

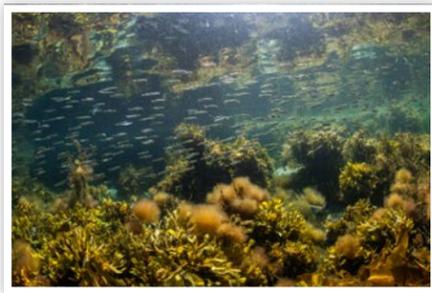
# Peace Off Our Coast

by EAC STAFF /// Images by NICK HAWKINS

Nova Scotia is known as Canada's ocean playground, but few have a chance to see what life is like off our coast. This summer, photographer Nick Hawkins spent a lot of time in Nova Scotian waters, photographing local marine life and habitats. His work is helping to shine a light on some of the most important marine areas in Atlantic Canada. Peek through Nick's lens to learn about life under the sea, why these areas are so important, and how local marine species and habitats support one another.



**Water Cycle (Port Joli):** The water cycle is a closed loop. Our rivers, streams, lakes, creeks and even roadside ditches are all connected to the oceans, and to each other. Water is precious, and is not evenly distributed around the planet. As Canadians, as Nova Scotians, we are blessed with an abundance of freshwater sources, and beautiful Maritime coastlines.



**Sand Lance:** The American sand lance (*Ammodytes americanus*) is a small schooling fish found in the shallow waters of the North Atlantic from Labrador to the Chesapeake Bay. They bury themselves as deep as six inches into the sand to hide from would-be hunters at night. These long, pointy-jawed characters feed primarily on plankton near the surface, but will sometimes attempt to tackle small clams or mussels at the seabed. Sand lance are important food source for animals higher up the food chain, including some of our most important commercial fish species like cod and salmon, and seabirds like terns and puffins inhabiting the Maritimes region.



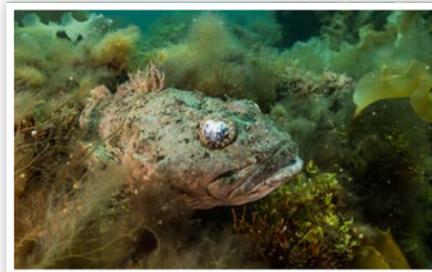
**Intertidal Zone:** If you've had the chance to get to know Nova Scotia, you've likely seen the intertidal zone—a bridge between land and water, often full of little creatures hidden in the mud or nestled along the rocky shoreline. A two-dimensional plane at low tide, the algal fronds float upwards through the water column when the sea comes in again, forming a three dimensional habitat essential to marine life in the same way a treetop canopy is to the species of the rainforest. The intertidal zone near Port Joli, Nova Scotia is dominated by a diverse community of colourful seaweeds and a vast array of accompanying biodiversity.



**Jellyfish:** Lion's mane jellyfish (*Cyanea capillata*) are the largest in the world, with tentacles that can deliver a painful sting, reaching out over 30 meters in some cases—about the same length as an adult blue whale. The lion's mane feeds primarily on zooplankton, moon jellies and tiny fish. They can also provide a floating habitat for their neighbours in the open ocean—butterfish, shrimp, prowfish and others have been known to stick close to these lanky gliders for food scraps and protection from predators. Look for these graceful, prehistoric creatures near surface waters all along the Atlantic coast.



**Eelgrass:** The waters of the Nova Scotian South Shore form a diverse mosaic of habitats, with sensitive eelgrass and kelp bed systems that function as nurseries for young fish. Not only do these areas provide food for a myriad of unique marine species, they also act as a foundation for Atlantic food webs, and as the beating heart of our coastal fisheries—important to culture and way of life in Mi'kma'ki and the Canadian Maritimes.



**Sea Ravens:** Found bottom-dwelling in sheltered bays and harbours in Atlantic Canada, the sea raven's colours often blend perfectly with their environment, making them difficult to spot. With their uniquely "pouty" appearance, and a prickly, spiny back to defend them against predators, this grumpy-looking member of the sculpin family gives off a major "leave me be" vibe. But nonetheless, keep an eye out for sea ravens (*Hemitripterae*) hidden in mud or rocky reefs around Nova Scotia.



**Kelp Fronds:** Kelp forests, like this one near Port Joli, Nova Scotia are some of the most productive ecosystems in the world. These habitats are often used as indicators of a healthy marine environment. Charles Darwin drew connections between kelp forests and terrestrial cloud forests in tropical regions, saying "if in any country a forest was destroyed, I do not believe nearly so many species of animals would perish as would here, from the destruction of kelp. Amidst the leaves of this plant numerous species of fish live, which nowhere else could find food or shelter; with their destruction the many cormorants and other fishing birds, the otters, seals and porpoise, would soon perish also."



**Shore Birds (Piping Plover):** Piping plovers (*Charadrius melodus*) are one of the most iconic east coast shorebirds. They depend on coastal environments for food, foraging for aquatic insects, marine worms, and crustaceans. In Canada, plovers are considered a species at risk. Experts estimate a population of less than 100 breeding pairs in the wild—a significant decrease from 1990s population counts. One of the major threats to the piping plover is habitat destruction. They typically nest on sand or gravel beaches, rearing their young in raised dunes or marram grass. These beachy habitats tend to be the same ones that we like to play at on vacation, including along the South Shore of Nova Scotia.



## Protecting Marine Habitats:

At the EAC, we're working with Nick and our partners across the country to help Canada meet its international obligation to protect 10 per cent of Canadian waters by 2020.

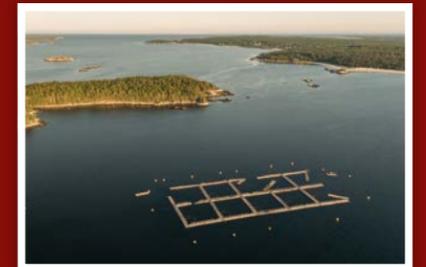
For those of us who live near the sea, eat from the sea, or generally love the ocean vistas and salty, seaside air of the Maritimes, it is our responsibility to preserve marine ecosystems. Our non-human neighbours in the ocean need space free from human influence, where they can live out their lives in peace, and flourish beneath the surface. With stewarding communities to support them, protected spaces like Canada's marine protected areas can allow for a healthy marine environment and an abundance of life to support our wild fisheries.

**Nick Hawkins** is an acclaimed nature photographer and photojournalist from New Brunswick. He has produced featured articles for Canadian Geographic, BBC Wildlife Magazine, and Canadian Wildlife Magazine, and was featured in the prestigious BBC Wildlife Photographer of the Year awards. He is currently working with the Ecology Action Centre to capture the beauty, fragility, and economic opportunity within the vast waters surrounding Nova Scotia.

## Threats:



**Green Crabs:** European green crab (*Carcinus maenas*), are just one of many invasive marine species new to the Northwest Atlantic. They originally arrived at our shores in the 1980s from Northeast Atlantic and Baltic seas, likely as incidental "stowaways" on bulk transport ships travelling internationally. These unassuming crustaceans have wreaked havoc on Maritime ecosystems, outcompeting native species for food, and destroying eelgrass in their pursuit of shellfish.



**Open Net-Pen Aquaculture:** This open net-pen aquaculture facility was photographed near Port Mouton in Nova Scotia. It's been a controversial topic in our region, pitting potential economic benefit against major environmental risks. Impacts on local biodiversity can range from disease and parasite transfer to wild fish to nutrient pollution from fish feces, and uneaten feed. To ensure the health of Canada's marine ecosystems, we've been calling for no open net finfish aquaculture in Marine Protected Areas, advocating for a transition away from this type of aquaculture in Nova Scotia in favour of sustainable shellfish operations and land based, closed containment finfish.