



# Collaborations

**A monthly update of cooperative research news**

**August 2001**

**Omission:** In last month's issue, the names of the principal investigators in the Sea Scallop Recruitment Group's project were omitted. They are **Jonathan Howland** and **Drs. Scott Gallager** and **Hanumant Singh** of the Woods Hole Oceanographic Institution. We respectfully apologize!



This issue of "Collaborations" highlights two cooperative research projects in an article that first appeared in the Brunswick, Maine *Times Record*. On page 5 is an announcement for "**Project Development Funds**" available for cooperative research and right whale research. Only letter proposals are required. They must be received by 4:30 pm on Monday, September 10, 2001.

## "Two-for-One Fisheries Research"

A newly-built 46' Wesmac stern trawler from Sebasco Harbor has become a popular 'platform' for fisheries research and its captain, **Proctor Wells**, couldn't be happier. On a recent trip 16 miles offshore of Portland, Maine, scientists from not one, but two, research projects boarded the *F/V Tenacious*.

With money appropriated by Congress specifically for this purpose, 'cooperative' research has become the buzzword in both fishing and scientific communities. The idea is that utilizing fishermen's experience and knowledge will improve the science on which fisheries management decisions are made. The ultimate goal is to insure good stewardship of marine resources and the human communities which depend upon them.

Wells, a third-generation commercial fisherman from Phippsburg, Maine, had the *Tenacious* 'built with research in mind.' Wesmac added four feet to the stern of its 42' hull to increase deck space for research work. The *Tenacious* also has an uninterruptible 110 power supply for computers, a hydraulic oil cooler to handle the stress of shorter, more frequent research tows, a comfortable wheelhouse complete with a work table, and plenty of bunk room. It recently passed a voluntary Coast Guard Safety inspection.

On this trip, Wells was helping the **Manomet Center for Conservation Sciences** to conduct commercial trials of otter trawls with modified codends in an effort to reduce 'bycatch,' in this case - the unintended mortality of juvenile, commercially valuable fish.

"I felt the need for some good scientific data in the groundfishery" Wells stated, "and I was curious about the selectivity of different codends".

When asked how he became involved in this project, Wells reports that he was approached by **Dr. Chris Glass** at the **Maine Fishermen's Forum**. Glass, the Director of Fisheries Research at the Manomet Marine Program, is highly respected in the field of selective gear research.

For this project, Glass enlisted three New England commercial fishermen to conduct the commercial trials. Manomet field researchers **Gregg Morris** and **Tim Feehan** have been working alongside Massachusetts fishermen **Frank Mirachi** of Scituate and **Russell Sherman** of

Gloucester. Mirachi, captain of the *F/V Christopher Andrew*, completed four days of trials this past January. Russell Sherman, captain of the *F/V Captain Dutch*, made his tows in March and April.

Now it was Wells turn to christen the *Tenacious* for its first research trip. After steaming 16 miles through fog that cloaked nearby tankers, the *Tenacious* arrived in a 'rolling closure' area that Wells had determined would be best for conducting bycatch trials. Fishermen's knowledge and experience regarding fish concentrations is one reason scientists find cooperative research so inviting. Morris specifically sought out Wells' input when determining the location for the trials.

Morris, who started his career with a three-year stint as an observer, stated that Manomet's mission is 'science for sustainability' that also 'keeps people working'. "All of Manomet's work is collaborative", Morris stated. "We're finding ways to reduce problems but maintain catch – just harvest the adults, not juveniles".

He reported that the aim of testing composite codends is to find the best mesh that retains the maximum amount of legal-sized fish and releases the maximum amount of undersized fish. Previous studies have shown that diamond mesh is good at releasing undersized flatfish but catches small roundfish (cod, haddock, and Pollack). Square mesh tends to release juvenile roundfish but catches small flatfish. The 'composite' of square and diamond mesh is an effort to blend the best of both shapes. "With fishermen, we can help find the answer to minimize bycatch," Morris said.

The experimental design of this project required a series of tows. The fishermen used their own gear, except for the experimental codends. Wells tows a 100' rockhopper groundfish net with cookie-covered ground cables and #6 Bison doors.

On the first day of trials, the fishermen towed their conventional 6" diamond mesh codends eight times for twenty minutes or less each time. Russell and Mirachi also towed their commercial 6 ½" square mesh codends. In a method called 'absolute selectivity', the only modification on these tows was a 2" diamond-mesh cover placed over the codends to catch the fish that normally would escape. By comparing the catch in the codend to the catch in the cover, researchers are able to calculate the percentage level of bycatch. This approach is an improvement over 'trouser trawls' that utilize side-by-side codends to compare results. In the Gloucester trials, the researchers also used a video camera inside the cover aimed at the codend. This allowed them to record the behavior of the fish escaping the different codends.

On the second day of towing, Wells switched his codend to a composite mesh made up of 6 ½" square mesh over 6 ½" diamond mesh and then made six short tows. Day #3 was six trawls of 6 ½" square over 6" diamond mesh and two tows of 6" hexagonal mesh. The trials ended on the fourth day when the final four tows of hexagonal mesh were completed.

A flurry of activity ensued once **Randy Smith**, Wells' first mate, hauled back the net. The catch from the codend and cover was dumped into separate trays for comparison. Morris and Feehan quickly separated the species into orange baskets and then weighed and measured the commercially valuable species including dabs, haddock, cod, monkfish, redfish, grey sole, yellow tail flounder, winter flounder and pollack. The remaining species were simply weighed. These included herring, silver hake, red hake, white hake, four-spotted flounder, spiny dogfish, longhorn sculpins, shad and sea ravens. Any cod were handed over to a third researcher, **David Martins**, to be placed in a live tank for tagging.

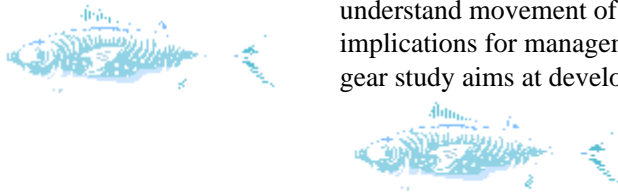
Martins, a fisheries technician from the University of Massachusetts **School for Marine Science and Technology (SMAST)**, had joined the Manomet researchers on the last two days of the project. In a gesture of scientific cooperation, Morris had invited him along so that he could continue his own research involving fish tagging. Since August 2000, SMAST has tagged over 6000 fish, mostly cod, but also halibut, haddock, spiny dogfish and striped bass. SMAST conducts some 'dedicated' trips to do tagging in closed areas but also trains fishermen to tag opportunistically.

Most of the tagging has been conducted in the southern Gulf of Maine, Cape Cod Bay and off Provincetown, so this trip on the *Tenacious* gave Martins an opportunity to expand his tagging efforts. SMAST has trained over 60 fishermen from Massachusetts, New Hampshire and Maine, and on this day, Martins left a tagging kit with Wells.

Martins reports that there have been 109 returns of tags. Some of the tags revealed interesting and unexpected results, such as fish crossing the 42° 20' line from the Gulf of Maine to Georges Bank or one fish that moved from Cape Cod Bay to the Race, near Nauset. A fish tagged on Stellwagen Bank was picked up off Jeffrey's Ledge. Researchers were surprised by the fish moving that far north. There has been one return from a halibut that 'didn't move too far'. Some fish showed southward movement in the spring when northward movement is expected. Massachusetts lobstermen, **Phil Mason**, captain of the *F/V Kestrel* and his son **Peter**, captain of the *F/V Potluck*, have tagged and recovered the same fish from the same trap area. "In fact, the same fish has returned to the same set of traps a couple of times within a month," Martins said.

At a price tag of \$100 each, Martins reports that SMAST has also deployed 90 data archival tags that record temperature and pressure while implanted in the fish. When asked about growth rate information, Martins stated that this has been unreliable. Fishes that were being tagged at 24" were being picked up later at 23".

Both studies aboard Wells' boat aim at improving management of Northeast fisheries. The tagging study will help managers better understand movement of commercially valuable groundfish. This has implications for management tools such as time/area closures. The selective gear study aims at developing commercially acceptable ways of reducing bycatch – a management tool that may be more palatable to fishermen than days-at-sea reductions.



Morris summed up selective gear research. "There are workable solutions. Let's find them. Let's put our concentration there. There are ways to bring in what we want and not catch what we don't want." In a reference to closures, Morris stated that improving the selectivity of gear is better than drawing 'lines in The ocean.' Feehan emphasized that the take-home message of cooperative research is that it shows 'how fishermen are coming up with great ideas.....teaming up with scientists to do the work to generate good data and workable solutions to fisheries problems.' He emphasized Morris' point about fishermen's knowledge of fish concentrations. "Our experiments don't show anything if the fish aren't there."

The Manomet study, funded last year by the **Northeast Consortium**, represents only one of several ongoing cooperative efforts to improve management of Northeast fisheries. To learn more about Manomet and the Consortium, visit their websites at [www.manomet.org](http://www.manomet.org) and [www.northeastconsortium.org](http://www.northeastconsortium.org). For help in getting involved in cooperative research, check out [www.fishresearch.org](http://www.fishresearch.org).

And if you catch an SMAST-tagged fish, you may contact Dave Martins by phone at 508-910-6392, by fax at 508-910-6371 or by e-mail at [dmartins@umassd.edu](mailto:dmartins@umassd.edu). Tag number, time and date of recapture and location information in LORAN coordinates or latitude/longitude are the most important information. Additional useful information includes size of fish, depth the fish was caught, substrate type, reproductive condition, water temperature and gear type. Fishermen must re-release fish under legal size with tags intact. An SMAST cod-tagging hat will be mailed to callers who report a tagged fish.



## **Announcement of Northeast Consortium Project Development Funds for Cooperative Research and Right Whale Research**

Date of Announcement: August 1, 2001  
Letter Proposal Due Date: September 10, 2001  
Decisions Announced: September 21, 2001  
Projects Start Date: October 1, 2001

**Northeast Consortium Project Development Funds** will provide **up to \$25,000 per project** to test the feasibility of an idea, try out new gear, or otherwise lay the groundwork for a new project. The Northeast Consortium has reserved \$200,000 in Cooperative Research and \$200,000 in Right Whale Research funds for these types of efforts. These funds will be awarded based on short Letter Proposals.

The reason for this new type of funding is that the Northeast Consortium received a number of Cooperative Research proposals that described a really good idea or an innovative new approach to an important problem that were not recommended for funding. The reasons were usually poor project design, poor proposal preparation, or no evidence that the project could work. In some cases, there was no (or not sufficient)

science - industry partnership - an important criterion for the Northeast Consortium. In order to encourage these good ideas and increase the likelihood of future funding for the project, the Northeast Consortium will make available a new type of funding for pilot projects, new ideas or approaches, and/or new gear designs.

The Northeast Consortium also received an unexpectedly small number of proposals in the area of whale-friendly fishing gear. The lack of good new ideas and technical approaches was very concerning. The Northeast Consortium decided that some means should be made available for fishermen and/or researchers to try new ideas, without the need for preliminary data. Thus, the Northeast Consortium will use the Project Development Funds to encourage fishermen (in particular) to try out a new idea, a new gear design, or a new approach to the problem of right whale entanglement.

### **Guidelines for Letter Proposal Preparation**

**Description of the project or idea:** Project Development funds for Cooperative Research and Right Whale research will be awarded based on Letter Proposals. Letter Proposals should describe the idea or concept, explain the real-world and scientific importance of the project, and provide enough detail on the approach or methods to be used to allow evaluation of feasibility. The Letter should also explain how the Project Development funding will lead to a larger or longer-term project.

**Length:** Letter Proposals should be about 2 pages long (if they are typed, single spaced) and no more than 5 pages long (typed, single spaced), excluding the additional information requested on budgets and project participants.

**Budget information:** A brief budget should be included with explanations of each line item.

**Project Participants:** All participants should be named with brief (one paragraph) explanations of each person's relevant experience and role in the project.

**Duration:** In general, funds should be requested for projects lasting one year or less. Exceptions to this guideline can be made for special cases.

**Submission:** Letter Proposals must be received by 4:30 pm on Monday, September 10th. Letters received after this time and date will not be considered.

### **Letter Proposals may be sent to:**

Ann Bucklin, Northeast Consortium  
University of New Hampshire  
142 Morse Hall (39 College Road)  
Durham, NH 03824

**Letters may be faxed to:** 603-862-7006

**Letters may be sent via email to:** [Laurinda.Smith@unh.edu](mailto:Laurinda.Smith@unh.edu)

This information is also available on [www.NortheastConsortium.org](http://www.NortheastConsortium.org).