

Collaborations

A monthly report on collaborative research projects in the northwest Atlantic



NAMA's science director, Heather Deese, and commercial diver, George Freeman, strategize off the shore of Old Orchard Beach, Maine.

Saco Bay Scallop Enhancement Project

Level of cooperation breaks new ground in collaborative fisheries research.

Camp Ellis, a small collection of people and shingled homes and fish shanties that sits adjacent to a granite breakwater protecting the mouth of the Saco River from storm and wave, is one of Maine's forgotten ports. Too far off the beaten path to attract summer crowds from Kennebunkport and Ogunquit to the south, and not glamorous enough to draw spectators from Portland and Freeport to the north, folks from Camp Ellis content themselves to summer visits from stripped bass fishermen in the know, occasional stragglers from Old Orchard Beach, and of course to each other.

The land north of the marshes that surround the mouth of the river turns in a sandy half moon for 10 miles or so to the southwest face of a rocky peninsula called Prout's Neck, and the water inside is called Saco Bay. According to local fishermen, the bay used to support a small scallop fishery until a large scalloper nearly dredged it clean in the 1980's.

So you could also say that Saco Bay's scallops is one of the state's forgotten fisheries.

"If we could get those scallops to come back, us local guys could make a few bucks working scallops in the winter," said Robert Morowski Jr., a local inshore fisherman. "It sure would help."

That's the idea behind the Northwest Atlantic Marine Alliance's (NAMA) Saco Bay Wild Scallop Enhancement Project, a collaborative research effort designed to test the feasibility of returning wild scallops to these waters.

"We are running a series of experiments in Saco Bay to determine if seeding the area with juvenile scallops is practicable," said Heather Deese, NAMA's director of science.

The experimental design goes like this: (1) Wild scallop spat (baby scallops about the size of the nail on your pinky finger) were collected near Stonington, Maine. (2) Divers placed the small scallops inside of 45 wire cages lined with a fine mesh at three locations across the bay. (3) Some of the cages were closed and some were left open; others included starfish, one of scallops natural predators. Each scenario was staged to replicate conditions spat must contend with in the wild. (4) Underwater video equipment was used to record the scene for analysis.

"We created several scenarios to watch two key factors in the survival rate of scallops: migration and predation. With this, we can begin to determine what we could do to give them the best chance to make it in Saco Bay," said Steve Zeeman, an oceanographer from the University of New England and the primary investigator on this project.

Key to the success of the scallop project therefore would be the ability to observe these creatures some 40 feet beneath Saco Bay.

But the use of underwater video equipment requires special training and was too costly for the project's budget.

Zeeman and Deese overcame this obstacle by teaming with fishermen and videographer Bill Lee.

"I saw immediately that the quality of data gathered in the (scallop) project would be enhanced greatly by video. Most of the equipment I have—and my experience using it—has come out of other collaborative research projects so I was thrilled to be able to lend a hand," he said.



Commercial Scallop Diver Dennis McGrath suits up off the Old Orchard Beach shoreline.

“We began by asking a simple question: Can this be done? Obviously, we can’t answer that question yet, but what we do know is that we’re closer being able to answer that question,” said Deese.

Lee donated the use of cameras, monitors, and a buoy capable of recording time-lapse video overnight to the project and the (Saco Scallops Continued) Northeast Consortium covered additional costs for his time.

The result may mark a turning point in the collaborative research concept: There is now enough equipment and expertise in the field for some project’s to leverage each other’s experience to mutual benefit.

“In an era of limited budgets we need to find creative ways to cut costs without sacrificing the quality of data collected,” Lee said. “As you can see with this project, we dramatically improved the kind information gathered and just as dramatically saved money.”

What’s more, video monitors on board a skiff used in the project allowed Deese and Zeeman to watch the divers at work.

“Rather than describe the problem to Heather—and hope she understands what I mean—I was able to point the camera right at the gear so she could see for herself,” said George Freeman, a commercial scallop diver who worked on the project. “It sure saved a lot of time and aggravation.”

Preliminary analysis of video seemed to show the scallops acclimating well—swimming vigorously above the cages and evading predators.

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Yellowtail Flounder Tagging: Year Two

Fishermen and scientists work to document the movement, mortality and growth of one of New England's most valuable groundfish species.

For the second year fishermen from across New England are collaborating with scientists from the Northeast Fisheries Science Center (NEFSC), the Massachusetts Division of Marine Fisheries, SMAST, and Rhode Island Fish and Wildlife, tagging yellowtail flounder in an effort to better understand the groundfish's movements, rate of mortality, and growth.

This year's tagging season is supported by the Northeast Consortium and NOAA's Cooperative Research Partners Initiative (CRPI), with additional support from NOAA Fisheries Stock Assessment Improvement Program.

Scientists identify three separate stocks of yellowtails in the region for purposes of management: Gulf of Maine/Cape Cod, Georges Bank, and Southern New England/Mid-Atlantic.

The major fishing grounds are on Georges Bank, however yellowtails are known to travel throughout the region to migrate and spawn.

Such movements have made population assessment efforts difficult.

"Unknown rates of movement by yellowtail flounders through different fishing grounds have complicated stock assessments in the past. Our hope is that with this tagging effort we will gain independent estimates of mortality, mixing rates among areas, and growth rates to improve management of this important resource," said Steve Cadrin a biologist with NEFSC and a lead scientist on this project.

In recent years the Cape Cod/Gulf of Maine stock of yellowtails has been particularly hard to census. While stock assessment surveys have suggested startlingly low numbers, consistently robust landings by fishermen seem to challenge the survey's credibility.

"Clearly we don't know enough about (yellowtail) migration to manage the fishery the way it ought to be managed. The only way we're



2003 Tagging Season Participants

Area 513 - F/V Tenacious, Proctor Wells
Area 514 - F/V Ellen Diane, Dave Goethel and F/V Blue Skies, Luis Ribas
Area 521 - F/V Joanne-A III, William Amaru
Area's 522, 525, 562, 561 - F/V Trident, Rodney Avila
Area's 526, 537, 537/539, 613 - F/V Heather Lynn, Steve Follett
Area 521 - F/V Northern Crusader - Joao Camarao

2004 Tagging Season Participants

Area 526 - F/V Voyager I - Tony Fernandes
Area 526 - F/V T-Luis - Tony Santos
Area 537 - F/V Heritage - Tom Williams
Area 613 - F/V Vincenzo - Sandy Mason
Area 513 - F/V Ellen Diane - David Goethel
Area 514 - F/V Blue Skies - Luis Ribas
Area's 522, 525, 562, 561:
F/V Olympia - Maggie Raymond
F/V Elizabeth - Shawn Mclellan
F/V Trident - Rodney Avila jr.

Yellowtails continued

going to get these answers is to go out there and start looking,” said Proctor Wells, a groundfisherman from Phippsburg, who participated in the 2003 tagging season.

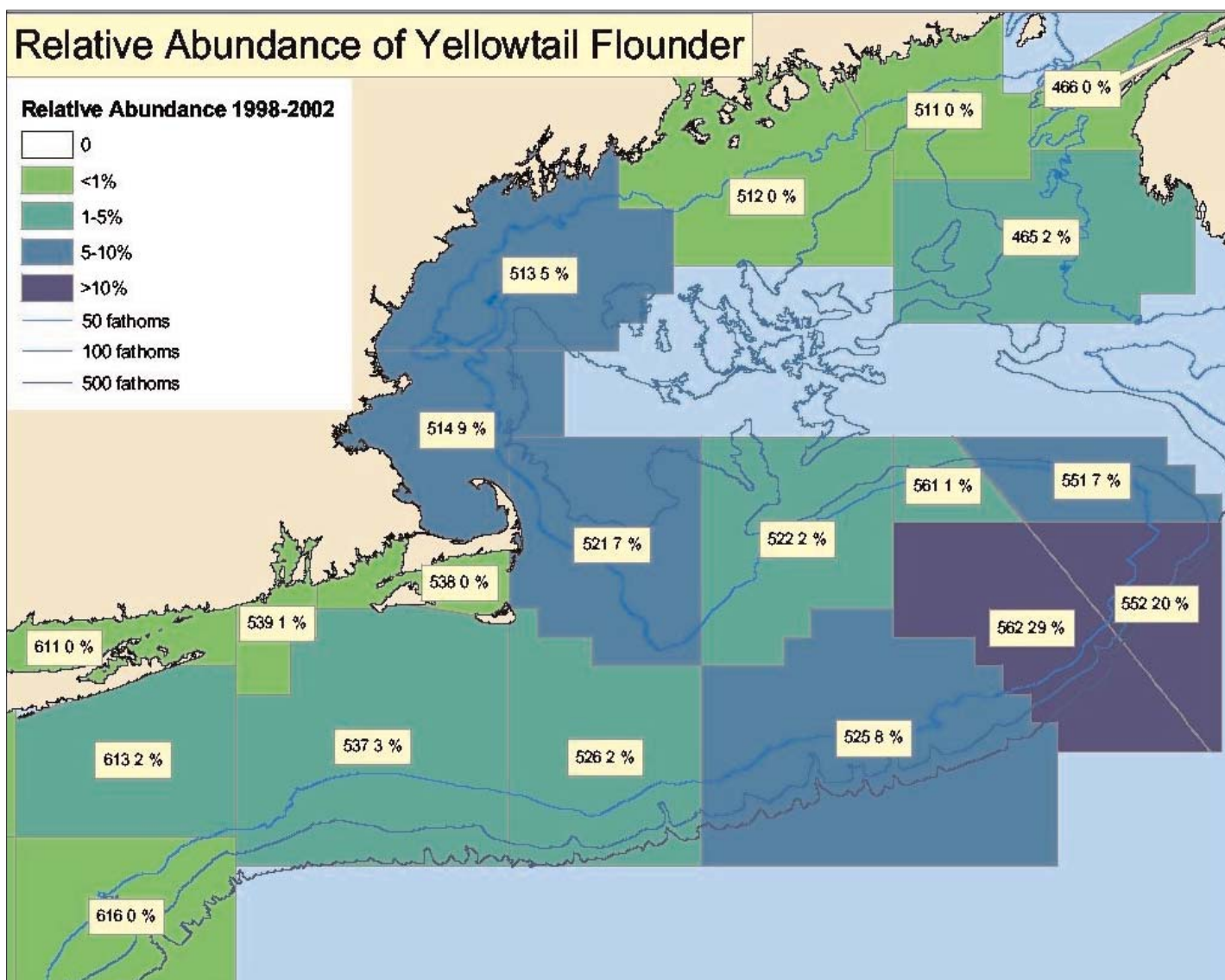
To date approximately 20,000 fish have been tagged with plastic discs and a smaller number with electronic devices (about the size of a paperclip) that record temperature and depth.

So far fishermen from across the region have returned almost 10 percent of these tags.

“It’s too early in the project to draw any significant conclusions, but preliminary data from the electronic tags have revealed that yellowtails periodically come off the bottom into shallower water, previously it was believed that they spent most of their lives on the bottom,” said Cadrin.

Representatives with the NEFSC hold monthly workshops with industry members to discuss the findings of the research. Preliminary data and more information about the project is available on the web at www.cooperative-tagging.org.

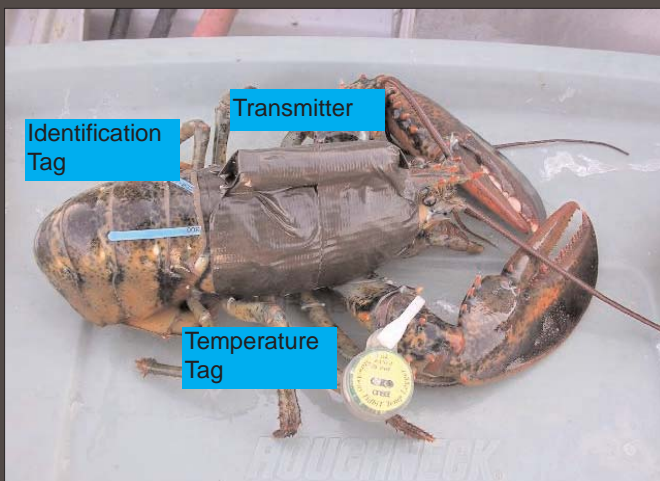
In 2002, yellowtail flounder landed the New England fishing industry about \$13 million making it one of the region’s most valuable marine resources.



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Sonar Lobster Tagging AUGUST 2004 UPDATE Rewards for tag returns!!!

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- Sex of lobster
- Number of claws
- Depth and bottom type
- Your name and phone number

For ALL lobsters and ALL tags:

- Remove Transmitter
- Remove Temperature Tag
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- Return apparatus and information to The Lobster Conservancy

Return temperature tags
and transmitters to

The Lobster Conservancy

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Project Sponsored by the Northeast Consortium