VISION:
Resilient estuaries and coastal watersheds where human and natural communities thrive

MISSION:
To practice and promote stewardship of coasts and estuaries through innovative research, education, and training using a place-based system of protected areas.
Research

Kirsten Wasson
Research

• Long term monitoring to detect changes over time

• Short-term projects focused on understanding and diminishing threats to Slough habitats and communities.
• List of potential projects maintained on line for students.
Water Quality Monitoring

- Volunteer Water Quality Monitoring
- Sampled monthly since 1988
- Temperature, salinity, dissolved oxygen, pH, turbidity, nitrate, ammonium, and dissolved inorganic phosphate.
HOW SEA OTTERS HELP the Elkhorn Slough Ecosystem

WITHOUT SEA OTTERS

1. Without otters to eat crabs, the crab population rises.
2. Too many crabs burrowing into the mud banks of the slough causes erosion and loss of habitat for other sea creatures.
3. When crabs eat too many of the sea slugs and limpets that normally feed on algae, the algae grow out of control and soak up lots of oxygen. This makes it hard for other animals to survive.
4. Without oxygen, eelgrass can’t grow on the slough floor. No fish and other animals that need eelgrass for food and shelter suffer.

WITH SEA OTTERS

1. Sea otters eat a diet rich in crabs. This helps keep the crab population at a balanced level.
2. Otters eat crabs that burrow in the mud banks of the slough. With fewer crabs, the banks of the slough become stronger, providing structure and habitat for other animals.
3. When the crab population is under control, eelgrass and other algae return to the slough and keep algae from overcrowning.
4. When algae are in check, sunlight and oxygen enrich the water. Fish and other animals can thrive in the eelgrass.
ES Safari Annual Averages and USGS Spring counts

Elkhorn Slough Safari counts (averaged by years) and USGS Annual counts
ESNERR Rookery Populations Over Time

Note that nesting occurred in central part of ESNERR, in "Rookery" area, until 2008; nesting then moved to "Seal Bend" part of ESNERR.
Invasive Plant Control
Grazing Program
Elkhorn Slough Reserve
Freshwater Ponds
Success
Lower Cattail: Construction
Santa Cruz Long-toed Salamander
California Tiger Salamander
Environmental DNA
Eucalyptus Tree Removal
Eucalyptus Tree Removal
Biochar
Tidal Wetlands Program

A collaboration to address the significant loss of salt marsh in the Elkhorn Slough. We have lost fifty percent, or 1,000 acres of our salt marshes over the past 150 years.
Post-Construction DEM (Detailed Marsh)
Levee (cut)

Borrow ditch (fill)

Levee (cut)
Facilities
Maintenance

Mike Curthoys
Facility Improvements
Dan Brumbaugh
Coastal Training Program
Focus on supporting and improving environmental stewardship by Coastal Decision-Makers (CDMs) * within the Central Coast region.

Compared to other NERR programs, more outward looking...

Currently in strategic planning phase, and feedback about CDM needs and opportunities are welcome!
Education
Virginia Guhin

2016 Employee Excellence Award Recipient
Estuary Explorers Club
Elkhorn Elementary School
Estuary Explorers Club
Elkhorn Elementary School
Monterey Bay Aquarium WATCH
Agricultural Education
Environment For the Americas
Ramsar Designation
“Wetland Of International Importance