

Significant economic impact

The Ocean Tracking Network (OTN) spans and affects the entire world. Collecting vast amounts of continuous, real-time data within one project will result in global economies of scale, long-term financial savings and significant scientific synergies.

The OTN has tremendous commercialization potential. In the next few decades, billions of dollars will be spent on ocean monitoring. Our technology will generate a large part of this new revenue. Future spinoffs for Canadian industry include ocean research, weather observations, electronic sensor manufacturing and more.



Acoustic receivers ready for the ocean floor



For more information:

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An evolution in ocean research

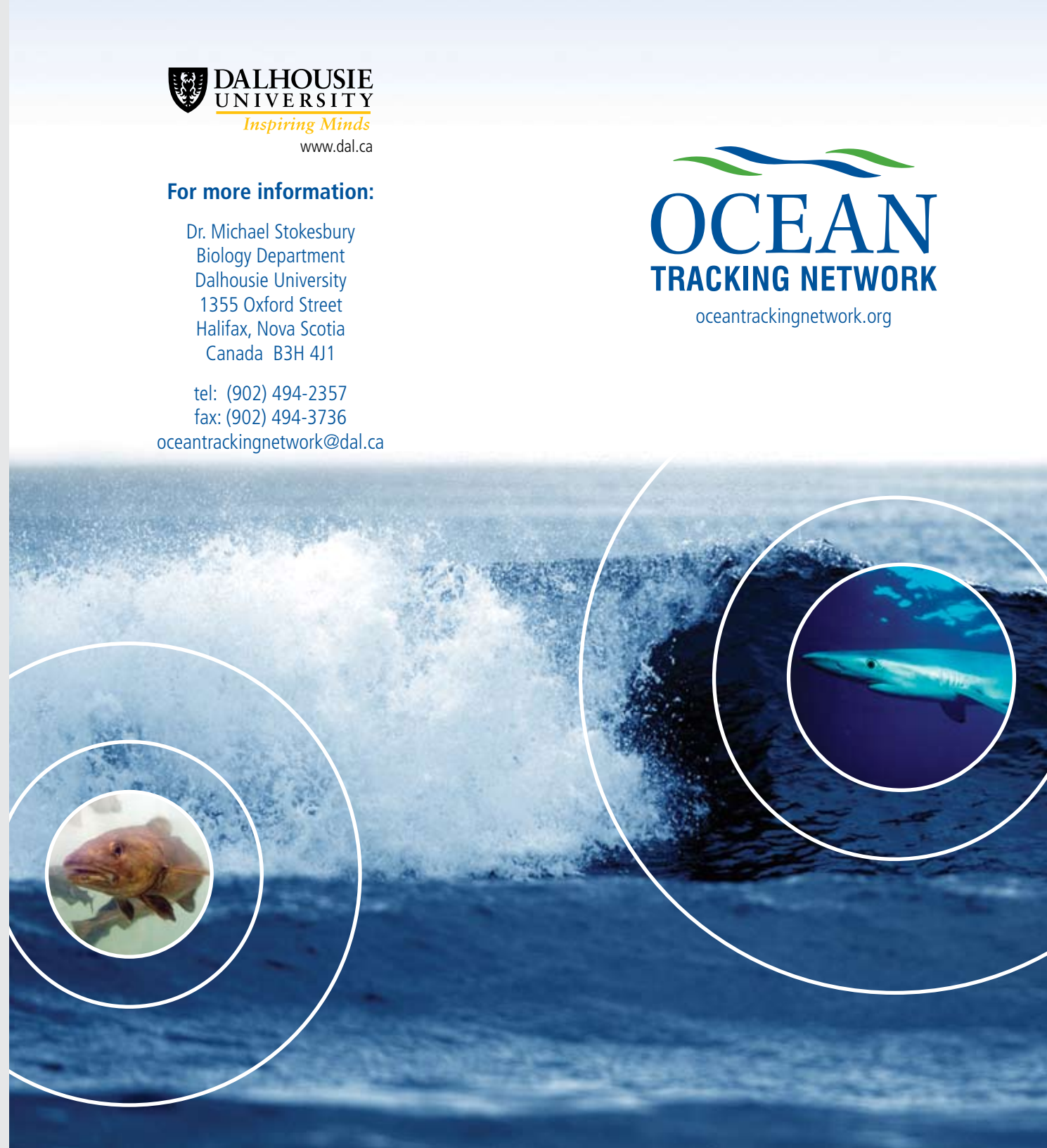
Consider just a few of the startling facts:

- Since the 1950s, the world has seen a 90 per cent drop in the population of large oceanic fish, such as bluefin tuna and giant blue marlin.
- Salmon, particularly Atlantic salmon, are well on their way toward endangered species status. Fisheries management specialists don't have enough information to reverse this trend.
- Polar bears are becoming visibly anxious – their habitats are melting and will soon be unable to sustain them.

The best way we can combat this drastic decline in marine life is through heightened research into animal and fish behavior and the changing physical properties of the oceans. In partnership with other internationally-renowned scientists, researchers at Dalhousie University in Halifax, Canada, are leading the world's most ambitious efforts to address climate change, ocean modeling and marine resource management.

"We know more about the dark side of the moon than we do about the bottom of the ocean. And we know even less about our marine life – how they live, where they go."

- Dr. Ron O'Dor, Lead Researcher, Ocean Tracking Network, Associate Dean of Science (Research), Dalhousie University



The Ocean Tracking Network

The Ocean Tracking Network (OTN) is a large-scale global initiative that comprehensively monitors ocean conditions and marine life response to these conditions.

Scientists are tagging sea creatures, from salmon to whales, with tiny transmitters so that their movements can be tracked for over 20 years by receivers placed at one-kilometre intervals along the ocean floor. Pressure sensors added to these receivers allow real-time measurements of ocean depth, temperature and salinity, all of which provide significant information about climate change and the likelihood of natural disasters such as tsunamis.

On shore, scientists around the world can receive this information regularly and upload it to a central database, resulting in current and reliable international records.

The power of information

To effectively protect and anticipate the future, we need to learn a thousand times more than we currently know about the ocean's biological and physical qualities, says OTN's project leader, Dr. Ron O'Dor of Dalhousie University.

The ocean makes up more than 70 per cent of the earth's surface, yet we know so little about what happens there. It feeds significant segments of the world's population. It controls our climate and fuels some of the deadliest natural disasters. It is the most vital component of our planet's infrastructure.

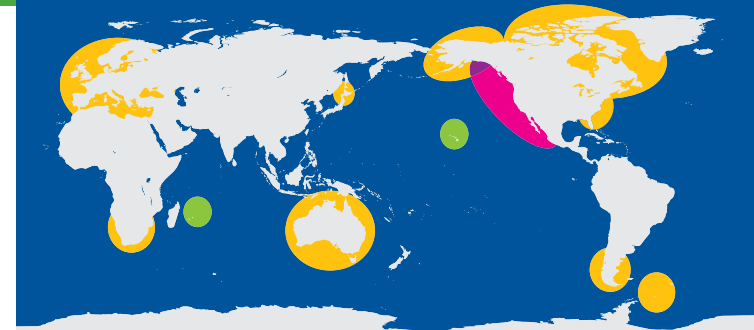
By using a sea-bottom network of acoustic receivers to track fish movement and the ocean's physical changes, we can collect benchmark data for predicting future changes and improving sea-life conservation. The Ocean Tracking Network makes this possible, and is changing the way marine research is conducted.

International partnerships

The power and potential of this initiative come from the international partnerships that are required to ensure reliable and thorough data collection.

The Ocean Tracking Network's technology crosses all seven continents – North America, South America, Europe, Africa, Australia, Antarctica and Asia. It covers five oceans – the Atlantic, Pacific, Indian, Southern and Arctic.

The technology's global application is such that, while researchers are tracking Greenland shark migration patterns in the Canadian Arctic that may be affected by melting of the polar ice cap, other scientists will be tracking the movements of king penguins as they feed in Antarctic waters.

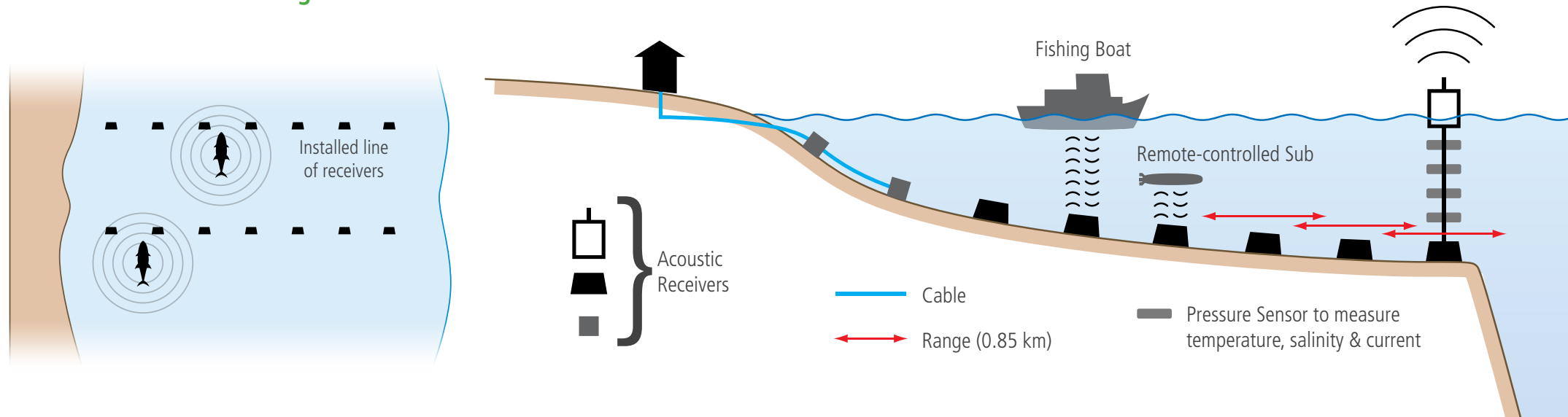


- Pacific Ocean Shelf Tracking
- Off Shore Receivers
- Ocean Tracking Network

Canadian technology at its best

The Ocean Tracking Network provides the global research community with a powerful new Canadian tool for observing the state of our oceans. Its leading-edge "made in Canada" technology is tested and proven. These underwater observation systems have shown great success for two major tracking projects of the Census of Marine Life: Pacific Ocean Shelf Tracking (postcoml.org) and Tagging of Pacific Pelagics (toppcensus.org), based on North America's west coast. These projects are simultaneously monitoring marine life movements and ocean environments. OTN will apply this technology worldwide.

The Ocean Tracking Network combines marine life and environmental data



"Canada is one of only three nations that fronts on three oceans – the Atlantic, the Pacific and the Arctic. From sea to sea to sea, we have the longest coastline of any country in the world."

- Former Canadian Prime Minister Brian Mulroney