

Saltwater News

A Monthly Newsletter for UNH Marine Program Faculty, Staff and Students
May 2007, Volume 6, Number 4

From the Director

Please join me in congratulating both **Jeb Byers** and **Chuck Walker** on their recent recognition for teaching excellence! Jeb was the recipient of the COLSA Outstanding Teacher Award, and Chuck was awarded the Jean Brierley Award for Excellence in Teaching at UNH. Both Jeb and Chuck are professors in the Zoology department and the Marine Program. Congratulations Jeb and Chuck!

I'm also pleased to be able to recognize New Hampshire's Conval High School for winning the championship of the National Ocean Sciences Bowl! Conval has worked closely with **Sharon Meeker**, **Mark Wiley** and our Marine Docents over the past decade and has always performed very well in the annual Nor'easter Bowl (the regional competition for the NOSB which New Hampshire Sea Grant and UNH organize along with the University of Maine and the University of New England). The grand prize for the team is an 8 day trip to the island of Maui in Hawaii. Many exciting events are planned for the well deserving team and coaches. Congratulations Conval!

Faculty in the News

1,000 flounder released to help raise stocks

By CLYNTON NAMUO
New Hampshire Union Leader Correspondent



Post-doctoral researcher **Elizabeth Fairchild** releases hatchery-bred juvenile winter flounder into the Hampton River as part of a stock enhancement effort.

Carefully raised in indoor tanks for the past year, 1,000 winter flounder were released into the Hampton River yesterday in hopes of replenishing a population that has declined markedly over the past two decades.

In the early 1980s, commercial fishermen caught around 20,000 metric tons of winter flounder each year, but now bring in only about 600 metric tons per year, University of New Hampshire post-doctoral research associate **Elizabeth Fairchild** said.

UNH researchers who raised the fish -- sold as flounder or lemon sole -- say the challenge is to make them behave as wild ones do.

"Hatchery-bred fish are different than wild fish," Fairchild said. "For stock enhancement to work, the raised fish must be as fit as the wild fish."

Captive fish must be trained to recognize predators, forage on their own and interact in an ocean environment for the highest percentage to survive once released, Fairchild said.

So far researchers have yet to train fish in all aspects of being in the wild, but Fairchild said they are already on their way, adding sand to the tanks so fish can burrow as they would in the wild.

Training the fish to avoid predators can be done in many ways, Fairchild said, including having a crab eat a fish while others watch so they can learn to swim away. Other researchers have put frozen predators into freshwater fish tanks and surrounded the predator with an electric current to teach fish to swim away. Such a technique would not work with saltwater fish such as winter flounder because electricity behaves differently in salt water, Fairchild said.

Eventually Fairchild and her fellow researchers hope to release tens of thousands of fish into the wild, propping up the winter flounder population.



UNH zoology professor **Hunt Howell** loads winter flounder into buckets yesterday to be released into the Hampton River.

Yesterday's experiment was done to see how larger flounder released at a different time of year would cope. Normally, 4- month-old fish are set free in the summer, but yesterday year-old fish about the size of a potato chip were sent into the wild.

UNH researchers will monitor the fish over the next days and weeks using small trackers on some of the flounder to see how they acclimate. The project is funded by the National Oceanic and Atmospheric Administration and is conducted through UNH's Atlantic Marine Aquaculture Center.

Student Profile



Christopher W.D. Gurshin, a student who is pursuing a PhD. in Zoology with specializations in marine fisheries biology, is our Profile student this month. He entered into the program this past Fall, 2006, and his advisor is **Hunt Howell**.

Please give a brief description of your work and research.

“My graduate studies are being completed concurrently with my employment as a fisheries biologist/data analyst for an environmental consulting company, Normandeau Associates, Inc. Professionally, I am interested in quantitative techniques in assessing spatial and temporal distributions and changes in marine fish populations and fish communities. As a professional, I have worked on large marine ecological monitoring programs, fish stock assessments, fish passage studies, and a variety of fisheries surveys. So after six years since I completed my M.S. research of catch-and-release survival and movements of sharks, I have chosen to continue my professional development by enrolling in a doctoral at UNH. My research will focus on making a contribution in fisheries acoustics, which is currently an advancing technology in fisheries science. In June of this year, I will begin my research with a series of cage experiments to study how acoustic backscatter (i.e. echos) from split- and multi-beam sonar can be used to estimate abundance of Atlantic cod. The results will hopefully lead to the development of future in-situ acoustic surveys using multi-beam sonar for purposes of stock assessment and essential fish habitat identification. This research has been funded by a Project Development Award from the Northeast Consortium. I am lucky to have the direction from my committee members: **Dr. Hunt Howell** (chair, Zoology), **Dr. Pingguo He** (EOS), Dr. Michael Jech (NOAA/NEFSC), **Dr. Larry Mayer** (OE, CCOM), and **Dr. Tom Weber** (CCOM).”

Why did you choose this field?

“Since early childhood I was curious about fish. After becoming obsessed with sharks in 4th grade, I knew I would take the direction of a career in marine biology. My interests developed from there with the marine aquarium hobby, SCUBA, underwater photography, and academics.”

Where are you from originally, and why did you choose UNH?

“I grew up in Newburyport, MA and studied as an undergraduate and graduate in the US southeast where I could study in the field year-round (and not freeze). When I returned to the area, UNH's marine program, faculty and resources made it a logical choice for my doctoral studies.”

What advice would you give to high school students or undergrads interested in pursuing a graduate degree in Marine Science?

“A career in marine biology may not be very lucrative, but it is an extremely rewarding profession to enter if you are willing to dedicate time for a multi-disciplinary graduate education. Any other piece of advice besides building a reference collection of coursework, text books, and journals, is to do well in other studies, specifically math, writing, and computer science.”

What do you see yourself doing in 10 years?

"I see myself continuing to advance my career in marine fisheries biology; and if so, I'll be living my life doing something I enjoy rather than working."

Student News

Congratulations go out to **April Blakeslee** in Zoology, who successfully defended her PhD on April 6th with her thesis entitled "Resolving the 100 year debate over the ecological history of the common periwinkle snail, *Littorina littorea*, in northeast North America." She has received a postdoc with the Smithsonian Environmental Research Center. Well done April!!

Congratulations also go out to **Brett Fullerton**, an Ocean Engineering student, on successfully defending his MS on April 24th with his thesis entitled "Development of two automated feed buoys for submerged fish aquaculture net-pens." Congrats Brett!!

Chad Turmelle, a Research Engineer in the Chase Ocean Engineering Lab and a Mechanical Engineering student, has successfully defended his MS on May 4th with his thesis entitled "Development of a 20-ton capacity Open Ocean Aquaculture Feed Buoy." Great work Chad!!

In Electrical & Computer Engineering, **Fan Gu** has defended her MS successfully on April 17th with her thesis entitled "Blending Techniques for Underwater Photomosaics." Well done Fan!!

Any other students who would like their hard work acknowledge in our Saltwater News, please feel free to contact me, Jennifer Bedsole (jen.bedsole@unh.edu) with your thesis title and date of defense and we will put you in our next newsletter.

Marine Program Potpourri



"High tide on the causeway going to Jackson Estuarine Lab during recent heavy rains in April. This photo illustrates the dedication of two of our Marine Program employees, **Colin Edwards** and **Nate Horton**, who refuse to let 'hell or high water' deter them from their mission of bringing lunch to their boss, **Steve Jones!**"

Marine Program Seminars

The **Large Pelagics Research Center** invites you to attend a special seminar in the Department of Zoology's Seminar Series entitled:

**Hankering back to ancestral pasts:
constraints on two pinnipeds, *Harbour seals*
& *Weddell seals* foraging from a central
place**

**Presented by Dr. Nikolai Liebsch
University of Wales Swansea**

**MAY 11, 2007
12:10pm
Spaulding Hall G26**



GEOSWATH SEMINAR TO BE HELD AT CENTER FOR COASTAL & OCEAN MAPPING

The **Center for Coastal & Ocean Mapping/Joint Hydrographic Center (CCOM/JHC)** would like to invite you to a one-day seminar run by GeoAcoustics Ltd. on the GeoSwath swath bathymetry sonar to be held on **Thursday May 24th 2007 in room 130.**

This Seminar will be chaired by Dr. Tom Hiller, Advanced Products Manager at GeoAcoustics Ltd. Talks will cover an introduction to the GeoSwath technology and survey practice, and guest speakers from USACE and SAIC will be describing their experiences using the GeoSwath. A session will also cover recent GeoSwath deployments on Remotely Operated Vehicles (ROVs) and Autonomous Underwater Vehicles (AUVs).

All are welcome to attend/pre-registration is required prior to May 18th. For more info go to www.geoacoustics.com or call Keith Vickery at (281)894-5570.