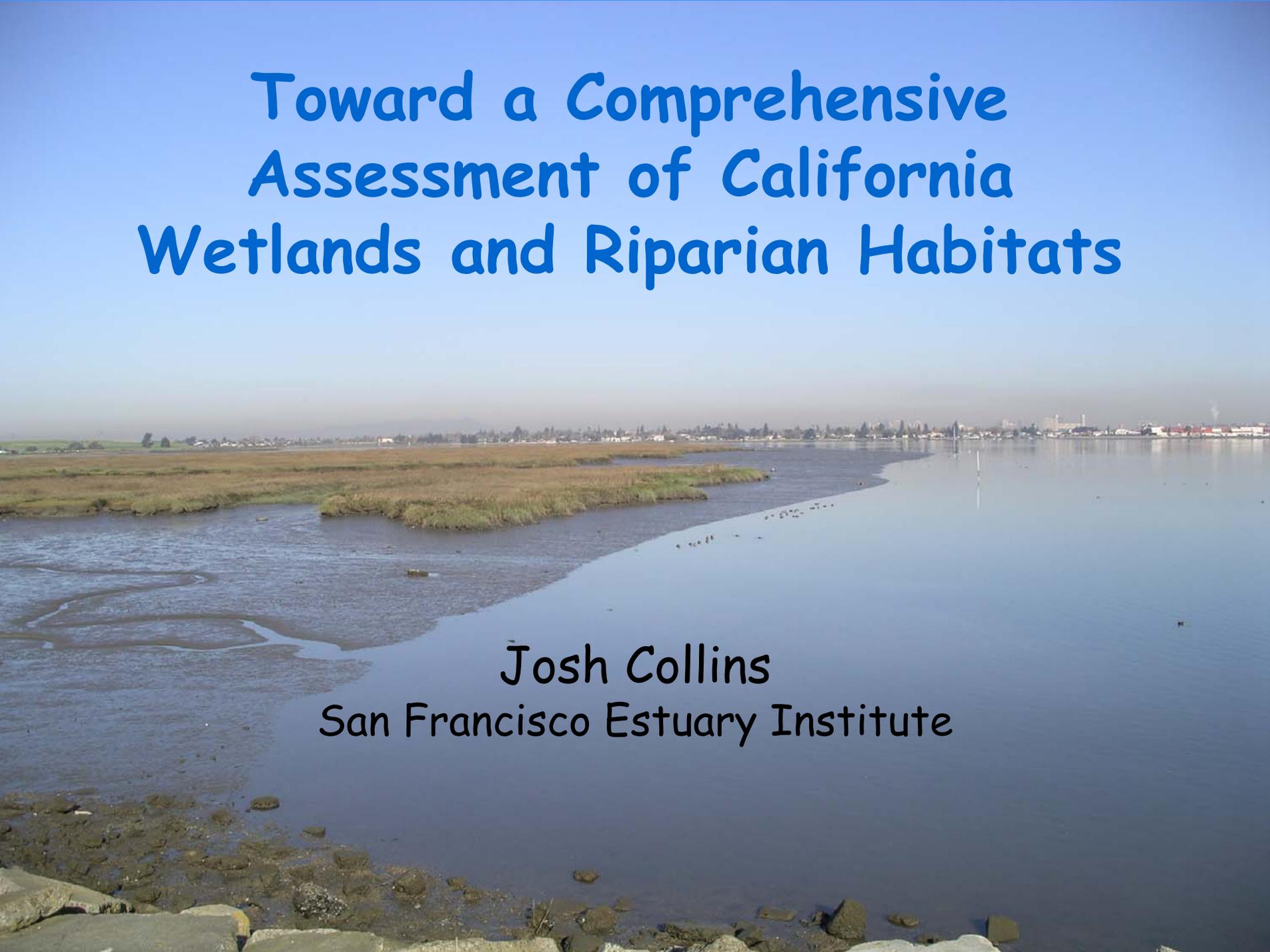


# Toward a Comprehensive Assessment of California Wetlands and Riparian Habitats

Josh Collins  
San Francisco Estuary Institute





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Southern California Coastal Water Research Project

Ross Clark  
California Coastal Commission

Adam Wiskind  
Moss Landing Marine Laboratory

Chris Potter  
California State Resources Agency

Paul Jones  
US EPA Region 9

# Purpose

Answer the questions: where are the wetlands and related projects and how are they doing?

# Purpose

Support Project planning and tracking in watershed and regional context by envisioning *any project* in the context of *all projects*, and in context of historical and modern habitats.

# Purpose

Track net change in wetland and riparian quantity and quality to ease the burden of reporting under CWA 401, 404, 305b, 304d, plus state directives including no-net-loss policies.

# Purpose

Provide public access to basic wetland information to assist environmental education and science.

**3-Level Framework  
for Comprehensive  
Wetlands and Riparian Habitat  
Assessment**

USEPA Wetlands Guidance Letter 2004-06

# Level 1: Inventories and Landscape Profiles

*Answer the question!*

Where *are* the wetlands and riparian habitats?

Develop sample frame for monitoring ambient condition and trends by wetland type.

Develop web-based tools for tracking habitats and projects.

## Level 1: Inventories and Landscape Profiles

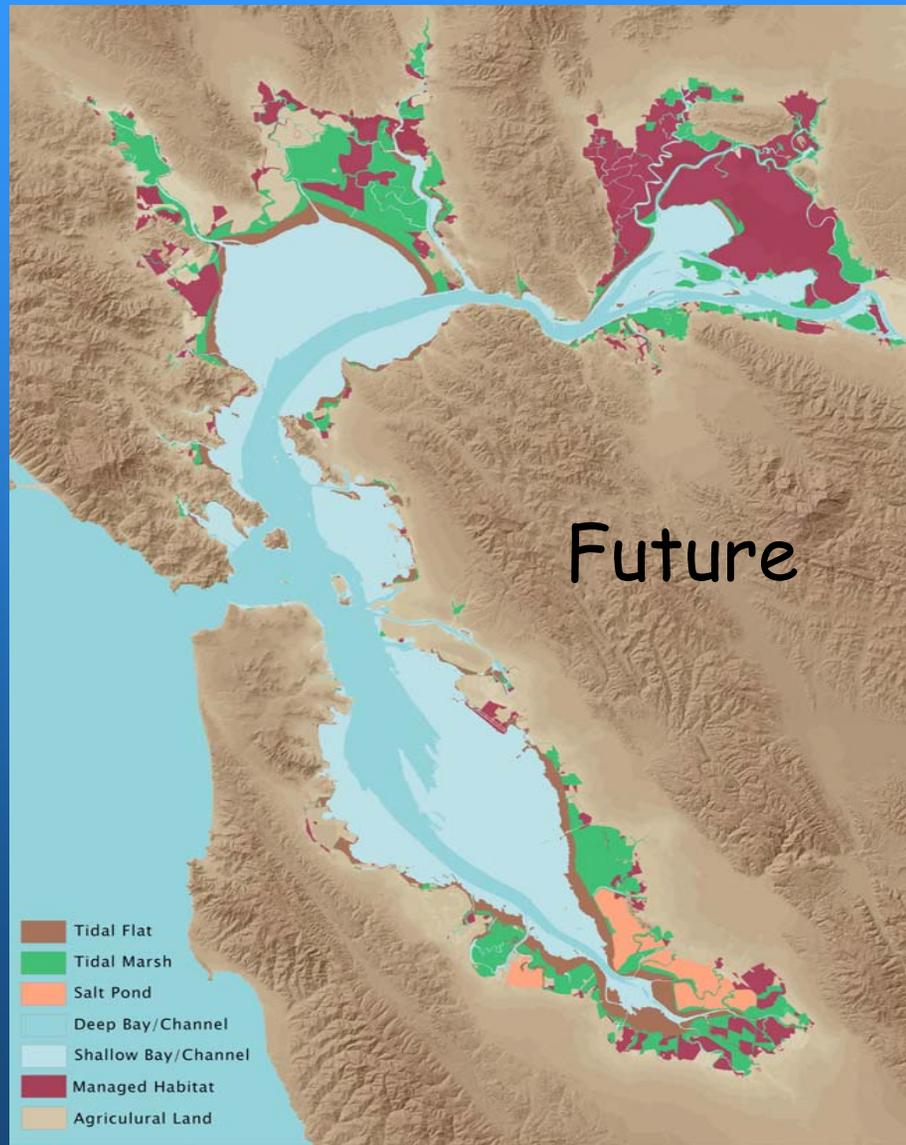
*Geographic Scope: All wetlands of all  
types in California*

lacustrine, estuarine, coastal lagoon,  
riverine-riparian, depressions, vernal pools,  
seeps and springs, playas

# Level 1 Regional Profile

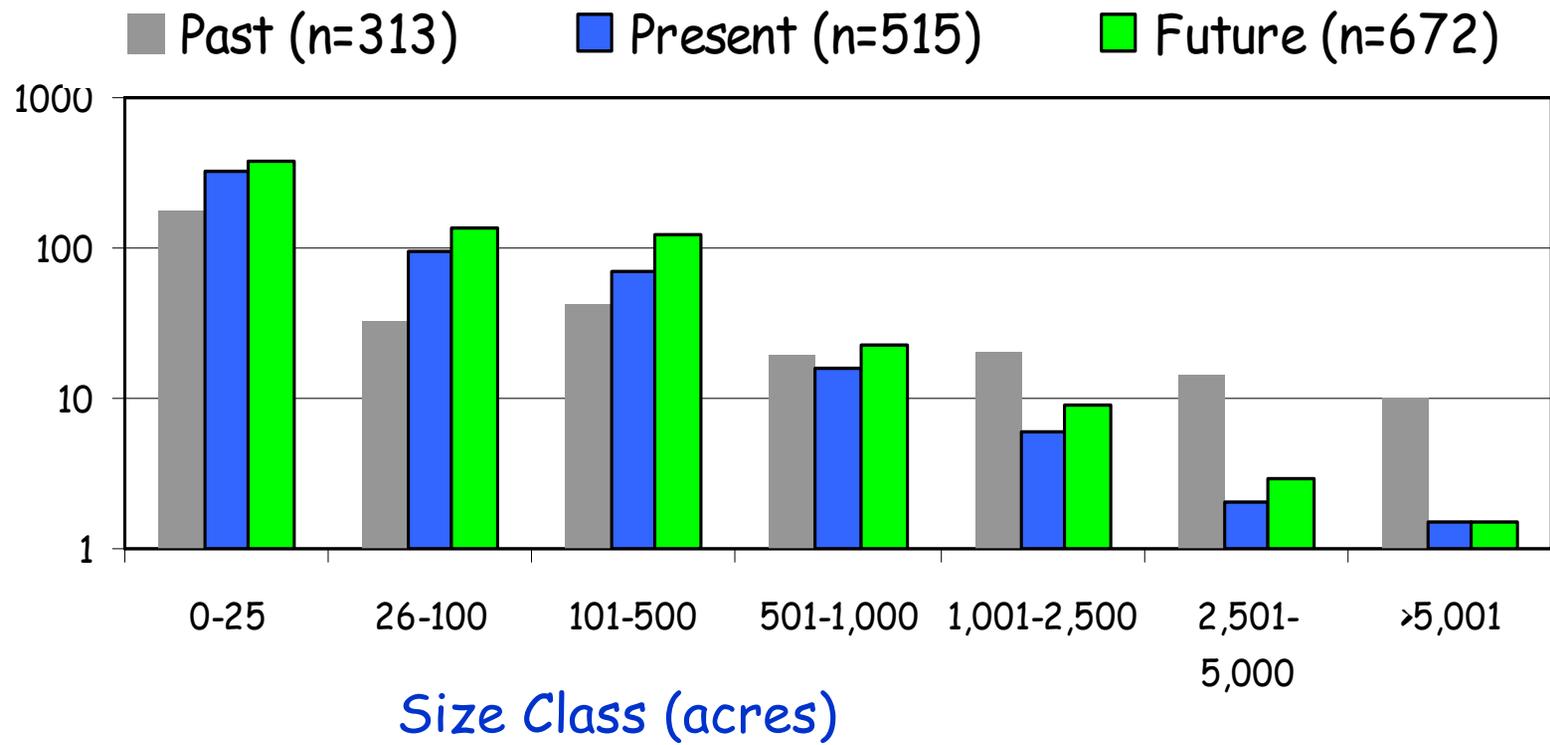


# Level 1 Regional Profile



# Level 1 Regional Assessment track extent over time

## Estuarine Wetland Patch Size



## Level 2: Rapid Assessment (CRAM)

*Answer the question!*

How are the wetlands doing  
(on a scale of 1-10)?

Develop a rapid method for assessing  
wetland condition that can be  
routinely used for evaluation and  
monitoring.

# What is CRAM?

- Expert “walk and talk” diagnostic tool
- A set of questions with mutually exclusive multiple choice answers
- 30 -120 minutes of field time per Assessment for 2-3 person team
- Required expertise comparable to jurisdictional delineation

# CRAM Scope

*Only compare wetlands  
of the same kind*

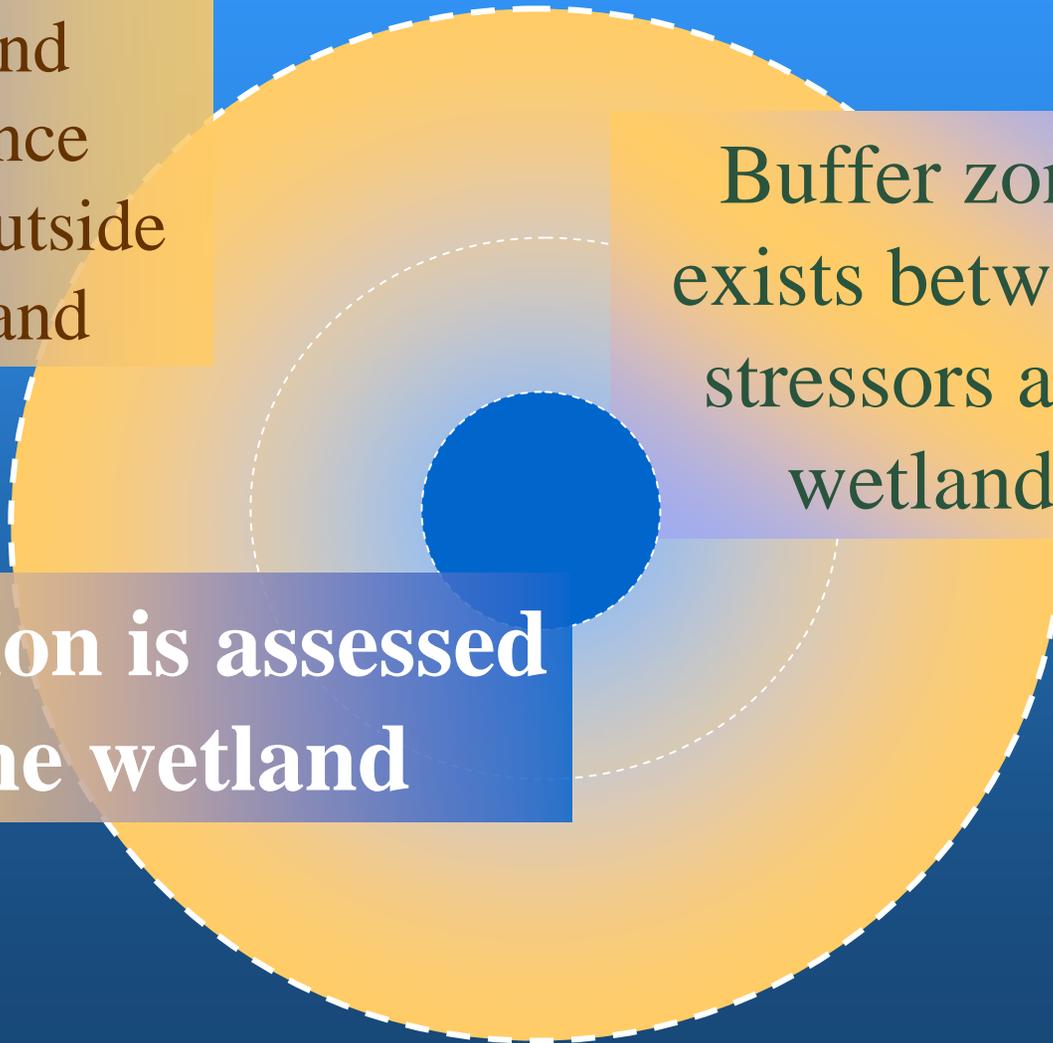


# Separate Assessments of Stress And Condition

Stress and  
disturbance  
originate outside  
the wetland

Buffer zone  
exists between  
stressors and  
wetland

**Condition is assessed  
at the wetland**



# Hierarchy of Assessment Approach

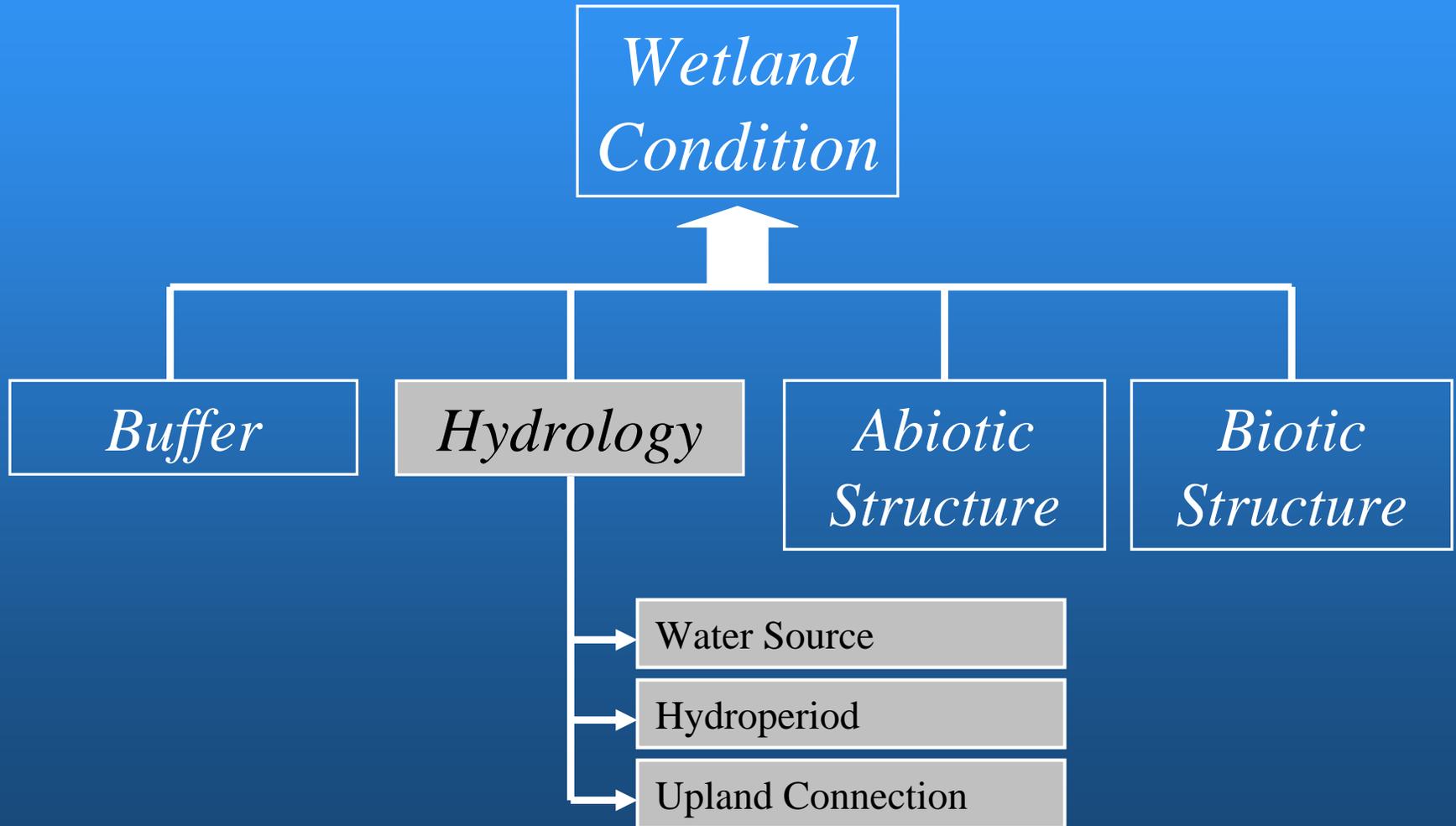
**Wetland Sites**, *have one or more*  
**Assessment Areas**, *for which there are*  
**Attributes of Condition**  
*which have*

*Same for  
Regions and  
Classes*

*Vary for  
Regions and  
Classes*

**Metrics**, *which have*  
**States**, *which have*  
**Scores** (*cf reference conditions*)

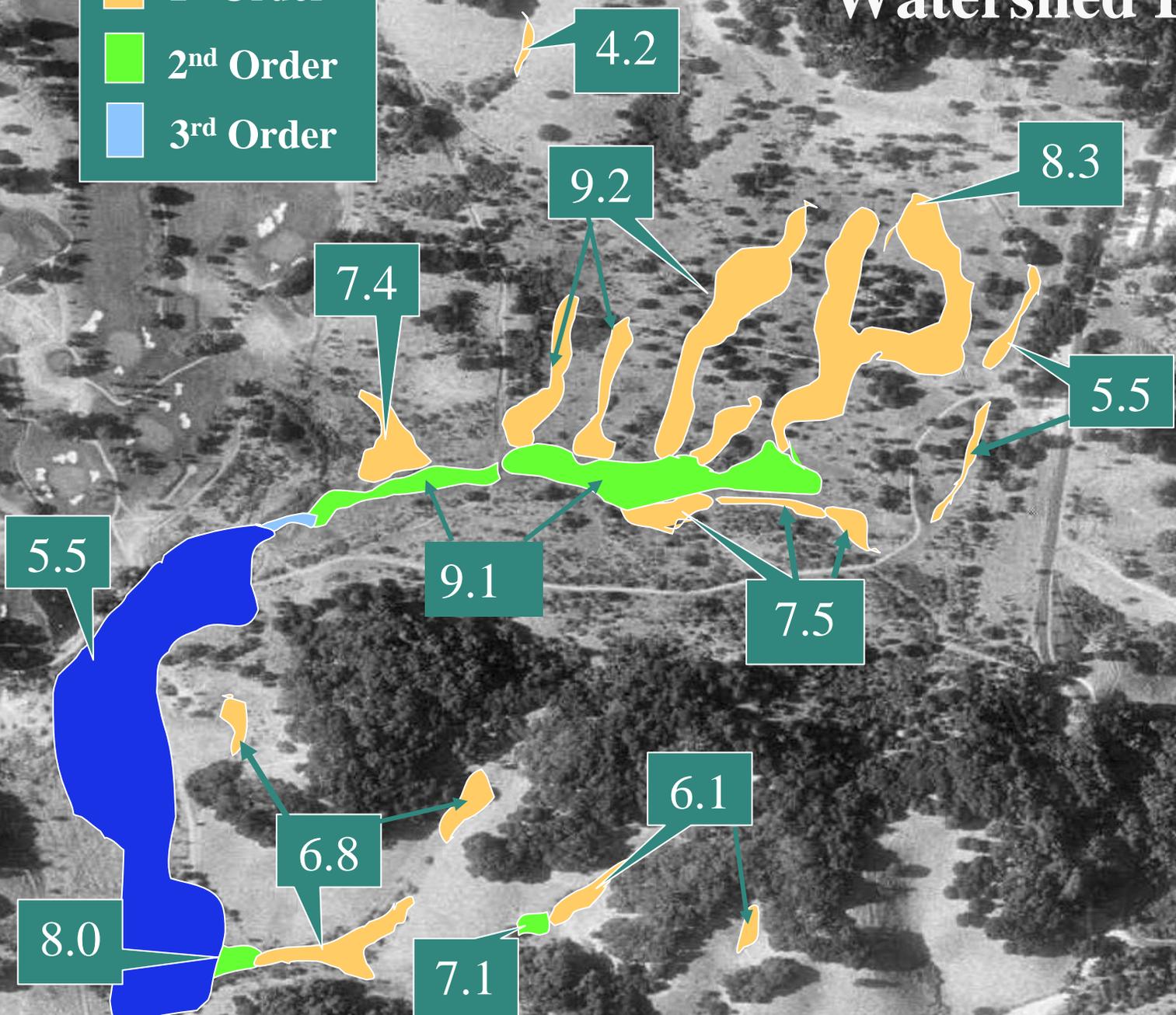
# CRAM Conceptual Framework: Condition Attributes and Metrics



# CRAM Applications

- Ambient monitoring
- Compliance monitoring
- Restoration performance assessment
- Cumulative impact & stressor analysis

# Watershed Profiles

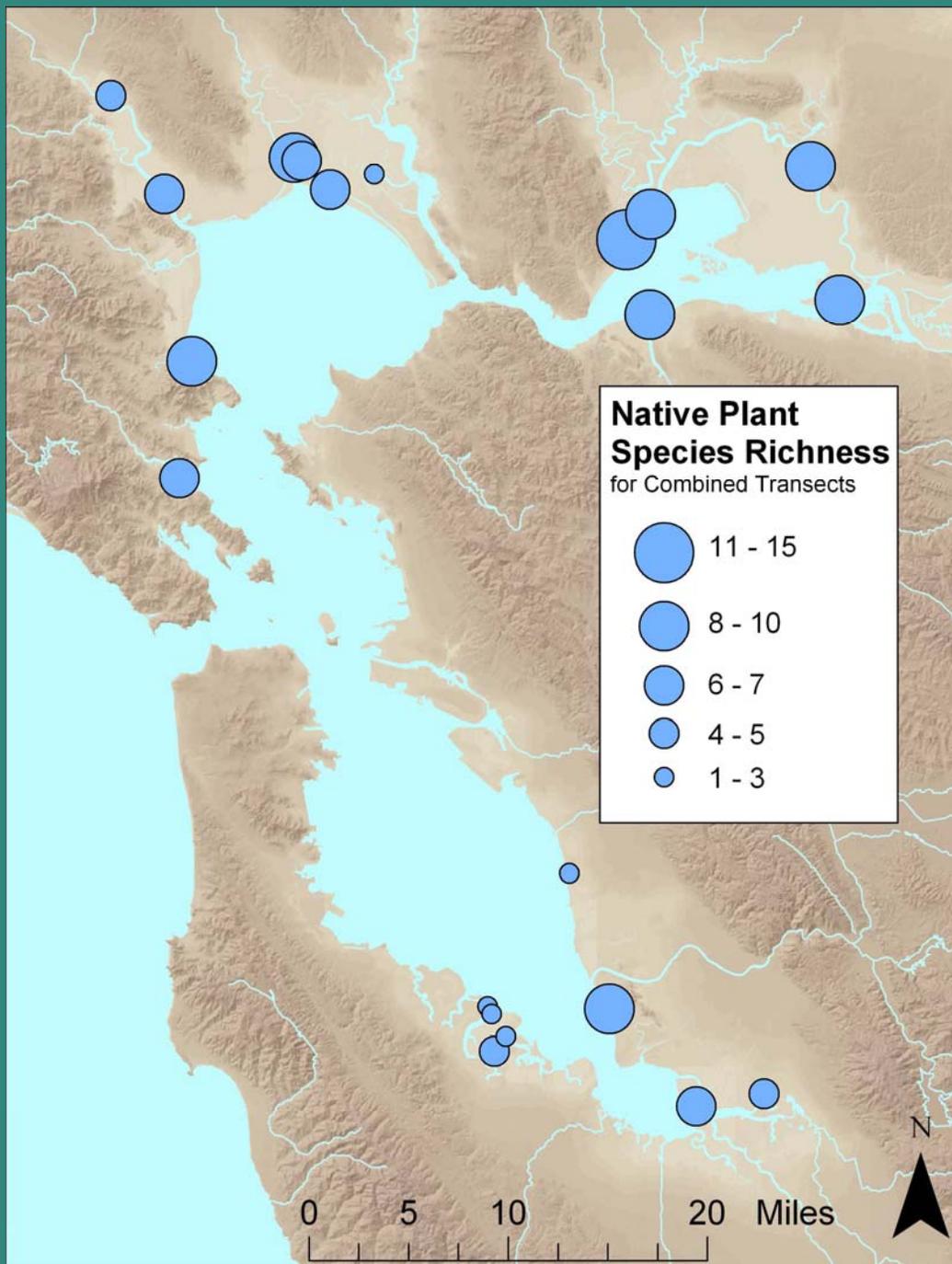


## Level 3: Intensive Monitoring and Special Studies

- Develop predictive models of relations among states, functions, and stressors (e.g., IBIs).
- Calibrate and validate Level 1 and Level 2 methodologies.
- Develop standard protocols for intensive monitoring

# Establishing Level 3 Baselines

Native plant  
species  
richness  
increases with  
marsh age and  
decreases  
with salinity.



# Information Management: What *Is* "Wetland Tracker"?

[www.wetlandtracker.org](http://www.wetlandtracker.org)



# Tracker is ...

Standard Data Dictionaries and Transfer Forms  
for uploading and sharing data ...

among regional habitat information systems ...

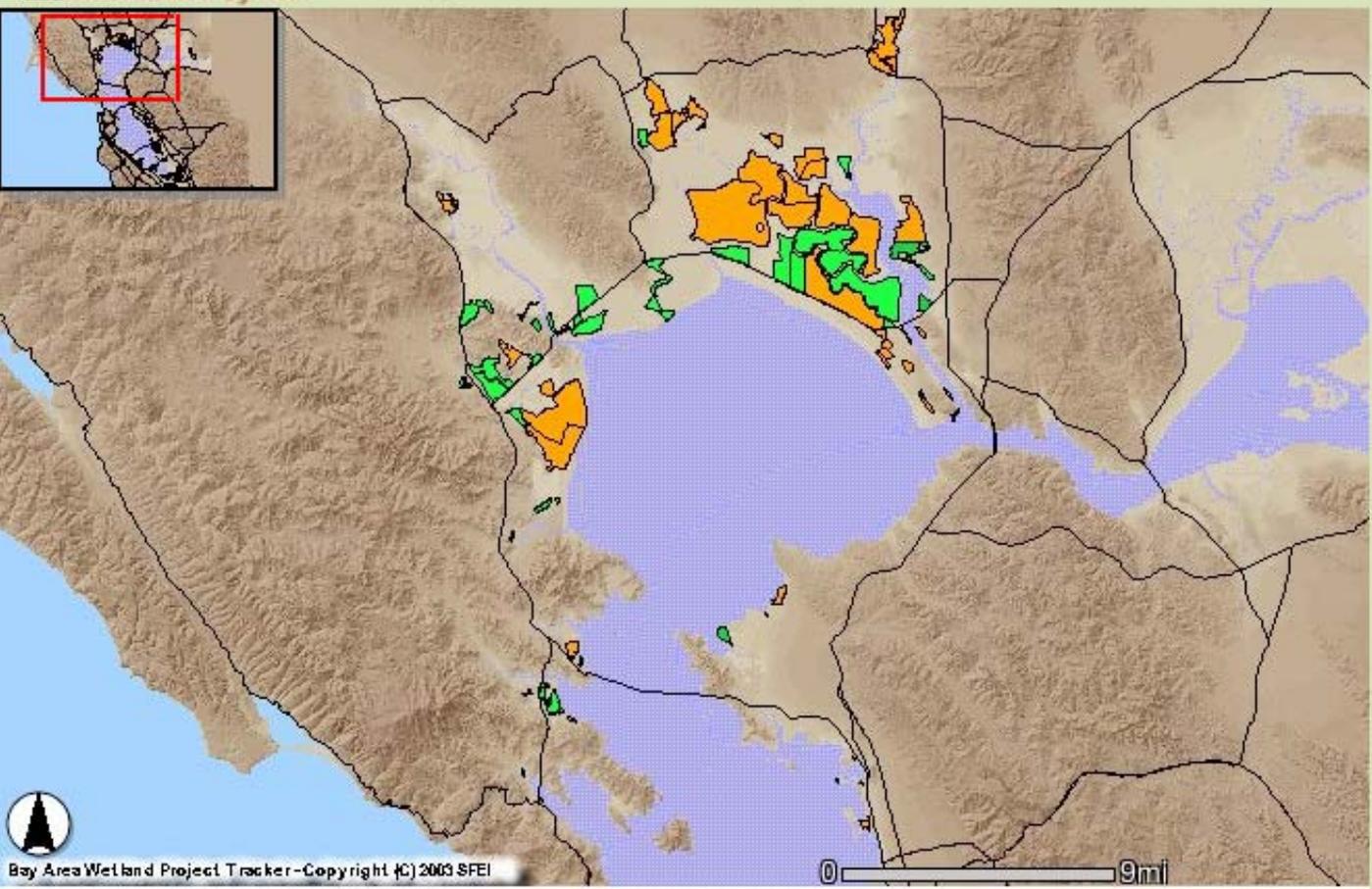
linking wetland and riparian habitat inventories  
(NHD, NWI, Cal Vegetation Manual) ...

# Tracker is ...

To Level 1-3 data ...

for tracking ambient and project condition in watersheds, regions, and statewide.

Tracker content is maintained through the CWA 401 permit process

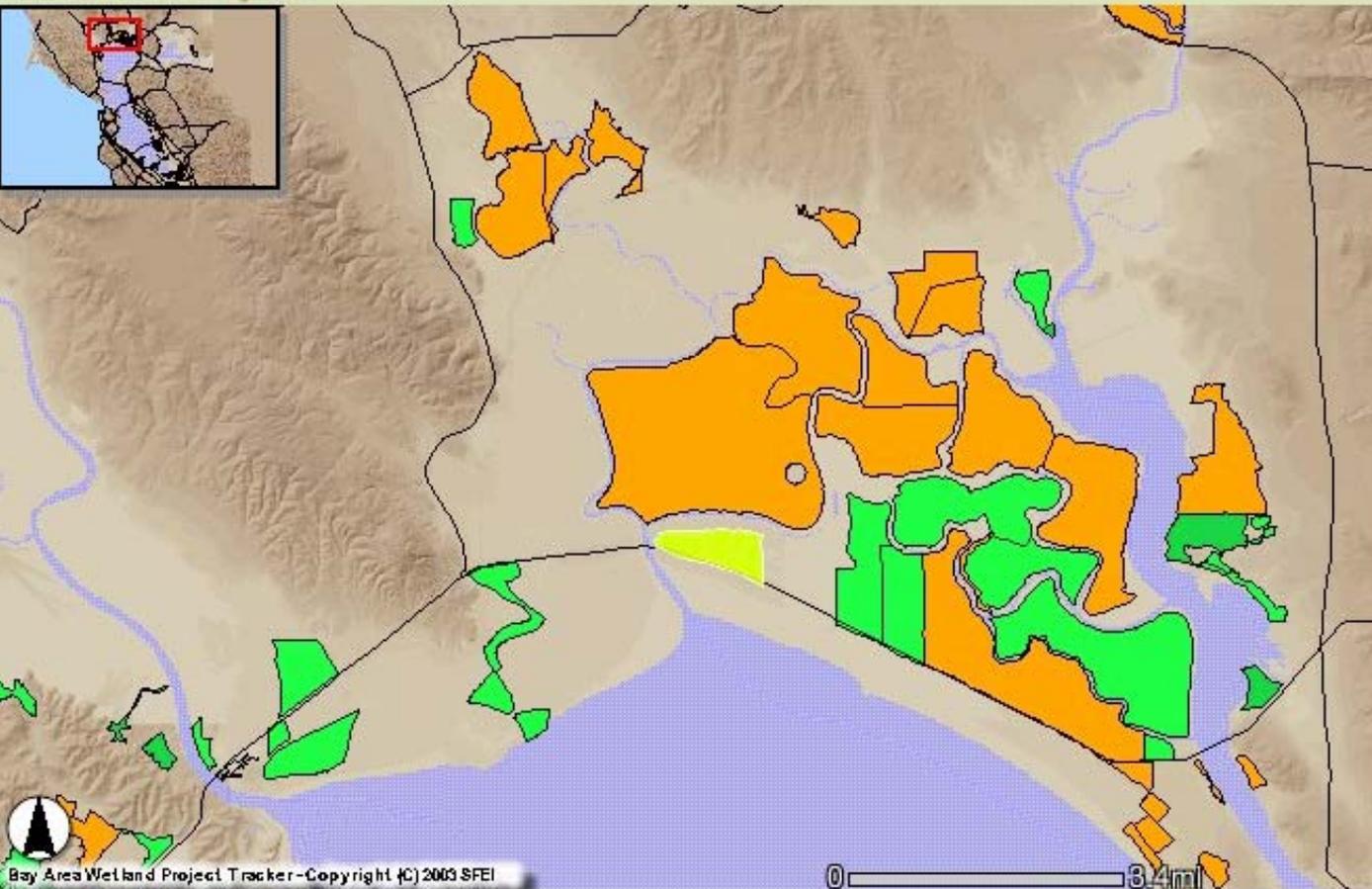


- Legend**
- Modern roads
  - Wetlands projects**
  - Completed
  - Naturally Restored
  - Planned
  - Unknown
  - The ocean
  - High tide
  - Color shaded relief

- Action**
- Zoom In
  - Zoom Out
  - Pan
  - Identify Project
- 

- Base Map**
- None
  - Modern Habitats
  - Historical Habitats
  - Show Topo

Web-based project and habitat maps ...



- Legend**
- Selected Features
  - Modern roads
  - Wetlands projects
  - Completed
  - Naturally Restored
  - Planned
  - Unknown
  - The ocean
  - High tide
  - Color shaded relief

- Action**
- Zoom In
  - Zoom Out
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- 

- Base Map**
- None
  - Modern Habitats
  - Historical Habitats
  - Show Topo

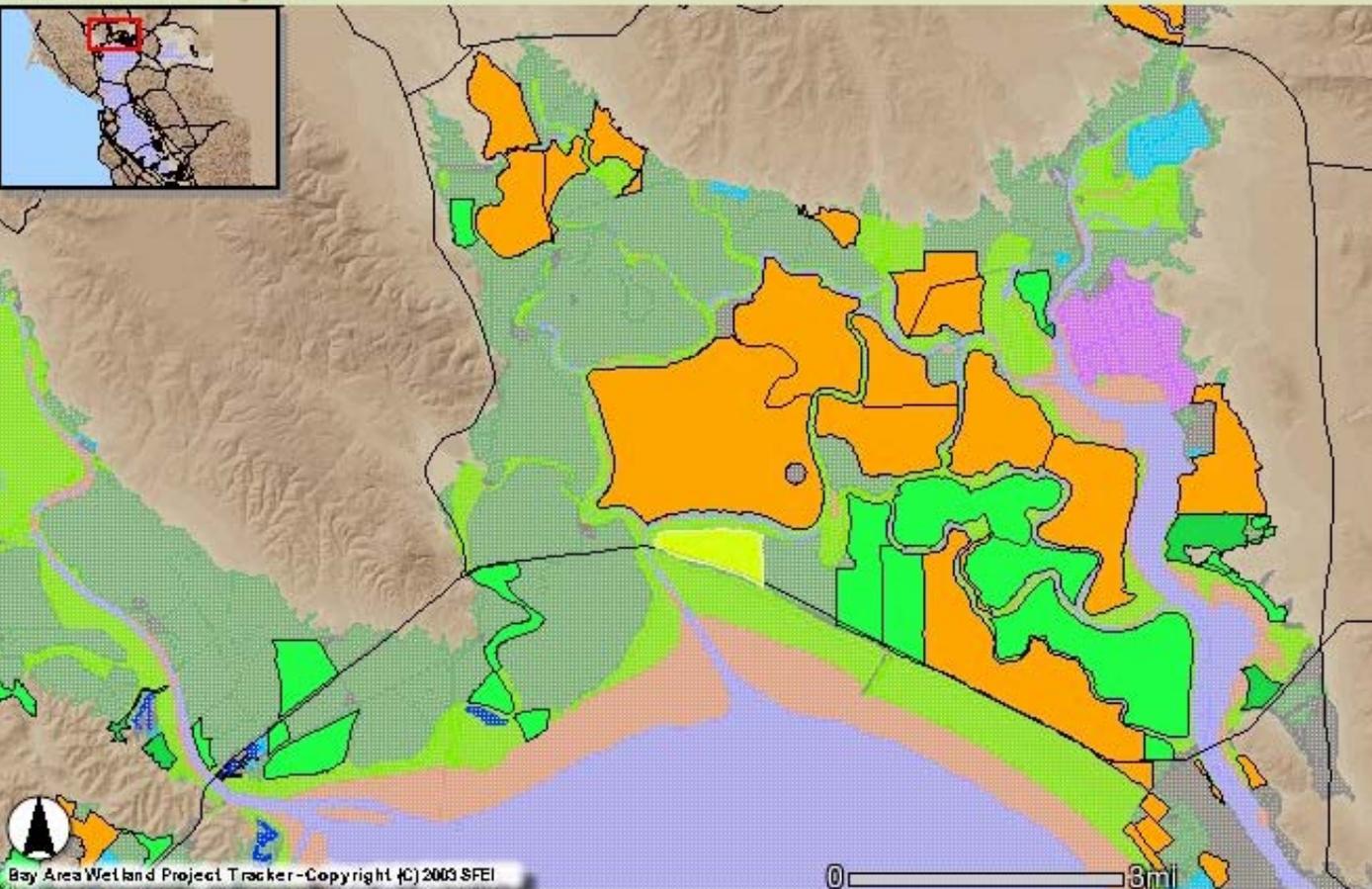
Project	Counties	Total area
<a href="#">West End Duck Club</a>	Napa, Solano	355.2 acres

\* includes files or web links

... point and click...

# Bay Area Wetland Project Tracker

[Introduction](#) [List all projects](#) [Feedback](#)



Project	Counties	Total area
<a href="#">West End Duck Club</a>	Napa, Solano	355.2 acres

\* includes files or web links

... zoom and pan ...



## Bay Area Wetland Project Tracker

[Interactive map](#)
[Close Window](#)
[Include component sites](#)

Project	Counties	Total area
<a href="#">Albany Bulb Lagoon</a>	Alameda	6.7 acres
<a href="#">Albany Salt Marsh Expansion</a>	Alameda	Unmapped
<a href="#">American Canyon</a>	Napa	622.6 acres
<a href="#">Bahia Lagoon*</a>	Marin	30.1 acres
<a href="#">Bair Island SFO Mitigation*</a>	San Mateo	220.1 acres
<a href="#">Bair Island, USFWS*</a>	San Mateo	1385.4 acres
<a href="#">Bayside Business Park Phase I*</a>	Alameda	271.0 acres
<a href="#">Bayside Business Park Phase II</a>	Alameda	40.6 acres
<a href="#">Bel Marin Keys Unit 5*</a>	Marin	1564.4 acres
<a href="#">Berkeley Meadows*</a>	Alameda	55.2 acres
<a href="#">Bothin Marsh*</a>	Marin	.5 acres
<a href="#">Breuners Mitigation Bank</a>	Contra Costa	109.1 acres
<a href="#">Burlingame Lagoon</a>	San Mateo	Unmapped
<a href="#">Canalways</a>	Marin	101.8 acres
<a href="#">Cargill Mitigation Marsh</a>	Alameda	49.2 acres
<a href="#">Central Avenue Marsh</a>	Contra Costa	Unmapped
<a href="#">Central Avenue Marsh, Albany Sequel</a>	Contra Costa	Unmapped

... query lists ...



## Bay Area Wetland Project Tracker

[Close Window](#)

### Bayside Business Park Phase I

Status: 3 completed sites

#### Project Description

<a href="#">Mapped</a> Project Area	271.0 acres
<a href="#">Reported</a> Project Area	250 acres
Existing/planned <a href="#">Habitats</a>	Tidal: 225 acres Managed Marsh: 50 acres Non-Tidal: 25 acres Stormwater Treatment Basin SMHM Preserve Tidal lagoon, managed pickleweed marsh
<a href="#">Type</a>	Restoration
<a href="#">Purpose</a>	Mitigation
Counties	Alameda
Sponsors	King & Lyons
Land owner	United States Fish and Wildlife Service
Comments	Mitigation for Bayside Business Park
Contacts	Clyde Morris United States Fish and Wildlife Service P.O. Box 524 Newark CA 94560 <a href="mailto:clyde_morris@fws.gov">clyde_morris@fws.gov</a>

... Access project and habitat information that reflects local, regional, and state needs ...

# Progress

- Tracker technology transfer to Coastal Zone Management Community in 2006
- Ambient assessment of riverine-riparian systems in three pilot watersheds in 2006-07
- Statewide Levels 1 and 2 ambient assessments of estuarine wetlands in 2007

*Thank You*

