ONC heads back to sea

Submitted by Virginia Keast Tue, 2015-04-28 11:50

1st expedition of 2015 supports long-term Canadian science projects

In late March, the first Ocean Networks Canada (ONC) expedition of 2015 set out to service observatory sites in the Strait of Georgia, B.C.?s busiest coastal waterway.

The**primary goal** of this year?s weeklong mission was to prepare for the spring phytoplankton bloom and the Fraser River freshet, both major annual events for scientific study in the southern Strait. In all, 48 instruments were replaced, repaired or newly calibrated and deployed in time to monitor these events.

ONC?s 2015 spring expedition: (top) M/V *Oceanic Surveyor* approaches Steveston dock; (lower, left to right) recovery of the forensic science platform; blackened pig bones destined for Dr. Lynne Bell?s lab at Simon Fraser University?s Forensic Research Centre; new Delta Dynamic Laboratory extension cable prior to installation.

Two major science projects using Strait of Georgia observatory data are also among the longest running: a program monitoring the shifting seafloor sediments at the Fraser estuary by Natural Resources Canada (NRCan), and a forensics experiment led by researchers from Simon Fraser University that?s helping police and coroners solve investigations dealing with human remains found in the ocean.

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Repairing an ocean observatory comes with unique challenges

Apart from rough weather, servicing observatory sites in the Strait of Georgia may be hampered by high currents and poor visibility subsea, affecting both the manoeuvrability of the remotely operated vehicle used to access the seafloor platforms and its ability to plug in or recover instruments.

> ?Ocean observatories are difficult and expensive to install and maintain,? says Adrian Round, ONC?s director of observatory operations. ?If you compare ocean exploration to space travel, both have significant engineering challenges but the ?toolbox? to address the ocean challenges is much more limited.?

Why? Visible light and radio waves, critical enablers of space exploration, are not available to the ocean explorer. Only sonar technology can penetrate the ocean?s darkness to enable undersea navigation and detection. And while the vacuum of space remains relatively constant, says Round, to go from sea level down as far as 3,000 metres, the increase in pressure presents a huge engineering challenge involving a major redesign of equipment. ?There?s no such thing as a small leak on the seafloor. Things fail very dramatically.?

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