

NEWSLETTER
Summer 2007

Dear Friends and Colleagues,

This electronic newsletter is being sent by the Gulf of Maine Mapping Initiative (GOMMI) to keep you up to date on our activities over the past 12 months, and to provide news on seafloor mapping in the Gulf of Maine region.

GOMMI NEWS

In December 2006, Susan Snow-Cotter, a founding member of GOMMI and Director of the Massachusetts Office of Coastal Zone Management (CZM), passed away after a brief but courageous battle with cancer. Many articles have been written in tribute to her life and work and can be read online (e.g., [GOMMI website](#), [Gulf of Maine Times](#), [CZM newsletter](#), [inflammatory breast cancer memorial web site](#)). Because of her tireless efforts to protect the Gulf of Maine for the past 12 years, the Gulf of Maine Council on the Marine Environment dedicated its [Action Plan 2007-2012](#) to Susan. In April, Susan was posthumously awarded the U.S. EPA's [Lifetime Achievement Environmental Merit Award](#) which is awarded in recognition of significant contributions to environmental awareness and problem solving. Specifically, Susan was honored as a born leader whose life's work will continue to be felt for future generations.

Progress on Two-Year Work Plan

Since holding a [Planning Workshop 2006](#), GOMMI has been working toward meeting the objectives laid out in its 2006-2008 Work Plan.

- 1) Coordinate mapping efforts in GoM
- 2) Broaden base of support for GOMMI
- 3) Complete pilot mapping projects on Cashes Ledge
- 4) Map priority areas and
- 5) Encourage use of metadata and mapping standards

We've been making good progress towards these objectives, as summarized briefly below.

Mapping coordination

This spring, GOMMI helped coordinate mapping efforts that will be taking place this summer in Cape Cod Bay by bringing multiple groups together on conference calls, and providing additional contact information. Opening up the lines of communication in advance of field work helped avoid duplication of effort, and will ultimately benefit all the groups through sharing and comparison of mapping data and techniques. GOMMI also submitted a joint grant proposal to NOAA with support from MA Department of Marine Fisheries, MA CZM, US Geological Survey, and Northeast Fisheries Science Center for groundtruthing work in Cape Cod Bay that would add value to ongoing mapping efforts.

GOMMI has been tracking the progress of seafloor mapping in the Gulf of Maine with an interactive map showing known [multibeam coverage in the Gulf of Maine](#). A newly updated version was posted in June, thanks to Seth Ackerman (Mass CZM and USGS) and Peter Taylor (GOMC's web designer). This coverage map is linked to websites of the survey groups, and indicates where more details on most of the surveys can be found. GOMMI will be updating the map periodically, so please contact GOMMI Coordinator [Sara Ellis](#) as new data become available, or if we have overlooked any projects.

Broadening our base of support

This year we continued broadening GOMMI's base of support by expanding the Steering Committee to include representation from Maine and New Hampshire. Linda Mercer, Director of [Maine Department of Marine Resources](#), and Chris Williams, Consistency Coordinator for [NH Coastal Program](#), joined the Steering Committee in January. Bruce Carlisle, Acting Director of [MA CZM](#) also joined the committee to continue the support that GOMMI was receiving from Massachusetts via Susan Snow-Cotter. Thus GOMMI now has representation from all three states that border the Gulf of Maine. Other plans to broaden our support involve public and legislative outreach.

The [GOMMI website](#) continues to be a useful tool for outreach and education; it's being updated periodically, so be sure to "visit" us once in a while. GOMMI gave presentations on seafloor mapping at several meetings in Fall '06 and Spring '07, including the [Bay of Fundy Ecosystem Partnership's 7th Bay of Fundy Science Workshop](#) (St Andrews, NB, Oct 2006), NE Charterboat Captains' Association (Newburyport, MA, Nov 2006) and [ICES Working Group on Marine Habitat Mapping](#) (Woods Hole, MA, Mar 2007). A general presentation on seafloor mapping and GOMMI is now available on our website.

Cashes Ledge

GOMMI's top mapping priority is to complete the pilot mapping project that began in 2005 when CCOM-JHC and SAIC collected acoustic imagery in portions of western Gulf of Maine, including Cashes Ledge. CCOM-JHC has produced maps of contoured topography and backscatter, with approximately 5-m accuracy. GOMMI aims to facilitate collection the geological and biological data required for groundtruthing and the production of benthic habitat maps.

On Cashes Ledge, Jonathan Grabowski, Ph.D. a benthic ecologist at [Gulf of Maine Research Institute](#), started gathering biological data from Cashes Ledge in summer 2006, and will continue to do so in 2007. Jonathan is studying cod habitat on Cashes Ledge via video and fish trapping. Thanks to a grant from the [Davis Conservation Foundation](#), GOMMI has arranged for Chris McGonigle, a Ph.D. student at the University of Ulster, Northern Ireland to come to Portland this summer join this collaborative project. Other scientists involved with this project are Lew Incze from the University of Southern Maine's Aquatic Systems Group and Tom Weber from University of New Hampshire's [Center for Coastal and Ocean Mapping](#). The focus of Chris's dissertation is to develop new methods for mapping seabed habitats, using acoustic and groundtruth data sets from the United Kingdom and the Gulf of Maine. Chris will be using multibeam backscatter data to create predictive habitat maps of Cashes Ledge using Qeuster Tangent software, then groundtruthing the maps with video. This is an exciting project, with applications to the Gulf of Maine and beyond. It will result in the first benthic habitat maps produced through collaborative efforts guided from beginning to end by GOMMI.

Metadata

GOMMI advocates the use of metadata for all Gulf of Maine mapping. We plan to share information on metadata standards, metadata creation techniques and tools, data sharing tools, and mapping standards through the GOMMI web site, e-newsletters, and workshops. Here we'd like to bring attention to the excellent work being done by our European colleagues. [Mapping European Seabed Habitats](#) (MESH) is a 3-year international marine habitat mapping program that started in spring 2004. The MESH partnership, which includes five countries, aims to produce seabed habitat maps for [north-west Europe](#) and develop international standards and protocols for seabed mapping studies. The end products will be a [meta database of mapping studies](#), a web-delivered geographic information system (GIS) showing the habitat maps, guidance for marine habitat mapping, a report describing case histories of habitat mapping, a stakeholder database and an international conference with published proceedings.

A key product will be an interactive [Guide To Marine Habitat Mapping](#). It will provide information at three levels to be used by everyone from the interested lay person through to the specialist mapping scientist. Each section will start with an overview and introduction to set out the important 'need to know' principles, and then progress through further sections offering more technical details, culminating in Recommended Operating Guidelines (ROGs) to help the field surveyor or data analyst standardize their work. One chapter will focus specifically on survey metadata. The Guide will be extensively illustrated with actual case studies and worked examples from the MESH Project surveys, and it will also provide a series of interactive tools for the user to download. The Guide is expected to be available online in summer 2007.

REGIONAL MAPPING NEWS

Mapping in Massachusetts' coastal waters

Since 2003, the [U.S. Geological Survey](#) and [Massachusetts CZM](#) have been working cooperatively to map the seafloor in Massachusetts. In Fall 2006 they published the second in a series of seafloor mapping reports, [High-Resolution Geologic Mapping of the Inner Continental Shelf: Boston Harbor and Approaches, Massachusetts](#). The report contains geographic information system (GIS) data, maps, and technical explanations of data collection, processing, and a discussion of the seafloor geology and topography of the study area. The first report, [Nahant to Gloucester](#), was released in February 2006. Data from three additional areas—Cape Ann to Salisbury Beach, Hull to Duxbury, and Duxbury to Plymouth—are currently being processed. New mapping is taking place in Cape Cod Bay this summer, extending from Plymouth eastward toward Provincetown. A multibeam survey cruise is scheduled for late August, followed by a second cruise for sampling and bottom photography in September. For additional information on the overall project, see the project website or contact [Seth Ackerman](#). Detailed information can be found in the recently published [GIS Library of Multibeam Data for Massachusetts Bay and the Stellwagen Bank National Marine Sanctuary, Offshore of Boston, Massachusetts](#).

A second project focused on Cape Cod Bay this summer is a partnership between NOAA's Office of Coast Survey, Northeast Fisheries Science Center, and Office of Protected Resources as well as the Center for Coastal and Ocean Mapping/Joint Hydrographic Center and USGS. These agencies are collaborating to use acoustic technologies to map new recommended shipping routes that were put in place in Fall 2006 by NOAA to [minimize the likelihood of ship strikes on endangered northern right whales](#). GOMMI is working to bring together partners and support to conduct groundtruthing in

areas that are being surveyed acoustically, with the ultimate goal of producing benthic habitat maps. For more information on the status and partners in this project contact [Sara Ellis](#).

Mapping in the Bay of Fundy

In April 2007, the Geological Survey of Canada, [Natural Resources Canada](#) (NRCan) launched its second field season in a three-year survey to map the Bay of Fundy seafloor, in partnership with the [Canadian Hydrographic Service](#) and the University of New Brunswick's [Ocean Mapping Group](#). Their goal is to survey from the bay's approaches in the southwest to the inner bay in the northeast. By the end of 2006 they had mapped 3,200 km² in the outer part of the bay. This year, 100 days of shiptime has been allocated for multibeam bathymetry surveys throughout the bay, and another 100 days of nearshore surveys will be performed using multibeam bathymetry survey launches. About 65 percent of the bay should be surveyed by September 2007. Ground-truthing surveys are planned for 2008 to collect photographs, bottom grabs, and observations from remotely operated vehicles. NRCan will release 1:50,000 scale maps as part of their national marine map series, which will include sheets of seafloor topography, backscatter strength, and surficial geology. In selected coastal regions around the bay, airborne topographic [LIDAR](#) data and bathymetric survey data will be combined to provide a seamless digital elevation model across the intertidal zone.

INFORMATION RESOURCES

Canadian Marine Multibeam Bathymetric Data

The Geological Survey of Canada has compiled various datasets of high resolution marine multibeam bathymetric data, comprising survey data collected by Natural Resources Canada and other partners over the past ten years. Multibeam maps can be seen through an interactive map viewer accessible to the public via their [website](#).

Digital Coast: Legislative Atlas Web Site

The NOAA Coastal Services Center has developed a new tool for coastal resource managers to help them better understand the complex aspects of legislation and policy that govern coastal and marine resources. The [Digital Coast: Legislative Atlas](#) is an information portal that contains a searchable database of coastal and ocean legislation at the federal and state levels. In addition, online mapping capability allows for visualization and simple analysis of georegulations, spatial representations of federal and state legislation and jurisdictional boundaries. The project currently covers key federal georegulations and agency jurisdictions for the ocean coasts of the continental U.S. and state georegulations for the Gulf of Mexico. Soon the atlas will cover federal laws for the entire U.S. and state laws in the Northeast, California, and Hawaii.

That's it for now!

Please [send us](#) feedback on this newsletter, or tell us about projects we could highlight next time. Keep those maps and letters coming!

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