



Project Title: Downscaling climate change models to local site conditions: effects of sea-level rise and extreme events to California coastal habitats and outreach to managers

Headline Title: Local outreach coastal response modeling

Brief Summary: Our studies provide information to managers on links among coastal habitats and expected future changes at several sites along the California coast.

Project Location: Humboldt Bay, Bolinas Lagoon, San Pablo Bay, Morro Bay, Pt. Mugu, Newport Bay, and Tijuana Estuary.

Partners: This project involves researchers from the USGS Western Ecological Research Center, Coastal and Marine Science Center, Patuxent Wildlife Research Center, US Fish and Wildlife Service Refuge Inventory and Monitoring Program, California Landscape Conservation Cooperative, UCLA, Oregon State, and UC Davis.

Background: Salt marshes, mudflats, and shallow bays of the land-sea interface are highly-productive, connected habitats critical for wildlife, people, and local communities. Climate change effects including sea-level rise and storms will alter these habitats in the future, but the effects will vary widely across the Pacific coast. We are developing baseline data from a network of sites in California and are working with local manager to provide them with science support for adaptation planning.

Project Goals: Our goal is to provide science support to local managers on climate change effects on nearshore habitats with high-quality local habitat data, downscaled climate models, and projected storm effects. Our work will be directly applicable for developing adaptation plans for nearshore habitats to sustain ecosystem functions and services such as fish and wildlife habitat, recreation, and flood abatement, and we will conduct outreach road shows to bring the science to the local site managers.

Strategy Goals Implemented: Goal 5, Strategy 5.3, Action 5.3.4: Develop and use models of climate-impacted physical and biological variables and ecological processes at temporal and spatial scales relevant for conservation. Goal 5, Strategy 5.3, Action 5.3.5: Provide access to current climate data and ensure alignment with data management and decision support tools at agency and departmental levels. Goal 5, Strategy 5.2, Action 5.2.1.: Produce regional to subregional projections of future climate change impacts on physical, chemical, and biological conditions for U.S. ecosystems. Goal 5, Strategy 5.3, Action 5.3.2: Improve modeling of climate change impacts on vulnerable species, including projected future distributions and the probability of persistence. Goal 4, Strategy 4.2, Action 4.2.3.: Conduct vulnerability and risk assessments for habitats and priority species (threatened and endangered species, species of greatest conservation need, and species of socioeconomic and cultural significance).