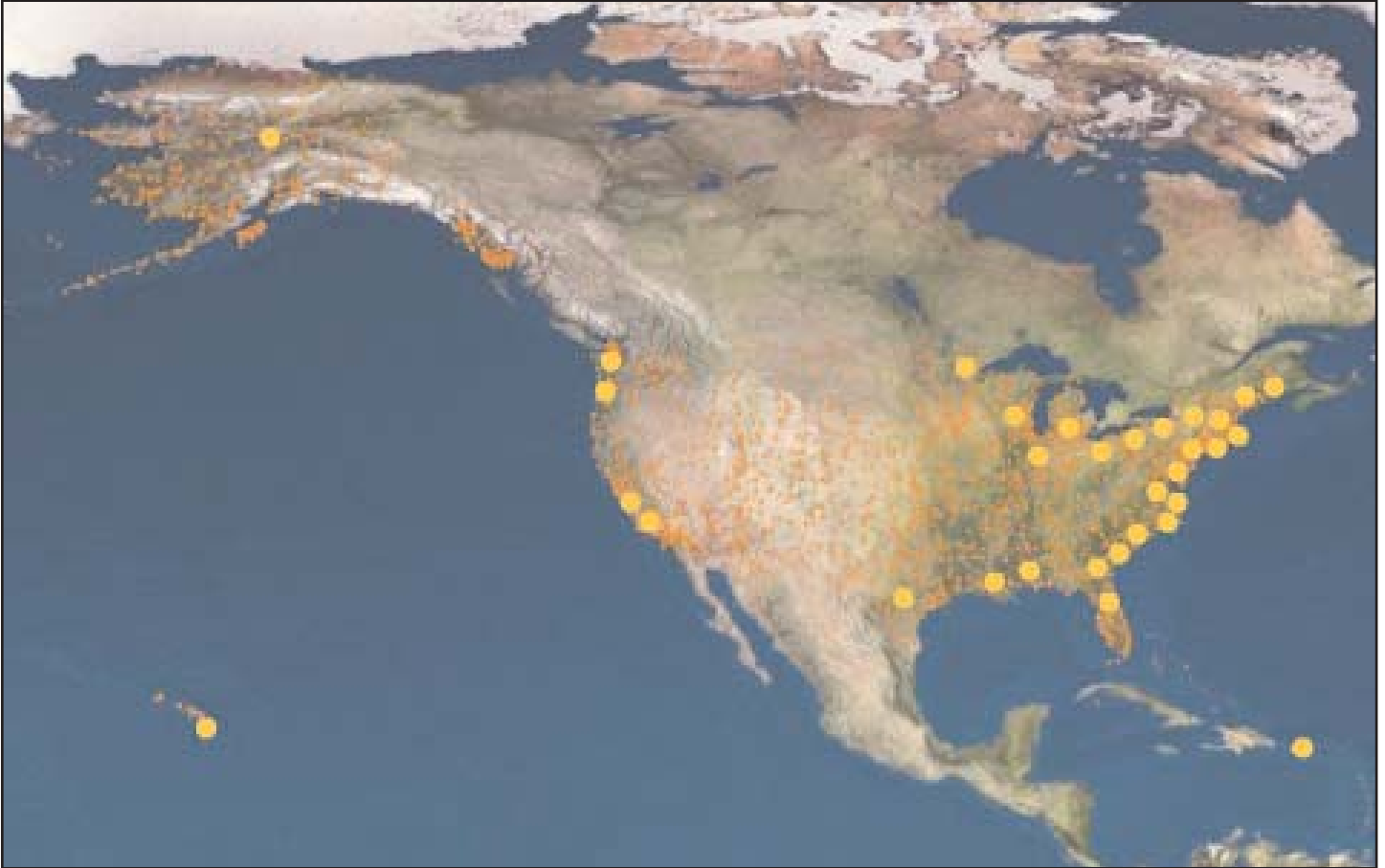


Collaborations

A report on collaborative research projects in the northwest Atlantic Ocean.



The Sea Grant College Extension Program Network is hosted at 30 universities linked to research at the nation's oceans and Great Lakes, including an office in the territory of Puerto Rico. (Image courtesy of Sea Grant)

A Land Grant College for the Sea: How Sea Grant Programs have changed to work with fishermen on emerging management issues in the Northeast.

In 1964, an editorial written by a versatile oceanographer with the curious name of Athelstan Spilhaus appeared in the journal *Science*. "I have suggested the establishment of 'sea-grant colleges' in existing universities that wish to develop oceanic work ... These would be modernized parallels of the great developments in agriculture and the mechanic arts which were occasioned by the Land-Grant Act of about a hundred years ago," he wrote. "Establishment of the land-grant colleges was one of the best investments this nation ever made. That same kind of imagination and foresight should be applied to exploitation of the sea." Spilhaus' concept was carried forth by Senator Clairborne Pell of Rhode Island, who was instrumental in passing the National Sea Grant College Program Act of 1966. Thus, at a time in history when the country was challenging the final frontier in space, and beginning to take notice of ecological

crises on land (with the emergence, for example, of Rachel Carson's groundbreaking *Silent Spring*), Spilhaus and Pell sought to remind citizens that the world of water sustains us all.

Today, NOAA administers 30 Sea Grant Extension Programs at universities tied to research on the nation's oceans and Great Lakes. Specific extension programming from state to state varies, of course, with the ecosystems present, but the overriding mission at all Sea Grant Programs is to connect advancements made through university research with members of the surrounding community.

In the Northeast, Sea Grant Extension Programs are hosted at the Universities of Connecticut, Rhode Island, Maine, and New Hampshire, the Massachusetts Institute of Technology, and the Woods Hole Oceanographic Institution. Over the years, Sea Grant extension programming in the region has covered a wide

While researching stories for Collaborations, I often come across fascinating (at least to me) bits of information that for reasons of space or precise relevance don't make it on to the page. Such was the case for this issue's cover story about Sea Grant Extension Programs.

Sea Grant is the legacy of what many scholars regard as one of the most influential government programs--up there with the Homestead Act and the New Deal--in affecting the course of our nation's history: The Morrill Act of 1862 (also known as the Land Grant Act). What I didn't have room for in the article was the peculiar convergence of events that eventually led to the creation of land grant universities in the late 19th and early 20th centuries.

On July 2, 1862, President Abraham Lincoln signed into law what is generally referred to as the Land Grant Act. The legislation, introduced by U.S. Representative Justin Smith Morrill of Vermont, granted to each state 30,000 acres of public land for each Senator and Representative (which amounted to at least 90,000 acres for even the smallest states). Proceeds from the sale of these lands were to be invested in a perpetual endowment fund which would provide support for colleges of agriculture and mechanical arts.

I basically knew that much, but what came as a surprise to me was that the passage of the legislation was preceded by a lengthy philosophical debate and political lobbying. One of the most notable campaigns was led by Jonathan Baldwin Turner, a Yale graduate who had also been a farmer, newspaper editor, and college professor. Turner championed the cause of the laboring class, and believed that agriculture, education, and information (true to the ideals of his own background) were key to social equality. His "Plan for a State University for the Industrial Classes," first presented in 1850, contained many of the ideas now considered fundamental to the land-grant system, such as experimental research in agriculture.

Influenced by Turner's ideas, Vermont Representative Justin Smith Morrill introduced his first land-grant bill in Congress in 1857. After a significant legislative maneuvering, Congress passed the Morrill Act of 1859, but President Buchanan vetoed it, on the grounds that it violated a state's right to provide education without federal interference. In 1861 Morrill introduced the bill again with, among other modifications, the provision that universities would teach military tactics. Given the need for military officers that had been created by the Civil War, along with the absence of Southern legislators who had succeeded from the Union, the land-grant act passed on its second trip through Congress.

In the following decades, the federal government significantly expanded its contributions to the land-grant colleges and universities. In 1887, Congress authorized federal funding for an agricultural experiment station in connection with each land-grant institution by passing the Hatch Act. In 1890, the Second Morrill Act was passed, supplementing it with direct appropriation beyond the original sale of lands. To receive the money a state had to show that race or color was not an admissions criterion, or else designate a separate land-grant college for blacks, leading to a group of segregated institutions in the South known as the "1890 land-grants."

In 1914 the Smith-Lever Act established the system of cooperative extension services to bring people the benefits of current developments in the field of agriculture, home economics and related subjects. Land-grant institutions, designed to foster a program of education suited to the needs of the agricultural and industrial classes, came to encompass a program of on-campus instruction, research, and off-campus extension work. In the decades following 1914, several acts were passed expanding the scope and increasing the support of all three aspects of the program. Now, in addition to the income from the original land grants, the appropriations of federal funds to aid the states in the maintenance of land-grant institutions amount to more than \$550 million annually.

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Collaborations:

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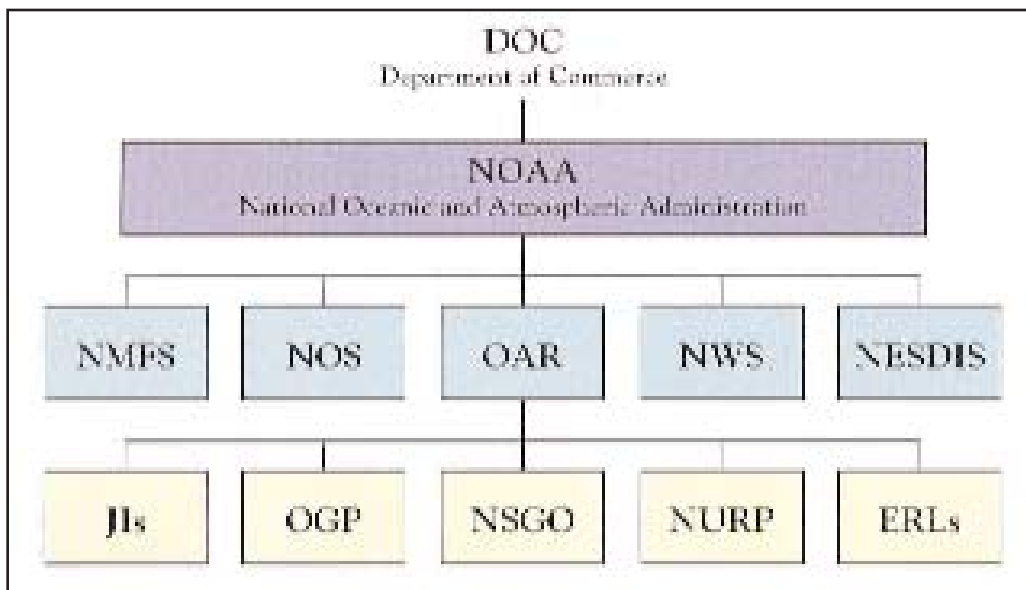
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A variety of associations, panels, assemblies, boards, and committees make up the Sea Grant Extension organizational structure:

Line Offices

- National Marine Fisheries Service
- National Ocean Service
- National Weather Service
- National Environmental Satellite Data and Information System

Joint Institutes

- National Sea Grant Office
- National Undersea Research Program
- Office of Global Programs
- Environmental Research Programs

range tied to fisheries research, from developments in aquaculture to oceanographic research. For the most part, however, extension staff have steered clear of projects directly related to issues involving the often politically charged world of New England fisheries management.

This changed somewhat in 2002, when Congress passed the Sea Grant Extension Enhancement Initiative, a \$3 million

You get the sense today that the fishing industry and Sea Grant are evolving side by side. The problems we face as fishermen are really the same problems scientists, managers, and extension staff are dealing with. I think fishermen must embrace this reality in order to meet the challenges of tomorrow,”

- Chris Brown, R.I. Fisherman

unfunded mandate that sought to utilize extension staff in resolving emerging fisheries issues. The initiative also sought to increase cooperation between Sea Grant Programs and management agencies. Without additional resources attached to the initiative, however, Sea Grant’s National Office was forced to adjust its budget, covering roughly half of the funding required by the mandate, and state offices to find alternative funding mechanisms in order to make up the difference.

“The initiative did a couple of things. It forced us to identify the most pressing needs in the fishery, and it also gave us the impetus to get involved in new partnerships both regionally and with NMFS,” said Paul Anderson, Director of the Marine Sea Grant Extension Program in Maine.

“You get the sense today that the fishing industry and Sea Grant are evolving side by side. The problems we face as fishermen are really the same problems scientists, managers, and extension staff are dealing with. I think fishermen must embrace this reality in order to meet the challenges of tomorrow,” said Chris Brown, a fisherman and president of the Rhode Island Commercial Fishermen’s Association.

At a series of meetings, representatives of the Northeast’s Sea Grant Programs and the fishing industry developed program areas designed to engage stakeholders in a dialogue about some of the most urgent problems it faces, and selected Kathleen Castro of

Rhode Island’s Sea Grant Sustainable Fisheries Extension Program to coordinate the effort. The four extension programs outlined below reflect the changing role of Sea Grant in the Northeast’s fisheries.

“Better Information For Better Management: Fisheries Educational Workshops”

This series of workshops, conducted in four states as a joint effort by Rhode Island, Connecticut, Maine, and New Hampshire Sea Grant Programs and NMFS, gave fishermen an opportunity to have their voices heard on three issues critical to the fishing industry and management: Bycatch, rights-based fishing, and marine protected areas. After each workshop, the proceedings are published and made available to the public in hard-copy or over the internet by contacting Rhode Island Sea Grant Communications Office, Narragansett, RI 02882 or by download at http://http://seagrants.gso.uri.edu/reg_fish/edworkshops/

The first workshop dealt with the issue of bycatch as a factor in the harvest of species managed by quota. The dialogues involved a range of stakeholders from fishermen to managers, often leading to frank discussions about the specifics of the problem from a variety of stakeholder perspectives:

“In New England, all fisheries have bycatch and all gear types have the potential for bycatch. Some Species that are caught have no financial value, but they have ecosystem value. The current management strategy does not recognize ecosystem dynamics—it is geared toward protecting ‘tasty’ fish. This suggests a bit of arrogance in terms of understanding ecosystem relationships,” said Chris Brown.



Publications: After each workshop, the proceedings are published and made available to the public in hardcopy or over the internet by contacting Rhode Island Sea Grant Communications Office, Narragansett, RI 02882 or by download at:

http://http://seagrant.gso.uri.edu/reg_fish/edworkshops/

“We support collaborative research on gear technology, including accelerating the permitting process. Proceeds from the sale of the catch should be used to fund additional research. The Ocean Conservancy is willing to work on fishery management plans aimed at reducing discards and targeting healthy stocks,” said Geoff Smith of the Ocean Conservancy at the New Hampshire meeting.

Mapping Fishing Gears of the Northeast

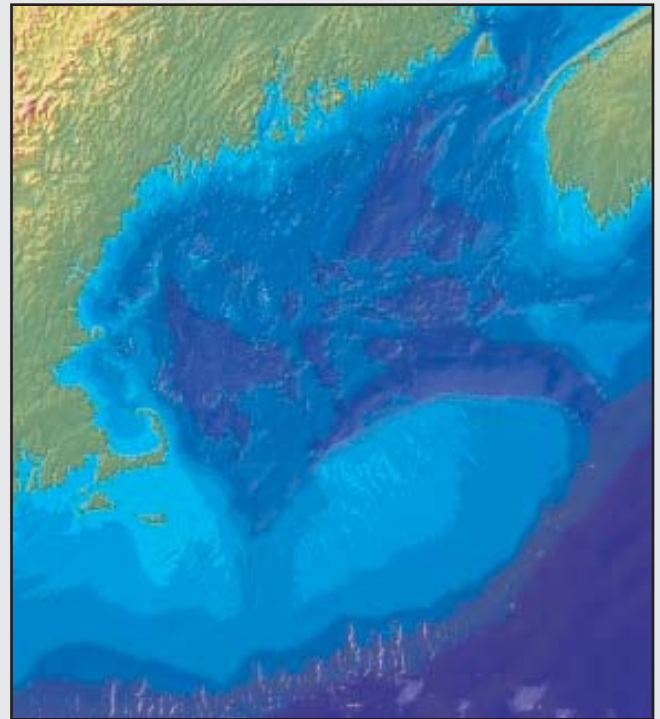
This project, headed up by the MIT Sea Grant Program, addresses the longstanding gap in understanding by fisheries management of who is fishing what gear where. Starting with information from interviews with fishermen, the project sketches the boundaries of fishing grounds typically associated with specific gear types, according to Dave Beutel, of Rhode Island Sea Grant, who has developed a similar map for Narragansett Bay. The data will be integrated into a layered GIS database, giving managers a means to measure the impacts of their decisions on such issues as essential fish habitat, rolling and permanent closures, and gear conflicts.

Training Facilitators of Tomorrow

As Sea Grant extension staff become more engaged in issues concerning multiple stakeholders in the region’s fisheries. Under the enhancement initiative, the Northeast Sea Grant Programs will provide training to prepare staff to facilitate discussion between interest groups that may be at odds with each other.

For more information about cooperative efforts by the Northeast’s Sea Grant Programs, visit: <http://web.mit.edu/seagrant/pubs/northeast/> and http://seagrant.gso.uri.edu/reg_fish/

Now Visit the Gulf of Maine Industry-Based Survey Interactive Website:



www.gmamapping.org/trawl/MapIndex.jsp

Now available for viewing this interactive site allows scientists, fishermen, students and the general public to view maps and summary data for Industry Based Survey (IBS) programs funded by the Cooperative Research Partners Program, NOAA’s Fisheries Service. The cod survey, spearheaded by the Massachusetts Division of Marine Fisheries, began in November 2003.

The survey was designed to study cod stock distribution and demographics in Gulf of Maine waters from Cape Cod to the Bay of Fundy. Working together, scientists and fishermen have combined their knowledge of cod stocks to design an optimal survey to help assess cod. This unique survey design utilizes a standardized grid as well as sampling locations recommended by fishermen to ensure a thorough and detailed survey.

Also online are maps of the southern New England Southern Yellowtail Flounder Survey at the same address.

Cod Tagging Program Announces April Lottery Winners

Portland, Maine -- The Northeast Regional Cod Tagging Program is pleased to announce the winners of its 20th cash lottery. Five winners will each receive \$200. To be eligible for the lottery, winners reported four critical pieces of information following the recapture of a tagged cod including tag number, recapture location, fish length and date captured.

This lottery is drawn for five categories depending on where the tagged cod were found: 1) Northern Gulf of Maine and Canadian waters, 2) Georges Bank, 3) Cape Cod and vicinity, 4) New Hampshire and Massachusetts Inshore waters, and 5) Processing plants and markets.

The winners for April 2005 are:

Category 1: Brian Belliveau, Lower West Pubnico, NS, Canada

Category 2: Bruce Bannick, Jamestown, RI, USA

Category 3: Michael Pay, Berkley, MA, USA

Category 4: Michael P. Leary, Hampton Falls, NH, USA

Category 5: Charles MacAlpine, Digby, NS, Canada

The Northeast Regional Cod Tagging Program represents the largest cod tagging program initiated to date along the eastern seaboard of the North American continent. A significant example of collaborative research, the program involves commercial fishermen and research organizations from Nova Scotia, Canada down to Cape Cod, Massachusetts. This initiative arose from a need identified by regional groundfish fishermen and scientists to understand current distribution and migration patterns of Atlantic cod as important for management efforts to rebuild cod stocks.

The program aim to tag and release over 100,000 Atlantic cod between March 2003 and March 2005 has been reached. To date, over 107,000 cod have been tagged and over 3,300 tags have been recovered.

Fishermen and fish processors are asked to keep an eye open for these tagged cod. Anyone who returns recapture information will receive a reward (either a T-shirt, hat or mug). In addition, anyone who supplies the four key pieces of information (tag number, recapture location, fish length and date) will automatically be entered into the monthly cash lottery.

The Northeast Regional Cod Tagging Program is funded by NOAA Fisheries, Northeast Regional Office through the Cooperative Research Partners Initiative and the New England Fisheries Management Council. The program is coordinated by the Gulf of Maine Research Institute and includes an international team of researchers from the Maine Department of Marine Resources, Canada's Department of Fisheries and Oceans, the Island Institute, Cape Cod Commercial Hook Fishermen's Association, Manomet Center for Conservation Sciences, and University of Massachusetts Dartmouth School for Marine Science and Technology to address these questions.

For more information on the progress of the Program, please visit the official web site:
<http://www.codresearch.org>.



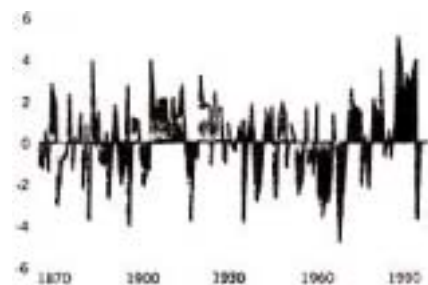
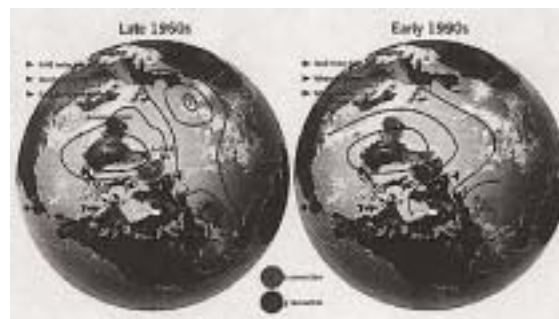
Tag recapture information can be reported by:

Calling our toll-free number, 1-866-447-2111 (free for US & Canada)

Emailing us at: codresearch@gmri.org

Mailing the tag and information to us at: Northeast Regional Cod Tagging Program, Gulf of Maine Research Institute, PO Box 7549, Portland, ME 04112.

Scientists and fishermen have long suspected a link between fluctuations in the abundance of zooplankton species (and thus the strength of commercial fish stocks) and the large-scale atmospheric phenomenon known as the North Atlantic Oscillation. Emerging research on two major components of the northwest Atlantic and North Sea zooplankton regime--*Calanus finmarchicus* and *C. helgolandicus*--suggests that long-term variations in abundance of these two species are closely associated with the state of the oscillation. Possible explanations include: (1) alterations in the stratification of the surface layer that modify the spring phytoplankton bloom; (2) variations in sea surface temperature; and (3) changes in interspecific competition. It has also been hypothesized that the North Atlantic Oscillation plays in the the North Atlantic a role comparable to the El Niño Southern Oscillation.



What is the North Atlantic Oscillation?

The North Atlantic Oscillation (NAO) is one of the most important weather patterns that has a significant impact on East Atlantic and West Atlantic weather patterns during the winter. It consists of a north-south dipole of anomalies with one center located over Greenland and the other center of the opposite sign covering the central latitudes of the north Atlantic Ocean between 35 degrees N and 40 degrees N latitudes. For example, if the center over Greenland is a high-pressure cell, the other center is a low-pressure cell, and vice versa.

What are the major phases of the North Atlantic Oscillation?

There are two phases: positive and negative.

What is the positive phase?

The positive phase of the NAO involves below-normal heights and pressure across the high latitudes of the North Atlantic along with above-normal heights and pressure over the central North Atlantic, the eastern United States, and western Europe.

What is the negative phase?

The negative phase of the NAO involves above-normal heights and pressure across the high latitudes of the North Atlantic along with below-normal heights and pressure over the central North Atlantic, the eastern United States, and western Europe.

What kind of impact does the NAO have on the weather?

The NAO has a significant impact on the intensity and location of the North Atlantic jet stream and storm track, and in large-scale modulations of the normal patterns of zonal and meridional heat and moisture transport. This impact results in changes in temperature and precipitation patterns generally extending from eastern North America to western and central Europe.

What kind of impact does the positive phase have on the weather patterns?

Strong positive phases usually result in above-normal temperatures in the eastern United States and across northern Europe. They result in below-normal temperatures in Greenland and frequently southern Europe and the Middle East. Strong positive phases are also associated with above-normal precipitation over northern Europe and Scandinavia and below-normal precipitation over southern and central Europe.

What kind of impact does the negative phase have on the weather patterns?

Strong negative phases usually result in below-normal temperatures in the eastern United States and across northern Europe. They result in above-normal temperatures in Greenland and frequently southern Europe and the Middle East. Strong negative phases are also associated with below-normal precipitation over northern Europe and Scandinavia and above-normal precipitation over southern and central Europe.

What is the duration of each of the phases of the NAO?

Although the phases vary, prolonged periods of several months of both phases are common.

Are there long-term variations in the phases of the NAO?

Long periods where one phase or another dominate have been identified. For example, in a period extending from the mid-1950s through Winter 1978-79, a strong negative phase dominated. During that time, the positive phase was observed as a seasonal mean only three times and never in consecutive years. On the other hand, from Winter 1979-80 through Winter 1994-95, a strong positive phase dominated with a significant negative phase appearing only twice (Winters 1984-85 and 1985-86).

Source: The Climate Prediction Center

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
NORTHEAST REGION
One Blackburn Drive
Gloucester, MA 01930-2298



May 3, 2005

Small Entity Compliance Guide

Dear Northeast (NE) Multispecies Permit Holder:

This letter is to inform you that the haddock daily and maximum trip limits for vessels fishing under a limited access NE multispecies day-at-sea (DAS) permit are suspended for the remainder of the 2005 fishing year. Consequently, the haddock daily, and maximum trip limits for vessels fishing under a limited access Handgear A and open access Handgear B permit, are also suspended for the remainder of the 2005 fishing year.

Effective May 3, 2005, there is no haddock daily or maximum possession limit per trip for these vessels through April 30, 2006, unless otherwise notified.

The suspension of the haddock trip limit is to provide the industry the opportunity to harvest at least 75 percent of the target total allowable catch (TAC) of haddock for the fishing year, without exceeding the target TAC.

This notice is authorized by the Administrator of NOAA Fisheries Service, Northeast Region. This small entity compliance guide complies with section 212 of the Small Business Regulatory Enforcement and Fairness Act of 1996.





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