# ASL Environmental Sciences

**Newsletter**
**Fall 2024**

**Fall 2024 ASL Newsletter. This issue:**



## ASL Successfully Completes Metocean Survey for FortisBC Energy Inc.

Dr. Matthew Asplin, ASL's Project Manager and Mujib Rahman, Senior Geotechnical Engineer with FortisBC Energy Inc.

ASL is pleased to announce that it has recently completed a six-month metocean survey for FortisBC Energy Inc. as part of its ongoing operations and maintenance activities supporting its stewardship of the Vancouver Island Transmission System which supplies natural gas to Vancouver Island and the Sunshine Coast. Wave buoys and subsea current profilers were deployed from December 2023 to June 2024, with a mid-program servicing trip in March 2024. All subsea equipment and wave buoy mooring anchors were successfully recovered, with full recovery of all datasets.

The field program measured directional waves and subsea currents at six individual moorings deployed at three strategic locations along the pipeline route in the Strait of Georgia near Powell River, BC and Texada Island. These measurements utilized ASL's new PBM-15 polyethylene deepwater buoys to support data collection in water depth of up to 400 m. The datasets collected from this program will be used in numerical modeling studies to support pipeline spanning and integrity assessment at various locations, to be conducted by Worley and RPS, a Tetra Tech Company.

The Vancouver Island Transmission System is critical energy infrastructure that transports natural gas from the British Columbia mainland to Vancouver Island. This pipeline system ensures a reliable natural gas supply to the Island's residents and industries, supporting residential heating and electricity generation. ASL is pleased to support preliminary front-end engineering design (PRE-FEED), construction, and operations and maintenance assessments of new and existing marine energy infrastructure.

FORTIS BC™ worley TETRA TECH


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## ASL Introduces the New Acoustic Zooplankton Fish Profiler "AZFP-nano"


The AZFP-nano is a compact, lightweight, single frequency scientific echosounder. A miniaturized version of the AZFP, it is easily portable and well suited for applications in challenging environments where size and weight are important considerations. It is ideal for such applications as fisheries science, oceanography and environmental monitoring.

- Compact, lightweight
- Battery-powered for multi-week deployments
- Uses common D-cell batteries for easy replacement
- 200 kHz center frequency (other options coming soon!)
- ASL's standard acoustical calibration

See product brochure for full details: click here

Optional titanium pressure case with transducer showing the nine D cell battery pack.

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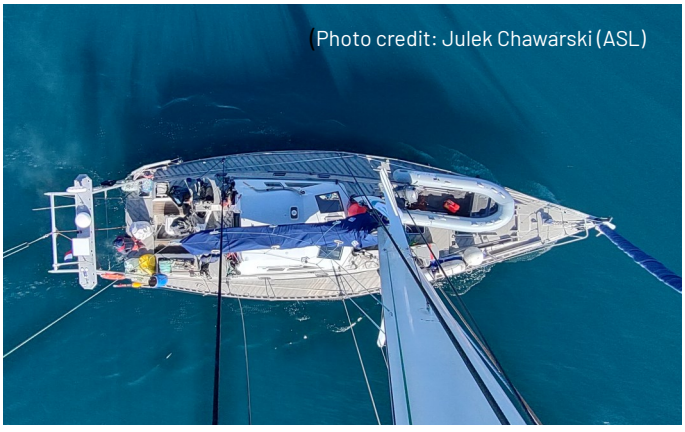
## ASL Co-sponsors Climate Research Expedition to Southeast Greenland


ASL's Biological Oceanographer, Dr. Julek Chawarski, successfully completed a research expedition to the glacial fjords along the southeast coast of Greenland, near the Ammassalik Archipelago. Aboard the 16-meter research sailboat *Atka*, the team focused on glacial-ocean interactions in a region rarely explored by research vessels. While most studies in the area concentrate on the massive Sermilik fjord system, home to the Helheim Glacier, the *Atka*'s crew of five, including two scientists, conducted pioneering research in the surrounding, understudied fjords.

Julek, collaborating with a team of scientists from Stockholm University, aimed to investigate the heat flux of Atlantic water from the Irminger Sea and its impact on the melting of smaller outlet glaciers along the coastline. The region's unusually heavy ice conditions and storm activity delayed the *Atka* in Reykjavik for two weeks before it could embark on a challenging crossing of the Denmark Strait. The vessel finally arrived in Tasiilaq on August 9th, and the team proceeded to navigate narrow coastal waters to reach ice-free fjords in the Ikertivaq region.




Using the *Atka*'s newly installed custom-built winch system, the team profiled over 14 kilometers of the water column with a novel profiler package equipped with ASL's latest instrument, the AZFP-nano. This advanced profiler was developed to measure a wide range of physical and biological parameters, including plankton biomass and distribution. In addition to studying heat transfer to the Greenland ice sheet, the team sought to unravel the varying effects of meltwater on polar and subpolar plankton ecosystems. Continued...

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Captain Paul Marre and Julek Chawarski deploying the novel water column profiler equipped with ASL's latest instrument, the AZFP-nano. Photo credit: Matthiea Klitting (*Témoins Polaires*).

The magnitude of heat exchange and meltwater volume often depends on fjord morphology and glacier type. By navigating the narrow coastal waterways, the team was able to study various glacier types, including floating and grounded marine-terminating glaciers and freshwater glaciers with riverine drainage into the ocean. By comparing the physical properties of meltwater and the associated plankton communities, scientists aim to better understand how marine ecosystems might respond to the accelerated melting of the Greenland ice cap.

During the expedition, Julek collaborated with Dr. Jakob Zopfi from Basel University, Switzerland, who was investigating the biogeochemical signatures of greenhouse gases in glacial meltwater.

The *Atka* is owned and operated by Temoins Polaire, a French foundation dedicated to climate literacy and research. Julek will continue working with researchers at Stockholm University to publish findings from the expedition and will collaborate with Temoins Polaire to communicate the results to school children and young adults interested in learning about climate change.

For more information on this expedition contact Dr. Julek Chawarski.

Julek Chawarski recovering the plankton net. Photo credit: Matthiea Klitting (*Témoins Polaires*).

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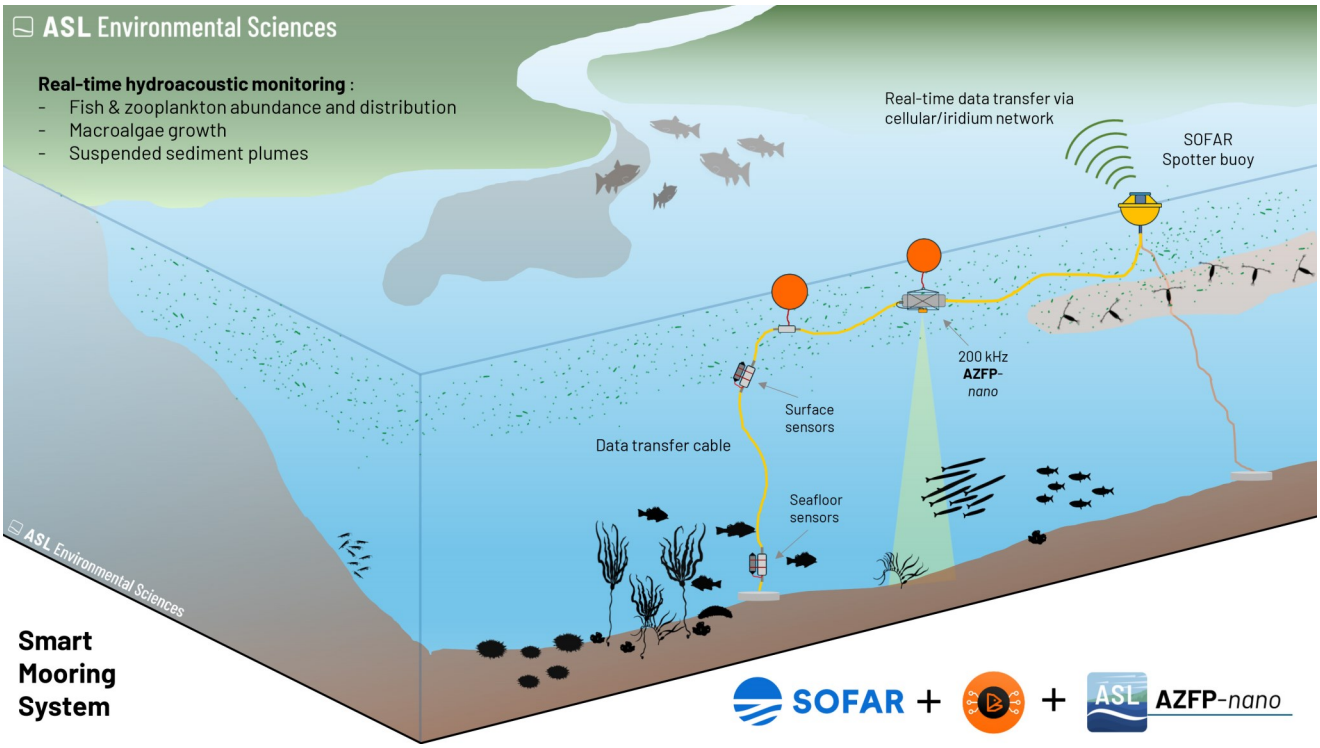
## Real-time Monitoring with Smart Mooring System—AZFP-nano Equipped Spotter Buoy



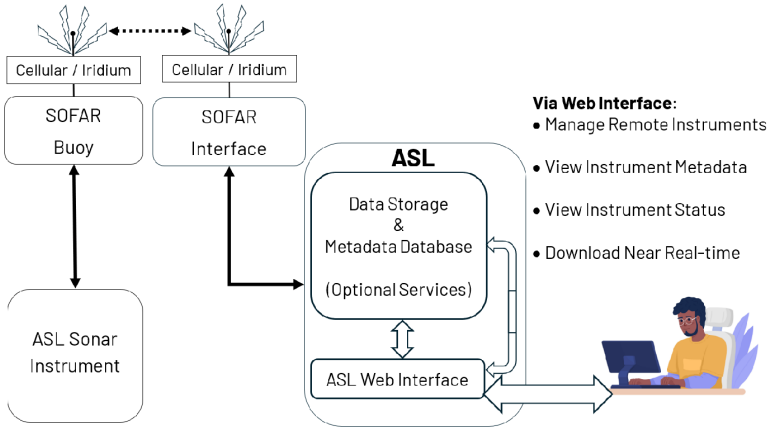

### Features

ASL's Acoustic Zooplankton Fish Profiler-nano (AZFP-nano) is a portable, light weight, easy to set up instrument package deployable across a range of marine monitoring platforms. We are working with SOFAR Ocean and the Bristlemouth initiative to provide researchers with a compact system delivering acoustic backscatter data in near real-time via cellular or iridium communication. Using a Bristlemouth hardware interface, acoustic data acquired from the AZFP-nano and other oceanographic instruments can now be viewed and downloaded remotely, bringing acoustic data from the field directly to the researcher.

Sofar Spotter metocean buoy

AZFP-nano

Conceptual drawing of real-time data transfer




Download brochure here

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## ASL partners with Edgewise Environmental

ASL Environmental Sciences Inc. (ASL) and Edgewise Environmental Consultancy Ltd. (Edgewise) have partnered to offer the North American offshore marine energy sector a comprehensive full-service team of ocean specialists. With a cumulative 60+ years of ocean experience and extensive on-water experience on all three of Canada's coastlines, we strive to deliver innovative multidisciplinary solutions for your marine energy project needs.

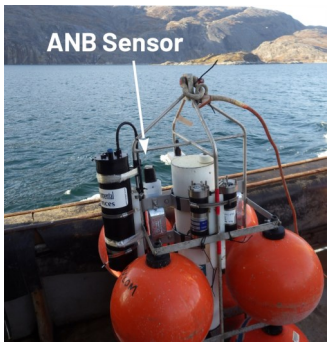
- Comprehensive physical oceanography studies
- Sea ice studies
- Biological oceanography studies
- Marine mammal and seabird observation
- Passive acoustic monitoring (PAM)
- Environmental training

Read more here: *Partnership Brochure*

ASL stands as Canada's largest company specializing in physical oceanography. Since 1977, ASL has been actively involved in supporting marine energy initiatives from the tropics to the Arctic. ASL offers a range of oceanographic instrumentation, an extensive lease pool of metocean instrumentation, and subsea mooring design and deployment. The company has also expanded its services to include direct surface wave measurements in shallow and deep waters via moored buoys, complementing its subsea offerings.

Edgewise Environmental is a certified women-owned Canadian marine environmental consultancy focused on marine mammals, seabirds and underwater noise mitigation solutions. As architects of change, Edgewise is driving marine environmental advancements through specialized consulting and training, strengthened by cutting-edge research and technology. Edgewise delivers environmental services and products to clients across various industries nationwide. Examples of past projects include mitigation and monitoring during geophysical and geotechnical surveys, wildlife data management for large scale energy projects, literature reviews for federal regulators focused in renewable energy, and Indigenous engagement for wildlife monitoring programs.

## ASL Uses ANB pH Sensor for a One-Year Deployment




ASL, in collaboration with the Nunatsiavut Government, is conducting a multi-year oceanographic study near Nain, Labrador, using a subsea mooring with advanced instruments like ASL's next generation IPS, an ADCP and sensors for chlorophyll, turbidity, temperature-salinity, and dissolved oxygen. A key addition is the ANB OC300 pH sensor, offering calibration-free monitoring of marine pH. This sensor makes use of in-situ pH reference calibrations to ensure long-term data accuracy, supporting the Nunatsiavut Government's environmental management efforts. ASL is the Canadian representative for ANB's pH Sensors. Please contact James Bartlett jbartlett@aslenv.com for more information.

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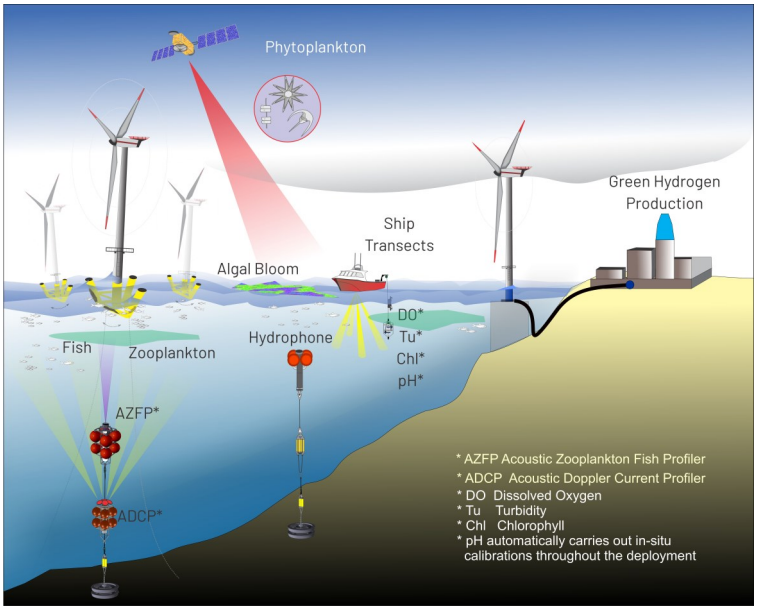
## ASL Awarded Subcontract to Assess Metocean Data Needs for Offshore Wind Development in Atlantic Canada

ASL Environmental Sciences Inc. is pleased to announce that it has recently completed a research and development subcontract from Gavin & Doherty Geosolutions Ltd., a subsidiary of Venterra Group PLC as part of a metocean data needs and gap assessment for the development of offshore wind projects in Atlantic Canada for Natural Resources Canada. ASL was selected as a subcontractor for its 45 years+ of expertise in sea ice, ice bergs, and freezing spray accretion as well as a history of delivering successful metocean-ice studies to clients.

The primary objective of the work is to identify all types of metocean data needed to enable successful offshore wind project development in Atlantic Canada. Following a review of existing datasets, and a dataset gap analysis, we will be making recommendations for specific appropriate measures to collect necessary datasets. The analysis focuses on Nova Scotia and Newfoundland and Labrador, where near-term offshore wind development is more likely. The study also keeps in mind the broader Atlantic Canada region, with future data needs for projects in the Gulf of St. Lawrence, Prince Edward Island, New Brunswick, and Quebec.

The final report is intended to support the development of public measurement campaigns that can be leveraged by a variety of stakeholders to ensure that informed decisions are made in pursuit of developing Canada's offshore wind industry over the coming years. The outcomes of this work will be of interest to regulators, industry, engineers, and the broader offshore wind community alike. For more information on this work, contact Dr. Matthew Asplin at masplin@aslenv.com or Sahar Tavangar of GDG at stavangar@gdgeo.com.




Identifying metocean data gaps and guiding pre-leasing data collection activities are critical components of our role in this project, which will ultimately guide the development of fixed-bottom and floating wind farms in Atlantic Canada.

The Great British Columbia ShakeOut

ASL officially registered and participated in the Great BC Shakeout on October 17 at 10:17 am. While potential earthquake hazards depend on your location, everywhere in British Columbia is considered at high risk in relation to the rest of Canada.

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## ASL's Jan Buermans Together with IGHEM Committee Organize IGHEM 2024 Conference

Organized by ASL's Jan Buermans with the support of the IGHEM committee, the 14th International Group on Hydraulic Efficiency Measurement (IGHEM) was held on August 11–14, 2024 at the University of British Columbia in Vancouver, British Columbia, Canada.

With 23 representatives from Canada, Switzerland, Austria, France, Sweden, Germany, Italy and the USA, the IGHEM conference provided a forum for engineers from industry and research establishments to present new results, to exchange ideas and to discuss directions of future developments.

## ASL Participating in International Conferences


**Oceans 2024 Halifax**


**WindEnergy–Hamburg 2024**


**OTC 2024 Houston**

## ASL Summer BBQ

This year ASL's Matthew Asplin and family hosted the annual ASL summer BBQ. A big thanks to Matthew, Laura and the boys for hosting this event. Thanks are in order to all those who participated.

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## ASL Welcomes Humza Rao to Our Team

ASL is proud to introduce Humza Rao. Humza graduated from McMaster University with a Bachelor of Mechanical Engineering in 2021. He has over three years of working experience in various engineering fields and has a fascination for electro-mechanical technology. His interests include running, climbing, playing intramural sports and generally staying moving and active. He enjoys a cozy night of reading or playing video games on occasion.

Humza has been hired for the position of Oceanographic Instrumentation Engineering Technician. His responsibilities will include design of mechanical components, supplier relationships, quality assurance, user manuals, mobilization, demobilization and repair of leased equipment.

United Way British Columbia

ASL kicked off its annual United Way Campaign with a pizza lunch October 8th followed by a presentation by Shaun Cerisano, Director of Development of Beacon Community Services.

## Conferences

### Upcoming Conferences

**ABCMI's Annual Business Opportunities Conference & Trade Show**
Oct 31–Nov 1, 2024
Vancouver, BC

**Asian Fishery Acoustics Society meeting AFAS 2024**
Nov 11-14, 2024
Nagasaki, Japan

**Marine Renewables Canada**
November 19–21, 2024
Halifax, Nova Scotia

**OEEC Offshore Energy Conference**
Nov 26-27, 2024
Amsterdam, Netherlands

**Arctic Change 2024**
December 9–12, 2024
Ottawa, Ontario

### Recent Conferences

**Working Group on Fisheries Acoustics Science and Technology WGFAST 2024**
April 9–12, 2024
Brest, France

**Offshore Technology Conference OTC 2024**
May 6–9, 2024
Houston, Texas

**Canadian Meeorological and Oceanographic Society CMOS 2024**
June 3–6, 2024
Virtual

**Oceans 2024**
Sept 23–26, 2024
Halifax, Nova Scotia

**WindEnergy- Hamburg 2024**
Sept 24–27, 2024
Hamburg, Germany

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