EQUIPMENT LEASING NEWSLETTER

SPRING 2009

Wave Measurement

Current Measurement

Ice Measurement

Sediment Transport

Fish Habitat Studies

Coastal Engineering

New Equipment Available for the 2009 Field Season:

TRDI StreamPro. The StreamPro is a high frequency (2 MHz) 3-dimensional Acoustic Doppler current profiler with bottom tracking for measuring discharge in shallow waterways. The transducer is attached to a small boat that is pulled across the waterway. Data is collected in real-time and transmitted via a Bluetooth wireless data link to a pocket PC.

StreamPro Specifications:

- Minimum water depth = 0.15 m
- Maximum water depth = 4.2 m (Long Range Mode)
- Default cell size = 10 cm; increases to 20 cm for Long Range mode
- Current speed resolution = 0.1 cm/sec
- Bluetooth range ~ 90-100 m
- Generally runs all day on 8 alkaline AA batteries

RBR XR-620 CTD (6Hz) with Turbidity, Chlorophyll, and an Aanderaa Optode for dissolved oxygen measurement.
The Optode DO sensor has:

- Response time <8 sec (63%)
- High accuracy
- Not stirring sensitive (it consumes no oxygen)
- Lower fouling sensitivity
- Measures absolute oxygen concentrations without repeated calibrations
- Better long-term stability

Much easier to use than the electrolyte-based sensors.

TRDI 75 kHz Long Ranger ADCP – low frequency, long range (500-600m).

RBR XR-420 CTD with Dissolved Oxygen (3 available)
RBR TGR-1050P Tide Gauge – 20 or 50m working depth (6 available)
ORE 8242XS acoustic release – heavy duty for deep water, rated for 6000m

Alec Compact CLW usb logger – with Chlorophyll, Turbidity, Temperature, and Wiper to keep sensor clean

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ASL's Lease Pool has expanded and now includes:

- 16 TRDI ADCPs with frequencies of: 75, 150, 300, 600, 1200, & 2000 kHz
- 11 Cart acoustic releases and 3 deck boxes
- 6 RBR CTDs

As well as many other instruments: www.aslenv.com/lease.htm

Interesting Leases within the last year:

The **Nortek Vectrino** has been used on several interesting projects including one at Baker Lake Dam in western Washington State. AECOM Environment used the Nortek Vetrino to verify velocities normal to a parallel bar screen used in a v-screen floating surface collector to satisfy fisheries requirements. The screens withdraw flow while directing fish to a collection area where they are removed and transported past the dam and released downstream of the project.

Turbidity Monitoring in an Ice Covered River

Enbridge Pipelines Inc. monitored turbidity throughout the installation of an oil pipeline at the Qu'Appelle River, Saskatchewan in the winter of 2008/2009. The pipeline was being installed beneath the river bed using horizontal directional drilling and turbidity was monitored in the river throughout construction to check if drilling mud had entered the river. North/South Consultants Inc. deployed **OBS3A** turbidity data loggers beneath the ice and downloaded turbidity data daily as support for turbidity readings measured with a handheld meter.

Intertidal Biological Research

Dr. Steve Cross of Aquametric Research has deployed the **1200 kHz Zed-Hed ADCP** several times to study current flow very close to bottom in the intertidal zone. He digs a hole in the bottom at low tide and installs the ADCP in a pipe with the head level with the sea bottom, looking up. Current profiles are collected using small bins as the tide floods and ebbs. The data are primarily used to determine the residual current directions for aquaculture research. Drs. Chris Pearce and Wenshan Liu of the Pacific Biological Station used this technique to gather data to help assess the effects of geoduck clam harvest on the benthic sedimentary environment, the nearby eelgrass beds, and the suspended sediment concentration, and to examine how these effects vary spatially and temporally. The data helped them set up sampling strategy for their experiment.