PROJECT TITLE: DEVELOPING A DIALOG/DECISION-SUPPORT TOOL FOR CLIMATE-SMART RESTORATION AND ADAPTIVE STRATEGIES IN COASTAL WETLANDS OF SOUTHERN CALIFORNIA

OBJECTIVE:

The primary objective of this project is to develop a method for managers to assess climate change-associated vulnerabilities at specific wetland locations by using the most appropriate Restoration Management Practices (RMPs) and tools to develop restoration and management priorities. Existing models, RMPs and tools will be coupled with specific archetypes in consideration of major anthropogenic constraints to help inform the decision making process. With an understanding of the vulnerabilities of wetland ecosystems, we will then develop climate-smart adaptation strategies and a decision-support tool to guide restoration project prioritization and design.

METHODOLOGY:

This project intends to utilize recently developed RMPs for restoration as well tools that are being currently developed by the Wetland Recovery Project (WRP) to identify and prioritize anticipated site-specific effects of sea level rise. This project requires: 1) Development coastal wetland archetypes, 2) An analysis of wetland archetypes using existing climate change RMPs and tools 3) Development of a dialog/decision-support tool. A refined list of archetypes will be keyed to structural features that may affect management/restoration decisions. Climate change archetype sensitivity will then be evaluated using existing RMPs, models, and tools. A decision-dialog/support tool that assists resources managers in dialog and decision making project- specific to prioritization and design will be created as the product of identifying vulnerabilities and developing adaptive strategies. Development of the tool will include ground-truthing its application at an example project sites within the region.

RATIONALE:

Climate change science has evolved rapidly over the past decade, but despite the existence of high quality scientific information, there are significant barriers to the application of available tools to real-world decisions regarding how to best restore and manage coastal wetlands in consideration of climate change effects especially for highly urbanized areas. These barriers derive from the difficulty in determining the most appropriate restoration or management prescription in light of site-specific habitat conditions, constraints, and expected future conditions. Wetlands along the southern California coast vary widely in terms of their size, habitat composition, and forcing functions constrained by urbanization further complicating managers’ ability to make decisions regarding climate change strategies. This heterogeneity along the coast combined with the variety of infrastructure constraints and other anthropogenic
stressors makes it difficult for managers to know which tools to use and how to best apply them to inform restoration and management for their specific circumstances.