

NH fishermen test modified gillnets, ground cables to improve fisheries

While the news from land about science, markets, and management hasn't been particularly good this year, innovation on the water is alive and well as fishermen and scientists continue to search for fishing practices that support sustainable marine resources and fishing businesses.

In New Hampshire, three projects with regional implications and, in some cases, regional counterparts, are now underway. These projects and scores of others in the Northeast are made possible in part through the Gear Conservation Engineering and Demonstration Network (GEARNET), a program funded through the National Marine Fisheries Service Northeast Fisheries Science Center's Northeast Cooperative Research Program.

New Hampshire projects include: testing the effectiveness of a modified ground cable designed to reduce bottom impacts while maintaining a profitable catch; a transfer of LED acoustic pingers to the gillnet fishery designed to reduce harbor porpoise bycatch; and continued testing of a raised gillnet intended to reduce cod catch while maintaining catches of other economically valuable species.

Modified ground cables

In May, New Hampshire fishermen tested the effectiveness of trawl gear designed to minimize bottom impacts while fishing. Neal Pike on the F/V Sandi Lynn and David Goethel on the F/V Ellen Diane, along with Erik Chapman from the University of New Hampshire and technicians from New Hampshire Sea Grant and the Gulf of Maine Research Institute (GMRI), collected data over five days of fishing that included five sets of tows with the two vessels fishing side by side.

During the experiment, one vessel used a modified ground cable with 8" rockhopper disks designed to keep the ground cable off the bottom while the other used its standard ground cable.

"We were interested in seeing two things from this experiment," explained Goethel. "First, we wanted to see if a ground cable like this one actually stayed off the bottom and, second, we wanted to see how this would affect the fish we catch."

Any reduction in bottom contact may

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Sarah Van Horne photo

Jayson Driscoll on the Sweet Misery out of Rye, NH worked with researchers to test the effectiveness of gillnets raised 4' off bottom.

also be expected to reduce the overall drag of the vessel, so fuel consumption data was collected in addition to catch data. The results will be of interest to both managers, who may consider opening previously closed areas to gear with a reduced environmental footprint, and to fishermen, who are interested in whether fishing with such gear would make sense from a business standpoint.

The weather cooperated and the data gathering went smoothly, including a day on the water to collect video observations of the modified ground cable in action.

Although the data still were being analyzed in August, the fishermen already had a few impressions about how the gear performed.

"We definitely seemed to be getting fewer flounder with the ground cable with the disks," Goethel said. "I would not use the modified cables when fishing for flounders, but they could be used to catch cod, haddock, and pollock during hard-bottom fishing when bottom contact is not desired."

He added that the modified cables probably could be used anywhere the principal flounder catch is blackbacks such as areas of George's Bank where blackbacks are pursued with bottom gear.

The video supported Goethel's conclusion that the ground cable modification reduced impact on the bottom.

"The video was a bit grainy," said GMRI technician Croy Carlin. "But, you could definitely see that the cable was off the bottom."

A more rigorous analysis of the catch and fuel consumption results will be

available on the GEARNET website this fall. The results will be posted alongside a related GEARNET project that tested low-impact semi-pelagic or "LISP" trawl doors offshore aboard vessels operated by Jim Odlin's Atlantic Trawlers Fishing Inc. in July.

Those tests looked at the impact of a system that includes semi-pelagic doors and 8" diameter cluster disks, which also are hypothesized to reduce bottom-impact while maintaining a profitable catch.

LED pinger program

In an unprecedented wave of industry technology adoption, Northeast gillnet fishermen will be switching to a new type of pinger that promises to be more effective in helping fishermen avoid harbor porpoises.

Vito Giacalone of the Gloucester Fishing Community Preservation Fund is overseeing the technology transfer program that was funded through a partnership of the preservation fund, GEARNET, and two New Hampshire-based community funding programs – the New Hampshire Coastal Economic Development Corporation and the Regional Economic Development Fund Center of New Hampshire.

This summer, Giacalone has worked closely with Northeast groundfish sectors to exchange, for a small fee, existing pingers for new pingers with LED lighting.

The LED pingers have an advantage over other pingers because fishermen can tell visually whether their pingers are working and don't have to rely on difficult to detect acoustic signals that often are drowned out by background

noise and other distractions associated with typical fishing conditions.

"We distributed a few of the pingers in New Hampshire and Gloucester last fall for testing, and we found that some of the original O-rings in the pingers failed," Giacalone said. "But, the manufacturer made changes and new pingers now test out well and are ready to go this fall when they're needed."

Although pingers are required as part of the Harbor Porpoise Take Reduction Plan, LED pingers represent an extra step that is being taken by the fishing industry in an attempt to reduce the bycatch rate in the gillnet fishery. Groundfish sectors are in the process of ordering the new LED pingers and delivery and transfer of the new pingers is on pace for deployment by Sept. 15.

Improving selectivity

As the LED pingers are deployed this fall, New Hampshire gillnet fishermen also will be testing the effectiveness of gillnets raised 4' off the bottom to reduce the catch of cod while maintaining a profitable catch of other, more abundant species.

Two test nets have been constructed, each with five experimental 300' strings raised 4' off the seabed and five 300' standard strings not raised off the seabed.

The New Hampshire fishermen will share the experimental gear within Northeast Fishery Sectors XI and XII during the experiment. The fishermen are waiting for the fall, when greater numbers of fish should be around to test the relative selectivity of the standard and experimental nets.

This project is paired with a similar effort out of Port Clyde, ME that also will be testing the alternative gillnet design.

It's certainly been a busy and challenging fishing season, but the projects highlighted here offer a glimpse of the innovative and resilient spirit that is echoed throughout the Northeast. You can track the progress of these and other GEARNET projects online at <www.gearnnet.org>.

Erik Chapman

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For more information or to discuss how to organize a meeting to discuss project results with a group of fishermen, call Chapman at (603) 862-1935 or e-mail him at <erik.chapman@unh.edu>.