

Project Description

Pacific Estuarine Ecosystem Indicators Research Consortium

The Pacific Estuarine Ecosystem Indicator Research (PEEIR) Consortium is led by the Bodega Marine Laboratory of the University of California at Davis, in partnership with the University of California at Santa Barbara. Collaborators include the University of Georgia, The Bay Institute, and the San Francisco Estuary Institute.

The overarching goal of PEEIR is to develop indicators of wetland ecosystem integrity and propose an approach for synthesizing indicators in assessments of wetland health along the Pacific coast. Because traditional ecosystem sampling, chemical analyses, and toxicity testing are not adequate to address responses to multiple stressors in wetland ecosystems, new indicators for specific plant, fish, and invertebrate population health, as well as indicators of toxicant-induced stress and bioavailability for wetland biota, will be developed. Specific local problems, including wetland degradation and fish declines in San Francisco Bay and in Southern California, mercury contamination in Tomales Bay, invasions by exotic species, and pesticide contamination in Northern and Southern California watersheds will be addressed using these biological indicators.

The remote sensing component seeks to establish landscape-level indicators of environmental stresses that can be routinely measured from airborne or spaceborne platforms. This approach will take advantage of the newer high spatial/spectral resolution instruments that are now available to better assess spatiotemporal aspects of ecosystem functioning.

Other federal and local programs will benefit from this research. Federal programs include the CALFED program concerned with management of water resources in the San Francisco Bay and the upstream Sacramento/San Joaquin systems, and the western component of EMAP. Local programs, as mentioned above, will also benefit.

Dr. Josh Collins, Director of the Wetland Science Program at the San Francisco Estuary Institute, serves on the Administrative and Integration Committee (AIC) to assist with overall conceptual modeling, assisting with the design and conduct of hydro-geomorphic science, linking PEEIR to wetlands monitoring efforts in California, and building applications of indicators developed through PEEIR.

<http://www.bml.ucdavis.edu/peeir/program.html>