National Centers for Coastal Ocean Science
highlights

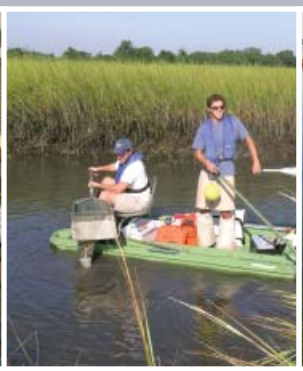
The National Centers for Coastal Ocean Science (NCCOS) conducts and supports research, monitoring, assessment, and technical assistance for managing coastal ecosystems and society's use of these ecosystems. NCCOS activities fit within a framework of five environmental stressors, including climate change, extreme natural events, pollution, invasive species, and land and resource use.

During fiscal year 2008, NCCOS scientists continued to study, monitor, and assess both natural and human impacts on coastal ecosystems – giving our Nation the information and, ultimately, the understanding needed to be better coastal stewards.

NOAA Releases Coral Reef Status Report

In July, at the International Coral Reef Symposium in Fort Lauderdale, Florida, NOAA released the third in a series of status reports assessing the condition of coral reef ecosystems in 15 locations ranging from the U.S. Caribbean and Gulf of Mexico to the western Pacific. The report uses the results of coral reef monitoring programs and the contributions of over 270 coral reef scientists and managers to assess the condition of the Nation's coral reefs and associated ecosystems. Research indicates that nearly half of these reefs are now considered to be in "poor" or "fair" condition. The report also describes the impacts of 13 major threats in each location while offering recommendations for on-the-ground conservation actions.




New Report on Coastal Waters Shows Decline in Contaminants

NCCOS released a 20-year study showing that environmental laws have had a positive effect on reducing overall contaminant levels in coastal waters of the United States. However, the report points to continuing concerns regarding elevated levels of metals and organic contaminants found near urban and industrial coastal areas. The report, *NOAA National Status and Trends Mussel Watch Program: An Assessment of Two Decades of Contaminant Monitoring in the Nation's Coastal Zone from 1986-2005*, is the first of its kind to present national, regional, and local findings in a quick-reference format. The findings are the result of monitoring efforts that analyze 140 different chemicals in U.S. coastal and estuarine areas, including the Great Lakes.

Forecast Predicted Record 'Dead Zone' in the Gulf of Mexico

A forecast released by NCCOS-funded scientists predicted that the 2008 hypoxic zone or "dead zone," which forms annually in the northern Gulf of Mexico, would be the largest on record. The 2008 dead zone was expected to exceed the previous record set in 2002 by 17 to 21 percent, resulting in a low-oxygen zone of 8,800 square miles in the summer. A research cruise to map the dead zone found that the actual size of the zone was slightly smaller than predicted, but with an area of 8,000 square miles, it was still the second-largest dead zone on record. High spring nutrient concentrations and discharges from the Mississippi River are the major causes of the large dead zone, according to the prediction.

The official prediction is the result of a long-term NCCOS research effort to characterize and model the dead zone and assess its ecological and socioeconomic impacts. This research provided the foundational science for the 2008 Gulf Hypoxia Action Plan to reduce the size of the Gulf of Mexico dead zone.

New England Red Tide Outbreak Predicted

NCCOS-supported scientists released the first-ever prediction of a larger-than-normal harmful algal bloom (HAB) in the Gulf of Maine this summer. The algal species, Alexandrium, which produces paralytic shellfish poisoning (PSP), a potent toxin that accumulates in shellfish and can cause illness in people who eat them, usually begins to appear in Maine's coastal waters in late April. NOAA-supported research provided information required for successful management of New England shellfish fisheries during the summer. NCCOS, through a decade of funding via its Ecology and Oceanography of Harmful Algal Blooms program, has developed HAB prediction capabilities for the Gulf of Maine. State agencies use these forecasts to help direct their monitoring for the algal toxin to ensure the protection of human health and local economies.

To keep the public and the media informed about the "red tide" event, NOAA launched the New England Red Tide Information Center Web site (*http://oceanservice.noaa.gov/redtide*) to provide updates on the location and extent of the bloom, information to help visitors understand what a HAB is, required safety measures to follow, maps of closed shellfish harvesting areas, and how NOAA and its partners responded to the situation.

Evaluating Sentinel Habitats for Ecosystem Health

NCCOS scientists sampled tidal creeks located within the Weeks Bay (Alabama) and Grand Bay (Mississippi) National Estuarine Research Reserves to investigate the value of using the creeks as early warning and forecasting tools for how coastal ecosystems are responding to changes in land use. Research suggests that the ecological health of tidal creeks does provide early warning of future coastal ecosystem impairment and also provides early warning of potential public health consequences of this damage. Impairment of these first responders, or "sentinel habitats," generally occurs years to decades before broad, system-wide injury. Information about sentinel habitats allows coastal managers to forecast, plan, and develop policies to protect the environment.