Advancing the Coordination of Wetland Science and management on the Central Coast

An Introduction to the Central Coast Wetlands Group

CALIFORNIA COASTAL COMMISSION

CCWG
central coast wetlands group

Moss Landing Marine Laboratories

California Wetland Policy

Ensure no overall net loss and achieve a long-term net gain in the quantity, quality, and permanence of wetlands acreage and values in California

CALIFORNIA WETLANDS CONSERVATION POLICY August 23, 1993

California Wetland Policy

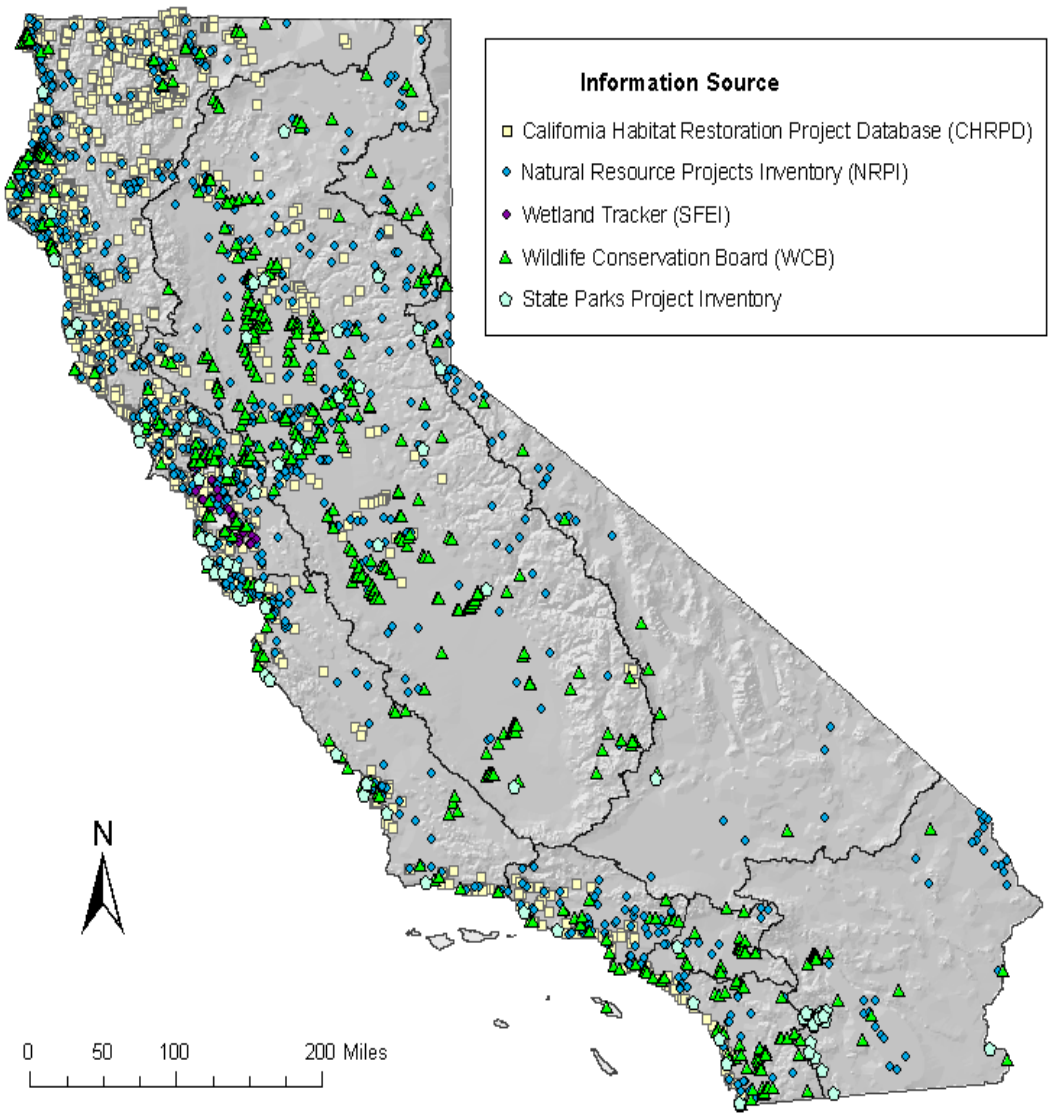
State & Regional Actions

- **Limit Impacts from new development**
- **Mitigate unavoidable impacts**
- **Restore /Enhance Previous Degradation**
- **Monitor Effectiveness of Actions**

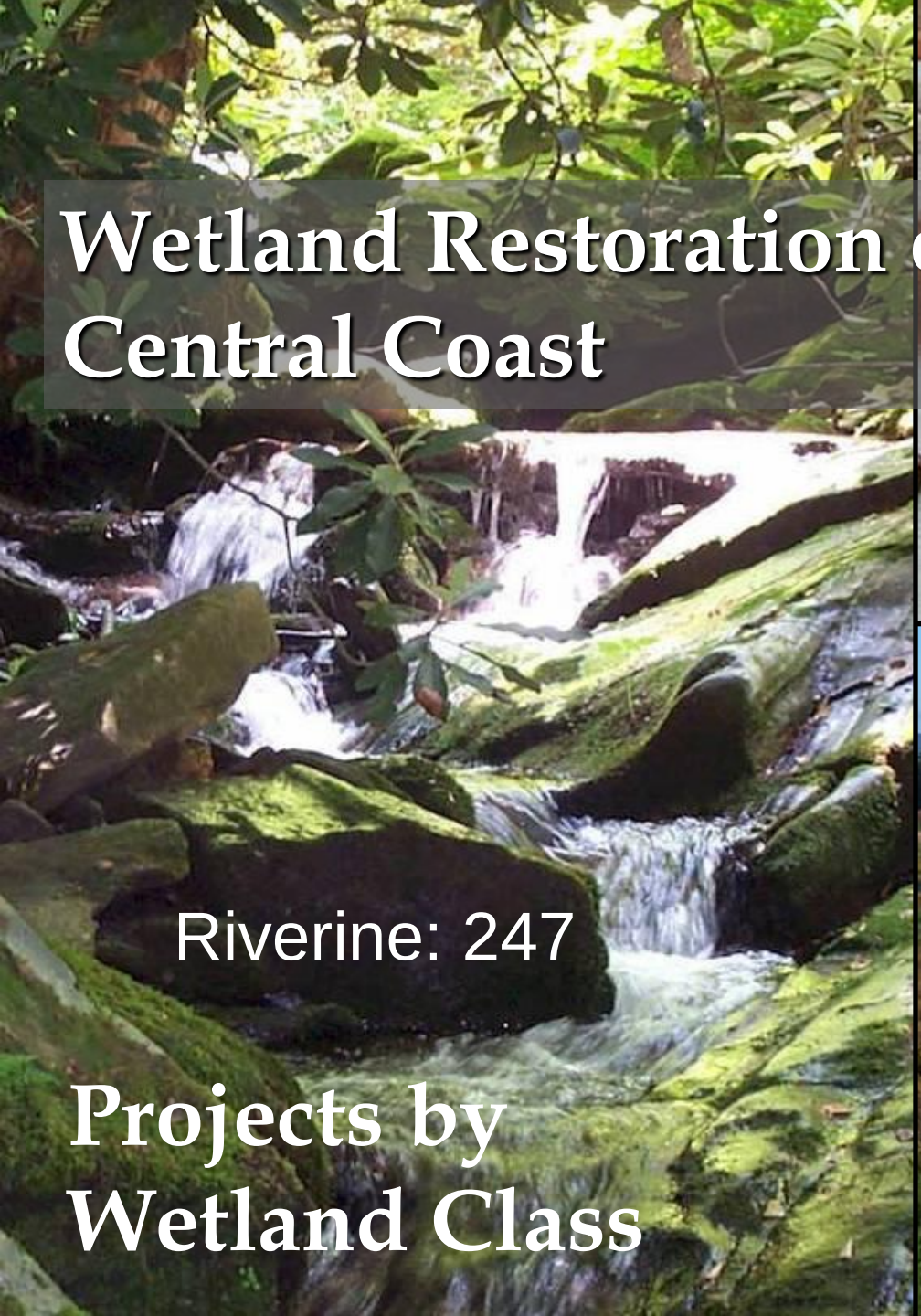
Wetland Gain

Inventory of State Funded Wetland Projects (Clark & Hurd 2005)

$2.5 Billion Statewide



Wetland Restoration on the Central Coast



Riverine: 247

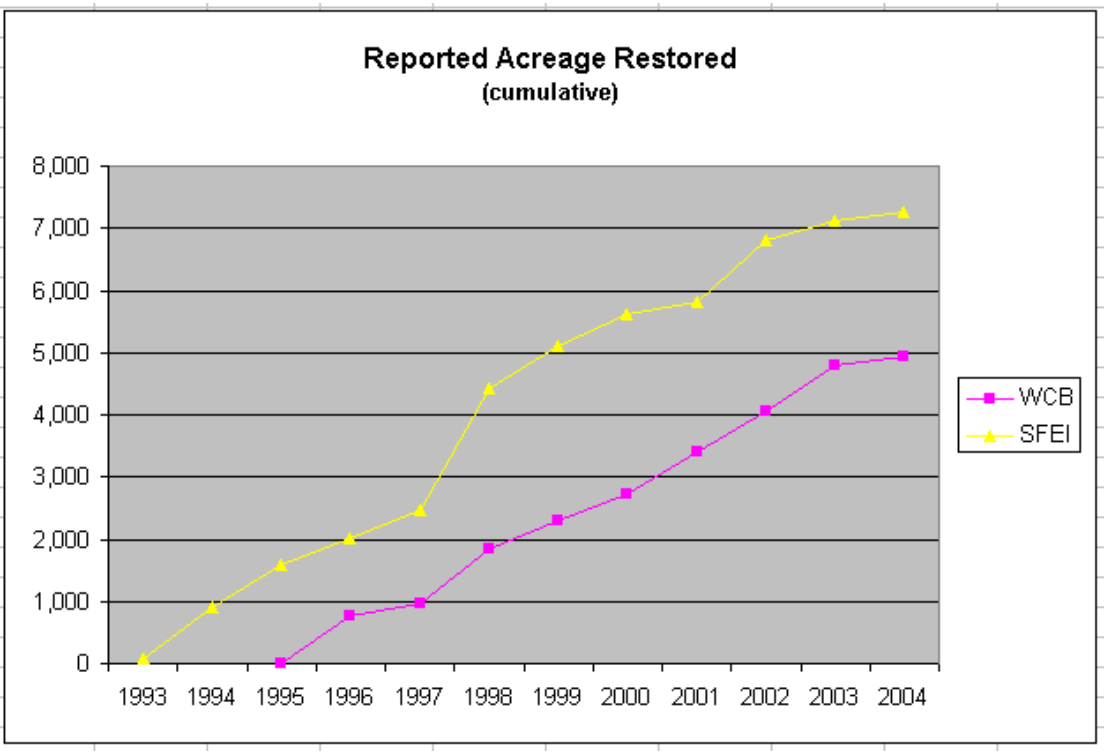
Estuarine: 14

Depressional: 14

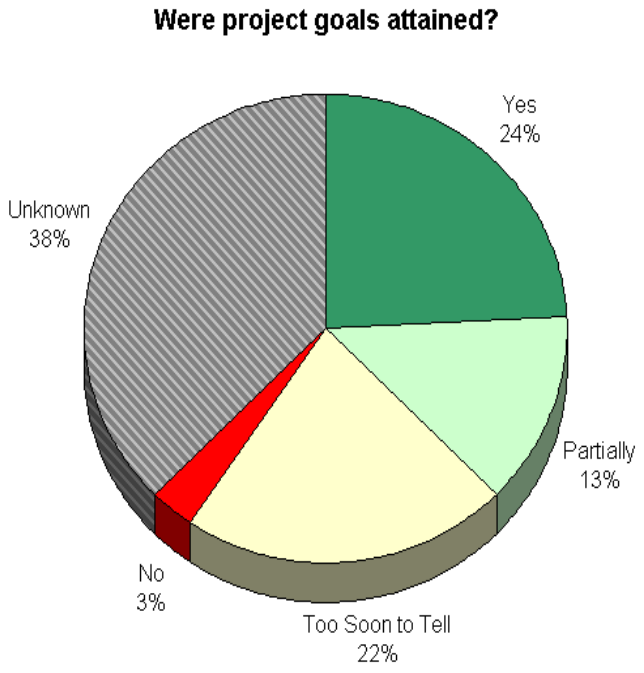
Projects by Wetland Class

Project Success

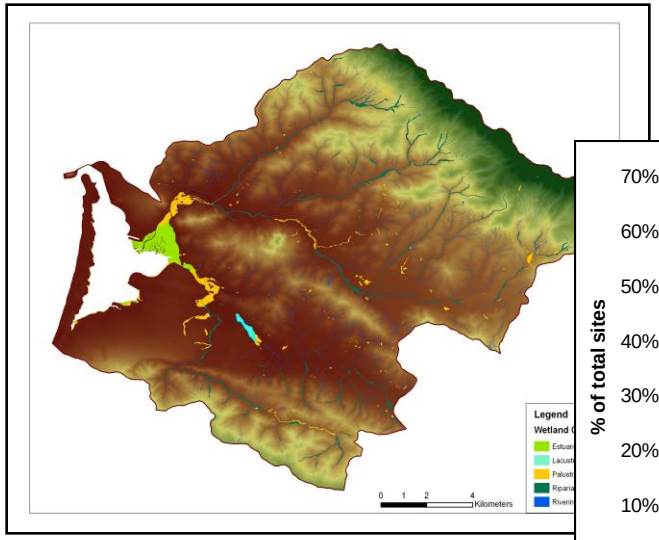
Acres Restored (Very Incomplete)

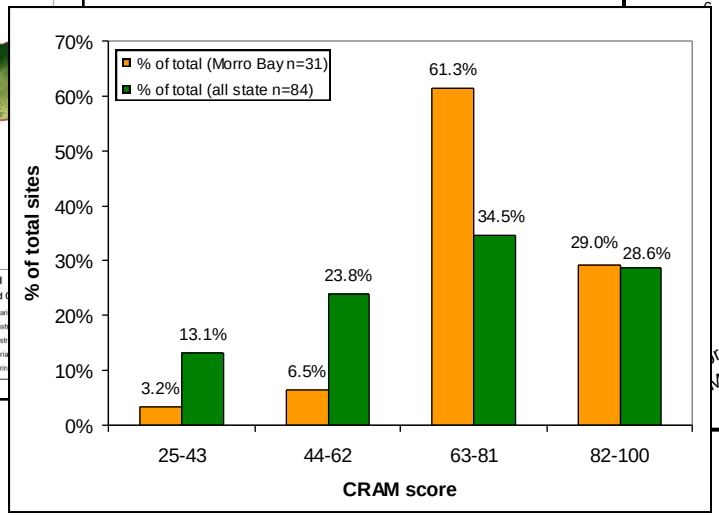


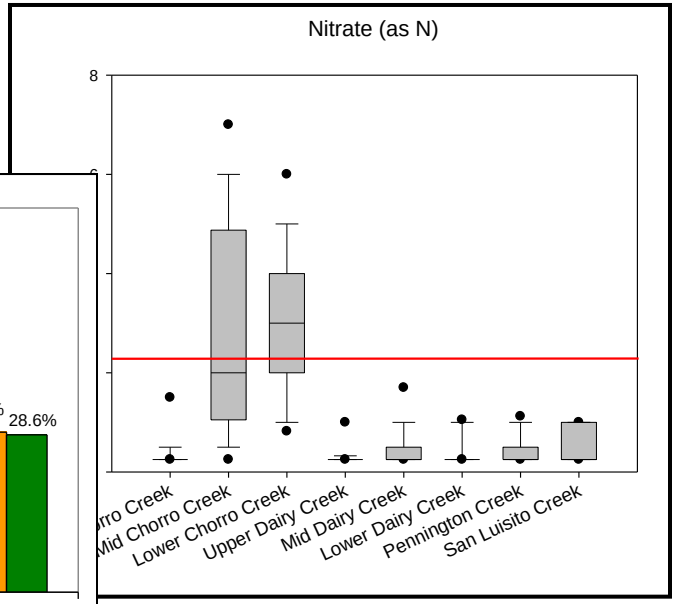
Condition ?



EPA Level 1-2-3 Monitoring Toolkit

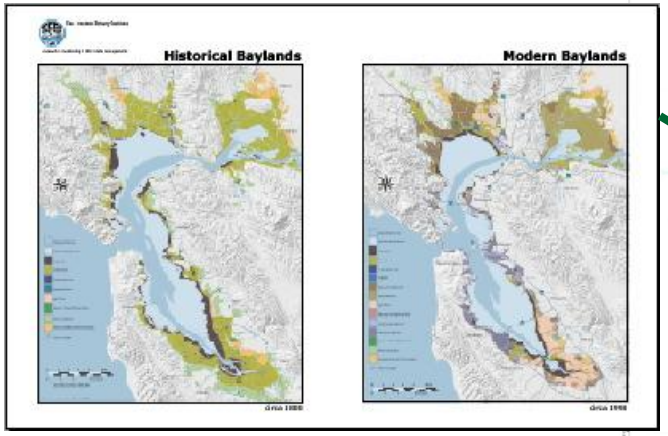


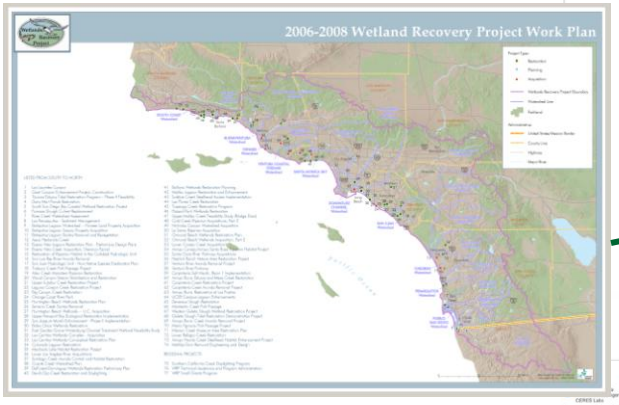


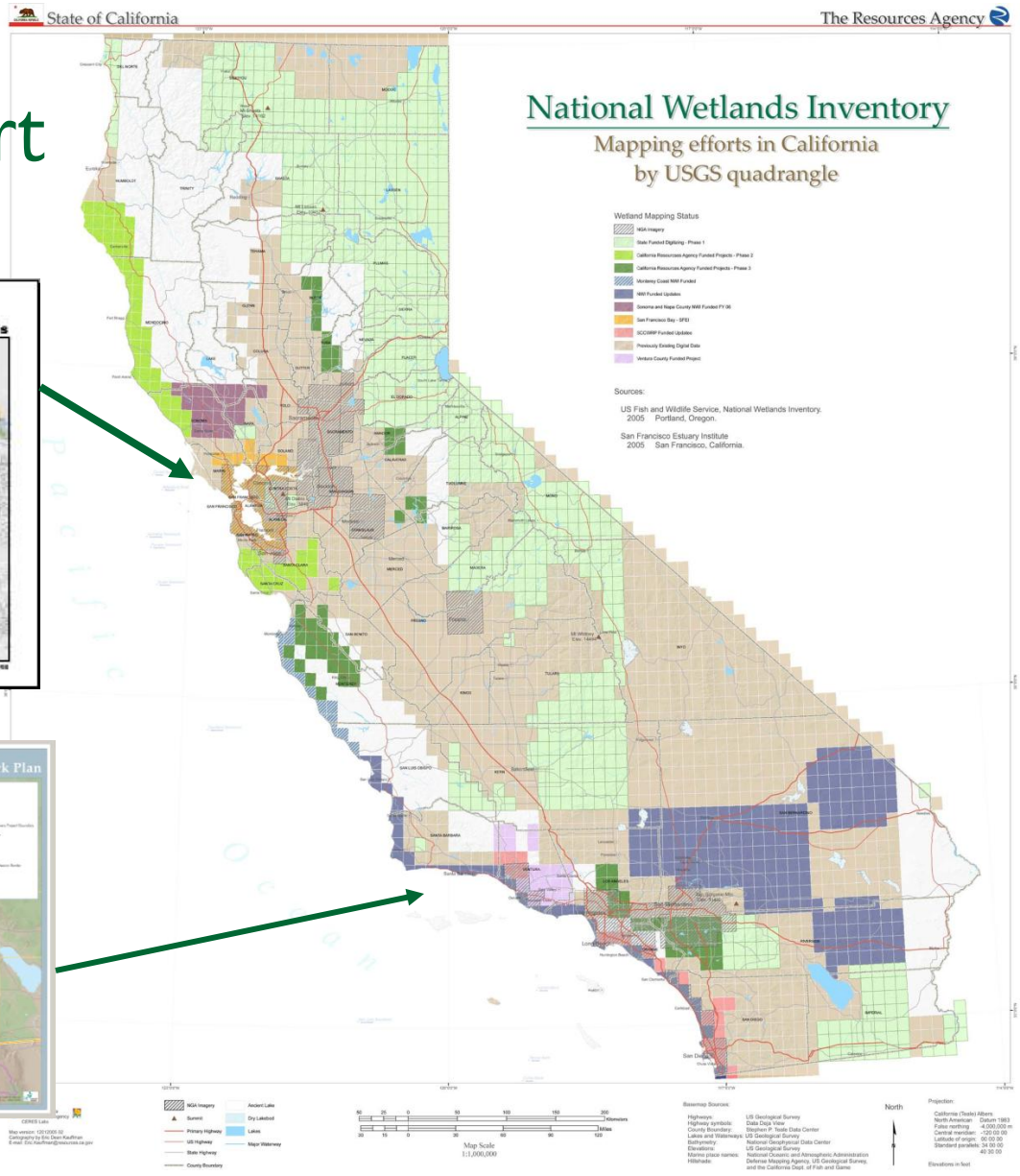


- Level 1 Wetland inventory
- Level 2 Assesses regional condition
- Level 3 Detailed or site-specific evaluation.

Regional Planning Leads to State Support



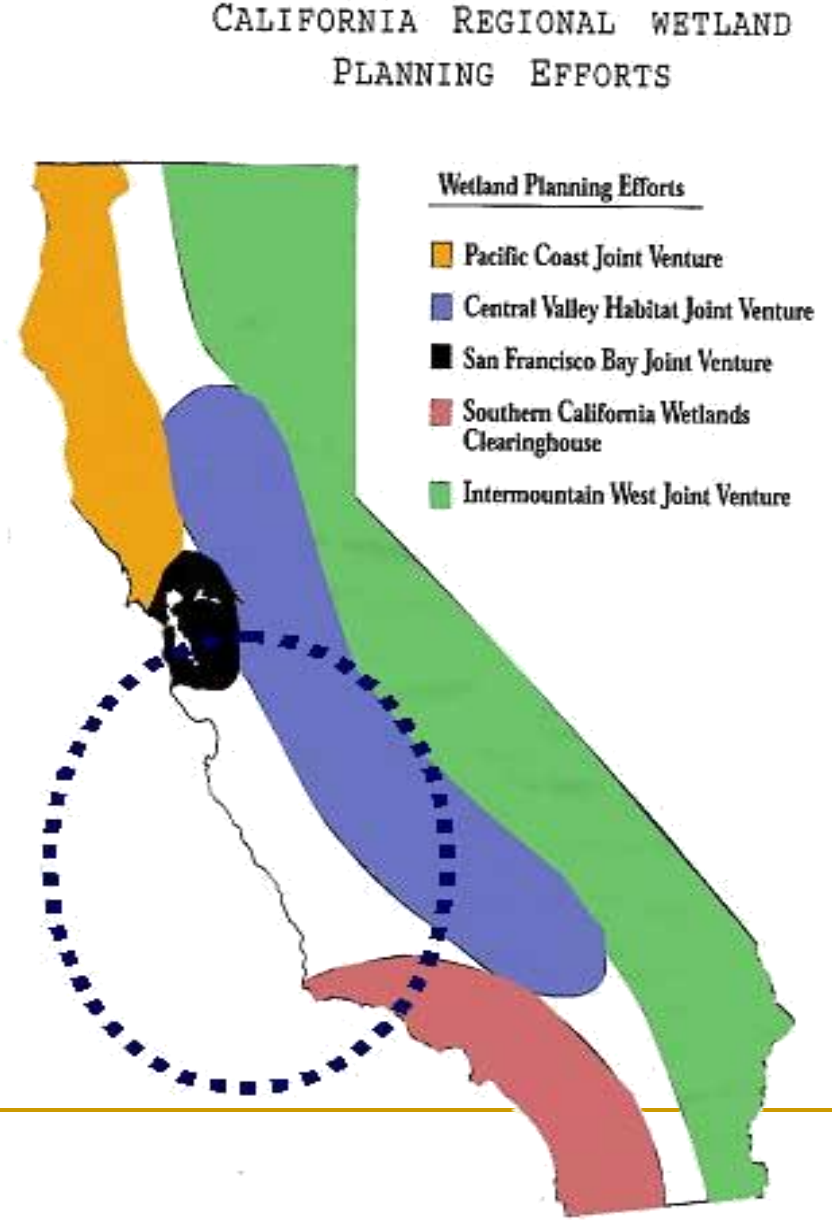




Central Coast Wetlands Group

Why is regional resource planning necessary on the Central Coast?

To fill a void in resource protection efforts in California



CCWG Advancing Central Coast Wetland Management

Working Principles included:

- Collaboration of Central Coast partners working to support wetland enhancement and protection
- Providing the infrastructure, tools and technical support for standardized monitoring and assessment
- Participate in State Wetland Monitoring Program as regional partner

2007 development grant and beyond

With the EPA grant the Group accomplished the following:

- Hired a program coordinator
- Developed and improved long term projects
- Changed name to Central Coast Wetlands Group, expanded website, created logo
- Produced brochure
- Held 2 wetland science symposia

CCWG – Long Term Projects

- Historical Ecology

  Integration of past ecological processes and condition in future restoration activities.

- Habitat Restoration and planning
  - Implementation of Moro Cojo Slough and Northern Salinas Valley Restoration Plans
  - Monterey County IRWMP Project Planning

  With consideration of Ecosystem Based Management and BMPs

- Wetland Monitoring and Project Evaluation
  - California Rapid Assessment Method
  - Wetland Tracker

CCWG Partners

- California Coastal Commission
- Elkhorn Slough Foundation
- Elkhorn Slough National Estuarine Research Reserve
- Monterey Bay National Marine Sanctuary
- Morro Bay National Estuary Program
- Moss Landing Marine Laboratories
- Regional Water Quality Control Board, Region 3
- Big Sur Land Trust
- The Watershed Institute at CSUMB
  - Return of the Natives
  - Central Coast Watershed Studies
- Planning and Conservation League Foundation
- Monterey Bay Area Governments
- USEPA Region 9
- 2nd Nature

Historical Ecology

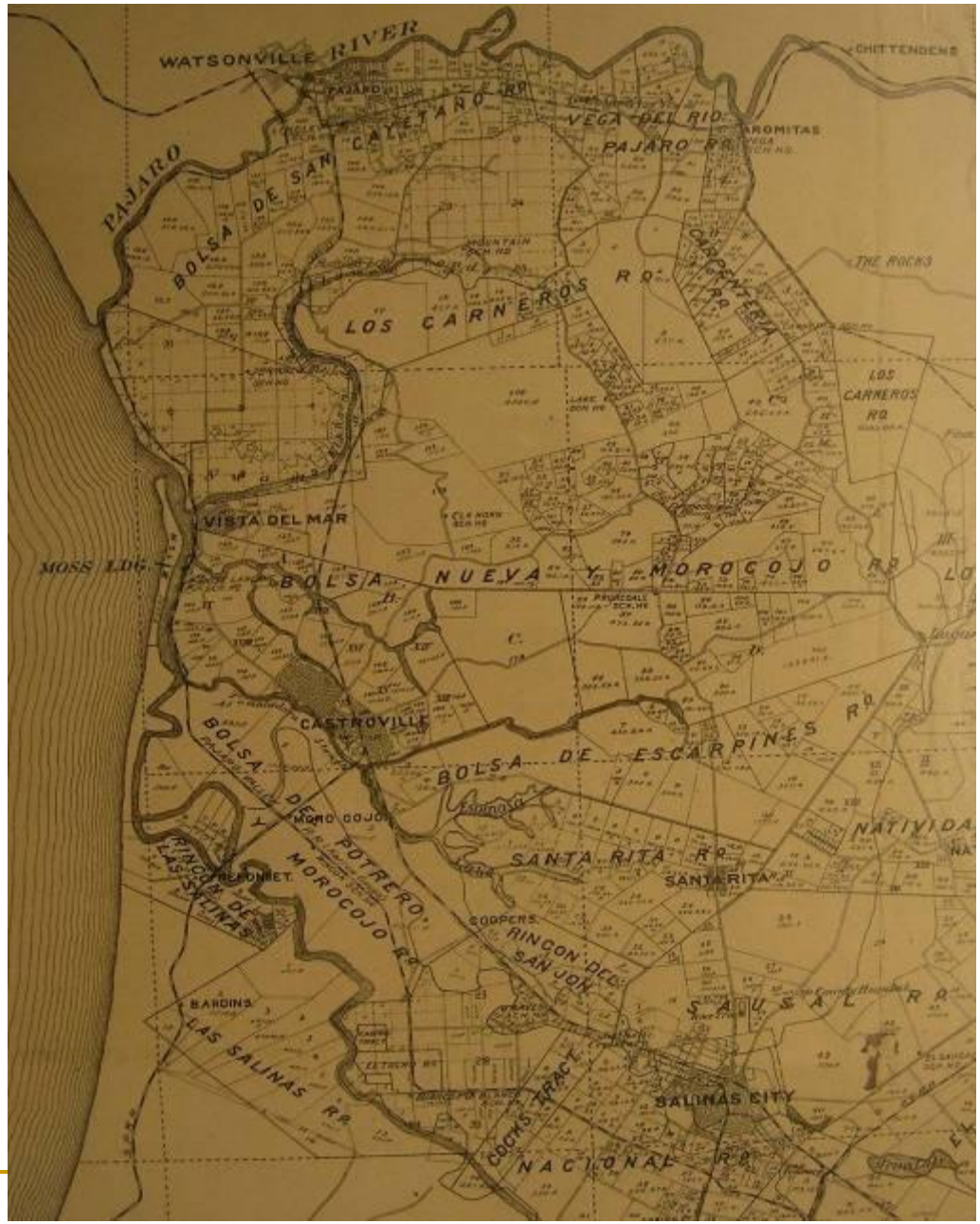
"Understanding the form and function of a slough prior to the late 1800s can inform interpretation of the current hydrologic regime and perhaps aid recovery and restoration in progress today"
(SFEI 2007)

Historical Information is a Valuable Restoration Tool

- Phase 1 of the Gabilan Watershed Project initiated with the help of Joel Casagrande in 2007
- On October 30, 2008- an orientation to Historical Ecology and regional strategic planning meeting was hosted by CCWG and MLML
- Central Coast wetland partners agreed "Understanding historical conditions prior to modern stressors and disturbances can help scientists and agencies gain regional perspective for local conservation and restoration projects"
- Data used for the Gabilan project were gathered from a variety of sources including maps, journals, anecdotes, survey data and pictures.

Historical Maps

T-Sheet map from 1854



Local map from1877

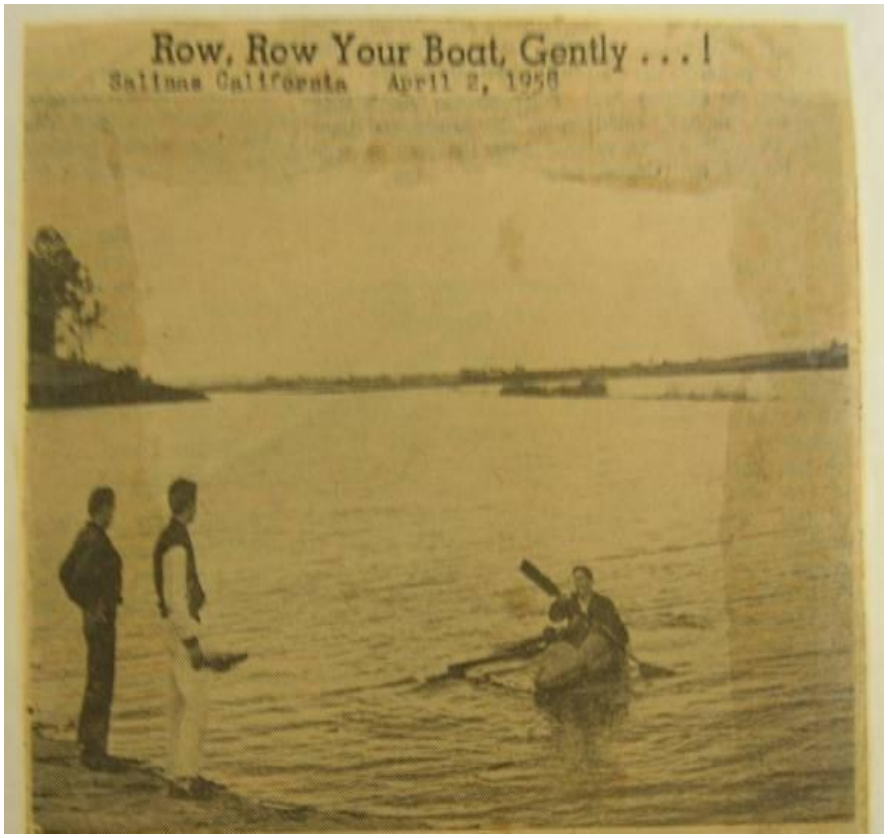
Pictures, Anecdotes-Hunting

The Gabilan Gun club, at the edge of Merritt Lake was organized in 1905 and provided the greatest duck hunting in the county. Federal limit was 50 ducks a day but conservative first president of the club, C.Z. Hebert, insisted that the limit be reduced to 25 mallards per day. - Salinas Californian, 1950

THE LIMIT—Even as late as 1908 there was no problem in bringing down a goodly supply of ducks close to Salinas. These three hunters bagged the limit. They were members of the Gabilan Gun club, situated just back of Chinatown on Carr Lake. However this picture was taken in the studio of Hugh Trout, photographer. In it are, from left, "Butch" Beevers of early California Rodeo fame, Emory Post, and Charles N. Blanchard. Post was game warden and Blanchard, one-time part owner of this paper.

Pictures, Anecdotes -Carr Lake

1875 - Jesse D. Carr, who owned the 49,000-acre Gabilan Ranch, began reclaiming 1,475 acre lake



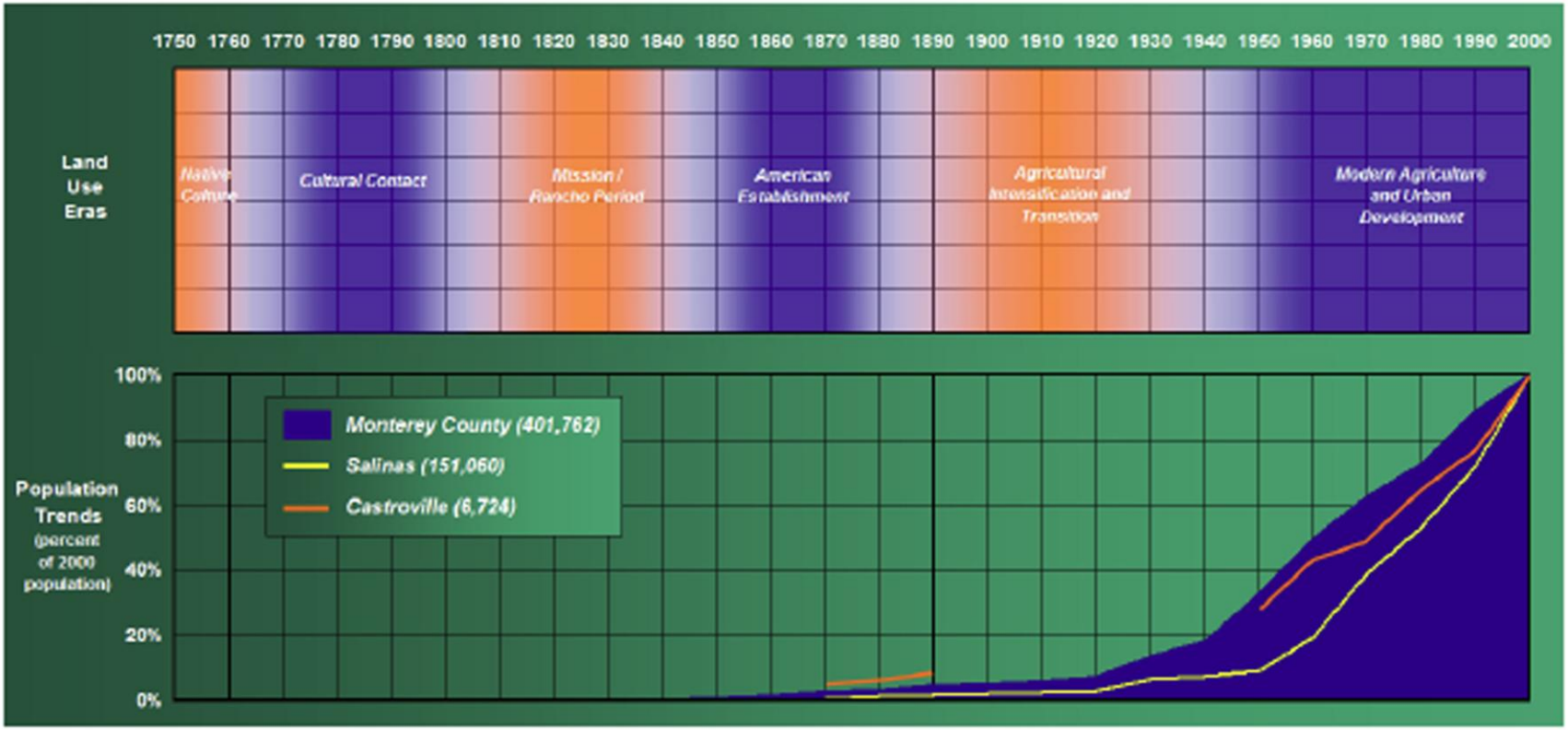
In 1911 it was estimated that there were 650 acres of land under water. There was no better hunting in Monterey county, especially for teal, than on The Flood. -Paul Parker, 1935

Surveys – Waterway Management

It is my firm belief, that if the four above named sloughs (The Tembladeras, the Castroville, the Elkhorn and the North fork of the Elkhorn) could be shut up at their respective mouths at once… - Herrman, 1879

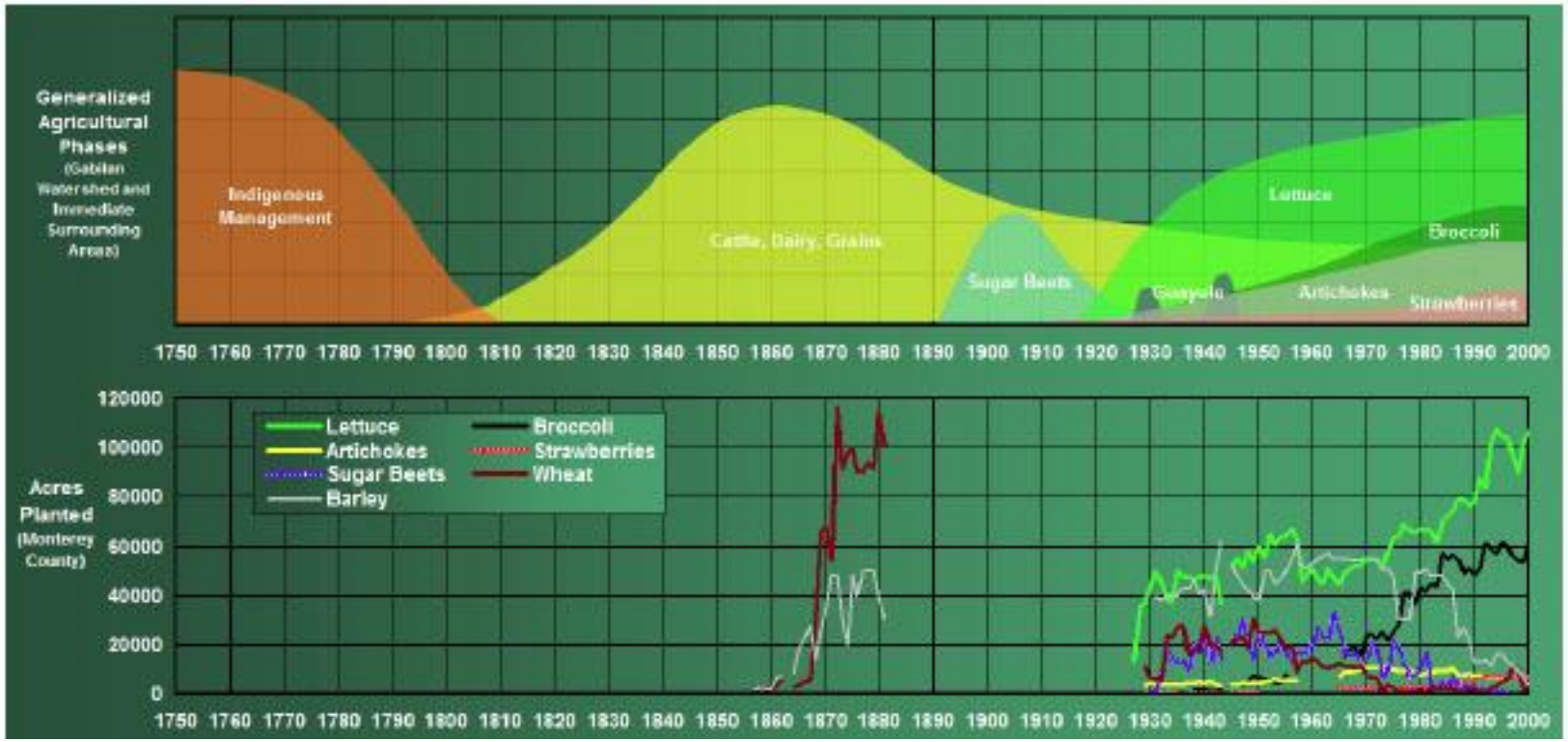
Gabilan Watershed Project Outcomes

Timeline of Land Use and Population



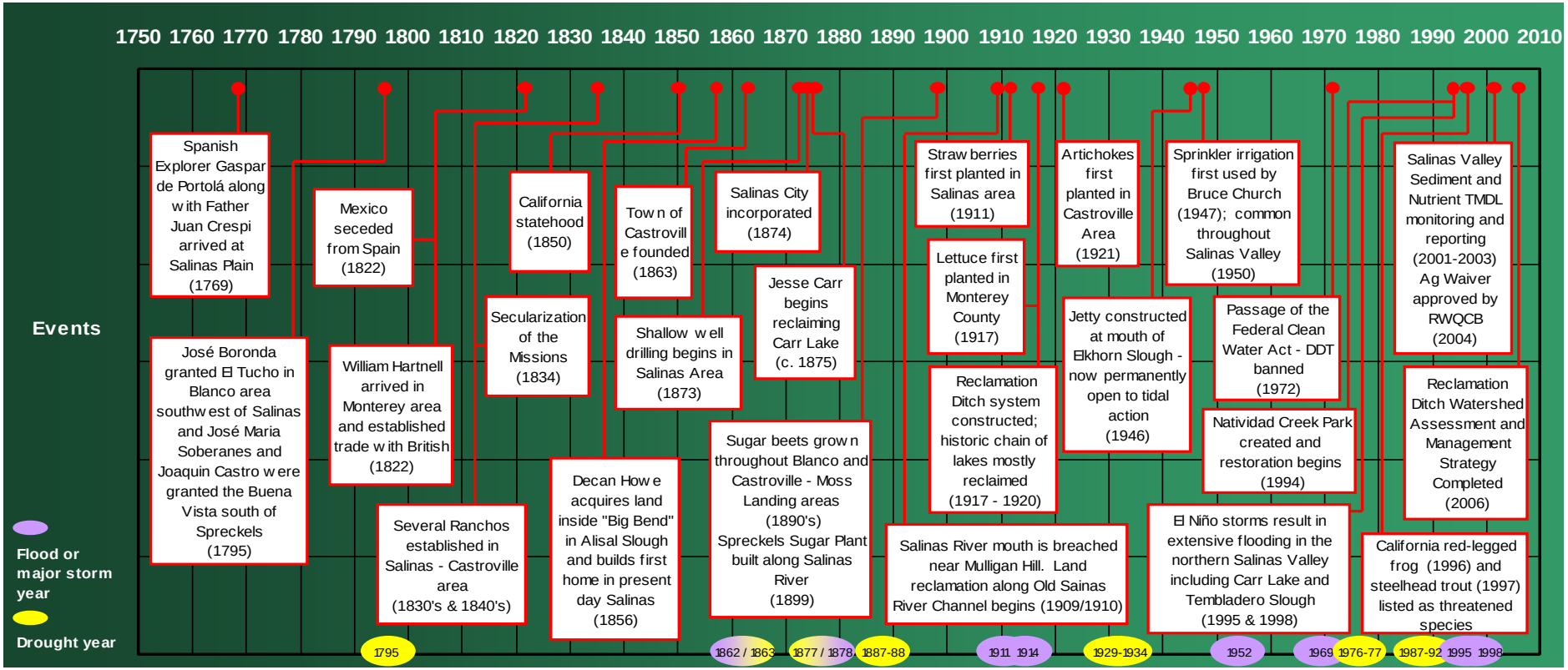
Gabilan Watershed Project Outcomes

Timeline of Agricultural Phases



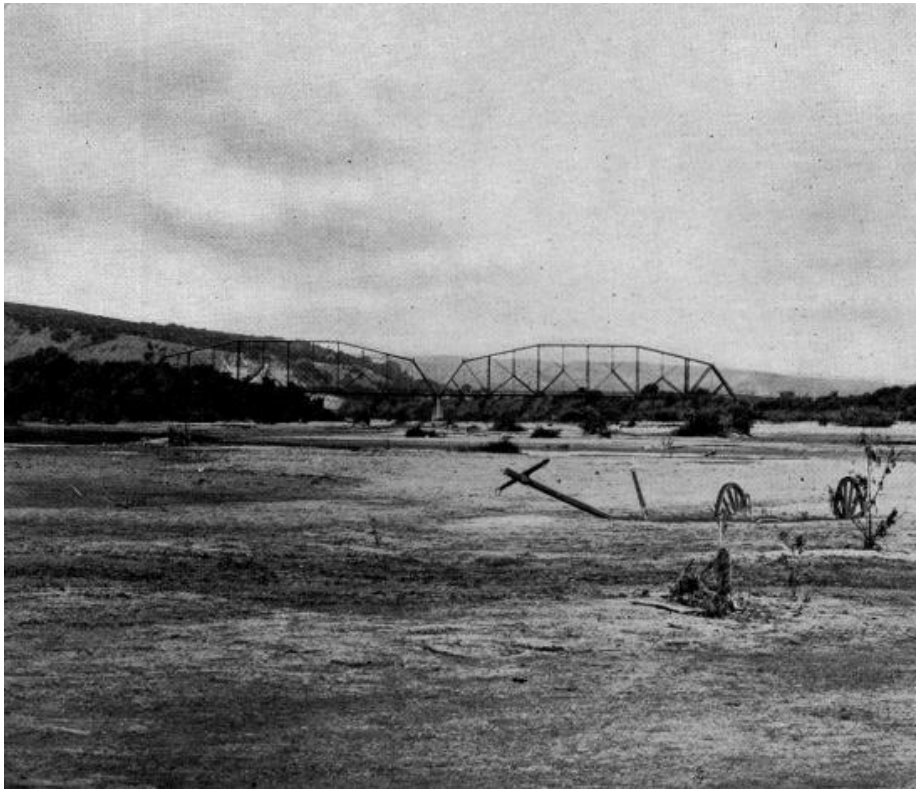
Gabilan Watershed Project Outcomes

Timeline of the Gabilan Watershed Area



Draft Historical Maps of the Watershed

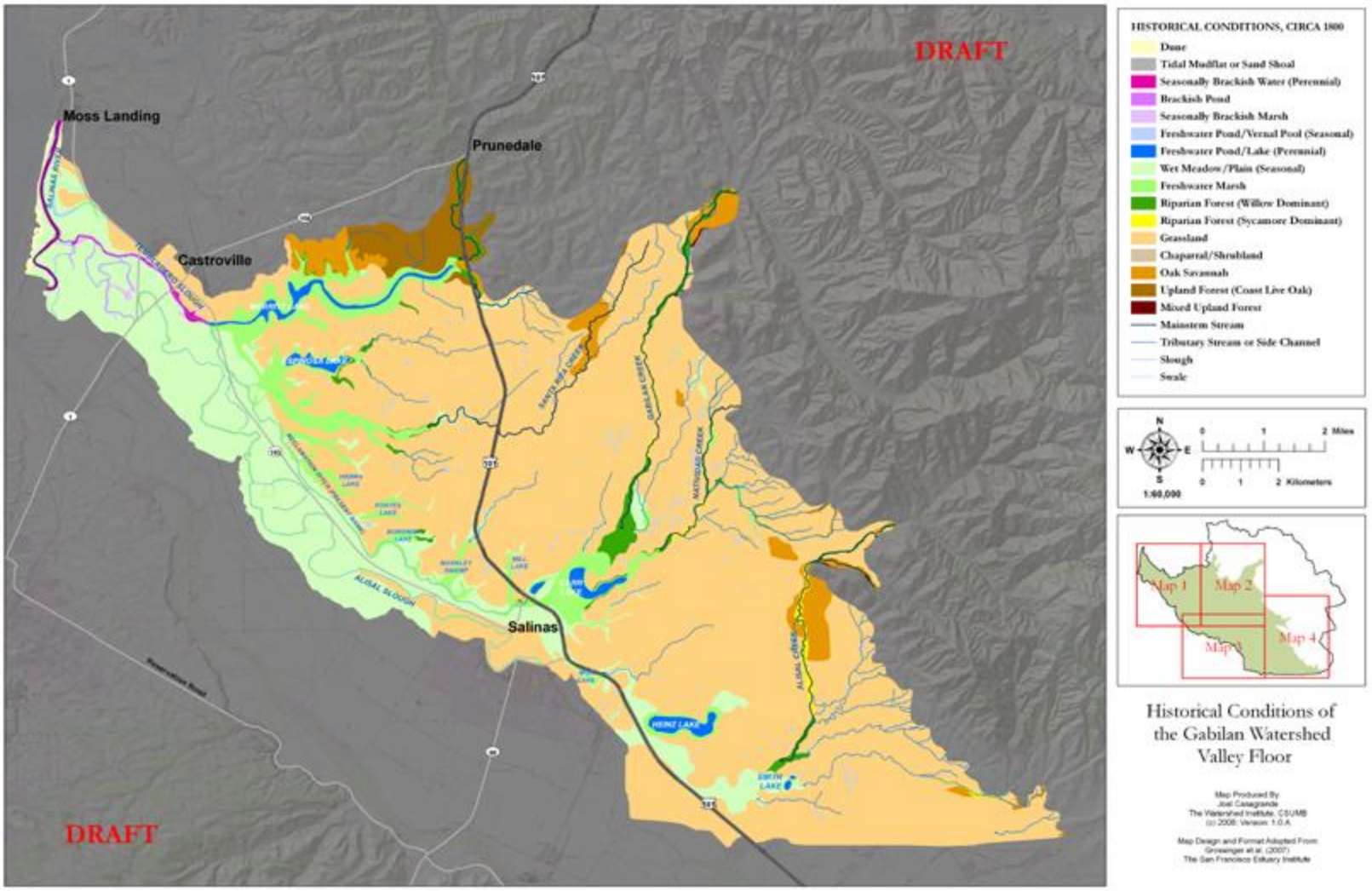
A preliminary study of landscape change over time.



Maps provide:

- valuable resource for understanding the historical landscape and function of the region
- change over the last 200 years
- guidance for restoration development within a historical context

Historical condition of the Gabilan Valley Floor

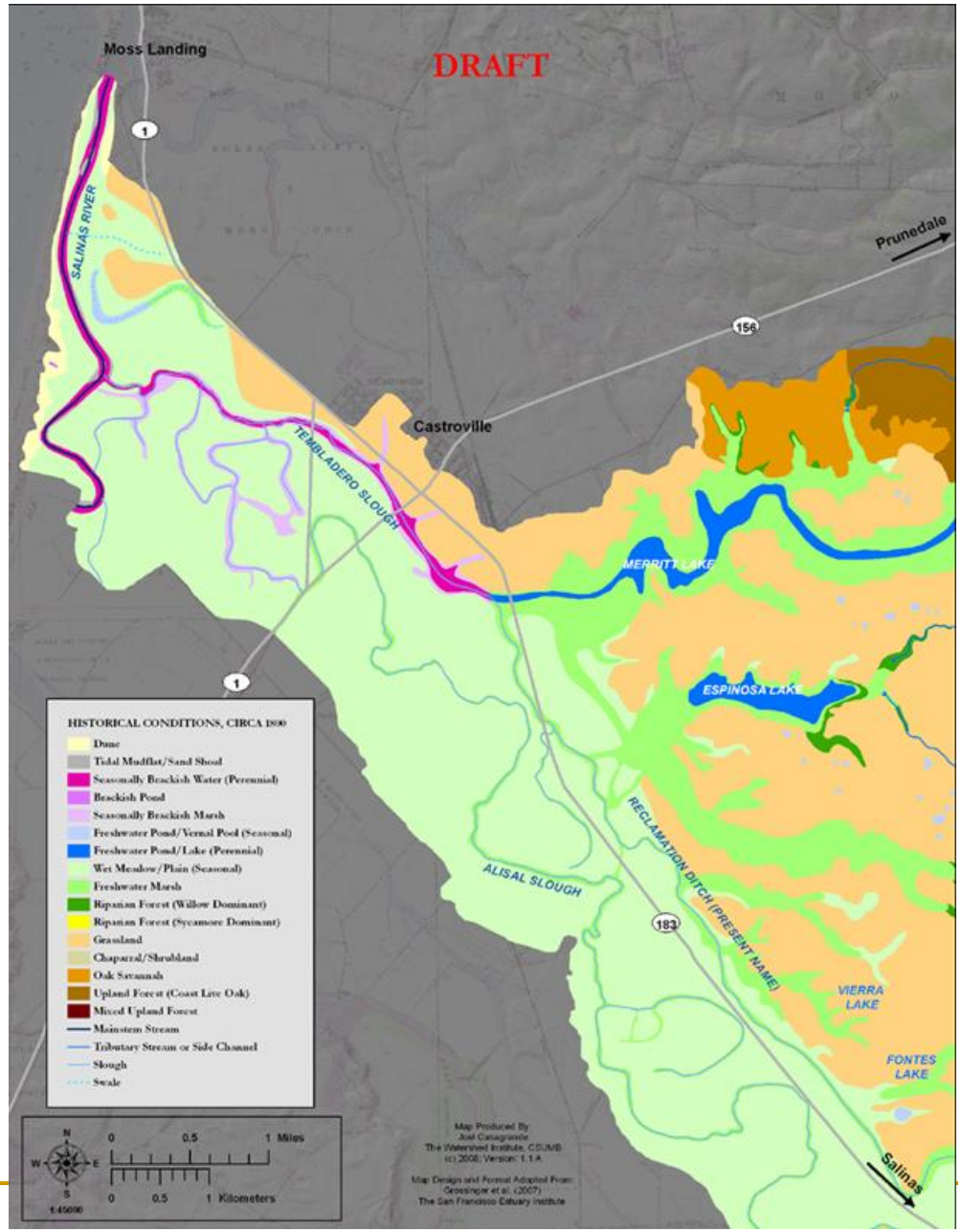


Map 1:

1. Inland extent of saltwater; brackish conditions; vegetation typical of saltmarsh (i.e. pickleweed).

2. Extent of perennially flooded open water habitat in Merritt Lake and Espinosa Lake is unknown.

3. Boundary between oak woodland (Coast Live Oak dominant) and oak savannah.



Map 2:

4. Boundary between oak woodland (Coast Live Oak dominant) to oak savannah and from oak savannah to grassland.

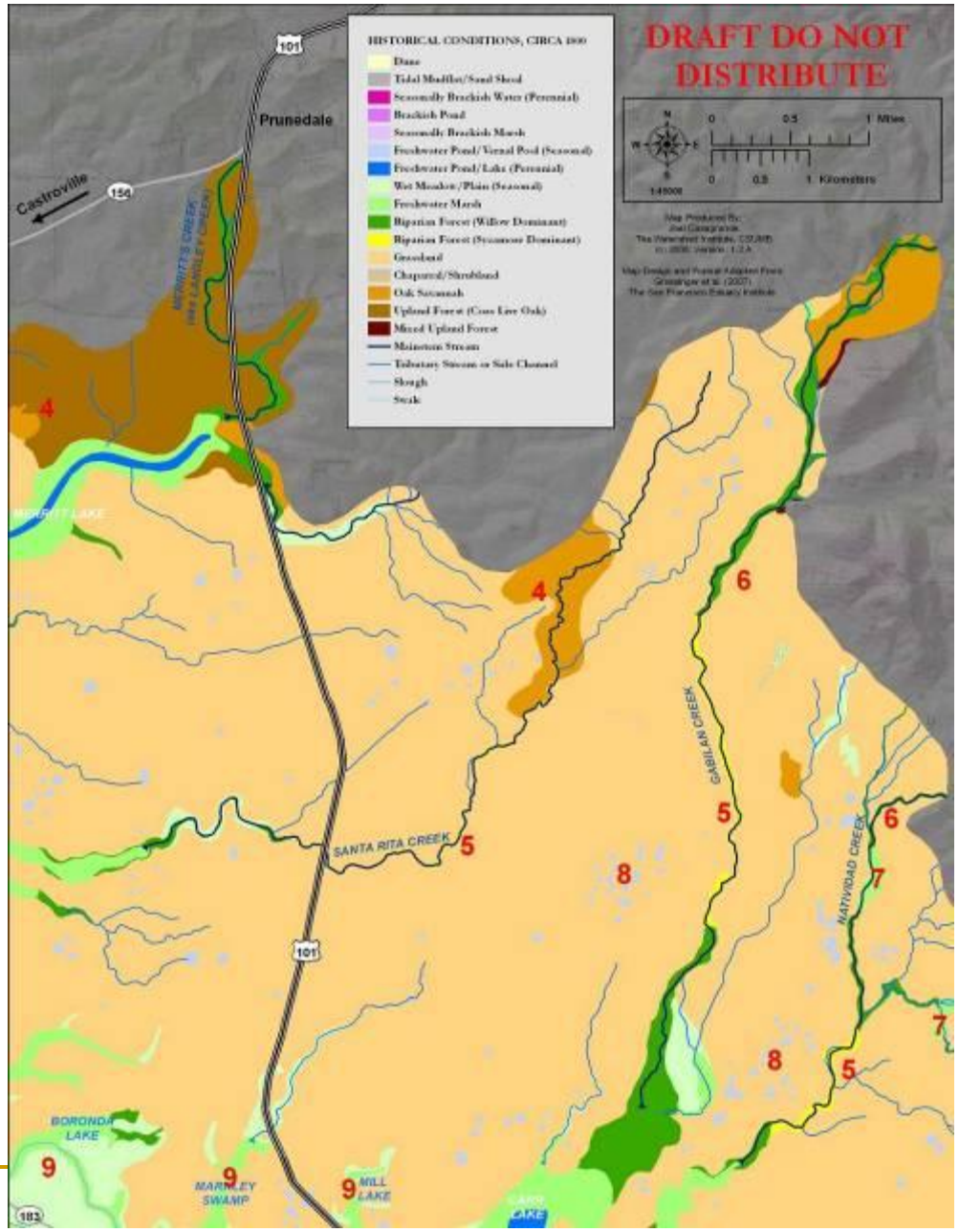
5. Historic extent of sycamore woodland along lower Santa Rita Creek.

6. Willow riparian forest extent based on likely extent of historic perennial water or high water table and preceding intensive grazing during the rancho period.

7. 1869 County Map shows large pond-shaped feature labeled "*Tulare*". Strong wet soil signature present in 1937 aerial photos.

8. High density of vernal pool/pond features present in 1937 aerial photos.

9. The presence and extent of perennially flooded open water habitat in Boronda Lake, Markley Swamp, and Mill Lake on an annual basis in unknown.



HEP Next Steps

- Continued work on the Gabilan Watershed to produce scientifically defensible results – Link findings to IRWMP planning process
- Existing projects in other parts of the Central Coast in various stages of completion
  - Morro Bay
  - Watsonville Slough
  - Elkhorn Slough
  - Central Coast Lagoons
- Identify specific management needs and necessary funding to continue our development of a Central Coast Historical Ecology Project

Habitat Restoration

Working to restore wet corridors on the Central Coast

Restore According to a Plan…

- Moro Cojo Slough Management and Enhancement Plan
- Northern Salinas Valley Restoration Plan
- Reclamation Ditch Watershed Assessment and Management Strategy

Moro Cojo Slough Management and Enhancement Plan

- Final Report completed in 1996 and adopted by Monterey County Board of Supervisors.
- Describes the environmental resources of the Moro Cojo Slough Watershed
- Recommends actions to enhance, restore and manage the significant resources on both public and private land.
  - Buffers along perimeter
  - Restore floodplain
  - Increase freshwater habitats
  - Increase public access

Northern Salinas Valley Restoration Plan

- Final Report completed in 1997
- Developed as an adaptive management plan for the Salinas Valley Water system
- Primarily addressing one BMP: restoration of wetland corridors
  - Benefits of restoration
  - Technical approach
  - Monitoring
  - Demonstration projects
  - Education

Reclamation Ditch Watershed Assessment and Management Strategy

- Final Report completed in 2005
- Covers a nationally vital agricultural economy
- Main Water Quality issues: nutrients, DO, temp, fecal coliform, sediment, pesticides
- Actions to address Goals of Management Plan:
  - Implement Ag Waiver program
  - Conduct study of vegetated treatment systems
  - Control urban runoff volume
  - Create/restore wetlands/open space
  - Evaluate fish passage and status of steelhead

Local Restoration Partners

- Coastal Conservation & Research, Inc.
- Creative Environmental Conservation
- Big Sur Land Trust
- Elkhorn Slough Foundation
- Monterey County Water Resources Agency
- Monterey Bay National Marine Sanctuary
- The Watershed Institute
  - Return of the Natives
  - CCoWS

Current Moro Cojo Restoration sites

Wetland Enhancement locations

Wetland Restoration locations

Plant Propagation

Moro Cojo Before and After

Tottino Ponds

2000

- Initiated in 1999 with creation of 5 ponds
  - 1 more added in 2003
- Bird & amphibian habitat
- 12 acres

2006

Moro Cojo Before and After

Seamist Ponds

2005

- Completed in 2008 with creation of 2 ponds (6 acres)
- Ag runoff water source
- Migratory bird habitat

2007

Tembladero Slough Wetland Demonstration Site

Before restoration (2005)

- Completed in 2006 with creation sinuous wetland
- Ag runoff water source
- BMP Demonstration site
  - Research, education, outreach

After restoration (2009)

IRWMP Planning

- Integrated Regional Water Management Plan for Greater Monterey County
- Allows for funding through Prop. 84
- Projects accepted for funding must address the regional goals and objectives
- CCWG is working on the development of two projects to add to the plan development
  - Gabilan/Bolsa Nueva Integrated Watershed Restoration
  - Coordinated Monitoring Program
- CCWG is also hosting the IRWMP website

  (www.centralcoastwetlands.org)

IRWMP Regions

Local IRWMP Projects Plans

Gabilan/Bolsa Nueva Integrated Watershed Restoration

- Gabilan Watershed Historical Ecology and Riparian Corridor Improvement Plan
- Central Moro Cojo Tidal Experimental Management
- Central Moro Cojo Floodplain Restoration
- Agriculture Run-off Treatment Wetland
- Tembladero Slough Restoration and Castroville Community Public Access
- Central Monterey Bay Sand Dune Restoration
- Upper Moro Cojo Restoration

Wetland Monitoring and Project Evaluation

To define and quantify past restoration success, improve methods and establish long term management objectives

State Wetland Monitoring Program

- Establish process for standardized data collection, analysis, interpretation, and reporting of wetlands to assess condition and evaluate project success.

USEPA SCCWRP SFEI CCWG SWRCB CCC

- Partners working to develop standardized State Monitoring Tools including:

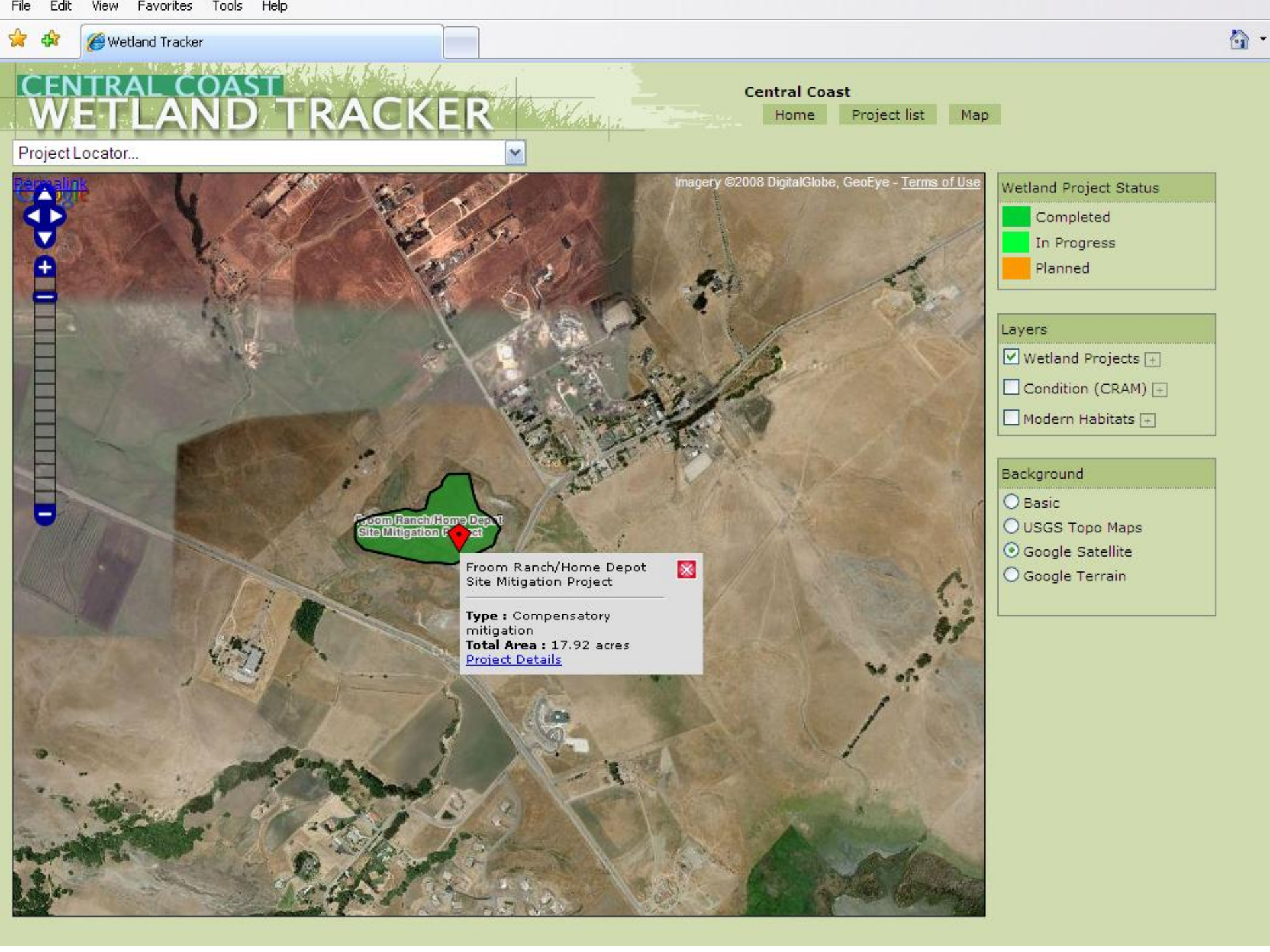
-Rapid Assessment
-Project Tracker
-Resource Mapping
-Historical Ecology

Existing Tools

- **Level 1: Where are wetlands in the region?**
- **Level 2: How does the project compare to regional wetland condition?**
- **Level 3: Is this wetland impacted by adjacent landuses?**

Central Coast Wetland Tracker

- 130 Central Coast projects entered to date, the number is regularly increasing.
- Compilation of past mitigation and restoration projects in centralized data repository
- Includes related documents (i.e. goals and objectives, funding information, final reports and images)
- Combine with assessment of current condition (CRAM)


File Edit View Favorites Tools Help
Wetland Tracker
CENTRAL COAST
WETLAND TRACKER
Central Coast
Home
Project list
Map
Project Locator...
Permalink
Imagery ©2008 DigitalGlobe, GeoEye - Terms of Use
Froom Ranch/Home Depot
Site Mitigation Project
Type : Compensatory mitigation
Total Area : 17.92 acres
Project Details
Wetland Project Status
Completed
In Progress
Planned
Layers
Wetland Projects
Condition (CRAM)
Modern Habitats
Background
Basic
USGS Topo Maps
Google Satellite
Google Terrain

CENTRAL COAST WETLAND TRACKER

Froom Ranch/Home Depot Site Mitigation Project

Basic info | Files & Links

Status	Completed
Type	Compensatory mitigation
Project Area	17.9 Acres

County	San Luis Obisbo
Location	35.281° N -120.713° W MAP

Habitat Plan

Habitat	Activity	Acres	Source
Depressional wetlands	Mixed	17.0	Permit-USACE
Riparian areas	Mixed	0.9	Permit-USACE

Related Habitat Impacts

Habitat	Acres lost	Source
no data		

Historical Habitats

Habitat	Acres
no data	

Sites

Name	Status	Acres
Froom Ranch/Home Depot Site Mitigation Project	Completed	17.9

Performance Criteria

Status	Details

Project Identification

ID	Type
985007300-TW	USACE - File Number

Events

Date	Type	Description
10/1/2002	Groundwork end	On-the-ground work completed

People

Type	Name	Organization
Contact	Dominic Roques	Regional Water Quality Control Board
Contact	Alex Madonna	None
Contact	Jeff Olberding	None

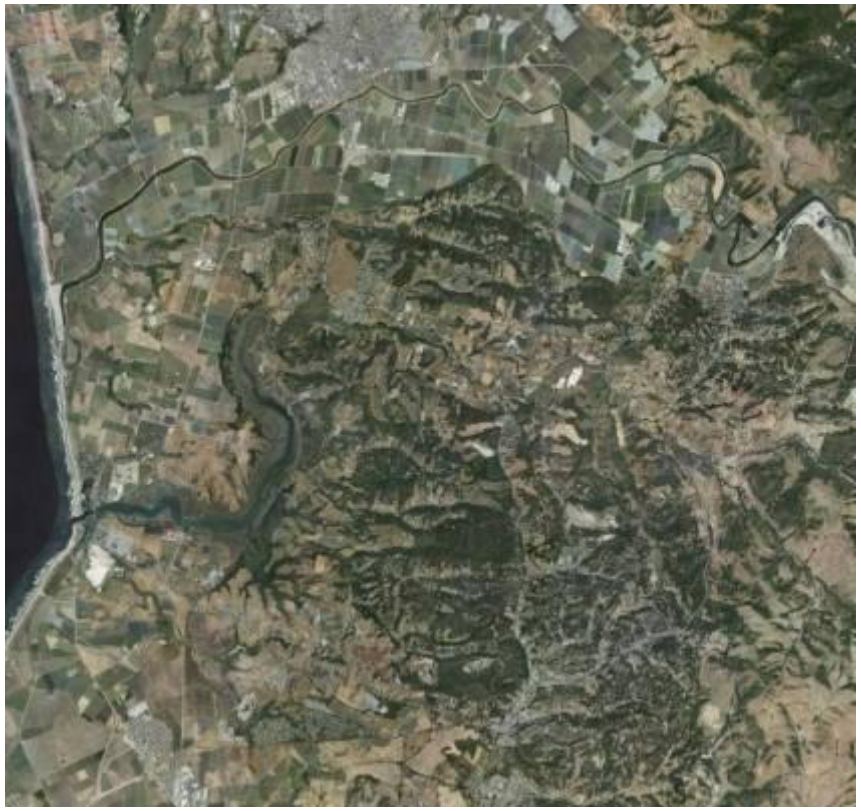
Related CRAM Assessments

Date	Site Name	Type	Score
no data			

California Rapid Assessment Method (CRAM)

Provides a rapid and cost effective evaluation of wetland condition that is comparable among sites, watershed regions and wetland classes; necessary for state and federal reporting and program evaluation.

Wetland Management Challenges



- Numerous State and Federal programs focus on regulating and managing wetlands
- Billions of public and private funds expended on wetland acquisition, restoration and enhancement
- What is the cumulative affect of these programs relative to losses & degradation from development?

What is CRAM?

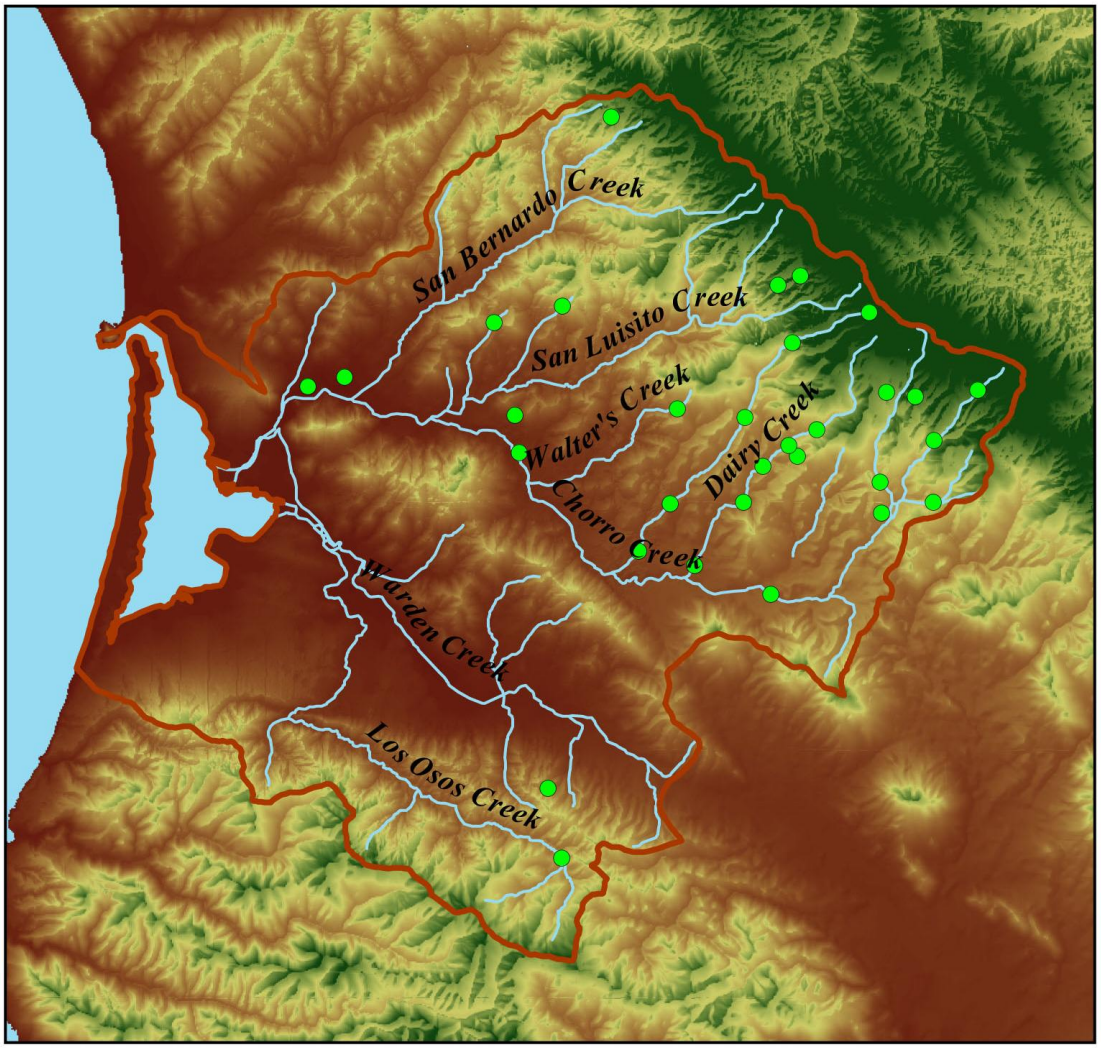
- Expert "walk and talk" diagnostic tool for all wetlands in California
- Less than half a day of field time, with a team of 2-3
- Required expertise comparable to jurisdictional delineation
- Integrates biotic, geomorphic and hydrologic indicators as well as adjacent buffer condition information to establish a cumulative score of condition.

Ambient Condition as Context for Site Conditions

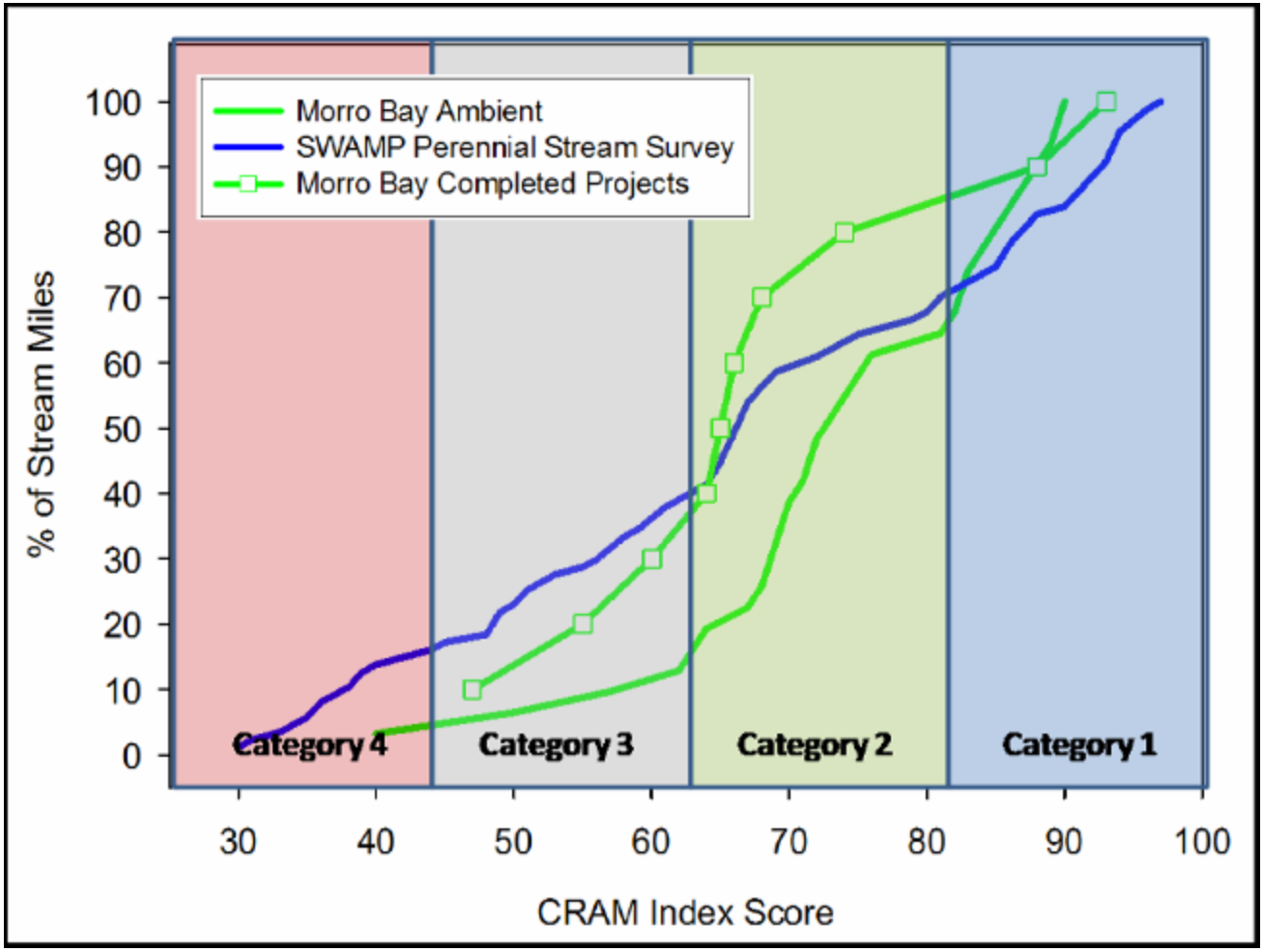
Ambient Condition of Morro Bay Watershed

2007 Morro Bay Probabilistic Riverine Survey:

30 Stations

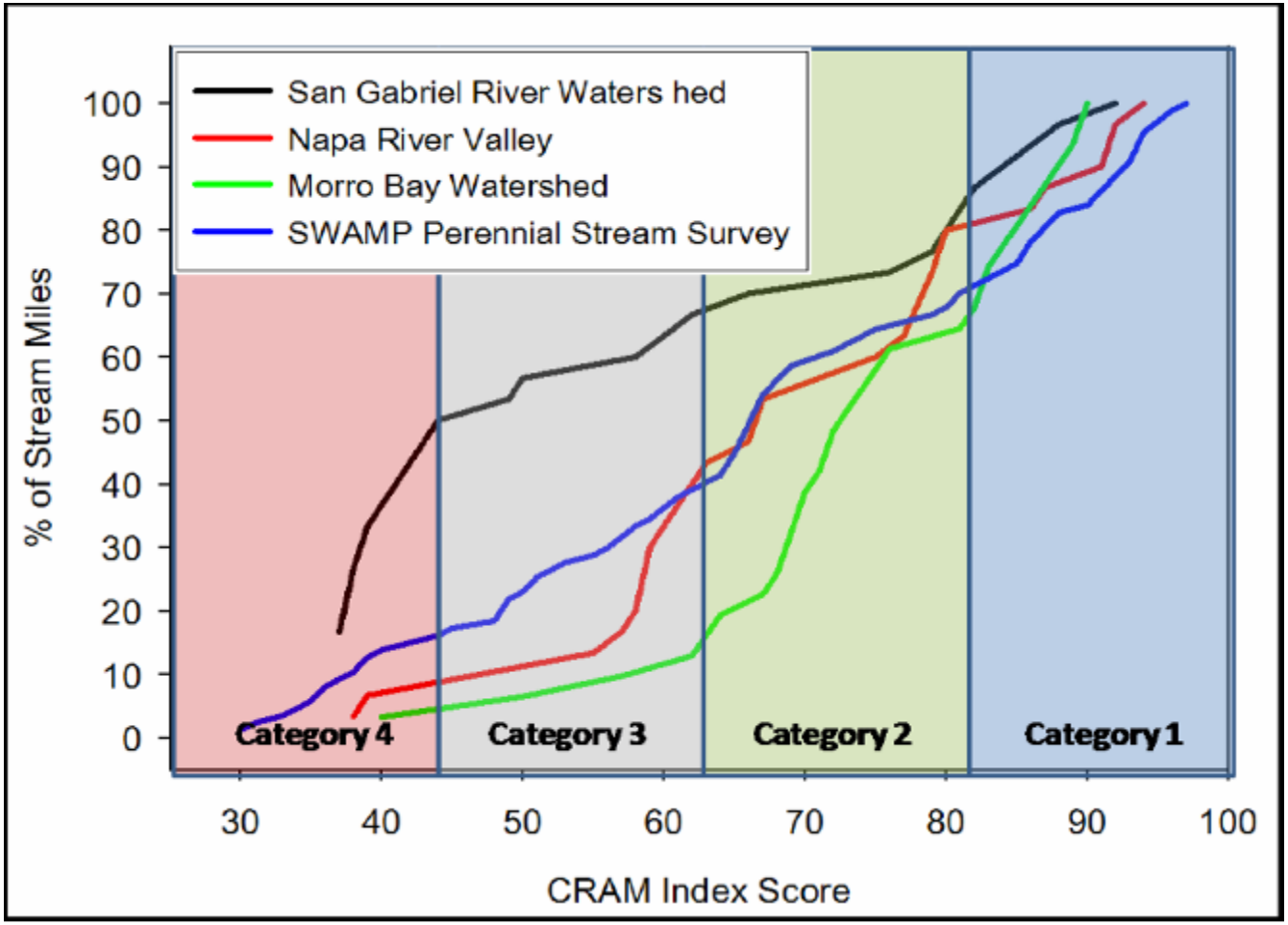


Morro Bay Watershed Compared to Statewide Ambient Condition



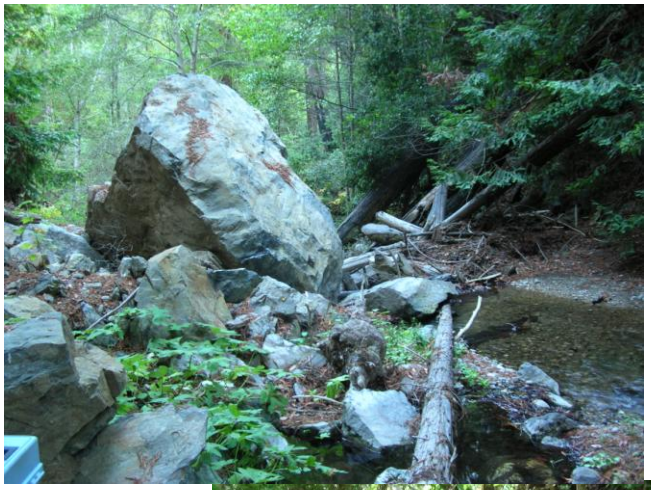
The Distribution of CRAM Scores

for different watersheds & compared to statewide ambient data



Project Evaluation in the Context of Reference Condition

- Reference site selection:
- Best Attainable Condition for the region
- Watersheds with primarily open space, relatively undisturbed
- Maps, aerial images, local experts



Wetland Project Evaluation

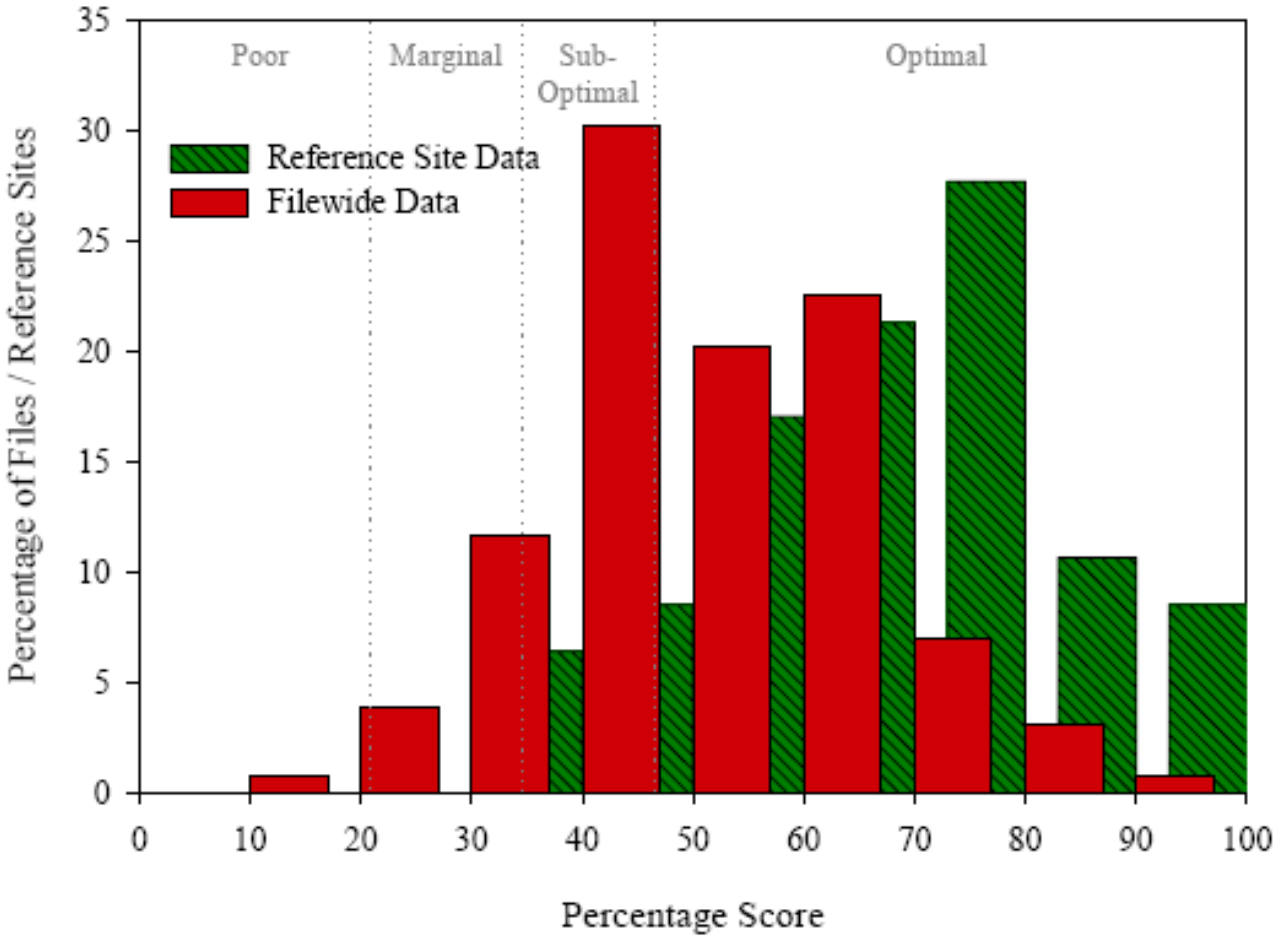
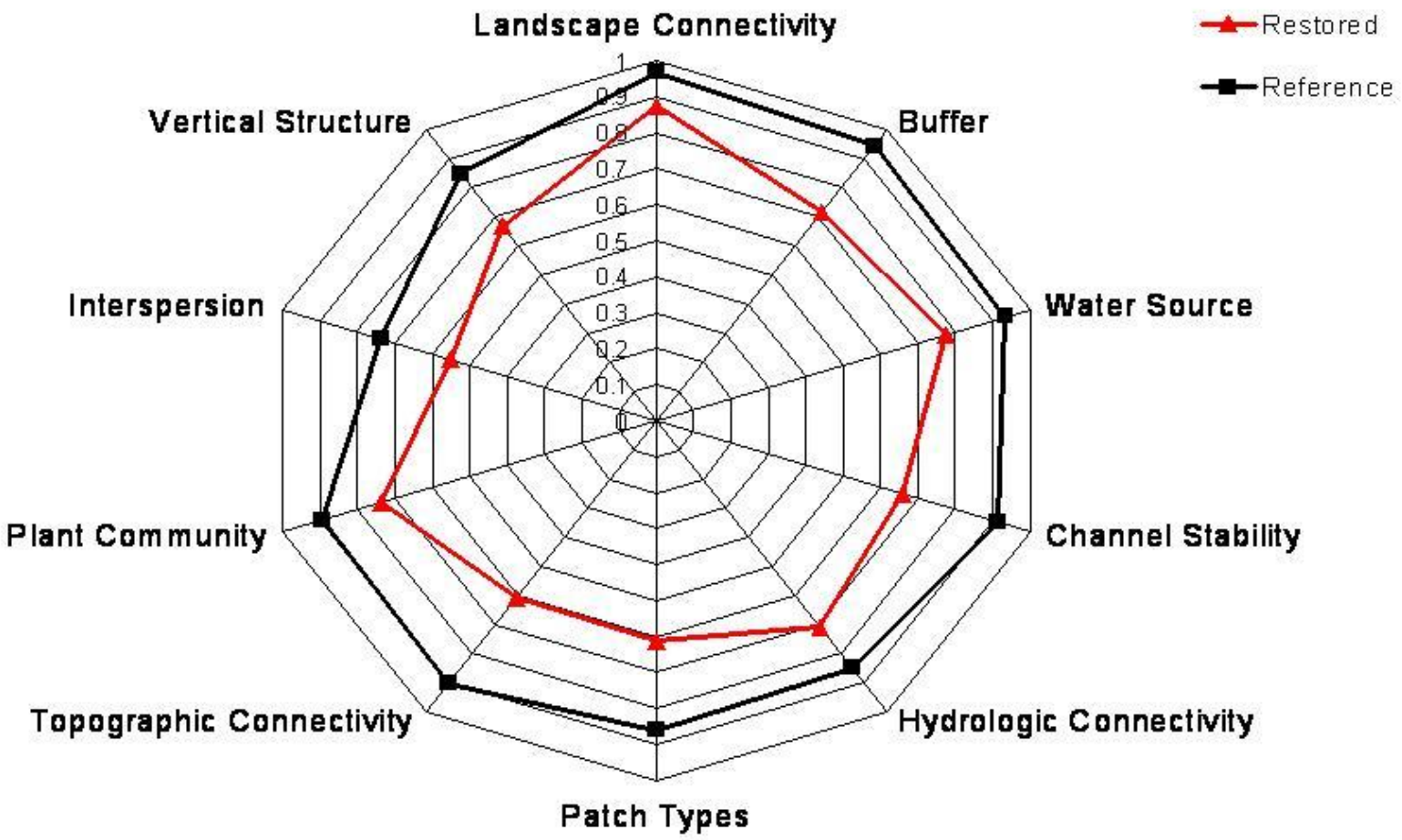
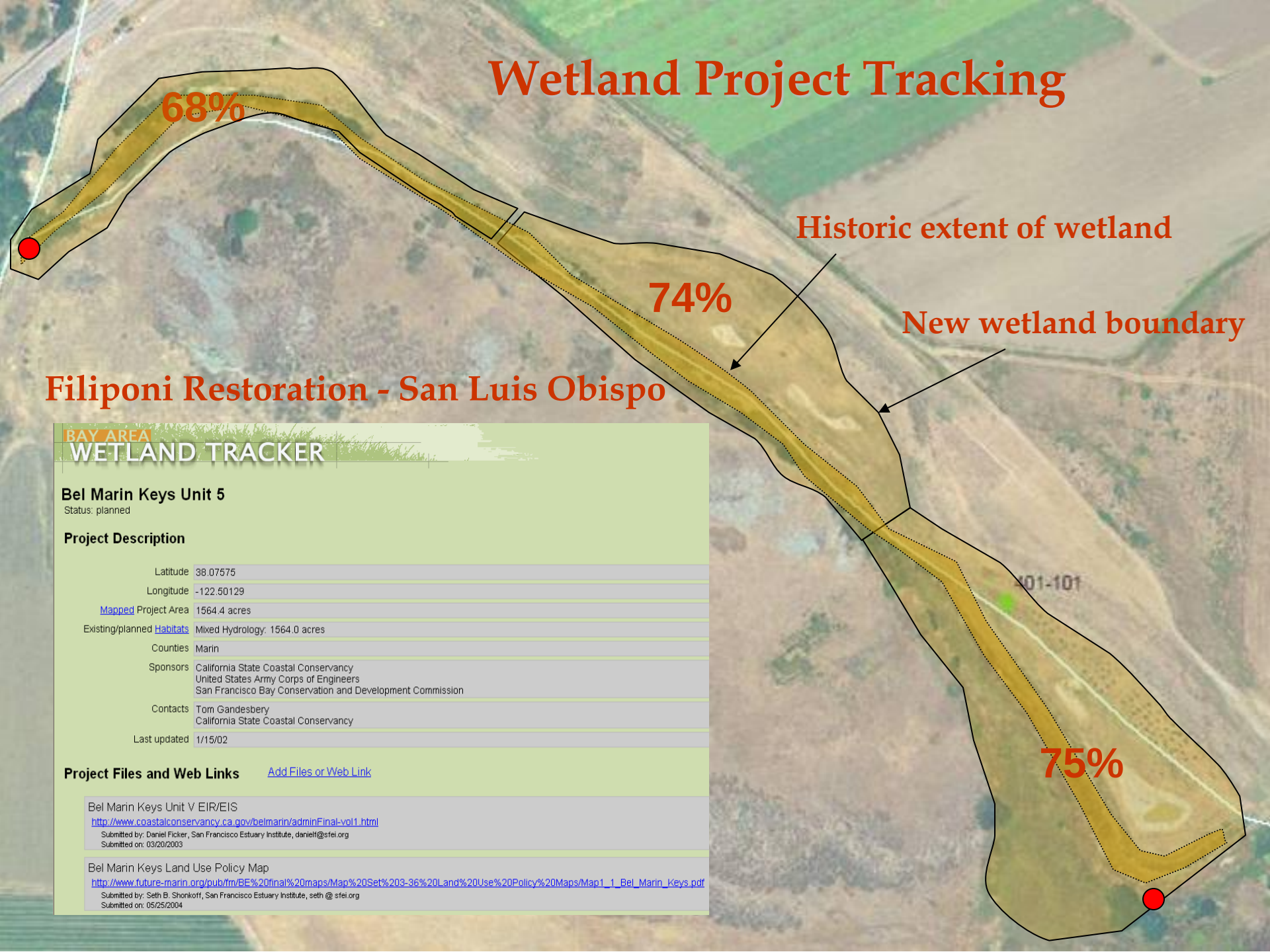


Figure 45. Biotic structure metric CRAM scores compared to reference-site data.

Comparison of Reference and Restored Sites for each CRAM Metric



Wetland Project Tracking



Filiponi Restoration - San Luis Obispo

BAY AREA
WETLAND TRACKER

Bel Marin Keys Unit 5
Status: planned

Project Description

Latitude	38.07575
Longitude	-122.50129
Mapped Project Area	1564.4 acres
Existing/planned Habitats	Mixed Hydrology: 1564.0 acres
Counties	Marin
Sponsors	California State Coastal Conservancy United States Army Corps of Engineers San Francisco Bay Conservation and Development Commission
Contacts	Tom Gandesbery California State Coastal Conservancy
Last updated	1/15/02

Project Files and Web Links Add Files or Web Link

Bel Marin Keys Unit V EIR/EIS
http://www.coastalconservancy.ca.gov/belmarin/adminFinal-vol1.html
Submitted by: Daniel Ficker, San Francisco Estuary Institute, danielf@sfei.org
Submitted on: 03/20/2003

Bel Marin Keys Land Use Policy Map
http://www.future-marin.org/pub/fm/BE%20final%20maps/Map%20Set%203-36%20Land%20Use%20Policy%20Maps/Map1_1_Bel_Marin_Keys.pdf
Submitted by: Seth B. Shonkoff, San Francisco Estuary Institute, seth @ sfei.org
Submitted on: 05/25/2004

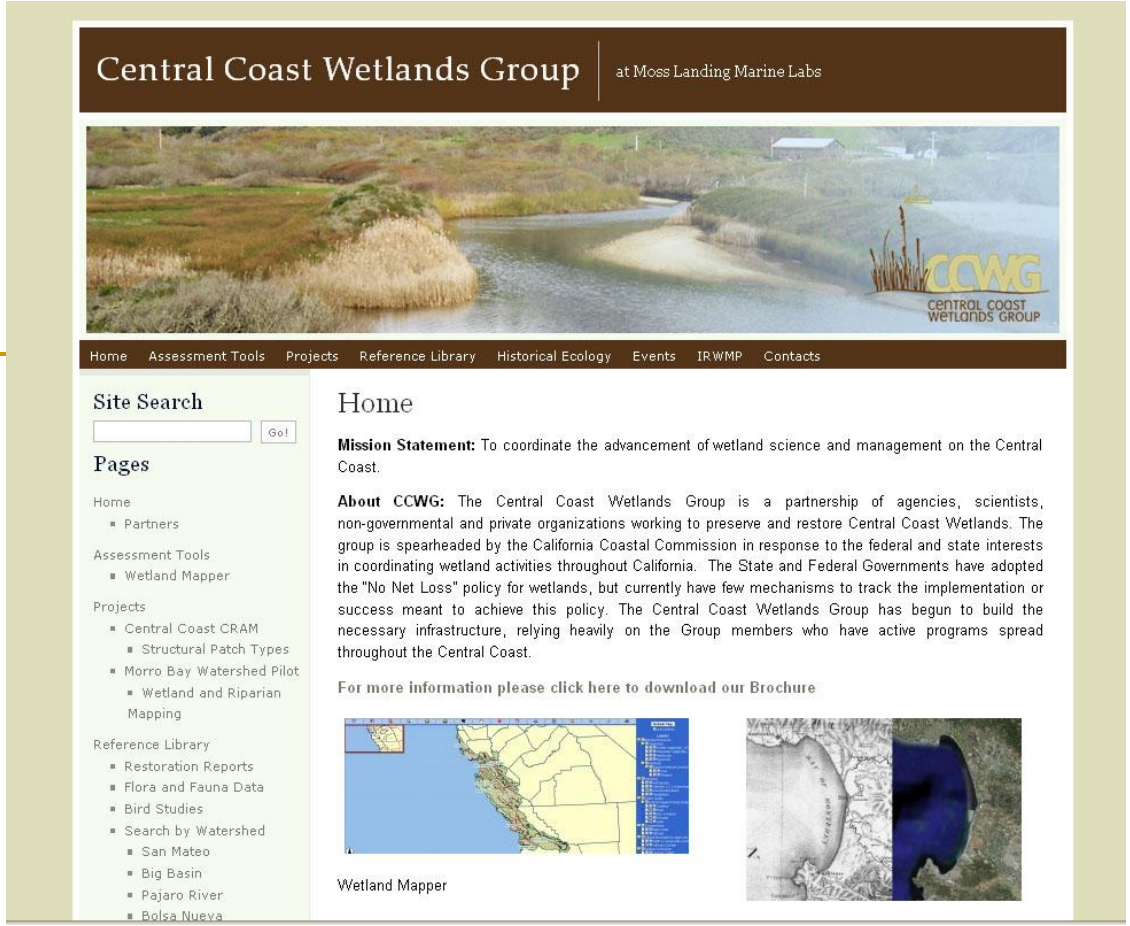
CRAM PUBLICATIONS

- 2006. A practical guide for the development of a wetland rapid assessment method: the California experience.
- 2006. An evaluation of compensatory mitigation projects permitted under Clean Water Act Section 401
- 2007. Improving Monitoring and Assessment of Wetland and Riparian Areas in California through Implementation of a Level 1, 2, 3 Framework
- 2008. Evaluating River Restoration Success using the California Rapid Assessment Method. M.S. thesis. California State University Monterey Bay, Seaside.
- 2008. California Rapid Assessment Method (CRAM) for Wetlands.
- 2008. California's Wetland Demonstration Program Pilot A Final Draft Project Report for Review by the California Resources Agency.
- 2009. Validation of a Wetland Rapid Assessment Method: Use of EPA's Level 1-2-3
- 2009. Demonstration of an Integrated Watershed Assessment Using the Level 1-2-3 Monitoring Framework.

Upcoming Monitoring Projects

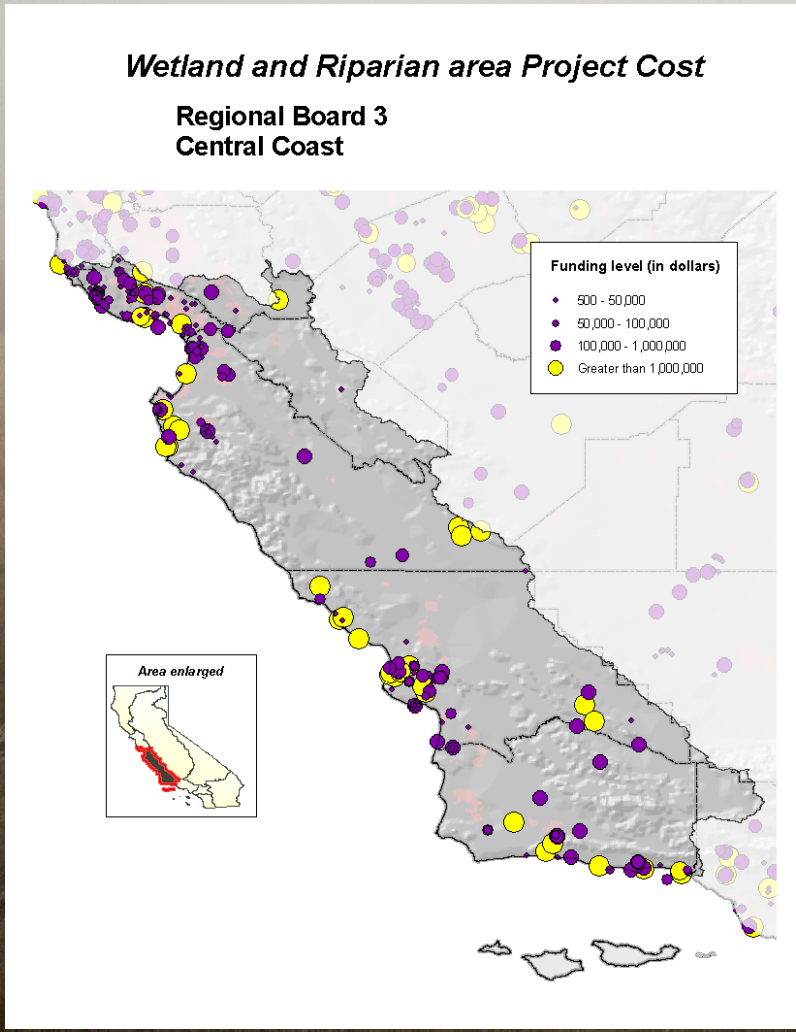
- Verification and validation of CRAM for Seasonally Tidal Estuaries
  - inventory of current and historical habitat
  - effect of sea level rise on wetland migration
- Verification and validation of CRAM for Perennial Depressional wetlands
- Wetland Reference Network for Riverine CRAM

Partnering with CCWG



Can We Say?

Projects meet State Policy



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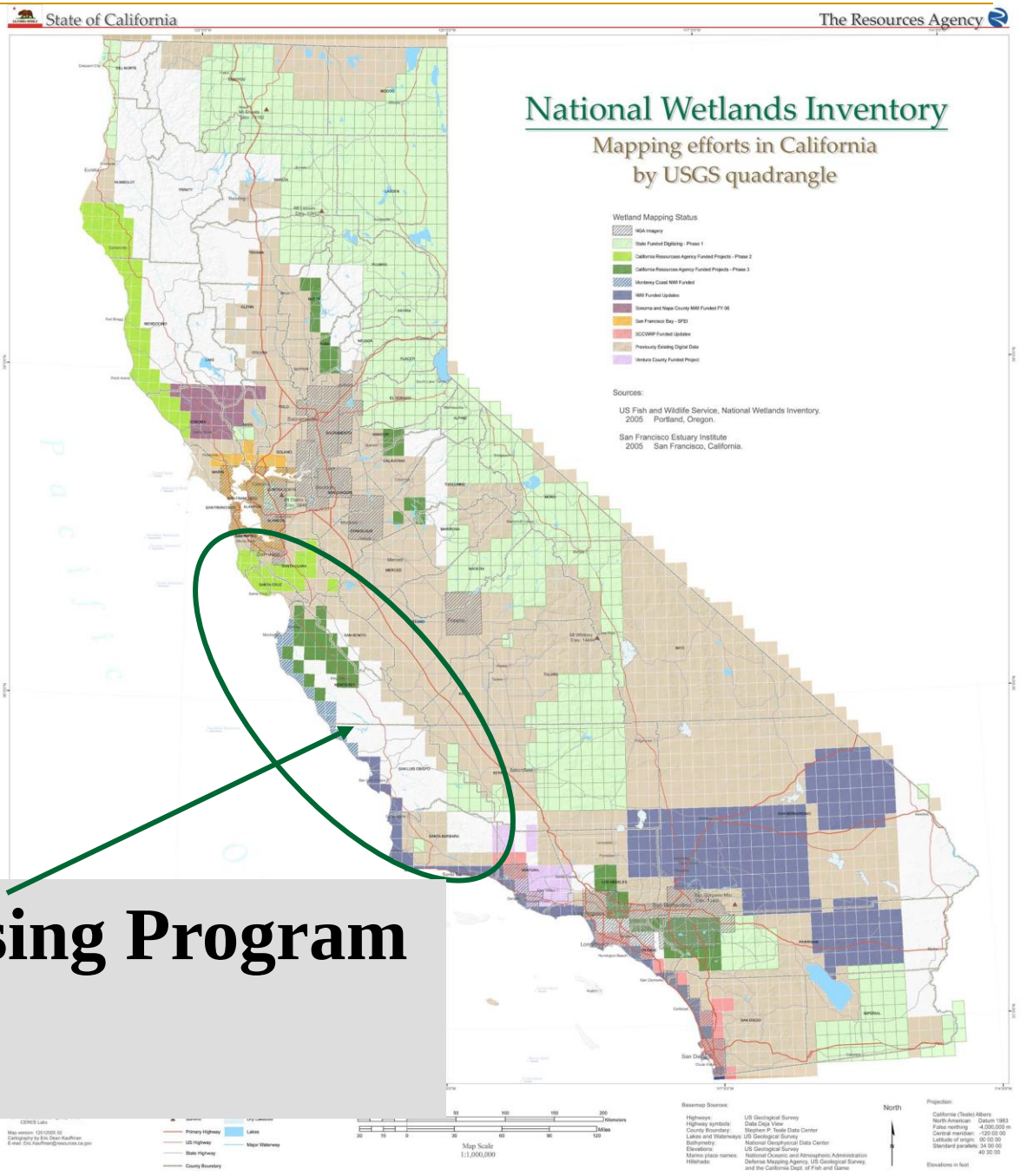
Ensure no overall net loss and achieve a long-term net gain in the quantity, quality, and permanence of wetlands acreage and values in California

CALIFORNIA WETLANDS CONSERVATION POLICY August 23, 1993

Where are the wetlands?



CCWG
central coast wetlands group

CCWG -Addressing Program & Data Gaps

Central Coast Wetlands Group

Mission Statement

To coordinate the advancement of wetland science and management on the Central Coast.

CALIFORNIA COASTAL COMMISSION

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Restoration · Education · Research · Policy
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EPA United States Environmental Protection Agency

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