

# Saltwater News

A Monthly Newsletter for UNH Marine Program Faculty, Staff and Students  
April 2008, Volume 7, Number 3

## From the Director

### **Paul Pelletier Retirement**

As most of you know, **Paul Pelletier** retired as Captain of the R/V Gulf Challenger and Supervisor of Marine Operations earlier this month. Transitions of valued colleagues are always difficult, and in Paul's case even more so because he touched so many of us over his thirty years of service to the Marine Program and the University. Whether you sailed on the *Jere Chase* or the *Gulf Challenger*, you could count on Paul for his steady hand at the wheel, and his experienced and measured response to emergencies. Equally as important, Paul always made sure that the vessels were well maintained and ready, insuring passenger safety and minimizing lost time for us as users. Paul has always been an enthusiastic and eloquent spokesperson for the University and interacted with an incredibly diverse user pool, from students and faculty, to University Presidents, Governors and U.S. Congressional Representatives. We look forward to celebrating Paul's career at UNH with him at the end of the month and are pleased to hear that he has expressed interest in serving as a stand-in crew member on the *Gulf Challenger* when he is needed.

**Paul, thanks from all of us for your service and friendship over the years!**

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### **New Hands At the Wheel of the R/V Gulf Challenger**

I'm pleased to announce that **Bryan Soares** has accepted our offer to become the Captain of the R/V Gulf Challenger and that **Debbie Brewitt** has accepted the position of Mate/Relief Captain of the R/V Gulf Challenger! Most of you know Bryan and Debbie well from their work on the *Gulf Challenger* for the last 6 plus years. Those efforts and the unanimous recommendation from all of the vessel users that were contacted by the search committee confirm that Bryan and Debbie bring a wealth of talent and experience to these positions.

**Please help me congratulate Bryan and Debbie for these promotions!**

## Faculty in the News

**Co-Director Dr. Nancy E. Kinner is the recipient of the UNH Excellence in Public Service Award!**

This award honors **Dr. Nancy Kinner's** exceptional achievements in the area of public service and recognizes that she has engaged in outstanding service activities that involve her academic expertise and support the mission of the university. Congratulations Nancy!

## CICEET News

### **New Publication on Gulf of Maine Salt Marshes**

With support from the Cooperative Institute for Coastal and Estuarine Environmental Technology (CICEET), the [Gulf of Maine Council on the Marine Environment](#) has published a new booklet on salt marshes in the Gulf. The booklet – *Salt Marshes in the Gulf of Maine: Human Impacts, Habitat Restoration, and Long-term Change Analysis*—offers a reader-friendly look at marsh ecology and ways to bring these ecosystems back to health.

According to the publication, 75 percent of New Brunswick and Nova Scotia salt marshes, and 37 percent of those in New England, have been destroyed. Many remaining marshes are impaired due to roads, development, and other human impacts. Rising sea levels in a time of climate change also pose significant risks to the sustainability of these essential ecosystems.

This publication explores the science behind salt marsh function; the connections between marshes, fisheries, and the Gulf of Maine ecosystem; innovative approaches to restoration; and the need for regional monitoring. The booklet is a product of the Council's Science Translation Project, and an element of the Council's five-year Action Plan to enhance the health of the Gulf of Maine ecosystem.

Download a copy or order a printed booklet at <http://www.gulfofmaine.org/saltmarsh/>

CICEET is a partnership of the National Oceanic and Atmospheric Administration and the University of New Hampshire. CICEET is dedicated to fostering the development of tools for clean water and healthy coastal environments nationwide. <http://ciceet.unh.edu>

## Coastal Response Research Center

### **2007 Coastal Response Research Center Annual Report**

The Coastal Response Research Center's 2007 Annual Report is now available online at:

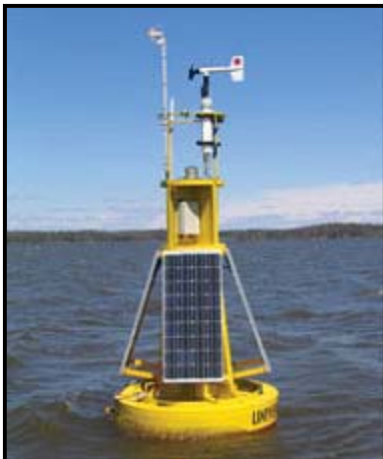
[http://www.crrc.unh.edu/annual\\_report\\_07.pdf](http://www.crrc.unh.edu/annual_report_07.pdf)

The Coastal Response Research Center is a partnership between University of New Hampshire and NOAA's Office of Response and Restoration. The goal of the Center is to reduce the consequences of spills and other hazards that threaten coastal environments and communities by conducting research, developing new response and restoration methods, and transferring technology to practitioners. It is a resource for NOAA and serves as a hub for the oil spill community.

The 2007 Annual Report highlights the Center's:

- Oil in Ice research collaboration – a joint project with U.S. and Norwegian scientists to better understand the complexities of oil in ice-infested environments;
- ERMA™ - a web-based environmental response management tool for improved communication and decision making during spill response and emergency planning;
- Innovative undergraduate and graduate student internships and educational opportunities; and
- Numerous workshops to benefit the spill response community.

Through these and other endeavors, the Center serves NOAA and the spill response and restoration community by supporting high quality research, initiatives to educate the next generation of scientists and engineers, and outreach. For more information on these and other Center initiatives, visit the Center's website at [www.crrc.unh.edu](http://www.crrc.unh.edu).



The Great Bay Coastal Buoy, located near Portsmouth, NH, records air & water temperatures, wind speed and direction, salinity, dissolved oxygen chlorophyll, & turbidity. This real-time data set is integrated into the ERMA™ prototype.

## NHEP News

By **Dave Kellam**

### **Portsmouth Seeks Out Vernal Pools with the Goal of Protecting These Unique Habitats**



The City of Portsmouth has embarked on a project to inventory and map vernal pools with the hopes of providing regulatory protection to these outstanding biologically diverse habitats. Once potential locations of the ephemeral pools have been determined, the Conservation Commission, in close coordination with the Planning Board and Planning Office, will propose specific vernal pool protection language for the City zoning ordinance that is currently being revised.

Vernal pools are seasonally flooded areas that are critical breeding grounds for a host of distinctive animal species, such as wood frogs, spotted salamanders, and fairy shrimp.



Currently, there is no regulatory protection afforded to these areas in Portsmouth that would prevent damage from encroaching development. The City believes that vernal pools are too valuable of a community resource to leave unprotected.

Steve Miller, Portsmouth's Conservation Commission Chair, reports that many people in the City are very supportive of vernal pool protection, but what the Commission needs is a good idea where the pools are located to protect them. "The inventory and associated mapping project will be very helpful to the Commission as we are asked to review development proposals," says Miller. "We need to know where the vernal pools are that need protecting."

Portsmouth's Environmental Planner, Peter Britz, describes the importance of the project, "While wetlands are specifically addressed in current zoning, vernal pools are not. Most of us recognize the ecological value of these areas and want to afford them at least the same protection given to year-round wetlands." Britz notes that vernal pools are somewhat of a rarity in the urbanized port city. "I think over time, many vernal pools were lost because their location was unknown. Since the water in them comes and goes, they are easy to overlook."

The current project will correct that problem and provide a very good estimate of the number and location of vernal pools in Portsmouth. A consultant hired by the New Hampshire Estuaries Project through its Community Technical Assistance Program will examine aerial photos and detailed topographic maps to identify likely vernal pools. The consultant will ground truth suspected vernal pools when possible to confirm that remotely detected features truly represent functioning pools. The data will be compiled into an inventory report, including a detailed map and recommended zoning language that will protect the fragile areas from human activity. The Community Technical Assistance Program, which is partially funded by the New Hampshire Charitable Foundation – Piscataqua Region, provides consulting assistance to help seacoast communities implement natural resource protection projects.

For more information contact, Peter Britz, Portsmouth Environmental Planner at 610-7215 (plbritz@ch.cityofportsmouth.com); Steve Miller, Portsmouth Conservation Commission Chair at 778-0015 (steve@greatbay.org); or **Dave Kellam**, NHEP Project Coordinator at 862-3403 (Dave.Kellam@unh.edu).

## **Sea Grant**

By **Rebecca Zielber**

A new project is encouraging residents and fishermen alike to remove trash from more than just the beaches.

Marine Debris to Energy is a project that seeks a holistic approach to cleaning up the Gulf of Maine, says **Ken La Valley**, NH Sea Grant commercial fisheries specialist.

Marine debris can include derelict commercial fishing



gear such as nets, trawl material or buoys and may end up floating farther offshore on the ocean surface or littering the bottom.

The debris can create hazards for vessel navigation and interfere with a fisherman's operating gear, La Valley explains. It may also entangle protected marine species or result in "ghost fishing," where the gear continues to catch the targeted species but without economic benefit. The debris on the shore, underwater and on the ocean surface will be removed in this ongoing effort by volunteers and fishermen.

Marine Debris to Energy will have an official kickoff at the Yankee Fishermen's Cooperative in Seabrook, April 18, 2008, at 10 a.m. This event will include a ceremonial opening of the Dumpsters to collect marine debris. In addition, speakers will discuss project goals and objectives and project information will be distributed.

The Dumpster at the Fishermen's Cooperative will be available to collect commercial fishing gear waste. Smaller bins will be placed at recreational fishing locations, marinas and tackle shops to collect monofilament line, which can take hundreds of years to decompose. The project will also encourage the continuation of beach clean-ups to remove garbage from those locations.

Debris sources and distribution patterns in the Gulf of Maine will also be recorded using underwater sonar. Fishermen, beach cleanup crews and the general public will be able to report the location, including latitude, longitude and water depth where they found the debris. Once the information is entered into a database, it will be available on GIS maps for online access at [www.nhmarinedebris.org](http://www.nhmarinedebris.org).

"If someone wants to learn about how ocean currents might impact the location of marine debris, they can layer GIS maps for current and debris location together to learn about it," La Valley says.

In addition, once the debris is disposed of in collection bins along the coast, it will be converted into energy via a waste-to-energy plant in the state, La Valley adds.

The project is funded by the NOAA Marine Debris Grants program, and cleanup will be conducted by a team of individuals from the UNH Environmental Research Group, NH Sea Grant, UNH Cooperative Extension and the Blue Ocean Society for Marine Conservation. Additional support will be provided by commercial and recreational fishermen, the cleanup volunteers and educators.

For more information on the program and the kickoff, please contact Ken La Valley at 603.862.4343 or [ken.lavalley@unh.edu](mailto:ken.lavalley@unh.edu). For more information about beach cleanups and the Blue Ocean Society Adopt-A-Beach

Program, please contact Jen Kennedy at 603.431.0260 or [jen@blueoceansociety.org](mailto:jen@blueoceansociety.org).

## UNH Researcher is Mapping the Flow of Communication

By Rebecca Zeiber

**Troy Hartley** could be considered a cartographer of human communication.

Hartley, a UNH research assistant professor in the department of resource economics and development, is studying the patterns of communication within and between various local and regional organizations.



Troy Hartley shows a computer-generated "map" of communication networks for coastal and ocean management organizations. The communication can include complex directives from project coordinators or simple discussions around the workplace water cooler.

Funded in part by NH Sea Grant, his project was motivated by the U.S. Commission on Ocean Policy report that indicated effective coastal and ocean management is inhibited by a lack of communication, coordination and a sense of partnership. Specifically, Hartley is looking at the communication networks for projects undertaken by the Atlantic Marine Fisheries Commission, the New England Fisheries Management Council, the NH Coastal Program and the Cape Breton Island in Nova Scotia.

Hartley used interviews and surveys to measure communication patterns among individuals within these entities and projects. The frequency and directional flow of information within and between the key individuals, such as project coordinators, scientists and decision-makers, were then "mapped" using the computer program Inflow. The outcome depicts a spider web effect of points connected by lines in a network. The points represent the individuals and the lines represent information flow on daily, weekly or monthly time scales.

"Communication 'maps' make sense to people," Hartley explains. "They create a visual of something that is conceptually difficult to wrap your arms around."

"Social scientists have studied regional government in other contexts, such as public transportation, water and wastewater management," Hartley adds. "But we will struggle finding the best ways that people can work together, communicate and coordinate effectively on a regional scale. We need to get better at that for regional integrated coastal and ocean management to become a reality."

As his research has progressed, Hartley has noticed some trends emerging that highlight some differences in communication networks and also some of the challenges involved.

The maps depicting the channels of communication among individuals in a watershed planning organization show relatively tight communities among participants who know of each other well and interact frequently. For example, the watershed planners might have planners, ecologists, GIS experts and government managers all interacting on a regular basis. The maps show lots of lines crisscrossing and forming a tight cluster of communication with many individuals talking with each other - something called the "density" measure of a network.

On the other hand, Hartley shows a communication network map involving herring management, a large regional fisheries case. There were more than 150 individuals from industry, government, conservation groups, scientists and other stakeholder groups involved weekly at various levels. However, the lines depicting the flow of communication show dense clusters of activity with fewer lines connecting the clusters to one another than was observed in the watershed planning case.

"Participants involved with herring management have very specialized roles and interests," Hartley explains. "A lot of the network weight falls on certain individuals to keep the communication flowing. Some individuals bear the brunt of the burden for ensuring information flows across the diverse groups. The network is vulnerable to their status and availability. For example, are they on vacation? Are they temporarily pulled away by another project? Do they always have the support necessary to serve this role?"

Hartley says the results of the research will encourage strategic thinking about network design and recommend changes in the function of the network and roles of individuals. Upon looking at these maps, some individuals have noticed that their information flows to other participants in unexpected ways, based upon the frequency of communication among others in the network.

In addition, the maps identify the key individuals who are in touch with various stakeholders and groups. These individuals can then be targeted by those needing to broadcast information to the rest of the group.

"Our communication effectiveness and influence are not independent of the other individuals in our own networks," Hartley says. "It is more than 'who you know' that is important, it is 'who do the people you know know.'"

"I enjoy seeing what the maps can do for people to improve communication within and among regional government entities," Hartley adds. "We can work in a coordinated way and the maps give us the guidance to get there."

## Students in the News

**Virginia Sawyer**, an R&D fellow and Earth Science M.S.'s student, will be going to sea on Woods Hole Oceanographic Institution's *R/V Knorr* this spring to participate in the International Chemistry Experiment in the Arctic Lower Troposphere or ICEALOT cruise to the North Atlantic/Arctic.

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Ph.D. student **Lina M. Saavedra Diaz** of OPAL was one of just 15 women worldwide to receive a two-year fellowship under the UNESCO-L'ORÉAL International Fellowships for Women in Science program. Diaz is working on developing co-management approaches for "artisanal" or low-technology fisheries in small communities on both the Atlantic and Pacific coasts of Colombia. She will be working with several communities directly to find ways to meet local needs and reduce overexploitation of coastal resources.

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Congratulations go out to **Megan & Jeremy Heidenreich** on the birth of their first child, a son, Connor William Heidenreich, born March 30<sup>th</sup> at 8lbs 1oz. Mom and baby are doing fine. Megan is an M.S. student in Natural Resources. Best Wishes go out to the happy family!

## Marine Program Potpourri

Good Luck and Best Wishes go to **Stanley Boduch** on his new position with the Department of State. Stan has worked here at the Jere Chase O.E. Laboratory for about seven years as an Engineering Technician III for Ocean Engineering and the Open Ocean Aquaculture Project. His work has focused on environmental monitoring, remote control and telemetry of feed, and oceanographic buoys from the Atlantic Marine Aquaculture Center farm. Stan will be working as the new Facilities Manager at the National Visa Center on Pease in Portsmouth.

Come join us in bidding farewell to Stan on Friday, May 9<sup>th</sup>. More information will be sent out soon!

Our sincere condolences go out as well to **Bryan Soares** on the passing of his grandmother on Sunday, April 20<sup>th</sup>. Byran is the newly appointed Captain of the R/V Gulf Challenger.

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Congratulations go out to **Linda Wade** on her son Erick Macpherson's wedding last month to Sara Young. Linda was able to fly out to North Carolina with her husband, daughter, and granddaughter to attend the nuptials.



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**A reminder that completed staff annual performance assessments are to be submitted to the Office of Human Resources by May 31st.**

**The new and improved University Performance Assessment Form (PAF) is now available on HR web site at:**

**<http://www.unh.edu/hr/pubs-frm.htm#perf>**

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**The Beautiful Magnolia Tree at JEL-Welcome Spring!!!- Picture courtesy of Heather Talbot**

