ASL Environmental Sciences

Solutions Newsletter

The Newsletter For The Aquatic Sciences

Spring 2012

ASL's latest product - the Acoustic Zooplankton Fish Profiler™

ASL successfully launched the Acoustic Zooplankton Fish Profiler™ at Oceanology International '12 London, UK! The AZFP™ offers a new, economical way of obtaining reliable measures of marine environmental conditions in the water column. The AZFP™ monitors the presence and abundance of zooplankton and fish within the water column by measuring acoustic backscatter returns at multiple ultrasonic frequencies. Other sonar targets realized from the sonar backscatter data include bubbles and suspended sediments.

The AZFP™ has an unmatched combination of multiple frequency operation with low power and long endurance that fits your budget. The AZFP™ is a powerful tool for scientific research and environmental monitoring in oceans, lakes, and rivers.

Using onboard data storage, the AZFP™ can collect data continuously for periods of up to one year at high temporal and spatial resolution. The AZFP™ is available with up to four frequencies in a single transducer housing.

It can be operated in bottom-mounted, upward looking mode or in downward looking mode from a buoy, and is ideally suited for taut-line mooring operation, but many other options available. The AZFP™ has highly configurable sampling programs. Link to AZFP web page

WERA NorthernRadar
North American Collaboration for Improved HF Radar Systems

Northern Radar Inc of St. John's NL, ASL Environmental Sciences Inc. of Victoria BC and Helzel Messtechnik GmbH of Germany, have recently entered into a Memorandum of Understanding (MOU). The three companies will collaborate in the marketing, sales, design, manufacturing, installation, maintenance, and operation of oceanographic high frequency radar systems for non-military applications.

This collaboration led to the development of the "WERA NorthernRadar" system – an updated and enhanced version of the "Helzel WERA" HF radar system. Northern Radar is supplying the HF Radar antenna systems, cable, filters and transmit modules. Northern Radar can also add software for iceberg detection and civil ship detection and tracking. Helzel supplies the HFR signal generation and processing core modules and system control software, real-time processing software and installation support and personnel training. ASL is responsible for sales and marketing of this system in North America.

The WERA NorthernRadar is an Oceanographic HF Radar providing simultaneous measurement of surface currents maps, ocean waves parameters and maps and wind direction (wind speed under development). These measured data are available over long distances (more than 200 km) and large areas with good temporal resolution (complete data set within less than 10 minutes) and with high spatial resolution (down to 250 m).

WERA installed in Australia, Lady Elliot Island/Tanum Sands, Dr. Mal Heron, James Cook University

First sale!!

ASL has sold the first WERA NorthernRadar system to Cédric Chavanne, Université du Québec à Rimouski (UQAR). The "no-compromise" two WERA 12-channel HF radar systems will provide high resolution currents, waves and wind direction in an important section of the St. Lawrence Estuary.

ASL's Extensive Experience with Ice Projects

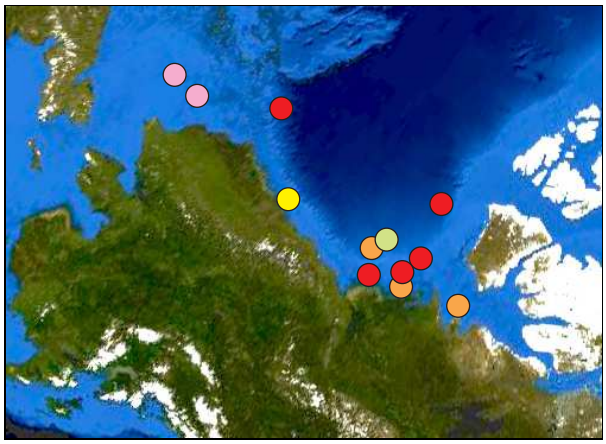
ASL has provided ice and oceanographic measurements for environmental assessment and engineering activities in support of oil and gas exploration worldwide since 1978.

ASL's ice mooring data collection programs involve the deployment and operation of multiple underwater, internally recording instruments from 1 to 8 sites per project, in water depths ranging from 9 to 2416 m for periods ranging from 5 months to 6 years, depending on the project requirements. Data is processed and analysed by ASL to be used to provide critical inputs for metocean ice engineering design criteria.

Measurements of ice drafts and velocities are obtained with ASL's Ice Profilers™ operated from taut-line moorings as well as Acoustic Doppler Current Profilers (ADCPs) to measure ice velocities.

Many of the projects also include measurement and analysis of ocean current profiles, non-directional waves, salinity, temperature, and turbidity of seawater from instruments on the subsurface moorings.

10 Years of Ice Projects Worldwide:



Chukchi Sea

- ***Olgoonik Fairweather for Shell, ConocoPhillips, and Statoil***
  4 sites 37-46m, July 2009-July 2012
  6 sites 2012-2013

Alaskan Beaufort Sea

- ***Shell***
  2 sites at 32-48m Camden Bay 2005-11

Canadian Beaufort Sea

- ***Institute of Ocean Sciences, Humfrey Melling***
  Data processing of multiple site field measurement programs, 1999-present.

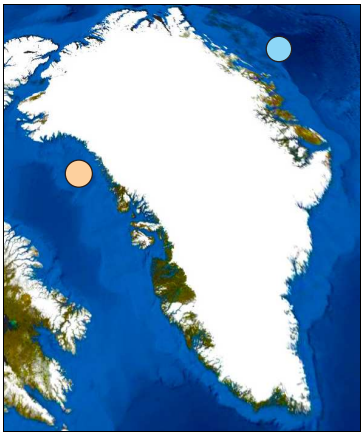
- ***Imperial Oil/ ExxonMobil/ BP***
  (in collaboration with ArcticNet, KavikAxys and IMG Golder)
  58 instruments at 8 sites, 73-1003m for 24-26 months, July 2009 - Sept 2011.
  Ice and water velocity profiles/ temperature/ salinity/dissolved oxygen/chlorophyll/turbidity for Environmental Assessment & engineering requirement inputs.

- ***KavikAXYS for Imperial Oil/ExxonMobil***
  Collection of metocean/ice data 2009-2010, inshore & offshore programs, as well as a review of historical data to provide a long-term perspective on the physical marine environment for the Ajurak area. Environmental assessment & input into engineering requirements.

East Greenland

- ***Norwegian Polar Institute***
  3-4 Ice Profilers across Fram Strait 200 - 2400m deep, 2006-2011(ASL Ice Profilers) and 1990-2006 (ES300 data sets), and data processing

- ***Chevron (Kanumas Group)***
  Processing and analyses of existing ULS data - collected Sept 2006- Sept 2009 by Norwegian Polar Institute. The NPI data sets consisted of ASL Ice Profiler ice draft measurements and Aanderra RDCP-600 ocean current and ASL derived ice velocities.



West Greenland

- ***GEMS Survey Ltd. for Royal Dutch Shell Oil***
  3 moorings
  330-630m depth
  Sept 2011 - 2012
  ice/currents/waves/ conductivity/ temperature/ water level

North East Caspian Sea

- ***CMOC and Kazak JV of Royal Dutch Shell via Aker Arctic. Kaz Eco Project - boat, logistics***
  2 Ice Profiler/ADCP LowPro-5 moorings for the 2010-2011 season.

- ***Agip KCO***
  2 Ice Profilers/ADCP moorings 2002-2008

Pechora Sea, Russia

Lukoil/ConocoPhillips, 2 Ice Profiler/ADCP moorings

East Coast Sakhalin Russia

Sakhalin Energy/Exxon Neftegaz
Up to 8 moorings 1996-2007

BP Elvara Neftegaz, 3 moorings 2005-2007

Latest Product Sales (Jan 2010-June 2012)

Ice Profiler (IPS)

2 IPS to Fairweather for Statoil, CPAI, and Shell
6 IPS to Technopole, Russia
2 IPS to Woods Hole Oceanographic Institute, USA
3 IPS to JAMSTEC, Japan
2 IPS to Norwegian Polar Institute
1 IPS to NE Baffin Bay Project
4 IPS to NOAA, USA
3 IPS to University of Washington, USA
1 IPS to GWM-Engineering Oy, Finland
2 IPS to CMOC project in the NE Caspian(rental)
1 IPS to Institute of Ocean Sciences, Canada

Shallow Water Ice Profiler (SWIP)

1 SWIP to NEPTUNE, Canada
1 SWIP to NWRI/UVic, Canada
1 SWIP to Aquadyne, Norway
1 SWIP to Civil Engineering Research Institute, Japan
1 SWIP to GWM Engineering OY, Finland (real-time, heated frame)
1 SWIP to Case Western Reserve University, USA
4 SWIP to U of Michigan, USA

Acoustic Zooplankton Fish Profiler (AZFP)

1 AZFP to Haida Salmon Restoration Group, Canada
1 AZFP to University Centre in Svalbard, Norway
1 AZFP to University of Tasmania (deep diving)
2 MF-AWCP to JAMSTEC, Japan
1 MF-AWCP to Ocean University of China
1 AWCP to NOAA Fisheries Service, La Jolla, CA
1 MF-AWCP to University of Otago, New Zealand
1 MF-AWCP to University of Tasmania
1 AWCP to British Antarctic Survey
1 AWCP to DFO - St Andrews Biological Station, Canada
1 MF-AWCP to Penn State University, USA
2 AWCP to Red Sea Research Center, Saudi Arabia
1 MF-AWCP to CSIRO Australia
1 MF AWCP to Alfred Wegener Institute, Germany

Image Recorder for Imagenex Sonar (IRIS)

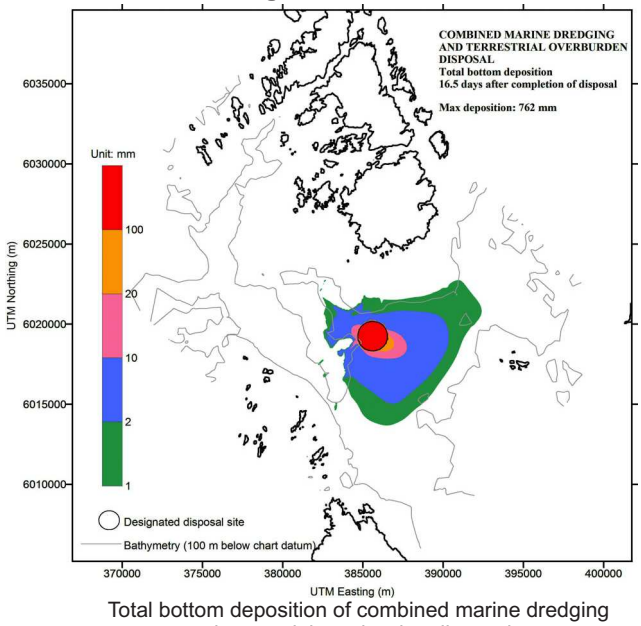
1 IRIS to Shanghai P-Nav Scientific Instruments, China
1 IRIS to USGS Woods Hole Science Center, USA
1 IRIS to J. Bornhoeft, Germany

Numerical Modeling

3D Numerical Modeling Study of Transport and Fate of the Sediments Released during and after Disposal Operations in Brown Passage

In support of the environmental approvals for the sediment disposal in the Brown Passage ocean dumping site, as conducted for Stantec Ltd., ASL Environmental Sciences has carried out a 3D numerical modeling study of short-term and long-term transport and fate of the sediments released during and after the disposal operations. The sediment disposal is part of a port development plan for Prince Rupert, which will involve disposal of marine dredging and terrestrial overburden sediments at the regional ocean disposal site in Brown Passage (see Figure).

The modeling results will be used to address the potential impact of the disposal of sediment on the natural environment of Brown Passage, especially for benthic habitat. For this objective, the 3D numerical model COCIRM-SED was adapted to determine the quantity and pattern of the short-term and long-term deposition of sediments and the Total Suspended Sediments (TSS) plume during and after the sediment disposal. The major oceanographic processes determining the deposition, dispersion and transport of the discharged sediments are the tidal and wind driven currents.



Total bottom deposition of combined marine dredging and terrestrial overburden disposals.

Upcoming Conferences

ASLO 2012	Japan, July 8-13, 2012
IceTech 12	Banff, Sept. 17-20, 2012
PICES	Hiroshima, Japan, October, 2012
TRCR 2012	Kamloops, Sept. 17-20, 2012
Oceans 2012	Virginia Beach, Oct 14-19, 2012
ATC 2012	Houston, Dec. 3-5, 2012

Todd Mudge, Bernadette Fissel & David Fissel at OTC 2012

Next Issue:

Remote Sensing

Currents & Waves

More Product Sales

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