The NOAA FISHERIES NAVIGATOR

Yellowtail Flounder Available to US Vessels in Offshore NAFO Area

Approximately 3 million to 4.4 million pounds of yellowtail flounder are now available to US vessels in the distant Northwest Atlantic Fisheries Organization (NAFO) Regulatory Area, along with smaller allocations of squid, shrimp, redfish, and other species. These allocations were made through NAFO, which manages the waters off the Northeastern US and between Canada and Greenland.

The US is party to several regional fishery management organizations that are responsible for managing fisheries resources on the high seas or areas beyond national jurisdiction. One of these is NAFO, which recently increased the US's ability to substantially harvest more yellowtail flounder.

NAFO was established in 1978 to manage fishery resources in both the NAFO Convention Area, which is located in the Northwest Atlantic roughly north of 35°N latitude and west of 42°W longitude, and the NAFO Regulatory Area, which is the part of the convention area that lies beyond the Exclusive Economic Zone of the area's coastal countries.

The convention applies to living marine resources in the convention area except for: salmon, tunas, swordfish, and marlins; cetacean stocks managed by the International Whaling Commission; and sedentary species on the Continental Shelf.

NAFO currently manages a number of species by quota or effort allocation, including: cod, redfish, American plaice, yellowtail flounder, witch flounder, white hake, caplin, skates, Greenland halibut, Illex squid, and shrimp.

Before the US joined NAFO in 1995, the organization established catch quotas for the species it managed based on prior catch history. Any country that became a party to NAFO following the establishment of these quotas was given a minimal quota, regardless of whether they had prior fishing history in the NAFO Regulatory Area. As a result, the US received small quotas for some species (squid and shrimp), and shared quotas for other species (redfish and yellowtail flounder) after it joined the organization. These quota allocations have been too small for US vessels to conduct an economically viable fishery.

The only species for which the US has a documented fishing history in the NAFO Regulatory Area is yellowtail flounder. As a result, the US began actively seeking NAFO Divisions (Grand Bank) yellowtail flounder quota primarily from Canada, which possesses the majority of the Grand Bank yellowtail flounder quota (97.5%).

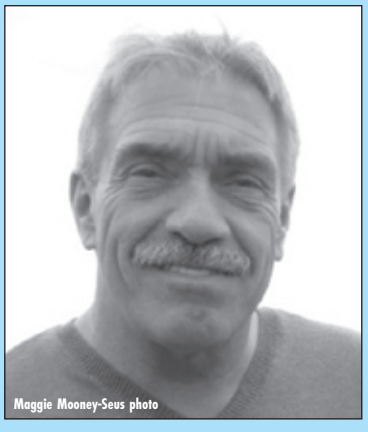
In 2008, the US and Canada signed a 10-year arrangement that transfers up to 1,500 metric tons (mt), or 3.3 million pounds, of yellowtail flounder quota from Canada to the US on an annual basis from Jan. 1, 2009 through Dec. 31, 2018. Also, an additional 500 mt (1.1 million pounds) of yellowtail flounder could be made available on the condition that the US transfers its NAFO shrimp allocation to Canada or through some other arrangement.

Participation in a NAFO fishery involves special

permitting, observers, installation of a vessel monitoring system, and daily catch reporting, among other requirements.

Any US fishermen interested in participating in a NAFO fishery should call the Sustainable Fisheries Division of the NOAA Fisheries Service Northeast Regional Office at (978) 281-9315 for further information. Information also may be obtained directly from NAFO's website at <www.nafo.int>.

New Compliance Assistance Liaison: Captain Don Frei


Maggie Mooney-Seus photo

Building on previous National Oceanic and Atmospheric Administration (NOAA) actions to improve its enforcement program and strengthen its outreach and communication efforts to the fishing industry, NOAA has hired a former commercial fisherman as its Office of Law Enforcement (OLE) Compliance Assistance Liaison for the Northeast.

Selected through a competitive process, Don Frei began his new job in mid-April. A native of Maplewood, NJ, Frei was a commercial fisherman for 23 years, starting as a deckhand and working his way up to captain. He spent the first 15 years of his career fishing primarily for scallops and also groundfish from New Bedford, MA before spending eight years fishing for scallops in the waters around Kodiak, AK.

In 1995, Frei changed careers, earning his college degree and working for the US Fish and Wildlife Service on restoration projects in the Cascade Mountains in Klamath Falls, OR and for the South Florida Water Management District on restoration projects in the Everglades.

Since 2002, he has been a fishery management specialist with the NOAA Fisheries Service Northeast Regional Office in Gloucester, MA, working with industry on regulation and gear questions and on a number of fishery issues related to scallops, herring, mackerel, dogfish, and *Loligo* and *Illex* squid.

As OLE's compliance assistance liaison, Frei will interact with stakeholders and work with them to solve problems. While Frei will work for OLE, he will not be an enforcement officer or a special agent. Currently, he is visiting ports throughout New England to talk with fishermen and seafood dealers to find ways to enhance understanding of and compliance with fishery regulations.

"I'm very much looking forward to working with the men and women in the industry because not only do I speak the regulatory language, but I also speak the language of fishing because of the years I spent fishing here in New England and in Alaska," said Frei.

Eric Schwaab, Assistant Administrator for NOAA Fisheries, welcomed Frei to his new job.

"We are confident Don Frei's extensive experience communicating with fishermen regarding fishery regulations will further open the lines of communication and aid fishermen in understanding regulations and improving compliance," Schwaab said.

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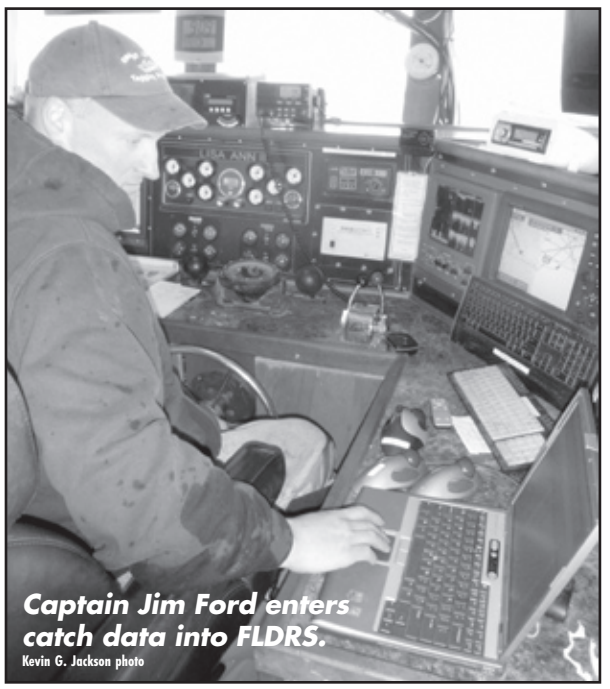
Northeast Study Fleet Examines Bycatch

A study fleet is usually a group of commercial fishing vessels that provides high-quality, self-reported data on fishing effort, catch, and biological observations. The development of the Northeast Study Fleet arose from a need to improve the quality of data that scientists receive from fishing vessel trip reports (VTRs).

Current regulations require fishermen to submit a VTR for each statistical area and/or gear type or configuration fished. For example, if a vessel makes six hauls in one statistical area with the same gear type, information from all hauls is combined into an average location, duration, and depth, and the catch information from all six hauls is summarized into one data point.



Captain Jim Ford enters catch data into FLDRS.
Kevin G. Jackson photo

This type of data cannot provide the fine-scale information that is needed for more precise and localized analyses. More detailed information, including the duration and location of individual hauls, along with accurate reporting of species retained and discarded, can greatly improve estimates of catch-per-unit effort and enhance stock assessments.

This data is similar to that collected by the Northeast Fisheries Observer Program. However, to significantly increase the availability of such data, it must be collected in a more efficient and cost-effective way than simply by increasing at-sea observer coverage.

Following workshops throughout New England in 2000, the Northeast Cooperative Research Program developed a study fleet with two main objectives: assembling a fleet of vessels to provide high-resolution, self-reported data on catch, effort, and environmental conditions; and developing electronic reporting methods to record and transfer more accurate and timely fishery data.

An initial goal of the project was to work with fishermen to develop the Fisheries Logbook Data Recording System (FLDRS) software, which maintains the data that fishermen obtain on their catches. Facilitating transmission of this data from the FLDRS software through vessel monitoring systems to databases at the Northeast Fisheries Science Center also was a priority. Recently, FLDRS software modifications have enabled fishermen to record more specific gear details that may foster regulatory acceptance of selective gear designs to calculate more accurate assumed discard estimates.

Staffers with the Northeast Cooperative Research Program are analyzing study fleet data by area and season and comparing it to observer data to improve the precision of discard rates used in stock assessments and to identify bycatch "hotspots." In addition, the Northeast Study Fleet also is helping address questions related to yellowtail, summer, and winter flounder age, growth, genetics, diet, and reproduction.

Participants are able to collect samples from a large portion of these flounder species' ranges in the Gulf of Maine, Georges Bank, and Southern New England, and they can do it during more seasons than Northeast Fisheries Science Center trawl surveys. To date, the study fleet has provided more than 3,000 additional samples.

Early analysis indicates that some species may experience skip-spawning, or spawning in alternate rather than consecutive years. This information will help inform the assessment of the growth and reproduction of these flounder species populations.

The Northeast Cooperative Research Program study fleet has included more than 45 commercial fishing vessels. Currently, 25 vessels, fishing primarily for groundfish and squid, are contributing tow-by-tow data that can be received within hours of the completion of a trip.

The Northeast Cooperative Research Program continues to seek additional opportunities to expand the use of the FLDRS software for tow-by-tow data collection to help develop strategies to minimize unwanted bycatch and allow fishermen to harvest more of their allotted catch.

For more information, contact Carolyn Woodhead, NEFSC Cooperative Research Program, at (978) 281-9197 or carolyn.woodhead@noaa.gov

Take Steps to Minimize Bluefin Release Mortality

The 2011 bluefin tuna commercial hand gear season opened on June 1 with an optimistic outlook. Last year, the General category rebounded after five years of relatively low harvests by taking 98% of the allocated sub-quota.

Similar to 2010, a large proportion of the bluefin available to be caught by General category fishermen may be just at or below the minimum size limit of 73". Currently, there is a strong 2003 year class of bluefin tuna straddling the commercial minimum size.

The average size of the 2003 year class is evident based on landings from the General category fishery in 2010. Twenty-five percent of total landings were composed of fish from 73" to 75". Only 8% and 9% of landed fish were in this size range during 2008 and 2009 respectively.

The percentage of fish ranging from 73" to 75" is likely to be higher in 2011 due to the size of the 2003 year class overall. However, a large proportion of that year class may be undersized. According to the scientific advisers to the International Commission for the Conservation of Atlantic Tunas, this 2003 year class is particularly important because the number of fish spawned after 2003 appears to be lower than in previous years.

Thus, the likelihood of catching a short bluefin tuna is relatively high, and NOAA Fisheries Service expects that many bluefin will have to be released.

Fishermen should try to minimize stress and injury to bluefin tuna when bringing one to the vessel and assist in its recovery if the fish must be released. Although the death of one fish on one vessel may seem inconsequential at the time, the mortality of released fish from numerous vessels can add up and be detrimental to the stock.

To minimize release mortality, use the following steps:

- Plan ahead and discuss the role of each crewmember in releasing any undersized fish.
- Select gear such as corrodible, non-stainless, non-offset circle hooks, which are more likely to hook the fish in the corner of the mouth rather than in sensitive areas like the gut and decrease the chances that the fish will chafe the leader. Corrodible hooks will deteriorate faster if the leader is cut and the hook is left in the fish.
- Measure the fish while it is in the water, and use a de-hooker to release undersized fish without bringing them into the boat.

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- When the fish is on the line, try bringing it in quickly to reduce the build-up of lactic acid, which can impact the quality of the meat.

Avoid exhausting any shorts that come to the rail. If a short fish is exhausted, try to revive it by towing it slowly behind the vessel.

Further information on each of these steps is available in the NOAA Fisheries brochure titled "Careful Catch and Release," which is available online at <www.nmfs.noaa.gov/sfa/hms>. You may also call Dianne Stephan, NOAA Fisheries Service, Highly Migratory Species Management Division, at (978) 281-9397 or e-mail her at <Dianne.stephan@noaa.gov>.

Accurate VTR and Landings Data Reduces "Uncertainty"

Our understanding of a fish stock's status is directly related to the level of detail and accuracy of available catch data. Estimates of the amount of fish removed from a stock by fishermen are the core of all stock assessments from the simplest to the most complex. Although research vessel surveys provide information on relative trends in population size and recruitment strength, fishery landings establish the scale. That is, landings tell us how big or small the stocks are.

In our fishery management system, much focus is placed on reducing uncertainty. We've divided these concerns into two areas: "management uncertainty" and "scientific uncertainty."

Management uncertainty usually revolves around whether measures used to manage the fishery will be effective and whether we have an accurate accounting of the amount of fish removed by the fishery. Scientific uncertainty usually revolves around how accurately a stock assessment portrays a real fish population. In general, the more uncertainty that exists, the more difficult it is to manage a resource and achieve long-term sustainability.

The number one way to reduce both management and scientific uncertainty is for fishermen and dealers to generate accurate and detailed catch data. The estimates of fishery removals used to manage fisheries come directly from these data. Complete, accurate, and timely vessel trip and dealer transaction reports account for how many fish are removed from each fish stock.

Providing this information is time-consuming for fishermen and dealers, but it is absolutely critical to good management and good science. Inaccurate or incomplete data can be very costly because management and scientific uncertainty usually increase when decisions have to be made with such data. Higher uncertainty generally leads to more restrictive catches than might be allowed otherwise.

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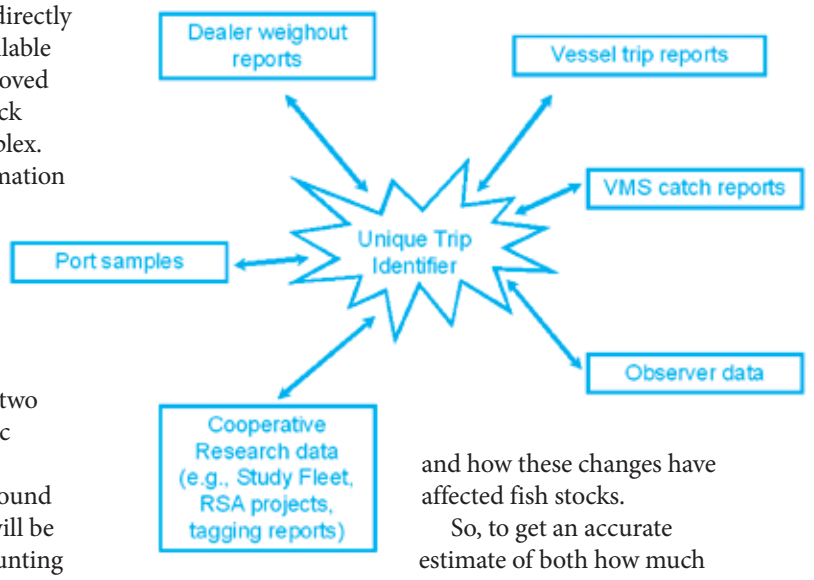
How data is used

Determining fishery removals, both landings and discards, requires information about the total catch by area, gear type, and mesh size. In the Northeast Region, dealer transaction reports are primarily used for determining total landed catch by species and weight. Why? Because dealers typically use scales that provide actual weight, while hail weights reported in vessel trip reports are usually estimates.

On the other hand, dealer transaction reports do not provide details about where the fish were caught or with what type of gear. For these important pieces of information, we use the vessel trip reports.

In the 1930s, scientists divided the ocean off the Northeastern US into statistical areas for a variety of purposes, including assigning catch to a particular area of the ocean. By doing this, catch can be related to the known distribution of a stock within that statistical area. Although the boundaries of these areas have changed slightly over time, the basic design has remained consistent since the 1950s. By keeping the areas standard, we can evaluate changes in the fisheries and how these changes have affected fish stocks.



So, to get an accurate estimate of both how much fish has been removed from each stock, dealer transaction reports must be linked to specific vessel trip reports.

Trip identifiers key

The unique trip identifier currently is the vessel trip report serial number. When a vessel trip report comprises multiple logbook sheets, the unique trip identifier is the serial number from the first logbook sheet. When this is correctly reported, we can allocate the catch to the statistical area where the fish was caught and identify the gear type used to harvest the fish. Analysts then apply the age and length sample data collected by port agents and fishery observers to estimate the number and age of fish removed from the population.

The trip identifier is the critical data element that links all of the data – the dealer transaction reports, vessel trip reports, vessel monitoring system data, observer data, port samples, and more.

When vessel trip reports and dealer reports can't be linked using the trip identifier, assessment scientists and analysts monitoring in-season quotas must devise other ways to assign area and gear information to the dealer landings. While these methods are based on sound decisions, they are estimates that are prone to … you guessed it … uncertainty.

Mismatch mistakes

Here are examples of common reasons why dealer and vessel trip report trip identifiers do not match.

- A vessel operator fills out a new vessel trip report with corrected information after providing the dealer with an uncorrected copy. The serial number from the new vessel trip report will not match the one provided to the dealer.
- A day boat trucks its fish to market to have its Friday, Saturday, and Sunday landings combined into a single shipment to the dealer. Frequently, the dealer will report this as a single transaction and record only a single trip identifier rather than splitting the transaction into three individual trips.
- A dealer misreports the trip identifier, either through non-reporting or inaccurate reporting.

A vessel fishes in multiple statistical areas but reports only one statistical area on its vessel trip report. The vessel may actually have been fishing on several stocks of fish but because only a single area is reported on the vessel trip report, all of the landings are attributed to one stock. In this case, the catch is overestimated for one stock and underestimated for the others.

Of course, other reporting issues can lead to errors in the estimated catch, including reporting the wrong species or catch amount. Regardless of the source, errors in catch data can lead to problems in the performance of assessments models and in the monitoring of in-season quotas.

Most commercial fisheries data are self-reported, and the quality and integrity of the data are controlled by those who report it – dealers and vessel operators. Although scientists and analysts can make informed estimates about where catch has come from if they have to, it is much better to get that information from those who harvested and purchased the fish.

The single thing that fishermen and dealers can do to reduce uncertainty in assessments and monitoring of in-season quotas is to submit timely, accurate, complete vessel trip and dealer transaction reports. And don't forget the magic number – the unique trip identifier.

For more information, contact Teri Frady, NEFSC, at (508) 495-2239 or e-mail her at <teri.frady@noaa.gov>.

Accumulation of Fishing Opportunities Capped

The New England Fishery Management Council has responded to concerns that a small number of individuals or businesses may be able to gain control of a disproportionate share of the fishing opportunities in the Northeast multispecies fishery, such as days-at-sea, vessels, permits, or fish allocation based on catch history.

Therefore, the council requested that NOAA Fisheries Service publish a "control date" as a first step in the process to limit possible excessive accumulation of fishing opportunities in the Northeast multispecies fishery.

A control date is formally designated and is a mechanism that allows the council to limit the accumulation of fishing opportunities to a level that will be determined later, and make it retroactive to the published date. In this case, April 7, 2011 is that control date, and industry members are advised that measures may be developed that could negate fishing opportunity accumulations that occur after that date.

Groundfish permit holders are advised to preserve records that verify their ownership or control of groundfish permits in the Northeast multispecies fishery in federal waters. Please call the Sustainable Fisheries Division at (978) 281-9315 if you have any questions regarding this control date.

Testing Gear to Reduce Interactions with Protected Species

NOAA Fisheries Service's Protected Resources Division manages marine mammals and other endangered or threatened marine species, such as sea turtles, Atlantic salmon, and Atlantic and shortnose sturgeon, which live in the ocean within 200 miles of shore from Maine to Virginia. NOAA Fisheries is working with commercial fishermen to find new gear and/or fishing techniques that will reduce the unintentional catch of protected species while still enabling efficient fishing.

Here are some examples of these collaborative research projects.

- Modifying Leaders in Pound Nets to Reduce Sea Turtle Bycatch – Pound nets consist of arrangements of fiber netting supported by stakes with head ropes or lines above the water. They are used to fish a wide variety of mixed species such as striped bass, Spanish mackerel, and summer flounder. Sea turtles also may become trapped in the pound, which could result in injury or mortality.

In 2004 and 2005, NOAA Fisheries Service Northeast Fisheries Science Center (NEFSC) scientists worked with pound net industry participants and others to develop and test a modified pound net leader design to eliminate or reduce sea turtle interactions while maintaining a consistent level of fish catch.

By increasing the stiffness of the vertical lines, researchers were able to reduce the number of sea turtles caught to zero. At the same time, results of the fish catch comparison suggested that the modified leader was as efficient at catching similar quantities and sizes of fish as the unmodified leader. As a result, fishermen in the southern Virginia Chesapeake Bay now must use modified pound net leaders while fishing offshore from May 6 to July 15 each year.

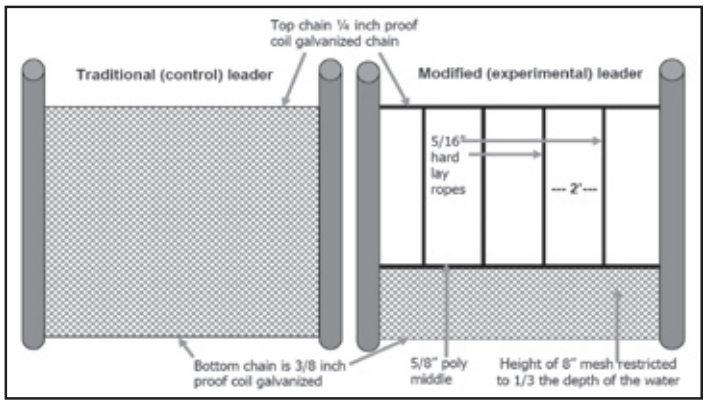


Figure shows the differences between a traditional leader and modified leader.

- Reducing Large Whale Entanglements – Because vertical lines in fixed-gear fisheries can entangle large whales, NOAA Fisheries is working with the Pemaquid Fishermen's Co-op and Skilligalee Inc. on two projects to evaluate hauling and setting trap/pot gear without using vertical lines and/or surface buoy systems.

These projects are taking place in the Gulf of Maine and off the coast of Maryland and experiment sites vary by bottom type and the presence of other trap/pot and trawl fisheries.

For both projects, fixed trap/pot gear is deployed to the sea floor without the use of vertical lines and is located by the use of GPS. Specialized grappling equipment is used to snag a sinking groundline extension to haul the traps to the surface. Haul data collected includes location, weather conditions, sea state, bottom type, depth, haul/set time, grappling time, catch kept, price per pound of catch, trap loss, gear configuration, and any problems and gear conflicts. Final reports for these projects will be available in 2012.

- Atlantic Sturgeon Bycatch Study – Currently, the catch and possession of Atlantic sturgeon is prohibited, and this species is currently being considered for listing under the Endangered Species Act. Atlantic sturgeon can get caught in sink gillnets, particularly ones that use tie-downs.

NEFSC scientists worked with commercial monkfish gillnet fishermen to minimize gear interactions with Atlantic sturgeon. Project participants fished standardized monkfish gillnet gear – 12 meshes tall with tie-downs – and compared it to the same gear but without tie- downs at the same time and area. The nets were set keeping all aspects of the operation such as soak time, set direction, and haul back speed identical between sets.

The final report for this project will be available later this year. If additional funding is secured, a second year of study will compare catch rates in the standard gear described above with gear configuration that is six meshes tall.

For more information on these projects, call Allison Rosner, NOAA Fisheries' Protected Resources Division, at (978) 281-9462 or e-mail her at <Allison.rosner@noaa.gov>.

More information on protected resources grant opportunities and research is available on these websites:

- NOAA Fisheries Service Northeast Regional Office Protected Resources Division Research and Grants – <www.nero.noaa.gov/prot_res/GrantsResearchProjects>;
- Research Priorities and Needs for Protected Resources in the Northeast – <www.nero.noaa.gov/prot_res/research>; and
- Northeast Fisheries Science Center Protected Species Branch Gear Research – <www.nefsc.noaa.gov/read/protspp/PR_gear_research>.

NEFSC Developing Visual Mapping Application

Many people have used or are familiar with Google Earth, a free mapping software program that is easy to download and doesn't require anything more than a computer and Internet access to get started. Researchers at the NOAA Fisheries Service's Northeast Fisheries Science Center (NEFSC) are developing an application, or "app," that is compatible with Google Earth to provide people in the fishing industry and the general public with a new way to view and understand the ocean environment.

The app has many advantages for non-scientists who need or want to get a sense of how conditions and marine life occur in relation to the areas of the ocean that are being actively used and have to be managed. Fishing vessels today are equipped with a fair amount of technology, and even if those aboard have never used Google Earth, they should find it easy to understand and use.

There are numerous ways that fishermen can use this app. For example, fishermen who are interested in fisheries survey data that they typically view in a table format showing species, temperature, depth and station location, will now be able to look at that same information as a visual "big picture" of the data displayed over a map of the Northeast Continental Shelf.

"We've had many requests in recent months for charts showing all kinds of ecosystem conditions as well as marine life on the Northeast Shelf," explains NEFSC's Dr. Michael Fogarty. "This application provides fishermen concerned with protected marine species like whales, for example, with a simple visual way of knowing where whales have been sighted and when whales are present in an area."

In addition, identifying and mapping ecologically sensitive areas and important fishing grounds are a critical part of assessing and planning for competing uses of the ocean.

"Given the competition for ocean resources, this is one way to show how fisheries use these resources and how competing activities can influence that use," Fogarty said. "Ultimately, we want to display not only physical and ecological data such as fish and shellfish abundance patterns, biodiversity hotspots, and protected resource species, but also human-use data that includes everything from shipping lanes and the locations of telecommunication lines to proposed offshore energy sites."

The application is a spin-off of the NEFSC's Ecosystem Assessment Program, led by Fogarty. For now, the main focus is getting the most commonly used data sets into a form Google Earth can read to help those working on the tough problem of managing multiple uses of ocean resources.

NEFSC's Robert Gamble is converting some of the science center's most popular data sets into a format that can be displayed using Google Earth. Initially, Gamble and his colleagues converted data for physical factors like depth, water temperature, salinity, and bottom type. Next in line are data sets that can be displayed over these such as whale sightings and fishing effort.

For more information on the NEFSC's Google Earth app, call Teri Frady at (508) 495-2239 or e-mail her at <teri.frady@noaa.gov>.

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