

## **Predicting climate change threats to key estuarine habitats and ecosystem services in the Pacific Northwest**

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**Summary:** Global climate change and sea-level rise will have profound effects on estuarine fish, shellfish and wildlife populations and their habitats. Our ability to manage sustainable fish, shellfish and other wildlife populations in the future will be seriously compromised unless we have a basic understanding of the coming changes and use this to develop mitigation and adaptation measures. The overall objective of this multi-agency research is to develop the baseline climatic and biological data, models, and tools to predict the cumulative impact of climate change on habitats and ecosystem services in a series of coastal estuaries of the Pacific Northwest. In collaboration with other federal, state, and NGO partners, USGS scientists will develop predictions of climate-related alterations of the distribution and abundance of oysters and seagrass, both of which provide critical habitats that serve as nurseries for estuarine fishes and crabs. In addition, the project will look at climate impacts to tidal marsh, including effects on wetland restoration and juvenile salmon habitat. The research will provide insights into future changes that impact wildlife and economically important species, and will help land managers understand the ramifications of the changes that are coming and what those changes may mean for both the wildlife and the ecosystem services provided by these estuaries.

Partner and collaborator organizations included in this research are the Oregon Climate Change Research Institute, U. S. EPA, U. S. Fish and Wildlife, U. S. Dept. of Agriculture, U. S. Forest Service, The Nature Conservancy, Oregon State University and the Oregon Institute of Marine Biology.



