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
Salt Marsh
~ 970 acres
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
Elkhorn Slough Tidal Wetland Project
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• Elkhorn Slough Tidal Wetland Project
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

- Upland
- High Marsh
- Middle Marsh
- Low Marsh
- Mudflat
- Subtidal

Max. tide
MHHW mean higher high water
MHW mean high water
MTL mean tide level
MLLW mean lower low water
Soil Compaction/Subsidence

Upland

Max. tide

High Marsh

MHHW mean higher high water

Middle Marsh

MHW mean high water

Low Marsh

MTL mean tide level

Mudflat

MLLW mean lower low water

Subtidal
Elkhorn Slough in the Past - Loss of Habitat and Soil Compaction
Marsh Loss
~ 50% since 1931
Marsh Loss - interior
Marsh Loss - interior
Marsh Loss - interior
Marsh Loss - interior
Marsh Loss - interior
Marsh Loss from Channel Widening

\[ \sim 1.6 \text{ feet per year} \]
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
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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

- Community Input
- Strategic Planning Team
- Science Panel
- Working Groups
- Ecology
- Project Goals
- Ecosystem-based Management
- Hydrodynamics
- Small-Scale Restoration Strategies
- Large-Scale Restoration Strategies
- Estuary History
- Outreach
- Monitoring
- Peer Review
- Consultants

Strategic Planning

Peer Review

Consultants
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
1. **CONSERVE TIDAL HABITATS**

   - Reduce marsh loss and erosion
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
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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?
“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

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?
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THANK YOU!

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