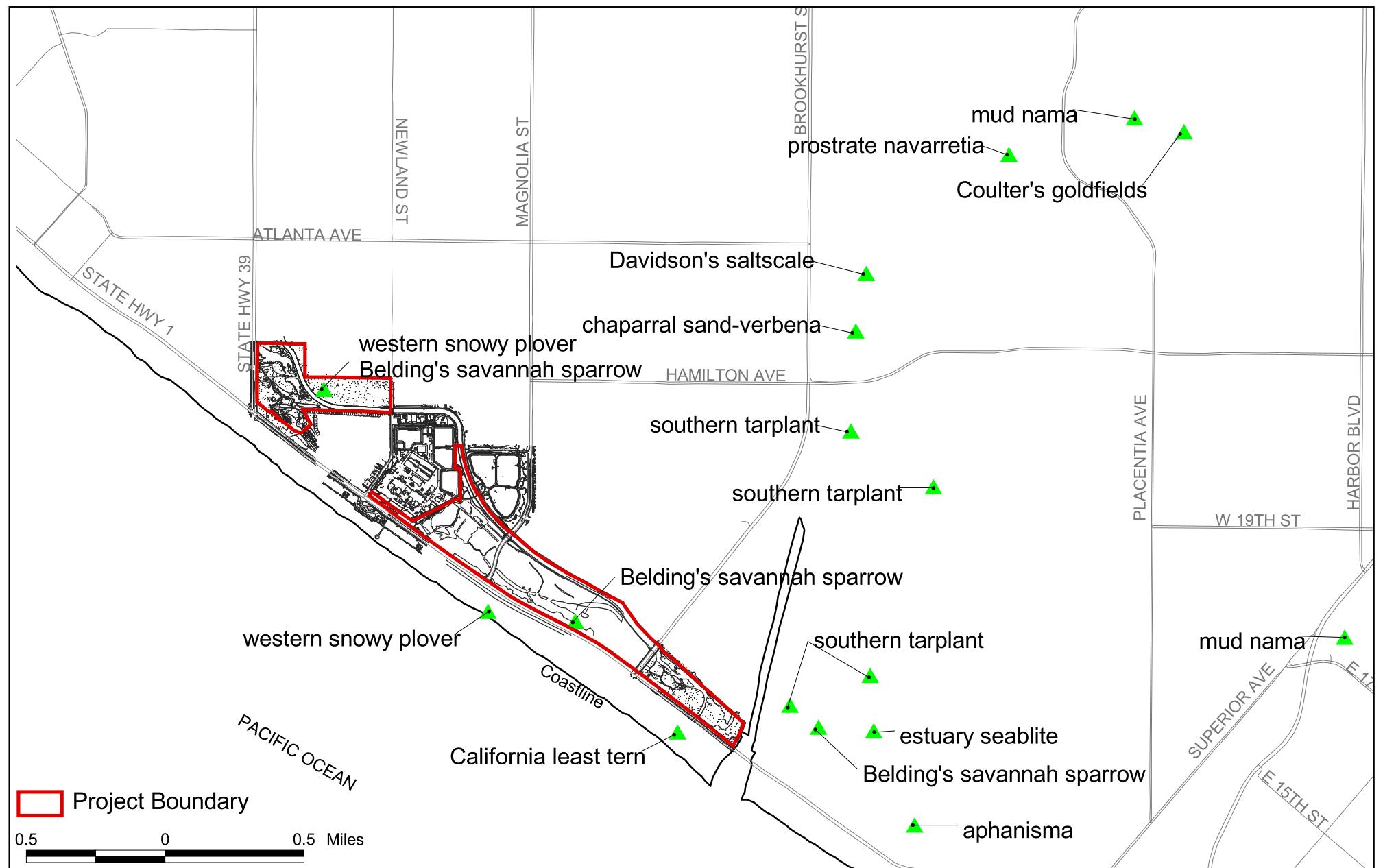
SENSITIVE BIOLOGICAL RESOURCES

The Huntington Beach wetlands complex is not well known for supporting an abundance of sensitive species. In fact, the system is known for its general lack of overall floristic diversity (Jones & Stokes 1997). The system’s smaller size and relatively lengthy isolation from tidal influence since the mid-1940’s combined with various degrees of historic degradation have likely resulted in the loss of many sensitive species typically associated with southern California’s coastal wetlands. This may be particularly true for sensitive plants, which are highly susceptible to localized extirpation following changes in hydrologic conditions, soil disturbances, and heavy infestation by exotic competitors.

Further, as a result of their dependence on passive dispersal strategies, plants are generally slower to recolonize geographically isolated sites than are animals. As a result, sensitive plants are poorly represented within the wetland complex.

To identify sensitive species known or potentially occurring within the Huntington Beach wetland complex, multiple sources of data were investigated. In addition, limited field visits were conducted to better document the distribution patterns of sensitive species identified from recorded sources. In particular, sensitive species were identified regionally through queries of the California Natural Diversity Data Base (CNDDB) for records through March 2004 (California Department of Fish & Game 2004). The CNDDB record search was conducted for a 10 mile radius around the Huntington Beach Wetlands and thus captured records for not only the Huntington Beach marshlands, but also the wetland complexes of Bolsa Chica, Semeniuk Slough, and Newport Bay. After conducting the CNDDB record search, the list of identified species and recorded occurrences were reviewed and a short-list of species potentially occurring within the habitats present within the Huntington Beach Wetlands was prepared (Table 2). In addition, the CNDDB sensitive species records occurring within three miles of the wetland complex were plotted for reference use (Figure 3). While these records are useful in identifying the general historic distribution of sensitive species within the region and immediate area, the lack of consistent metadata regarding survey methodologies, and the lack of updates to records, often limits the contemporaneous utility of these data.

To augment CNDDB records, various survey documents addressing specific areas of the wetland complex were reviewed and unpublished data and reports were provided through personal contacts with resource agency staff, Huntington Beach Wetlands Conservancy volunteers, and various past observations by the project team. These sources are referenced in the following pages as appropriate



Huntington Beach Wetlands
California Natural Diversity Database (CNDDDB)
Records of Sensitive Species Occurrence

Figure 3

Table 2. Sensitive species known from the vicinity with potential to occur in the Huntington Beach Wetland complex.

Species	Common Name
Plants	
<i>Aphanisma blitoides</i>	Aphanisma
<i>Atriplex coulteri</i>	Coulter's Saltbush
<i>Atriplex pacifica</i>	South Coast Saltscale
<i>Atriplex serenana</i> var. <i>davidsonii</i>	Davidson's Saltscale
<i>Astragalus pycnostachyus</i> var. <i>lanosissimus</i>	Ventura Marsh Milk-vetch
<i>Centromadia parryi</i> ssp. <i>australis</i>	Southern Tarplant
<i>Cordylanthus maritimus</i> ssp. <i>maritimus</i>	Salt Marsh Bird's-beak
<i>Juncus acutus</i> ssp. <i>leopoldii</i>	Southwestern Spiny Rush
<i>Lasthenia glabrata</i> ssp. <i>coulteri</i>	Coulter's Goldfields
<i>Nemacaulis denudata</i> var. <i>denudata</i>	Coast Woolly-Heads
<i>Nama stenocarpum</i>	Mud Nama
<i>Navarretia prostrata</i>	Prostrate Navarretia
<i>Suaeda esteroa</i>	Estuary Seablite
Animals	
<i>Athene cunicularia</i>	Burrowing Owl
<i>Charadrius alexandrinus nivosus</i>	Western Snowy Plover
<i>Cicindela gabbi</i>	Gabb's Tiger Beetle
<i>Panoquina errans</i>	Salt Marsh Skipper
<i>Passerculus sandwichensis beldingi</i>	Belding's Savannah Sparrow
<i>Pelecanus occidentalis</i>	California Brown Pelican
<i>Rallus longirostris levipes</i>	Light-footed Clapper Rail
<i>Sterna antillarum browni</i>	California Least Tern
<i>Trigonoscuta dorothea dorothea</i>	Dorothy's El Segundo Dune Weevil
<i>Tryonia imitator</i>	Mimic Tryonia (California Brackish Water Snail)

The on-site status of all of the species identified within Table 2 has not been fully investigated under the present program or in prior studies. However, many of the species with potential to occur in the system are strongly associated with habitat conditions that have been more thoroughly investigated. For this reason, it is possible to gain a relatively good understanding of the potential for occurrence and status of sensitive species within the wetlands through consideration of the overall body of survey data and reports combined with habitat characteristics, and the likely potential for a particular resource to go unnoticed within the complex for any length of time. Using these tools, an analysis of each of the twenty-eight species listed above was undertaken to identify the likely presence of sensitive species occurrences in the Huntington Beach wetland complex. The results of this assessment are summarized in Table 3.

Table 3. Status of known and potentially occurring species in the Huntington Beach Wetland complex.

Species	Sensitivity Status	Records	Status On-Site
Plants			
Aphanisma (<i>Aphanisma blitoides</i>)	Fed: None State: None CNPS: List 1B	Known from 1932 collections approximately 0.75 miles east of the wetlands and 1991 collections at Upper Newport Bay (CNDB 2004). No other reports were located	Not likely to be present due to disturbed habitat conditions within the HBW and the limited extent of suitable habitat available.
Coulter's Saltbush (<i>Atriplex coulteri</i>)	Fed: None State: None CNPS: List 1B	Known from 1932 collection at Newport Bay (CNDB 2004)	Not likely to be present due to disturbed habitat conditions within the HBW and the limited extent of suitable habitat available.
South Coast Saltscale (<i>Atriplex pacifica</i>)	Fed: None State: None CNPS: List 1B	Known from 1932 collection at Newport Bay (CNDB 2004).	Not likely to be present due to disturbed habitat conditions within the HBW and the limited extent of suitable habitat available.
Davidson's Saltscale (<i>Atriplex serenana</i> var. <i>davidsonii</i>)	Fed: None State: None CNPS: List 1B	This species has been identified from the Newport Bay region in 1917. A more proximate record exists within the CNDB (2004) from near Atlanta Avenue and Brookhurst, however the source of this record is not provided.	This species has a moderate potential to occur, it is not widely documented in the area, however degraded fringe habitat surrounding the wetlands is considered suitable to support this species.
Ventura Marsh Milk-vetch (<i>Astragalus pycnostachyus</i> var. <i>lanosissimus</i>)	Fed: Proposed End. State: Endangered CNPS: List 1B	Only one recorded occurrence of this species was located. That was an 1882 record from around Bolsa Bay (CNDB 2004)	This species is not expected to occur at the Huntington Beach Wetlands.
Southern Tarplant (<i>Centromadia parryi</i> ssp. <i>australis</i>)	Fed: None State: None CNPS: List 1B	This species has been reported commonly from around the Semenik Slough area to the south of the Huntington Beach Wetlands with most of the records dating from the late 1980's to the late 1990's. Sites are generally presumed to still be extant.	This species has a good potential to be present in limited numbers around the HBW. It is often found in disturbed marsh fringes in saline soils and is opportunistic by nature.

Species	Sensitivity Status	Records	Status On-Site
Salt Marsh Bird's-beak (<i>Cordylanthus maritimus</i> ssp. <i>maritimus</i>)	Fed: Endangered State: Endangered CNPS: List 1B	This small hemiparasitic saltmarsh plant has been reported by J. Fancher from 1980 observations in Upper Newport Bay. In addition, the species has been reported from 1932 observations in Bolsa Chica wetlands. No reports of the species from Huntington Beach Wetlands were located.	This species has a very low potential to occur within the study area due to habitat degradation as well as the significant presence of qualified observers that have worked in the marshlands. Because of the species' high sensitivity and distinct appearance, it is unlikely that this species would occur at any substantial levels without historic detection.
Southwestern Spiny Rush (<i>Juncus acutus</i> ssp. <i>leopoldii</i>)	Fed: None State: None CNPS: List 4	This robust brackish marsh species is common within coastal dune swales and the interfaces of coastal marshes and uplands where freshwater emerges above saltwater lenses. This species is known from every major coastal wetland in the proximity of Huntington Beach Wetlands and is found within the HBW complex.	This species is found within the alkali marsh habitats scattered around the fringes of the HBW. A particularly dense occurrence of this species is found immediately west of Brookhurst along the back dunes adjacent to PCH. This stand supports several hundred mature plants.
Coulter's Goldfields (<i>Lasthenia glabrata</i> ssp. <i>coulteri</i>)	Fed: None State: None CNPS: List 1B	Records for this species occur in the Bolsa Chica wetlands and at Costa Mesa from 1932 and 1965 sources as reported in the (CNDDB 2004)	This species has a moderate to low potential to occur within the tidal and non-tidal marshlands. This annual species has bright-yellow flowers and is an obvious species when in flower and thus large populations are unlikely to go unrecorded in a heavily trafficked area such as the HBW complex.
Coast Woolly-Heads (<i>Nemacaulis denudata</i> var. <i>denudata</i>)	Fed: None State: None CNPS: List 1B	This species is known from beach dune habitats along the	This prostrate dune plant is found in abundance around and within the California Least Tern nesting colony west of the Pacific Coast Highway. Due to the significant degradation of dune habitat on the east side of PCH,

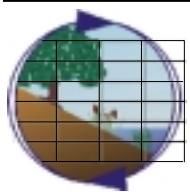
Species	Sensitivity Status	Records	Status On-Site
			this species is not expected to occur within the study area at any significant levels. However, given its wind-borne dispersal, any suitable open sandy patches around Talbert Marsh have the potential for recruiting woolly-head from year to year (Figure 4b). Dave Pryor (State Parks Ecologist) has confirmed the occurrence of this species along the peripheral dune environment within a small disturbance in the summer of 2004.
Mud Nama <i>(Nama stenocarpum)</i>	Fed: None State: None CNPS: List 2	This species is reported from freshwater wetlands to the north of the project area, no additional data area available on these records (CNDDB 2004)	This species has a limited potential to occur along the Talbert and Huntington Channels upstream of the Huntington Beach Wetlands. It is not expected to be capable of establishing persistent populations within the saline wetland complex.
Prostrate Navarretia <i>(Navarretia prostrata)</i>	Fed: Species of Concern State: None CNPS: List 1B	This species is reported from to the north of the project area, no additional data area available on these records (CNDDB 2004)	This species is not expected to occur due to the lack of suitable habitat, a high degree of disturbance, and the general lack of potential for the species to recruit to the site from nearby source populations.
Estuary Seablite <i>(Suaeda esteroa)</i>	Fed: None State: None CNPS: List 1B	This species is relatively common as an element of high marsh environments within southern California. However, past studies at the HBW have noted an absence of suaeda from the system (Jones & Stokes 1997).	This species has a low to moderate potential to occur in low numbers within the upper fringes of the salt marsh wetlands. Its reported absence from the system is probably the result of considerable degradation of fringing upland habitats over the past decades.

Species	Sensitivity Status	Records	Status On-Site
Animals			
Burrowing Owl (<i>Athene cunicularia</i>)	Fed: Species of Concern State: None CDFG: Calif. Species of Special Concern	This species has been reported from the Bolsa Chica wetlands in 1993 and from Upper Newport Bay in 1981. The species may be expected to occur around the flood control channels and the Santa Ana River as a wintering species, however regular breeding resident pairs are not expected to occur in the vicinity without report.	This species is expected to occur within the HBW as a migratory winter visitor but is not expected as a breeding resident species.
Western Snowy Plover (<i>Charadrius alexandrinus nivosus</i>)	Fed. Threatened	This species is a regular visitor to the HBW complex and forages within the mudflats and on sandbars within the Talbert Marsh. Plovers can also be expected to forage on salt pannes and around evaporating brine pools within the non-tidal areas of the system. There are two reported nesting attempts of Snowy Plovers on the adjacent state beach. These are discussed below.	Snowy Plover is a regular foraging and loafing species within the Talbert Marsh portion of the Huntington Beach Wetlands. This species makes use of tidal habitat within the Huntington Beach wetlands in a manner similar to its use of other wetlands and open coastal beaches. It is not clear to what extent it uses the expansive salt pannes, however, no reports of attempted nesting in these areas have been located (Figure 4b).
Gabb's Tiger Beetle (<i>Cicindela gabbii</i>)	Fed: None State: None	This species is a rare tiger beetle of upper mudflats and salt-pannes of salt marshes. It has been reported from several of the salt-marsh systems in southern California, including Bolsa Chica and Upper Newport Bay (Nagano, pers. comm. 1994).	This species has a moderate to high potential to occur within both the tidal and non-tidal marshlands of the HBW. It could readily go un-noticed for many years. It has not been observed during recent visits to the wetlands by project biologists.
Salt Marsh Skipper (<i>Panoquina errans</i>)	Fed: None State: Calif. Species of Special Concern	This species occurs in abundance within coastally located saltgrass (<i>Distichlis spicata</i>). Nearly every healthy stand of saltgrass found	This species is present at the Huntington Beach Wetlands within fringing stands of its host plant <i>Distichlis spicata</i> . The generally

Species	Sensitivity Status	Records	Status On-Site
Belding's Savannah Sparrow (<i>Passerculus sandwichensis beldingi</i>)	State: Endangered	around southern California coastal salt marshes supports this species.	limited occurrence of saltgrass along the marsh fringe is the primary factor limiting the occurrence of this species at the HBW.
California Brown Pelican (<i>Pelecanus occidentalis</i>)	Fed: Endangered State: Endangered	Belding's Savannah Sparrows are a relatively common species associate of both tidal and non-tidal coastally located <i>Salicornia</i> marshes. This species is found within marsh complexes both north and south of the HBW and is found as an abundant resident within the HBW pickleweed marshlands.	The populations of Belding's Savannah Sparrows are regularly monitored by the Department of Fish & Game and good counts occur for the Huntington Beach Wetlands. This species typically nests within robust <i>Salicornia</i> marsh, however, where non-tidal environments occur, even sparse and lower stature marsh may be used by the sparrow. Within the wetlands, the distribution of Belding's Savannah Sparrows generally follows that of <i>Salicornia virginica</i> , however, where vegetation is subject to extreme salinities or long-periods of inundation, the stunted and sparse vegetation generally supports fewer birds than the more robust vegetation found around tidal waters, or along swales and seeps in non-tidal areas. This species is discussed further below (Figure 4b).

Species	Sensitivity Status	Records	Status On-Site
Light-footed Clapper Rail <i>(Rallus longirostris levipes)</i>	Fed: Endangered State: Endangered	This species is a secretive species of low and middle elevation tidal marshes as well as dense cattail marshes along the coast. Recorded occurrences of this species include 1993 detection of rails at Bolsa Chica (CNNDBB 2004) as well as a persistent and robust population of rails at Upper Newport Bay to the south.	Due to the limited extent of cordgrass habitat within the marsh, the accessibility of the majority of the marsh by humans and predators, and the high number of qualified birders it is not expected that the Light-footed Clapper Rail (<i>Rallus longirostris levipes</i>) would have escaped detection if present in the system. At present Light-footed Clapper Rails are not expected to occur within the wetlands, however, as restored cordgrass expands, the opportunity for colonization of the Talbert Marsh by this species will increase.
California Least Tern <i>(Sternula antillarum browni)</i>	Fed: Endangered State: Endangered	California least terns occur along the central and southern California coastline where they nest in discrete, well documented, colonies and forage opportunistically in waters proximate to nesting sites.	This species occurs as a nesting species on a permanently established nesting site on the State Parks beach between the Talbert Channel tidal inlet and the mouth of the Santa Ana River. Least terns forage extensively along the coastal shoreline near the nesting colony and within the tidally influenced channels of the restored Talbert Marsh as well as along the lower portions of the Talbert and Huntington Channels. This species is also an active forager along the Santa Ana River channel. No nesting occurs within the Huntington Beach Wetlands (Figure 4a and 4b).
Dorothy's El Segundo Dune Weevil <i>(Trigonoscuta dorothea dorothea)</i>	Fed: None State: None	This species is a resident of coastal dunes and has been recorded at the Bolsa Chica wetlands on Rabbit Island	The dune weevil is likely to be present within the active dunes surrounding the California Least Tern colony on the

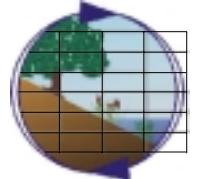
Species	Sensitivity Status	Records	Status On-Site
		and at the south entrance to the Bolsa Chica Ecologica Reserve Entrance in 1989 (CNDDDB 2004)	State Beach south of PCH. However, this species is not expected within the HBW due to the highly degraded state of the dune habitat to the north of PCH.
Mimic Tryonia (<i>Tryonia imitator</i>)	Fed: None State: None	This brackish water snail has been reported from Bolsa Chica wetlands in 1968 (CNDDDB 2004) and Upper Newport Bay where a population is still known to exist at the mouth of San Diego Creek (Merkel pers. obs.)	The brackish water snail is likely to occur within the tidally influenced reaches of the Talbert Channel and the Huntington Channel. The species does not do well in full saline waters and would not be expected to persist well into the Talbert Marsh complex.



Huntington Beach Wetlands
Sensitive Species Habitats
Western Portion

Figure 4a

MATCHLINE SHEET 2a

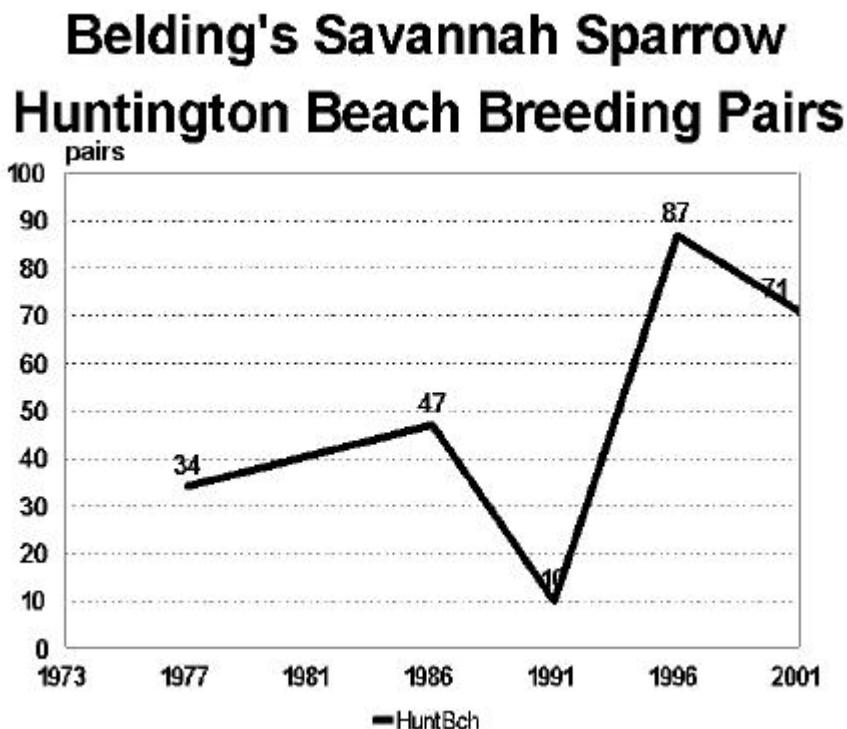


Huntington Beach Wetlands
Sensitive Species Habitats
Eastern Portion

Figure 4b

Of the potentially occurring species, or species known to occur within the Huntington Beach Wetlands complex, only two are anticipated to play a significant role in planning for system enhancement. These are the Belding's Savannah Sparrow and the California Least Tern. While other species may be influenced by the work, or could play a minor role in the project planning and environmental review processes, the relatively extensive use of the project site by Beldings' Savannah Sparrows and Least Terns will be important considerations relative to minimizing impacts, enhancing values of the restoration program, and planning restoration opportunities around biologically important periods such as the nesting season.

The on-site populations of Belding's Savannah Sparrows has shown an increase over time as pickleweed has recolonized much of the open flats of the non-tidal marsh and as the tidal portions of the Talbert Marsh have improved the vigor of middle marsh habitats. During the spring of 2004, a considerable recruitment event occurred and juvenile and adult Belding's Savannah Sparrows occurred throughout most of the vegetated salt marsh areas, both tidal and non-tidal. During the planning periods of the enhancement efforts, it will be necessary to evaluate and control the potential for adverse impacts to marsh vegetation that supports Belding's Savannah Sparrows.



Provided by J. Fancher, data from Zembal & Hoffman 2002.

Figure 5. Belding's Savannah Population trends at Huntington Beach Wetlands.

California Least Tern use of the wetlands and nesting at the beach is expected to create some potential conflicts for construction timing associated with any enhancement activities undertaken at the Huntington Beach Wetlands. However, given the limited use of the site by least terns as foraging areas, any enhancement that increases the tidally influenced areas within the wetland complex would be expected to result in long-term improvements in the foraging-base in proximity to the adjacent colony. As a result, the least tern is believed to present the enhancement efforts with more of a logistical construction constraint than a substantive design constraint.

REFERENCES

- California Department of Fish and Game, Natural Diversity Database. 2003. RareFind Version 3.0.3. 2004 data.
- Jones & Stokes Associates, Inc. 1997. Talbert Marsh Restoration Project Five-Year Post-Restoration Monitoring Report. Final. December. (JSA 96-300) Sacramento, CA. Prepared for Huntington Beach Wetlands Conservancy, Huntington Beach, CA.
- Massey, B. M. 1994. Summary of the 5-year Period of Post-Restoration Monitoring at Talbert Marsh, Huntington Beach, CA. Prepared for the Huntington Beach Wetlands Conservancy.
- Zembal, R. and S. Hoffman. 2002. A survey of the Belding's savannah sparrow (*Passerculus sandwichensis beldingi*) in California, 2001. Species Conservation and Recovery Program Report No., 2002-01 12pp.