

Northward Ho! (2014)

Submitted by Dwight Owens Mon, 2014-08-25 09:59

Return to Cambridge Bay

In September 2012, Ocean Networks Canada installed a cabled community observatory in Cambridge Bay, Nunavut—the first of its kind to be installed in Canada’s North.

Each year, ONC teams travel to this northern hamlet for an important maintenance expedition to clean and upgrade the observatory infrastructure and instruments. It’s also a great opportunity to reconnect with the residents of Cambridge Bay.

Right now, members of our engineering, science and outreach teams are busy preparing for our third visit, from 14-25 September.



Panorama view of the dock at Cambridge Bay.

New and improved technology

This year, the main instrument platform will be retrieved from the seafloor and replaced with a new platform. Existing instrumentation to be serviced and reinstalled:

- Underwater HD video camera
- Acoustic ice profiler
- Fish tag receiver from [Ocean Tracking Network](#)

New instrumentation to be installed:

- Conductivity-Temperature-Depth (CTD) instrument with fluorescence and oxygen sensors
- Hydrophone customized for cold water conditions
- Photosynthetically Active Radiation sensor (PAR)

The new light sensor (PAR) will measure underwater light levels, helping scientists study changes during key periods, such as spring when the polar sunrise triggers algal blooms under the ice.

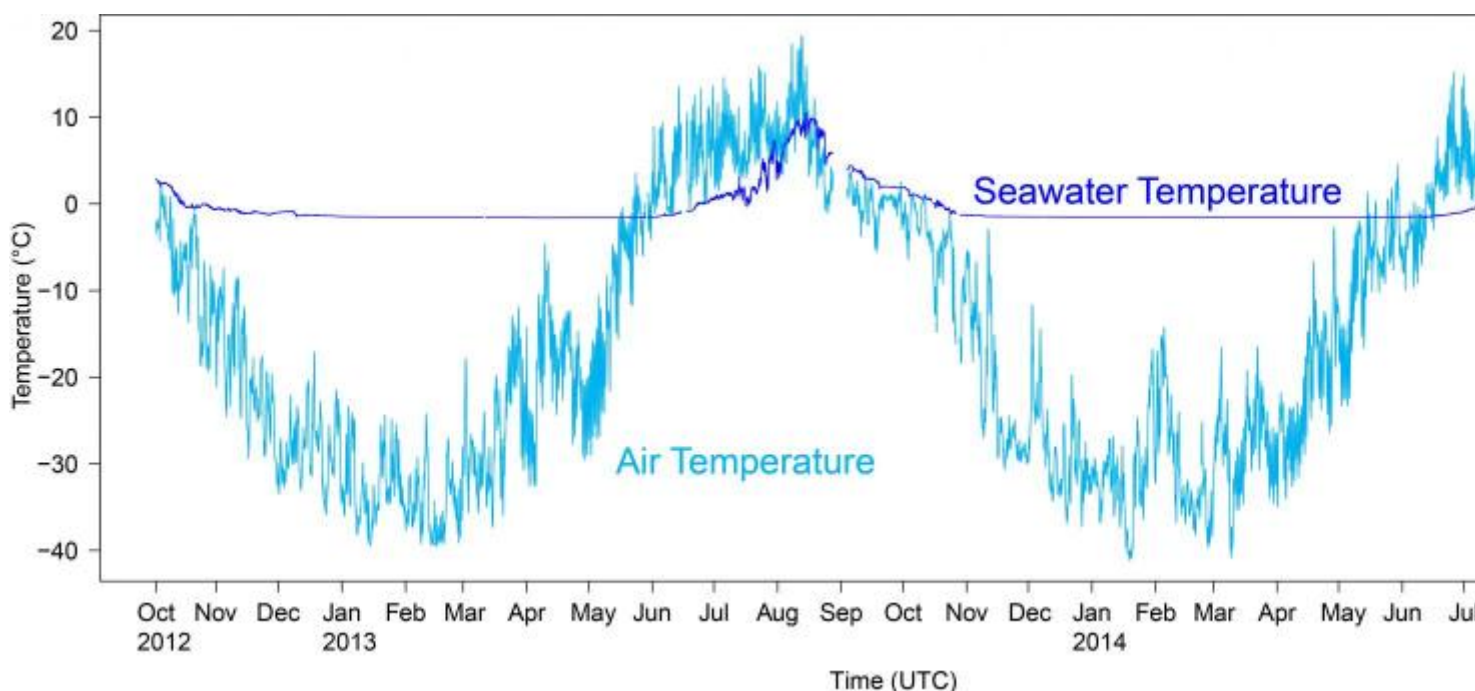
Above water, the video camera will continue to monitor surface ice formation (see [Return of the Ice](#) video clip) and the weather station will provide real-time atmospheric conditions, and the Automatic Identification System antenna positioned on top of a local building will continue capturing location and identify signals from nearby ships.

During the redeployment of the new platform, ONC scientific divers will also sample fauna on the seafloor, and conduct surveys for a new observatory location for 2015 that will position the underwater sensors at a greater distance from vessels and winter road traffic near the local dock.

What we're learning

In the current context of climate change and the pressures that global warming imposes on the environment, especially in the Arctic, continuous monitoring and collection of time series data are crucial to understanding and managing the Arctic Ocean.

The Cambridge Bay observatory has been successfully running for nearly 2 years now, and is helping establish a baseline of environmental conditions such as rates of ice growth and the timing of plankton blooms.



Air and seawater temperatures 2012-2014 winter in Cambridge Bay, Nunavut. While winter air temperatures frequently dip below -30 C, the water beneath the ice remains near 0 C. During the brief Arctic summer, prolonged sunshine raises air temperatures and melts the ice, causing seawater temperatures to approach 10 C.

Local Observations. Global Connections.

Free and open access to scientific data from the community observatory can help local students, teachers and community members to better understand the marine environment. This year, we're inviting local schools to participate in the pilot year of a novel educational program based on analyzing, understanding and sharing ocean data collected by the ocean observatories.



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Local students observed and participated in installation activities alongside Ocean Networks Canada staff members.



Moonset over Cambridge Bay: the moon emerges from a lunar eclipse to set at daybreak, 15 April 2014. **(Click the image to view the moonset movie.)**

Stay tuned for updates!

Interesting Observations

- [A Year of Arctic Sea Ice](#) (related story)
- [Greenland Cod](#) (video)
- [Melting of the Ice](#) (video)
- [Return of the Ice](#) (video)
- [Cambridge Bay Observatory](#) (photo set on Flickr)

- [Snowmobile on Ice](#) (hydrophone recording from below the ice)

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