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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
Carlsbad Fish and Wildlife Office
2730 Loker Avenue West
Carlsbad, California 92008

In Reply Refer To: FWS-SD-1872.2

FEB 22 2002

John H. Robertus, Executive Officer
Attn: Hashim Navrozali
Regional Water Quality Control Board, Region 9
9174 Sky Park Court, Suite 100
San Diego, California 92123

Re: Tentative Order No. 2001-283, NPDES Permit No. CA0001368, Waste Discharge Requirements for Duke Energy South Bay, LLC, South Bay Power Plant, San Diego County, California

Dear Mr. Robertus:

Thank you for providing the U.S. Fish and Wildlife Service (Service) the opportunity to review and comment on the subject Tentative Order which addresses the NPDES Permit No. CA0001368, Waste Discharge Requirements for Duke Energy South Bay, LLC, South Bay Power Plant (SBPP), San Diego County, California. The Service previously commented on the subject permit in a letter dated June 6, 2001. Many of the concerns identified in that letter are applicable to the effluent permitted by the subject Tentative Order and will be reiterated below.

South San Diego Bay (South Bay) provides important habitat for a myriad of aquatic and terrestrial wildlife species. South Bay serves as an integral migratory stopover and wintering area for shorebirds, seabirds, and waterfowl in the Pacific flyway. The South Bay supports breeding colonies of elegant tern, royal tern, Forster's tern, gull-billed tern, caspian tern, black skimmer, and double-crested cormorant. These breeding colonies are significant. Royal terns breed at only two sites on the west coast including South Bay and Bolsa Chica. Elegant terns breed at only three sites on the west coast including South Bay, Bolsa Chica, and Terminal Island in Los Angeles. South Bay is one of only two nesting sites in San Diego County for Forster's tern. South Bay is the only coastal breeding site on the west coast of United States for the gull-billed tern. Due to the biological diversity and abundance of fish and wildlife species, the Service recently obtained a long-term lease from the State of California to manage the salt ponds and marine waters of South Bay as the South San Diego Bay Unit of the San Diego National Wildlife Refuge (NWR)(see attached map).

Federally listed threatened and endangered species that are dependant upon South Bay include green sea turtle (*Chelonia mydas*), California least tern (*Sterna antillarum browni*), brown

Enclosure (1)

pelican (*Pelecanus occidentalis*), light-footed clapper rail (*Rallus longirostris levipes*), and western snowy plover (*Charadrius alexandrinus nivosus).* These listed species may be affected by the subject permit.

We believe the Regional Water Quality Control Board (Board) recognizes the biological significance of San Diego Bay by including the following as designated beneficial uses of the waters of the bay:

Preservation of Biological Habitats of Special Significance (BIOL)
Estuarine Habitat (EST)
Wildlife Habitat (WILD)
Rare, Threatened, or Endangered Species (RARE)
Marine Habitat (MAR)
Migration of Aquatic Organisms (MIGR)

These beneficial uses are those that are to be achieved and protected for San Diego Bay. We believe that demonstration of the achievement and protection of these uses will ensure that the biological resources utilizing the bay are protected. We believe this demonstration is the responsibility and should be required of the permitted dischargers to the bay.

The subject discharge permit may adversely affect biological resources that utilize South Bay including aquatic vegetation (specifically, eelgrass), zooplankton, benthic invertebrates, fish species, migratory bird species, and other aquatic dependent wildlife species. Protecting the beneficial uses identified above requires that the physical, chemical, and biological quality of the bay be protected, including the habitat quality (physical and chemical) and food availability (biologicial - i.e., prey items) of species dependent upon the bay. Effects to the habitat quality and food availability can adversely effect species utilizing the bay.

The effect of the SBPP effluent on the distribution of eelgrass in South Bay is of concern. Eelgrass is extremely important for many of the species that utilize the bay. Eelgrass is among the most productive habitats in the ocean and generally associated with diverse invertebrate and fish faunas, both of which serve as prey items for many species of wildlife that utilize South Bay. Therefore, eelgrass serves as a good indicator of a healthy, functioning waterbody. The green sea turtle and brant are known to feed on eelgrass beds within South Bay. Major factors affecting eelgrass distribution include: light levels, temperature, salinity, depth, nutrients, and sediment grain size. We believe the SBPP effluent is a factor affecting the distribution of eelgrass in South Bay because the effluent alters temperature and turbidity in South Bay. We believe the discharge creates disturbance of the bottom sediments, and is likely a greater contributing factor to turbidity, and resulting diminished light levels, in the South Bay than that due to wave action. We would like further evaluation of the effects of the discharge on turbidity in South Bay and the relationship this effect may have on eelgrass distribution. These concerns are warranted

based on the loss of eelgrass beds historically found in the southeastern portions of the bay (See Figure 5-2 (copy attached) *in* SDG&E South Bay Power Plant NPDES Permit Renewal Issue Summaries and Presentation Format, January 20, 1995).

This permitted discharge may affect benthic invertebrate populations utilized by western snowy plover (plover) and snails, aquatic insects, and crayfish fed upon by the light-footed clapper rail (clapper rail). The plover has nesting colonies at "D" Street Fill, Chula Vista Wildlife Reserve, and the levees of the salt ponds. The clapper rail has been documented to occur in the Otay River and at South Bay Biological Study Area.

The discharge may affect the distribution of marine fish species that are important food items for the California least tern (tern) and brown pelican. The tern is of particular concern because this bird species has nesting colonies at "D" Street Fill which is a unit of Sweetwater Marsh NWR, Chula Vista Wildlife Reserve, and the levees of the salt ponds that are a unit of San Diego Bay NWR. The terns are totally dependant on small marine fish that are typically captured within two miles or less from their nesting colony. Topsmelt and anchovies are two primary prey items for the adult terns. Gobies are thought to be an important food item for young tern chicks.

The more subtle, long-term effects from the continual discharge on these aquatic and aquatic-dependent species and on their distribution pattern within South Bay needs to be evaluated and monitored. Chemical and toxicological monitoring of the sediments in South Bay is necessary to evaluate the effects of this effluent on the bay and should be required of the discharger as a permit condition.

Per discussion with Hashim Navrozali of your staff, it is our understanding that the subject permit does not include an effluent limitation for dissolved oxygen because a dissolved oxygen water quality objective does not exist in the Water Quality Control Plan for the San Diego Basin for enclosed bays. However, we believe the Basin Plan infers a water quality objective for dissolved oxygen for enclosed bays. Further, Table C-1, page C-4 of the San Diego Basin Plan lists the following dissolved oxygen objective for bays and estuaries:

"Shall not be less than 5.0 mg/L with designated MAR. The annual mean DO shall not be less than 7 mg/L more than 10% of the time."

Therefore, we recommend that an effluent limitation using the Basin Plan's dissolved oxygen objective be incorporated in the subject permit to ensure protection of the designated beneficial uses of the San Diego Bay.

Of particular concern is the temperature effluent limitation in the subject permit which states, "The temperature of the combined discharge shall not average more than 15°F above that of the intake water during any calendar day. The combined discharge shall not at any time exceed 25°F above that of the intake water." [Tentative Order No. 2001-283, NPDES Permit No. CA0001368, B. DISCHARGE SPECIFICATIONS 1. Combined Discharge (a)]. We are concerned that the

heated discharge may adversely affect aquatic organisms, particularly during the summer and early fall months, when ambient water temperatures in South Bay are normally high. This may result in the death of some species that are not mobile (i.e. benthic invertebrates and eelgrass) or the displacement of species (i.e., fish) that would typically occur in South Bay. These concerns are further warranted because of the entrainment of the thermal discharge plume (i.e., recirculation of the discharge plume as intake water), which will effectively elevate the ambient temperature of the intake water. Because as much as 45% of the thermal plume may be entrained (personal communication, Hashim Navrozali, Regional Water Quality Control Board to Scott Sobiech (Source: San Diego Gas & Electric 1980, South Bay Power Plant Cooling Water Intake System Demonstration)), this could allow for significant temperature increases relative to the ambient temperature of the rest of the bay.

The Regional Water Quality Control Board's fact sheet for the subject permit cites numerous studies indicating that the thermal effects, impingement, and entrainment from SBPP have not adversely impacted the biota of South Bay. Most of the studies were conducted more than a decade ago. We believe that SBPP should be required to demonstrate that the best available technology is being employed to minimize the numbers of biological organisms lost by impingement and entrainment. This information should be provided to the Service, California Department of Fish and Game, and National Marine Fisheries Service. More recent thermal effects, impingement, and entrainment studies are necessary to demonstrate that the beneficial uses of South Bay are being protected.

We believe that maintaining the physical, chemical, and biological quality of the South Bay will ensure protection of the designated beneficial uses of San Diego Bay. We believe the appropriate monitoring of water quality, sediment quality, and biotic communities is necessary to ensure that these designated beneficial uses are protected. We encourage the Regional Water Quality Control Board, San Diego Region to require such monitoring as a permit condition for the SBPP. We are willing to work with your staff to identify and recommend an appropriate monitoring program. Should you have any questions regarding these comments, or require further technical assistance, please contact Scott Sobiech or Martin Kenney of my staff at (760) 431-9440.

Sincerely,

Jim A. Bartel
Acting Field Supervisor

cc: Mendel Stewart
Brian Collins
Denise Klimas, NOAA
William Paznokas, CDFG

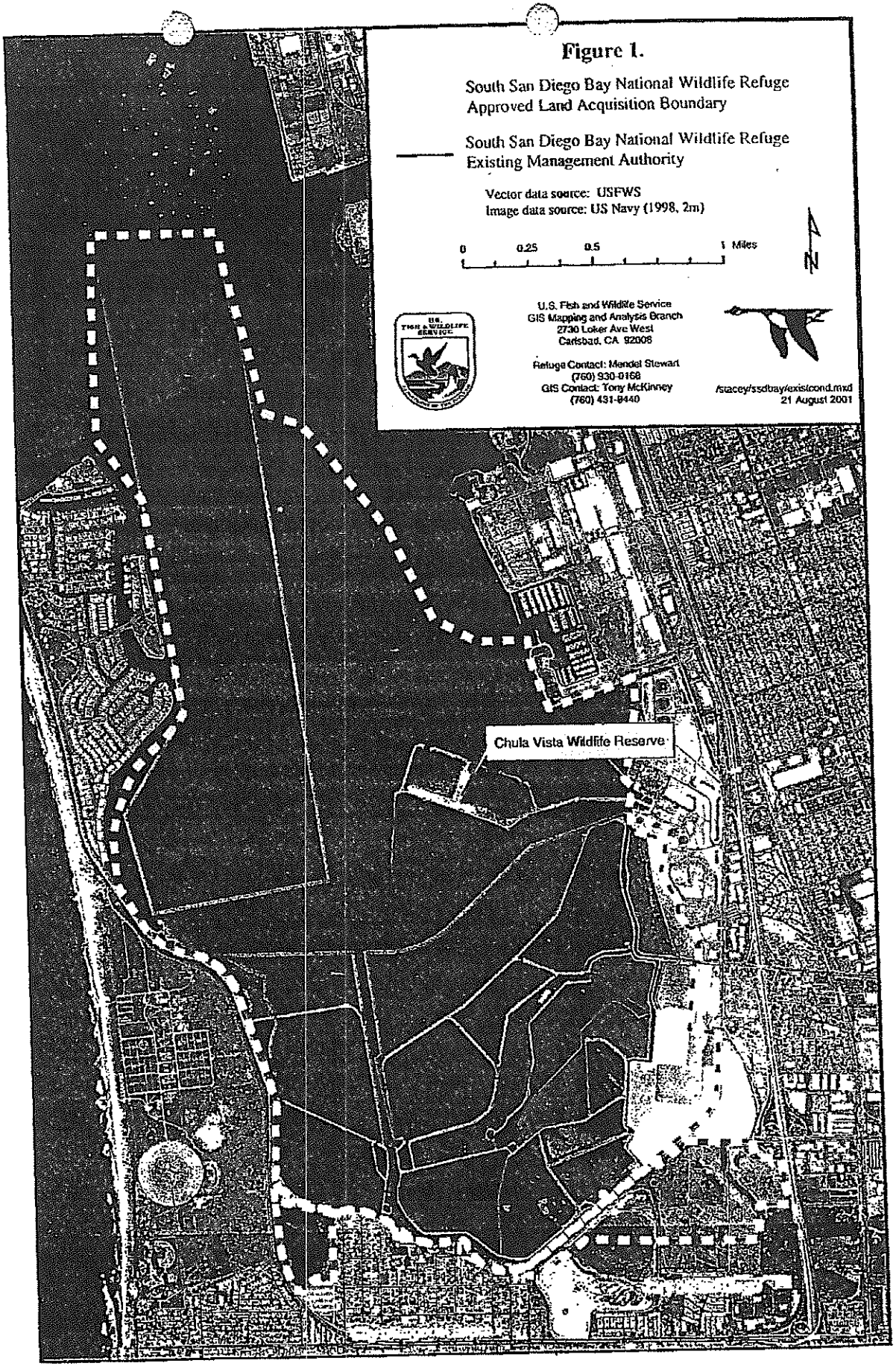
Figure 1.
South San Diego Bay National Wildlife Refuge
Approved Land Acquisition Boundary
South San Diego Bay National Wildlife Refuge
Existing Management Authority
Vector data source: USFWS
Image data source: US Navy (1998, 2m)
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0.25
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1 Miles
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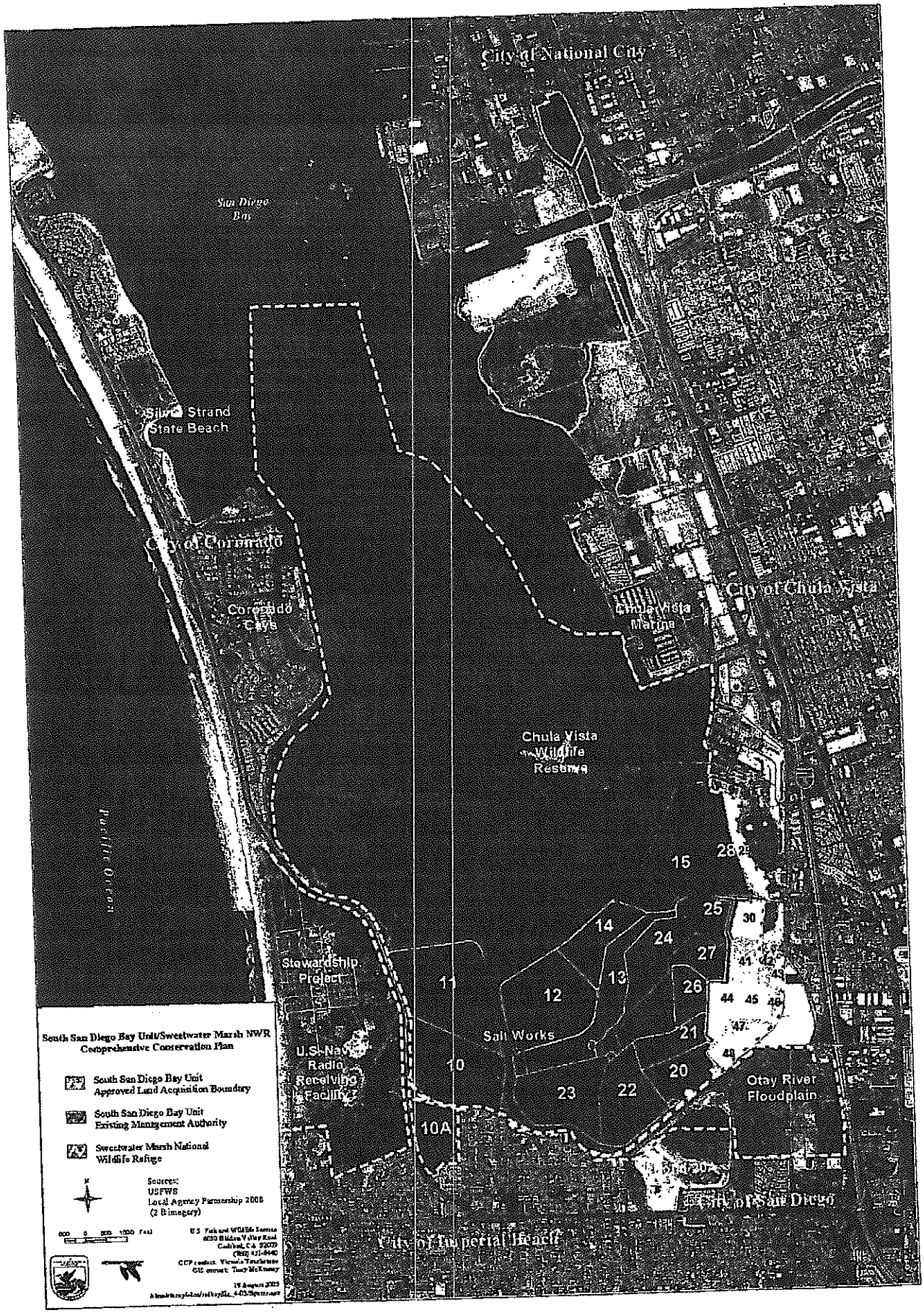
U.S. Fish and Wildlife Service
GIS Mapping and Analysis Branch
2730 Loker Ave West
Carlsbad, CA 92008
Refuge Contact: Mendel Stewart
(760) 930-0168
GIS Contact: Tony McKinney
(760) 431-9440
/staceyl/ssdbay/existcond.mxd
21 August 2001
Chula Vista Wildlife Reserve


City of National City
San Diego Bay
Silver Strand State Beach
City of Coronado
Coronado Cays
City of Chula Vista
Chula Vista Marina
Chula Vista Wildlife Reserve
Pacific Ocean
Stewardship Project
U.S. Navy Radio Receiving Facility
Salt Works
Otay River Floodplain
City of San Diego
City of Imperial Beach
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South San Diego Bay Unit/Sweetwater Marsh NWR
Comprehensive Conservation Plan
South San Diego Bay Unit
Approved Land Acquisition Boundary
South San Diego Bay Unit
Existing Management Authority
Sweetwater Marsh National
Wildlife Refuge
N
Sources:
USFWS
Local Agency Partnership 2005
(2 Bimagery)
800 0 800 1600 Feet
U.S. Fish and Wildlife Service
6010 Hidden Valley Road
Carlsbad, CA 92009
(760) 431-9440
CCP contact: Victoria Touchstone
GIS contact: Tony McKinney
19 August 2005