AOOS
The Eye on Alaska's Coasts and Oceans
www.aoos.org
Update
Winter 2012

AOOS Glider Breaks Records in Chukchi Sea

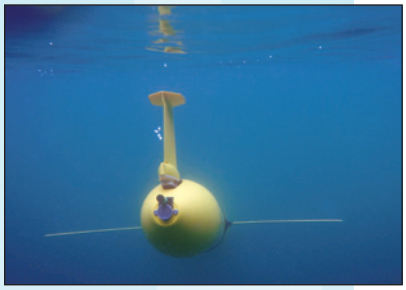

Photo courtesy of Seth Danielson, University of Alaska Fairbanks.

An AOOS-funded glider broke records this summer by continuously sampling ocean properties in the Chukchi Sea for over nine weeks, collecting over 11,000 vertical profiles of pressure, temperature, and salinity covering 1,000 km of ocean. The glider was equipped with high-capacity lithium batteries, which enabled it to stay in the water for over two months while continuously collecting and transmitting real-time data.

The 2011 mission was the second year of studies on the hydrographic properties of Arctic waters, led by Dr. Peter Winsor at the University of Alaska Fairbanks and funded by the Bureau of Ocean Energy Management (BOEM), Conoco Phillips, and Shell Oil. 2011 deployments took place from Wainwright on July 31st, following last year's inaugural surveys, which covered over 1,000 km of ocean and collected more hydrographic data than all previous studies combined.

Gliders are a special class of Autonomous Underwater Vehicles (AUVs) designed for quiet, low-power and long-endurance missions. They use small changes in buoyancy, similar to a fish's swim bladder, to generate vertical motion that is translated into forward motion by gliding on wings attached to the vehicle's body.

The glider program is part of a larger project lead by Tom Weingartner at UAF, which includes land-based HF radars, drifters and moorings. The HF radars are capable of mapping surface currents over a huge area of the Chukchi Sea over time and streaming this data in real time. The HF radars and glider programs are unique to the Arctic and have been successful mainly due to the excellent technical team of Rachel Potter and Hank Statscewich, assisted by residents of Barrow, Wainwright, and Pt. Lay, who deploy, monitor and service these complex systems in challenging conditions.

"The glider data provides detailed biochemical and physical ocean data that previously has been unavailable to us," Winsor said. "However, when we combine the HF radar and AUV glider data a unique view of the ocean emerges, and with features and complexity that are changing our ideas of how this area is functioning," he added.

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Eugene Bodfish, Olgoonik Oilfield Services; Peter Winsor, University of Alaska Fairbanks; and Andrew Mullen, undergraduate intern from Notre Dame University, prepare to launch a glider from *C/V Tukpuk* off Wainwright, Alaska. Photo courtesy of Hank Statscewich, University of Alaska Fairbanks.

Alaska Ocean Observing System

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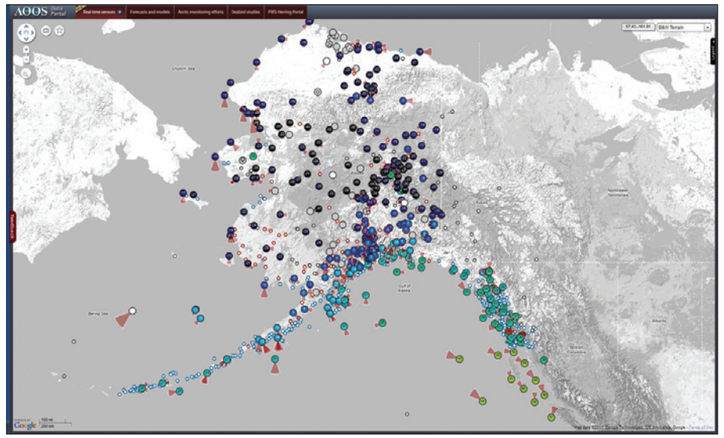
AOOS Real-time Sensor Portal Updated



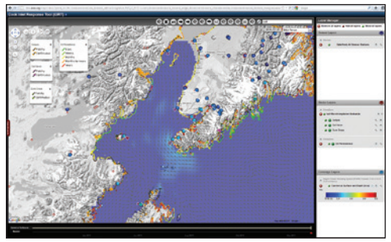
Real time data just got better. In November, AOOS released version 2 of its real-time sensor portal, a data application that connects to over 3,000 real time sensors throughout the state. Adding to previous capabilities, users can now:

- Simultaneously view the latest observations from multiple sensors housed on a single station;
- "Deep Link" into their current view by clicking the star at the top left of the screen, allowing you to bookmark a specific view to return to, or send it to a friend;
- View wind vectors on the main map, showing wind direction and magnitude; and
- View a visual representation of relative differences in temperature, precipitation, or other parameter of your choosing across stations

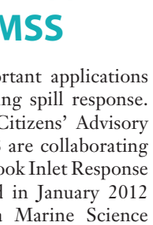
Click the feedback tab on the screen's left to let us know what you think. ■

New Spill Response Tool for Cook Inlet Unveiled at AMSS

One of the most important applications of ocean data is for managing spill response. The Cook Inlet Regional Citizens' Advisory Council, NOAA and AOOS are collaborating on the development of the Cook Inlet Response Tool (CIRT) to be released in January 2012 coinciding with the Alaska Marine Science Symposium. This application combines GIS spatial data layers, real time observations, model nowcast/forecasts for winds, waves, and ocean circulation, and a ShoreZone video imagery viewer. An exhibit at the AMSS poster session will showcase and allow users to interact with the new tool. ■

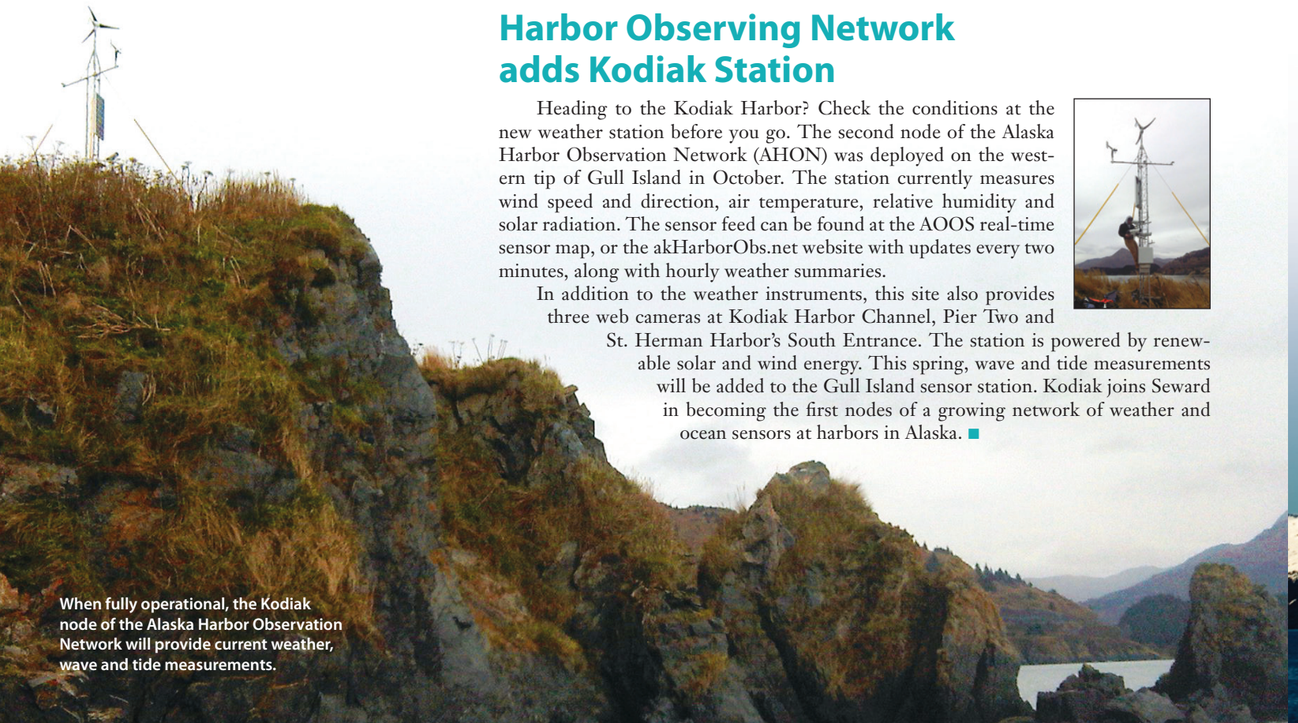


Harbor Observing Network adds Kodiak Station



Heading to the Kodiak Harbor? Check the conditions at the new weather station before you go. The second node of the Alaska Harbor Observation Network (AHON) was deployed on the western tip of Gull Island in October. The station currently measures wind speed and direction, air temperature, relative humidity and solar radiation. The sensor feed can be found at the AOOS real-time sensor map, or the akHarborObs.net website with updates every two minutes, along with hourly weather summaries.

In addition to the weather instruments, this site also provides three web cameras at Kodiak Harbor Channel, Pier Two and St. Herman Harbor's South Entrance. The station is powered by renewable solar and wind energy. This spring, wave and tide measurements will be added to the Gull Island sensor station. Kodiak joins Seward in becoming the first nodes of a growing network of weather and ocean sensors at harbors in Alaska. ■



When fully operational, the Kodiak node of the Alaska Harbor Observation Network will provide current weather, wave and tide measurements.

EVOSTC Funds Long-term Monitoring Programs in GOA

AOOS is a partner in two five-year monitoring grants approved September 15 by the *Exxon Valdez* Oil Spill Trustee Council. Both grants are the first segment of a planned 20-year commitment by the Trustee Council to long-term research and monitoring in the region of the Gulf of Alaska affected by the 1989 oil spill.

AOOS Director Molly McCammon will serve as the management lead for a $2.5 million Long Term Monitoring (LTM) Program, with Kris Holderied at NOAA's Kasitsna Bay Lab serving as Science Lead and the Prince William Sound Science Center providing administrative support. AOOS also will provide data management services for the LTM project, as well as for the Herring Research and Monitoring Program, in collaboration with the National Center for Ecological Analysis and Synthesis based at the University of California Santa Barbara. Scott Pegau, with the Oil Spill Recovery Institute in Cordova, is the management and science lead for the herring project.

A group of 20 PIs met at AOOS in November to kick off the LTM program. More information can be found on the AOOS website. ■

New Project for Data Tools to Support Future Arctic Fisheries Decisions

AOOS and partners have received funding from NOAA to design, develop and test interactive web-based data integration and visualization tools for Alaska's Arctic. The goal of the project is to develop data tools that could be used to help plan for future decision-making relating to potential commercial fisheries in the Arctic. The 18-month project will start in January, and focus on the northern Bering and Chukchi Seas.

AOOS will serve as the project manager, and contribute its extensive marine data resources and infrastructure. Axiom Consulting and Design will be the technical lead for the project, responsible for managing the data and building the tools. The University of Alaska's Institute for Social and Economic Research will provide social and economic data, and the Alaska Center for Climate Assessment and Policy will develop downscaled climate model data. Additionally, The Nature Conservancy of Alaska will provide experience with data visualization and decision support tools. The project steering committee will be reaching out to a large number of collaborators to help identify what existing and new layers would be useful in such a tool.

The final product will be an AOOS Arctic Portal, designed for resource managers and planners, regional planning organizations, and any other stakeholders with an interest in specific aspects of the Alaska marine ecosystem who want easy access to data. ■

AOOS Plans a Build Out Strategy for the Future

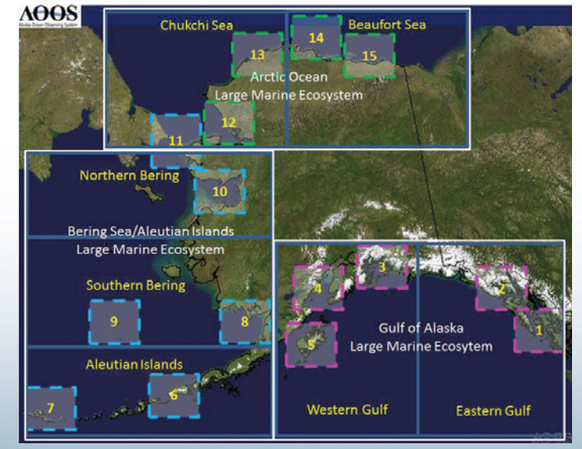
This fall, AOOS drafted a 10-year build out plan for ocean observations in Alaska. The plan is intended to ensure initial, barebones capabilities to address regional priority needs.

The AOOS plan works within the constraints of Alaska's broad geography, the guidelines set forth by the national IOOS program, and the feedback provided from three thematic workshops held in 2010 with stakeholder and scientist participation to identify Alaska observing and information priorities. The full draft plan can be found on the AOOS website.

AOOS is seeking input on the plan, and will looking for ways to collaborate with partners on implementation. In November, AOOS staff participated in a national meeting where partner observing systems worked to synthesize the 11 regional plans into a national plan.

The broad priorities are:

1. Marine Operations
2. Climate and ecosystem variability and change
3. Coastal Hazards ■



The framework of the plan is organized around the 3 Large Marine Ecosystems, 7 sub-regions and 15 "areas".

Erik Pallister/NPRB

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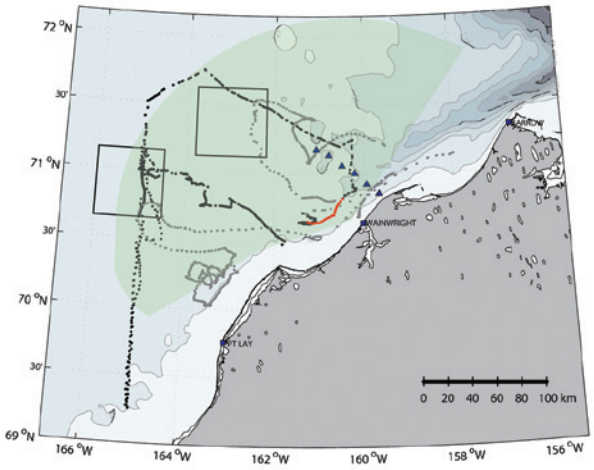
Near-future goals are to continue glider operations in the Chukchi Sea, but work towards developing the capability of under-ice AUV operations. "Using both propelled and glider AUVs capable of navigating and sending data in ice-covered seas will prove very important for understanding the hydrography and circulation of the Beaufort and Chukchi Seas, which remain ice covered for large portions of the year," Winsor said. "An extra benefit will be developing the capability to detect the presence of oil, map its extent, and locate its source under sea ice, which will be a key tool for future oil development in these areas."



This map shows 2010 glider transects (gray dots) and 2011 glider transects (black), as well as the coverage of the HF radar mask (in opaque) and the cross-shelf mooring array (blue).

Farewell to Nancy Bird

AOOS will greatly miss Nancy Bird who recently left the Prince William Sound Science Center after 22 years. Bird was president of the PWSSC as well as Executive Director of the Oil Spill Recovery Institute. In this capacity, she has been a key member of the AOOS Board, as well as serving on the North Pacific Research Board, PWS RCAC Board, and the Coastal Response Research Center advisory board. ■

Welcome to Rosa Meehan

In December, AOOS staff welcomed Rosa Meehan to the team. Rosa is "on loan" from the US Fish and Wildlife Service for the next year. In her prior life, she had been serving as the marine mammals manager in Alaska for USFWS. For AOOS, she will be focusing on initiatives to better integrate biology into ocean observing. ■

Seeking Beta Testers

Are you interested in playing with the latest hot-off-the-press data applications developed by AOOS? We are seeking beta testers to explore new online data tools before they are launched. If you would be willing to provide feedback via email or participate in a focus group, please contact Darcy Dugan, dugan@aoos.org. ■

Save the date! NMEA 2012 in Anchorage

The National Marine Educators Association will meet in Anchorage June 24-28th. Join hundreds of marine educators from around the country for plenary sessions, keynote addresses, and field trips. Early registration is now open. The conference is also seeking volunteers. More information can be found at http://www.coseealaska.net. ■

AOOS Welcomes New Officers

In September, the AOOS Board selected a suite of officers representing a balance of new and experienced Executive Committee members. They include:

Chair: Ed Page, Marine Exchange of Alaska

Vice Chair: Ed Fogels, Alaska Department of Natural Resources

Secretary: Glenn Sheehan, Barrow Arctic Science

Treasurer: Amy Holman, NOAA

A full list of AOOS Board members can be found on the AOOS website. The Board includes representatives from three state agencies, four federal agencies, seven research entities, and an NGO.