



NOAA
FISHERIES

NOAA's Climate Research Strategy



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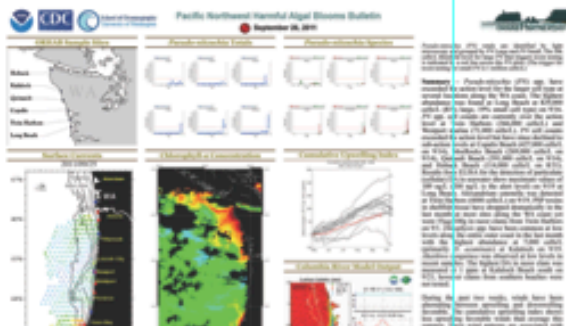
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Abstract

NOAA's Ecological Forecasting Roadmap (EFR) is used to predict changes in ecosystems in response to environmental drivers such as climate change. The program goal is to provide early warning of these ecosystem changes on coastal systems and allow mitigation strategies to be developed. NOAA's EFR is focused on 4 priorities, the first of which is harmful algal blooms (HABs). Strategic partnerships are a necessary component of program success. The strategic plan recommends aligning complementary cross-NOAA capacity and working closely with national and international entities. Here we describe NOAA-sponsored programs that are relevant to future work on Climate Change and HABs, including the U.S. Integrated Ocean Observing System (IOOS), the NOAA Fisheries Climate Strategy, NOAA's Ocean Acidification Program, and the National Center for Coastal Ocean Science competitive research programs.

Ecological Forecasting Roadmap

The Pacific Northwest HAB bulletin is one example of NOAA's Ecological Forecasting Roadmap products which includes early warning of HABs, hypoxia, pathogens and habitat. The Ecological Forecasting Roadmap priorities were determined by 3 criteria: (1) needs expressed by stakeholders, (2) maturity of NOAA's science in that research area, and (3) national significance.



NOAA National Centers for Coastal Ocean Science

National Centers For Coastal Ocean Science (NCCOS) leads US interagency programs for HAB research under the legislative authorities of the Harmful Algal Bloom and Hypoxia Research and Control Act (HABHRCA). These HAB programs include both internal research at NCCOS labs as well as national competitive programs. NCCOS also leads engagement of the international HAB community for the US through the Intergovernmental Oceanographic Commission's Intergovernmental Panel on HABs. Since HABHRCA was first passed in 1998, these programs have yielded considerable advances in the field and provided coastal managers with new tools to mitigate impacts. These include the development of sophisticated and more effective HAB and toxin detection technologies utilizing molecular and other techniques, development of effective monitoring technologies, and evaluation of control techniques to protect aquaculture and other living resources. Advances in understanding the mechanisms behind bloom development coupled with remote sensing has led to the development of HAB forecasting capabilities, some of which have already moved to operational status. The effects of climate change are being felt through much of

U.S. Integrated Ocean Observing System (IOOS)