

?Ocean Sense? and Community Observatories

Submitted by Dwight Owens Thu, 2014-10-02 14:08

Coastal communities are facing a wide range of rapid changes due to a changing environment. Lack of up to date scientific data limits community members in their ability to make informed decisions about their own coast. The University of Victoria's Ocean Networks Canada offers a unique solution for bridging this gap in environmental monitoring, community involvement and scholastic outreach through the community observatory. To complement the expanding community observatory network, Ocean Networks Canada is introducing an educational program, [?Ocean Sense: local observations, global connections?](#) that will be piloted at Brentwood College School in Mill Bay, British Columbia, and Kiilnik High School in Cambridge Bay, Nunavut during the 2014-2015 school year.

Connecting coastal communities to their ocean

- In early 2012, the first prototype community observatory was installed at the dock at Brentwood College School in Mill Bay, BC. The Mill Bay location was chosen due to the school's interest in hosting the observatory, the availability of power and communication at the site, and the school's proximity to the Ocean Networks Canada VENUS observatory site in Saanich Inlet.
 - [Live data from Brentwood College School in Mill Bay, BC](#)
- In September 2012, a proof of concept version was developed for colder northern environments and installed in the Arctic Ocean at Cambridge Bay, Nunavut. Today this community observatory offers year round, continuous monitoring and science-based support for greater understanding and protection of fragile Arctic marine ecosystems. In September 2014, an ONC expedition team completed the 3rd annual visit to Cambridge Bay to maintain and upgrade the observatory.
 - [Live data from Cambridge Bay, Nunavut](#)
- All observatory data are freely available to the local school and community for their use, in addition to being available to the global science and education communities.

Why build a community observatory?

- Smaller-scale observatories allow Canadians to participate first-hand in ocean observations using proven ocean observing technologies.
- They offer the opportunity to study data, images, video and acoustics, in much the same way that researchers use NEPTUNE and VENUS, the world's most advanced cabled ocean observatories.

ONC offers an Internet-connected ocean with continuous monitoring

- Community observatories consist of four on-site components: an underwater instrument platform, an armored underwater cable, a shore station and a server station.
- The information collected from the platform is sent to the University of Victoria where it is managed, archived and made freely available to anyone with Internet connection.

What equipment typically comes in a community observatory system?

- Water quality sensors (to measure such things as temperature, oxygen, salinity, chlorophyll)
- Underwater microphone (called a hydrophone, to detect marine mammal vocalizations and other sounds)
- Underwater video camera (to monitor the diversity and behaviour of sea life)
- Above ground weather station (provides information on atmospheric conditions)
- Stationary shore camera (to support weather station data)
- Optional instruments to suit the location (such as an ice profiler for the Arctic)

From local observations, to global connections with ?Ocean Sense?

- ONC is launching a pilot educational program this fall focused on grades 8 to 10, to engage students early in their high school studies with locally-relevant ocean content.
- Schools that host a community observatory will be the cornerstones; however all schools and communities are welcome to participate. All it takes is an interest in learning more about the ocean through data from the observatory.
- ?Ocean Sense? will allow a school and its surrounding community to better understand their local ocean environment, and also to share information and insights with other communities, near and far.
- Initially, the program will be piloted in both BC and Nunavut schools, connecting the two regions to allow for a collaboration in learning. The flagship schools in the pilot year will be Brentwood College School in Mill Bay, British Columbia and Kiilinik High School in Cambridge Bay, Nunavut. Science teachers at the schools will be using resources and data in classrooms and providing feedback and direction to Ocean Networks Canada in developing and refining the program. Students will have opportunities to connect with each other across geographical distance and share findings and ideas.

Engaging communities with scientific research

- The University of Victoria and Ocean Networks Canada support the growing global movement to take university science into the community. This program is linked with other initiatives at the university through the Institute for Studies & Innovation in Community-University Engagement and the Office of Indigenous Affairs.
- By making scientific data directly available to community members, they can better understand the local ocean environment and use the data to inform community priorities.



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Local students have opportunities to observe and participate in observatory maintenance activities alongside Ocean Networks Canada staff members.

Inspiring future generations to care about their ocean

- The cost of a community observatory is highly dependent on its location, distance from

shore and the instruments included. Ocean Networks Canada has developed a range of systems to support a wide variety of research projects and that can be tailored to meet a school's available resources.

- Private donors are welcome to provide financial support towards a community observatory, thereby making possible a legacy of environmental and educational stewardship. For information, please contact [Jessica Stigant](#).

The potential for community ocean observatories

From its beginning in southern British Columbia's coastal waters, the community observatory concept is today garnering interest across Canada.

Links & Information Contacts

- [Ocean Sense program home page](#)
- [Live data from Brentwood College School in Mill Bay, BC](#)
- [Live data from Cambridge Bay, Nunavut](#)

[Maia Hoeberechts](#), Associate Director, User Engagement, Ocean Networks Canada,
(250) 721-8296 maiah@uvic.ca

[Ian McPherson](#), Director of Communications & Marketing, [Brentwood College School](#),
(250) 743-5521 ian.mcpherson@brentwood.bc.ca

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