

Elkhorn Slough Tidal Wetland Project April 26th Community Forum



Barb Peichel, Elkhorn Slough Tidal Wetland Project Coordinator

Elkhorn Slough National Estuarine Research Reserve (ESNERR)



- 1 of 27 National Reserves
- CA DFG (state) & NOAA (federal)



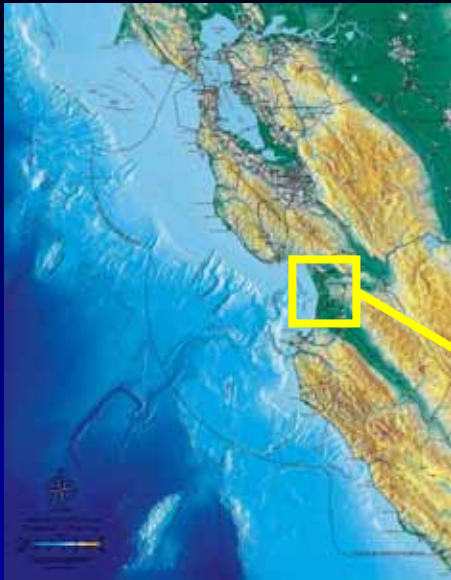
Elkhorn Slough Tidal Wetland Project

GOALS - April 26th Community Forum

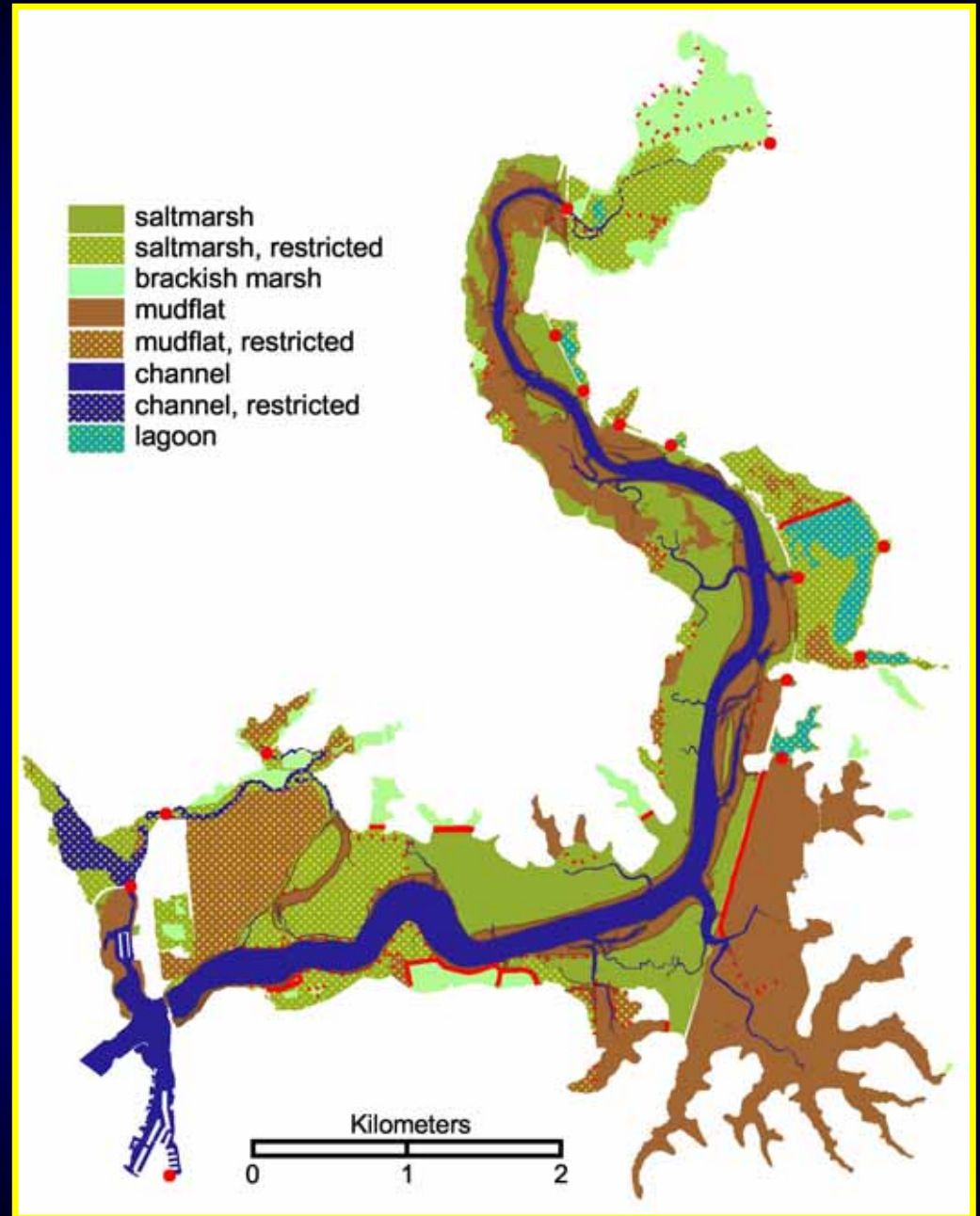
- Better understand changes to Elkhorn Slough's tidal habitats
- Find out how San Francisco Bay developed a successful tidal wetland planning project
- Learn about the Elkhorn Slough Tidal Wetland Project and how you can provide input

Elkhorn Slough Tidal Wetland Project OUTLINE

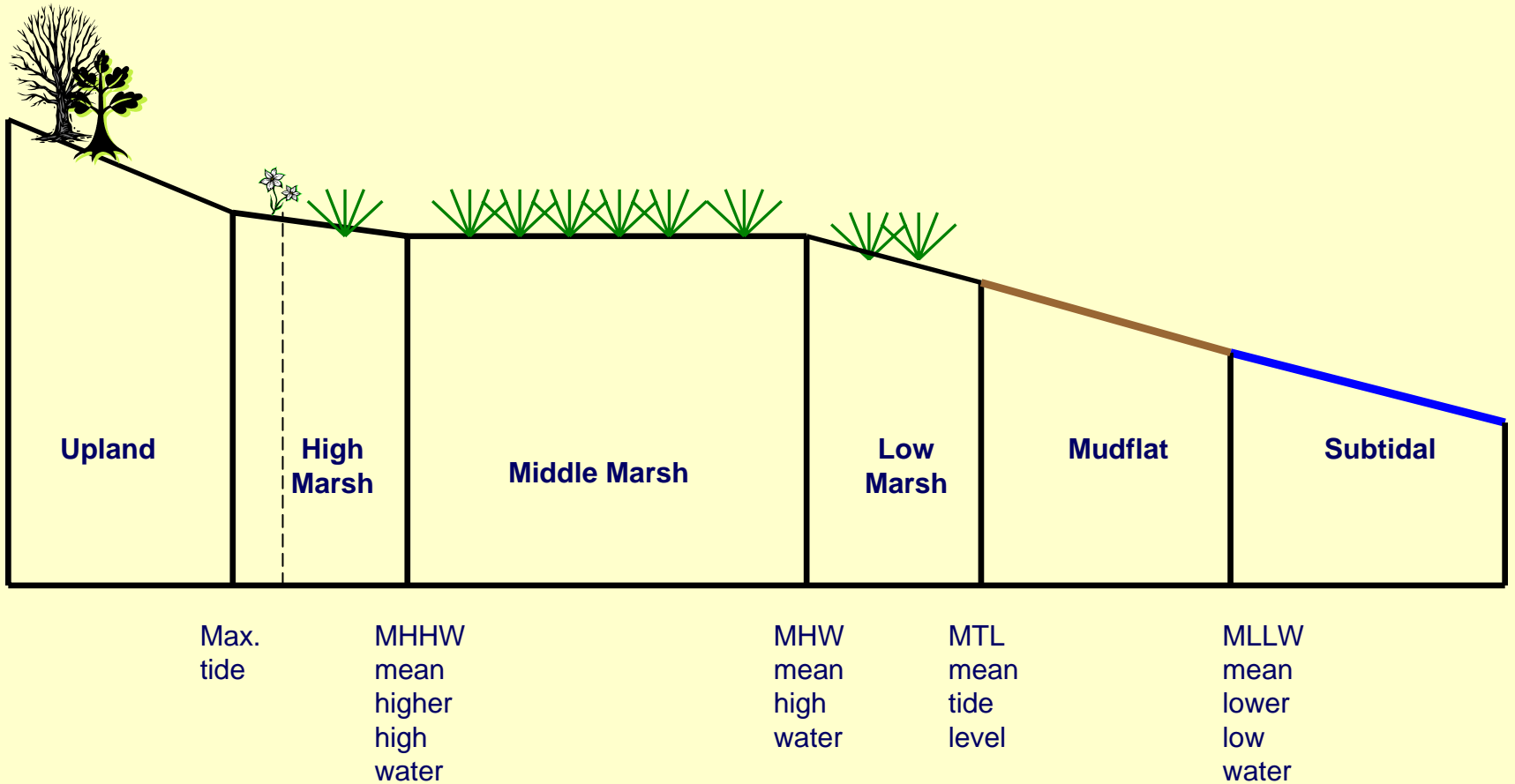
- Tidal Wetlands 101
- Changes to Elkhorn Slough's Tidal Habitats
- Elkhorn Slough Tidal Wetland Project



Elkhorn Slough Tidal (Estuarine) Habitats



Tidal Habitat Zones



Salt Marsh ~ 970 acres



Distichlis spicata
Photo by Shirley Denton



Mudflat ~ 870 acres



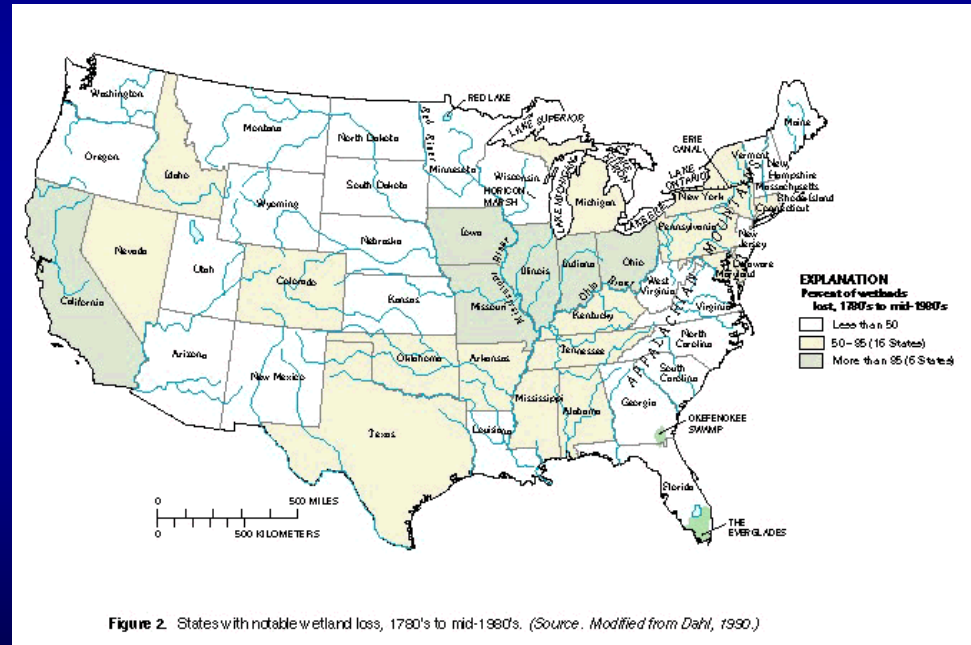
Channel/Tidal Creeks ~ 600 acres



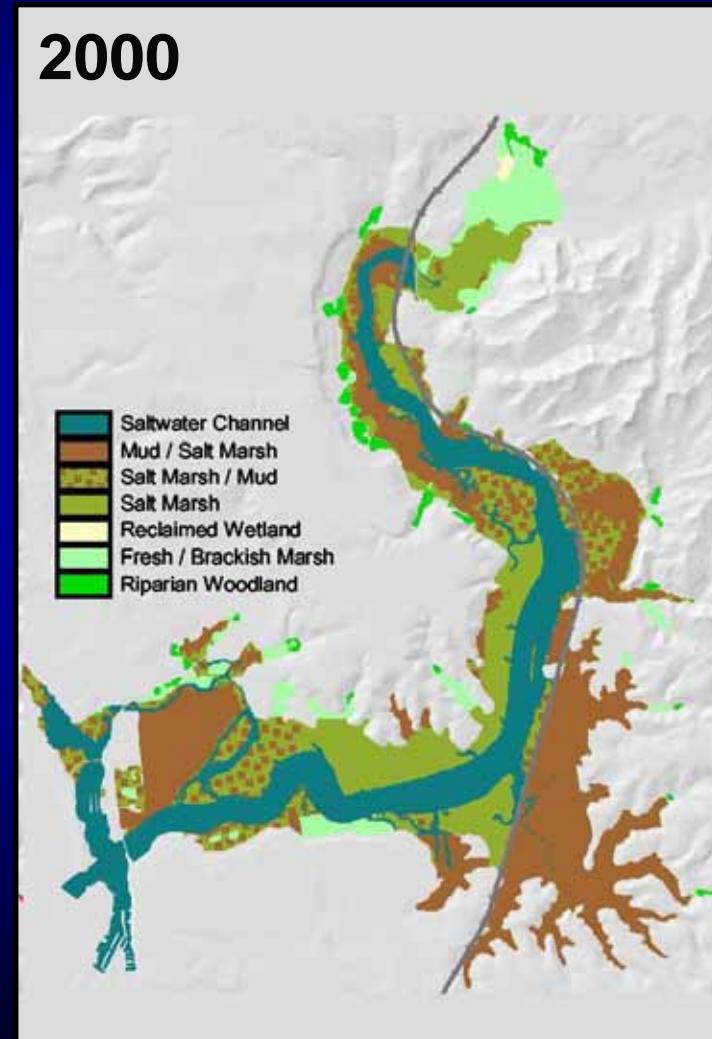
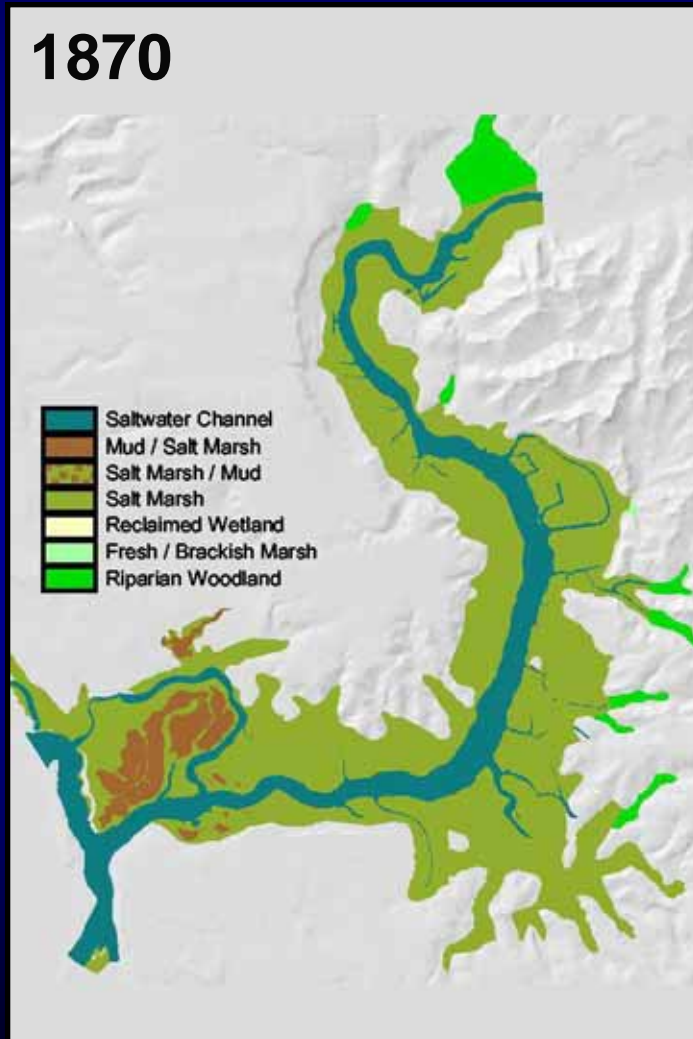
Regional Marsh Loss

What percentage of California's coastal salt marshes have been lost?

- a. 20%
- b. 40%
- c. 60%
- d. 80%



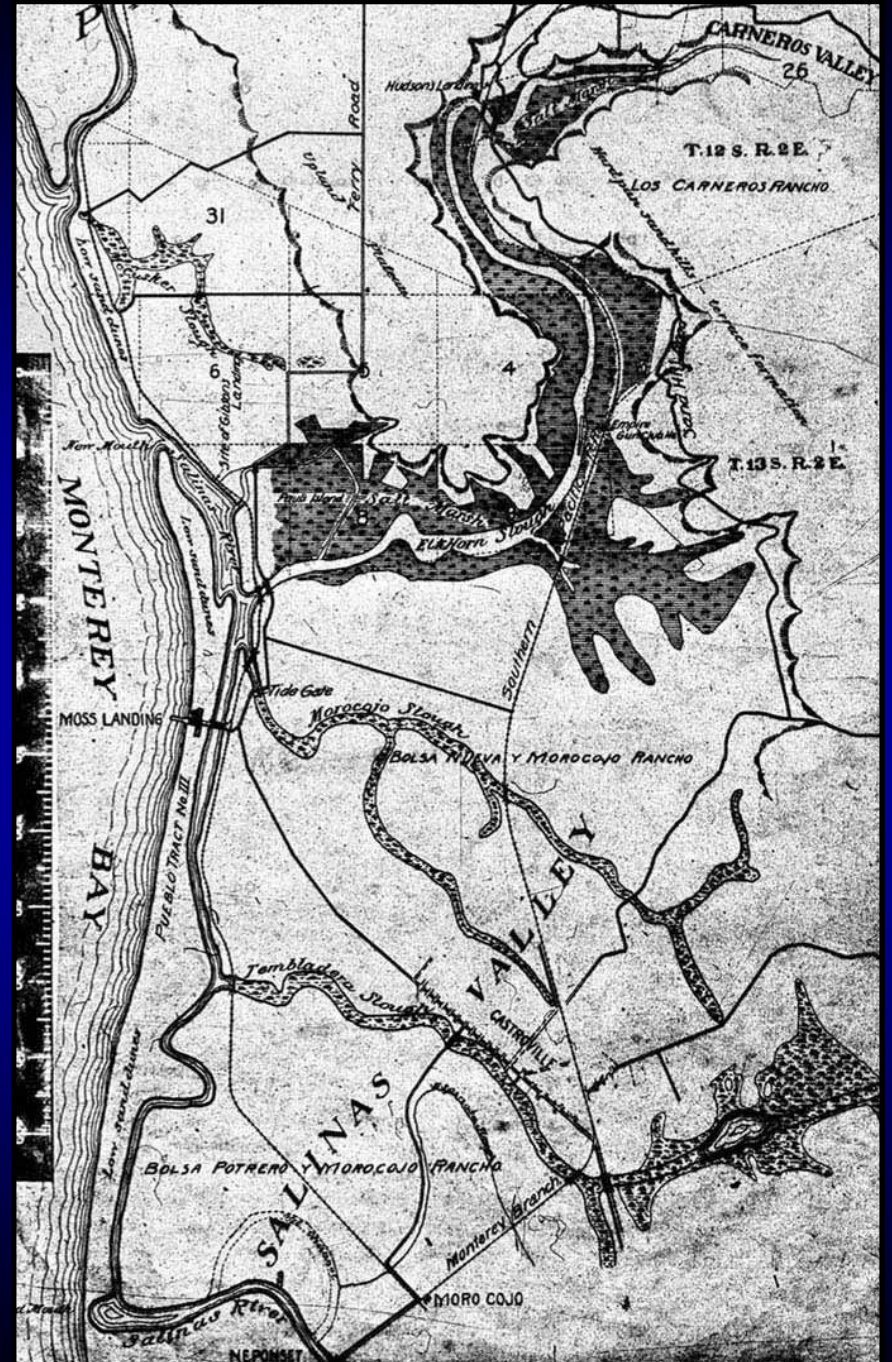
Elkhorn Slough Marsh Loss ~ 50% since 1931



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Elkhorn Slough in the Past – River Diversion and Connections



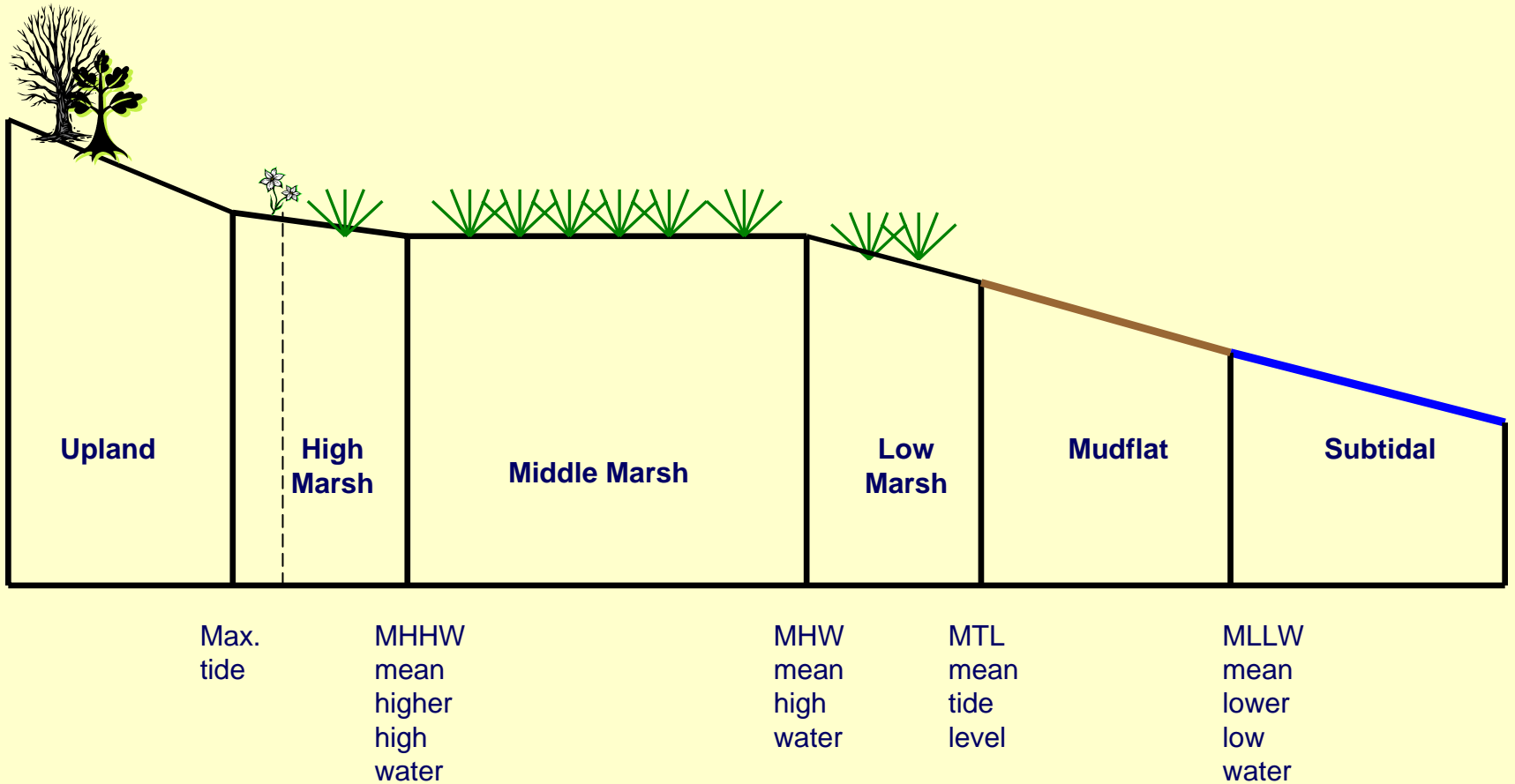
Elkhorn Slough in the Past – Loss of Habitat and Tidal Connections



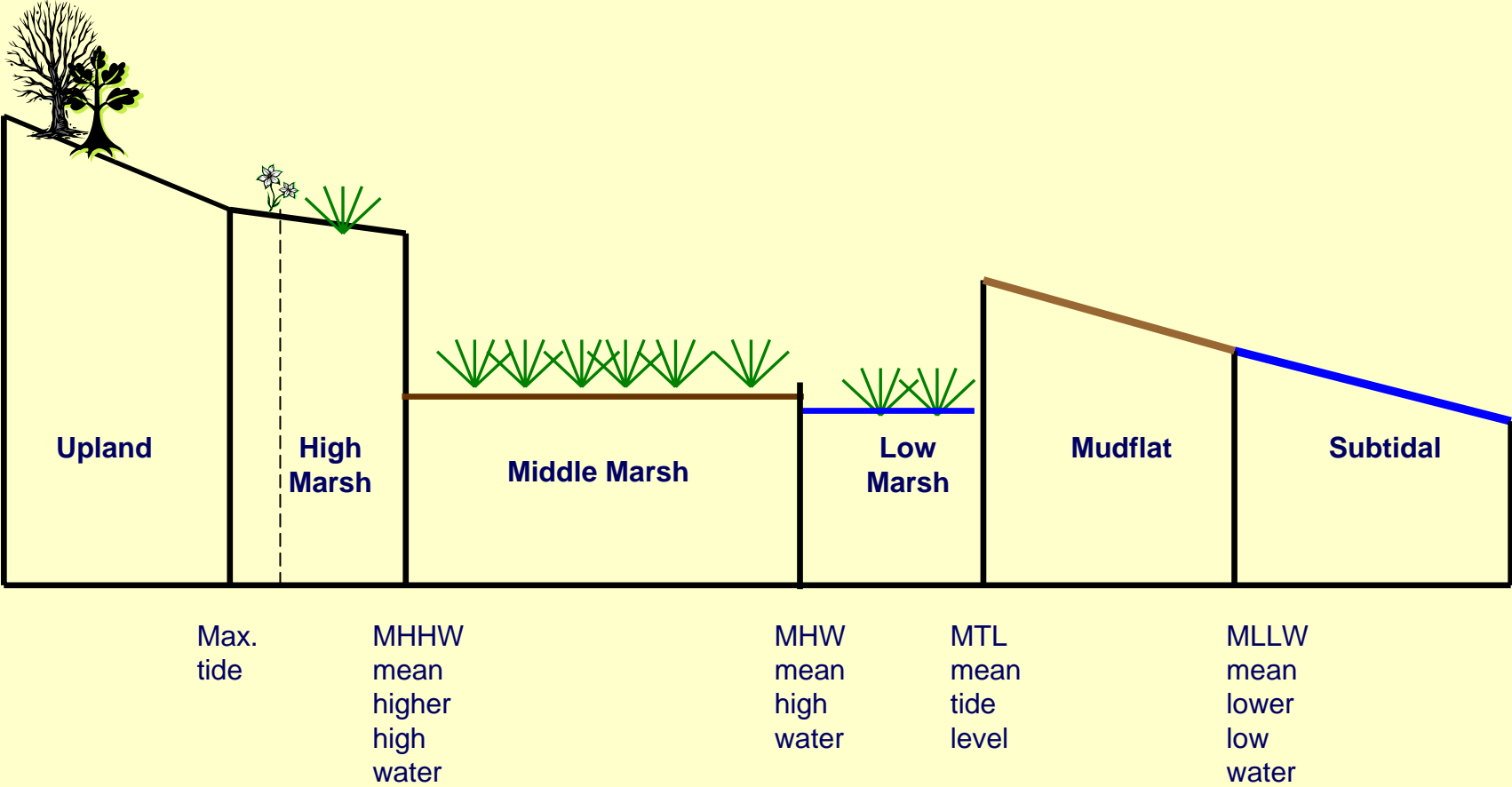
Elkhorn Slough in the Past – Loss of Habitat and Soil Compaction



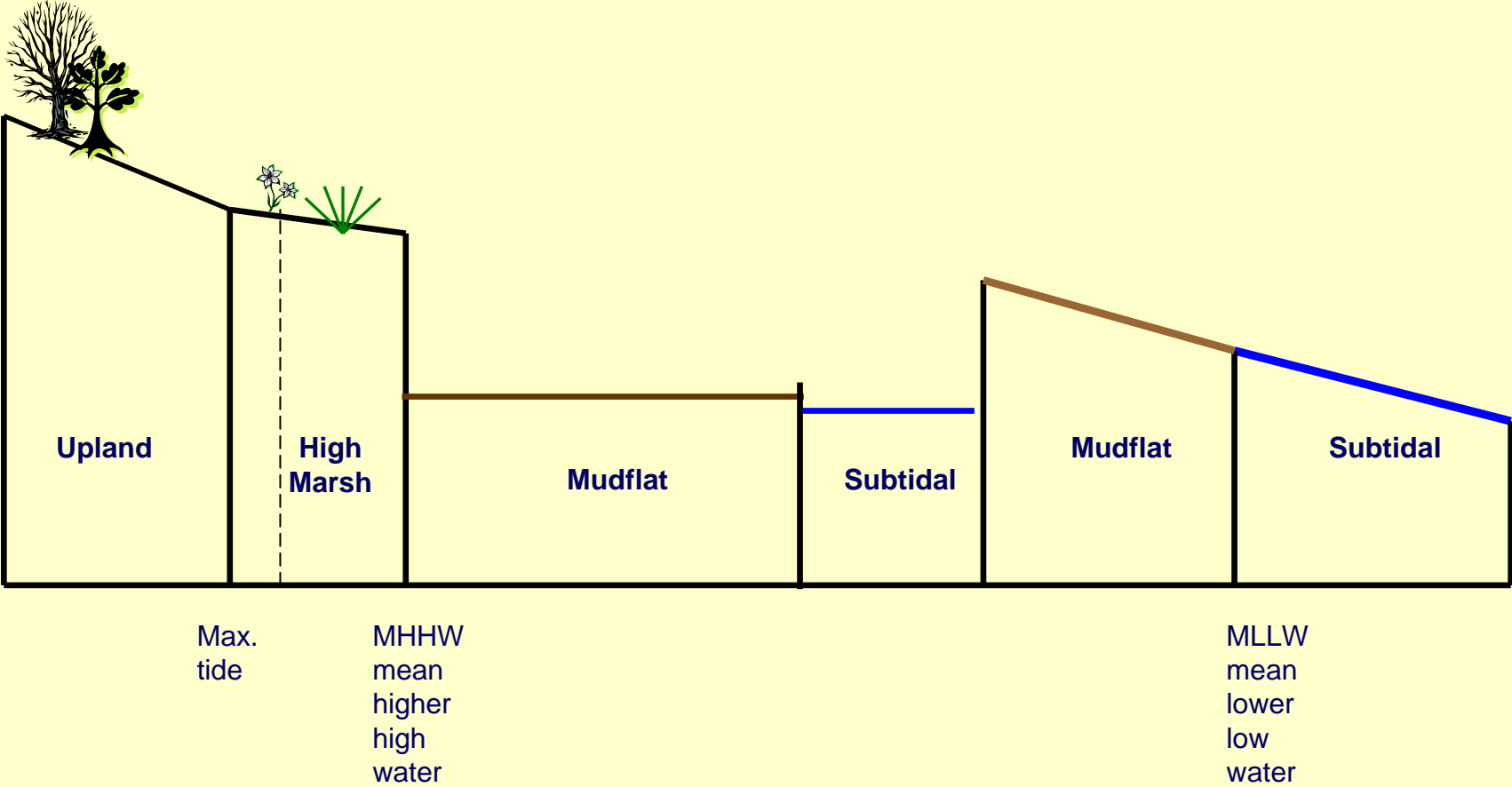
Tidal Habitat Zones



Soil Compaction/Subsidence



Soil Compaction/Subsidence



Elkhorn Slough in the Past – Loss of Habitat and Soil Compaction



Marsh Loss - interior



Marsh Loss - interior



Marsh Loss - interior



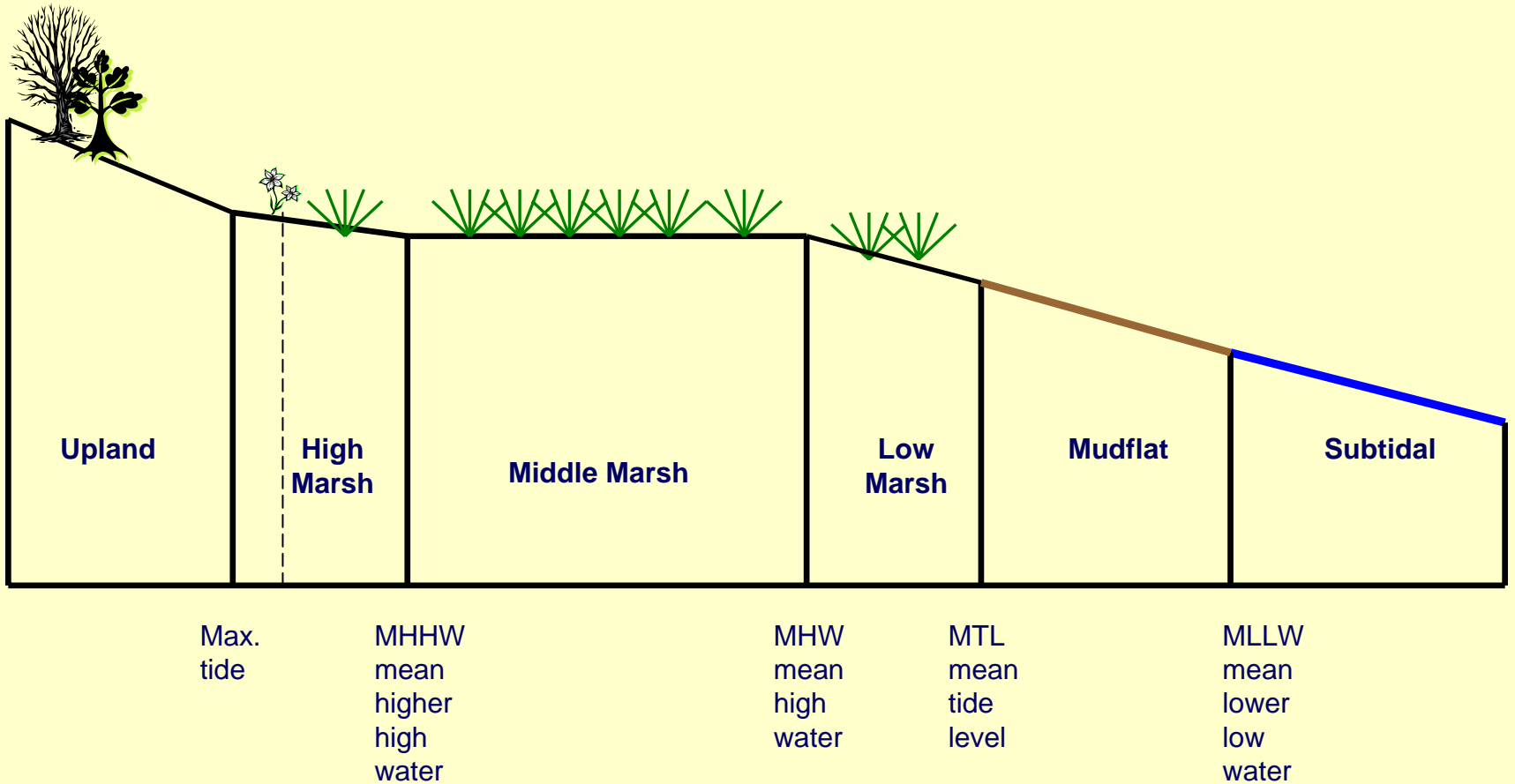
Marsh Loss - interior



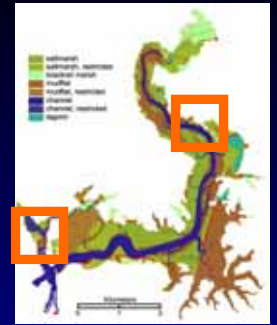
Marsh Loss - interior



Interior Marsh Loss

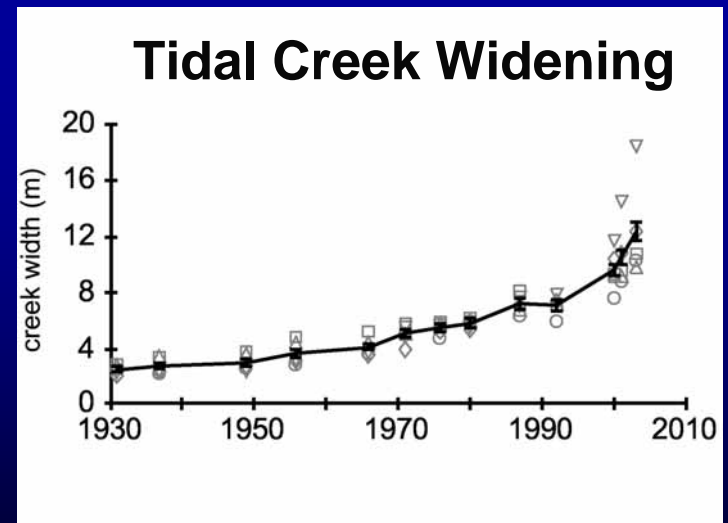


Marsh Loss from Channel Widening ~ 1.6 feet per year



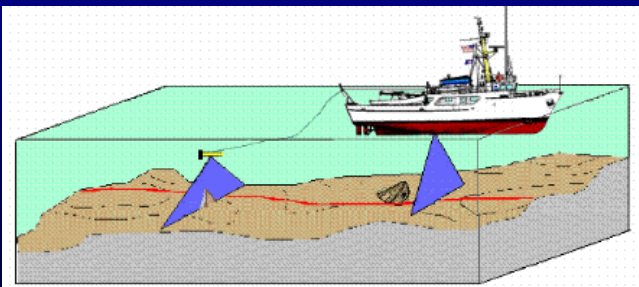
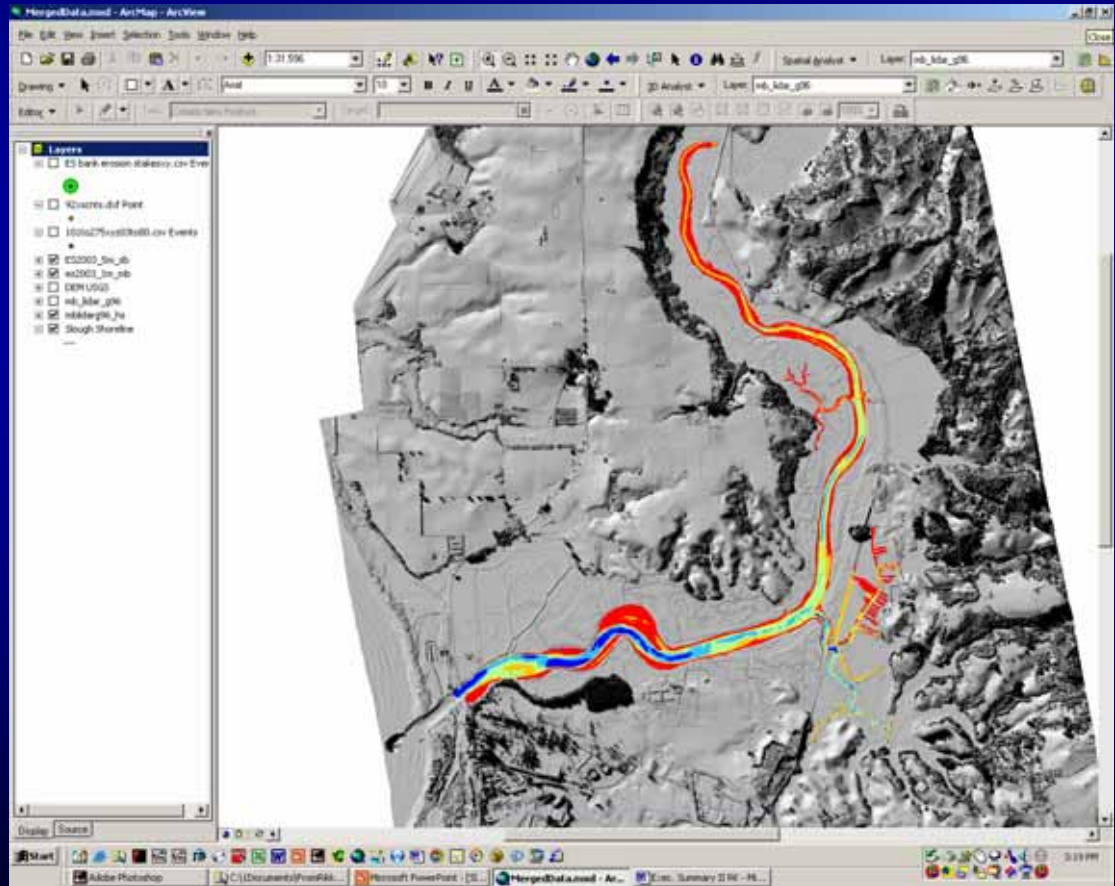
Marsh Loss from Tidal Creek Widening

~ 7 ft to 40 ft increase



Loss of sediments from Channel Deepening

24% Deeper and Wider from 1993 – 2001
Tidal water more than doubled since 1956



Elkhorn Slough Exports Vast Amounts of Sediment!



Average annual rate of sediment loss

- 73,000 cubic yards (1,971,000 cubic feet) sediment lost/yr
- 10,500 dump trucks per year



50-YEAR PREDICTIONS

Based on Current Trends



Elkhorn Slough Tidal Wetland Project OUTLINE

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Elkhorn Slough Tidal Wetland Project

What is it?

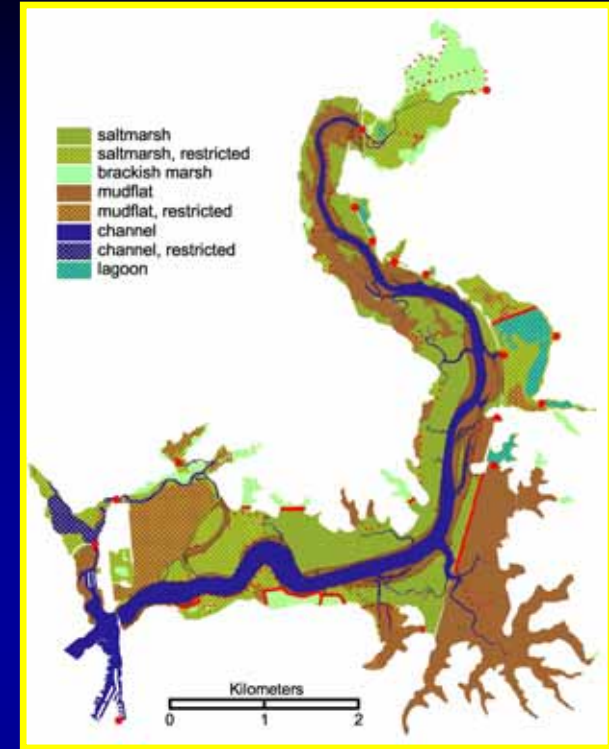
- Collaborative strategic planning process

Purpose of Project

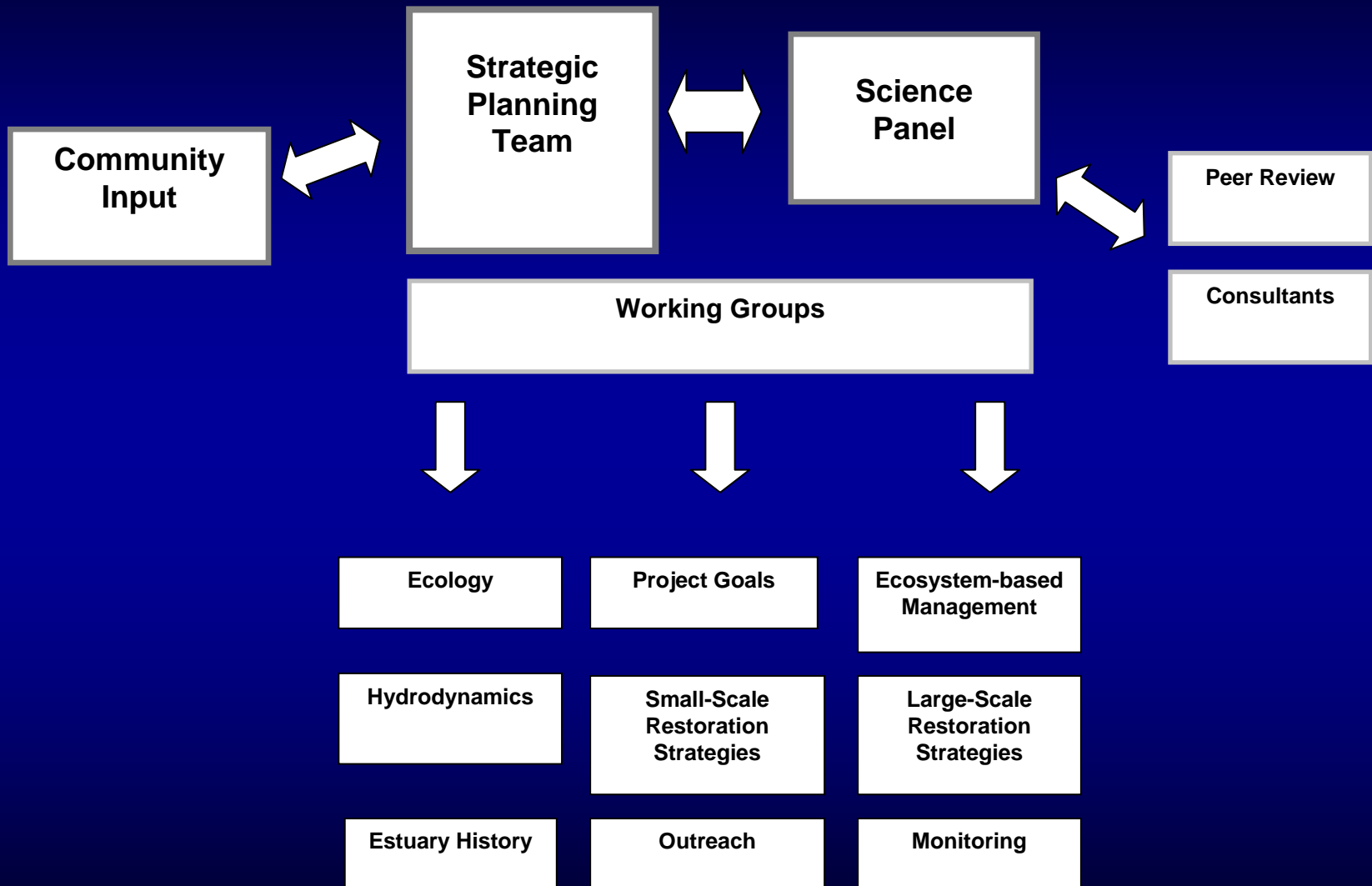
- To develop restoration and conservation strategies for tidal habitats in the Elkhorn Slough watershed

Funding

- NOAA Coastal Impact Assistance Program
- David and Lucile Packard Foundation and Resources Legacy Fund Foundation



ESTWP Participants and Roles



Strategic Planning Team

Role

Primary decision-making body overseeing the project



FEDERAL

- **Monterey Bay National Marine Sanctuary - NOAA**
- **National Marine Protected Areas - NOAA**
- **U.S. Army Corps of Engineers**
- **U.S. Environmental Protection Agency**
- **U.S. Fish and Wildlife Service**

FEDERAL & STATE

- **Elkhorn Slough National Estuarine Research Reserve – NOAA/CA DFG (lead)***

STATE

- **CA Coastal Commission**
- **CA Coastal Conservancy**
- **CA Department of Fish and Game**

LOCAL

- **Monterey County**
- **Moss Landing Harbor District**

NONPROFIT/ACADEMIC

- **Moss Landing Marine Laboratories**
- **CA State University Monterey Bay**
- **Elkhorn Slough Foundation**
- **San Francisco Estuary Institute**
- **The Nature Conservancy**
- **The Ocean Conservancy**
- **University of San Francisco**

Science Panel

Role

- Provide and review scientific information for the Strategic Planning Team to make management decisions

Who

- Biologists, hydrologists, geologist, tidal restoration experts, and water chemists

Over 40 members

U.S. Geological Survey
Stanford University
The Nature Conservancy
Moss Landing Marine Laboratories
U.S. Environmental Protection Agency
U.S. Army Corps of Engineers
University of California Santa Cruz
California Coastal Commission



ELKHORN SLOUGH TIDAL WETLAND PROJECT GOALS



1. CONSERVE TIDAL HABITATS

- Reduce marsh loss and erosion

ELKHORN SLOUGH TIDAL WETLAND PROJECT GOALS



2. RESTORE AND ENHANCE TIDAL HABITATS

- Increase the extent of salt marsh/tidal brackish marsh

ELKHORN SLOUGH TIDAL WETLAND PROJECT GOALS

3. RESTORE AND ENHANCE NATURAL PROCESSES

- Attain a more appropriate tidal influence and re-establish or augment sediments



Strategic Planning Principles (17)

- Accommodate Human Uses such as Boating, Farming, Transportation, Recreation
- Mitigate or Avoid Negative Impacts and Consider Positive Impacts to Neighboring Landowners
- Priority for Habitats Rapidly Being Lost
- State and Federally-Listed Species
- Pilot Projects/Adaptive Management
- Water Quality
- Sea Level Rise
- Level of Maintenance



Elkhorn Slough Tidal Wetland Project

NEXT STEPS



Small-Scale

- Gather site data and come up with draft restoration strategies

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NEXT STEPS



Medium-Scale

- Write grants to obtain funding for restoration designs

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NEXT STEPS

Large-Scale

1. Create preliminary designs of restoration strategies

How can we attain an appropriate tidal influence?



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NEXT STEPS

Large-Scale

2. Predict the likely outcomes
(no action)

How would different
restoration strategies...

Meet the goals?

Change tidal velocities,
human uses, water quality?



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NEXT STEPS

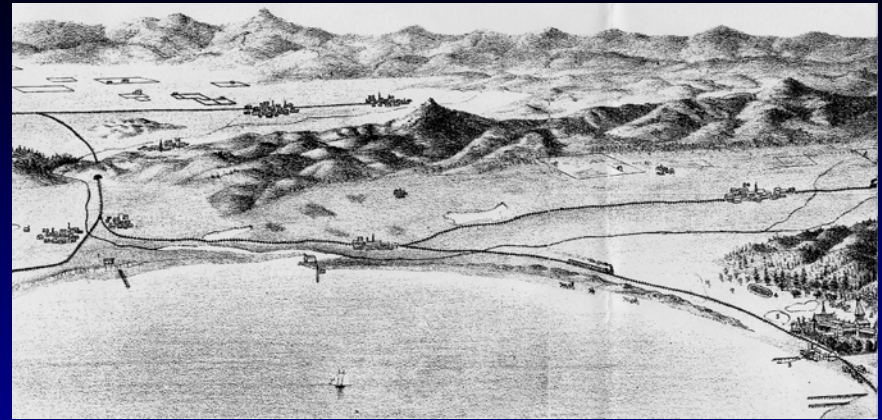
Large-Scale

3. Conduct research and monitoring activities and pilot projects.

Would adding sediments help bring back marsh plants?



View from the train 1870s



"The upper end of [the Salinas Valley] rests upon Monterey Bay...running through these tide water marshes, one can see along the indentations of the bay hundreds of solemn-looking pelicans, with bills bowed on their baggy throats, appearing to take a most unfavorable view of affairs generally. As we ran along the inlets of the bay, ducks, gulls and other fowl, in great flocks, took to wing and got away. . . ."

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How You Can Get Involved

- * Get informed - website
- * Share the Elkhorn story
- * Send us your questions and concerns
- * Attend future community forums and field trips (survey)
- * Provide input on the draft Elkhorn Slough Tidal Wetland Plan next year



Elkhorn Slough Tidal Wetland Project WEB PAGES



ELKHORNSLOUGH.ORG

Elkhorn Slough Tidal Wetland Project

TWP Home Page

[Project Description](#)

[Map: Place Names](#)

[Management Plan](#)

[Research and Monitoring](#)

[Strategic Planning Team](#)

[Science Panel and Working Groups](#)

[Meetings](#)

[Contact Us](#)

www.elkhornslough.org/tidalwetlandplan

Elkhorn Slough Tidal Wetland Project

- What do you value about Elkhorn Slough's tidal habitats?
- What changes to the tidal habitats have you noticed?

Elkhorn Slough Tidal Wetland Project

THANK YOU!

- Kim Merin, ES Reserve, SPT, SP
- Photo credits