



ICE PROFILER™ SALES

ASL Ice Profilers in Beaufort Gyre Experiment

Researchers at Woods Hole Oceanographic Institution, (WHOI) Massachusetts, USA, are planning a year-long experiment, starting in summer 2003 to explore the mechanisms of fresh water accumulation and release in the Beaufort Gyre.

The Beaufort Gyre is a massive, clockwise circulation of the entire Beaufort Sea caused by the earth's rotation and contains about 45,000 cubic kilometers of fresh water.

As part of this experiment to understand more about this phenomenon and its impact on the Arctic climate system, WHOI will be deploying three moorings, each containing an array of instruments, including Ice Profilers from ASL, which will be used to measure and record sea ice draft over the period of the experiment.

WHOI's selection of the ASL Ice Profiler is based on previous successful experiences with these instruments including one deployment in the Antarctic where a unit encountered several iceberg collisions including one which pushed the unit to a depth of 123 meters (well below the design depth of the pressure sensor). The instrument continued to work well until the pressure sensor failed at this depth.

Arctic Deployment

Two Ice Profilers have been sold to Dr. David Huntley of the Univ. of Delaware for deployment in Nares Strait between Greenland and Ellesmere Island.

Public Works & Government Services Canada

PW & GS has purchased another Ice Profiler for monitoring ice thickness near bridge footings at Confederation Bridge, PEI, Canada

Two More Ice Profilers Bound for Japan

Dr Yasushi Fukamachi of the Institute of Low Temperature Science at Hokkaido University, Japan has ordered an additional two Ice Profilers from ASL Environmental Sciences of Sidney, BC Canada.

These two units will bring the total number of Ice Profilers owned by the Institute to five. Most of these instruments are being used as part of a long-term study to understand more fully the characteristics of ice thickness in the Sea of Okhotsk north of Japan. In addition, one of the units has been specially modified by ASL and has been installed on an Autonomous Underwater Vehicle (AUV), which will be deployed in the Antarctic in the near future.

Landfast Ice Movements

ASL has ordered three GPS/Argos Ice Beacons that have been deployed on the Beaufort Sea ice cover, and one at an adjacent land station in Tuktoyaktuk. This work was conducted for B. Wright & Associates Ltd. who are doing some ice study work for Devon Canada Corp. The purpose of this project is to monitor small movements of the landfast ice cover in Devon Canada's Beaufort Sea lease areas, as one of the inputs to the planning of winter drilling activities in the area. John Marko of ASL is also involved in the analysis of the beacon data that is now being collected.



Courtesy B. Wright

Undersea Pipeline Acoustic Testing by ASL

A proposed undersea gas pipeline from the West Coast of the US mainland to Vancouver Island across the Georgia Strait has raised concerns about the effects of operational noise generated by this pipeline on marine mammals.

ASL Environmental Sciences, of Sidney, BC Canada was subcontracted by TERA Environmental Consultants of Calgary AB Canada to investigate this potential problem.

ASL had previously performed a number of acoustic measurements on a similar existing pipeline adjacent to the proposed route and these measurements, along with extensive acoustic laboratory tank testing of pulsed sound propagation through bare steel and concrete coated steel pipe sections were used in the investigation.

Overall, the results confirmed that the proposed use of steel piping combined with a 1.6 inch concrete coating would reduce purported pipeline-generated noise to levels below that found in the quietest open ocean locations.

NUMERICAL MODELING

Ocean Wave Modeling

ASL's numerical modeling group now has the capability of doing ocean wave modeling using SWAN (Simulating WAVes Nearshore). SWAN is a numerical wave model that obtains realistic estimates of wave parameters in coastal areas, given wind, bottom, and current conditions. SWAN is a nested grid, high-resolution model used to resolve bottom or structures in near shore areas (rigs, terminals). ASL has applied SWAN nearshore off the west coast of Vancouver Island, BC and the results have been successfully compared to wave measurement stations in the area.

Numerical Modeling of a Complex Eddy

Following on from previous work done for Columbia Power Corporation (BC, Canada), ASL has performed further modeling runs of its ASL-COCRIM 3-D Numerical Model to provide additional understanding of circulation flows and water temperatures at the confluence of the Columbia and Pend d'Oreille Rivers in BC. This location features a large and complex eddy flow known as the Waneta Eddy.

The model output was summarized and compared in detail with observed flow pattern survey data and was also used to determine tailwater levels at the Waneta Dam as well as at the proposed new Waneta Expansion Project for a wide range of river discharges.

This work will help predict the effects of the proposed expansion of capacity at the Waneta Dam.

OISI - Ocean Innovative Systems Inc.

Five well-established British Columbia companies have incorporated Ocean Innovative Systems Inc. (OISI) as the first step in building a world-leading company supplying technology and services to markets needing interactive and real-time ocean information.

The five Greater Victoria-based OISI shareholders (ASL Environmental Sciences Inc., Axyx Technologies Incorporated, Barrodale Computing Services Ltd., Quester Tangent Corporation, and 2WE Associates Consulting Ltd.) have been providing decision support information to marine operators and governments worldwide for many years. The five companies have proven capabilities in ocean instrumentation, data collection, spatial database management and interpretation, marine science, ocean mapping, and environmental evaluation.

www.OceanInnovative.com



Physical Oceanography for the IOS

ASL has been contracted to prepare a document on Physical Oceanography for the BC Central Coast Integrated Management Plan for the Institute of Ocean Sciences in Sidney, BC. Included in the overview are details about the meteorological parameters, waves, water levels, currents, summer and winter features, water properties, nutrients, PH, plankton, and long-term variability.

Recent Papers Published by ASL

Documentation and Analyses of Large Amplitude Waves in the Interior of the Sea of Okhotsk Ice Pack - J.R. Marko; *Journal of Geophysical Research (Oceans)*, 2003.

3D Numerical Modeling of Circulations Associated with Submerged Buoyant Jet in a Shallow Coastal Environment

J. Jiang, D. B. Fissel and D. Topham; *Estuarine Coastal & Shelf Science* – In press

See our website for all recent papers:
www.aslenv.com/techrep.htm

Meet Us at Events

ASL will be attending the following trade shows & conferences. We would welcome the opportunity to meet with you.

POAC 2003	June 2003	Norway
Oceans 2003	Sept 22-25	San Diego, CA
Estuarine & Coastal Monitoring	Nov 3-5	Monterey, CA