

World Ocean Day

A groundswell of support for conservation efforts

Inspired by the natural bounty of Canada's coastal regions, a diverse array of voices call for the protection of key ecosystems. Here are six examples among numerous areas worthy of protection. They represent unique biodiversity, specific challenges and innovative approaches to safeguarding these natural treasures. Building upon decades of efforts, proponents are optimistic that with continuing support, these crucial conservation initiatives will ultimately be fully realized.

1 EVERYTHING IS CONNECTED IN THE GREAT BEAR SEA

The Great Bear Sea, on the north coast of British Columbia, provides an incomparably rich habitat with deep fjords, rocky islands, glass sponge reefs and the shorelines of the Great Bear Rainforest. It is home to fin whales, humpback whales, orcas, seals and others as well as sea birds, wolves and bears, including the iconic all-white spirit bear.

"It's one of the world's last natural rain forests," says Danielle Shaw, chief councillor of the Wuikinuxu Nation. "I feel lucky to live surrounded by such natural beauty, but I'm also reminded that this ecosystem has been affected by things like overharvesting, mismanagement and climate change."

A number of factors – including commercial fishing, shipping, forestry and infrastructure development – have contributed to a degradation of habitats and declines in the abundance of many species. "Everything is connected," says Shaw. "The bears rely on different species of salmon,



and studies have shown that when salmon numbers drop for even one season, this affects the health of the bear population. The same applies to eagles, seals and whales."

Impacts are also felt by communities and those who depend on ocean ecosystems for employment, sustenance and well-being, she says. "We're looking to restore critical habitat, such as eelgrass beds and kelp forests, where many species live and reproduce, as well as salmon-bearing streams and watersheds."

Traditional knowledge can enhance decision-making, Shaw emphasizes. "The people living here know these areas like the back of their hands; they know what to harvest at what time of the year – and how to ensure practices are not negatively impacting species. We've taken that information and combined it with western science to ensure the highest rate of success."

Another consideration for the Great Bear Sea Marine Protected Area Network comes from economic impact studies. "We're looking to create a balance between protection and economic opportunities," she says. "Rather than a blanket protection, we envision different zones where certain activities can be continued. There is growing recognition among partners, including the fishing industry, that ecosystem protection can mean a thriving – and more sustainable – economy."

The hope is that in 40 years the coastal region will be fuller, richer and healthier, and that visitors "will still get to see orcas and grizzly bears in this beautiful place of the world," she says.

2 GIVING WHALES THE RIGHT-OF-WAY IN THE SALISH SEA

"The Strait of Georgia in the Salish Sea is one of the most important marine areas in Canada in need of protection," says Susie Washington-Smyth, co-ordinator of the Southern Gulf Islands Whale Sighting Network. "I'm worried that if we don't act now there will be nothing left to protect."

Coastal waters, flanked by B.C.'s Gulf Islands and the San Juan Islands in the U.S., are heavily frequented by both marine transport and whales travelling from the Strait of Georgia to the Haro Strait in the Salish Sea.

"There are about 3,000 species in the Salish Sea, with orcas at the top of the food chain," she says. "Southern resident [orcas] are the poster child of endangered species on the West Coast, and protection measures in the southern Strait of Georgia could tip the balance between southern residents surviving or not."

There are only 73 southern resident orcas left, the lowest number ever recorded, says Washington-Smyth. "Shipping and marine traffic has increased and continues to increase dramatically, but current protection measures for whales are woefully inadequate."



Management measures, in effect June 1 to November 30, encompass a "voluntary ship slowdown," she says, "but that's not enough. While there are interim sanctuary zones for the whales, they are too small, are not connected and have practically no enforcement. What's more, the sanctuary zones are only in place half the year when the whales are present year-round."

Current measures fall under the jurisdiction of Transport Canada, and outcomes can be significantly enhanced by forming a marine conservation area co-managed by First Nations, Parks Canada, and Fisheries and Oceans Canada, as both federal agencies have strong conservation and environmental protection mandates, argues Washington-Smyth. "We hope First Nations and federal and provincial governments will work together and help address the cumulative threats, including habitat loss, overfishing, pollution and climate change. Our communities depend on a healthy coastal environment."

"Since these waters are so heavily used, it's one of the most critical ecosystems to protect," she adds. "If we can't protect the home of the orcas, an important indicator species for the Salish Sea, what hope do we have for the future?"

3 INSPIRING AWE AND A DESIRE TO PROTECT HUDSON AND JAMES BAYS

Local First Nations call the shoreline along Hudson and James Bays the "birthing place." It's where ocean and land come together, where caribou rear their young – and where polar bears and beluga whales share habitat with hundreds of thousands of shorebirds.

Another ecosystem of significance is called "the breathing lands," says Lawrence Martin, manager of Mushkegowuk Marine Region, a conservation project spearheaded by the Mushkegowuk Council, representing seven First Nations in the Hudson Bay Lowlands in northern Ontario. "The peatlands are among the largest in the world. They are so important because the time it takes for dead plants to break down in these wet environments is more extended, allowing carbon to be safely stored."

Due to the biodiversity and cultural importance of these traditional territories, there is wide support among First Nations communities to "establish a national marine conservation area," he says. "A lot of traditional knowledge has been shared by elders and community members about how they use the land and water. We need to acknowledge that everything is interconnected: the water and the land, the plants you see, the mosquitoes flying by your face and the frogs singing away."

The region earmarked for marine conservation comprises 1,290 kilometres of coast and 91,000 square kilometres of offshore waters, says Anna Baggio, conservation director, Wildlands League. In addition to being popular with seals and fishes, the National Audubon Society estimates that the area is the nesting ground for millions of birds and millions more – songbirds, shorebirds, waterfowl and others – rely on the region during migration.

"It is also home to the most southern population of polar bears, and there are freshwater fish that only here venture into the salt water of the bay," she says. "We've been coming here for 20 years, working with Indigenous people and bringing in researchers to better understand this ecosystem."

Baggio recently witnessed two herds of caribou merging and travelling on by the thousands. "It's one of the most spectacular places on Earth," she says. "This reminds us that we're all connected – to the ocean and the land and each other."



When a common goal inspires such collaborative efforts, Martin sees this as an opportunity to "build new relationships, including with federal and provincial governments, which can allow us to move forward from the dark times of the past."

4 CO-MANAGING THE TORNGAT MOUNTAINS WITH TRADITIONAL RIGHTS-HOLDERS

The area stretching from the jagged peaks of the Torngat Mountains to the Labrador Sea and beyond – between Olak and the Button Islands – is considered the most rugged and spectacular coast of mainland eastern North America. Less than 100 years ago, the area was home to a large Inuit population. The settlements – later abandoned due to government relocation efforts – now have significant archaeological value.

Today, Inuit are leading efforts to conserve these culturally and naturally significant lands, says Belinda Webb, an Inuk and deputy minister in the language, culture and tourism department at the Nunatsiavut Government. "It's not only about determining which areas will be protected, but also about maintaining our traditional practices and our way of life."

"Rather than the federal government coming to us with a plan, we've been the driving force from the get-go," she says, adding that the partnership between Inuit and Parks Canada envisions consensus-based decision-making based on co-governance and co-management.

"We're also doing rights-holder consultations with Indigenous communities and stakeholder engagement with commercial fishers and other industries," Webb notes. "This helps to ensure we're considering all the different issues and challenges – and work to address them early on."

In addition to community engagement, conservation objectives will be informed by collaborations with academic, government and NGO partners, says Rodd Laing, director of environment, Nunatsiavut Government. "Our aim is to determine priorities based on both a science and a traditional use perspective. We realize we can't look at ecosystems in isolation but have to consider how the different habitats – from terrestrial environments and freshwater sys-

tems to the ocean – are connected."

While the Torngat Mountains received full national park status in 2008, an area of interest for marine protection has only recently been formalized with a memorandum of understanding with Parks Canada. Laing adds that a feasibility assessment – which covers the entire ecosystem and considers both conservation and economic opportunity objectives – is underway.

One key consideration is climate change, with ice cover in coastal waters having declined by approximately 30 per cent per decade since 1971, says Laing, who believes this makes it even more important to draw on both traditional and scientific knowledge to advance protection measures.



"We want to highlight the importance of positive relationships between humans and the environment, and especially Inuit, who have been stewards of this region for millennia," he adds.

5 DEEP-SEA CORALS AND SPONGES IN THE FUNDIAN CHANNEL

At the Fundian Channel-Browns Bank, the Bay of Fundy spills out – via an undersea channel – into the larger ocean. As the largest entrance to the Gulf of Maine from the open Atlantic Ocean, many species, including basking sharks, use this migration corridor to pass through some of the region's most diverse and productive marine ecosystems.



The northeast channel portion, for example, contains the densest known concentrations of large gorgonian corals in Atlantic Canada, and unique glass sponge populations can be found within the proposed boundary. Local communities have long sought to implement protection measures for this unique ecosystem, says Susanna Fuller, vice-president, conservation and projects, Oceans North. "This area is vital to connecting many other protections of deep sea corals and sponges across the Scotian Shelf."

Because of the high level of ecosystem productivity with vibrant sea floor communities, forage fish, seabirds, whales and commercially important species, "the area has been an important fishing ground over the centuries," she explains. "When fishermen first raised concerns about the impacts of fishing on corals, this was the place they were most concerned about."

Conservation efforts have already contributed to the establishment of the first deep sea coral protections in Canada in 2002. And in 2018, Browns Bank was announced by Fisheries and Oceans Canada as an area of interest, with "recent work being undertaken to finalize boundaries and conservation objectives," says Fuller. "As the process comes to completion, having support of all stakeholders will be foundational to its success."

The Mi'kmaq of Nova Scotia, as represented by the Kwilimukw Maw-klusuaqn, are also expressing

concerns about the health and longevity of traditional lands and waters and look to long-held Mi'kmaq principals, such as Netukulimk, which speaks to conservation and resource management. The Mi'kmaq recognize a responsibility to protect our oceans and all the life within them, advanced by a marine protected area in the Fundian Channel-Browns Bank.

6 BALLET AND BUFFET: THE INNER BAY OF FUNDY

One takes off and countless others follow. They take to the sky to rise and swoop and whirl in unison, following an unwritten dynamic and elaborate choreography. This murmuration, aptly dubbed sandpiper ballet, never fails to delight spectators in the inner Bay of Fundy, where tens of thousands of shorebirds turn extensive mudflats into both stage and buffet.

In this unique ecosystem, which has the highest tides in the world, receding tides leave a great swath of ocean floor exposed. There, an abundance of mud shrimp invites shorebirds to feast. "Among the most numerous flocks are semi-palmated sandpipers and semi-palmated plovers," says Roberta Clowater, executive director, New Brunswick chapter, Canadian Parks and Wilderness Society. "They stop here to feed and feed and feed – until they're fat and strong enough to make it to their wintering grounds in the south."



Protecting a significant portion of these mudflats, marshes and waters is important for this migration. Current pressures affecting this habitat include development, such as building dykes and pipelines and dredging the seafloor, as well as climate change, she says. "We know these ecosystems are important, not only for the shorebirds but also for marine mammals, forage fish and endangered populations of Atlantic salmon and sturgeon."

The aim is to "conserve nature without trampling on cultures or economies," says Garry Donaldson, manager, protected areas and stewardship for the Canadian Wildlife Service's Atlantic Region. "Instead of drawing a line on the map based on conservation criteria and then consulting with people, we talk to everyone first."

This "bottom-up" process – which starts with asking the right questions – can help to avoid later complications, he suggests. "We've had about 25 engagement sessions with a variety of people, including conservation organizations and NGOs, Indigenous communities, industry, Fisheries and Oceans Canada and Parks Canada. Getting a sense of what people value can help find that sweet spot, where we have a protected bay that continues to provide cultural and economic value for communities."

Donaldson envisions "a patchwork of different types of protection, including a national wildlife area, an Indigenous protected area and other stewardship activities."

"Being inclusive and focusing on values will result in a mosaic of protection of terrestrial, intertidal and marine areas," he says, "with the mudflats, which are so important for shorebirds, as an anchor."

Meeting Canada's ambitious 30-by-30 conservation goals requires an all-hands-on-deck approach to create a

SEA CHANGE



Without protection, Canada's globally significant marine and coastal life is at risk. Efforts to establish marine protected areas are underway in the Great Bear Sea (1), the Salish Sea (2), southwestern Hudson Bay and western James Bay (3), the Torngat Mountains (4), the Fundian Channel-Browns Bank (5) and the inner Bay of Fundy (6).

BRINGING TOGETHER SUSTAINABLE DEVELOPMENT AND CONSERVATION MEASURES

As climate change is melting the Arctic ice pack at unprecedented rates, the north of Canada is becoming increasingly accessible to commercial marine traffic. Over the past 25 years, industrial shipping and fishing, cruise ships, oil and gas exploration and other vessel traffic has tripled. This increase, says Erin Abou-Absi, director of policy at Oceans North, is impacting sensitive ecosystems and potentially threatening the health, safety and well-being of communities in the North.

"There's only about 16 per cent of the Canadian Arctic that's been surveyed to modern standards," explains Abou-Absi. The uncharted seafloor adds risks for shipping and other operations. "We see a seven times higher rate of incidents in the North than in other waters, [including] regular grounding events."

A major accident – such as an oil spill – would be devastating. "There would be no real response capacity to clean it up," she says. "It would be absolutely detrimental to the wildlife in the area and the food security of nearby communities."

Oceans North is working throughout Inuit

Nunangat, the Inuit homeland, to ensure that standards, including the establishment of safe shipping routes, are set and followed to help mitigate climate change and industrial and commercial pressures in the Arctic.

"We are focused on bridge-building between grassroots efforts in Indigenous coastal communities and the federal government," says Abou-Absi. The organization advocates for science-based, sustainable practices that are informed by and reflect Indigenous rights, knowledge and consultation.

An example of Indigenous-led solutions is the outcome of discussions between industry and residents of Coral Harbour on Southampton Island, located in northern Hudson Bay. Oceans North worked with Leonard Netser, an Inuit hunter, and other community members who became concerned when nearby mine sites attracted increased marine traffic.

The ships were passing between Southampton Island and Coats Island, precariously close to walrus, beluga and fish habitats, nesting areas for seabird colonies and important harvesting areas. "Walrus are especially sensitive to human activity," explains

Netser, who has tracked haul-outs of these massive wild animals. "If disturbed, they may abandon their habitat; and once gone, they're gone forever."

The community engaged with a mining company operating in the area. "We asked them to redirect their ships and mark their charts to avoid disturbing the walrus colonies," he says, adding that the company agreed and rerouted its ships.

"We think there are many opportunities where industry would be willing to avoid sensitive areas," says Abou-Absi. "And we hear from communities and Inuit organizations that they want to play a greater role, contributing knowledge and skills towards safely managing marine traffic."

Oceans North is advocating for a collaborative engagement process to advance marine traffic safety and reduce environmental impact in the North.

"The ships are coming; the Arctic is opening," she adds. "We have a chance to show the world what sustainable development looks like in an Indigenous homeland profoundly impacted by climate change."

THE IMPACTS OF CRUISE SHIPS ON COASTAL ECOSYSTEMS

With a steady uptick in the volume of cruise ships passing through coastal waters, experts are raising concerns about the industry's mounting impact on the marine environment, says Michael Bissonnette, staff lawyer at West Coast Environmental Law. "When we researched regulations in Canada as well as in the U.S., we found legal loopholes that can result in the dumping of harmful substances into Canadian waters."

The resulting report covers three different sources of pollution: sewage, gray water and scrubber wash water. "While sewage is comparable to what we would find in cities, it tends to be much more concentrated coming from ships," Bissonnette explains. "Gray water comes from showers and washing machines and so on, and scrubber wash water, the biggest source

of pollution, comes from measures to clean up fuel sources to reduce [air] emissions."

More stringent international carbon emission standards aim to encourage the cruise industry to adopt cleaner fuels. However, a work-around allows operators to install scrubber technology instead of using cleaner fuels, he says. "These systems remove the air pollution resulting from dirty fuel, but they create wastewater that is then dumped into the ocean."

According to a report from World Wildlife Fund Canada, outflow from scrubber technologies contains contaminants that pose a threat to aquatic life. Cruise ships, the biggest adopters of scrubber technology, made up only 2 per cent of vessels included in the

study yet accounted for roughly two-thirds of the pollution dumped into Canadian waters.

Advocates have called on government to implement protection measures in coastal waters, yet new measures announced by Transport Canada "don't go far enough," says Bissonnette. "First, they are voluntary. Secondly, they don't address scrubber wash water, and thirdly, ships are self-reporting compliance, which can be difficult to monitor in remote areas."

Bissonnette advocates for harmonizing regulations. "In Alaska, an ocean ranger program placed independent third-party monitors on ships," he says. "We'd love to see a similar type of program here in Canada in addition to making compliance to regulations mandatory."

Working together to sustain coastal and marine life



902 275 8077
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