

April 2003

Collaborations

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



Photo of the Gloucester Fishermen's Wives Memorial by Michael Crocker

Measuring the Social Impacts of Management

By Michael Crocker

While most collaborative research continues to focus on the complex relationships between biological communities in the ocean, an ongoing project initiated by the Massachusetts Fishermen's Partnership is examining how human dynamics on land are relevant to fisheries management.

In three New England ports—Gloucester and Scituate, Mass. and Beals Island, Maine—project organizers have assembled community panels made up of fishermen, lawyers, teachers, business people, and other community leaders to help identify local values and principals that inform the decisions they make about marine resources.

The study, funded by the Northeast Consortium with additional support from

the Saltonstall-Kennedy Grant Program and the Sailor's Snug Harbor Foundation, began in 2001 and was recently extended for another year.

The project continues the kind of research begun by the Marine Fisheries Research Initiative (MARFIN) project that has documented extensive social and economic information about fishing communities in eleven fishing regions of New England.

"Information about people is just as important to fisheries management as information about fish," said Dr. Madeleine Hall-Arber, one of the project's primary investigators from the Center for Marine Social Sciences at the Massachusetts Institute of Technology Sea Grant Program.

The project entitled "Institutionalizing

Social Data" or the "Community Panels Project" has broken new ground with its community-based approach to social research.

Few cultural studies—whether in New England fishing communities or elsewhere in the world—allow informants to play such an active role in gathering and assessing their own social data.

"We are experimenting with a community-based approach to data collection, which not only gives us information, but allows community members to effectively express their ideas and concerns," said Dr. Hall-Arber.

Each community panel is comprised of eight to 12 "core" members who meet approximately once a month to discuss issues relevant to fisheries management.

(Social Data continued)

Fishermen and Researchers Collaborate on Net Design

By Michael Crocker

Gloucester, Mass.—In an effort to stave off the kind of controversy currently surrounding the credibility of data gathered by the government research vessel Albatross IV, officials from the Massachusetts Department of Marine Fisheries (Mass. DMF) met with a small group of New England fishermen in March to determine the design specifications of a net to be used in an industry-based survey of cod next fall.

Last fall, it was revealed that the Albatross had been conducting groundfish surveys with faulty equipment for at least two years, which prompted many fishermen to wonder if the samplings—that scientists used to estimate the size of fish populations or their “biomass”—undercounted fish and therefore led to stricter fishing limitations than necessary. An independent review (released early last month) determined that the error was “statistically insignificant” to the findings of the research in question, but many fishermen still remain skeptical about whether government restrictions reflect the recovery of groundfish stocks that most scientists and fishermen acknowledge has occurred.

“Clearly there is recognition—by the feds and states—that we have to go in a different direction [with trawl surveys], especially in regards to cod. Involving fishermen in the early stages of an experiment is important not only to appease accusations of wrong data, but also to help train scientists in gear design and usage,” said David Pierce, deputy director of Mass. DMF.

Like any scientific experiment, accurate fish sampling requires standardized methodology and equipment in order to gather reliable data. It is very important, for example, that the duration, speed and nets used in each tow are as similar as possible. This can be a tall order in a research

project that necessarily utilizes vessels of varying size and horsepower. For this reason, the implementation board at Mass. DMF will use vessels between 50 and 65 feet for the inshore surveys and vessels of 75 feet and greater for offshore surveys.

Other new research parameters will include:

- 400 tow-sites (200 in areas that have historically produced large catches of cod and 200 in new areas, including some previously closed to fishing to allow for stock recovery).
- 30-minute tow durations because the survey’s designers believe that cod now exist in numbers such that longer tows might overwhelm observers who have to sort through the catch; and shorter tows may allow vigorous adult cod to swim away from the net before it’s hauled in.
- Nets with 4 1/2-inch, diamond-shaped mesh with a high rise design and 2-inch mesh in the cod-end specifically to target cod two years of age and older.
- Nets utilizing electronic monitoring devices will be attached to the trawls to ensure that they are fishing properly during the research.
- Number Seven-and-a-half Bison Trawl Doors

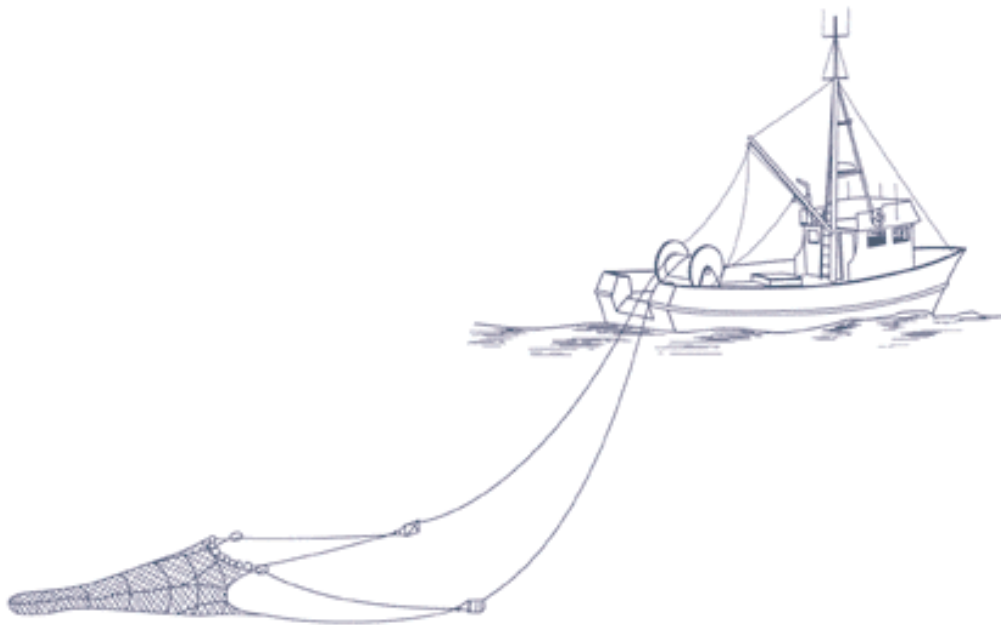
While these parameters provide for a higher level of consistency than previous-

ly existed in industry-based surveys, there is still the danger of considerable variation in tows—and that’s where fishermen’s years of experience becomes indispensable to a project.

Robert Tetrault, a fisherman from Maine said, “it’s important that we not only talk about the size and horsepower of the vessels and the kind of net we’re going to use, but also the fishing circle—the part of the net that does the actual fishing. First, we need to decide the size circle we want and then make sure that all the vessels used can tow it at the proper speed for the duration; otherwise all this talk of standardization is irrelevant. If we have a standard fishing circle, we can better control how individual boats maintain the same net size and shape over the course of the tow.”

With the help of Mary O’Rourke, a net-maker from Trawlworks, Inc. in Narragansett, R.I., the group settled on a 150-foot fishing circle and an 80-foot sweep with 14-inch “Rockhoppers” to accommodate a variety of bottom types. “It’s important to select the right net for the job—one that behaves similarly when it’s towed by different boats and different crews. A four-seam net has a higher top and selects better for adult cod and it

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(Social Data continued)

In Gloucester and Beals Island, two graduate students have acted as “coordinators,” lending their knowledge of social science methodology by organizing the panels, facilitating meetings, and incorporating the data into a scientific framework.

Already, important differences between the two ports have begun to emerge from the data.

The Maine communities tend to view fishing as a unique way of life that they hope to pass on to their children. Many see a management system that includes ITQs (individual transferrable quotas) as a direct threat to future access to traditional fishing grounds.

In contrast, members of the Gloucester Panel have expressed doubt that fishing will be a viable option for their descendants, viewing ITQs as a reasonable strategy to improve their economic well-being.

The Scituate Panel requested that they carry out the research without the help of a coordinator, but time restraints have caused them to reconsider using the help of an outside investigator.

The community-based approach has also allowed researchers to adapt to the often volatile regulatory environment of the fishing industry.

For example, after a judicial decision

in 2002 further restricted allowed fishing days-at-sea, the Gloucester Panel chose to spend the next several meetings gathering key economic information from its community by distributing “boat economics” questionnaires.

With the help of a local accountant, they recorded the fixed and non-fixed costs associated with fishing vessels of varying sizes and determined how the new regulations will affect long-term business plans.

David Bergeron of the Massachusetts Fishermen’s Partnership, a primary investigator of the community-based project, believes the Gloucester example demonstrates how effective fisheries management requires the participation of the whole community.

“[Through the study] we recognized that Gloucester is made up of individuals with various but interconnected expertise. The more of these skills that are represented, the better we can address the impacts of regulatory decisions,” he said.

Currently, Dr. Hall-Arber is sharing her preliminary findings with representatives of the New England Fisheries Management Council and they are in the process of incorporating the data into a framework that can be used to anticipate the social and economic consequences of management recommendations.

“If we have choices between alterna-

tives, this information will help us make selections that are least harmful to the social and economic well-being of fishing communities,” she said.

“We don’t yet have access to the amount of social science data that exists with biological data. Projects like this are starting to give us a reliable source of information about fishing communities so we can shape our decisions to help mitigate social impacts,” said Lori Steele of the New England Fisheries Management Council.

Ted Hoskins, a minister and community activist from the fishing community of Stonington, Maine and member of the Beals Island Panel, added:

“If all we want is the most efficient way to bring home the total allowable catch I think eventually we’ll get there, but if we also want to value community life, we have to pay attention to other factors—it’s one thing to have a healthy ocean and quite another to have healthy communities that depend on a healthy ocean.”

Further information about the community panels project can be found online at www.fishermenspartnership.org. Those interested in social research on fishing communities should visit MIT’s Sea Grant website at <http://web.mit.seagrant/advisory/marfin/index.html>.

(Net Design continued)

keeps its shape better when towed by different boats,” said O’Rourke.

Further meetings will determine whether a two-seam or four-seam net is used. After the March meeting, O’Rourke made schematic drawings of the potential net designs and the next step may be to have a scale model constructed and tested at the Centre for Sustainable Aquatic Resources’ flume tank in Newfoundland, the only facility capable of running such experiments.

“The flume tank will tell us more precisely how the net tows at different speeds and conditions,” she said.

In the meantime, both scientists and fishermen are optimistic about the research’s potential. “This survey really stands to enhance the way we study cod and other species. It will give us a higher resolution of near shore samples that you can’t get with the Albatross. After the initial pilot stage, it could be escalated into a long-term study, one that incorporates gillnets and other kinds of fixed-gear,” said Earl Meredith, biologist with the NOAA Fisheries’ Northeast Regional Office.

“The science gathered through these surveys has a huge impact on our quality of life. Small changes in regulations can

decide whether we keep going fishing or tie our boats up to the dock for good. We just want to know if we can trust the information that is used to make these decisions. Meetings like this are a step in the right direction,” said Vito Giacalone, a fisherman from Gloucester.

Mass. DMF is still seeking comments regarding the net design as well as participants for the surveys scheduled to begin in November 2003. Interested parties are encouraged to contact Bill Hoffman at (978) 282-0308 x. 106 or via email at bill.hoffman@state.ma.us.

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