



## MARINE NATURAL HERITAGE: PROTECTION AND CONSERVATION OF MARINE ECOSYSTEMS

The oceans cover almost three-quarters (71%) of our planet's surface. They hold an unbelievable variety of life forms, from the surface to the depths, and even to the coasts. At the origin of life, the oceans play a vital role in climate regulation as well as in air and water quality. The resources contained in the sea also constitute an essential food source for close to 2.5 billion human beings.

Surrounded by three oceans, the Atlantic, Arctic and Pacific, Canada has the longest shoreline in the world and an extraordinary diversity of resources and marine ecosystems. Moreover, Canadian waters are renowned for several emblematic species, such as whales and polar bears, which alone could justify their protection. However, threats to the oceans, such as overfishing, pollution and global warming, are also real and require sustainable management of the marine ecosystems.

### Marine ecosystems under pressure

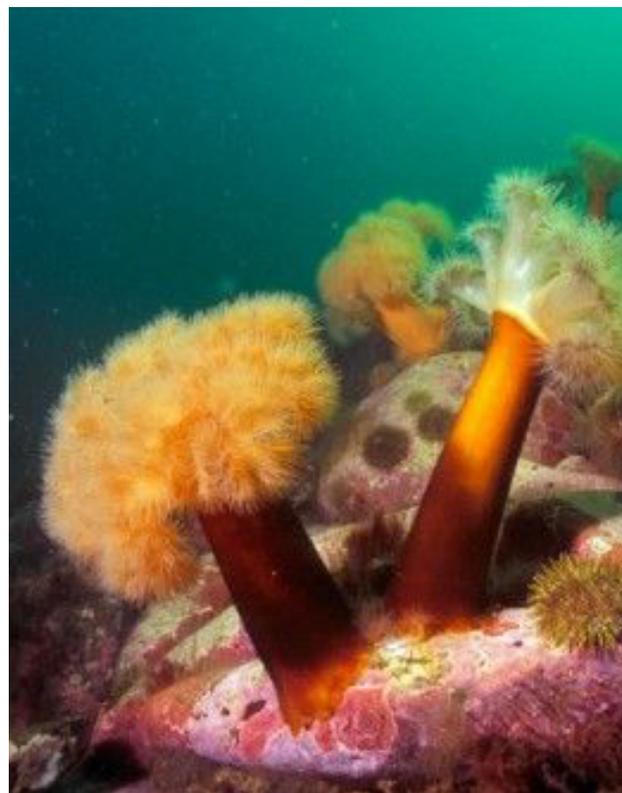
Threats to marine environments are very serious: intensive fishing, pollution and global warming. Among the most solid evidence:

- the disappearance of fish species;
- the exploration and development of oil and gas reserves;
- the degradation of water quality and habitats;
- the accelerated thawing of polar ice.

In addition, more than 90% of the ten most-fished species of fish are endangered. And half of the other commercial species are threatened by fishing industry practices.

### Marine protected areas, an important conservation tool

Throughout the world, marine protected areas are increasingly seen as an invaluable tool for conservation and protection. With more than 60% of the world's population living in coastal areas, the pressure placed on marine and coastal biodiversity will continue to increase and threaten these often-fragile ecosystems. Scientists agree that marine protected areas (MPA) are the most effective tools for protecting oceans against these ever-growing threats.



*Filled Anemone in the St.-Lawrence estuary.*

Credit: Clément Dumont

## What is a marine protected area (MPA)?

A marine protected area is a zone covered temporarily or permanently by salt water where large-scale industrial activities such as mining operations, petroleum development, or trawling are prohibited. A MPA is a zone legally designated to ensure long-term protection of marine ecosystems, habitats and species, including aquatic biodiversity.

Recreational and commercial activities are permitted, although limited in certain zones to preserve biodiversity in the marine environment for current and future generations. Marine protected areas range from sites that are entirely protected to sites in which harvesting of renewable resources is authorized as long as conservation objectives are respected.

## A major challenge

With a coastline extending 243,000 km and an extraordinary diversity of marine ecosystems, Canada currently has only 27,000 km<sup>2</sup> of marine areas that have varying degrees of protection, which is equivalent to only 0.5% of the surface of Canadian marine waters. The goal of creating a national network of marine protected areas for 2012 remains a major challenge for Canada. In 2009, it was estimated that, on a world-wide scale, barely 0.8% of the oceans were protected.

Québec has a role to play in Canada's commitment at the international level. Québec marine environments include more than 13,000 km of coastline, and include rich and varied ecosystems as well as an estuary that is unique in the world. Moreover, the St. Lawrence River was recently recognized by the National Assembly as a national heritage to protect. Already by 1997, the first marine park in Canada was established at the confluence of the St. Lawrence Estuary and the Saguenay Fjord. However, a serious effort will be required to reach the goal of 2% set by the United Nations for 2012.

## Research projects

Québec-Océan researchers are interested in the preservation of habitats, safeguarding fragile and threatened species as well as water and sediment

contamination. They use a variety of tools including digital simulation, genetics, remote sensing and marine acoustics to better understand topics such as the ecology of estuary fish or the proliferation of toxic algae. Results of these research projects are shared with government managers in Québec and Canada, and contribute to the long-term protection of zones with great ecological and biological value.



Credit: Mathieu Cusson

*Assessing the condition of organisms living in the intertidal zone in estuaries.*

## Find out more

- [Canada's Federal Marine Protected Areas Strategy](#)
- [Canadian Parks and Wilderness Society](#)
- [Protected Areas in Québec](#)
- [Saguenay-St. Lawrence Marine Park](#)
- [St. Lawrence Global Observatory](#)
- [North American Marine Ecosystems](#)
- [Symposium - Marine Protected Areas in Québec \(French only\)](#)
- [Group for Research and Education for Marine Mammals](#)