



# Collaborations

**A monthly update of cooperative research news**

**October 2001**

This month's issue highlights the eMOLT project, in an article written by **Rebecca Clauss** and originally published in September's *Commercial Fisheries News*. We also look "Across the Pond" to see what cooperative research projects are underway on the other side of our ocean. You may recognize some common themes with what we're doing here in the Northwest Atlantic!

## **Fishermen, Scientists Question Bottom Water Properties in Relation to Lobster Migration**

Several years ago, **Marc Palombo**, a fisherman based out of Sandwich, MA and a member of the **Atlantic Offshore Lobstermen's Association**, picked up the phone to resolve a question that had been puzzling him for quite a while: "Why are my lobster catches in this region so low?" Eventually, he was directed to **Jim Manning**, a scientist from the **Northeast Fisheries Science Center**. As it turns out, Manning and Palombo had similar interests for different reasons. Manning has a particular interest in the physical oceanography of the Gulf of Maine and Georges Bank, while Palombo is curious how the physical environment affects lobsters in his region. After talking with Jim Manning, Marc Palombo was sent a temperature probe, which could be put on his lobster trap and left for months to record data. This is how the collaborative project *Environmental Monitors on Lobster Traps* (EMOLT) was born.

The EMOLT project began in November 2000 with funding from the **Northeast Consortium**. It involves partners from the Atlantic Offshore, Massachusetts, Maine, and Downeast Lobstermen Associations. **David McCarron**, director of the **Gulf of Maine Lobster Foundation**, is responsible for coordinating much of the effort by training participants and assisting in data collection.

The underlying goal of the first phase of the project is to better understand the incidence and extent of temperature shift in the Gulf of Maine and Georges Bank region and to observe what type of effect these shifts may have on migratory lobster populations in the area. Approximately 50 temperature probes are now operational on lobster traps set out along the New England coast.

Results from Phase I show that bottom water temperature was especially cold off Georges Bank for this past season. **Arthur Sawyer**, Vice President of **Massachusetts Lobster Association**, has been equipped with one temperature probe during the first phase of the project and has recorded some interesting temperature data from his lobster trap. While located approximately 60 fathoms below the surface, Sawyer's probe detected a 3-4 °F drop during a storm, which occurred in early March. According to many lobstermen, this year's lobster hauls have been notably low, although, actual catches are not publicized. "Right now, some friends of mine are crying the blues," said Sawyer. Sawyer, like many lobstermen, feels that low lobster catches are linked to cold bottom water temperatures.

EMOLT supporter **Bill Adler** and participant Marc Palombo have found that results from the first phase raised even more questions about the significance of salinity in lobster abundance and migration. In phase two of the project, salinity probes will be added to some of the lobster traps located along the coast. Salinity, although slightly more difficult and expensive to measure, is a much more effective tracer of freshwater intrusions, such as runoff due to melting snow and ice, heavy spring rains as well as input from remote source waters. Findings from earlier studies have shown that lobsters become stressed under low-salinity conditions and will migrate to deeper, saltier water in response to stormy weather (Jury et al., 1995; Jury et al., 1994). Whether or not these conclusions apply to the saltier environment outside the estuaries is still uncertain.

Initially, the primary focus of the project was on episodic or sporadic events (such as Gulf Stream rings, periods of upwelling or downwelling, storm events) and how they might impact lobster migration. But the project participants may be changing their tune. According to Manning, "Episodic events may be less important in controlling the lobster population in the long run." During a particularly cold season, such as this year's, "lobsters are more sluggish and likely to burrow, which may impact seasonal migration," said Manning. The project participants are now moving toward an inter-annual way of thinking. By concentrating more on year-to-year changes, the participants observe larger signals and can in turn make better conclusions concerning lobster movement and bottom water variability.

By measuring bottom water temperature and salinity in the coastal region of New England at fixed locations over multiple years, EMOLT participants may be able to determine whether longer-term processes such as climate change have more of an impact on lobster movement than smaller-scale events. In addition to studying the impacts of environmental factors on lobster populations, another major objective is to determine whether changes in temperature and salinity are related to local processes (such as river input and heating at the surface) or more remote inputs (such as ice melt from the north). In the future, this knowledge could be used to predict water mass movement and thus lobster migration.

The major sentiment shared by most of the participants is that EMOLT is a positive experience for building trust among scientists and fishermen. **Bill Adler** made an excellent point: "you have to produce science that everyone can agree on... Unlike groundfish, which everyone agreed the numbers were declining, scientists said that lobsters would collapse... which wasn't true," said Adler. Later on, states Adler, "the scientists told us 'maybe we were wrong.'"

David McCarron expects to receive 8 salinity probes in the near future and will conduct a training session after the initial testing of these probes. The salinity monitors will be deployed along coast to examine the nearshore environment.

#### CONTACTS

For more information on the EMOLT project, contact:

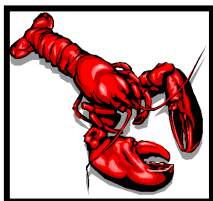
**Jim Manning** at 508-495-2211 or by email: [jmanning@whsun1.wh.who.edu](mailto:jmanning@whsun1.wh.who.edu) or

**David McCarron** at 207-363-8008 or by email: [gomlf@gwi.net](mailto:gomlf@gwi.net)

**Rebecca Clauss** is the project coordinator for the Northeast Consortium. She may be contacted at [rclauss@cisunix.unh.edu](mailto:rclauss@cisunix.unh.edu) or 603-862-4034

FOR MORE INFORMATION ON THE E-MOLT PROJECT Visit:

(<http://www.wh.who.edu/~jmanning/lob/whatsnew.html>)



#### Additional Reading:

Jury, S. H., M. T. Kinnison, W. H. Howell, W. H. Watson III, 1994. The

behavior of lobsters in response to reduced salinity. *Journal of Experimental Marine Biology and Ecology*. 180: 23-37.

Jury, S. H., W. H. Howell, W. H. Watson III, 1995. Lobster movements in response to a hurricane. *Marine Ecology Progress Series*. 119: 305-310.

### "ACROSS THE POND"

According to World News of **Fish Information Services** ([www.fis.com](http://www.fis.com)), the Scottish Executive has targeted 1 million pounds of a 27 million pound aid package to a collaborative research program involving fishing vessels. The Scottish Fisheries Minister Rhona Branklin announced that a partnership board of scientists and fishermen had agreed on suitable projects for the research funds. Here is a sampling:

The **Fisheries Research Services** ([www.marlab.ac.uk](http://www.marlab.ac.uk)) is conducting both selective gear trials and stock research, including:

- \* Assessing the selectivity of 110 and 120 mm codends on a smaller trawler
- \* Studying the effect of square mesh panel color on fish behavior and its effect on selectivity
- \* Measuring the effect of extension length on trawl selectivity
- \* Assessing the effect of grids and square mesh panels on cod, haddock and saithe
- \* Investigating the abundance and distribution of monkfish
- \* Estimating bycatch in the Norway pout fishery

The **North Atlantic Fisheries College** ([www.nafc.ac.uk](http://www.nafc.ac.uk)) is conducting several catch comparison trials using 100, 110 and 120 mm codends on trawlers and seiners. NAFC also plans to do an exploratory survey for deepwater shrimp.

The **Sea Fish Industry Authority** ([www.seafish.co.uk](http://www.seafish.co.uk)) is involved in several projects:

- \* Testing modified prawn trawls to reduce whitefish bycatch
- \* Comparing the catch of single and double length square mesh panels in pair trawls
- \* Assessing the effect of a low headline trawl in reducing whitefish bycatch
- \* Testing the selectivity of knotted and knotless square mesh panels

For more details on these and other projects 'across the pond', visit:

[www.scottish.parliament.uk/official\\_report/wa-01/wa0918.htm#7](http://www.scottish.parliament.uk/official_report/wa-01/wa0918.htm#7)

### RESEARCH SAFETY

Additional people on board. Additional equipment on board. Non-routine activities. Unfamiliarity with the vessel. Emergency procedures unknown. Whereabouts of emergency equipment unknown. We all know that fishing is a hazardous activity. Conducting cooperative research complicates that hazard.

For fishermen, having additional people and equipment onboard while conducting non-routine activities presents a safety challenge AND an opportunity. Scientists, as well, are confronted with the need to learn the safety aspects of each fishing vessel they board.

## The Challenge

**FISHERMEN:** Do you orient the scientific party to the emergency procedures of your particular vessel? Since your boat is the best piece of safety equipment you have, have you made an appointment for a Voluntary Docksides Exam? Call the USCG Marine Safety Office today!  
Portland - 800-410-9549 ext 3079  
Boston - 617-223-3045  
Providence - 508-991-6812

**SCIENTISTS:** Since your ultimate successful rescue may depend on your ability to quickly carry out emergency procedures to save yourself, can you answer these questions? Do you know where the survival suits are? Are the zippers open and waxed? Do you know where you **SHOULDN'T** be when you put it on? Do you know where the EPIRB is? Do you know how to activate it? Do you know how to operate the radio to make a distress call? Do you know how to deploy the life raft? Do you know where the fire extinguishers are? Do you know how you'll get back in the boat if you're thrown overboard?

## NEWS YOU CAN USE:



### ~REQUEST FOR PROPOSALS~

**November 1, 2001, 5:00 pm EST** - Proposals for sea scallop research funded through the fishing year 2002 TAC set-aside will be accepted for consideration by NMFS and the Council. Visit [www.nefmc.org](http://www.nefmc.org), "Plans and Reports," "Sea Scallop Fishery Management Plan," "Notice and Request for Sea Scallop Research Proposals." Or contact Pat Fiorelli at the New England Fisheries Management Council, 978-465-0492 or Peter Christopher, NMFS, 978-281-9288.

**ATTENTION GILLNETTERS AND LONGLINERS!** Join the six inshore and offshore trawlers who are participating in the following project:

---

MIT Sea Grant is seeking vessels to participate in a pilot groundfish study fleet. The boats will be fitted with electronic logbooks to collect detailed data on catch and bycatch. The project seeks to determine how the systems will be used and how to provide useful information to managers while protecting the proprietary interests of fishermen. Contact Cliff Goudey for more information (617-253-7079 or [cgoudey@mit.edu](mailto:cgoudey@mit.edu)).

---

NAMA is located at 200 Main Street, Suite A, Saco, Maine 04072  
888-320-4530 or 207-284-1355  
[nama@namanet.org](mailto:nama@namanet.org)

We welcome your tax-deductible contributions.

Announcements and news releases for future issues of Collaborations may be sent to [collaborations@namanet.org](mailto:collaborations@namanet.org).