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U.S. Fish and Wildlife Service Coastal Program
Mediterranean Climate

Average Monthly Temperature at Lindbergh Field, San Diego

Average Monthly Rainfall at Lindbergh Field, San Diego

Based on data from 1948-1990 (http://www.wrh.noaa.gov/sgx/climate/san-san.htm)
Coastal Wetland Systems of Southern California

- Approximately 100 distinct systems

- Total of 8,237 ha

- Range = 0.03 ha – 1,322 ha
  - Average size = 81 ha
Small Creek Mouth Systems

Bell Canyon

Arroyo Burro
Intermittently Closing River Mouth Estuaries

Malibu Lagoon
Open Basin, Fringing Intertidal Wetland

Anaheim Bay and Seal Beach
Large Depositional River Valley

Tijuana River Valley
Harbors, Bay, Lagoons

Mission Bay

San Diego Bay
Sensitive Species in Coastal Estuaries

- Western snowy plover
- Belding’s savannah sparrow
- Ridgway’s rail
- California least tern
- Salt marsh bird’s beak
- Migratory Birds
Southern California Wetland Recovery Project

**Federal Partners**
- National Marine Fisheries Service
- Natural Resources Conservation Service
- U.S. Army Corps of Engineers
- U.S. Environmental Protection Agency
- U.S. Fish and Wildlife Service

**State Partners**
- California Natural Resources Agency
- State Coastal Conservancy
- Department of Fish & Wildlife
- California Department of Parks & Recreation
- Wildlife Conservation Board
- California Coastal Commission
- State Lands Commission
- California Environmental Protection Agency
- State Water Resources Control Board
- Central Coast Regional Water Quality Control Board
- Los Angeles Regional Water Quality Control Board
- Santa Ana Regional Water Quality Control Board
- San Diego Regional Water Quality Control Board
Long Term Objective/Long Term Vision

The long-term objective of the WRP is to reestablish a mosaic of fully functioning wetlands systems, with a diversity of habitat types and connections to upland communities, which preserves and recovers self-sustaining populations of species.

Regional Goals

1. Preserve and restore coastal wetland ecosystems
2. Preserve and restore stream corridors and wetland ecosystems in coastal watersheds
3. Recovery native habitat and species diversity
4. Integrate wetlands recovery with other public objectives
5. Promote education and compatible access related to coastal wetlands and watersheds
6. Advance the science of wetlands restoration and management in Southern California
Organization and Structure

Upper-level support + Resource Agencies + Grass-roots foundation + Scientific Support
Southern California Wetland Recovery Project

Types of Projects
- Acquisition
- Planning
- Restoration
- Recreation and Access

Types of Wetlands
- Tidal Wetlands
- Stream Corridors
- Urban Wetlands

Support Mechanisms
Wetland Recovery Project Work Plan
Community Wetlands Restoration Grant
Restore Tidal Wetlands

South San Diego Bay Restoration and Enhancement Project
Enhance Urban Wetlands and Recreational Access

Colorado Lagoon Restoration Project
Restore Fish Passage & Ecosystem Function
Acquisition

Newland Marsh Acquisition
Planning
Community Wetlands Restoration Grant Program
**Projects**

**Completed Projects**
- 98 Work Plan Projects Completed
- 129 Community Wetland Restoration Grants Completed
- 8,247 acres Protected/Acquired
- 4,900 acres Restored

**Active Projects**
- 53 Projects
  - 8 Acquisition
  - 22 Restoration
  - 23 Planning
Why Update the Regional Strategy?

- Quantifiable Objectives (abundance, diversity, distribution)
- Wetland Assessment Data
- Consider resilience, dynamics, functions
- Lessons Learned
- Regional Context
- Historical Ecology
- Climate Change Adaptation Strategies

Decision Support Tool
Vision
A coastal Southern California with restored, protected and resilient wetlands that support ecosystem processes, functions and services.

Mission
The Southern California Wetlands Recovery Project supports the planning for and implementation of acquisition, restoration, and enhancement of coastal wetlands and watersheds, which will result in a long-term increase in the quantity and quality of the region’s wetlands.

Guiding Principles (13)

Goal 1
Preserve and restore resilient tidal wetland ecosystems.
○ Measurable Objectives

Goal 2
Preserve and restore stream corridors, wetland ecosystems, and near-shore systems that have a functional connection to tidal wetlands.
○ Measurable Objectives

Goal 3
Support education and compatible access related to coastal wetlands and watersheds.
○ Measurable Objectives

Goal 4
Advance the science of wetlands restoration and management.
○ Measurable Objectives
Guiding Principles

1. Actions to protect and restore wetland ecosystems and adjacent habitat types support a mosaic of functional wetlands and provide habitat connectivity among wetlands within watersheds and along the Pacific Flyway.

2. Actions that influence the distribution of wetland archetypes* consider the historic, current, and possible future extent, diversity and relative proportion of wetland types.

3. Projects have clear environmental goals that include quantifiable measures of success, and are based on scientific evaluation of feasible alternatives.

4. Projects restore and preserve ecological and physical processes to maximize ecosystem benefits based on the best available evidence of historical, present, and future conditions.

5. Projects preserve and restore the suite of locally appropriate native wetland habitats and associated species communities, including special status species.

6. Restoration and adaptive management result in wetland systems that are resilient to climate change and other stressors.

7. Restoration of wetlands minimizes the scale, frequency and cost of maintenance and long-term management.

8. Projects demonstrate incorporation and application of best-available science including an explicit evaluation of ecological and financial costs and benefits, and lessons learned from past and present projects.

9. Monitoring of projects include consistent protocols that assess project success and regional progress, allow for analysis and a statewide comparison of monitoring results, and may be used to test predictions and prescribe subsequent actions as part of an adaptive management strategy.

10. Projects support wetland associated ecosystem services.

11. The Wetland Recovery Project and associated projects share information, engage stakeholders and community members and provide opportunity for participation.

12. Projects include public access, recreation and education opportunities, and public communication where appropriate to complement preservation of wetlands.

13. The Wetland Recovery Project actively engages, as appropriate, in development of funding strategies, planning, and policies that promote the Wetland Recovery Project’s Vision.
Session overview
Creating Objectives for Goal 1

1. **Lieberman** - Developing a Science-based, Management-driven Plan for Restoring Wetlands: The Regional Strategy

2. **Stein** - Assessing Historic Change and Relative Vulnerability of Southern California Coastal Wetlands to Sea Level Rise

3. **Lowe** - Development of Regional Objectives for Southern California Coastal Wetlands using Landscape-level Metrics

4. **Ambrose** - Applying Regional Restoration Objectives at Specific Coastal Wetlands in Southern California

5. **Largier** - Developing Science-Based Management Strategies for Intermittently Open Estuaries in Southern California