

Appendix F. Evaluating Large-Scale Restoration Alternatives using Ecosystem-based Management

The Tidal Wetland Project is supported by multiple grants, however funding from the David and Lucile Packard Foundation and Resources Legacy Fund Foundation in January 2006 is targeted at the evaluation of large-scale restoration alternatives using an ecosystem-based management approach. The analysis of options to conserve and restore Elkhorn Slough estuarine habitats will include predictions about changes to estuarine hydrodynamics, morphology, habitats and species, water quality, socioeconomic values, and political constraints. The final outcome of this project will be the selection by Tidal Wetland Project teams of preferred restoration strategies that are science-based, politically and economically feasible, and supported by the community in the long-term. The specific project activities are highlighted below.

Development of Strategies to Predict Tidal Hydrodynamics and Sediment Changes

A consulting team, headed by Philip Williams and Associates, Ltd., will make quantitative predictions about changes to the tidal hydrodynamics, geomorphology, and estuarine habitats for the different restoration alternatives. Preliminary designs and rough estimates of the costs of restoration strategies will also be developed.

Interactions of Nutrient Dynamics

Monterey Bay Aquarium Research Institute (MBARI) senior scientist Ken Johnson will lead efforts to examine interactions of nitrogen dynamics with changes to tidal hydrology predicted for different restoration scenarios.

Responses of Biological Indicators

Elkhorn Slough National Estuarine Research Reserve (ESNERR) research coordinator Kerstin Wasson and collaborators will predict the responses of key species to the various restoration alternatives using the predicted changes to estuarine habitats and nutrient conditions.

Estimates of Economic Values and Analysis of Legal and Political Context

MBARI social scientist Judith Kildow and collaborators will analyze the socioeconomic values of Elkhorn Slough and evaluate how restoration alternatives will affect human uses. Kildow and her team will also conduct an analysis of the political feasibility of selected options based on case studies and the analysis of relevant laws and regulations.

Interactions of Wetland Elevation, Tidal Hydrology, and Sediment on Marsh Habitats

ESNERR geographical ecologist Eric Van Dyke and consultants will examine marsh sustainability and degradation by studying the role of elevation, tidal hydrology, and sediment. Tide stations and sediment elevation tables will be installed and monitored.

Continuation and Expansion of the Tidal Wetland Planning Process

The Tidal Wetland Project planning process will continue to bring together over a hundred resource managers, community members, and scientific experts to address habitat erosion and marsh loss. It will be expanded to incorporate new findings into its decision-making framework. Tidal Wetland Project staff will also create an organizational structure that sustains a collaborative group to oversee restoration projects and enhance the involvement of key stakeholders.