

## Welcome from ACT's Northeast Region

Welcome to the first edition of the Northeast Chapter of the Alliance for Coastal Technologies (ACT) newsletter. This newsletter will be published three times a year to provide our members and stakeholders with an overview of recent activities and upcoming events. The most up-to-date information on ACT can be found at the ACT website <http://www.act-us.info/>, while updated information about Northeast Chapter events is available at the GoMOOS' website: [www.gomoos.org/act/](http://www.gomoos.org/act/).

The spring and summer were busy and productive seasons for the Northeast ACT Chapter. Highlights include the completion of a successful workshop on coastal management's use of AUVs and gliders and the initial ACT sensor evaluation work that was completed at the Darling Center in Walpole, ME (please see articles below). In addition, several ACT outreach activities were conducted in the region.

In May 2004 GoMOOS hosted an ACT Northeast Chapter reception at The Coastal Society's 19th International Conference in Newport, RI. This meeting was attended by hundreds of coastal management professionals including policy makers, managers, scientists and consultants from around the country and the world.

## AUV/Glider Workshop Report

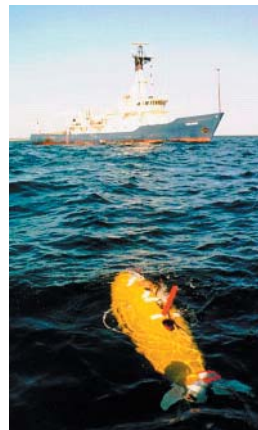
On April 28-30, 2004, GoMOOS hosted the ACT Workshop on Mobile Sensor Platforms: Management Applications for AUVs and Gliders in the Near Shore Environment, in Cape Elizabeth, Maine. The draft workshop report was completed in June, and submitted to all those attending for review comments. A revised version of the report was completed in August and forwarded to the ACT Headquarters office for final publication. The final report will be posted on the ACT website upon final publication ([www.act-us.info](http://www.act-us.info/)).

Image courtesy Dr. James Bellingham

Tom Shyka, GoMOOS program specialist, gave a luncheon presentation about the role of ACT and its recent achievements. Additionally, an ACT display was set up at the meeting and was attended by Tom along with Dr. Mark Luther, an ACT Partner from University of South Florida, and Dr. Jan Newton, an ACT Stakeholder from the University of Washington.

In September GoMOOS represented ACT at the Marine Law Symposium and the Ocean Expo that was held at Roger Williams University in Bristol, RI. The Ocean Expo followed the symposium and brought together New England AUV and glider companies along with GoMOOS and ACT. The Expo offered an opportunity for the symposium participants to learn about a regional ocean observing system, and the role ACT and other companies in developing the technologies used to conduct research and monitoring in the coastal environment.

The next activity for the Northeast chapter will be a reception at the 4th Ocean Technology Workshop in Newport, RI on October 19. We hope to see you there!



### Regional Events and Workshops

#### Events:

NEW Fabien Laurier Joins ACT Headquarters

Customer Needs and Use Assessment for In Situ Fluorometers

Initial application for the 2nd instrument validation underway (fluorometers)

NSF Sensor workshop to be held at MBARI

ACT welcomes Mr Casey Moore president of Wet Labs Inc. as a new stakeholder.

Northeast Alliance Reception at the 4th Annual Ocean Technology Workshop, Newport, RI October 19, 2004

#### New Series of ACT Workshops

Genetic Sensors for Environmental Water Quality - To be held at USF January 5-7 2005 - Forum

Measurement of Dissolved Inorganic Carbon Speciation in Natural Waters - To be held at UH/SOEST February 16-18 2005 - Forum

Determining Primary Productivity in Near Shore Environments: In Situ Fluorometers - To be held at GoMOOS January 05 - Forum

Application of Sensor Technology to Assess Groundwater-Surface Water Interactions in the Coastal Zone - To be held at SkIO 7-9th March 2005 - Forum

Transfer of Medical Sensor Technologies to Environmental Monitoring - To be held at CBL April 2005 - Forum



## ACT Sensor Verification Update

ACT Partner Institutions conducted their first ACT Technology Evaluation of commercially available in situ dissolved oxygen sensors. A customer needs and use assessment survey solicited sensor users to define their current applications, limitations and problems with the instruments, and to identify the important parameters considered when selecting a dissolved oxygen sensor. Results from the assessment were used to determine the key parameters to be evaluated in the dissolved oxygen sensor technology verification in 2004. The test parameters include accuracy, bias, precision, instrument drift, and reliability.

Two main types of dissolved oxygen sensors are being tested: polarographic membrane sensors, and new optical luminescence sensors. Four manufacturers that use dissolved oxygen technologies on their data sondes are participating in this first evaluation, including Aanderaa, In-Situ Inc., Greenspan Analytical, and YSI Environmental. Each manufacturer is providing eight instruments for testing: four with anti-biofouling devices, and four without anti-biofouling devices. Winkler titrations, based on the WOCE Protocols, serve as the standard of reference for determining instrument performance characteristics. Controlled laboratory tests and field tests are being conducted to evaluate performance under a variety of known and unknown environmental conditions.

The University of Maine's Darling Marine Center pier, located in the Damariscotta River Estuary in Walpole, Maine, was the site of the sensor verification. The GoMOOS ACT Technical Coordinator,



*Dissolved oxygen sensor mooring frame prior to deployment off the Darling Marine Center Pier*



*Winkler Samples in the Lab*



*Dr. Kjell Gundersen, preparing to take a water sample at the mooring site*

Dr. Carol Janzen, and Research Associate Dr. Kjell Gundersen deployed the dissolved oxygen sensors on July 1, 2004 for a period of 29 days. All instruments were placed on a mooring frame that situated the dissolved oxygen sensors at 1-meter below the surface of the water. Dissolved oxygen measurements were recorded every 15 minutes on each instrument, and water samples were collected at the depth of the oxygen sensors twice daily. Samples were analyzed within 36 hours of collection, and will be used to compare with in situ observations from each instrument. All instruments were recovered July 30, 2004, and data downloaded for analysis.

Data analysis will determine the performance of each instrument throughout the deployment period. The second round of tests are currently underway at the remaining three partner institutions, and the dissolved oxygen verification is expected to be completed by the end of September, 2004. Reports outlining the results for each instrument should be available in the spring of 2005.

### ***Questions about sensors?***

Check out ACT's searchable database at: [www.act-us.info/db.html](http://www.act-us.info/db.html)

## Northeast Integrated Ocean Observing (IOOS) News

### ***New Sentinel Buoy Launched!***

GoMOOS, in partnership with the National Marine Fisheries Service and The Department of Fisheries and Ocean Canada, deployed a new sentinel buoy – buoy N– in the Northeast Channel. This buoy will monitor the movement of water between the Gulf of Maine and the greater Northwest Atlantic Ocean and will provide information to help better understand and predict environmental variability in the Gulf of Maine.

### ***Do you have news?***

Please send us news items, events and comments you'd like to see added to the Sensor-Northeast. Please email your information to [jlark@gomoos.org](mailto:jlark@gomoos.org)



*Buoy N is similar to this buoy being launched by University of Maine. Photo by Megan Schiff*