

**National Ocean Service, National Oceanic and Atmospheric Administration, &
Department of Commerce**
2016 Ecological Effects of Sea level Rise Program –Advancing Predictive Capabilities to
Evaluate Natural and Nature-based Features

Title Page

Date: January, 8 2016. Funding Opportunity: NOAA-NOS-NCCOS-2016-2004616

1. Project Title: EESLR 2016 Marshes on the Margins: Developing Tidal Wetlands Adaptation Strategies in Southern California
2. Principle Investigator: Megan Cooper, Deputy South Coast Region Program Manager, State Coastal Conservancy, Oakland, CA
3. Total project cost: **\$1,287,147.66** ; Federal dollars: **\$1,043,147.66 (annual requested funds: \$260,386.91)**; Cost share/match: **\$244,000.00**
4. Funding Period: 12 months
5. Award Period: 4 years
6. Abstract/Project Summary:

The tidal wetlands of Southern California are some of the most threatened estuarine systems on the west coast. The high urbanization of wetlands in Southern California places them under serious threat of habitat transformation and loss in the face of sea level rise. Further, these systems are highly understudied, particularly in regards to inlet dynamics. Most wetland inlets in Southern California are intermittently open to the tides. Even though many systems are managed (i.e. via jetty construction or dredging) to be perennially open, those systems are constantly attempting to revert back to the functions they have evolved to perform (i.e. bar building). The fate of intermittently open systems is currently unknown.

The proposed project will investigate how the dynamic estuarine systems of Southern California will be affected (physically and biologically) by sea level rise and will determine how and where nature-based solutions can be used to provide resilience to those effects. First, the project will integrate existing sea level rise and habitat evolution models to understand how the physical and habitat-level changes will occur with rising tides and associated storm events. The project will then develop various conceptual models of changing estuarine inlet dynamics to refine model outputs.

The proposed project will also identify nature-based, sea level rise adaptation strategies for Southern California. Upland-estuarine transition zones (T-zones) will be identified and mapped for potential conservation and restoration. Additionally, the project will involve stakeholders and case-study sites to prioritize T-zone areas and develop guidance on T-zone restoration and/or nature-based T-zone creation (e.g. horizontal levees).

By building upon the Southern California Wetlands Recovery Project's existing collaborative structure which includes the state's leading wetland scientists, high-level staff of the 18 partner state and federal agencies, and key practitioners conducting on-the-ground restoration in Southern California, the proposed project will develop guidance and tools that will fill a crucial need in wetland management.