



PRINCE RUPERT - TS'MSYEN TERRITORY COMMUNITY OBSERVATORY

Information for Community Members

At a Glance

Ocean Networks Canada has installed ocean monitoring equipment in the Prince Rupert region – Ts'msyen Territory. All data collected will be made freely available over the Internet. Community input is welcome at all stages of the project, and opportunities for collaborative education and science programs will be fostered. Further information is provided in the remainder of this document.

Background

Ocean Networks Canada (ONC), an initiative of the University of Victoria, develops, operates, and maintains cabled ocean observatory systems. The world-leading NEPTUNE and VENUS cabled observatories supply continuous power and Internet connectivity to a broad suite of subsea instruments from the coast to the deep sea, supporting research on complex ocean and earth processes.

Building on the successful technology and data delivery of the NEPTUNE and VENUS observatories, ONC is proposing the installation of additional community observatories along the coast of British Columbia. Coastal communities are facing a wide range of rapid environmental changes. Real-time data from cabled observatories can be used by community members when making informed decisions about their coast and marine resources.

ONC will design, provide, install, and maintain the scientific instrumentation associated with the community observatory. ONC has engaged with community members and gained the support of decision-makers including the Port of Prince Rupert, Metlakatla, Lax Kw'alaams, Kitselas, Kitsumkalum and Gitxaala Nations. ONC has completed the permitting phase of this project and instrumentation will be installed in **March 2016**.

The equipment will complement existing community research efforts by enhancing access to local, relevant environmental data which supports applications in several areas:

- **Marine safety:** by monitoring and providing information to support assessments of sea state, ship tracking, and incident response.
- **Public safety:** through natural hazard alerts for earthquake ground-shaking, underwater landslides and near-field tsunamis.
- **Environmental monitoring:** by building a baseline of environmental parameters and being able to continuously monitor changing conditions.
- **Science-based decision-making:** by enabling the use of observatory data to support decision-making.
- **Education and outreach:** by providing students, teachers and community members access to locally relevant data and support in analyzing and utilizing the data.

Project Locations

Sites are being proposed for long-term deployment of observatories in five regional areas:

1. Prince Rupert – Ts'msyen Territory
2. Kitimaat Village – Haisla Territory
3. Douglas Channel – Ts'msyen Territory
4. Campbell River – Kwakwaka'wakw / Coast Salish Territory
5. West Coast of Vancouver Island – Nuu-chah-nulth Territory



Figure 1: Existing and planned observatory locations.

Instrumentation for Prince Rupert – Ts'msyen Territory

Prince Rupert harbour has seen progressive growth of marine traffic over the years and the number and size of vessels is projected to increase with expansions to the terminals at Fairfield and Ridley Island, and with the possible addition of a terminal at Lelu Island. It is important to have a baseline of the local marine environment with the existing amount of vessel traffic before additional development begins. The publicly available scientific data from ONC observatories will contribute to the assessment of any long term, cumulative, or accident-related impacts.

ONC is installing a community observatory within Ts'msyen Territory, on the west side of Digby Island near the YPR airport. This observatory is equipped with a shore station that has a weather station and shore camera. The shore station is cabled to subsurface instruments that track and record local water quality, underwater sounds of marine mammals and vessels, and live stream video from an underwater camera. In addition, this location is equipped with a High Frequency (HF) RADAR (CODAR) system capable of measuring surface current speed and direction, as well as an Automatic Identification System (AIS) antenna to track large vessels in the region.

ONC is also installing instrumentation at a second location on the west side of Ridley Island. The installation has a second HF RADAR system that when triangulated with the Digby Island RADAR produces surface current maps that can extend out approximately 20 – 30kms. An X-Band RADAR (WaMos) is also co-located at this site, producing a shorter range but higher resolution picture of wave heights, direction and period in addition to surface current maps. A second shore station hosts a weather station, a shore camera and AIS antenna at Ridley as well.

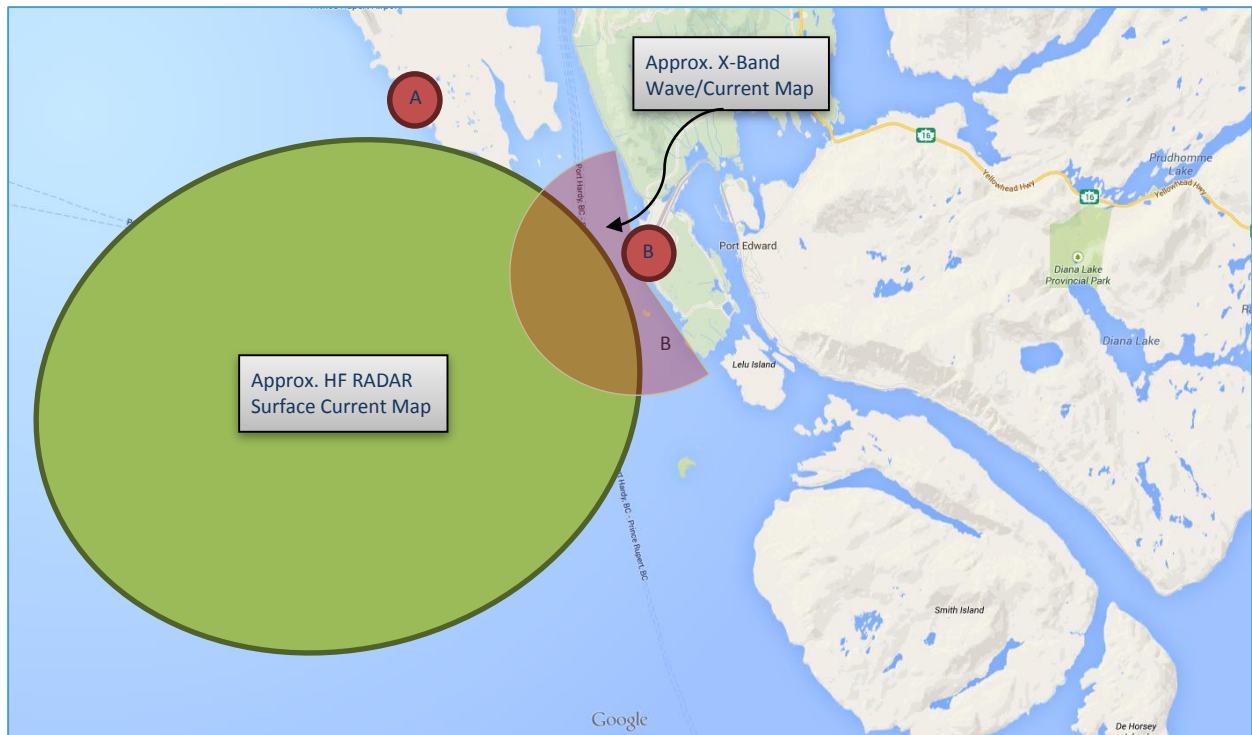


Figure 2. Circle A is the Digby Island YPR location of the ONC Community Observatory (shore station and cabled subsurface observatory platform), AIS, and HF RADAR station. Circle B is the Ridley Island location of the second HF RADAR station, X-Band RADAR, shore station and AIS. The transparent pink radius shows the approximate coverage of the X-Band RADAR. The transparent green oval shows the approximate HF RADAR surface current coverage. [Basemap: GoogleMaps]

The projected duration of the operation and maintenance of the systems are 20 years or more. Once the instruments are operational, real-time and archived data will be made freely available over the Internet for the lifetime of the equipment. These data can provide independent and unbiased observations of any changes to the Prince Rupert marine ecosystem, while offering the community a new window into their local marine resources.

Indigenous Community Engagement

A community engagement and education plan will be developed through a collaborative process involving the creation of working groups, face-to-face meetings, and workshops held in each of the regional areas. Community involvement is critical at all stages of the project, including planning deployment locations, development of educational programs, and long-term planning. It is essential that the data being collected by ONC instruments is relevant to community members and can contribute to priorities identified within the community.

Educational Opportunities

- **Local Observations. Global Connections:** Ocean Sense is an educational program based on students analyzing, understanding and sharing ocean data collected by their local community observatory.
- Educators and students will be invited to participate in the Ocean Sense program which links their community to other coastal communities through a web portal, video conferencing, face to face events, and social media tools.
- Other formal and informal educational materials and programs can be developed depending on community interests and needs.

Indigenous Knowledge

ONC would like to incorporate relevant Indigenous knowledge into the Ocean Sense program through a collaborative process with the guidance and oversight of Indigenous community educators from the five regional areas. With the advice from community knowledge holders, Indigenous knowledge and language will be included into materials for

educators and students, and where appropriate, shared with other communities in online materials and resources.

Contacts

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