

Metocean Equipment Leasing

SPRING 2017

Wave Measurement

ASL Environmental Sciences has the largest lease pool of metocean equipment in Canada. We can help you choose the best instruments for your application and advise on how to deploy them. We also have experienced personnel to support you in the field and with data processing as required. We use the equipment for our projects and know these instruments well. Pick our brains; we want you to have a successful deployment so that you will come back and lease from us again. Many of our clients are repeat customers and look to us first for their equipment and mooring requirements. Many of our clients are return customers. We don't just lease, we provide advice on equipment selection, rigging, etc.

Current Measurement

Ice Measurement

Equipment Focus – Instruments Available for Sediment Measurements

Sediment Transport

- **Turbidity loggers** (Alec CLW and D&A OBS3A): Alec units are wiped for long term stability in biofouling environments. The OBS3A's can also provide realtime turbidity data via cables.

- **Niskin bottles for in-situ water samples** that can be analyzed for suspended sediment concentration.

- **Ponar bottom grab samplers**, both petite and standard, for collection of bottom samples.

- **ADCPs**, downward looking with the bottom-track feature, can provide a measure of bedload transport. Acoustic backscatter intensity is related to suspended sediment concentration.

- **RBR CTD's with turbidity sensors** for profiling or self-contained deployment.

- **Imagenex scanning sonar** for bedform studies; both real-time or in combination with an **IRIS data logger**.

- **ASL AZFP** acoustic multi-frequency water column profilers can map time series of sediment distribution over the water column.



Fish Habitat Studies

Coastal Engineering



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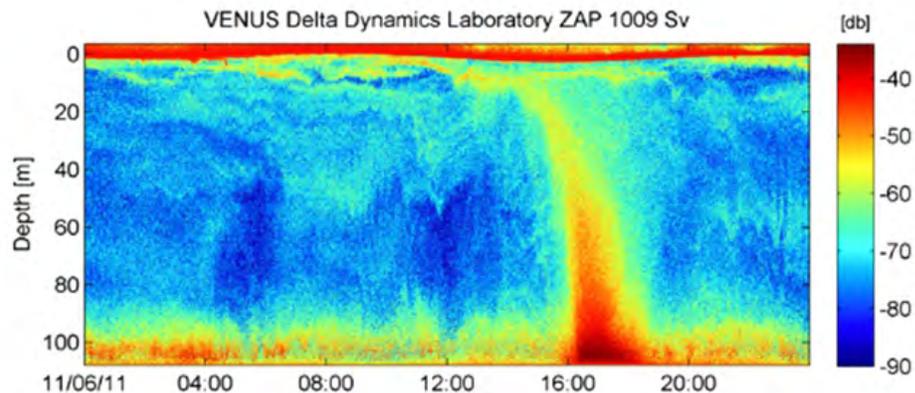
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ASL's AZFP Detects Vertical Sediment Distribution off the Fraser River

ASL's AZFP multi-frequency sonar, with its long battery life allowing for extended self-contained deployments, has shown interesting sediment processes off the Fraser River Delta, including river sediment flowing out as a pulse on the ebb tide.



Did You Know?

We recommend you do not rely on the delayed start feature of most instruments. Start the instrument up before deployment and confirm it is running (an AM radio can often be used to help confirm operation). This reassurance is well worth trading off a few days battery power.

Mooring & System Integration

The Field Services Group at ASL has over 50 man-years of combined experience in deployment and recovery of metocean equipment worldwide. We can assist you with your moorings and field work, from renting the equipment, to providing a trained field technician to assist you, to designing and assembling your mooring and having it shipped to you ready to deploy.

Mooring design and assembly is critical to the success of every project. ASL uses numerical modelling software to help account for current drag, buoyancy, and to calculate the load on each component as well as anchor weight requirements. Mooring components should all be load rated and capable of handling the mooring loads expected, including shock loading. Corrosion precautions need to be taken particularly with dissimilar metals.

Moorings deployed in strong tidal flows need to be low-drag to limit depression. Alternately use bottom frames to provide a stable platform that can also withstand fishing activity, debris and high suspended/mobile sediment.

Deepwater moorings must be rated for extreme depths, and buoyancy is generally provided with syntactic foam or glass sphere flotation. Taut line moorings can be thousands of meters long and require special vessel deck gear and positioning capabilities.



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Mooring & System Integration (continued)

Working in rivers and lakes can present different challenges, such as high river flows and limited accessibility to remote areas. Clear water can drastically reduce the range of the Acoustic Doppler Current Profilers often used for flow measurement, and extremely low current speeds in many lakes can require custom sampling configurations.

Recovery can be even more challenging and ASL recently achieved a 100 % recovery rate over a three year project in the harsh conditions of Cook Inlet, Alaska. Our moorings often have backup recovery/re-location, such as ground lines.

Whether you are doing CTD, water quality or ADCP transect work, or wish to deploy taut-line moorings or bottom frames, ASL has the knowledge and experience to help you. We made some mistakes early on (yes, we deployed a bottom frame or two upside down); you don't have to. Take advantage of our experience. Let us help you have a pleasurable mooring experience.

ASL Environmental Sciences Is Now Sales Representative for Teledyne Marine Products

ASL Environmental Sciences Inc. has been chosen by Teledyne RD Instruments, Teledyne OceanScience, and Teledyne Benthos as sales representative for British Columbia, Alberta and Alaska. ASL already has a large equipment pool of Teledyne Marine products, which we use for our projects and lease out to customers. This expanded role builds on our longstanding relationship with Teledyne and brings our specialist aquatic knowledge to the sales environment. We work in both the commercial/industrial world, as well as with government and research agencies such as Ocean Network Canada, bringing a rounded view to oceanographic studies.



ASL has a wealth of knowledge about the Teledyne instruments and how best to deploy them. Our understanding has been tried, tested and improved over many years and much of our work has been in our assigned sales area. We have extensive field experience in the North Pacific and Arctic Oceans. We have worked from high-altitude alpine lakes down to brackish estuarian waters, while sampling around quite a few dams along the way. Clients include engineering and consulting firms, port authorities and local companies such as fish farms and we have work closely with LNG and Oil and Gas companies. This has extended our experience deploying metocean gear into river, lake and coastal environments, which can be applied worldwide.

We believe Teledyne Marine products offer some of the best solutions in the world and we are here to help you meet your goals. Please contact Ben Garrett bgarrett@aslenv.com or Rick Birch rbirch@aslenv.com or call us at 1-250-656-0177

ASL Attending Upcoming Conferences

OTC 2017

May 1-4, 2017 Houston, Texas



Oceans 2017

Sept 18-21, 2017 Anchorage, Alaska



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