BUILDING A SMART OCEAN

annual report 1 april 2016 – 31 march 2017
Canada’s national ocean observatory & hub for ocean data

Ocean Networks Canada (ONC) represents an investment of over $300 million in ocean-observing technologies, and supports transformative, multi-disciplinary research in coastal and deep ocean environments whose applications shed light on ocean processes and their impacts on a global scale.

ONC’s big data capacity has grown to include observatories in the Arctic Ocean, expanded systems along the west coast of Canada, buoys on Canada’s east coast, community volunteer ship data collection systems, coastal oceanographic radars, and ferry-based observations.

By continuously capturing, archiving, and delivering data from the ocean, these observatories support scientific study and inform decisions about earthquakes and tsunamis, climate change, coastal management, conservation, and marine safety for the benefit of the planet and all its living inhabitants.

Thanks to Canada’s significant investment, ONC’s pioneering research, data collection, and knowledge will continue to provide real-time access to information on the health of the ocean based on valuable benchmark data, alerts that provide a warning ahead of earthquakes and tsunamis, and tools for developing global strategies to sustain life on planet Earth for generations to come.
our ocean blueprint.
ocean health.

@Ocean_Networks gathers data for science research using tools like #3Dcameras #CdnSci

Hon. Kirsty Duncan
@ScienceMin • 8 Aug 2016
Expedition 2016: bigger footprint enables better science

Wiring the Abyss 2016 involved 40 days at sea off the west coast of Canada. This year’s expedition was an ambitious undertaking involving 149 people aboard three ships, and included three remotely operated vehicles (ROV) that made 44 dives to deploy, maintain, and recover 180 instruments and lay 18 kilometres of fibre-optic cable. The dynamic 24/7 operations engaged viewers across the world via live stream and featured regular Q&A with scientists, educators, and engineers.

Ocean Networks Canada (ONC) has succeeded in implementing the challenging vision of a comprehensive suite of observation arrays at sites across Endeavour, 250 kilometres off the west coast of British Columbia and one of the most challenging ocean environments on Earth. Endeavour now hosts sensitive seismic instruments that detect earthquake activity, an important step in improving our understanding of ocean spreading ridge earthquakes.

A new Delta Dynamics Laboratory platform, designed by Gwyn Lintern and his team at Natural Resources Canada, was deployed in 2016. This is one of the largest platforms on the coastal network, measuring six metres in length, and is equipped with over a dozen sensors and scanning sonars. These data provide a fuller picture of underwater currents and sediment dispersion at the mouth of the mighty Fraser River where it flows into the Strait of Georgia.

Sedimentary principles: marine geology, shrimp fisheries, and the impact of deep sea trawling

ONC’s Visiting Scientist Pere Puig is a marine geologist whose expertise in deep sea sediment dynamics is contributing to our growing understanding of the importance of submarine canyons. And, as the grandson of a shrimp fisherman in northern Spain, Pere’s research is also having a direct influence on Mediterranean fishing practices.

In 2015, Spain was the European Union’s biggest market for seafood products, according to SeafoodSource.com. The waters north of Barcelona are one of the most productive fisheries in the Mediterranean, but periodically, adult shrimp have been known to disappear for years. The collapse of the shrimp fishery in 2005 prompted Pere and his team at the Marine Sciences Institute to conduct a study, which revealed the cause and accurately predicted the return of the shrimp in 2008.

“While the fishermen already knew that trawling gear was scraping the seafloor, they were unaware of the ecological implications of constantly removing sediment from fishing grounds. Our study led them to think differently and to auto-impose a ban on the use of heavy bottom trawling gear in Palamós harbour.”

PERE PUIG, MARINE GEOLOGIST
Saanich Inlet & the science of dead zones

Saanich Inlet is one of the best-studied fjords in the world. The combination of easy access and unusual features has attracted researchers to this glacially carved fjord since the 1930s. It’s unique because of geography, dense plankton populations, and deep water that is a natural “dead zone”—a zone depleted in oxygen. Once a year, in the late summer or early fall, oxygen is restored, which makes it a fascinating study area for biologists, chemists, and sedimentologists.

In the fall of 2016, a research team ventured into the inlet every two weeks to collect water samples at multiple depths to measure a wide range of concentrations, from water chemistry and trace metals to phytoplankton and microbes. Experts from around the globe who don’t have easy access to a natural dead zone analyze these data.

As part of his PhD research at the University of Victoria, Jackson Chu has examined the ecology of oxygen deficient systems by using ONC data collected over the last decade. As an early adopter of seafloor observatories, his research and participation in ONC field studies date back to his first expedition in 2007.

The Northeast Pacific Blob: fading or not?

The warm surface water anomaly dubbed the “Blob” that has fascinated scientists for two years has all but disappeared from surface satellite maps. But is it gone for good?

“It’s not dead yet. There may still be a lot of heat down there—deep down—below the view from the satellites,” says Richard Dewey, ONC’s associate director of science services.

One idea as to why this occurred points to the Arctic, which is undergoing rapid climate change. In the fall of 2012, a season or two before the Blob showed up, the Arctic Ocean recorded its lowest summer sea-ice extent on record, allowing a significant amount of heat to be released by this open water, which weakened the polar vortex and changed the shape and position of the jet stream, so much so that fewer storms occurred in the northeast Pacific.
Partnering to expand Ocean Networks Canada’s reach from sea to sky

ONC and Dr. Maycira Costa of the University of Victoria installed a ferry-based sensor system focused on the calibration of satellite data for ocean health monitoring. Sensors were installed on the BC Ferries’ Queen of Oak Bay that plies the waters of Georgia Strait between Horseshoe Bay and Departure Bay. The first sensor, a radiometer oriented to look upward and mounted on the tallest part of the vessel, measures the amount of sunlight. The second instrument, a hyperspectral sensor, factors in the position of the ferry and the sun to find the ideal orientation to point at the ocean and measure the colour of the water: the greener the water, the healthier the ocean.

“ONC’s expertise in installation and operation of sensors and the Ocean 2.0 data portal were fundamental to the success of this research,” comments Maycira, whose expertise is in remote sensing.
indigenous & coastal communities.

A first anniversary for British Columbia’s community observatories

Coastal communities are facing a variety of rapid environmental changes. Real-time data from cabled observatories are being used by community members to make informed decisions about their coastal and marine resources.

Ocean Networks Canada’s (ONC) Arctic installation at Cambridge Bay, Nunavut was the first community observatory deployed (August 2012). The success of this observatory—and the community relationships it continues to foster—has provided valuable learning that made additional installations possible.

ONC continued to push the innovation envelope by deploying three community observatories along the British Columbia coast: in Campbell River, Kitamaat Village, and Prince Rupert.

An additional community observatory will be deployed in the Alberni Inlet in 2017.

“"The Port Alberni community observatory is important in terms of discovering more about the ocean and inlet that is our marine backyard. It will afford the opportunity for people—locally and from afar—to learn more about this critical ecosystem. We anticipate that its very presence will increase the number of visitors to our area. The City of Port Alberni thanks ONC for being such a great partner in science.""

MIKE RUTTAN, MAYOR OF PORT ALBERNI

Mia Otokiak, ONC’s first youth science ambassador

As the Arctic Youth Science Ambassador, Mia worked to further ONC’s community, youth, and educational engagement in the Cambridge Bay region. She was involved in the ONC-led “Safe Passage: to develop a better understanding of arctic sea-ice freeze-up and break-up,” including exploring the implications of changing conditions on local use of the ice. As part of her work, Mia led a youth community-based monitoring program to collect snow data to help in scientific modelling of ice conditions.

Building on the successes in Cambridge Bay, the Youth Science Ambassador program has been expanded to Prince Rupert, Victoria, Kugluktuk, and Gjoa Haven.
Digital Fishers: sablefish story

Modern science is starting to take amateur scientists’ observations seriously. “The impressive performance of over 500 citizen scientists who signed on for a study counting sablefish off the Tofino coast is heartening proof that we can all play a part in understanding the ocean,” says Maia Hoeberechts, ONC associate director of user services, who co-authored the study.

A vast collection of video is freely accessible through SeaTube, an application that is part of ONC’s sophisticated data management portal, Oceans 2.0. Citizen scientists can also watch live camera feeds and participate in scientific campaigns using the Digital Fishers tool. With 90,000 hours of archived data generated to date, the more eyeballs on the data the better. ONC is deeply grateful to all its volunteer “citizen scientists” as more and more video data are viewed and annotated.

Ocean observing course comes to Northwest Community College, Prince Rupert

In January 2017, a college course on instrument technology was launched at Northwest Community College in Prince Rupert. The course introduced students to marine sensor technology, with an emphasis on underwater cabled observatories and shore-based coastal weather stations. Students learned about the diversity of marine sensors, why and how they are used, and the challenges and opportunities of operating technology in a marine environment. Students designed and tested sensor apparatus in the lab and in the field, analyzed sensor data, and planned their own field missions. Due to its success, a version of this course is now being developed for Nunavut Arctic College.
oceans 2.0 users.

SCIENCE IMPACTS

- **196** scientific contributions (book chapters, theses, journal articles, conference proceedings, conference abstracts, and papers).
- **993** students impacted (undergraduate, master’s, doctoral, post-doc, research).

**CANADA** 72%

**UNITED STATES** 16%

**UNITED KINGDOM** 1%

**BRAZIL** 1.5%
environmental protection.
Planetary meltdown

The dramatic melting of sea ice impacts nearly everyone on the planet. In 2016/17, Canada saw the Rideau Canal open for just 25 skating days, Vancouver blanketed with more snow in one week than in two years, the Prairies enduring their most intense storm season on record, and Fort McMurray experiencing its driest spring in over 70 years before “The Beast” wildfire became the costliest natural disaster in Canadian history.

The scientific community has long warned about the irreversible effects on our Arctic of a steady rise in global temperatures. In the last decade alone, what once seemed incomprehensible is now imminent: the Arctic Ocean may be ice-free in summer by 2030.

Only by monitoring unprecedented changes in this unique-to-the-globe ocean can we hope to protect and mitigate the stressors on our Arctic. An observing network of undersea Internet-connected stations collecting data over the long term can improve our understanding of how the Arctic functions and responds to climate change before it becomes a multinational trade hub.

Arctic sea ice: slow growth in 2016

While global temperature tracking is suggesting 2016 will be the warmest year on record, the effects are acute and immediate in the Canadian Arctic where climate change has already advanced more than twice the global average.

This warming is having a dramatic effect on Arctic sea ice, with reports of both lowest ever recorded geographic coverage and low total thickness.
Delivering a smart ocean for Canada: Trudeau’s historic Oceans Protection Plan

On 7 November 2016, the Right Honourable Prime Minister Justin Trudeau announced a $1.5 billion national Oceans Protection Plan that will implement world-leading ocean safety and monitoring systems and strengthen engagement with Indigenous and coastal communities. This historic initiative will protect Canada’s ocean and coastal ecosystems for generations to come.

Cambridge Bay at the crossroads of history & climate science

In late summer of 2016, the first luxury cruise ship sailed through a virtually ice-free Northwest Passage and anchored in Cambridge Bay. This unprecedented event will be repeated in future by ships of multiple sizes and purposes. Ocean Networks Canada’s (ONC) expertise helps protect and mitigate the stressors on our Arctic Ocean.

The data collected from ONC’s world-leading technology improve our understanding of how the Arctic functions and responds to climate change. The next step is to attract funding partners to expand sensors into Arctic waters so communities have access to data for their own planning purposes and decision-making.
Canada’s first three-glider mission maps whale habitat

For the first time in Canada, a triple glider project successfully mapped a critical gray whale habitat off the west coast of Vancouver Island.

Giders are mobile underwater robots that fly at oblique angles up and down through the water column, collecting data that provide profiles of information from the ocean surface all the way to the seafloor. Periodic surfacing allows the gliders to obtain a GPS position fix, receive new instructions, and send back a few vital data records for early assessment.

In addition to the common suite of water property sensors—temperature, salinity, and oxygen—the gliders carried a broadband hydrophone to identify and count whale vocalizations, an echo sounder to remotely quantify zooplankton biomass variability, and optical instrumentation identifying phytoplankton to elucidate the major components of the whale food chain. A University of British Columbia glider also carried a specialized sensor suite for measuring ocean turbulence to better understand why submarine canyons create such favourable habitat for the whales.

The three gliders were provided by ONC, the University of British Columbia, and Dalhousie’s Ocean Tracking Network. This Whales, Habitat, and Listening project was funded by the Marine Environmental Observation, Prediction, and Response Network, and Fisheries and Oceans Canada who are partnering to ensure a sustainable and healthy ocean.
The ocean economy: Canada, a global superpower

At roughly 202,080 kilometres, Canada boasts the world’s longest coastline. New discoveries from the Franklin Expedition, along with the Northwest Passage’s opening for the first time in human history, have thrust our Arctic waters, and all the potential this uncharted area brings, into the spotlight. This global interest, and the investments Canada has made in marine innovation, provides an opportunity for us to significantly move forward and harness the true potential of our ocean and coasts.

Canada is already exhibiting leadership in ocean observation, bringing government, industry, conservation, and recreational interests together for informed policy decisions about our coastal resources. But in order to advance a truly innovative national agenda, we must continue to invest.

By striking a balance between economic growth and sustainability, Canada stands not only to reap the dividends of the blue economy, but also to lead the armada. At COP21, Canada’s leaders promised that addressing climate change would be a national priority and an opportunity to build a low-carbon economy that will serve as a model for the world. Unlocking the ocean economy sustainably is essential for fulfilling this promise.
Taking ocean data to the next level: custom web services for marine decision-making

With hundreds of instruments monitoring Canada's ocean environment, Ocean Networks Canada (ONC) gathers the same amount of data as the Hubble Space Telescope. Turning a firehose of high resolution data into useful knowledge is the challenge of the century and requires ONC’s robust and sophisticated data management system, Oceans 2.0, which is recognized by the International Council for Science’s World Data System as a state-of-the-art ocean management tool for marine decision-making.

Oceans 2.0 is a versatile online tool that allows scientists and the public to access and manipulate data—including audio and video—from ONC’s hundreds of deep ocean and coastal sensors in real time, 24/7. Thanks to renewed funding from CANARIE—whose ongoing support since 2006 has made Oceans 2.0 possible—a new two-phase project is currently underway to accelerate and advance scientific research in Canada.

"$10 mill #federal investment has led to $100 mill #economicimpact through @Ocean_Networks Innovation Centre."
@VIAlliance #VISummit

"ONC’s seafloor infrastructure combined with JASCO Applied Systems underwater listening station is generating critical data that will help inform vessel noise reduction solutions for vessels calling at the Port of Vancouver, and other ports around the world."

ORLA ROBINSON, ENHANCED CETACEAN HABITAT AND OBSERVATION PROGRAM, VANCOUVER FRASER PORT AUTHORITY

The @Ocean_Networks Innovation Centre is a one-stop shop for building new ocean monitoring systems.

Exploration vessel (E/V) Nautilus and cable ship (C/S) Cable Innovator during a tricky seafloor operation to lay three kilometres of cable at the Cascadia subduction zone. Over a kilometre below the choppy ocean surface, this fibre-optic cable connects a variety of deep sea sensors, including several accelerometers that will contribute to British Columbia’s earthquake early warning system.
Deployed: the first spike for British Columbia’s earthquake early warning system

In June 2016, Ocean Networks Canada (ONC) successfully deployed and connected the first of several earthquake early warning sensors on the Cascadia subduction zone. It will be part of a network of seismic sensors that ONC will install under water and on land as part of an earthquake early warning system funded by Emergency Management BC.

Following deployment, the sensor was successfully connected to ONC’s observatory infrastructure and data management system, Oceans 2.0., and ONC scientists have already been able to analyze data from recent minor earthquakes.

“We are among the first in the world to install these types of sensors in the ocean for earthquake early warning,” says Kate Moran, president and CEO of ONC.

Hon. Navdeep Bains
@MinisterISED • 4 Aug 2016

Innovation @Ocean_Networks is an earthquake early warning system
A Canadian first: NOAA brings tsunami digital elevation model training to Victoria, British Columbia

When Kelly Carignan, University of Colorado scientist, visited Victoria, British Columbia for the first time in April 2016, she was surprised that no tsunami evacuation routes were posted in this coastal city. “In northern California, you see a lot of tsunami hazard zone signs,” says Kelly.

For the last decade, Kelly and her colleague, Matthew Love, have been working with the National Center for Environmental Information at the National Ocean & Atmospheric Administration (NOAA) to develop high-resolution digital elevation models of coastal regions in the United States. Digital elevation models are a vital tool in tsunami forecasting and water level inundation modelling, and the National Centre for Environmental Information has defined the global standards being used by tsunami planning and warning centres.

Unlike other digital elevation models for land or sea, tsunami modelling presents a unique challenge; tracking powerful, landward-moving waves involves a sophisticated integration of both land-based topographic data (elevation) and ocean-based bathymetric data (water depth) into one seamless dataset. This task is extremely complex, detailed, and time-consuming. It involves gathering, editing, and integrating multiple data formats from a variety of sources to create the single high-resolution data set needed for a tsunami digital elevation model. All of these datasets also need to be referenced to the same tidal reference, which varies along British Columbia’s coast.

The creation of digital elevation models and tsunami inundation models for Canada’s coastal areas will improve the preparedness of the at-risk areas, and inform and strengthen the collaboration with the NOAA Tsunami Warning Centre and Emergency Management BC.

“Environmental issues don’t recognize borders,” comments Matthew Love. “Data collaboration is important, so we all work together to mitigate hazards.”

A Fly-on-the-Wall: notes from Port Alberni’s exercise coastal response

As Canada’s west coast braces for a much-anticipated major earthquake, ONC is working with partners to develop an earthquake early warning system. ONC has also been collaborating with other research agencies to develop preliminary tsunami wave propagation models that provide time of arrival, wave height, and inundation maps. These models—together with ONC’s observatories, sensors, and the new warning system under development—are crucial tools for tsunami preparedness.
building a smart ocean.

In 2014, Transport Canada, Western Economic Diversification, and IBM Canada wisely invested in a vision to take ONC’s decade of deep sea ocean observing science, data, and infrastructure to the next level.

After three years of hard work, collaboration, and innovation, this timely investment bore fruit in March 2017 when Ocean Networks Canada (ONC) successfully delivered an impressive suite of Smart Ocean Systems™ infrastructure, services, and data product prototypes, positioning Canada as a global leader in ocean technology, data management, and responsible ocean management.

The outcome of this smart investment is the delivery of the following suite of ocean infrastructure, data products, and services that leverage ONC’s extensive sensors and continuous real-time data that foster our country’s long-term economic growth and protection of the marine environment.

“You can have big data without information, but you can’t have information without data.”

DANIEL KEYS MORAN, COMPUTER PROGRAMMER & SCIENCE FICTION AUTHOR
SYSTEMSTM ECOSYSTEM 2014-2017

FUNDERS

Transport Canada
Western Economic Diversification
IBM Canada

PARTNERS

Polar Knowledge
Provincial ministries
Industries
Ports

DATA PRODUCTS & SERVICES

Marine Traffic Data Products
Workshops & Working Sessions
Ocean Health Data Products
Multi-media Outreach Products
Creating outreach products allowed ONC to further engage with coastal communities, including First Nations, and work with like-minded ocean-focused entities to build common tools.

Ocean Data in Practice
The Ocean Data in Practice iBook is an interactive overview of ONC’s coastal community observatories and data products. Within these pages you’ll find information on each community observatory, a guide to selected ocean instrumentation, descriptions of marine safety, marine traffic, and ocean health data products, and data access tutorials for Ocean Networks Canada’s data management system, Oceans 2.0.

Exploring the Salish Sea
The Exploring the Salish Sea iBook is an interactive guide to coastal marine ecosystems in British Columbia’s Salish Sea. Within these pages you’ll find information on the different environments of the Salish Sea where ONC has instrumentation, the science taking place at each location, a guide to common and locally important marine species, and data access tutorials for Ocean Networks Canada’s data management system, Oceans 2.0.

ENGAGEMENT IMPACTS

173 community events
16,800+ attendees
1,700+ K-12 educators involved
6,500+ K-12 students reached
Coastal Communities and Ocean Health

Monitoring the ocean is integral to our understanding of climate change. This video illustrates how ONC gathers scientific data from all three coasts, allowing communities and leaders to make informed decisions that improve ocean health and marine safety and enables us to build a smart ocean together.

Oceanographic Radars and Ocean Safety

Canada is a maritime nation that depends on shipping. The Port of Vancouver alone handles 20% of our country’s global trade. This video showcases ONC’s high resolution oceanographic radars that provide data on ocean currents, speed, direction, and wave heights in real time. This state-of-the-art technology improves marine navigation safety and oil spill response and enables us to build a smart ocean together.

Marine Traffic and Ocean Safety

Canada’s ocean is home to Earth’s largest mammals, while its ports handle 310 million tonnes annually. This video highlights how ONC combines ship traffic data with hydrophone data that not only support the shipping industry but also provide data for environmental monitoring and protection, activities that enable us to build a smart ocean together.
in the news.

social media stats FY16/17

**twitter** @Ocean_Networks

7,279 followers.

**facebook** /OceanNetworksCanada

9,308 likes.

**instagram** /@ocean_networks

955 followers.

**youtube.com** /OceanNetworksCanada

1.5M views.

**flickr.com** /photos/OceanNetworksCanada

76.8K views.

**linkedin.com**/company/ocean-networks-canada

1,044 followers.

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instagram highlights

- **MARCH 29 2017**
  - Ocean_networks fun fact: Orca groups are divided into pods, [...]
  - 75 likes

- **AUGUST 26 2016**
  - Ocean_networks A great group of students visited the ONC team [...]
  - 22 likes

- **JUNE 21 2016**
  - Ocean_networks Amazing drone footage of R/V Sikuliaq + ROV [...]
  - 61 views
media highlights

October 10, 2016
The ocean economy: Canada could be a global superpower

June 22, 2016
Canadian earthquake detector has deep-sea edge over US rival

October 10, 2016
FAULT LINES: Podcast with Johanna Wagstaffe

May 19, 2016
The bizarre link between the Fort McMurray Fire and a ‘warm blob’ in the Pacific

August 24, 2016
A groundbreaking effort against ‘the big one’
In 2017, the Canada Foundation for Innovation (CFI) celebrated its 20th anniversary. How has CFI’s support enabled state-of-the-art infrastructure and world-class research? With continued support, what is Ocean Networks Canada’s (ONC) vision for the future?

**JIM ROCHE**

CFI has supported the ambitious Canadian vision of placing instruments on the ocean floor and connecting them to the Internet since the late 1990s. They couldn’t have made a smarter investment. The world was beginning to wake up to the importance of our ocean to life on Earth. We can reach into space, but we also need tools to reach deep into the ocean to better understand our planet.

The support of CFI has helped make Canada a world leader in ocean observing technology and research.

Renewed commitments from CFI will enable these ocean observatories and their firehose of data to become a global source of knowledge that will guide leaders and direct policy to ensure our ocean and its coastlines, communities, and resources are understood and protected well into the future.
With funding for the last three years from Transport Canada, Western Economic Diversification Canada, the Centre of Excellence for Commercialization and Research, and IBM Canada, what was ONC able to achieve? How vital has that investment been to ONC’s impact in providing benefits to Canada and the world?

**KATE MORAN**

We operate the best, largest, most diverse ocean observatory in the world. Thanks to Canada’s smart investment in ocean observing research and technology, we can protect our ocean and sustain our quality of life.

Canada’s investment allows ONC to collect data 24/7 and deliver state-of-the-art data products and services that change the way the world uses, understands, and protects our ocean. With this information, we can better understand such things as climate change, which is impacting every human being on this planet and the global economy. At the same time, we are stimulating commercial opportunity by bridging the gap between innovation and commercialization in the realm of avant-garde ocean technology. Furthermore, these investments allow for innovative advances in the fields of biology, physics, geology, and more, and it informs policies that protect marine mammals, secures our food supply, and reduces greenhouse gas emissions.

That’s an achievement for which we can all be proud. And future generations will thank us.

It’s just a matter of time before the “Big One” occurs. Ocean Networks Canada and the British Columbia government are collaborating to develop an earthquake early warning system. What’s the latest on that partnership?

**JIM ROCHE**

In 2016, the Province committed $5 million to ONC and its partners to ensure that communities in southern British Columbia have the best chance to protect themselves and find safety when a major earthquake occurs.

This funding has enabled ONC to expand its seismic sensor network on land and on the ocean floor off the coast where large earthquakes occur. ONC also hosts vast amounts of data on Oceans 2.0, its world-leading data management system that collects and archives diverse data in real time that contribute to what will be a state-of-the-art warning system for the British Columbia coastal region.

With an expanded sensor network and proven delivery system, ONC data will alert decision-makers within seconds of a major event, allowing more time to take protective action. It is an important part of ONC’s vision to use our knowledge and leadership to deliver solutions such as these for science, society, and industry.

In 2016, the Canadian federal government announced a historic $1.5-billion Oceans Protection Plan and conducted a national science review. How will these bold steps by Canada help our oceans, and what role will ONC play?

**KATE MORAN**

It was a thrill to hear our progressive leaders announce the Government of Canada’s $1.5 billion Oceans Protection Plan. This Plan is a historic initiative that will significantly improve ocean safety and protect Canada’s deep ocean and coastal ecosystems. It’s a bold and ambitious plan that is a true partnership among government, Indigenous communities, academia, and our growing ocean industry. And, it couldn’t have come at a more opportune time.

Federal departments are mandated to achieve results under this program, and it’s exciting for ONC to be able to leverage existing infrastructure and expertise—which exists because of Canada’s foresight—to help achieve those priorities. ONC’s role is to operationalize specialized products and services that meet current and future priorities under this Plan, continuing the momentum towards a sustainable marine transportation system and the stewardship of our unique ocean environment.

By working together at this pivotal moment in history, we can ensure sustainable coastal and deep sea ecosystems that will benefit future generations.
Ocean Networks Canada (ONC) enhances life on Earth by providing knowledge and leadership that deliver solutions for science, society, and industry.

ONC infrastructure and data provide researchers from around the world with the tools to make strides towards understanding and forecasting extreme ocean and coastal events and climate change, chemical and biological change, geophysical events, and direct human impacts. New and improved products, processes, and services are being provided to ports, ferry and ship operators, emergency managers, First Nation communities, resource industries, and the Federal and Provincial governments for safe and environmentally sound management and use. ONC’s Innovation Centre is growing our ocean tech sector so that Canada can lead the world in tapping into opportunities in the planet’s growing blue economy.

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