

# Tidings

Gulf of Maine Research Institute Newsletter

SUMMER  
2009

## Engaging Teachers to Develop Effective Science Curricula

With funding from the NOAA Bay Watershed Education and Training Program, GMRI and Maine Sea Grant are working with 43 Maine middle school teachers to develop inquiry-based science curriculum units for 5th through 8th grade students.

*VitalVenture* will link GMRI's *LabVenture!* for 5th and 6th graders and *Vital Signs* for 7th and 8th graders. Students will explore their watersheds from the perspective of a specific environmental issue (e.g., climate change, natural resource harvesting, biodiversity). This will connect scientific discovery to Maine's natural resources and students' own communities.

“It's a wonderful, totally relevant experience that will motivate and educate not only students across Maine, but teachers and community members,” notes one teacher.

The group began developing this watershed curriculum last spring, and the teachers have already begun testing the program with their students. GMRI will introduce the program into Maine's 5th through 8th grade classrooms over the next two years.



**Modified Scallop Fishing Gear Can Reduce Bycatch** - Bycatch has been a major issue in the scallop fishery, with large unwanted catches of groundfish such as yellowtail flounder. This has forced regulators to prematurely close productive scallop fishing grounds. In March, GMRI's Fish Behavior and Gear Technology Scientist, Steve Eayrs, began testing changes to fishing gear that might eliminate this problem.

The first stage of the project was completed in collaboration with fishermen from Cape May, New Jersey. GMRI scientists altered the fishermen's traditional scallop gear, replacing the steel rings on the dredge top with nylon twine. Initial test results revealed that the altered dredge was effective at retaining scallops, and the addition of a twine top with wider mesh openings allowed for fish like flounder to escape. The result was lower bycatch.

The second stage of the project will move up to the Great South Channel (off Cape Cod) where bycatch has been high historically. GMRI scientists will deploy cameras on the dredge to get a closer view of how the gear is performing and how fish are reacting to it as it moves along the seafloor. To learn more about GMRI research initiatives, check out [www.gmri.org/science/initiatives.asp](http://www.gmri.org/science/initiatives.asp).

## GMRI Launches Sustainable Seafood Initiative



As consumer demand for locally and sustainably harvested seafood grows, GMRI is keeping pace with the launch of a new Sustainable Seafood Initiative. The program will enable seafood consumers to support the economic and ecologic sustainability

of the region's seafood industry.

GMRI developed a survey to gauge the attitudes of local consumers. The survey was conducted in May by agents from Keller Williams Realty during their annual day of community service.

Responses revealed great affinity for local and sustainable seafood. The vast majority of respondents indicated they would increase their seafood consumption if they knew it was locally and sustainably harvested. Most said they would pay slightly more for these products, particularly if they knew that the premium supported fishermen, coastal communities, or the ocean environment. Respondents cited supporting the local economy as the biggest motivator for buying local.

GMRI will harness this consumer affinity to build a stronger market for locally and sustainably harvested seafood.



# Community and Research

## Exploring Fine-scale Ecology for Groundfish Management

The groundfish fishery has been slow to recover despite 20 years of catch reductions, and a call has been made for a reevaluation of the scale at which fisheries are managed. For example, should commercial groundfish species like cod be managed as only two stocks in New England (Gulf of Maine and Georges Bank) or should we be considering alternatives, including finer-scale management for multiple sub-stocks within each region?

Scientists convened in April for a workshop to share existing knowledge and identify new research priorities to define ecologically appropriate scales for groundfish management. Co-hosted by GMRI, Penobscot East Resource Center, the Maine Department of Marine Resources, Maine Sea Grant, and the University of Maine, the workshop brought together fishermen, oceanographers, biologists, social scientists, and fishery managers.

“The diversity of perspective spurred rich discussion on what is known and what questions remain to be addressed to manage groundfish within the Gulf of Maine at multiple scales,” says John Annala, GMRI’s Chief Scientific Officer.

Critical outcomes included the recognition that finer-scale management, if pursued, must keep an eye toward the larger ecosystem as a driver of stock structure, and that the current scale of management may not be making adequate use of new research being done on the movement patterns and stock structure of a number of important groundfish species.

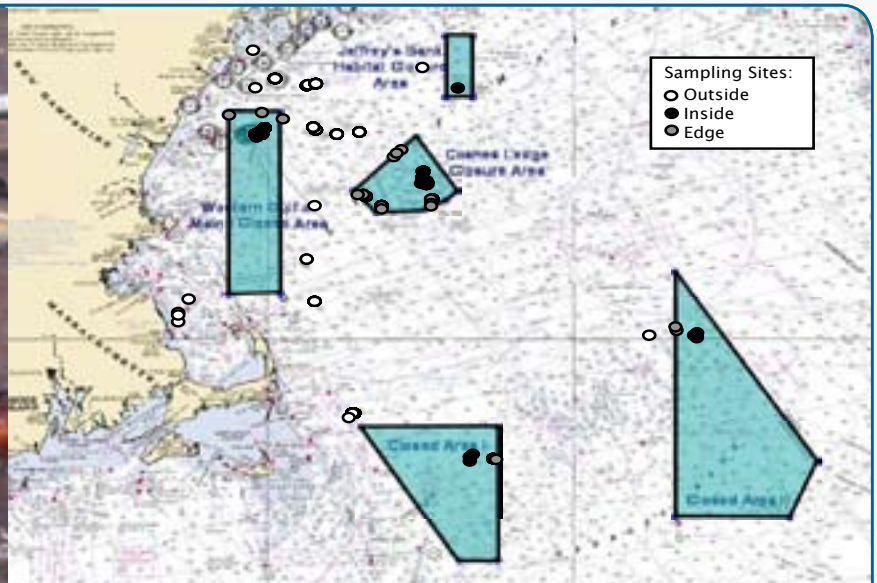
## GMRI Convenes Scientists and Managers to Discuss Importance of Habitat Mapping for Fishery Management

Due to a historic focus on single-species assessments and lack of funding for ecosystem-based research, fisheries managers have been forced to make decisions with limited information. Without critical habitat data, fishing may cause lasting damage to areas that fish use during important life stages.

Acoustic seafloor mapping offers a promising solution. Using sonar, the technology creates high-resolution imagery of the seafloor that provides a better understanding of marine habitats. Seafloor mapping is being used far less in the Gulf of Maine than in other regions of the world, where federal and industry funds support mapping efforts.

To address this need, Dr. Jonathan Grabowski, GMRI’s Benthic Ecologist, led a two-day workshop focused on strategies to integrate seafloor mapping and benthic ecology into Gulf of Maine fisheries management. Fisheries scientists, managers, and marine habitat mapping professionals from New England, the mid-Atlantic U.S., eastern Canada, and the U.K. explored how to integrate ongoing and future mapping efforts into fisheries management more effectively, and identified priority seafloor areas that could be helpful for management decisions.

By bringing together the fisheries and acoustic mapping communities, this workshop will enhance future efforts to manage essential fish habitat and the fish populations that depend upon its health.



Combining new knowledge on fine-scale stock structure and habitat preferences for better management of cod: Cod life-history varies substantially among individuals. For instance, red cod are thought to be more sedentary and bottom oriented than the average cod which may range over hundreds of kilometers and feed both in the water column and on the bottom. GMRI is currently sampling cod from within and outside of closed areas (see chart) to test the hypothesis that these areas may be favoring a more sedentary type of cod for which red cod are likely just one extreme example.

## Still Looking for a Summer Camp?

If you know of a child age 7 -12 who might enjoy a fantastic 1-week or 2-week ocean day camp experience, please consider “Fish Camp.” Information, pictures, and registration forms can be found at [www.mrandmrsfish.com](http://www.mrandmrsfish.com).