

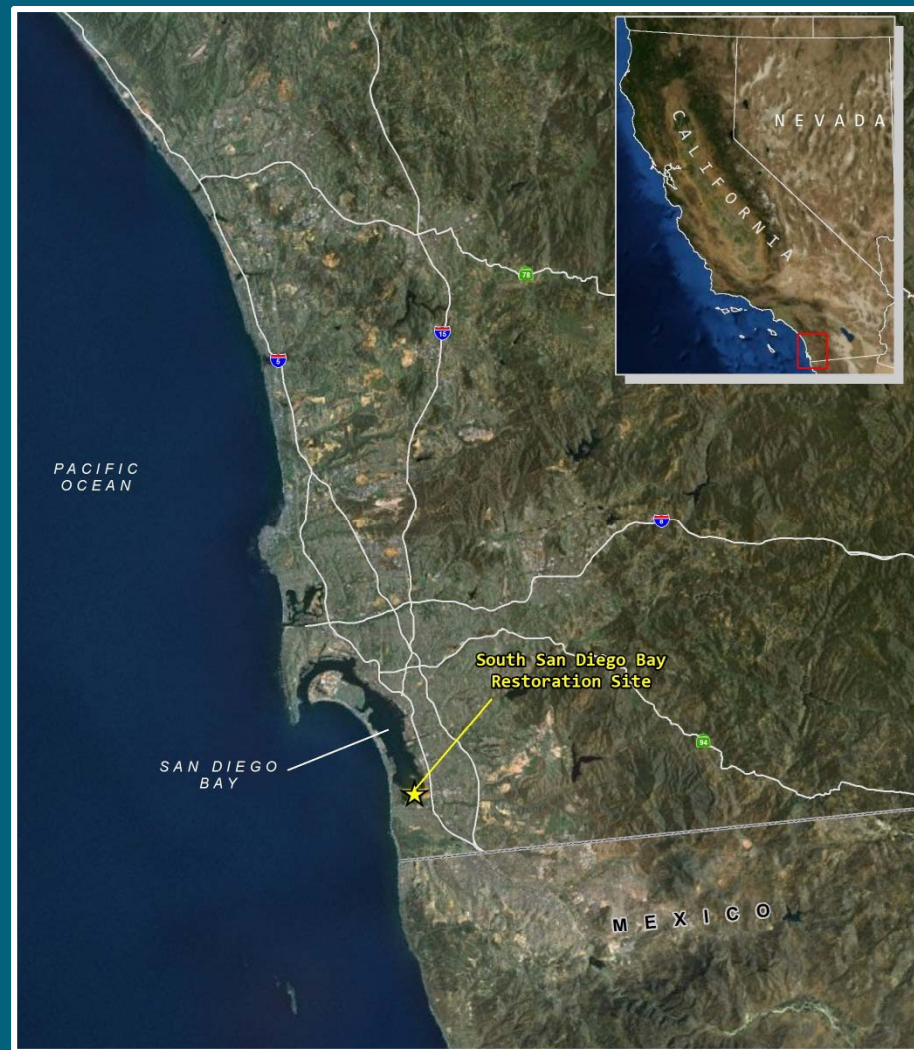
Collaboration and Planning to Implement the South San Diego Bay Restoration and Enhancement Project

Carolyn Lieberman
Coastal Program Coordinator for Southern California
U.S. Fish and Wildlife Service

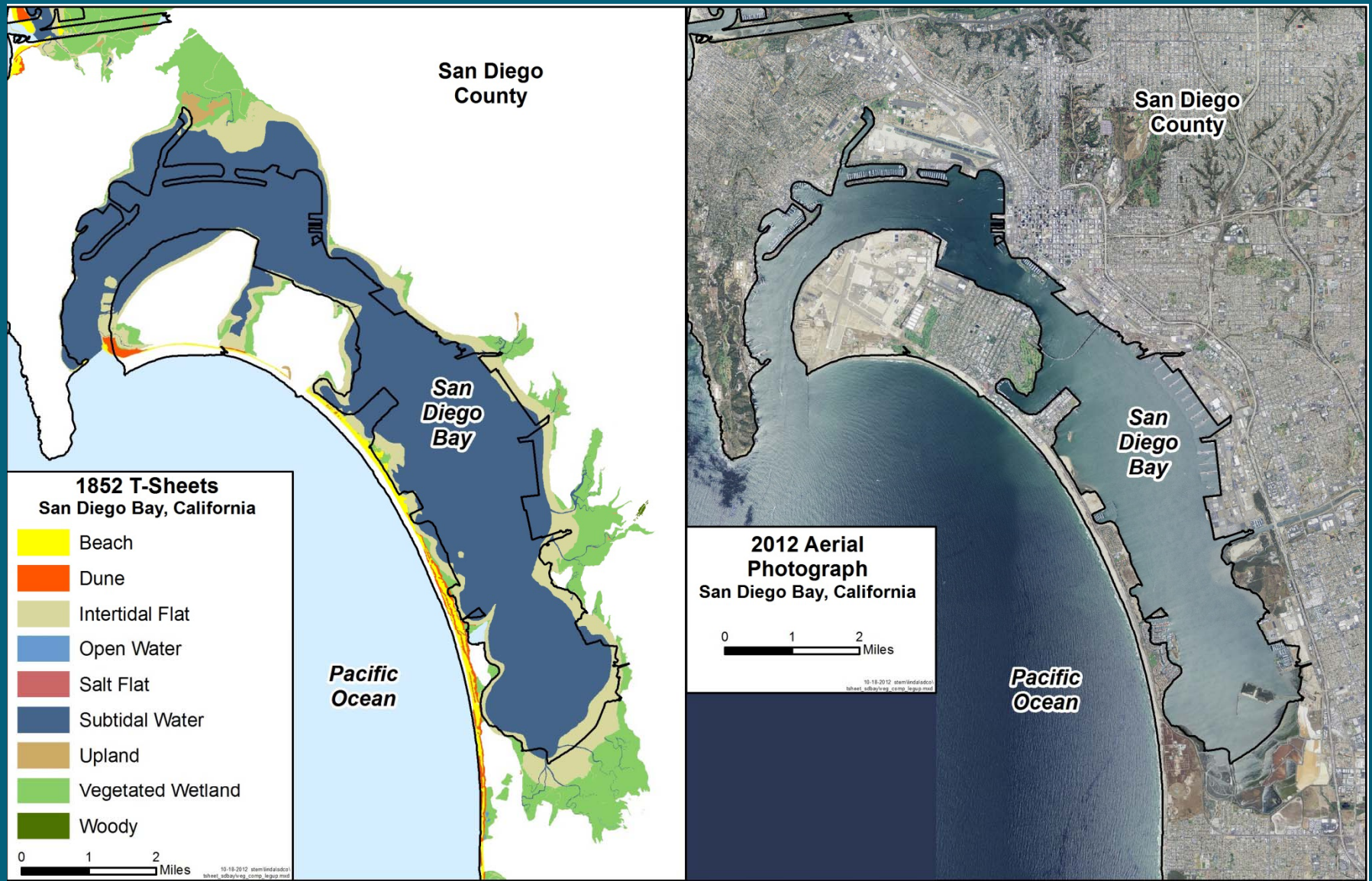


August 28, 2013

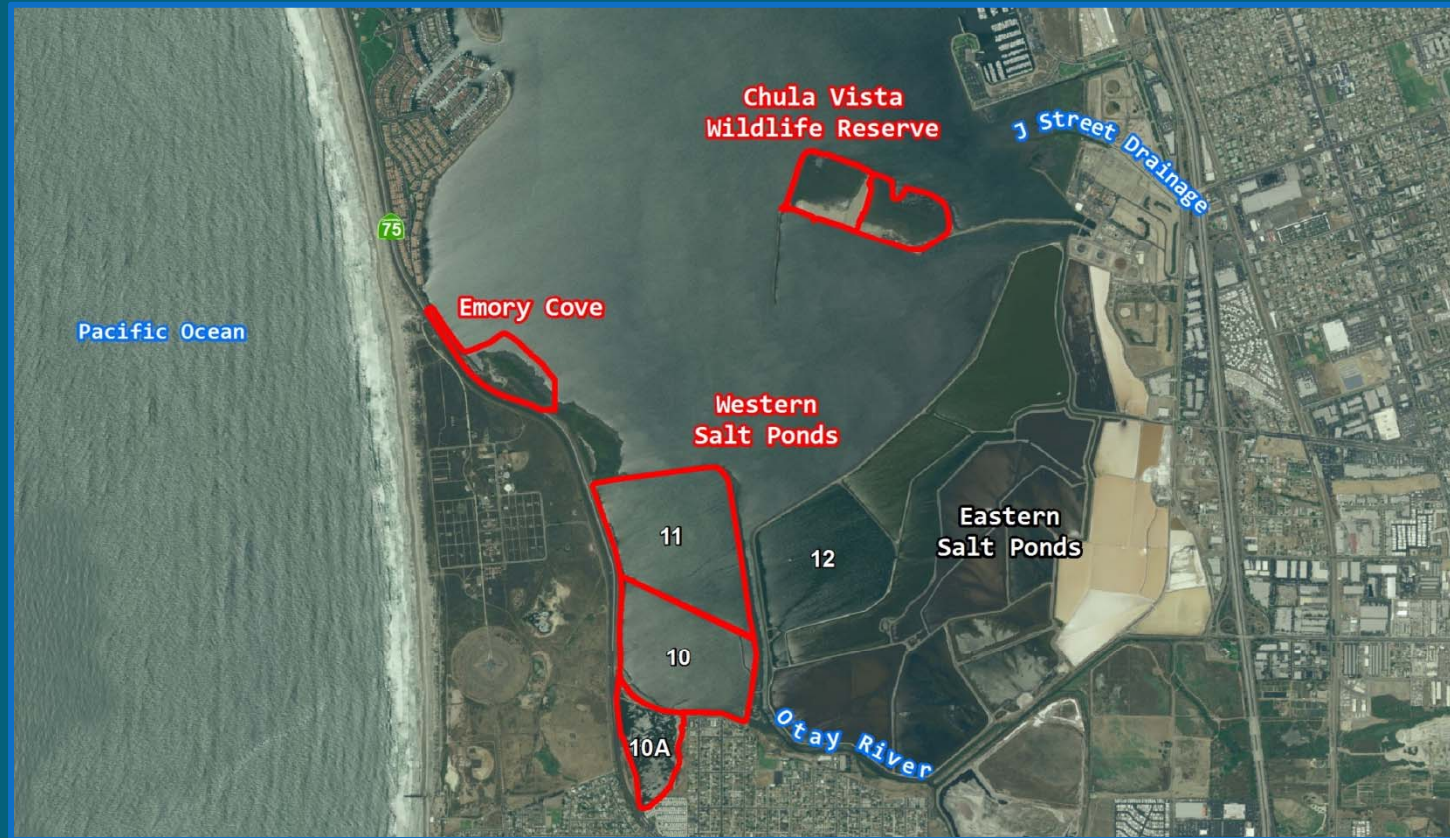
State and County Vicinity Map



San Diego Bay in 1852 and 2012



South San Diego Bay



Planning Milestones

- 1994 - USFWS Coastal Program documents significant bird use in south San Diego Bay.
- 1999 - South San Diego Bay Unit of the San Diego Bay National Wildlife Refuge is established.
- 2006 - San Diego Bay National Wildlife Refuge Comprehensive Conservation Plan and Environmental Impact Statement is finalized.
- 2006 - South San Diego Bay Coastal Wetland Restoration Project is added to the Southern California Wetland Recovery Project Work Plan.
- 2008 – Partnership between Coastal Program, National Wildlife Refuges, California Coastal Conservancy, Port of San Diego, and Southwest Wetlands Interpretive Association is established to seek grant funding is established.



Project Goals



Chula Vista Wildlife Reserve (50 acres)

- Establishment of 11 acres of coastal salt marsh within degraded habitat and enhancement of 32 acres of coastal salt marsh and 7 acres of seabird nest site

Western Salt Ponds (230 acres)

- Restoration of 230 acres of estuarine habitats within three active solar salt ponds

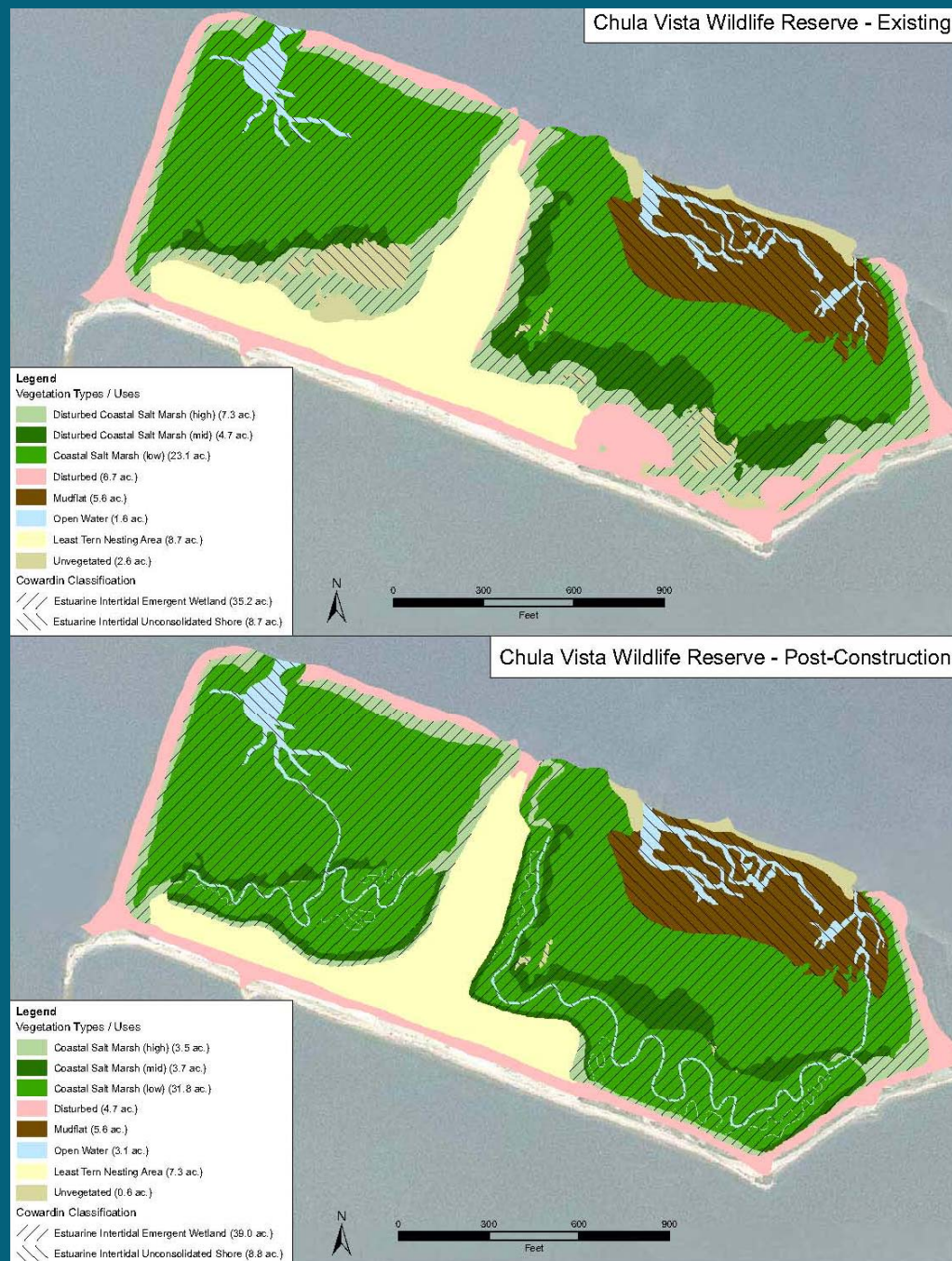
Emory Cove (28 acres)

- Enhancement of 28 acres of salt marsh and wetland-upland ecotone



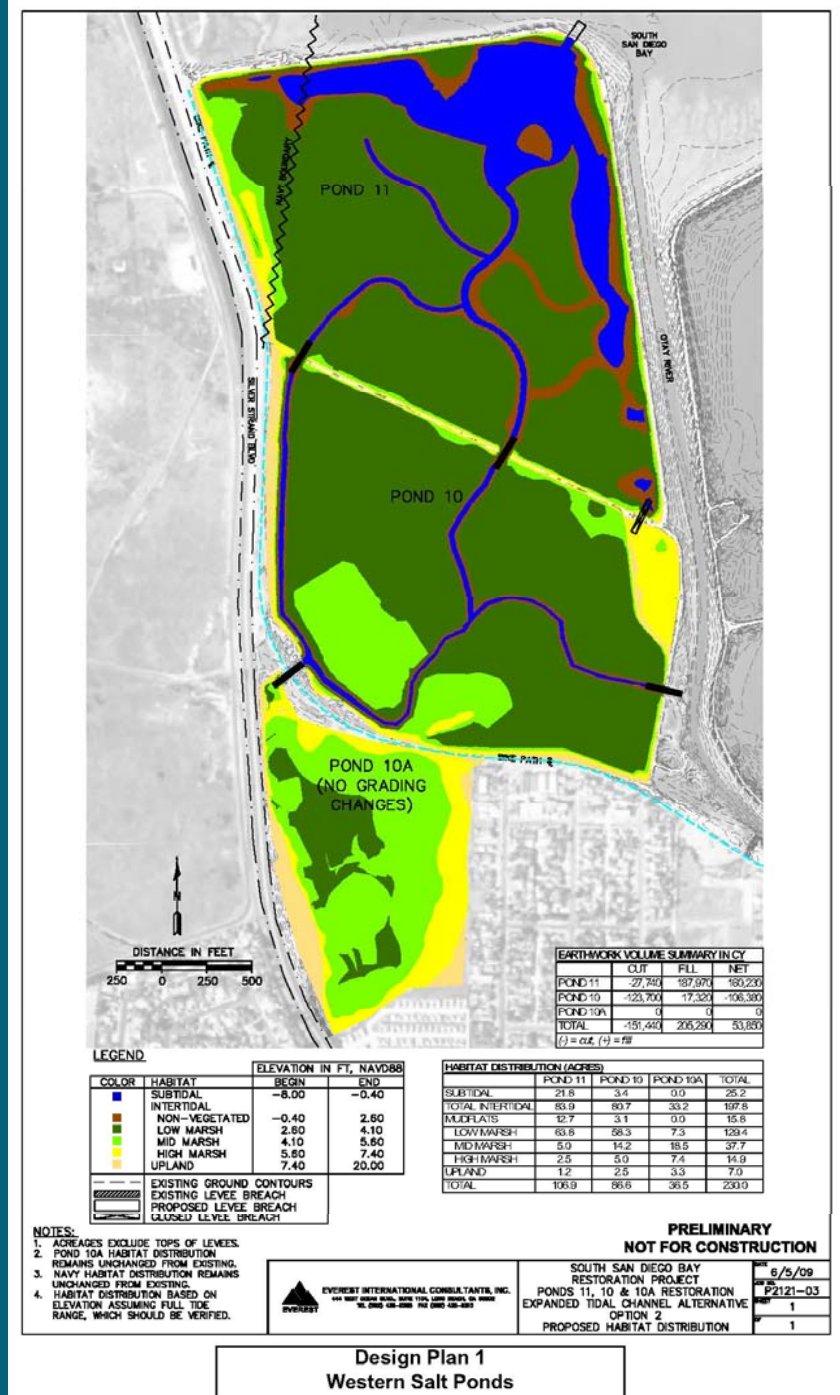
Chula Vista Wildlife Reserve (Port Land)

Habitat Type	Acreage
Nesting Area	7 (enhanced)
Salt Marsh	11 (restored) 32 (enhanced)
Total	50



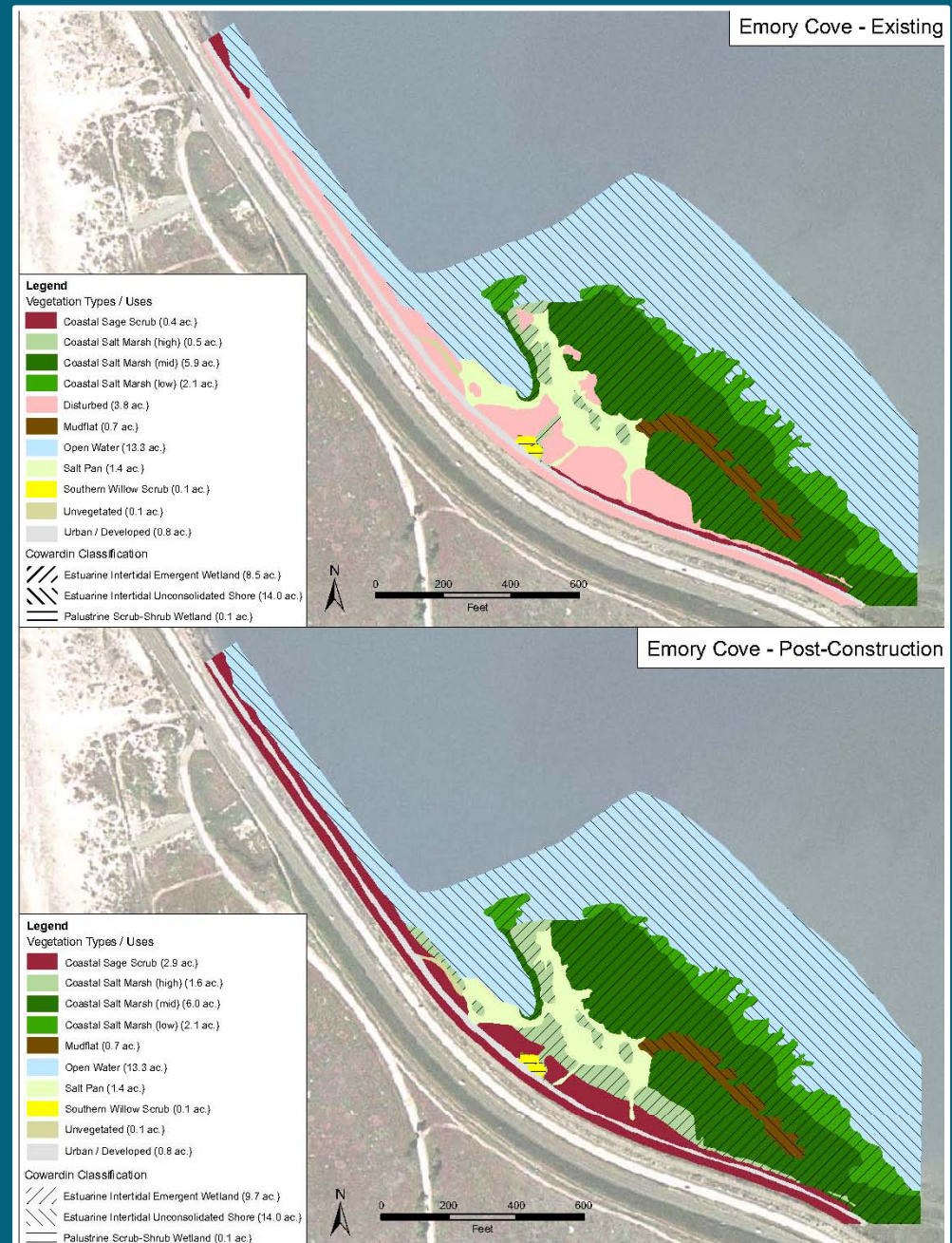
Western Salt Ponds (Refuge Land)

Habitat Type	Acreage
Subtidal	25 (restored)
Mudflats	16 (restored)
Salt Marsh	182 (restored)
Upland	7 (enhanced)
Total	230



Emory Cove Conceptual Design (Port Land)

Habitat Type	Acreage
Salt Marsh	9 (enhanced) 1 (restored)
Mudflat	14 (enhanced)
Salt Pan	1 (enhanced)
Coastal Sage Scrub	3 (restored)
Total	28



Target Species

Threatened and Endangered Species

- Light-footed clapper rail
- California least tern
- Western snowy plover
- Salt marsh bird's beak
- California brown pelican
- Belding's savannah sparrow
- Pacific Green Turtle



Migratory Birds

Fish



Monitoring Program



Physical Processes

- Topography
- Bathymetry
- Tidal Amplitude
- Water Quality
- Soils

Biological Processes

- Benthic Macro-invertebrates
- Fish
- Birds
- Vascular Plants
- Exotic Species



Funding Sources for the Restoration Project

State and Local Funding Sources

California Coastal Conservancy	\$1.3 Million
Port of San Diego - Environmental Fund	\$1.3 Million

Federal Funding Sources

NOAA Coastal and Marine Habitat Restoration Project Grant (American Recovery and Reinvestment Act of 2009)	\$3.0 Million
USFWS National Coastal Wetlands Conservation Grant	\$1.0 Million
EPA West Coast Estuaries Initiative	\$1.0 Million
USFWS Coastal Program and Refuges	\$0.1 Million
TOTAL	\$7.7 Million



Contributing Partners

Federal

- U.S. Fish and Wildlife Service:
Coastal Program, National Wildlife Refuge, National Coastal Wetland Conservation Grant
- National Oceanic and Atmospheric Administration:
America's Recovery and Reinvestment Act
- Environmental Protection Agency
- U.S. Navy



State

- California Coastal Conservancy

Local

- Unified Port of San Diego
- Southwest Wetlands Interpretive Association
- Coronado Cays Homeowners Association
- San Diego Oceans Foundation
- Ocean Discovery Institute
- San Diego Audubon



Contributing Partners

Federal

- U.S. Fish and Wildlife Service:
Coastal Program, National Wildlife Refuge, National Coastal Wetland Conservation Grant
- National Oceanic and Atmospheric Administration:
America's Recovery and Reinvestment Act
- Environmental Protection Agency
- U.S. Navy

State

- California Coastal Conservancy

Local

- Unified Port of San Diego
- Southwest Wetlands Interpretive Association
- Coronado Cays Homeowners Association
- San Diego Oceans Foundation
- Ocean Discovery Institute
- San Diego Audubon

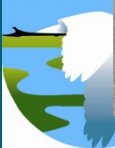


Implementation Time Line

Date	Location(s)	Action
Summer 2009 – Winter 2011	CVWR & WSP	<ul style="list-style-type: none"> • Design and Engineering
Winter 2010 – Spring 2010	CVWR & WSP	<ul style="list-style-type: none"> • Construction of New Tide Gate for Eastern Salt Ponds • Pre-Construction Monitoring Begins
Fall 2010 – Spring 2011	CVWR	<ul style="list-style-type: none"> • Excavation of Fill to Establish Coastal Salt Marsh at CVWR • Transport of Excavated Fill to WSP • Planting of Native Plants
Winter 2010 – Winter 2011	EC	<ul style="list-style-type: none"> • Removal of Exotics Plants and Planting of Native Plants
Spring 2011 – Fall 2011	WSP	<ul style="list-style-type: none"> • Dredging Tidal Channels and Establishment of Elevations to support Target Habitats • Levee Breaches • Debris Removal • Planting of Native Container Stock and Plug Transplants
Fall 2011 - 2016	CVWR & WSP	<ul style="list-style-type: none"> • Five Year Post-Construction Monitoring Begins

CVWR = Chula Vista Wildlife Reserve; WSP = Western Salt Ponds; EC = Emory Cove

Implementation at Emory Cove



Implementation at Chula Vista Wildlife Reserve



Implementation at Chula Vista Wildlife Reserve

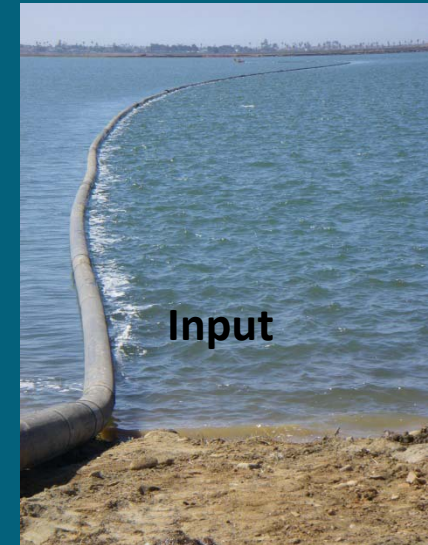


After

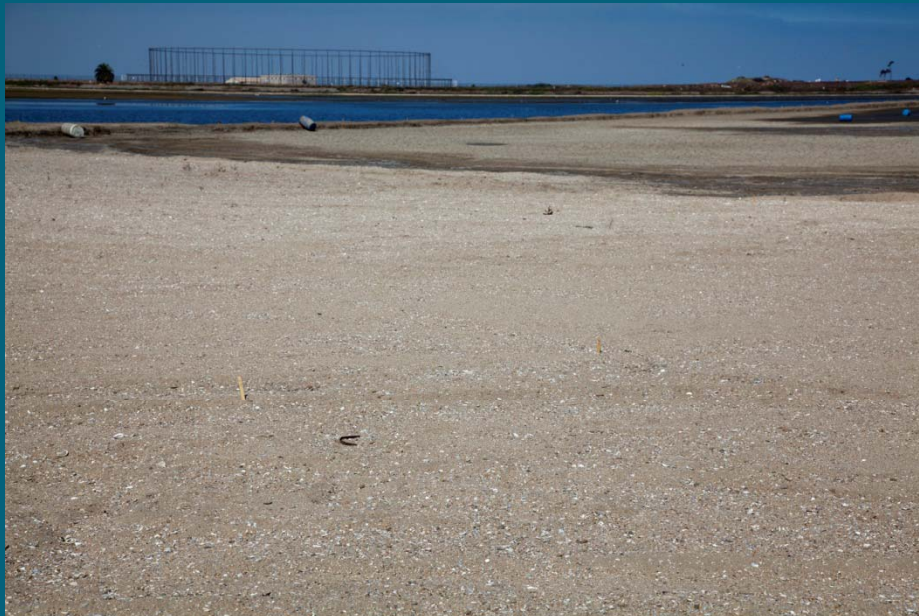


Moving material from CVWR to WSP

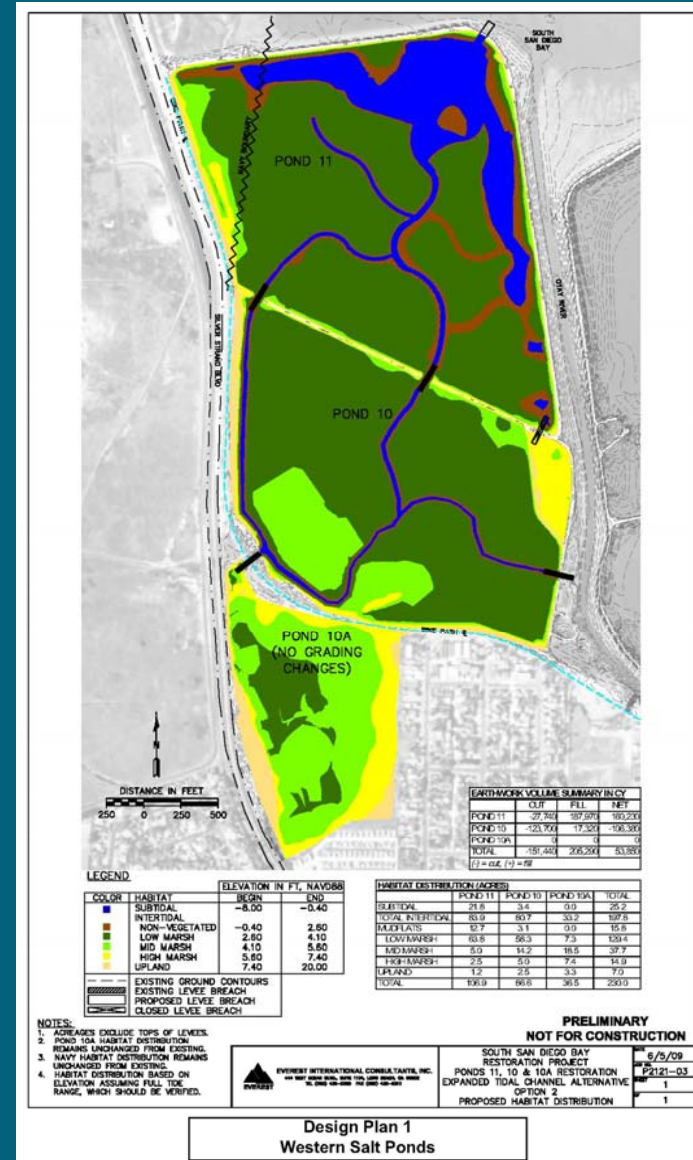
**67,000 cubic yards of excavated material
was slurried for transport**



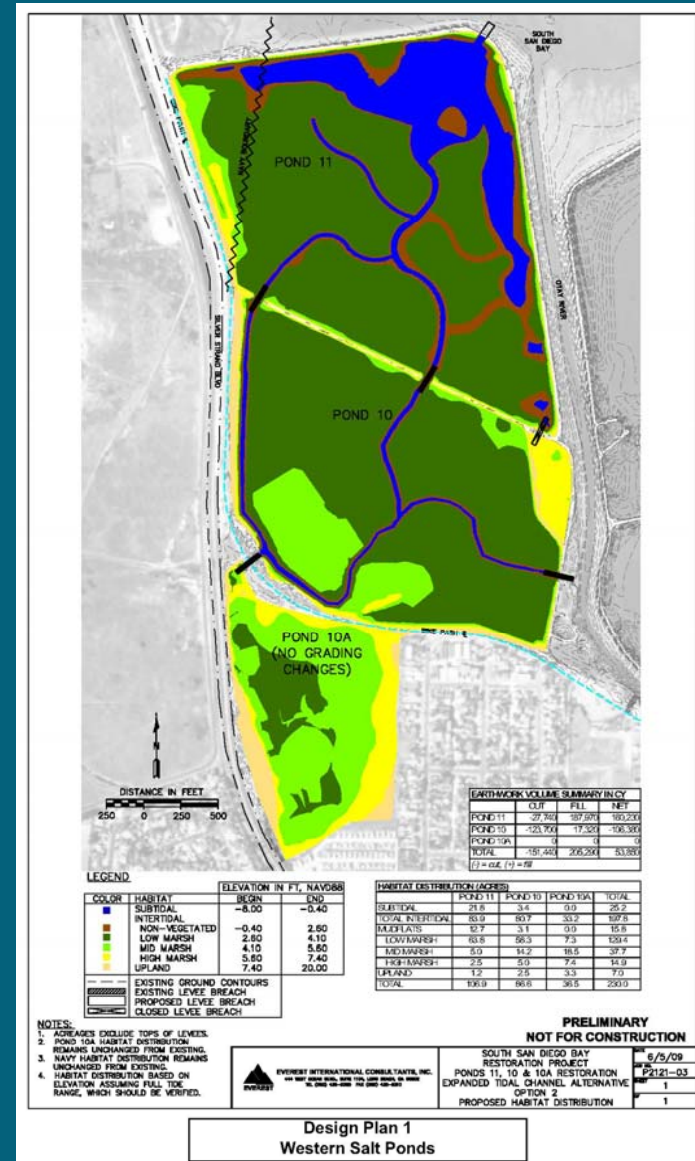
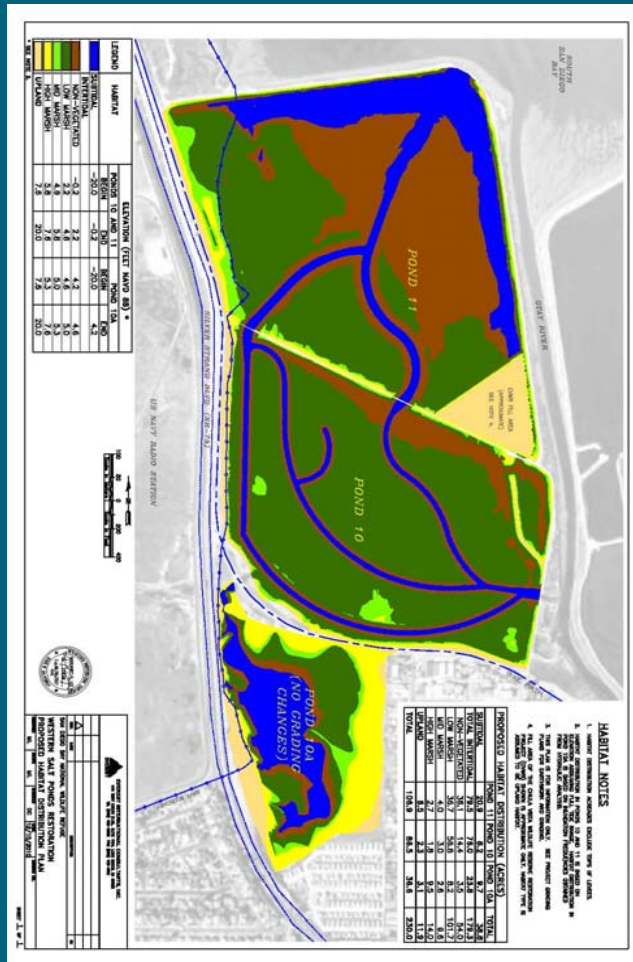
Planning Modifications



Deposited Material from the CVWR

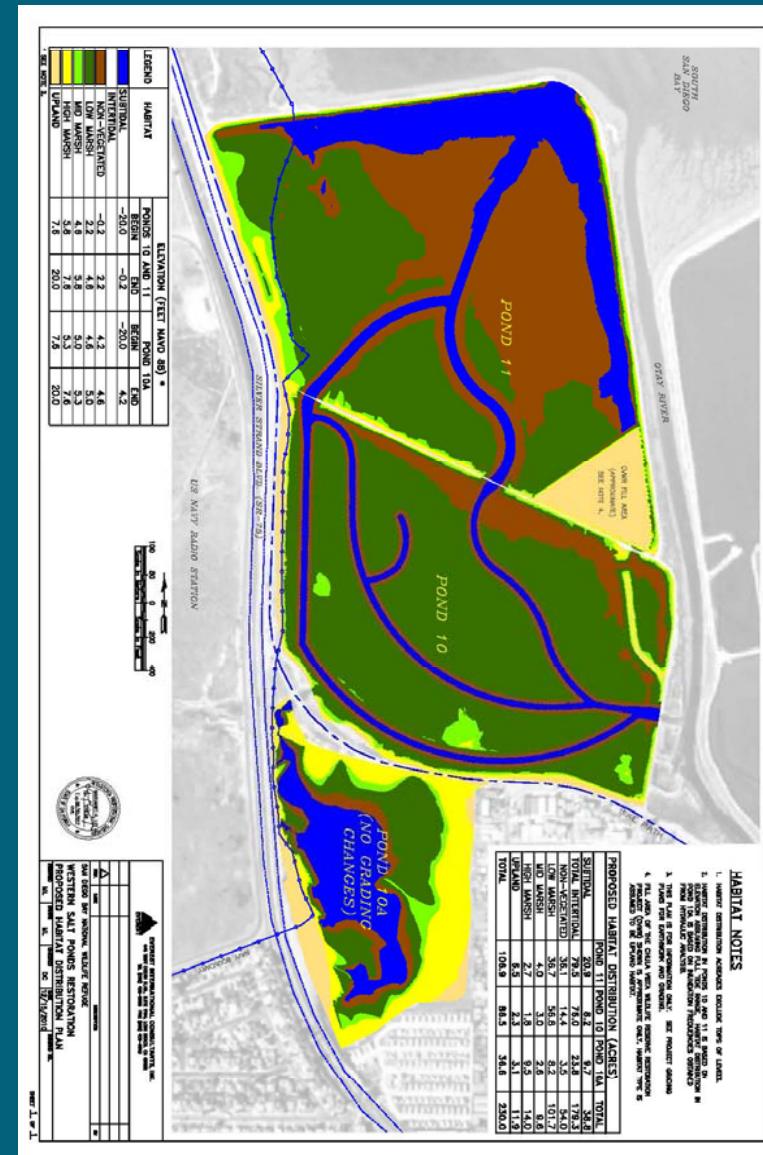


Planning Modifications



Planning Modifications

Habitat Type	Acreage
Subtidal	39 (Restored)
Mudflats	54 (Restored)
Salt Marsh	125 (Restored)
Upland	12 (Enhanced)
Total	230



Implementation at Western Salt Ponds

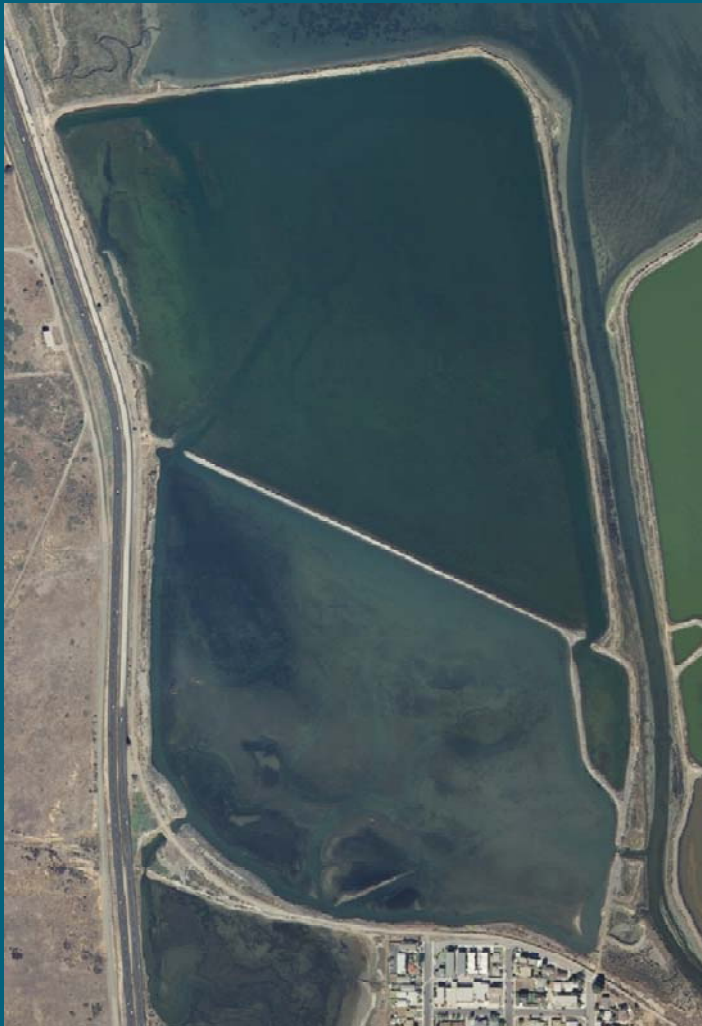


Implementation at Western Salt Ponds



Implementation at Western Salt Ponds

2003 (Before)



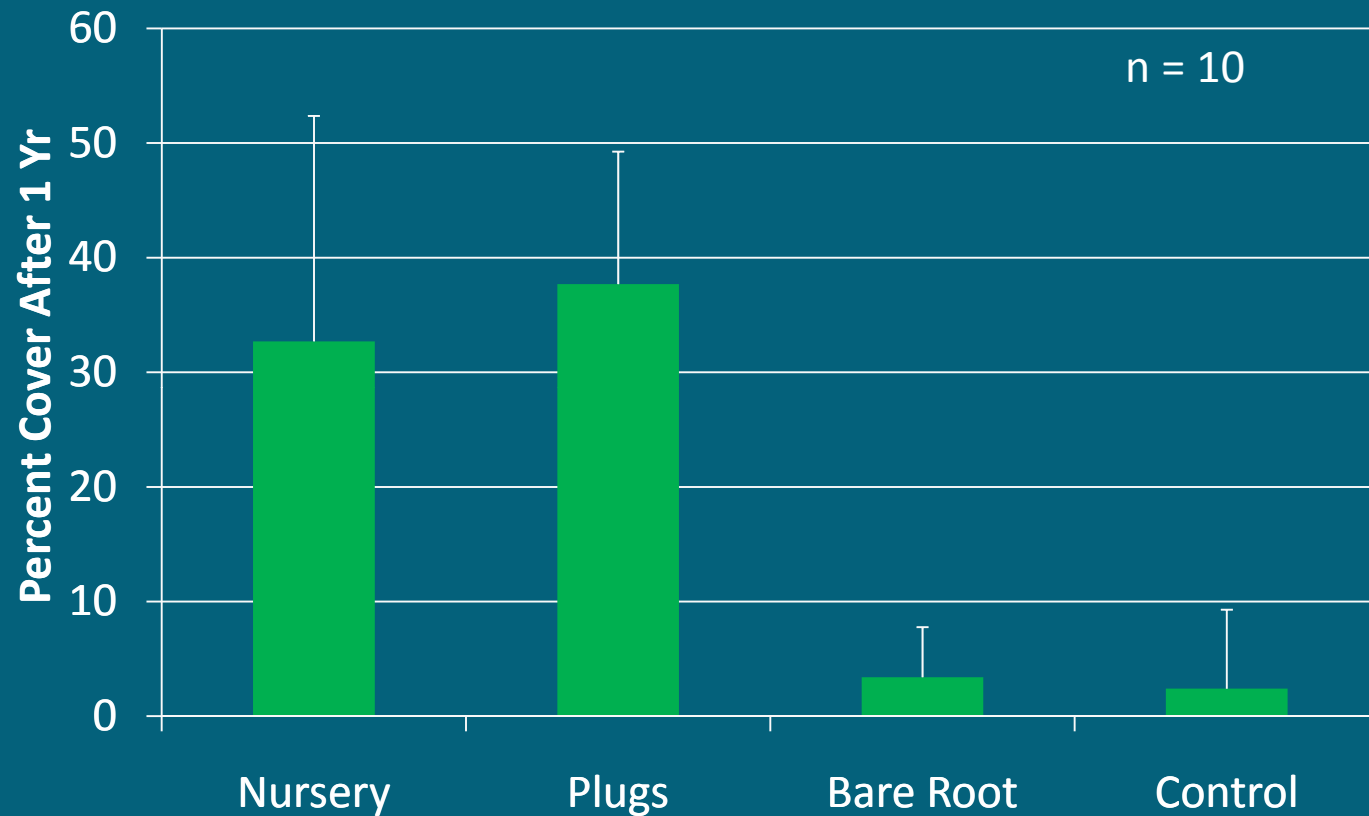
2011 (After)



Implementation at Western Salt Ponds



Cordgrass Transplant Experiment



Supplemental planting of cordgrass is not necessary.



Jobs Retained and Created

Job Type	Value
Grant Administration	\$ 39,123
Advocacy/Management	\$ 244,577
Other Government (Port)	\$ 233,965
Nursery Stock	\$ 281,406
Construction	\$ 3,499,209
Surveying and Mapping	\$ 1,770
Security and Patrol	\$ 56,346
Biological Consulting	\$ 281,560
Engineering	\$ 392,597



"It's really a two-part project: one restoring habitat, but also generating jobs for the community," said Bob Hoffman, with the National Marine Fisheries Service.

Post-Construction



Summary for South San Diego Bay Restoration and Enhancement Project

- Restored/enhanced 300 acres of shallow subtidal waters, mudflat, salt marsh, and bird nesting habitat
- Approximately 130 jobs were added to the local economy
- Next Steps: Continue Post-Construction Monitoring Program

