

ELKHORN SLOUGH NATIONAL ESTUARINE RESEARCH RESERVE

TIDAL WETLAND PROJECT 5 YEAR PLAN

Tidal Wetland Project

MARCH 2014

In November 2012 the TWP Strategic Planning Team voted for TWP to proceed with the following recommendations. We (The Tidal Wetland Group) have taken each recommendation and identified concrete actions grouped under ten objectives within the recommendations. The Strategic Planning Team and Science Panel had the opportunity to comment on these through a survey in July 2013. We sought to identify gaps in the plan and investigated partner support in a meeting held on 3/10/2014. *Actions in italics are underway.* Actions in regular type are planned or needed (if they lack an owner). The actions under each objective encompass all organizations/stakeholders/people that are TWP members/ partners so if your organization is already doing this, let us know.

Please note that this is a TWP action plan in which some actions will be led by TWP and some actions will be led by ESNERR or other TWP partners. The TWP action plan is a separate document from the ESNERR action plan.

MARSH RESTORATION THROUGH SEDIMENT ADDITION: We recommend restoration of salt marsh through sediment addition to areas of Elkhorn Slough that have subsided due to earlier diking.

Objective 1: Conduct project at Minhoto to restore marsh and to learn optimal practices for future marsh restoration projects in estuary

- *Action 1a: Restore 36 acres with sediment and monitor outcome for key ecological indicators (ESNERR-TWP)*
- Action 1b: Using lessons learned from Minhoto plan future marsh restoration projects in the estuary (i.e. expand restoration) (ESNERR-TWP)

Objective 2: Explore options for stable sediment sources to restore Parsons Slough

- Action 2a: Explore Granite Canyon, Big Sur slides, Moss Landing dredge materials as sources and explore transport options (ESNERR-TWP)

MARSH SUSTAINABILITY RESEARCH: We recommend that further research be conducted to determine the causes of salt marsh dieback at Elkhorn Slough and to identify the factors most likely to contribute to future salt marsh sustainability.

Objective 3: Increase understanding of the causes of marsh dieback vs. sustainability

- *Action 3a: Conduct experiments examining the role of biological factors (crab burrowing, wrack mats) in driving marsh loss at bank edges (ESNERR-Research, UCSC)*
- *Action 3b: Conduct geospatial analyses to detect correlates of marsh loss vs. sustainability at Slough marshes over time (ESNERR-Stewardship)*
- *Action 3c: Continue long-term monitoring of marsh sediment, cover and elevation throughout the estuary (ESNERR-Stewardship)*

- *Action 3d: Write grants to bring in outside expertise in marsh ecology to test hypotheses about marsh dieback (ESNERR-Research)*

PARSONS RESTORATION: We recommend continued monitoring of the Parsons Sill Project, and potential future reduction of tidal prism in the Parsons complex.

Objective 4: Continue monitoring and adaptive management of the Parsons Sill Project.

- *Action 4a: Continue long-term monitoring (ESNERR-Research)*
- *Action 4b: Analyze data and write annual reports to the regulatory agencies (ESNERR-TWP)*
- *4c: Conduct complementary monitoring to assess effects of Parsons Sill, e.g. bathymetric mapping, benthic cores. (Benthic Lab, CSUMB)*
- *Action 4d: Hold a TWP SP/SPT meeting in 2016 to review monitoring data and vote to determine whether pursuing additional reduction of tidal prism would be beneficial (ESNERR-TWP)*

(Refer back to Objective 2)

RESTORATION OF TIDALLY RESTRICTED HABITATS: We recommend tidal exchange be increased to some wetlands where water quality and biodiversity are extremely degraded due to artificial tidal restriction, and where increased exchange would not significantly contribute to tidal scour or conflict with other management goals.

Objective 5: Improve water quality and biodiversity while not increasing tidal scour

- *Action 5a: Remove the Whistlestop water control structure, changing the system from a lagoonal water body connected to the rest of South Marsh by two small culverts, to a fully tidal system. (ESNERR-Stewardship)*
- *Action 5b: Secure funding to increase tidal flow to North Marsh, with ample community and scientific input. (ESNERR-TWP & Stewardship)*
- *Action 5c: Continue adaptive management and monitoring of water control structures at North Azevedo Marsh to find configuration that supports water quality, increases marsh extent, and minimizes erosion (ESF and ESNERR-Research)*

NO ACTION AT MOUTH: We recommend that no management action currently be undertaken at the mouth of Elkhorn Slough.

Objective 6: Ensure that the TWP community and the public understand the rationale for not currently pursuing large-scale restoration at the mouth of Elkhorn Slough

- *Action 6a: Update in the TWP newsletter (ESNERR-TWP)*
- *Action 6b: Public meeting held (ESNERR-TWP)*

COLLABORATIVE GOAL-SETTING AND IMPLEMENTATION: We recommend that TWP member organizations and other regional conservation partners explore the potential for jointly setting goals for habitats and conditions in the current and historical estuarine wetlands of the Elkhorn Slough watershed, so that multiple organizations can implement projects under a shared conservation plan.

Objective 7: Determine whether collaborative goal-setting is advisable for estuary-wide conservation planning.

- *Action 7a: Evaluate costs/benefits of setting habitat goals for other ecosystems where this has been done, such as SF Bay (ESNERR-TWP)*

EUTROPHICATION: Reduce nutrient-loading to the Elkhorn Slough estuary.

Objective 8: Support improved regulation

- *Action 8a: Serve as liaison between Central Coast Regional Water Quality Control Board and Elkhorn Slough water quality researchers, to ensure the Board receives the data, analyses, and input it needs (ESNERR-CTP)*
- *Action 8b: Exploring the benefit of setting Numeric Nutrient Endpoints (NNEs) to inform TMDLs (ESNERR TWP)*

Objective 9: Better understand consequences and drivers of ecological impacts of eutrophication

- *Action 9a: Conduct investigation to examine role of eutrophication in marsh loss (ESNERR-Research)*
- *Action 9b: Correlate fish community indices and offshore production with estuary water quality (UCSC, TNC, ESNERR-TWP)*
- *Action 9c: Experimentally examine effects of hypoxia on key estuarine species (ESNERR-Research)*
- *Action 9d: Investigate how much of the current N load in the Salinas is historical (CSUMB and CCWG)*
- *Action 9e: measure flow and concentration in various source tributaries (ESNERR-Research, TNC, MCWRA and CCRWQCB)*

Objective 10: Decrease nutrient pollution into the slough

- *Action 10a: Acquire and restore lands in the Elkhorn Watershed that contribute disproportionately to nutrient pollution. (ESF)*
- Action 10b: Acquire and restore key lands along Tembladero and lower Salinas (? and CCWG - Gabilan Watershed)
- *Action 10c: Educate and support farmers to improve practices (TNC, ALBA, NRCS, RCD)*
- Action 10d: Decrease eutrophic conditions in managed wetlands (refer to 5a-5d)
- Action 10e: Decrease nutrient pollution into wetlands through the use of treatment wetlands (CCWG)

Stakeholder ranking of TWP objectives.

This ranking was generated by a survey of the Strategic Planning team (SPT) and the Science Panel (SP) in attendance at the meeting (SPT = 10, SP = 8) and SPT and SP members absent from the meeting who communicated their priorities via e-mail (SPT = 2, SP = 7).

1	Reduce Eutrophication	Obj. 10
2	Marsh Research	Obj. 3
3	Sediment addition	Obj. 1
4	Parson's	Obj. 4
5	Eutrophication research	Obj. 9
6	Restricted tidal	Obj. 5
7	Eutrophication: inform regulation	Obj. 8
8	Sediment source	Obj. 2
9	Collaborative goal	Obj. 7
10	No mouth action	Obj. 6