

## EVIDENCE-BASED DECISION-MAKING.

The state of the ocean is an important indicator of the overall health of the planet. The ocean off the coasts of Canada, including the Arctic, comprises some of the richest and most diverse ecosystems on Earth. This makes Ocean Networks Canada data relevant to global users.

### THE SCIENCE ENABLED BY OCEAN NETWORKS CANADA INCLUDES:

#### Understanding human-induced change

- » Observing impacts from ocean temperature changes, increased noise, dissolved oxygen depletion, and increased acidification on fish and ocean ecosystems.

#### Life in diverse environments

- » Understanding the importance of biodiversity to ecosystem function requires knowledge about where species live, characteristics about their habitats, their roles in the community and how biodiversity changes over time.

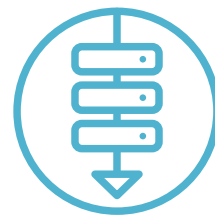
#### Interconnections among the seafloor, ocean, and atmosphere

- » Studying volcanic activity at ocean ridges, gas venting from the ocean floor, methane hydrate dynamics, low oxygen water masses, and ocean-atmosphere interactions help to advance knowledge of the earth system.

#### Seafloor and sediment in motion

- » Most of the largest earthquakes occur in the ocean's subduction zones, such as offshore Canada's west coast, and impact society, causing death, injury and infrastructure damage directly and through the generation of tsunamis. Similarly, studying underwater landslides is essential for understanding how they generate tsunamis.

## BIG DATA. BIG SOLUTIONS.



Long-term, continuous scientific data from the ocean environment are gathered by Ocean Networks Canada and made available through Oceans 2.0—a powerful online data management system. Oceans 2.0, combined with high-performance computing, allows ONC to provide ocean analytics that assist researchers, communities, industry and policy-makers in making evidence-based decisions in Canada and globally.

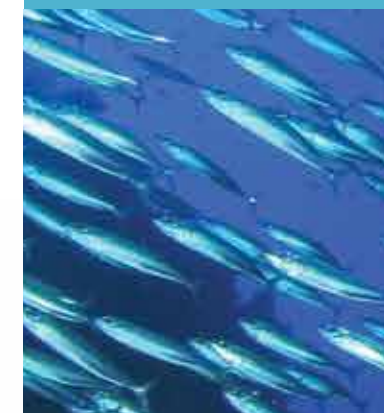
## LOCAL OBSERVATIONS. GLOBAL CONNECTIONS.

Coastal communities are facing a wide range of rapid ocean changes. Access to up-to-date scientific data enables communities to make informed decisions about their own coast. Ocean Networks Canada fosters ocean literacy by collaborating with Indigenous knowledge holders and local experts to develop resources and programs for educators, students, and citizen scientists.

## DISCOVER THE OCEAN. UNDERSTAND THE PLANET.

The ocean covers 70% of the Earth's surface and is a critical component of our planetary life support system. Human pressures are impacting the ocean at an ever-increasing pace, and understanding this change is vital to ensuring our planet's sustainable future.

*Equipped with world-leading observatory technologies, Ocean Networks Canada is a global community of researchers who are uniquely positioned to contribute to this urgent cause. Now...when it matters most.*



Ocean Networks Canada is funded by the Canada Foundation for Innovation, Government of Canada, University of Victoria, Government of British Columbia, CANARIE, and IBM Canada.

## WORLD-LEADING DISCOVERIES AT A CRITICAL TIME.

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Ocean Networks Canada enhances life on Earth by providing knowledge and leadership that deliver solutions for science, society, and industry.

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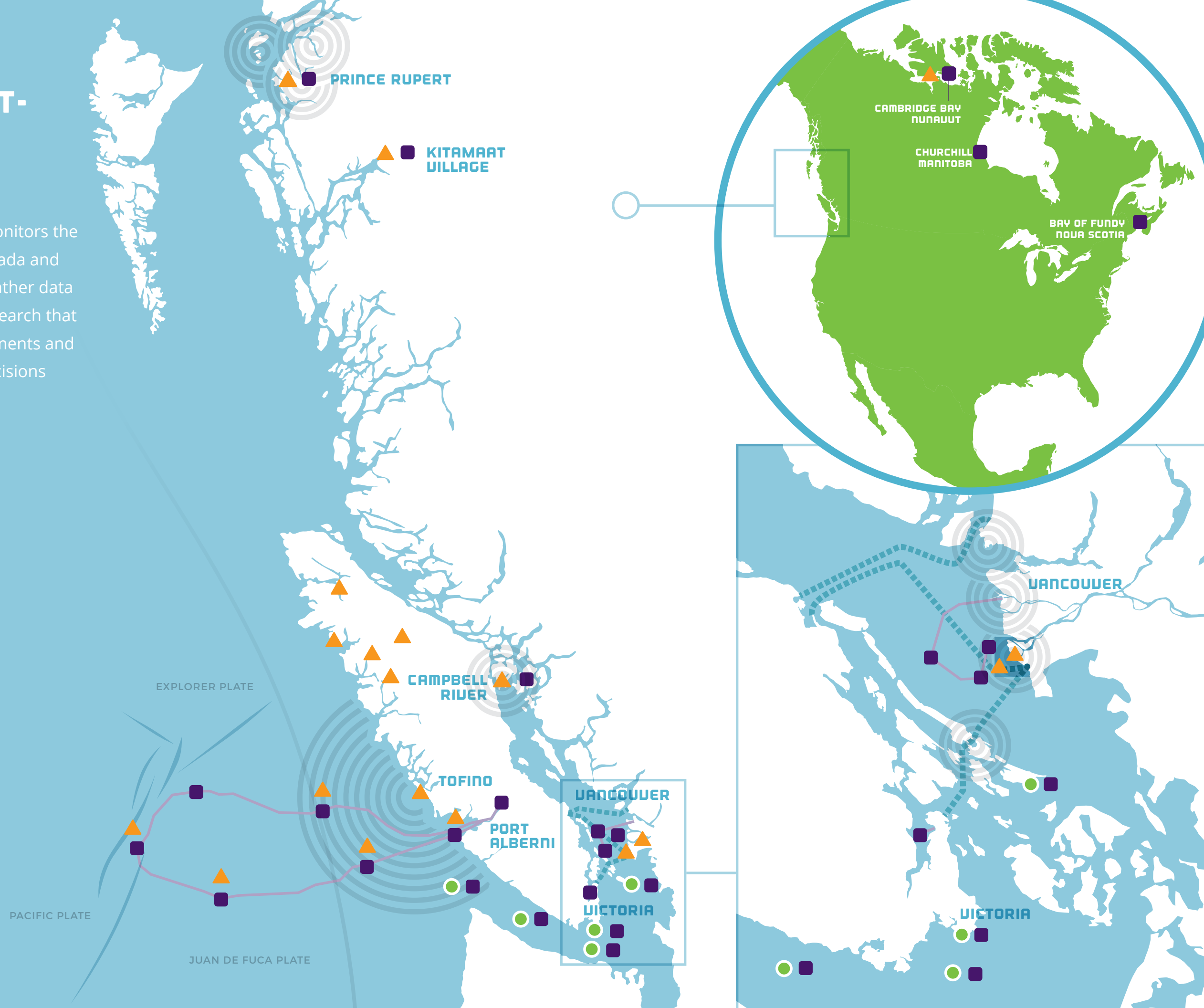


# THE INTERNET-CONNECTED OCEAN.

Ocean Networks Canada monitors the west and east coasts of Canada and the Arctic to continuously gather data in real-time for scientific research that helps communities, governments and industry make informed decisions about our future.

-  OCEAN SAFETY
-  OCEAN HEALTH
-  MOORING
-  FIBRE-OPTIC CABLE
-  FERRIES
-  COASTAL RADAR

150KM



# BUILDING A SMARTER OCEAN.

Smart Ocean Systems™ operationalizes Ocean Networks Canada's innovative technologies and expertise for the benefit of Canada and the world. Cabled observatories, remote control systems and interactive sensors, and big data management enable evidence-based decision-making on ocean management, disaster mitigation, and environmental protection.

## OCEAN HEALTH

- » Understanding climate change in the ocean
- » Cumulative impacts monitoring
- » Environmental benchmarks—water quality, marine life, and noise
- » Monitoring pollution for rapid and efficient response

## OCEAN SAFETY

- » Sea-state index
- » Marine mammal avoidance alerts
- » Ship traffic information
- » Earthquake early warning
- » Tsunami detection
- » Storm surge alerts

