

Canada's Historic Win

Rebuilding fisheries is now
the law of the land

The Right Whale to Protect

Our plan to save the last 400
North Atlantic right whales

Making a Marine Scientist

Daniel Pauly shares a personal essay
from his new book

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To help navigate Oceana's work, look for these five icons representing our five major campaigns.



Curb
Pollution



Protect
Habitat



Stop
Overfishing



Increase
Transparency



Reduce
Bycatch

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The Pulitzer Prize winner for literature this year is a book about trees. Called “The Overstory,” it is an engaging account of a set of fictional, yet recognizable, people who struggle together to protect the remaining stands of the once-great North American forest.

Oceans have their forests too. And just as bio-diverse animal communities thrive in dense terrestrial forests and jungles, fish and marine wildlife suffer when the ocean bottom is clear-cut by bottom trawls. Bottom trawling is a fishing method that involves dragging heavily weighted nets along the bottom of the ocean. These nets catch nearly everything in their path. They also knock down anything growing on the seafloor. Sometimes the nets are hundreds of yards long, towed by pairs of powerful vessels working in tandem, one at each net-end.

Bottom trawling is, in a metaphor I first heard nearly 20 years ago, like hunting for rabbits in the forest with a bulldozer. The bulldozing hunter will catch a lot of rabbits, but next year, because there is no longer a forest, there will be no more rabbits.

It is the most destructive form of fishing known to man short of dynamite. It is legal.

Sensible policymakers around the world are restricting bottom trawling. They do this with strong support from ocean conservationists and from

the vast majority of fishers – both commercial and artisanal – who do not use bottom trawl gear.

With Oceana’s help, and at the request of its own (non-trawling) fishing fleet, the government of the Brazilian state of Rio Grande do Sul banned bottom trawling along the entire length of its coast, an area more than 370 miles long and 12 miles wide.

On the other side of the world, also with Oceana’s help, and supported by fishers using sustainable gear, the government of the Philippines banned bottom trawling off the coast of all 7,107 of its islands, the fifth longest coastline in the world. It is difficult to comprehend the scale of these victories.

Here is a metaphor to help you. Imagine that timber companies are clear-cutting everything within 12 miles of the coast of California, working their way steadily north from San Francisco to the border with Oregon in a grinding fury of wanton destruction. That is the scale of underwater demolition stopped by the smart new policy of the government of Rio Grande do Sul.

Now imagine that the timber clear-cutters continue both north and south on the American west coast until they meet the international borders with Canada and Mexico. Then they load their bulldozers, tree movers, trucks and cutting machines onto ships and transport them to Maine and work their way south all the way to Florida. Having denuded both coasts inland to a distance of 9 miles, the industry again loads its gear onto huge marine transport ships and delivers them to the coast of China, and there proceeds

to cut down everything along the entire coast of that big country. That is the scale of destruction stopped by the Philippines’ bottom trawl ban.

I hope you take heart from these achievements. Thank you for helping to make them possible. You will find more good news of our progress throughout this issue of our magazine. You will also be introduced to three people who share your commitment to ocean conservation. Like the characters of “The Overstory,” they are fascinating. Unlike those characters, they are real people: Dr. Lisbet Rausing, Dr. Daniel Pauly and Nicholas Davis. Any cause which unites and engages the energies and resources of such talented and diverse people – they live in London, Vancouver and Santiago – can take courage.

Toward the end of “The Overstory,” the narrator notes that human beings love stories. Indeed, we love them so much that we often cannot distinguish satisfying stories from meaningful ones. Well, here’s a story that’s both: Sensible scientific management produces an abundant and diverse ocean, and an abundant ocean helps feed the world, mitigate climate change, promote human health and protect biodiversity.

Thank you for helping Oceana win the policy victories that make that story come true.

For the Oceans,


Andrew Sharpless
CEO
Oceana

For the Win




Canada's revised *Fisheries Act* requires that collapsed fisheries be rebuilt. Currently, 33 of Canada's 192 major fish stocks are critically depleted.

Canada modernizes its *Fisheries Act* in a historic win for the country's oceans

 In June, Canada updated its *Fisheries Act*, which now mandates rebuilding plans for depleted fish populations across the country – a first in the Act's 150-year history. Legally binding requirements to rebuild populations are key to restoring ocean abundance and have generated great success in other countries. In the United States, for example, similar legislation has restored 45 depleted fish stocks to sustainable levels.


For more details, read the *Making History* feature on page 20.

Grassroots effort leads to shark fin trade ban in Canada, a first in G20 countries

 Canada became the first G20 country to ban the import and export of shark fins, the key ingredient of a luxury soup that's popular in Asia. Shark finning is a brutal practice where the fins are often sliced from still-living sharks and the animal dumped overboard to die. Shark finning has played a major role in the rapid decline of many shark species, with the fins from as many as 73 million individual sharks ending up in the fin trade every year.

For more details, read the *Making History* feature on page 20.

Canadian government bans oil exploration and other industrial activity in Marine Protected Areas


 Oceana Canada, along with other conservation groups, was recently successful in prompting the government to implement new minimum standards for Marine Protected Areas (MPAs) that limit exploration for oil and gas, among other destructive activities, in fragile marine habitats.

Canada has increased the portion of its waters that are subject to some protection from less than 1% in 2015 to 14% in 2019. These measures, however, did not preclude oil and gas exploration and drilling, waste dumping, mining, bottom trawling and other destructive activities from occurring in these areas. The new standards bring more of Canada's marine protections in line with international best practices and will help safeguard fragile habitats that provide nursery, spawning and feeding areas for wildlife and commercial seafood stocks.




Marine scientist Devan Archibald (right) and Expedition Coordinator Alexandra Vance conduct pelagic surveys during Oceana's Gulf of St. Lawrence Expedition in 2017. Oceana's expedition and subsequent campaigning helped convince the Canadian government to create the Banc-des-Américains MPA in March 2019.

Chile to make fishing vessel data publicly available through Global Fishing Watch

 The Chilean government signed an agreement to make its fishing vessel tracking data publicly available through Global Fishing Watch. This online platform, developed by Oceana, Google and SkyTruth, tracks the movement of more than 70,000 fishing vessels around the world in near real-time. The agreement, part of Oceana's collaboration with the Chilean government to increase the transparency of commercial fishing activity, will enable researchers, nonprofits and other members of the public to better study Chile's fishing fleet, and to monitor it for potential illegal activity such as fishing out-of-season or inside protected areas.

New York stops offshore drilling in state waters

 In April, New York Governor Andrew Cuomo signed a bill to prohibit the exploration, development and production of offshore oil and gas in New York waters. The law also prohibits any infrastructure to support drilling off New York's coast, and prevents the state's agencies from taking regulatory actions to facilitate oil and gas production in federal waters.

The legislation, a clear rebuke to the Trump administration's plans to expand offshore drilling to nearly all U.S. waters, is a response to Oceana advocacy and a groundswell of opposition from fishermen, coastal businesses and others who rely on a clean ocean. In New York, fishing, tourism and marine recreation support over 414,000 jobs and \$39 billion in GDP.



Oceana's campaign against offshore drilling has received a groundswell of support from Democrats and Republicans alike. More than 2,300 elected officials from both parties, and all levels of government, have opposed or expressed concern with proposals to expand offshore drilling.

News + Notes

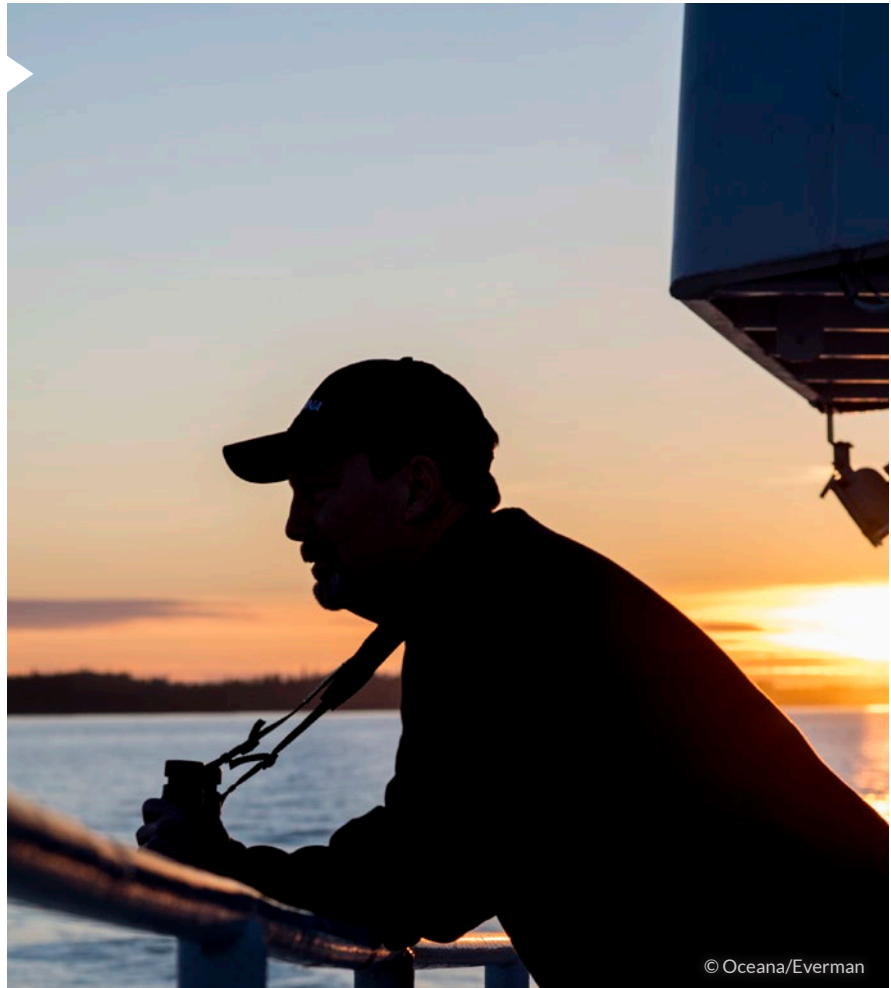
Oceana, through Global Fishing Watch, tracks vessels tied to illegal fishing and human trafficking

 Using Global Fishing Watch data, Oceana researchers discovered apparent gaps in the public tracking signals that were transmitted by a South Korean-flagged fishing vessel with a history of illegal fishing and human rights abuses. One transmission gap lasted almost 12 days, ending when the Argentine Coast Guard seized the vessel for fishing illegally inside Argentina's waters.

Ships sometimes intentionally turn off their Automatic Identification Signal (AIS) transponders to hide illicit activities by "going dark."


In another instance, a Taiwanese-flagged ship remained at sea for as long as 20 months at a time. This same ship was reported to have carried an alleged victim of human trafficking who died on a previous voyage. Fishing vessels that use forced labor often stay at sea for extended periods of time, where trafficking victims are isolated aboard and subjected to inhumane conditions including 20-hour workdays, sexual abuse, torture and murder.

Illegal fishing causes losses of \$10 billion to \$23 billion a year and has been tied to money laundering, slave labor and human, drug and wildlife trafficking. Oceana is using Global Fishing Watch to shine a light on the vessels involved in these activities and to help limit illegal fishing and the problems associated with it.



Robert Rangeley, Oceana Canada's director of science, is pictured on an expedition off the coast of British Columbia in March 2018. The region is home to nurseries and spawning grounds for commercially important species, like depleted rockfish.

Vessel monitoring leads to arrest of 61 suspected illegal fishers in the Philippines

 In May, during a two-day operation at sea, police seized three commercial fishing vessels and apprehended 61 people suspected of fishing illegally off of Cavite, south of Manila. The boats were within municipal waters – a 15-kilometer band where only artisanal and subsistence fishing is permitted. They were identified using a satellite with infrared imaging technology able to detect

the lights that boats use to attract fish at night.

Oceana has won victories that led to this successful action, such as partnering with the League of Municipalities to make the infrared data publicly available and useful to local law enforcement. Oceana helps the Philippine government and other stakeholders apply the ban on commercial fishing in municipal waters, and helps ensure that mandatory fishing vessel monitoring is enforced throughout the country.




The Paracas National Reserve in southern Peru (pictured) is one of the most popular tourist destinations in the country. It's also home to important artisanal fisheries.




A fishing boat approaches Spain's Costa del Sol. Species like hake, red mullet and Norway lobster are subjected to extreme overfishing in the Mediterranean.

Proposed Nazca Ridge Reserve would protect 7% of Peru's ocean

 Eight years ago, Peru signed onto United Nations biodiversity targets which included a goal to protect 10% of its marine territory by 2020. But as of this writing, Peru has safeguarded 0.5% of its ocean, lagging far behind other South American countries, including Chile, which has set aside roughly a quarter of its ocean in vast marine parks.

Oceana is currently campaigning for the protection of the biologically important Nazca Ridge, which would bump up Peru's protected oceans to roughly 7%, according to Dr. Patricia Majluf, vice president for Oceana in Peru. Nazca Ridge is a vast underwater mountain range in the Pacific that begins about 100 kilometers off of Peru's coast and runs toward Easter Island. This reserve would bolster efforts to preserve the Ridge, which is also protected in Chilean waters under the Nazca-Desventuradas Marine Park.

Canadian government caves to industry pressure to overfish northern cod

 In June, the Canadian government increased its annual catch quota for the iconic but critically depleted northern cod, which dwell along Canada's eastern coast. The new quota is a 30% increase from 2018, contradicting clear scientific advice and the recently amended *Fisheries Act*, which requires the government to keep the fishing of depleted fish populations at the lowest possible level.

A study commissioned by Oceana Canada found that a rebuilt cod fishery could provide 16 times more jobs and have five times as much value as it does now. Implementing science-based cod management should yield these benefits in as little as 11 years.

Oceana discovers potential illegal fishing in the Mediterranean

 Oceana researchers used satellite tracking data to identify several potential cases of illegal fishing within Mediterranean protected areas, amounting to 28,000 hours of suspicious activity in 2018. The most significant case involved 56 bottom trawling vessels that operated in Fisheries Restricted Areas in the Strait of Sicily, where bottom trawl fishing is prohibited to protect nursery grounds for hake – the region's most overfished species.

Overall, the Mediterranean is the world's most overfished sea, according to the United Nations. Oceana is calling on Mediterranean countries to enhance sanctions on lawbreakers, boost transparency and overhaul measures combating illegal fishing, particularly in protected areas.

Q+A



Lisbet Rausing completed her Ph.D. at Harvard University, where she was also a lecturer and assistant professor. Together with her husband, Professor Peter Baldwin (UCLA and NYU), Rausing co-founded the charitable fund Arcadia. Arcadia protects endangered culture and nature, and promotes open access. Since 2002, it has awarded more than \$663 million to fund projects that range from preserving near-extinct languages and endangered historical archives to preserving threatened landscapes and the marine environment. Rausing also founded, and remains a director of, Ingleby Farms & Forests, which today owns and farms more than 100,000 hectares in nine countries.

Lisbet Rausing, co-founder of Arcadia, on the importance of biodiversity and conservation

Arcadia has been a longtime and keystone supporter of Oceana. Why did you choose to work with Oceana?

LR:

We were looking for a partner that tackles the causes of biodiversity loss, like overfishing, with a focus on concrete policy outcomes and a necessary sense of urgency. Biodiversity loss is one of the greatest environmental challenges we face, yet the impacts of ecological breakdown are regularly ignored or underestimated.

What is Arcadia's vision for restoring our oceans?

LR:

Our environmental grants aim to protect threatened biodiversity, landscapes and seascapes, and train future conservation leaders. We also support policy advocacy, because good governance and the enforcement of well-designed legislation are critical for conservation. We see this

with our restoration projects on land – reducing threats gives nature a chance to recover. The oceans are much harder to govern as they belong to all. Yet they are under immense pressure. It is essential that we create ambitious policies and strong enforcement mechanisms to protect them.

How can Arcadia and Oceana achieve lasting conservation change for our oceans?

LR:

The challenges we face require long-term commitments. They require sustained pressure on governments and corporate actors regardless of short-term hurdles. We are glad Oceana is also prepared to challenge the status quo, such as government subsidies that incentivize unsustainable fishing practices. The global fishing fleet is twice the size the ocean can sustainably support. This cannot go on. We must make those in charge accountable.

With support from Arcadia and others, Oceana has won several recent victories to protect biodiversity hotspots, including Chile's Juan Fernández Islands, the Philippines' Benham Bank and Belize's Mesoamerican Reef. How does preserving biodiversity benefit our oceans?

LR:

Biodiversity is what makes up our oceans. From tiny crustaceans to mats of seagrass and blue whales, our oceans are very much alive! But much of this is out of sight and out of mind. Systemic changes are needed in the way we engage with our oceans and species that depend on them. This goes beyond 30x30 (protecting 30% of the ocean and land by 2030). We must envisage a world where exploitation of nature is a thing of the past.

In addition to protecting the environment, Arcadia is dedicated to preserving cultural heritage. How do these objectives complement each other?

LR:

Like ecosystems, cultural heritage around the world – both tangible and intangible – is at risk. We work to preserve fragile and dispersed fragments of nature and culture. If we don't, they may vanish forever, leaving starkly simplified environments and globalized culture. Innovation and change occur best in complex systems. We must protect complexity so future generations can flourish in a vibrant, resilient, greener (and bluer!) world. ■



A variety of fish are pictured off the coast of Chile, a country that has banned harmful bottom trawling from all of its seamounts.



Corals are seen in the Philippines' Benham Bank, a biodiversity hotspot that Oceana successfully campaigned to protect in 2018.

North Atlantic right whales are on a course to extinction

In June and July, nine of the estimated 400 remaining North Atlantic right whales were found dead in Canada's Gulf of St. Lawrence. Since 2017, at least 30 have died, many the victims of ship strikes and entanglements in fishing gear. As this beloved species slips towards extinction, Oceana is carrying out a binational campaign to help save them.



© NOAA Fisheries/Allison Henry

North Atlantic right whales were named as such because they were once considered the “right” whale to hunt. Whaling was ultimately outlawed, but the animals still face grave threats. Ship collisions and fishing gear entanglements are largely to blame for unnatural right whale deaths.



© Nick Hawkins

Researchers conduct a necropsy on Punctuation, a North Atlantic right whale that died in Canada's Gulf of St. Lawrence after colliding with a shipping vessel.

Punctuation, a North Atlantic right whale named for the comma-like scars on her head, was a mother to eight and a grandmother to two. She was at least 38 years old, judging from when researchers first sighted her in 1981. In June, the prolific mother was feeding in Canada's Gulf of St. Lawrence when a ship slammed into her enormous body, leaving a 6-foot gash along her spine that cut so deep her organs spilled out.

Before her death, Punctuation was one of the rarest of beasts. There are only around 400 North Atlantic right whales left on earth, and fewer than 100 breeding females. Punctuation's death, a severe blow to a species in desperate need of new members, was one of 10 this year, as of early November. Two others died, like her, from ship collisions.

The summer's deaths sent chills through the right whale scientific community. Updated rules following the carnage of 2017, when at least 17 whales perished, were supposed to buffer these slow-moving leviathans from entangling fishing gear and passing ships. Last year brought three deaths, followed by the mounting

misfortunes of 2019. The recent mortalities make it clear that current measures aren't enough to protect the whales. Now, Oceana's teams in Canada and the United States are uniting to launch a campaign to save a species on the edge of extinction.

A tangle with death

Nine thousand to 21,000 North Atlantic right whales once roamed the Atlantic in a vast arc from Bermuda through Canada and Norway, and south to northwestern Africa. They're sometimes called the "urban whale," and for good reason: Their travels put them in the paths of some of North America's busiest shipping lanes and fishing zones.

Centuries of commercial whaling decimated them, possibly leaving only 100 individuals alive, before the League of Nations outlawed right whale hunting globally in 1935. North Atlantic right whales recovered, albeit at a glacial pace, peaking at almost 500 individuals in the early 2000s. But it wasn't long before the whales started vanishing once more.

Punctuation's life and death offer a worrying clue as to why. Before her fatal collision in June, she had been struck twice by ships, but survived, and had also been entangled in fishing gear at least five times before managing to escape.

Her harrowing story is far too common. Nearly 83% of North Atlantic right whales bear scars from tangles with fishing gear, and nearly 60% have been snared more than once. The whales are strong, but fishing gear is stronger. Heavy nylon buoy ropes are nearly indestructible, and they're attached to clusters of lobster or crab traps that can weigh hundreds to tens of thousands of pounds. This gear can loop around whales' mouths and starve them, slowly slice off fins, or drown or fatally exhaust them over the course of months.

A July study found that entanglements and ship strikes caused nearly 90% of the deaths of 43 right whales whose necropsies revealed a clear cause of mortality. "We're not even seeing them die from natural causes anymore," said Whitney Webber, the head of Oceana's right whale campaign in the U.S. ➔

The recent mortalities make it clear that current measures aren't enough to protect the whales. Now, Oceana's teams in Canada and the United States are uniting to launch a campaign to save a species on the edge of extinction.



Responders from the Florida Fish and Wildlife Conservation Commission and the Georgia Department of Natural Resources toss a grapple in an attempt to cut the fishing rope that can be seen dangling from the right whale's mouth. The rescue was successful, and the whale was freed.



Gulf of St. Lawrence tragedies

After 2017's "unusual mortality event," the Canadian government beefed up protections for the whales. The government created a "static zone" that prohibits the use of lobster and crab lines and other types of fishing gear that entangle

whales, along with "dynamic zones," where all fishing gear has to be removed if a whale is spotted in the area. The government also implemented speed reduction zones in the Western Gulf of St. Lawrence for ships 20 meters and longer, and reduced that size to 13 meters after several whales were found dead in shipping lanes in June.

For Kim Elmslie, director of Oceana Canada's right whale campaign, these measures aren't enough. The dynamic zones rely on aerial monitoring, but airplanes can't spot whales if it's foggy, stormy or nighttime. Many whales go unseen. And in 2019, the government reduced the no-fishing zone by 63%, on the assumption that whales would only return to the same areas they had visited in previous years.

"To be effective the fishing and shipping measures must be created using all information on whale sighting as well as modeling that tries to predict where the whales will be found in the future," Elmslie said.

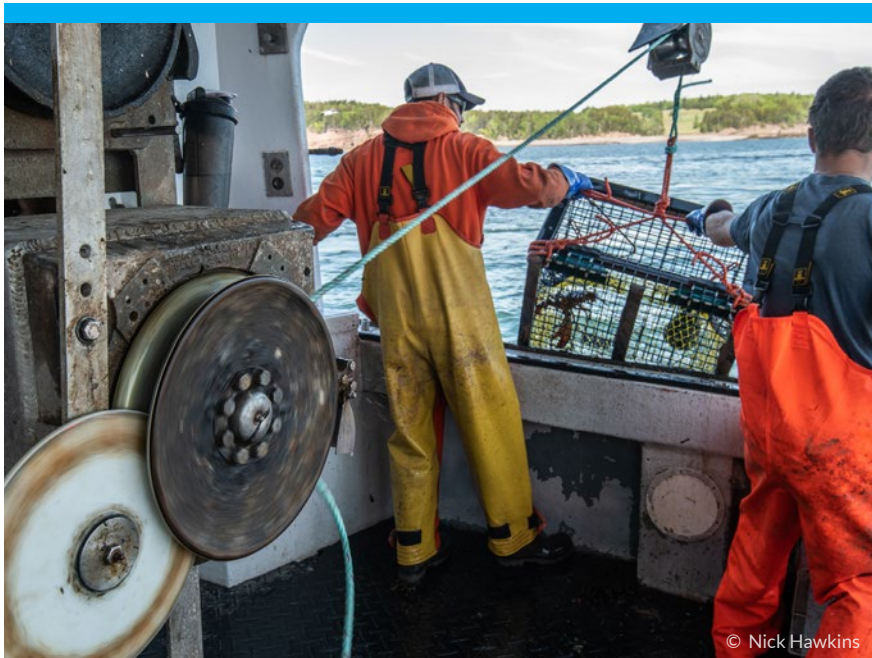
There is an extra level of danger in assuming that whales will continue to return to the same areas year over year, Elmslie added. The whales' prey – cold-loving plankton called copepods – are shifting unpredictably as climate change heats up the ocean.

And where the copepods go, whales follow. While North Atlantic right whales once fed in large numbers in the Bay of Fundy, many are now traveling to the Gulf of St. Lawrence, a busy shipping and fishing zone where the majority of 2017 and 2019's known deaths were discovered.

The U.S. is falling behind, too. "We have very insufficient protective measures right now for these whales," Webber said. She noted that because most whales are dying in Canada, some fishing interests in the U.S. are resisting efforts to cut down on whale-entangling gear, and their resistance is in part translating to slow regulatory action.



Punctuation (left) was named for the comma and hyphen-shaped marks on her head, which helped researchers identify her.



Heavy ropes attached to lobster traps can ensnare whales. Roughly 1 million fishing lines sprawl across right whale migration routes and feeding areas in the U.S. and Canada.

Vanishing act

Oceana's Canada and U.S. teams are now joining forces to push their governments towards stricter protections including effective management areas, mandatory speed reductions for ships and improved monitoring.

Limiting the number of vertical fishing lines in the Atlantic, promoting the development of whale-safe fishing gear and strategically closing fisheries when needed would greatly improve right whales' chances of survival. Both teams are also advocating for improved satellite tracking of fishing vessels to determine where boats and whales are getting too close for comfort.

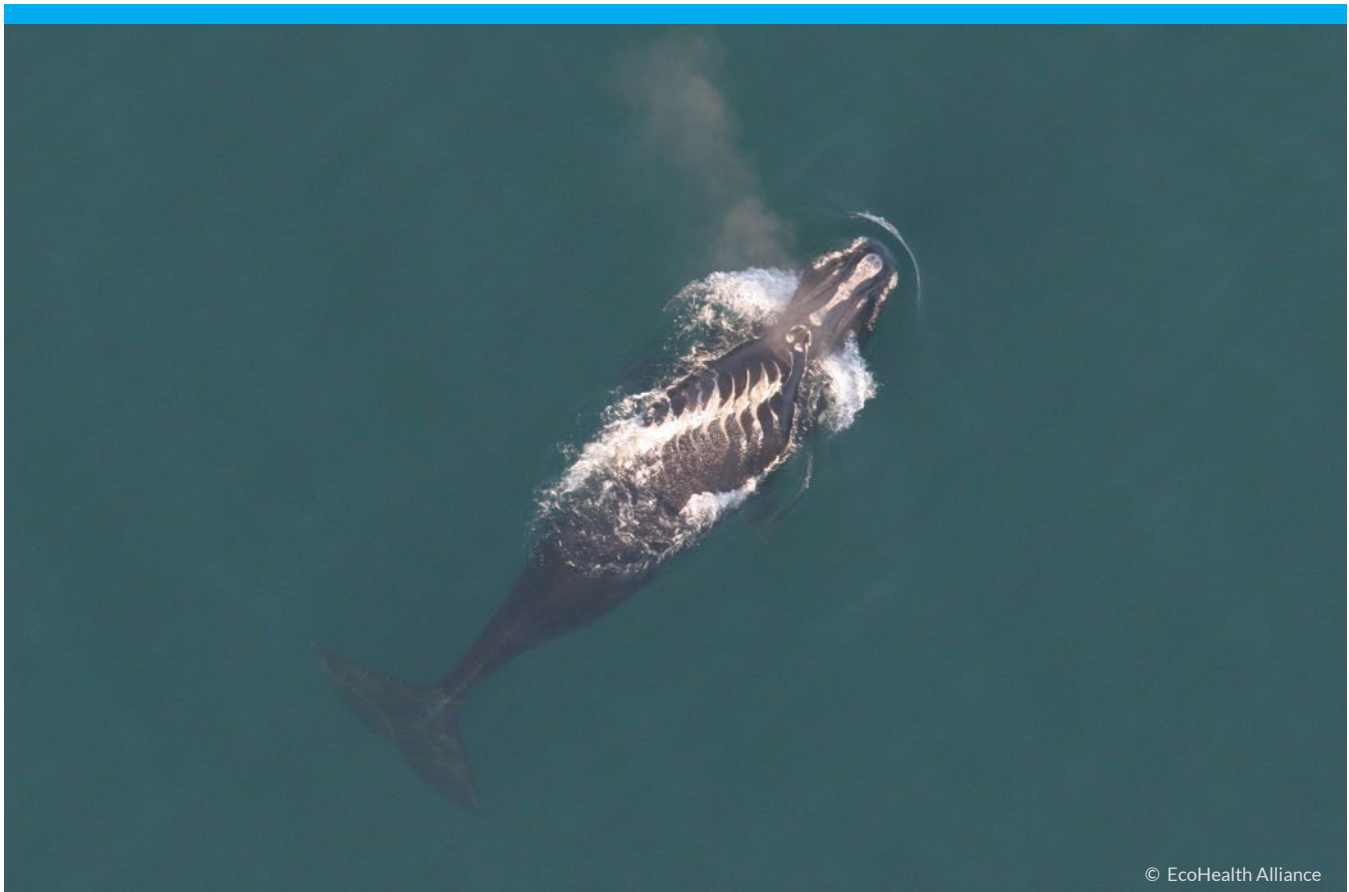
The U.S. team is fighting another threat, too. President Trump has proposed opening nearly all U.S. waters to offshore drilling, and in 2018, the administration authorized five companies to harm marine mammals hundreds of thousands of times while conducting large-scale seismic surveys for oil and gas in the Atlantic.

Seismic airgun blasting, which creates one of the loudest manmade sounds in the ocean, uses compressed air explosions to search for potential oil and gas deposits buried beneath the seafloor. These deafening blasts interfere with right whale communication, including between mother and calf, and ramp up stress. Oceana and its partners are challenging the permits in court, and have created a groundswell of

opposition to offshore drilling and seismic airgun blasting along the east and west coasts of the U.S.

Oceana's efforts in the U.S. and Canada are a race against time. Though seven calves were born in the 2018-2019 calving season – a big improvement from the previous season's zero births – it's not enough. "They're dying much more quickly than they're reproducing," Webber said. "We're looking at functional extinction in the next couple of decades."

If North Atlantic right whales go extinct, they'd be the first large whale to vanish in centuries in the Atlantic Ocean. Letting the whales slip through our fingers would be "catastrophic," Webber said. "And that's why Oceana is stepping up." ■



A right whale is pictured with visible wounds from a ship's propeller. Climate change is making plankton move to cooler waters, which is forcing right whales to cross busy shipping lanes in pursuit of their prey.

The immortal afterlife of plastic trash



When a U.S. Geological Survey researcher analyzed rainwater samples from the Rocky Mountains, he expected to see dirt and mineral dust. Instead he found tiny flecks and fibers of plastic in a rainbow of colors.

It wasn't the first time a scientist discovered a literal rain of plastic. Minute wind-blown plastics have wafted down in Paris, France, in Dongguan, China and in remote parts of the Pyrenees mountains.

Plastic is everywhere – including in our air, water and food – and it's going to be there for a long time. Plastic never really goes away. Instead it breaks up into tiny bits that range from the visible to the microscopic. As these pervasive remnants of our throwaway problem pile up, scientists worry that they could be having a big effect on human and ocean health.

Breaking it down

Plastic doesn't play nice with living things. While evolution has yielded a host of microbes, fungi and invertebrates that can turn everything from wood to flesh back into carbon dioxide and water, almost nothing can biodegrade plastic, explained Oceana senior scientist Dr. Kim Warner.

"The chains that make up the backbone of these different plastics are so complex that there's no organism out there that can

effectively break down those chemical bonds in a natural setting," she said. "When plastic gets smaller and smaller, that doesn't make it easier to degrade back into its components."

Of the over 8.3 billion metric tons of plastic that have been manufactured since 1950, only 9% have been recycled, and only 10% of recycled plastic gets recycled a second time. A small fraction of plastic waste is incinerated, but the lion's share – 79% – winds up in landfills, littered in landscapes, or bobbing in our rivers and oceans.

Exposed to sunlight, saltwater and the mechanical forces of waves, winds and tides, plastic first fragments into particles

called microplastics, a catchall term for any type of plastic that's 5 millimeters or smaller. Eventually, microplastics erode into "nanoplastics" measuring less than 100 billionths of a meter across, about the size of typical bacteria.

All these bits and pieces add up, with much of it winding up in places where it's not readily seen. When plastic enters the ocean, 94% sinks to the sea floor, according to a recent report.

Warner said, "We already have a layer of stuff that's not going to degrade further. It could last potentially for eons, unless something evolves in that time to break down plastic in the very cold environment of the ocean." ➡

Of the over 8.3 billion metric tons of plastic that have been manufactured since 1950, only 9% have been recycled, and only 10% of recycled plastic gets recycled a second time.

Shrinking seabirds

One of the iconic images of the growing anti-plastic movement is that of the desiccated corpse of an albatross chick, its belly overflowing with garishly colored bottle caps, lighters and other plastic detritus. The fatal effects of plastic on ocean animals is well known, but a recent study shows that even a few flecks of plastic can do great harm.

On Australia's remote Lord Howe Island, tens of thousands of flesh-footed shearwater parents feed their fluffball chicks fish – and plenty of plastic. Some years, up to 90% of chicks have at least one piece of plastic in their stomachs. Scientists discovered that chicks that eat even small amounts of plastic suffer health consequences. Just one scrap of shampoo bottle or balloon is enough to trigger elevated cholesterol levels and blood chemistry associated with impaired kidney function.

“This can have some pretty significant consequences for a bird that has to fly unaided to the Sea of Japan when they leave the island,” one of the study's authors said in a release.

Seabirds are far from the only creatures that consume plastic. Considering microplastics have been found in everything from oysters to humans, it stands to reason that a vast number of earth's animals are contaminated with the stuff. The shearwater study is one of the first to confirm in a non-laboratory setting what scientists

have suspected for years: Eating plastic is bad for animals. And its effects on people are not yet understood.

In experimental settings, plankton, marine worms and fish that ate plastic consumed their real food less efficiently. Plastic-gobbling crabs had trouble breathing, and ingesting microplastic slowed the growth of sea urchins. In one particularly troubling experiment, nanoplastics passed from a fish's food into its gut and organs before crossing the blood-brain barrier and interfering with its normal behavior.

Microplastics also act as “magnets” for harmful pollutants like pesticides or flame retardants that find their way into bodies of water, explained Christy Leavitt, the head of Oceana's U.S. plastics campaign. “When they're eaten by fish, they may work up the food chain into our food supply,” she said.



Turtles sometimes mistake plastic for jellyfish, a key food source.



A dead and decayed albatross on Hawaii's Midway Atoll presents a gruesome picture of the reality of plastic ingestion. Albatross parents pick up plastic while skimming the ocean surface for food, and then inadvertently feed it to their chicks.



© Shutterstock/Krzysztof Bargiel

The chemical make-up of plastic further complicates matters. According to industrial ecologist and researcher Dr. Roland Geyer, only 93% of plastic, on average, is the polymer itself. “The other 7% are additives,” he said. “These additives are complex chemicals, some of which are known to be hazardous.”

Microplastics research is still in its infancy, and we still don’t know if gobbling down small bits of a plastic bottle or foam takeout container poses any more threat to human health than simply eating and drinking out of plastic. What is known, though, is that each of us currently consumes around 70,000 plastic particles a year.

And it’s only going to get worse, with plastic production expected to nearly quadruple by 2050. The oil and gas industry has invested more than \$200 billion in the U.S. alone to ramp up plastic production in the coming year.

“As time goes on, we’ll be exposed to more microplastic,” Leavitt said. “Plastic pollution is only going to increase.”

Recycling isn’t enough

It is a next to impossible task to clean up the trillions upon trillions of minute plastic particles swirling deep in our seas and littering our lands. But it is possible to stem the tide of plastic manufactured, including packaging, bottles, bags, utensils and other throwaway junk.

“We are not going to recycle our way out of this problem,” Leavitt said. “We need to reduce single-use plastic at the source.”

Oceana is working in Peru, Chile, Belize, Canada, the U.S. and the EU to create and implement laws that phase out throwaway plastics. In addition, Oceana will campaign for plastic-free spaces in workplaces, universities and businesses to give consumers the option of refusing single-use plastic waste.

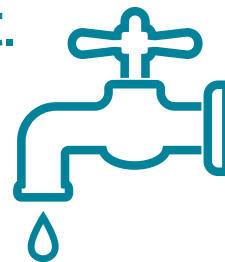
One thing is clear: If we don’t take swift action soon, the plastic raining over our mountains and cities and entering our oceans will turn into a plastic deluge – and the aftermath will be with us essentially forever. ■



© Shutterstock/David Pereira

Plastic is a permanent fixture of many beaches. Clean-ups are only a short-term fix.

Imagine that your bathtub is overflowing. Would you run for a mop or turn off the faucet? Recycling is the mop. We need to turn off the faucet.



Making history

By Emily Petsko

Canada updates its 151-year-old *Fisheries Act* to make its oceans abundant once again

Canada borders three oceans, boasts the world's longest coastline and has a rich history of fishing. And yet, for many years, the country and its fishers have suffered the consequences of an outdated and problematic legal framework for fisheries.

The federal *Fisheries Act* was enacted in 1868, making it older than the telephone, the light bulb and the motor car. While the law has been amended over the years, none of those changes required the government to manage its fisheries sustainably or to develop rebuilding plans when fish stocks dipped perilously low. Until now, that is.

Fishing boats are pictured in Alma, Bay of Fundy, on the New Brunswick Atlantic coastline in Canada. Under the revamped *Fisheries Act*, critically depleted cod in these waters could finally get the chance to bounce back.





In response to years of intensive campaigning and grassroots organizing by Oceana, First Nations people, other conservation groups and fishers, Canadian policymakers finally updated the sesquicentennial *Fisheries Act* in June, ushering in a new era of science-based management and bringing Canada's fisheries law into line with modern standards.

Not only does the improved *Fisheries Act* require rebuilding plans for collapsed fish stocks, but it also requires the Minister of Fisheries and Oceans to maintain major fish stocks at or above the level necessary to ensure the sustainability of the stock, ideally preventing them from declining in the first place.

Measures to protect fish habitats from harmful alteration, disruption

or destruction were restored after being cut from previous versions of the Act in 2012, and for the first time, new language recognizes Indigenous knowledge and requires that impacts on Indigenous Peoples be considered when decisions are made.

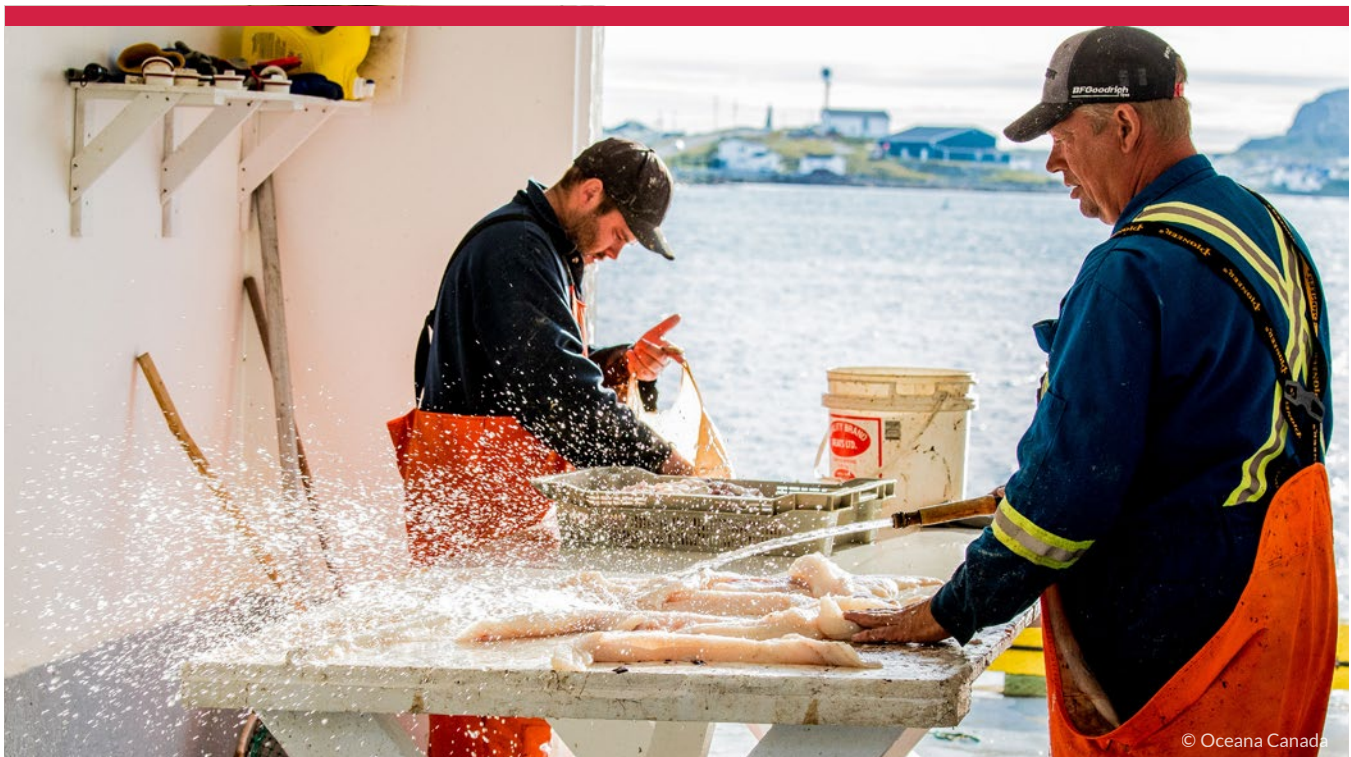
There's another reason to celebrate. Built into the law is a ban that officially ends the import and export of shark fins throughout Canada – a country that, up until just a few months ago, saw the highest number of shark fin imports outside of Asia.

The conservation benefits and economic gains that these changes to the Act unlock for Canada's waters cannot be overstated, according to Josh Laughren, executive director of Oceana Canada. "The overhauled *Fisheries*

Act could end up being one of the most transformative changes in how we manage Canada's oceans in many years," Laughren said.

At present, only 29% of Canada's fish populations are considered healthy, according to Oceana's latest *Fishery Audit*, released in November. But, as other countries with science-based fisheries policies have demonstrated many times over, the ability of many fish species to quickly reproduce makes it conceivable that fish stocks could – with proper care – reach a full recovery.

As for Canada, collapsed stocks can now become commercially viable once again, providing a more diverse selection of sustainable seafood for Canada and the world, as well as lasting benefits and stability for coastal communities.



© Oceana Canada

Fishers on Fogo Island, Newfoundland and Labrador clean the Atlantic cod they caught. Cod was an important commodity of Newfoundland's isolated villages for more than 500 years, but overfishing took a heavy toll on this once-vibrant industry.



Canada's cod industry is currently valued at 36 million Canadian dollars, but a rebuilt fishery could generate far more: CA \$233 million.

The comeback cod?

Consider Atlantic cod, for instance. This species, once famously abundant and central to Atlantic Canada's economy, suffered consistent overfishing and poor fisheries management. By the early '90s, cod were deemed commercially extinct, and all but one of the Canadian cod fisheries shut down. The damage was so swift and so severe that over 30,000 people were put out of work overnight, displacing families and entire communities.

Nearly three decades later, cod still haven't recovered. Overfishing continues to this day, with the federal government allocating higher cod quotas than advised by their own scientists, and no rebuilding plan exists. Prior to the passage of the modernized *Fisheries Act*, fisheries management was left to the absolute discretion of Canada's fisheries minister. Too often, ministers failed to rebuild fisheries and faced no consequences for it.

A rebuilt cod stock would support 26,000 jobs in Canada – 16 times more jobs than the fishery currently supports. This could be achieved in as little as 11 years.

"The difference between a country that has a law requiring stocks to be rebuilt and one that doesn't is the difference between the country that rebuilds stocks and the one that doesn't," Laughren said. "If this new *Fisheries Act* had been in place 30 years ago, fully implemented and enforced, the Atlantic cod collapse never would have happened."

A rebuilt cod stock would support 26,000 jobs in Canada – 16 times more jobs than the fishery currently supports – and stimulate as much as 233 million Canadian dollars in economic activities, according to a University of British Columbia study that was commissioned by Oceana and conducted by

Oceana Board Member Dr. Rashid Sumaila and Louise Teh. And if the environmental conditions are right, these changes could occur in as little as 11 years.

Redfish, another Atlantic species that collapsed under the pressure of overfishing in the '90s, could also bounce back under new management plans. The good news is that redfish stocks in the Gulf of St. Lawrence have shown significant signs of recovery in recent years.

If Canada uses this momentum to allow a full recovery to take hold, redfish could quickly become a sustainable seafood staple – and stay that way. ➔

“I grew up in the ‘Jaws’ era, and we were all terrified of sharks. But kids, at least the ones I’ve spoken to, are now really curious about sharks and understand that sharks hold special value.”

-Kim Elmslie, campaign director, Oceana Canada

A win for sharks

Shark fin soup originated in imperial China and, over the years, gained a reputation as a luxury dish that was best served at special occasions like weddings and banquets.

There’s nothing refined about the way these fins are obtained, though. In many instances, after their fins are hacked off, the sharks are dumped overboard to suffer a slow death.

The global trade is also indiscriminate. In 2017, when researchers conducted DNA testing on 129 shark fins (and manta ray gills) that had been sold at markets in Canada, China and Sri Lanka, 71% were shown to belong to at-risk species, including great hammerheads and whale sharks. While shark finning has been outlawed in Canadian waters for some time, it was perfectly legal to import and export shark fins before the passage of the new *Fisheries Act*.

Five earlier bills had attempted to ban the import of shark fins, but they lacked multi-party support. That changed in 2017, when Conservative Senator Michael MacDonald reintroduced a bill put forward years earlier by Member of Parliament Fin Donnelly of the left-leaning New Democrat Party.

Oceana pushed for an expanded version of the bill that included shark fin exports, and also helped



Unfortunately, fins are the most valuable part of a shark, with a bowl of shark fin soup costing up to US \$100.

garner more than 300,000 signatures for a petition supporting the ban that was sent to Prime Minister Justin Trudeau and Minister of Fisheries and Oceans Jonathan Wilkinson. Oceana’s campaign convinced more than 20,000 people to directly contact their Members of Parliament or the Minister of Fisheries and Oceans to demand change.

Other key supporters of the shark fin trade ban included the Humane Society International, the late Rob Stewart and his family, and Toronto City Councillor Kristyn Wong-Tam.

“We were able to demonstrate that there was broad public support for a shark fin trade ban,” said Kim Elmslie, campaign director for

Oceana Canada. “Our relationship with sharks is changing, and there’s now a greater understanding of the important role that sharks play in ocean ecosystems.

Elmslie said she has personally seen a generational shift in attitudes towards sharks: “I grew up in the ‘Jaws’ era, and we were all terrified of sharks. But kids, at least the ones I’ve spoken to, are now really curious about sharks and understand that sharks hold special value.”

Senator MacDonald’s bill banning imports and exports was incorporated into the broader *Fisheries Act*, providing more evidence of Canada’s desire to be a world leader in ocean conservation.

Working with allies, Oceana is playing a key role in ensuring that regulations match the stated goals of the law.

Next steps

While the new version of the *Fisheries Act* is now law, the specifics of how to rebuild and sustainably manage fish stocks are yet to come – and will ultimately determine how successful the Act will be.

Regulations detailing what rebuilding plans will include, how quickly they will be implemented and to which stocks they apply are currently being developed by Fisheries and Oceans Canada in consultation with Oceana and other stakeholders. An opportunity for the public to comment on the regulations is expected early in the new year.

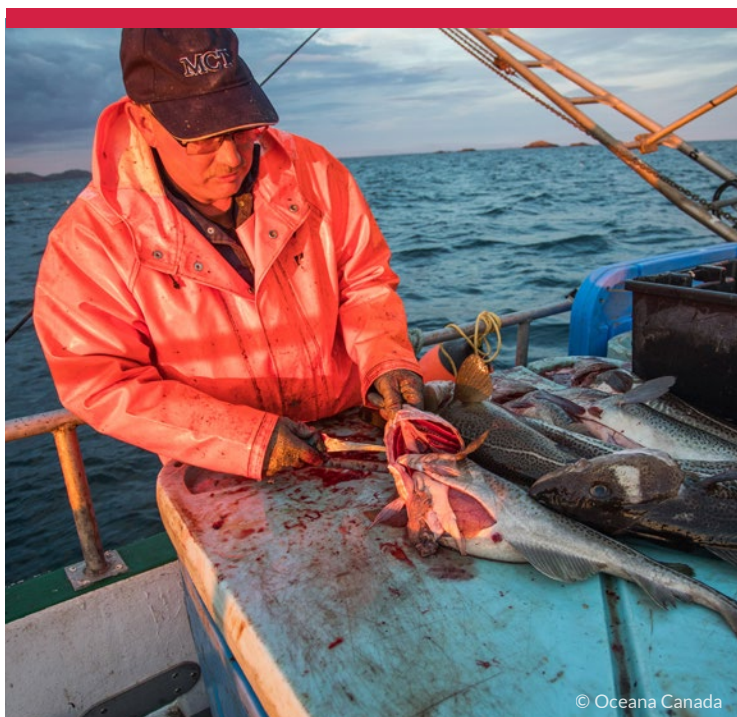
Of Canada's 192 major fish stocks, 33 are critically depleted. These

stocks will need rebuilding plans under the new law, but until the new regulations take effect, there remains no legal requirement to take the necessary steps to recover these stocks.

Working with allies, Oceana is playing a key role in ensuring that these regulations match the stated goals of the law.

"The modernized *Fisheries Act* is a tremendous step forward, but we've still got work to do," Laughren said. "We celebrated for a day, and then got to work on the regulations."

That's good news indeed for the fish and for Canada. ■



Overfishing of Atlantic cod continues, even though stocks are critically depleted.



"By rebuilding its fisheries, Canada is helping lead the way toward healthier, more sustainable and more resilient oceans," said former New York City mayor Michael Bloomberg.



2019: A year of victories

As 2019 draws to a close, we are reflecting on our successes over the last 12 months and setting goals for the year ahead. Please join us in celebrating all of our 2019 victories, which would not have been possible without your support.

- Canada modernizes its *Fisheries Act*
- Canada becomes first G20 country to ban the shark fin trade
- Chile announces it will publish vessel tracking data for fishing fleets, promoting transparency at sea
- New York prohibits offshore drilling
- Canadian government bans industrial activity in Marine Protected Areas
- Oceana wins lawsuit to protect vulnerable dusky sharks
- Canada creates Banc-des-Américains Marine Protected Area
- Spain creates the second-largest marine national park in the Mediterranean
- Chile passes one of world's strongest laws against illegal fishing



Supporter Spotlight

Oceana Board Member Nicholas Davis is in the business of conservation

Nicholas Davis, Oceana's newest member of the Board of Directors, had just founded the 12-room Hotel Alaia in Punta de Lobos – a surfing town in central Chile with a world-famous wave – when he met Ramón Navarro. Davis is a highly successful Santiago-born financier, and Navarro is a famed surfer and environmentalist who grew up in Punta de Lobos.

The two men quickly realized, despite their different backgrounds, that they were passionate about protecting Punta de Lobos and its unique environment from a host of threats, including pulp mills, dams and unfettered development.

So, they joined forces and created the Fundación Punta de Lobos (Punta de Lobos Foundation). They began to win easements from private landholders and convert them into public spaces along Chile's coastline, which helped prevent overdevelopment while also boosting local tourism, artisanal fishing, surfing and conservation. They began to make a real difference in Punta de Lobos, and the model worked so well that Davis and Navarro are now bringing it to other parts of Chile and to the sea.

Their success led Davis to attend the "Our Ocean Conference" in Chile, where he was introduced to Oceana Board Member Herbert Bedolfe. It's also where he first heard about Oceana's victory of protecting more than 300,000 square kilometers around the Desventuradas Islands – the largest marine park in the Americas. This win was followed by several others which have resulted in protection for about a quarter of Chile's seas.

Davis was impressed. He was particularly taken by Oceana's ability to take large, complex problems and address them with measurable and winnable campaigns. "Oceana's record of success and strategy of delivering meaningful and measurable progress for our oceans is unique," he noted. "It's something I wanted to be a part of."

After deepening his relationship with Oceana and receiving an invitation to join Oceana's Board of Directors, Davis formally became a board member in May 2019.

In Chile, Davis believes it's important to empower artisanal fishers who aren't adequately compensated for their catch. Oceana can help, he believes, by continuing



Oceana Board Member Nicholas Davis is the president of Chilean company EuroAmerica.

to improve the traceability and transparency of seafood. This will help buyers and consumers understand the true value of different seafood products, while also ensuring that fishers receive fair wages for their products.

Davis is also passionate about addressing plastic pollution. It's a problem he takes personally, as he, until recently, wore a bracelet made of recycled plastic to symbolize his concern. However, Davis has now taken off his bracelet to signify his belief that recycling isn't the answer to an industry-created problem, especially as some forecasts call for plastic production to quadruple by the year 2050.

Globally, Oceana is campaigning for companies to offer plastic-free alternatives and for governments to pass common-sense bans on single-use plastics. In Chile, for instance, Oceana is trying to pass a law to reduce throwaway plastics. "If we can do this and be successful, it can be a model for other, larger countries to follow," Davis said.

In addition to lending his expertise to Oceana's Board and the Punta de Lobos Foundation, Davis also serves as the president of EuroAmerica, a Chilean insurance and financial services group. He lives in Santiago with his wife Paulina and his five children. ■

Ask Dr. Pauly

This personal essay is an excerpt from Dr. Daniel Pauly's book, "Vanishing Fish: Shifting Baselines and the Future of Global Fisheries," published by Greystone Books in May 2019. It has been condensed for republication here.

Although I was born in Paris, I grew up in La Chaux-de-Fonds, a little town in the French-speaking part of Switzerland, in the Jura Mountains, where cows roam freely but not very far, because they have bells. I did not have a "normal" youth, but I did have hamsters, a goldfish, and sometimes a dog. However, I did not have the intimate connections with Nature that some well-known biologists enjoyed. I was into books and ideas, never a naturalist. I tend to see patterns in data, but not in raw Nature.

At 16, I dropped out of high school and went to work in Germany for a year as a "diaconic helper" for six months in an asylum run by the Lutheran Church and another six months in a city hospital, which cured me forever of the religious delusions common in juveniles.

Instead, I realized that I needed to go back to school, and this I did: For four years, I attended evening school from 5 to 9 p.m., five times a week, while working low-level jobs in a paint factory, a brush factory, and other factories during the day to support myself. Nature receded even farther into the background of my life.

Then, in the spring of 1969, I graduated and went to the United

A weird background for a marine scientist?



The cover of Dr. Pauly's new book (top left) and photos from different stages of his life.

States to connect with my father and his family for the first time, much as I had reconnected with my mother and her family three years before in Paris. As the son of a Frenchwoman and an African-American G.I., I had previously been aware that I was biracial (and there was always somebody to remind me, lest I forgot), but I was not ready to be part of a group. In the United States, I became assimilated into one ("African-Americans") that was still engaged in the fight for civil rights and its various ramifications.

I came out of this experience more confused than ever but convinced that I should somehow join in the struggle of people of color. I decided I would not live in Europe after my studies.

Thus, when I began my studies at Kiel University, I aimed to learn something "useful," something that would enable me to work in developing countries. I obtained permission to do a double major in biology and agronomy, but unreformed, old Nazi professors (real, not metaphoric ones!) drove me out of agronomy.

Marine science offered an alternative mix of useful and neat science, and Kiel University was a good place for it: You could learn classical fisheries science and marine biology at the very place where, in the late 19th century, Victor Hanen and Karl Möbius founded planktology and (benthic) community ecology, respectively.

Here are two things that impressed me during my studies: First, my six months (in 1971) in Ghana to study a coastal lagoon, near the port city of Tema. I learned all about the little lagoon, which supported an artisanal fishery for blackchin tilapia, and even discovered a new species of parasite in their mouths. Now, almost 50 years later, the lagoon is inside Tema, and the tilapia, size-wise, have turned into guppies. It was also then that I got my first sunburn and learned that I was European, not African.

Second, my six weeks (in 1973) onboard a giant factory ship turned research vessel, surveying cod off Newfoundland and Labrador. These were the heydays of the cod fishery (which collapsed less than two decades later). We were fishing at 1,600-foot depths, with trawls capable of lifting a boulder the size of a Volkswagen. Now I understand: We did not know what we were doing.

In 1974, I obtained a “Diplom,” the German equivalent of a master’s degree, and I was hired by the German international development agency (GTZ) to work in Tanzania. Then, in mid-1975, I was shipped to Indonesia to help introduce trawling to the country.

In Indonesia, I did the standard work of foreign fisheries “experts” working in developing countries, that is, helping to “develop” fisheries. This consisted mainly of conducting surveys to estimate the then-largely unexploited demersal fish biomass of western Indonesia and writing reports about how much was there and how much could be taken. Of the many scientific challenges at the time, three now stick out: (1) We were “terraforming” the sea (but did not know it), (2) We were ignoring small-scale fishers (but did not care), and (3) We were dealing with more species than we could handle.

I chose the last of these problems as my research challenge. The two years in Indonesia passed quickly, and I then returned to Germany with my head full of ideas for how to improve fish stock assessments in the tropics. I earned a Ph.D. working out some of these concepts and also teamed up with colleagues who helped me program some of the more outlandish ideas.

In 1979, I was back in Southeast Asia, this time in the Philippines, at the International Center for Living Aquatic Resource Management (ICLARM). This institution, founded two years earlier by the Rockefeller Foundation, was to do for the ocean what the green revolution had done for the land (increasing yields, the panacea in those days). For me, this meant teaching my newly developed methods and concepts as tools of “empowerment” throughout the tropical world. Thus, I got to know hundreds of colleagues on five continents and found out that they all had similar concerns.

Traveling as I did and crossing cultures and languages helped me see similarities where others saw differences. In the 1980s, the artisanal fisheries of Senegal, in northwestern Africa, were booming and were a source of wealth, and those of the Philippines were already in deep trouble.

However, unlike many anthropologists, I understood that this difference was not due to differences in the countries’ social organization, or “Asianness” versus “Africanness,” but to contingencies of development, such as when development began. Now, Senegalese fisheries are in the same trouble as those in the Philippines. This required a theoretical explanation, which I endeavored to develop. ■



Dr. Daniel Pauly is the founder and director of the Sea Around Us project at the University of British Columbia's Institute for the Oceans and Fisheries, and is a member of the Oceana Board.

For the full essay, check out “Vanishing Fish: Shifting Baselines and the Future of Global Fisheries” by Daniel Pauly.

Photos courtesy of Daniel Pauly



Jackson Browne



Mark Puente and Anne Earhart



Carl and Janet Nolet



SeaChange Co-Chair Valarie Van Cleave, Vice Chair Jeff Blasingame and Co-Chair Elizabeth Wahler

On September 7, Oceana supporters gathered at a private Laguna Beach estate overlooking the Pacific Ocean for the 12th annual SeaChange Summer Party. Oceana Board Vice Chair Ted Danson and Senior Oceana Advisor Alexandra Cousteau hosted the event and introduced its theme: ocean plastic pollution.

Danson told the crowd, "I've been campaigning for the oceans for more than 40 years. And we've met many saltwater challenges in that time. Fixed a lot of them. But now we face one of the biggest ever."

Cousteau followed with, "On my dives, I've seen things that my grandfather would consider a nightmare. I remember him every time I'm in the water ... the mental

conversation I have with him lately is all about plastic. The plastic pollution that is killing our oceans."

SeaChange Co-Chair Valarie Van Cleave took the microphone to thank Co-Chair Elizabeth Wahler and Vice Chair Jeff Blasingame, along with event hosts Karen and Bruce Cahill and event partners including: Oceana Board Member Jean Weiss and her husband Tim Weiss, The Harriet E Pflieger Foundation, Valaree Wahler, Tricia and Michael Berns, Chase Offield, Laurie and John Duncan, The Marisla Foundation and the Jaffee Family Foundation.

She also thanked event donors and sponsors Burgess Yachts, Southern California BMW Centers, Brunello



Susan Thomas, Karen Jaffe, Melissa Cavanaugh, Maura Short and Kimberly Woloson



Valaree Wahler, Alexandra Cousteau and Elizabeth Wahler



Oceana Board Vice Chair Ted Danson with Ocean Hero award recipient Chloe Espinosa (right)



Michael and Tricia Berns, Dino and Leslie Cancellieri, and Oceana CEO Andrew Sharpless

Cucinelli, Nolet Spirits, Mikimoto, South Coast Plaza and Coast Magazine.

Wahler seconded her thanks and expounded on the night's theme: "We, the SeaChange community, say that a healthy ocean is every child's rightful inheritance. And we do not want to leave an ocean filled with plastics to future generations."

Oceana CEO Andrew Sharpless stepped onto the stage and shared Oceana's strategy to combat the flow of single-use plastic into the sea. He described how Oceana will expose the myth of plastic recycling and demonstrate the pervasiveness of plastics in every part of the sea, in the bodies of marine animals and even inside humans.

He added, "When your bathtub is overflowing, the first thing you do is turn off the water tap. And then you go find a mop. Recycling is good, but it's just a mop."

"We know that 91% of all the plastic ever made has not been recycled. So the facts show that the mop is not working. We need to turn off the tap."

As a gentle breeze blew in from the ocean, award-winning musician and dedicated environmental advocate Jackson Browne played a moving set – a fitting conclusion to an inspirational evening that raised \$1.5 million in support of Oceana's campaigns. ■



Oceana CEO Andrew Sharpless, Board Vice Chair Ted Danson, Viola Bernbach, Diane Lane, Board Member Jean Weiss, Tim Weiss and Board Member Sam Waterston



Leslie Zemeckis, Jennifer Schwab, Board Member Susan Rockefeller, Paula Zahn and Bill Clinton



Board Vice Chair Ted Danson, Board Member Susan Rockefeller, Kelly Hallman, Yoel and Eva Haller, Diane Lane and Jim Hallman

On September 10, leaders in the worlds of philanthropy, business and entertainment gathered in the iconic Rainbow Room atop New York's Rockefeller Center to support Oceana and to celebrate two great advocates for the oceans: actress Diane Lane and former Oceana Board Chairman Simon Sidamon-Eristoff.

Master of Ceremonies and Oceana Board Vice Chair Ted Danson introduced Oceana supporter and 42nd President of the United States Bill Clinton, who discussed the success of policy in helping to conserve the seas. He lauded Oceana's long track record of victories, adding, "When they say they're going to get something done, they do."

Oceana Board Member Sam Waterson introduced Sidamon-Eristoff as one of Oceana's original founders. Sidamon-Eristoff spoke of Oceana winning several hundred policy changes for the oceans since he joined the board in 2002, characterizing this effort as "arguably the biggest success story in the environmental movement over the past 18 years."

Event Co-Chair and Oceana Board Member Susan Rockefeller welcomed Diane Lane, a fellow native New Yorker, and noted her passion for ocean issues. Lane spoke about the ecological and economic risks of offshore exploration and drilling for oil and gas. "I'm deeply honored to be a part of Oceana's mission to save our precious one-and-only blue planet," she said.



Robin Daley, Board Member Sydney Davis, James Brown and Dede McMahon



Kay Fernandez, Rick Taylor and Linda Weiss



Melissa Wright and Oceana President Jim Simon



Kai Lenny, Nancy Sidamon-Eristoff, Board Member Simon Sidamon-Eristoff and Board Member Sam Waterston

Oceana CEO Andrew Sharpless discussed the problem of plastic pollution in the oceans, the theme of this year's gala. Pointing out the senselessness of making single-use items out of a material that lasts forever, he explained that Oceana will use all the tools at its disposal to push for reductions in plastic production.

"When we set a goal for the oceans, we bring everything we can to the job of winning," he said. He then enlisted the crowd in making a short video clip to send to U.S. Representative Nita Lowey from New York to thank her for supporting Oceana's campaign to ban offshore oil drilling.

The event raised a record-breaking \$1.9 million and was, along with Susan Rockefeller, co-chaired by her husband and fellow Oceana Board Member David Rockefeller, Jr., Kay and Frank Fernandez, Kelly and

Jim Hallman, Oceana Board Member Jena King, Dede McMahon, Regina K. and John Scully, and Oceana Board Member Jean Weiss and her husband Tim Weiss.

The gala's Vice-Chairs included Oceana Board Member Monique Bär, Violaine and John Bernbach, Barbara Cohn, Ocean Board Member Sydney Davis, Angela and Stephen Kilcullen, Melony and Adam Lewis, Andy Sabin, Samriti and Scott Seltzer, Toby Usnik, Leslie and Robert Zemeckis, and Mercedes Zobel. Corporate partner attendees included Jonathan Propper from Dropps, Rick Taylor and Kay Fernandez from Konica Minolta, and Michele Roberts and Betsy Weeter from Tamara Comolli.

The night concluded with a spirited performance by The Rakiem Walker Project, whose energy reflected the audience's enthusiastic support of Oceana's mission. ■



*Red Hot Chili Peppers
at Rock Under the Stars*

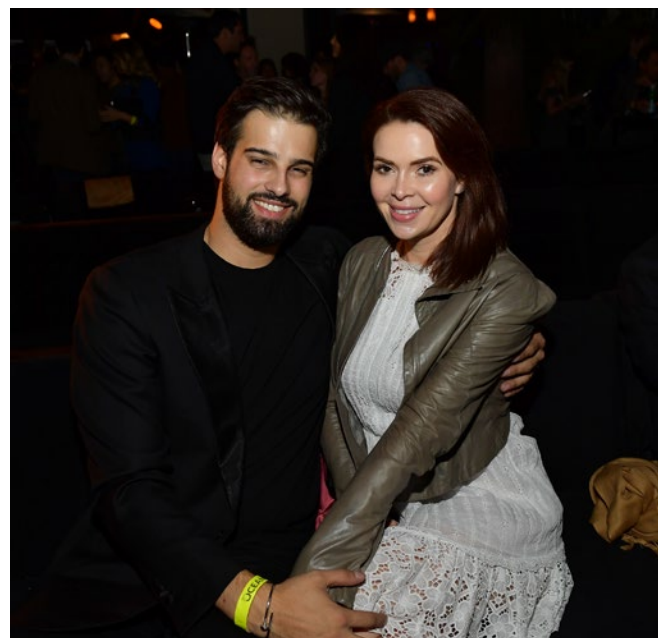
All photos © Matt Winkelmeyer/Getty

The Red Hot Chili Peppers

On October 12, Oceana Board President Keith Addis and Keri Selig hosted the Red Hot Chili Peppers at the fourth annual Rock Under the Stars in Los Angeles. The event, held at their beautiful and historic home, raised over \$900,000 in support of Oceana's campaigns.

"The mission of saving and protecting the sea is important to so many of us in California," Addis noted in his welcoming message for the evening. "Everyone here tonight is concerned about threats such as ocean pollution, overfishing, marine habitat destruction and the loss of magnificent animals including sharks, dolphins and whales."

Guests, including Jeff Goldblum, Diane Lane, Ed Begley, Jr., Tommy Chong, Anjelica Huston, Dylan McDermott and Carly Steel, enjoyed a plastic-free evening, with cocktails sponsored by Pernod Ricard and a water station provided by FloWater.



Jacob Andreou and Carly Steel



Rachelle Carson, Ed Begley, Jr., Oceana CEO Andrew Sharpless, Jeff Goldblum and Emilie Livingston



Event host and Board President Keith Addis

Oceana CEO Andrew Sharpless presented Oceana's campaign against plastic pollution in advance of the concert. Oceana will employ science, law, communications and grassroots engagement to push for local and national legislation restricting single-use plastics, designating plastic-free zones and requiring companies to provide plastic-free choices, he explained. "When we set a goal for the oceans, we bring everything we can to the job of winning," Sharpless said.

The Chili Peppers – including singer Anthony Kiedis, bassist Flea, drummer Chad Smith and guitarist Josh Klinghoffer – played a 45-minute set that brought guests to their feet. The band performed songs that spanned their more than three-decade-long career, including "Higher Ground," "Give It Away" and "Californication."

Oceana Board Member Jean Weiss, who introduced the Chili Peppers to Oceana, added: "They usually perform in large arenas, so it's a treat to see them in such an intimate setting."

In past years, Rock Under the Stars has featured Dead and Company, Sting, and Don Henley and friends (including Jackson Browne). ■

Sablefish



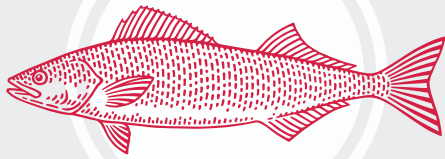
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Mark Bittman's take on a savory – and sustainable – stew

Mark Bittman is an award-winning food journalist, author and former columnist for *The New York Times*. His new book, the completely revised 20th anniversary edition of “How to Cook Everything”, was released in October.

I'm a longtime fish fan and my goal for eating seafood has remained the same for years: Buy it right, cook it simply. The cooking is still dead easy, but everything about buying seafood has changed. The globalization of harvesting and farming has created a situation in which fewer and fewer fish can be eaten in good conscience. That means that you can't have a rigid plan when it comes to choosing fish.

Generally, I buy the most sustainable, seasonal fillets, steaks, whole fish or shellfish available at any given time and then pick a simple cooking method, and the 20th anniversary edition of “How to Cook Everything” reflects that approach. For example: You'll no longer find recipes for monkfish, which is subjected to both overfishing and wasteful fishing practices (the tail, and sometimes the liver, are the only parts that make it to market). I've also limited the number of recipes that call for marginally sustainable species, and always offer alternatives. The curried fish recipe on the following page, for example, works well with sablefish or any thick fish fillet, such as carp, rockfish or grouper. – MB



The cod that isn't actually cod

If you've ever ordered "black cod" off of a restaurant menu, then you've eaten sablefish. This flaky, flavorful fish looks similar to the "true" cod that it colloquially shares a name with, but that's where the similarities end.

The two species aren't even in the same family, and sablefish is a far more sustainable choice than most cod from the Atlantic, which suffered the consequences of overfishing in the early '90s and never fully recovered.

By contrast, sablefish are not overfished, and all of the available options from the U.S. and Canada are rated as the "best choice" or a "good alternative" by the Monterey Bay Aquarium's Seafood Watch guide.

They're good for you, too. These fish, which can be found in the northeastern Pacific Ocean, are loaded with omega-3 fatty acids – a key component of a nutritious diet. They also contain as much DHA and EPA (two types of omega-3s) as wild salmon. So the next time you're looking for a healthy, guilt-free fish to serve for dinner, consider giving sablefish a try.

Mark Bittman's Curried Fish

From the 20th anniversary edition of
"How to Cook Everything"

— Makes 4 servings —
— Time: 45 minutes —

1 cup all-purpose flour	2 tablespoons curry powder or garam masala
1½ pounds sablefish* fillets or steaks, skinned if you'd like and cut into 2-inch chunks	1½ cups coconut milk
	2 tablespoons fresh lemon juice
Salt and pepper	Chopped fresh cilantro for garnish
3 tablespoons good-quality vegetable oil, plus more as needed	Chopped pistachios for garnish
1 large onion, halved and sliced	

*Can substitute any thick fish fillet

Instructions

Put the flour in a shallow bowl. Sprinkle the fish with salt and pepper and toss it in the flour until lightly coated. Put the oil in a large skillet over medium-high heat. When it's hot (a pinch of flour will sizzle), shake the excess flour from several pieces of fish and add them to the pan. Work in batches to avoid crowding, and adjust the heat so the fish sizzles. Cook, turning as necessary to brown the fish on all sides, 3 to 5 minutes total. As the pieces finish, transfer them to a plate with a slotted spoon. Repeat with the remaining fish, adding more oil if needed.

Spoon off all but 1 tablespoon of the oil and lower the heat to medium. Add the onion and cook, stirring occasionally, until it's soft and brown in places, about 10 minutes. Stir in the curry powder, sprinkle with a bit more salt and pepper, and cook, stirring constantly until fragrant, about a minute. Add the coconut milk and ½ cup water to the skillet and adjust the heat so the sauce bubbles steadily. Cook, stirring once or twice, until it thickens, about 3 minutes. Return the fish to the skillet and cook, stirring gently to coat the pieces in the sauce, until the fish is opaque at the center, 3 to 5 minutes; test with a thin-bladed knife. Add the lemon juice, taste, and adjust the seasoning. Garnish with the cilantro and nuts, and serve.



Journalist and photographer Claudio Almarza captured this shot of seaweed being gathered from the waters surrounding the Chiloé Archipelago in southern Chile. This red-tinted algae – called *luga negra* locally – can be sustainably picked by hand. However, harvesters get a little help from the ocean's tides, which naturally uproot the seaweed between spring and summer.



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*A type of octopus called a wunderpus, named
after the German word for "marvel"*



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