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Woods Hole Oceanographic Institution: News Release : Climate Change Meets Ocean Life in New Northeast Research Institute

Cooperative Institute for the North Atlantic Region (CINAR) Will Improve Ecosystem Management

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Federal and academic marine scientists in the Northeast have combined resources in a new effort to understand how the large marine ecosystem off the northeastern U.S. functions.

“I am very pleased to be involved in research that can truly improve the way we manage valuable ocean resources,” said Don Anderson, senior scientist at the Woods Hole Oceanographic Institution and director of the newly formed Cooperative Institute for the North Atlantic Region.

“The Northeast shelf is one of the most studied and best known marine ecosystems in the world,” said Anderson. “This institute provides a way to harness that knowledge and focus it on understanding the ecosystem processes as a whole, even predicting how it will change and what factors drive that change—particularly climate,” he said.

The institute was formed by the federal National Oceanic and Atmospheric Administration (NOAA), one of the nation’s leading environmental science agencies. In addition to the Woods Hole Oceanographic Institution, partners include Rutgers University, the University of Maryland Center for Environmental Science, the University of Maine, and the Gulf of Maine Research Institute. Since projects will also have substantial involvement from NOAA researchers, more than 200 ocean scientists may eventually work on institute projects.

Although still in its infancy, the institute partners are already working on several projects. Among them are efforts to apply advanced technologies to the next generation of fishery stock surveys, to understand whether there is a link between marine mammal health and risk of entanglement in fishing gear, to better predict the occurrence and intensity of harmful algal blooms (red tides) in Northeast coastal waters, and to test and evaluate new forms of fishery management.

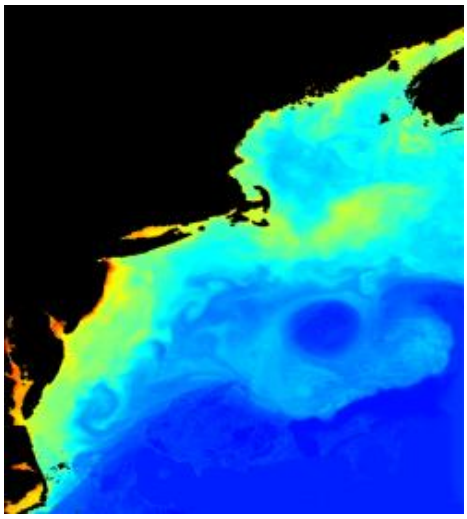
The ecosystem focus of the institute is particularly welcomed by Nancy Thompson, science and research director for NOAA’s Northeast Fisheries Science Center. Her staff will be among the scientists who are actively involved in institute projects. “Much of what we do is related to managing fisheries, recovering species, and protecting habitats from harm and overuse,” she said. “We’re reforming our own scientific focus along ecosystem lines and welcome the additional capability the institute can provide.”

For example, fishery scientists everywhere recognize that resources managers need a full picture of the processes influencing marine life if they are to reduce risks and uncertainties about fish stock condition that can cost time and money for fishing businesses. “That means not only understanding an individual species but also its competitors, all the things it eats, the physical, nutritional and climactic factors that affect the world in which it lives,” said Thompson. “That’s the future of fisheries management. Compared with many other places in the world, we in the Northeast are well-positioned to actually do it,” she said.

Anderson agrees, and said that climate, in particular is something that while critical, is just now being understood in a way that can be applied to resource management issues.

“Climate permeates all the other topics,” he said. “You can’t manage these fisheries, or study them without a deep understanding of climate - both regional and global - and the changes that are coming. The institute partners can monitor climate-related parameters in all the world’s oceans, plus we have extensive data collections, the instruments and infrastructure to collect more, and the numerical modeling capabilities that encompass weather, climate, hydrography and ecosystems.”

The first projects undertaken arise from those in which NOAA and institute investigators have ongoing interactions and collaborations. As the institute moves forward, the goal is for the CINAR scientists to work closely with NOAA investigators to plan future projects and programs,



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A primary goal of the CINAR is to use data, such as those pictured here, to conduct research that identifies and evaluates linkages among productivity, fish and fisheries, pollution, climate change and ecosystem health. This image is a three-day composite SeaWiFS image showing chlorophyll concentration for 18-21 June 2001. Higher levels of chlorophyll on the continental shelf reflect enhanced net primary production within the Northeast US Large Marine Ecosystem. (Heidi Sosik, Woods Hole Oceanographic Institution)

Enlarge Image

Don Anderson, shown testifying before a Congressional subcommittee in September 2009, will direct the new cooperative institute. Anderson is a senior scientist in the WHOI

and to work together to find funding for the work. Examples include studies of climate-related ocean acidification (a worrisome result of excess carbon dioxide in the atmosphere) and marine spatial planning (similar to land use planning, but focused on specific marine habitats or systems).

Another expected major activity is developing and deploying arrays of underwater vehicles and instruments needed to continuously monitor the ocean as part of the growing ocean observatory network. Central to these efforts will be arrays of meteorological and hydrographic sensors deployed in the equatorial Pacific and other areas far from the northeastern U.S., but where measurements are needed to understand global climate processes that ultimately affect this region and its valuable fisheries and ecosystems.

Biology Department. (Photo-Op, Woods Hole Oceanographic Institution)

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The Woods Hole Oceanographic Institution is a private, independent organization in Falmouth, Mass., dedicated to marine research, engineering, and higher education. Established in 1930 on a recommendation from the National Academy of Sciences, its primary mission is to understand the oceans and their interaction with the Earth as a whole, and to communicate a basic understanding of the oceans' role in the changing global environment.

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