

Metocean-Ice Programs

Baffin Bay Greenland Metocean & Ice

ASL has successfully completed the third year of a three year multiple instrument measurement program (2011-2014) at three mooring sites in the NE Baffin Bay for Royal Dutch Shell. ASL collected extensive year-round oceanographic and sea ice measurements in this remote sub-Arctic area. These data will advance understandings of the oceanographic and sea ice regime.

ASL's field personnel are happiest when out in the field!

These four represent over 100 years of experience!



NE Greenland Metocean-Ice Program



ASL is concluding an ice and metocean measurements and analysis program off NE Greenland for the Norwegian University of Science and Technology (NTNU) and Statoil. ASL personnel aboard the Norwegian Polar Institute's ship, the *RV Lance*, recently recovered the 4 Ice Profiler/ADCP moorings from Fram Strait. ASL is now processing the data from this second and final year of a very successful program.

[Link to Ice Profiler brochure](#)

Shallow Water Ice Profilers™ to Finland

The University of Eastern Finland has purchased two Shallow Water Ice Profilers™ (SWIP) to be installed at two study sites in Finland on the Kokemäenjoki and Tenojoki Rivers.

The goal of the study is to gain understanding of extreme and annual fluvial processes, including both snow-ice melt and ice-dam floods, as well as to gain a better picture of the river-ice and its influence on flow conditions and river channel erosion, when compared to ice-free time.

Eliisa Lotsari of the U of EF, and Tero Piiparinen and Claude Flener, sales agents for ASL at GWM-Engineering in Finland, came to Victoria BC for a 3-day training session.

Ed Ross (standing) and Dawn Sadowy (sitting) were 2 of the ASL instructors.



[Link to SWIP brochure](#)

“Multi-sensor Assessment of Reclaimed Areas” (MARA)

ASL has been awarded a new contract by the Canadian Space Agency (CSA) to develop advanced methodologies and products for the purpose of environmental monitoring and remediation. The funding for the two-year project is provided through CSA's Earth Observation Applications Development Program (EOADP).

ASL, with partners University of Lethbridge – Alberta Terrestrial Imaging Centre and Polster Environmental Services Ltd., will develop improved Earth Observation (EO) products for assessment and monitoring of reclamation following industrial disturbance in Canada's natural areas. Both RADAR and optical remote sensing data along with in situ data will be analysed. This interdisciplinary project combines world-class expertise in EO science and plant ecology from industry and the university, guided by a scientific advisory team of senior researchers and a user advisory team that includes industry reclamation managers and government representatives from four provinces and territories (British Columbia, Alberta, Yukon, and Northwest Territories).

Recent regulation requires forestry, oil and gas, and mining companies to return disturbed land as closely as possible to its original state upon completion of their activities in an operating area, so there is greater need to monitor reclamation and re-vegetation, both locally across large sites and regionally at many sites across broad areas.

This project aims to greatly expand upon current information sources used by Canadian industrial reclamation managers to focus and direct local reclamation efforts, and for Canadian government agencies to screen and monitor those efforts in a timely manner.



The image was acquired by the LANDSAT 8 satellite in 2013 and shows various types of disturbed areas, including clearcuts, oil and gas drill pads, pipeline corridors, and mines (Central Alberta, Canada).

Acoustic Zooplankton Fish Profiler™ news:

The AZFP provides continuous high-resolution time series of acoustic scattering strength throughout the water column. The data can be used to monitor the presence and behavior of zooplankton and fish, as well as physical processes such as internal waves, sediment suspension and scattering from bubbles. [Link to AZFP brochure](#)

Deploy moored AZFP™ to study Antarctic silverfish spawning in Terra Nova Bay during winter

by Richard O'Driscoll, National Institute of Water and Atmospheric Research (NIWA), New Zealand

Antarctic silverfish are a keystone species in the Ross Sea, Antarctica, providing one of the major links between zooplankton and predators like seals, whales, penguins, and toothfish. Silverfish eggs and larvae are abundant during spring among the sub-surface platelet ice in Terra Nova Bay. It is not known whether the eggs are spawned elsewhere and accumulate under the ice or whether there is mass migration of silverfish to coastal spawning sites in winter. To test the latter hypothesis, NIWA plan to moor an upward-looking echosounder under the ice over winter in Terra Nova Bay to observe potential silverfish migration. The proposal is to place a mooring equipped with the AZFP™ echosounder and other instruments (current meter, conductivity-temperature depth sensor) in Terra Nova Bay from the New Zealand research vessel *Tangaroa* in February 2015 and recover it the following summer (2016) using an Italian research vessel. The acoustic system will be calibrated to detect and record the abundance of silverfish over winter.



Richard O'Driscoll (NIWA, IPY-CAML)



Peter Marriott (NIWA, IPY-CAML)

This is a collaborative project between New Zealand and Italian scientists with a strong track record studying silverfish in the Ross Sea. The proposal uses innovative technology which has not previously been used in the Ross Sea, but which has been deployed successfully elsewhere. It builds on existing Italian research to monitor silverfish in Terra Nova Bay and acoustic research carried out on silverfish by New Zealand as part of the 2008 International Polar Year voyage.

This objective will help fill an important observation gap in the life history of silverfish. Understanding silverfish ecology is necessary to reduce uncertainty in predictions about impacts of environmental change on the coastal Antarctic system. Because of the influence of sea-ice on silverfish biology, future changes in the Ross Sea, driven by global increases in temperature, may impact spawning success and abundance of silverfish. If successful, this project will constitute a component of the monitoring and research programme for the recently established Commission for the Conservation of Marine Living Resources (CCAMLR) Antarctic Specially Protected Area between Cape Washington and Silverfish Bay.

7 Acoustic Zooplankton Fish Profilers (AZFP) delivered to Ocean Observatories Initiative (OOI)

Woods Hole Oceanographic Institute and Oregon State University have taken delivery of 7 Acoustic Zooplankton Fish Profilers (AZFP™) for the Coastal Scale Nodes component of the Ocean Observatories Initiative (OOI) Coastal and Global Scale Nodes (CGSN). ASL is supplying up to 16 instruments for the Coastal Scale Nodes and up to 10 instruments for the Global Scale Nodes. The four-frequency internally-powered, internally-recording AZFP™ echosounders with 38, 125, 200 and 455 kHz channels are for use on the Coastal Scale Node and will operate for 7 months or longer on their own power.

The project, funded by the National Science Foundation (NSF), is planned as a networked infrastructure of science-driven sensor systems to measure the physical, chemical, geological and biological variables in the ocean and seafloor. As a fully integrated system, OOI will collect and disseminate data on coastal, regional and global scales. Greater knowledge of the ocean's interrelated systems is vital for increased understanding of their effects on biodiversity, climate change, ocean and coastal ecosystems, environmental health and climate. WHOI and its partners, Oregon State University and Scripps Institution of Oceanography are responsible for the OOI coastal and global arrays.

The AZFP™ can monitor the presence and abundance of zooplankton and fish within the water column by measuring acoustic backscatter returns at multiple ultrasonic frequencies.

For more on the Ocean Observatories Initiative: <http://oceanobservatories.org/>



David Neiman(OSU) examines an AZFP™ to be deployed as part of OOI in spring 2015.

CBO 2014, Brasil

(6th Brazilian Oceanographic Congress, Oct 25-29)

Dr. Adriene Pereira, Hidromares; Bruna Alves; Thelma Luiz Scolaro, regional president of Oceanography Brazilian Association; and Gabriel Paschoal, Hidromares. Hidromares represent ASL in Brasil.

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Upcoming Conferences

Canada-US Oil & Gas NWT	Nov 4-6
Yellowknife Geoscience Forum	Nov 25-27
ArcticNet, Ottawa	Dec 8-12
ATC 2015 Copenhagen	Mar 23-25
OTC 2015 Houston	May 4-7
WGFASST 2015 France	May 25-28
CMOS 2015 Whistler	May 31-Jun 4
POAC 2015 Norway	Jun 14-18
Oceans 2015 DC	Oct 19-22



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