

Sea ice returns to Cambridge Bay

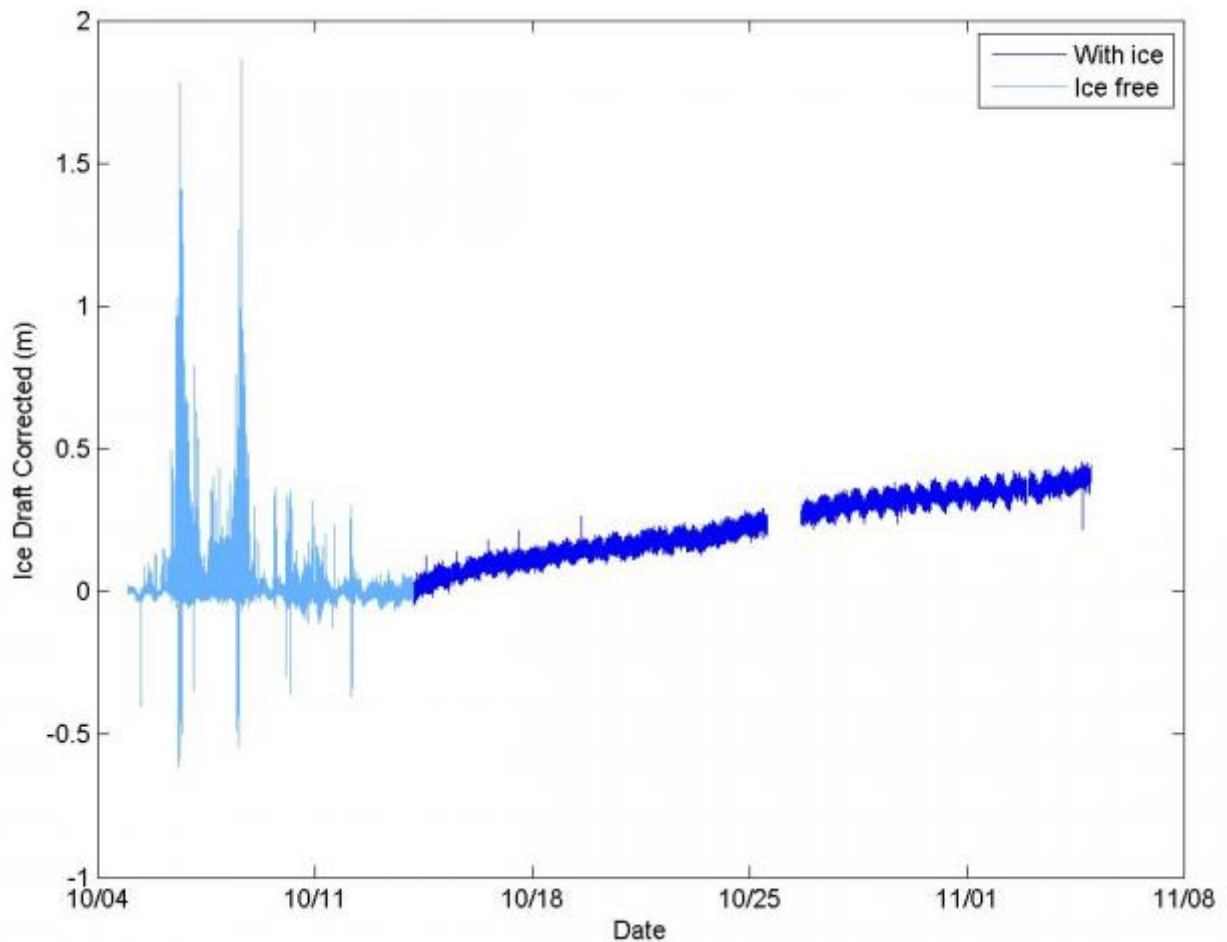
Submitted by Virginia Keast Fri, 2015-11-20 15:54

Unseen beneath the surface of the Arctic Ocean, the Ocean Networks Canada ocean observatory in Cambridge Bay, Nunavut, monitors ocean conditions 24/7. During the night of 13 October, sensors detected the seasonal return of surface sea ice.



Twilight at Cambridge Bay, Nunavut.

Since the installation in September 2012, the cabled observatory has continually recorded the conditions in Cambridge Bay, including the thickness of the sea ice. The shallow water ice profiler (SWIP) manufactured by Canada's [ASL Environmental Sciences](#), facing upward from the top of the observatory platform, uses acoustics to measure the ice thickness, known as ice draft. Other underwater sensors record the ocean temperature and salinity, while a camera on shore captures freeze-up and a weather station on the dock provides daily conditions.



This plot, starting 5 October 2015, shows the ice free period in light blue, followed by ice thickness in dark blue from 13 October onward. Small variations each day reveal the rise and fall of the Arctic tides in Cambridge Bay.

A review of similar observatory data from previous years indicates the ice formed on 18 October, 21 October, and 8 October in 2012, 2013, and 2014, respectively.

The observatory provides a direct measurement of ice thickness in this region, and over time will reveal the long-term variations associated with a changing Arctic. These data, freely available on the Internet, provide an accurate record of both the freeze-up and the melt periods for this portion of the Northwest Passage, complementing the regional coverage provided by satellite imagery.

Notice in the plot that the ice-free or light blue portion of the data is rather 'noisy,' with many spikes. Before the sea ice formed, the shallow water ice profiler detected the rough ocean surface, and the waves and bubbles caused by strong wind events. As soon as ice formed on 13 October, the signal became stable and the steady progression of thickening sea ice under the influence of the cold Arctic air can be clearly seen.

- See Data Tools to learn how to preview, create your own plots, download data, and more using ONC's data management and archival system, Oceans 2.0.

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