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Q&A with Jane Fonda
On her support for climate activism and ocean conservation

From Nazca to Panaon
Oceana's push to protect vital habitats in Peru and the Philippines

Ask Dr. Pauly
Marine protected areas are good – so why doesn't everyone think so?

OCEANA Protecting the World's Oceans

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- Curb Pollution
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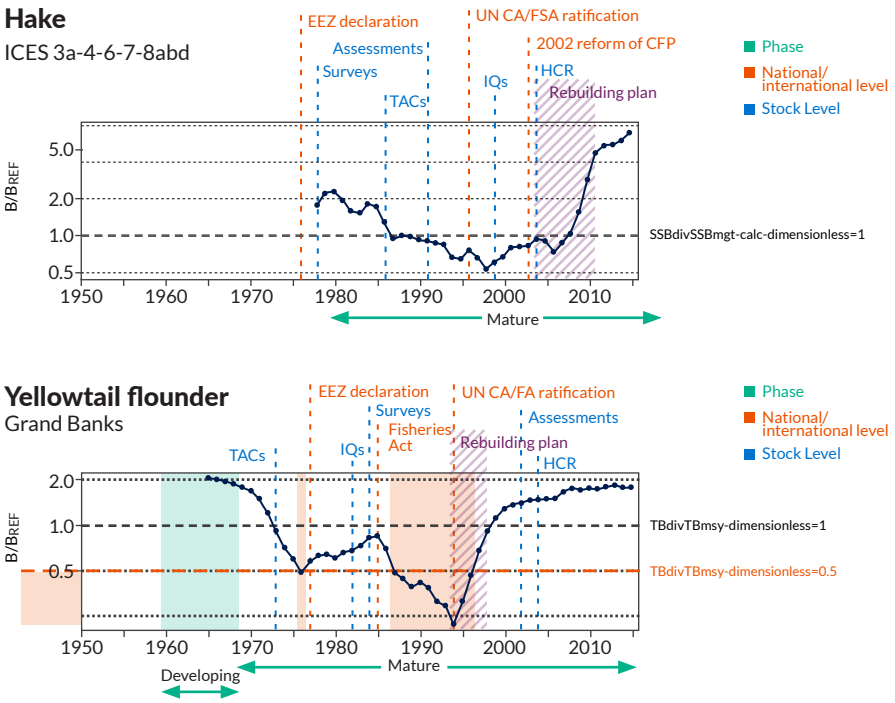
CEO Note

Dear friends:

Our goal at Oceana is not just to conserve the oceans, but to restore their abundance. An abundant ocean is a naturally sustaining resource for a hungry planet and an inspiration to everyone who loves wild ocean creatures. The question, for practical people like the readers of this issue of *Oceana Magazine*, is can we do it? Can we deliver, promptly, measurable improvements in ocean health? In short, can we get more fish in the water?

A comprehensive scientific study of fishery management, published just recently in the distinguished scientific journal *Nature Sustainability*, shows that the answer is yes. Even more importantly, this is not a forecast – the study reports on success stories in which THE FISH CAME BACK. Disastrous collapses due to overfishing were finally confronted by sensible, enforceable policy-driven regulations. And – often in just 5-10 years – the wrecked fishery rebounded to high levels of abundance.

Consider these two examples: yellowtail flounder, on the Canadian Grand Banks, and hake, off the coast of France. They are chosen from 288 reviewed in this comprehensive study, whose authors include a stellar cross-section of academic marine scientists from more than a dozen different countries, including the United States, Japan, New Zealand, Ireland, Italy, Belgium, South Africa, Argentina, Australia, Canada, Denmark, Morocco, and Britain.



These graphs, adapted from Melnychuk et al.'s recent paper, show the relative increase of fish biomass (B/BREF) following the enactment of fishery rebuilding plans. B/BREF refers to the biomass, or weight of a fish population, relative to a scientifically established target. The 1.0 mark on each graph is the "target," according to each fishery's management plan.

Source: Melnychuk, M.C., Kurota, H., Mace, P.M. *et al.* Identifying management actions that promote sustainable fisheries. *Nat Sustain* (2021).

The charts provided in the study show the abundance of the studied fish species over time. The stories are similar – fisheries decline due to mismanagement and overfishing. Then (finally!), regulators intervene with a decisive and effective action. They design and implement fishery rebuilding plans. The moment this is done is highlighted in cross-hatching on these charts. See for yourself what happens in the graphs above.

THE FISH COME BACK!

Oceana's mission is to save the oceans to help feed the world. We've helped win sensible, science-driven fishery management policies in countries around the world. We are putting more fish in the water. These fish provide hungry people a climate-smart and nutrient-rich protein. If well-managed on a global basis, our oceans can feed a billion people a seafood meal, every day, forever.

If you're a donor or supporter of Oceana, you are helping to drive that success. This comprehensive academic study is further proof that restoring ocean abundance is a practical and achievable goal. Results matter. Ocean conservation, delivered through sensible, enforced laws that require rebuilding plans, works.

All the best,

Andrew Sharpless, Oceana CEO

For the Win

Siboglinid tubeworms, like the ones pictured here in the Gulf of Mexico, become sessile animals as adults. "Sessile" refers to an organism that attaches itself to a surface and stays there. Corals, sponges, anemones, and barnacles are also sessile animals.

Deep-sea corals in U.S. Gulf of Mexico waters now protected from destructive fishing

The National Marine Fisheries Service issued a final rule last fall to protect nearly 500 square miles (1,300 square kilometers) of coral habitat in the Gulf of Mexico from harmful fishing gear. This newly protected part of the ocean stretches from the U.S. border with Mexico to the Florida Keys and includes canyons, reefs, and deep-sea corals, some of which can live for hundreds or even thousands of years.

Home to iconic species like sharks and grouper, this place is vulnerable to destructive fishing methods, like bottom trawling, that can flatten fragile corals. Under the new regulations, bottom trawls will be prohibited in certain "habitat areas of particular concern" (HAPCs).

"Protecting deep-sea corals is a win-win for both fishermen and healthy oceans," said Oceana Senior Campaign Manager Gib Brogan. "Healthy corals will help sustain robust fisheries and ocean ecosystems for years to come."

This win follows past Oceana deep-sea coral victories in the Atlantic and Pacific. On the East Coast, it adds to an existing network of protections that covers more than 61,000 square miles (158,000 square kilometers) of deep-sea coral areas from Rhode Island to Texas and 1.4 million square miles (3.6 million square kilometers) nationally.

California's new crab fishing rules will save more endangered whales and sea turtles

New regulations in California will better protect endangered whales and sea turtles from crab fishing gear that too often causes fatal entanglements. These regulations, published by the California Department of Fish and Wildlife last fall, require closures or reductions in the number of Dungeness crab traps in areas where larger concentrations of whales and sea turtles are spotted.

Humpback whales, blue whales, and Pacific leatherback sea turtles – all of which have endangered populations in Californian waters – are some of the species susceptible to entanglements. When fishing ropes wrap around an animal's body, it can cause debilitating and even fatal injuries. Entanglements can prevent animals from eating and mammals from surfacing for air, potentially leading to starvation or drowning.

In recent years, whales came closer to shore in search of food, but doing so has exposed them to an obstacle course of crab traps. This resulted in a huge increase in entanglements off the West Coast, including at least 56 cases of entangled whales in 2016.

Under new regulations, even if certain areas are closed to conventional crab traps, fishers can use state-approved alternative "pop-up" gear – also called "ropeless" gear – that eliminates the vertical fishing lines that can cause entanglements. Since 2018, Oceana has been partnering with Dungeness crab fishers to test pop-up gear, which keeps lines on the ocean floor instead of hanging unattended in the water for days.

"We welcome the new opportunity to test and expand innovative pop-up gear to allow for safer and more sustainable crab fishing in the future," said Dr. Geoff Shester, California campaign director and senior scientist for Oceana.

"Sadly, gear entanglement occurs everywhere in the oceans, and if we can solve the crab pot line problem here, we could help provide solutions to prevent entanglements around the world."

Oceana and allies stop the expansion of offshore oil drilling in U.S. waters

U.S. President Joe Biden signed an executive order in January that pauses all federal offshore oil and gas leasing, following grassroots campaigning by Oceana to protect U.S. waters from the expansion of offshore drilling, a dangerous practice that contributes to climate change and ocean acidification. This victory would not have been possible without Oceana and its many allies. The campaign won support from every East and West Coast governor; more than 390 local municipalities; over 2,300 local, state, and federal bipartisan officials; and alliances representing more than 56,000 businesses and 500,000 fishing families.

Offshore drilling is not just harmful to the environment. It's also bad for the economy. A recent Oceana analysis found that stopping new leasing for offshore oil and gas – if made permanent – could prevent over 19 billion tons of greenhouse gas from being emitted and more than $720 billion in damages to people, property, and the environment. The protections will also safeguard the U.S. clean coast economy, which supports around 3.3 million American jobs and $250 billion in GDP through activities like tourism, recreation, and fishing. Oceana continues to campaign for measures that would permanently protect U.S. waters from expanded drilling.

Oceana urges President Biden to prioritize renewable energy instead of ocean oil drilling. Offshore wind has the potential to generate more electricity than the U.S. currently demands.

News + Notes

Amazon has a 'large and rapidly growing' plastic waste problem, Oceana reports

Amazon generated an estimated 465 million pounds (211 million kilograms) of plastic packaging in 2019, according to a recent Oceana report based on available industry data and the company's market share by country. If all of that trash took the form of the inflatable "air pillows" that Amazon frequently uses to fill packages, it would create a plastic trail long enough to circle the Earth over 500 times.

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The majority of Amazon's plastic bags are not recycled because they are made of plastic film, which is not accepted by most curbside recycling programs.

Considering that little of Amazon's plastic packaging is recyclable in any practical sense, this poses a big problem for the world's oceans. Using a combination of industry data and country-specific research revealing the amount of plastic that leaks into waterways, Oceana estimated that up to 22.4 million pounds (10.2 million kilograms) of Amazon's plastic packaging polluted freshwater and marine ecosystems in 2019. That's the equivalent of up to a delivery van's worth of plastic polluting the ocean every 70 minutes.

Amazon disputes these figures but has not yet responded to Oceana's request for alternative data or specific estimates – by country – detailing the plastic footprint generated by Amazon and its marketplace vendors. Oceana's ongoing campaign urges Amazon to take responsibility for its plastic footprint and take meaningful steps to reduce it, including, at minimum, giving Amazon customers a plastic-free packaging option at checkout.

Canadian consumers could be spending millions of dollars a year on illegal, unregulated, and unreported seafood

Through no fault of their own, Canadians could be unwittingly spending up to 160 million Canadian dollars (USD$125.7 million) a year on seafood caught through illegal, unregulated, and unreported (IUU) fishing, according to a recent Oceana Canada report based on modeling data from leading fisheries economists. In some cases, the seafood sold at Canadian supermarkets may have been caught by victims of modern-day slavery – an injustice that plagues the global seafood supply chain.

Canada's weak traceability standards for the seafood supply chain are partly to blame. Though the country committed to implementing a boat-to-plate traceability system in 2019, no timeline for doing so has been established. In the meantime, the country loses up to CA$93.8 million (USD$73.7 million) a year in tax revenue and up to CA$379 million (USD$297.8 million) in revenue for Canadian seafood industry workers. Worse still, human rights abuses and losses of vulnerable marine life continue unabated.

"Right now, an endangered species of fish caught by modern slaves on a vessel fishing illegally can make its way onto Canadian supermarket shelves with no way for consumers to know its true origin, simply because safeguards to prevent this haven't been put in place," said Dr. Rashid Sumaila, who was the lead researcher of the report. He is also an Oceana Board Member and Director of the Fisheries Economics Research Unit at the University of British Columbia.

Oceana Canada is calling on the government to outline how it will deliver on its commitment in 2021. Any proposed plan should require catch documentation for all domestic and imported seafood, methods to verify a species (such as DNA testing), strict penalties to deter fraud, and improved seafood labeling.

A group of dreamfish (Sarpa salpa) swim through Spain's Mar de Las Calmas Marine Reserve. Of the areas assessed by Oceana, Spain's MPAs had the highest number of fished areas.

Oceana report finds that most of Europe's marine protected areas are under threat

The European Union (EU) announced in 2018 that it had surpassed its target of protecting a tenth of its ocean, but since then, enforcement has been sorely lacking. A recent report by Oceana revealed that 96% of Europe's Natura 2000 marine protected areas (MPAs) still experience grave threats from human activities, including destructive fishing gear, maritime traffic, dredging and dredge dumping, and oil and gas installations. Natura 2000, a network of protected areas that spans the European Union, contains the majority of Europe's MPAs.

A combination of threats can be especially dangerous to habitats and marine life. Some sites in Germany, the Netherlands, and the United Kingdom (which, at the time, was still part of the EU) were found to face 11 or more threats each. Only a tiny fraction of the assessed MPA network – 0.07% total – was unaffected by threats.

These "paper parks," protected only in name, create a false sense of progress. Oceana asserts that MPAs should only be counted towards international targets once those sites are actively managed. Oceana is also calling on governments to prohibit destructive fishing within MPA boundaries, drastically ramp up protective measures, and review ongoing threats to marine life and habitats.

Regulations could better protect North Atlantic right whales from fishing gear in U.S. waters

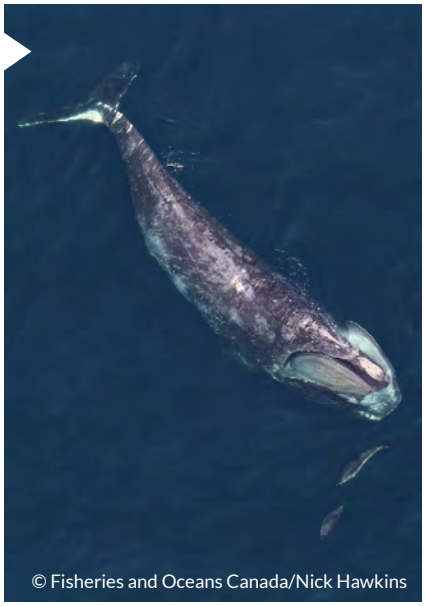
Entanglement in fishing gear is one of two leading causes of death for North Atlantic right whales, of which only about 360 remain. When fishing rope ensnares a whale, it can sever fins and tails, cut into bone, and cause other serious wounds. The National Marine Fisheries Service proposed regulations last December that could reduce risk to these critically endangered animals, but stronger protections are still needed to ensure their survival as a species.

The proposed regulations would reduce the number of vertical lines in the water, expand the use of weak rope designed to break when it comes into contact with adult North Atlantic right whales, improve fishing gear marking requirements, and create new areas that permit "ropeless" fishing gear but prohibit vertical fishing lines.

Oceana Campaign Director Whitney Webber called the proposed rule "long overdue," but said the department relies too heavily on weak rope, which can reduce entanglements for adult North Atlantic right whales but may not be effective for smaller juveniles or calves.

Oceana is urging the agency to implement regulations that further reduce the use of vertical line gear in areas where North Atlantic right whales are present. The agency should also promote a transition to ropeless technologies that reduce North Atlantic right whale injuries and deaths, Webber said.

"With North Atlantic right whale numbers declining, they can't afford any more delays," Webber said. "Oceana calls on NOAA [the National Oceanic and Atmospheric Administration] to finalize strong protections for these whales before it is too late."



The North Atlantic right whale is one of the largest species on Earth, growing up to 15 meters (50 feet) and weighing up to 64 metric tons (140,000 pounds).

Q+A

In Jane Fonda's new book about climate action, she writes that "change is coming – by disaster or by design," and she could either watch it happen or help tip the balance towards the latter. Inspired by Greta Thunberg and the global climate change protests of 2019, she decided to drop all other commitments and move to Washington, D.C. for four months prior to the COVID-19 shutdowns. Once in the capital, she and Greenpeace organized weekly Fire Drill Friday protests that urged Congress to pass meaningful climate legislation. While practicing peaceful civil disobedience, Fonda was joined by and arrested with several other prominent members of the entertainment community. Fonda was honored at Oceana's virtual New York Gala last fall (for more, see page 32), and in another recent conversation with Oceana, she shared what fuels her activism and how others can get involved, too.

Actor and lifelong activist Jane Fonda on fighting the good fight for climate action

What do you feel was the single greatest accomplishment of the Fire Drill Friday protests, and what do you want to achieve going forward?

JF: On the last Friday there were over 2,000 people and over 300 were arrested. We never intended to have very large crowds (though they grew bigger than we anticipated). Our goal was to raise awareness of the urgency of the climate crisis, which we succeeded at because of our willingness to engage in non-violent civil disobedience and risk arrest.

Our media coverage was vast. People came from all over the country and most said it was their first time doing such a thing. Your board chair, the wonderful Sam Waterston, is a shining example.

This is what we wanted. According to a Yale study, there are millions of people who are concerned about the climate crisis but have never taken action because no one has asked them. We were asking them and continue to.

Since March 2020, our virtual Fire Drill Fridays have had 9 million viewers across all platforms. Thousands volunteered in the lead-up to the election and made over 4 million calls and texts to climate voters who sat out the previous election. Again, most had never volunteered before.

Negative impacts to the ocean, while significant, are unseen by the average person. Climate change presents similar challenges. How can we convince people who haven't witnessed the effects of climate change firsthand to care about an invisible threat?

JF: Great question. Well, it's getting harder to not notice the effects of climate change: the catastrophic fires in the West, rising seas, tens of millions of climate refugees, more frequent and severe hurricanes, prolonged drought, flooding, hotter summer weather. There are those who, despite all this, refuse to believe what scientists are saying. I'm not sure we should waste our time with them. It's like the people who still say COVID is a political hoax.

But for the others – get them to listen to or read what climate science is saying. The scientists are unanimous in saying it's very dire and time is running out. If we miss the nine-year mark (2030), at which time they say we must have cut our carbon emissions in half,

it will be pretty much out of our hands, although every half degree of warming we can prevent will save millions of lives and species.

Some have questioned whether climate change can remain an important agenda item when racial justice and global health crises like COVID-19 demand our immediate attention. Do these issues really need to be tackled separately?

JF: They must be tackled together, for they are part of the same root causes: greed, racism, hubris. There would likely not be a climate crisis without the racism that leads the fossil fuel industry to put its drilling, fracking, refining, exporting, and dumping of coal ash in the places the least able to fight back: low-income areas, communities of color, and Indigenous lands. They even call them 'sacrifice zones.'

The toxic landscapes that make up oil and gas infrastructures wouldn't be tolerated in populations with political and social clout. This is why calls for a Green New Deal and Blue New Deal are critical. They address economic and racial injustices in their solutions to the climate crisis.

Epidemiologists say that with global warming, pandemics are certain to become more common as Arctic ice sheets melt, releasing pathogens we have no resistance to.

Mosquitoes, rodents, and other vectors are moving from their usual habitats because of climate change, so more serious diseases are starting to show up. Developing a more prepared, robust, and democratic health care system is very much part of preparing for what's coming in terms of extreme weather events.

How can celebrities use their platform to demand positive change?

JF: It's a very personal thing, and not everyone is psychologically equipped to handle organized criticism. On the other hand, we all want meaning in our lives. Knowing that we care about more than just ourselves is a great feeling, and it makes growing old a lot easier!

When we, as celebrities, join the fight for justice, democracy, and the climate (saving civilization), it not only helps the cause – it makes us feel good. Activism is the best antidote for malaises and depression.

We don't have to be the experts. There are plenty of experts to call on. Celebrity activists are the repeaters, the tall towers on the tops of mountains that pick up weak signals from the valley and broadcast them more widely.

That's what the Fire Drill Fridays movement is doing. We get the most beautiful and poignant but little-heard voices from the frontlines and give them a platform, with celebrities introducing them. That's the role for celebrities, and it's a wonderful, joy-filled one.

You authored a book titled *What Can I Do?: My Path from Climate Despair to Action*. What advice do you have for people who are new to activism?

JF: Read my book. But for sure, don't be a lone activist. Even if every one of us bought electric cars, got rid of single-use plastics, and went vegan, it can't add up to enough to get us where we need to be fast.

Join a well-established, strategic organization. Make certain it's not one with all white men on the board and one token woman and person of color. That is so yesterday, and it's ineffective. Organizations focus on different things: research, electoral work, conservation, and so forth.

The world is in a perilous place right now. Science tells us we have nine years to keep warming at 1.5 degrees Celsius. This is going to take unprecedented numbers of people demanding an end to fossil fuels which, by the way, is the primary thing that's killing the oceans.

So, in my view, activism should focus on mobilizing the largest numbers of people to engage in non-violent direct action. Again, read my book. It's very user- friendly.

The planet took a lot of hits in 2020, from devastating wildfires in Australia and North America to continued deforestation in Brazil and environmental protection rollbacks in the U.S. What is one piece of good news for our blue planet that you took solace in last year?

JF: We elected our first climate president. Now we just have to hold his feet to the fire. ■

Nazca Ridge: Peru's next marine reserve?

Home to rare species and massive seamounts that have been nicknamed the "underwater Andes," Nazca Ridge is unlike anywhere else on Earth. The power to protect this unique place now lies in the Peruvian government's hands.

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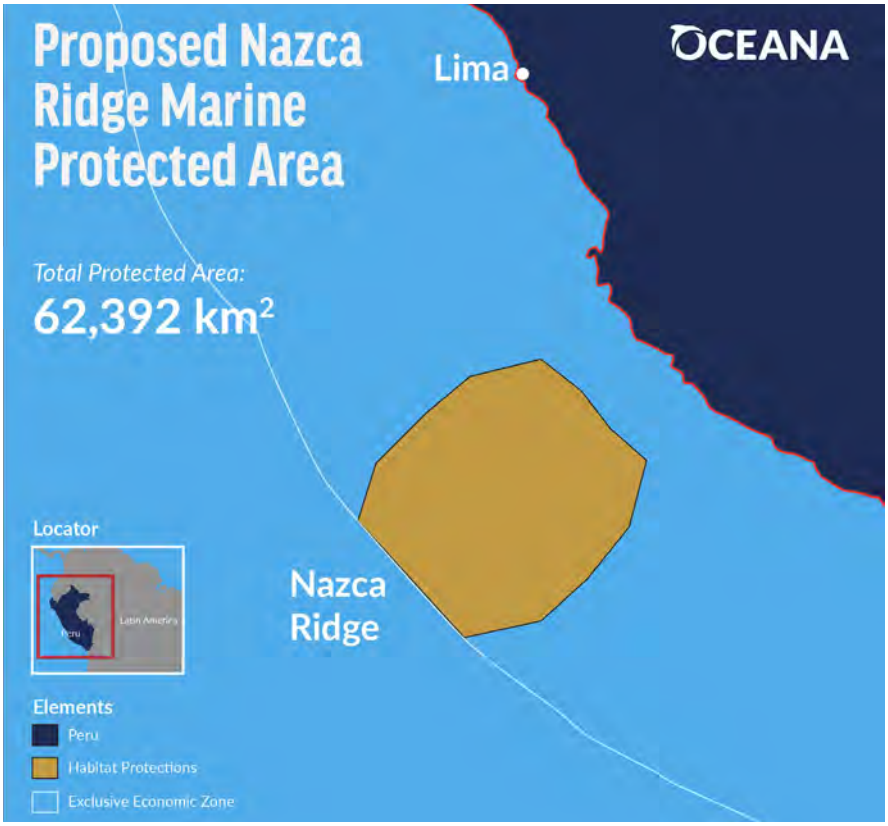
Roughly 30 million years ago, in an epoch when the world's oceans teemed with megatooth sharks and hippo-like marine mammals called behemotops, a chain of equally imposing underwater mountains formed off the coast of present-day Peru. Countless species have come and gone since then – some dying off, others evolving into the animals we know and cherish today – but these seamounts still stand, sheltering and sustaining life in its many resplendent forms.

Today, we call this geographic feature Nazca Ridge, or *Dorsal de Nasca* in Spanish. While there is much to learn about this remote, relatively unexplored part of the South Pacific, we know that more than 1,000 marine species call Nazca Ridge home, from blue whales and orcas to sea turtles and tuna. Some species, like deep-sea corals and cod, are vulnerable to disturbance and slow to recover. Others, like squid and jack mackerel, provide food and jobs to Peruvians. Perhaps most impressive, many of these animals are entirely unique to Nazca Ridge.



The proposed Nazca Ridge National Reserve, shown above in yellow, would raise Peru's ocean protection area to nearly 8%.

"One of the main characteristics of this area is that more than 40% of the fish are found nowhere else on Earth," said Alicia Kuroiwa, director for habitat and species conservation for Oceana in Peru.

Kuroiwa is the scientist who spearheaded and developed Oceana's proposal to create a national reserve along the eastern end of Nazca Ridge, located about 100 kilometers (62 miles) from the Peruvian coast of Ica. If enacted, it would be the first fully marine area that enjoys national protections. Even though Peru is a top fishing country with one of the world's most productive marine ecosystems, it protects just 0.5% of its ocean. This is well below the government's overdue goal of protecting 10% by the end of 2020.

Nazca Ridge is home to marlin, a highly prized species. Other commercially important species, like mahi mahi, Humboldt squid, and bonito, are also found in this area.

Gabriel Quijandría, the head of Peru's Ministry of Environment, spoke last fall about the importance of creating the Nazca Ridge National Reserve, which would boost Peru's percentage of protected ocean to almost 8%.

"The creation of the Nazca Ridge Reserve will be a marine conservation milestone in Peru," he said. "We have 0.5% [of protected sea], and this is unacceptable in a country with a wealth of fisheries resources and marine ecosystems

like Peru. We are in last place in Latin America [in terms of the percentage of protected ocean] … We cannot be left behind."

Around the same time, then-President Martín Vizcarra announced he was committed to creating Nazca Reserve by the end of 2020. However, a political shakeup led to Vizcarra's removal from office in November 2020. Oceana is now working with Peru's new administration to approve Nazca Reserve in the coming months, a commitment publicly confirmed by Quijandría.

Doing so would protect nearly 63,000 square kilometers (24,000 square miles) of unique habitat with high biodiversity. Kuroiwa compared Nazca Ridge to a busy highway, explaining that its peaks, trenches, and canyons contrast with the flat, featureless seafloor and act as a visual guide to marine animals on the move. Even though elephant seals, king penguins, and Juan Fernández fur seals are not native to Peru, they have been spotted near Peru's coast after following the ridge to its natural conclusion. Nazca's seamounts are comparable in size to some of the smaller Andes mountains, which also run through Peru – albeit above sea level. It is possible that Nazca's underwater ecosystems are just as diverse as those found in the Andes. According to Kuroiwa, these seamounts should, in theory, have different ecosystems and habitats at varying altitudes.

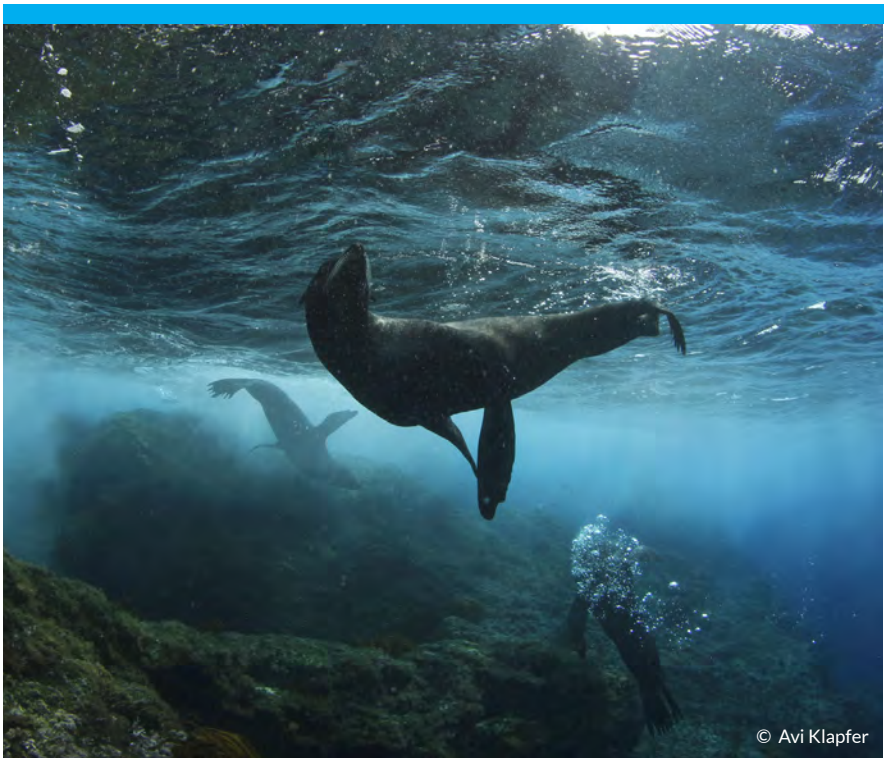
"We have to sample all of the altitudinal levels to know what species are there, but that's difficult because the seamounts go 4,000 meters (13,120 feet) deep," Kuroiwa said. "But we know enough to be sure that it is an important area for conservation, not only because it serves as a highway but also because it has places that act as nurseries for commercial fish species, like jack mackerel."

Oceana recognizes that we cannot afford to wait for marine species and habitats to become imperiled before taking action. Nazca Ridge is an opportunity to be proactive and protect Peru's biodiversity from potential future threats, such as seabed mining and destructive illegal fishing. To date, more than 30,000 people have called on the Peruvian government to create Nazca Reserve by signing a petition at oceana.org/NazcaNow.

Others think Nazca is a place worth preserving, too. The Wyss Foundation, Waitt Foundation, Bloomberg Philanthropies, and Oceans 5 have all supported Oceana's Nazca campaign. Celebrity supporters have also directed international attention to the cause. Actor Leonardo DiCaprio joined Oceana's social media campaign last year, writing in an Instagram post, "By protecting this area, we can help maintain its abundance for generations to come and in turn, ensure neighboring fisheries thrive."

Nazca Ridge has fostered new life, both big and small, for millions of years. Peru should act now to ensure it has a long future, too. ■

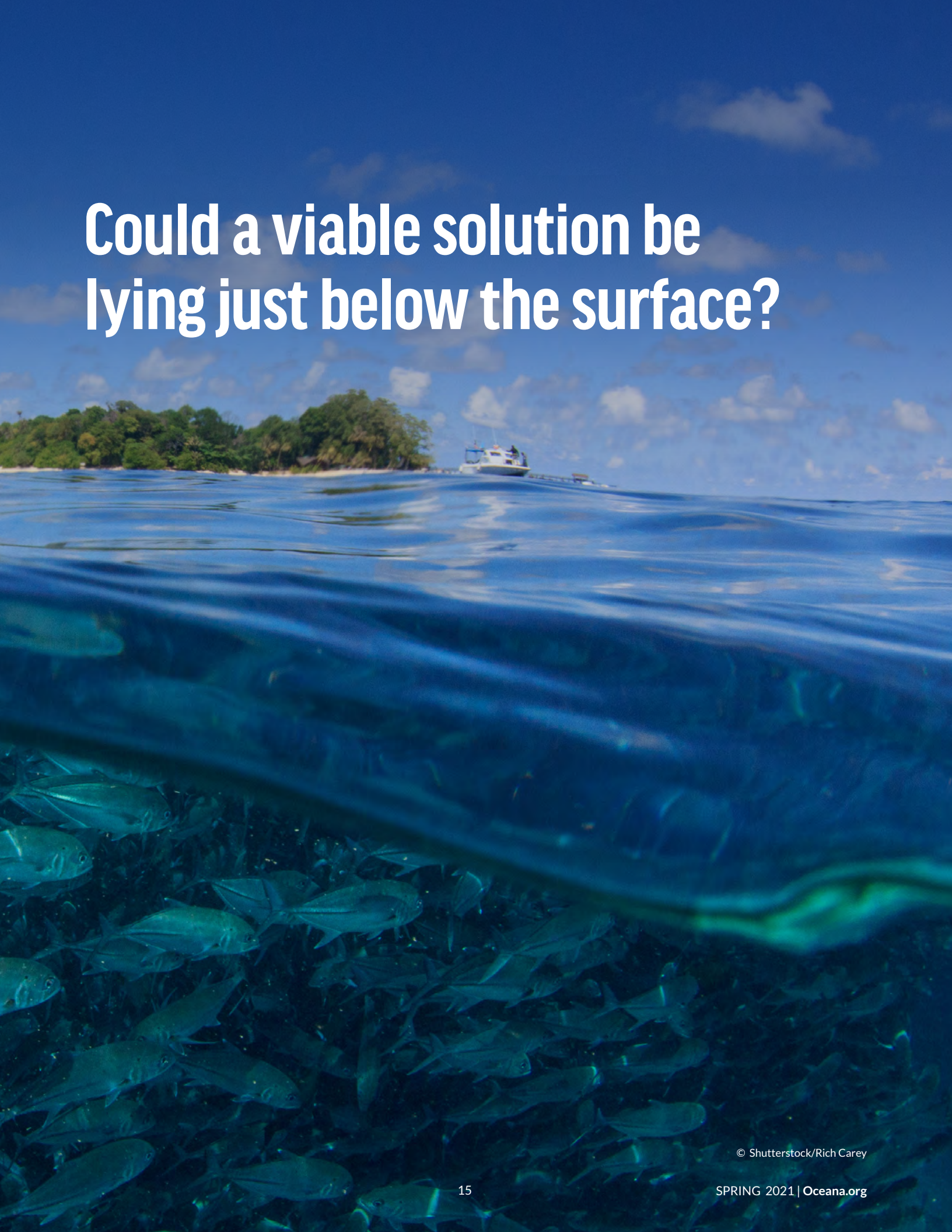
Nazca Ridge is an opportunity to be proactive and protect Peru's biodiversity from potential future threats, such as seabed mining and destructive illegal fishing.



Juan Fernández fur seals come from Chile's islands, but they have turned up on Peru's coast after cruising along the Nazca Ridge "highway." Once hunted for their pelts, these animals are now protected by the Chilean government.

‘Hidden hunger,’ caused by a lack of micronutrients, affects billions around the world.

Could a viable solution be lying just below the surface?



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There's an old proverb in Bangladesh: *Mache bhate bangali*, meaning "fish and rice are what make a Bengali." With most of the country's population nestled inside a river delta, and with the southern border overlooking the Bay of Bengal, it is no wonder that Bangladesh is the third largest inland fishing nation and 24th largest marine fishing nation by catch weight. In this country of more than 163 million, fish accounts for more than half of people's animal protein intake.

Protein is only part of the picture, though. Fish is also rich in omega-3 fatty acids and a variety of micronutrients that are essential to human health, particularly in pregnant women and children. Despite improvements in recent years, more than a quarter of Bangladeshi children under 5 still experienced stunting, or impaired growth and development, in 2019.

Small, locally available fish could improve the health of children in Bangladesh, according to a 2015 study led by Dr. Jessica Bogard, who is now a nutrition systems scientist with the Agriculture and Food branch of Australia's national research agency.

A savory, rice-based porridge made from local fish, orange sweet potatoes, and soybean oil could provide more than 60% of the vitamin A and zinc that children under 2 need each day, helping to stave off stunting during a critical development period in their lives. And this study is just one example of the potentially life-saving nutrients fish can provide to countless people around the world.

"Fish is a micronutrient powerhouse that tackles 'hidden hunger,' which is when you might have enough calories to eat but don't get the vitamins and minerals you need to be healthy," said Oceana's Chief Scientist Dr. Katie Matthews.

"More than 2 billion people suffer from micronutrient deficiency worldwide, and those deficiencies, when manifested in moms and their kids, look like maternal mortality, childhood stunting, blindness, birth defects, and compromised brain and immune function."

The challenge is ensuring that fish are abundant and accessible to the populations that need them most. Oceana is now identifying countries where improved fisheries management could yield more fish for local communities facing micronutrient deficiencies. This is part of Oceana's "Save the Oceans, Feed the World" campaign, which works to increase marine abundance so that the oceans can feed 1 billion people a healthy seafood food meal, every day, forever.

Fishers in Bangladesh bring their catch to port. Bangladesh is considered a low-income country with a food deficit, meaning that it lacks the resources to import sufficient food or produce it domestically, making its population food-insecure and vulnerable to external shocks.

"More than 2 billion people suffer from micronutrient deficiency worldwide, and those deficiencies, when manifested in moms and their kids, look like maternal mortality, childhood stunting, blindness, birth defects, and compromised brain and immune function."

–Dr. Katie Matthews, Oceana's chief scientist

A fish vendor works at a market in Puerto Princesa, located on Palawan Island in the Philippines. Small fish, despite their size, are often packed with proteins, amino acids, vitamins, minerals, and micronutrients like iron, magnesium, and zinc.

A long-overlooked solution

Eight years ago, when Oceana CEO Andrew Sharpless published *The Perfect Protein*, a book about the benefits of eating fish, the links between seafood and nutrition were seldom addressed at international forums on hunger and food security. For the most part, discussions centered around agriculture and livestock. Fish was an afterthought – and wild-caught seafood even more so.

That conversation is starting to shift. A Blue Food Assessment examining the role of aquatic foods and their nutritional value will be part of a United Nations Food Systems Summit this year. Another report on ocean solutions, published by the High Level Panel for a Sustainable Ocean Economy last December, concluded that rebuilding fish stocks and expanding non-fed aquaculture could significantly reduce malnutrition. Recent studies have also analyzed the nutritional content of various fish, confirming that many species are full of omega-3 fatty acids, vitamin D, vitamin B12, iron, zinc, and other micronutrients.

Some types of omega-3 fatty acids can only be found in egg yolks and marine foods, like seafood and algae. Despite being limited to just a couple categories of foods, they are vital for fetal development – especially the growth of a baby's brain and eyes – and they also support the health of mothers.

Globally, nearly one in five pregnant women has anemia from an iron deficiency, and one in three is vitamin-A deficient. If overfishing continues to deplete fish populations, it will further deprive women and children of a healthy, nutrient-dense meal.

"Imagine a world where children and pregnant women cannot access the omega-3s that are the building blocks for healthy brain and body development," Sharpless wrote in *The Perfect Protein*.

"As fish become scarcer, they will become more dear, too, leaving the neediest families in poor countries even more nutritionally disadvantaged, broadening the gulf between the haves and have-nots."

Fortunately, we can reverse course by enacting policies that allow collapsed fisheries to rebound. This has been, and will continue to be, a key component of Oceana's campaigns around the world.

> ***"As fish become scarcer, they will become more dear, too, leaving the neediest families in poor countries even more nutritionally disadvantaged, broadening the gulf between the haves and have-nots."***
>
> **–Oceana CEO Andy Sharpless**

Small but mighty sardines

For evidence of a fishery policy that has the potential to protect livelihoods and improve nutrition, look no further than Oceana's campaign to manage sardines more effectively in the Philippines. At a cost of roughly 40 U.S. cents per can, the humble sardine is one of the cheapest sources of protein available to Filipinos. They are popular in local cuisine, too. One dish called *ginisang sardinas* is prepared by simmering sardines in a spicy tomato sauce.

Because sardines are nutritious and have a long shelf life when processed, they have become a staple food in the care packages handed out to Filipinos during the COVID-19 pandemic and subsequent shutdowns. Though diminutive in size, these skinny, silvery fish are packed with nutrients and omega-3 fatty acids that can reduce the risk of heart disease, blood clots, and other ailments. This is especially important when you consider that more than 100 million Filipinos are nutritionally dependent on fish. Sardines also provide thousands of jobs – not just to small-scale fishers, but also to those who dry, smoke, can, and bottle the fish for mass distribution.

Moalboal in the Philippines (pictured above and below) is home to millions of sardines. In addition to providing jobs to Filipino fishers, sardines are also important to ecosystems, providing food to many predatory fish species and mammals.

Some protections for sardines, like seasonal fishing closures that allow stocks to recover, already exist in certain parts of the Philippines. But in a country where roughly three-quarters of the fishing grounds are already overfished, these measures didn't go far enough to prevent sardines from suffering the same fate. Following campaigning by Oceana, the Philippines formalized its first-ever National Sardine Management Plan last year. Oceana is now pushing for this plan to be put into action, which would prevent juvenile sardines from being caught prematurely and enforce other science-based processes designed to protect sardines for many years to come.


© Shutterstock/Emily-Jane Proudfoot

Fishing boats are pictured in St. Louis, Senegal. Senegal has one of the largest populations that is both dependent on fish for food and susceptible to micronutrient deficiencies. Policies that improve the availability of – and access to – seafood could help improve the health of local populations.

When fish flourish, they also nourish

In many African countries, marine fisheries are severely depleted, with some estimates showing that 40-60% of stocks are overfished. This is on a continent where moderate to severe food insecurity affected over half the population in 2019, and the prevalence of childhood stunting was nearly 30%.

Imagine what could be accomplished if overexploited fisheries are rebuilt in places where vulnerable populations depend on seafood for vital micronutrients. Rebuilding plans are the single most significant way to allow overfished populations to recover, according to new research that reviewed hundreds of fish stocks.

There are plenty of good ecological reasons to rebuild fisheries – like helping to restore food webs and strengthen resilience in the face of climate change – but it's equally important to prevent declines from happening in the first place. In doing so, we can preserve seafood resources for those who get a large share of their micronutrients from the ocean.


© Shutterstock/Leonie Broekstra

Fish are shown at a market in Senegal's capital, Dakar, which is situated on a peninsula facing the Atlantic Ocean. Senegal's waters are vulnerable to overfishing and climate change-related impacts, which could further hurt fish stocks and the millions of people reliant on oceans.

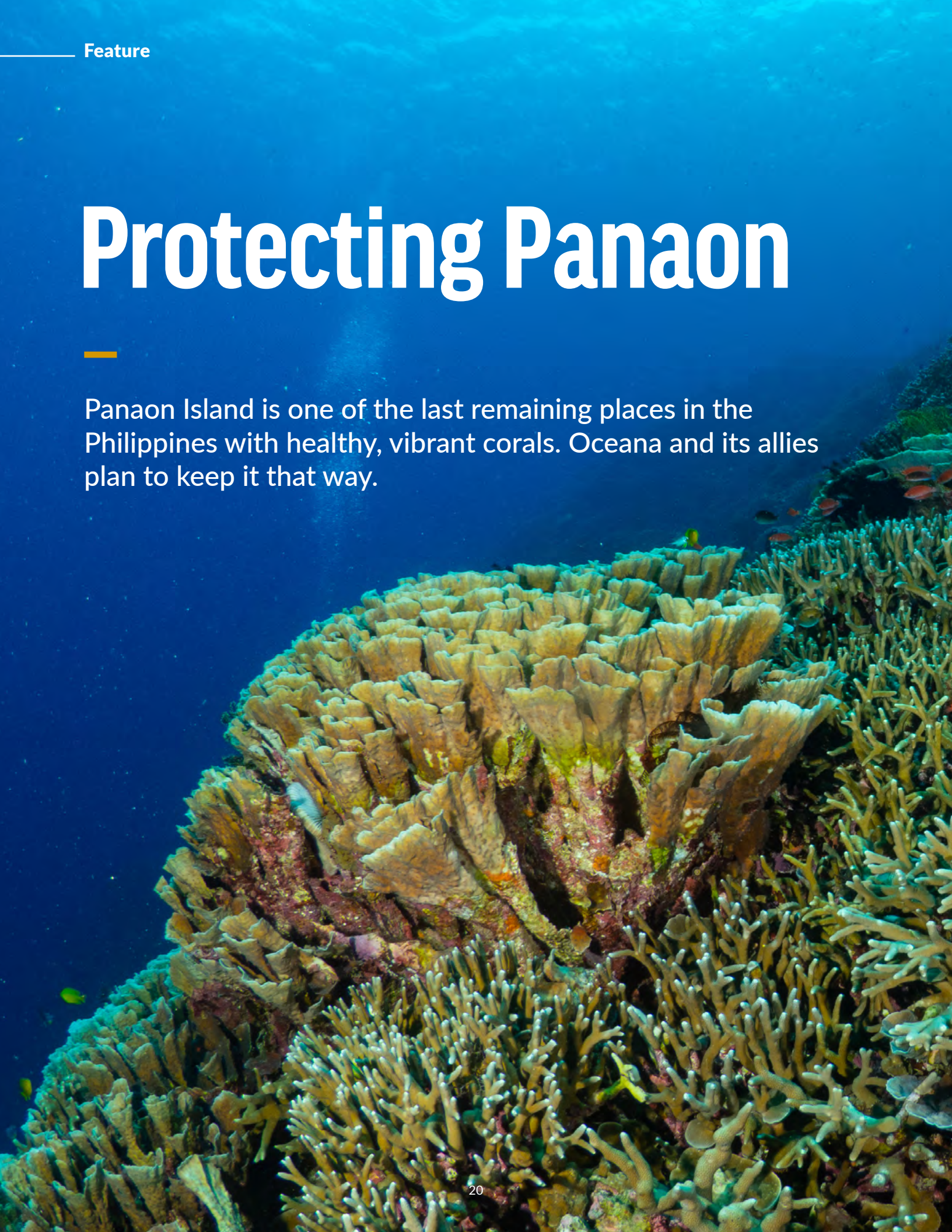
Oceana is currently investigating the intersection of fish and food security in Africa and Southeast Asia, as well as in countries where it currently has campaign teams, according to Oceana's chief scientist.

"We can take Oceana's campaign experience with 'Save the Oceans, Feed the World' and apply it where it matters most – to those fisheries that are fundamental to the livelihoods and well-being of thousands of coastal communities around the world," Matthews said. "Many of these fisheries are being threatened by rampant overfishing, often by unscrupulous actors in the global supply chain."

Success will hinge on engaging food-insecure populations in this process. Too often, the people who stand the most to lose or gain from national-level policies are excluded from the very decision-making processes that affect them. Small-scale fishers and coastal communities often know best how to manage the fish stocks they depend on. By supporting them, we can help ensure a sustainable and nutritious food source remains viable for generations to come. ■

Protecting Panaon

Panaon Island is one of the last remaining places in the Philippines with healthy, vibrant corals. Oceana and its allies plan to keep it that way.



© Oceana/Danny Ocampo

It's hard to talk about coral reefs without also talking about climate change. Australia's Great Barrier Reef lost half of its corals to warming waters in less than three decades, and if current trends continue, children born today may live to witness the extinction of these iconic animals.

Fortunately, it's not too late to prevent this doomsday scenario from coming true. While sweeping international action is needed to reduce the carbon emissions that lay waste to reefs, scientists are simultaneously focused on helping corals cope in hotter, more acidic waters. One strategy is to prioritize healthy reefs before irreparable damage has been done.

By intervening early and protecting vibrant reefs from other threats – like overfishing and pollution – we can foster resilience in corals. In some cases, carefully designed MPAs can help corals evolve to withstand higher temperatures over time, according to research led by Dr. Timothy Walsworth at the University of Washington and co-authored by Oceana Science Advisor Dr. Malin Pinsky.

Given the rapid acceleration of ocean warming, the corals surrounding Panaon Island in the Philippines are strong contenders for national-level protections. Oceana went on a 22-day expedition to Panaon in fall 2020 and discovered that more than half of the coral reefs surrounding the island are in good or excellent condition, with some areas enjoying at least 70% coral cover. This was a welcome surprise, considering that the country's reefs have been steadily declining over the last 40 years. The overwhelming majority – around 95% – are classified as at risk.

The Oceana Panaon Island expedition team poses for a photo. The team included marine scientists, ship personnel, and the production crew.

"It was an eye opener for our experienced divers that there are still areas in the Philippines worth protecting," said marine scientist Marianne Saniano, who led Oceana's Panaon expedition. "After every dive that they did, the scientists would always say, 'It gets better and better.'"

Thanks to support from Bloomberg Philanthropies and Sobrato Philanthropies, Oceana is campaigning for the creation of a marine protected area (MPA) in Panaon. MPAs have been proven to improve the health of coral reefs by increasing coral cover and diversity, as well as fish diversity, abundance, and biomass. This would not only be good news for coral reefs, but also the thriving ecosystems they support.

Tube sponges come in a variety of colors, including cerulean. The table coral to its right is small, but some grow to the size of an average above-ground swimming pool.

A clownfish peeks out of an anemone, showcasing their symbiotic relationship.

An underwater gem

Located in Southern Leyte province and home to 56,000 people, Panaon Island forms part of the "Coral Triangle," an area of high biodiversity that sprawls across multiple countries in the western Pacific Ocean. More than 250 species of hard coral and plenty of soft corals have been documented in this area, each seemingly competing for the attention of underwater photographers.

In one spot, you may see delicate sea fans, swathed in varying shades of yellow, orange, and pink. In another, you may come across table corals stretching five meters (or 16 feet) across, their umbrellas sheltering marine life in need of some shade.

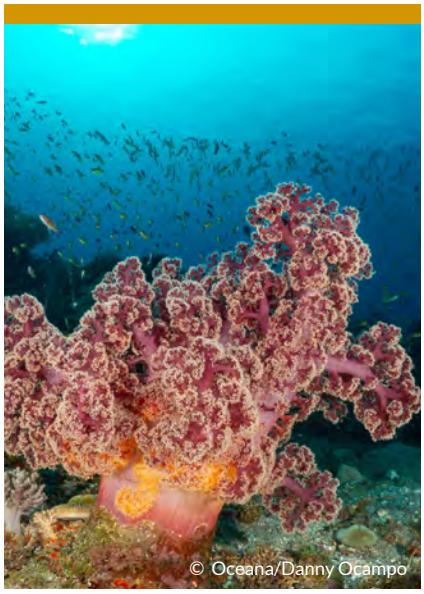
There are fungi-like foliose corals, magenta-colored soft corals, and massive branching corals resembling the roots of an ancient tree. The fact that these corals are in mint condition is a sign that Panaon has not been heavily impacted by human activity, according to Yvette Lee, an award-winning photographer who has dived all over Asia.

"Panaon is a gem. It's a 20-carat emerald," said Lee, who was part of the expedition's documentary team. "Only in rarely dived places can you see sea fans growing out of the sandy floor. Usually, you see them on walls or steep slopes. In Panaon, you see them a lot, which is an indication that it is a relatively untouched place where pristine reefs thrive."

Unfortunately, in addition to sea fans, Oceana's team also found plastic wrapped around corals. Sea turtles are among the many vulnerable species in Panaon that could ingest or become entangled in plastics. Because sea turtles are unable to easily regurgitate foreign objects, swallowing a piece of plastic can be a slow death sentence if it prevents a turtle from eating or digesting food. Though marine pollution in Panaon is less prevalent than in other parts of the Philippines, it serves as a stark reminder that even seemingly pristine and remote habitats cannot escape the scourge of plastics.

Throughout the Philippines, Oceana is campaigning to ban single-use plastics – a measure that would not only benefit Panaon, but also countless other marine habitats across the country. Nearly 50 local governments – including two out of four municipalities in Panaon – passed resolutions urging the National Solid Waste Management Commission to classify single-use plastics as a non-environmentally acceptable product. Oceana is leveraging this grassroots support to get the national government to implement a single-use plastic ban that would protect coastal waters across this country of more than 7,600 islands.

Foliose coral covers a large swath of the President Quezon marine protected area in Southern Leyte.



Unlike hard corals, soft corals (like the one pictured above) do not form reefs.

A whopping 11.1 billion plastic items got entangled in corals in the Asia-Pacific region alone, according to estimates based on a 2018 scientific survey of 159 coral reefs.

Fire corals are pictured outside of the Punta marine protected area in Southern Leyte.

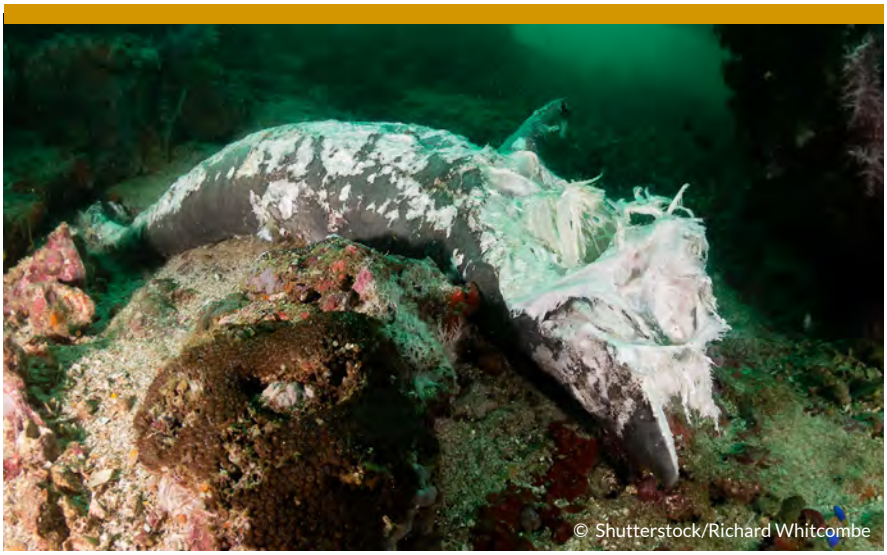
© Oceana/Danny Ocampo

A small-scale municipal fisher holds up a net in Tañon Strait. When large commercial fishers illegally encroach on marine protected areas like these, it takes resources from municipal fishers who operate legally and depend on abundant oceans for their livelihoods.

Preventing future threats

Oceana's plastics campaign is making headway, but the future of Panaon's robust corals is not yet assured. First, the island is an up-and-coming tourist destination, and visitors could place undue strain on reefs that are already vulnerable to warming waters. Second, illegal and destructive fishing are widespread problems in the Philippines. Some fishers use dynamite and cyanide to catch fish. Others drag bottom trawls that bulldoze the seafloor. Corals, many of which are fragile, can take decades or longer to recover from destructive fishing.

If Panaon is not protected, these harmful activities could make their way to this coral-rich paradise. Community leaders in Panaon have established 18 local MPAs that help shield the area. Oceana and its allies are campaigning to create one large, nationally designated MPA. Doing so would give Panaon stronger protections, as well as increased funding to support management of the area.



A decaying shark is pictured on a reef in Myanmar where dynamite fishing is known to occur. Also known as "blast fishing," dynamite fishing still occurs in the Philippines and other countries.

Across the Philippines, Oceana is campaigning to stop illegal commercial fishing in municipal waters. In 2017, Oceana successfully advocated for vessel monitoring in the Tañon Strait – one of the largest MPAs in the country – in an effort to identify and stop illegal fishers. This area is home to more than 60% of the country's coral species and more than half of its whale and dolphin species, but these marine animals are threatened by illegal commercial fishing, pollution, and unplanned coastal development projects.

Enforcement is central to any MPA, and fisheries management plays a supporting role in protecting areas where some degree of fishing is permitted. Another victory for the Philippines came in 2019, when the country created Fisheries Management Areas (FMAs) that are science-based, participatory, and transparent. FMA 8, which includes part of the proposed Panaon MPA, was the first management body convened in the country. As such, it will play a key role in any decisions regarding the management of Panaon Island.

"Oceana supports FMA 8, which is one of the most advanced fisheries management bodies in the country," said Rhea Yray-Frossard, Oceana's fisheries management officer and coordinator in the Philippines. "Since their creation in 2019, FMAs have been the umbrella that many of our campaigns in the Philippines have fallen under. They direct all coastal local government units and key fisheries stakeholders to assume responsibility for the conservation and sustainable management of shared fishery resources."

A cuttlefish hides amongst algae during Oceana's expedition. Cephalopods, a group that includes cuttlefish, are known for their intelligence.

Panaon is an overlooked area with a vulnerable population. Creating an MPA could provide benefits to locals, such as sustainable ecotourism jobs that would depend on healthy coral reefs.

Next steps

In addition to supporting FMA 8, Oceana has been partnering with government agencies at both the local and national level, as well as two marine conservation groups: the Large Marine Vertebrate Research Institute and Coral Cay Conservation. Oceana is working with key decision-makers and partners to protect Panaon Island under the Expanded National Integrated Protected Areas System (ENIPAS) Act.

A national MPA can be created in one of two ways: Congress can pass a law, or the president can sign a proclamation. Oceana previously supported President Rodrigo Duterte's decision to establish the Philippine Rise Marine Resource Reserve in 2018. This reserve includes strict protections for Benham Bank, an area with diverse species and 100% coral cover in some areas.

Saniano said another motivation for protecting Panaon – aside from its vibrant corals – is that it's an overlooked area with a vulnerable population. Creating an MPA could provide benefits to locals, such as sustainable ecotourism jobs that would depend on healthy coral reefs.

"Southern Leyte is one of the poorest provinces in the Philippines, and they're the ones that are almost always hit by strong typhoons," Saniano said. "As a campaign manager, I'm always looking for the areas that have less help. And as a Filipino citizen, I want other parts of the Philippines – the ones that are not given enough attention – to be protected, too."

In the coming months, Oceana will release its scientific findings from the expedition, as well as a documentary highlighting the many reasons that Panaon is a special place worth protecting. In the meantime, Oceana will continue campaigning for policies that protect Panaon – and countless places like it across the country – from single-use plastics and illegal fishing.

OCEANA

Our victories over the last year

- Expansion of offshore drilling is stopped in U.S. waters
- Oceana and allies protect deep-sea corals in U.S. Gulf of Mexico
- Oceana and allies stop seismic airgun blasting in U.S. Atlantic waters
- Government of Belize bans gillnets
- Brazil launches online logbooks for its fisheries catch data
- Chile prevents the construction of harmful salmon farms in Patagonia

Supporter Spotlight

Sobrato Philanthropies helps protect vibrant habitats in Mexico and the Philippines

Oceana is campaigning to protect important habitats in Mexico and the Philippines thanks to the generous support of Sobrato Philanthropies, which contributed $2.2 million to Oceana's campaigns. Sobrato Philanthropies is the charitable arm of the Sobrato Organization, a multi-generational, family-owned real estate firm founded by John A. Sobrato in 1979.

Sobrato Philanthropies primarily funded initiatives that create educational and economic opportunities for underserved communities in California's Silicon Valley. Investing in international ocean conservation may seem like an unexpected addition, but Sobrato Philanthropies Board Member Eric Brisson drew parallels between Oceana's approach and some of the strategies their partners have used over the years.

"Many of the tactics employed by Oceana to conserve our oceans – including a focus on gathering data and getting it into the hands of key decision makers – are employed by our partners on other strategies as well," Brisson said.

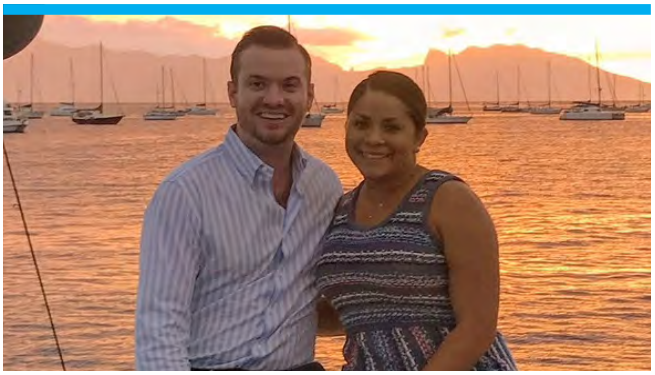
Ocean conservation is also a cause close to the Sobratos' hearts. Four generations of the family grew up near the ocean, and several members count diving, boating, and sailing among their hobbies. These personal and philanthropic interests aligned in spring 2018, when Brisson and fellow Board Member Jeffrey Sobrato prepared a presentation on climate change for the group's consideration.

Jeffrey Sobrato said that climate change – which affects not only the environment, but also health, education, and livelihoods – is now an area of particular concern for Sobrato Philanthropies.

"The oceans are a core piece of the climate puzzle: one that – only if healthy – can provide a necessary carbon sink," Sobrato said. "The connections between a healthy ocean and healthy climate are clear to us, and were an important factor for us in deciding to focus on the oceans."

While researching different ocean-based initiatives, the family became impressed with Oceana's campaigns to protect habitats around the world, particularly in places where vulnerable populations depend on the ocean for jobs and food.

Eric Brisson, Sheri Sobrato, and their children



Jeffrey Sobrato with his wife Leann

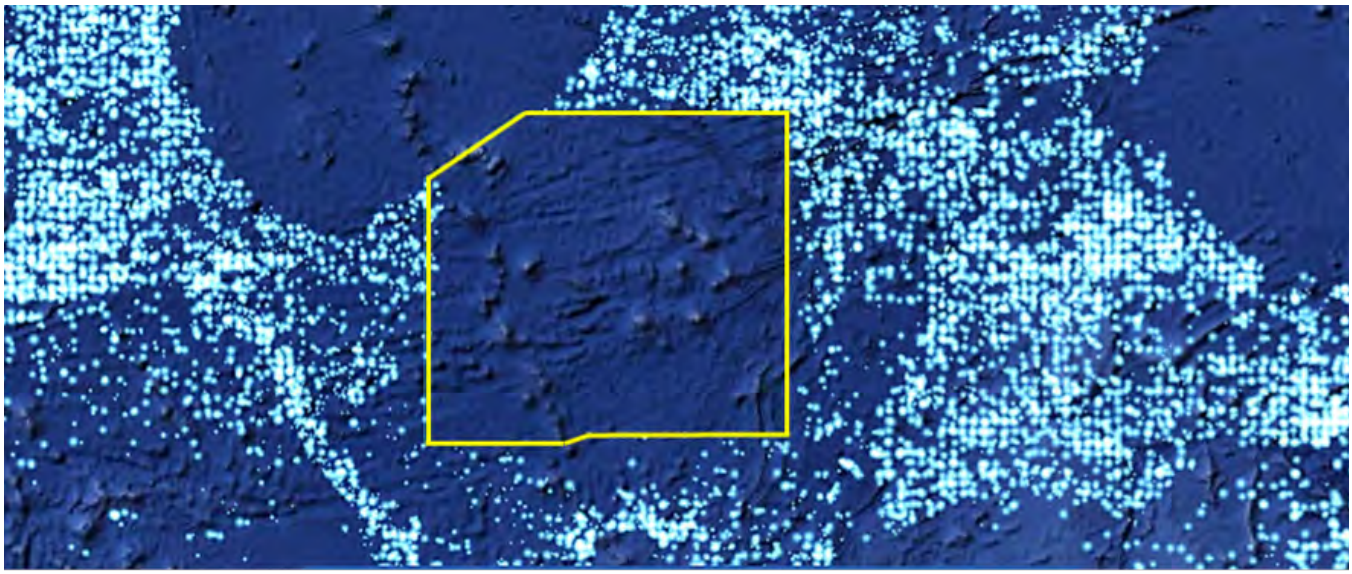
"Oceana is well-known in the field of ocean conservation as an incredibly effective, results-based organization," Sobrato said. "We had been familiar with Oceana in the past, but as we were crafting our initial set of grants, Oceana was repeatedly mentioned as an organization to explore."

He added, "When we learned more – in particular, about the country-specific strategies and strong results orientation – we were thrilled to be able to support Oceana's work in Mexico and the Philippines."

Sobrato's Sustainability Fund will support three of Oceana's initiatives: an upcoming expedition to Scorpion Reef in Mexico, a campaign to stop dump-and-fill reclamation projects that decimate mangroves in the Philippines, and another Philippines-based campaign to create a coral-rich marine protected area (for more, read the feature on page 20). Thanks to the Sobrato family's support, these vital habitats have a vibrant future ahead of them.

Ask Dr. Pauly

Why is the creation of marine protected areas such a contentious issue?



White and light blue dots representing fishing vessels are shown around the perimeters of the Phoenix Islands Protected Area (PIPA), outlined in yellow. Though fishing is not allowed inside this marine protected area in Kiribati's waters, fishers may benefit from a "spillover effect," which occurs when species grow abundant in protected areas and subsequently cross over into areas where fishing is permitted.
Source: Global Fishing Watch. 2018. Accessed on February 9, 2021.

Writing to explain why we need marine protected areas (MPAs) is straightforward: Fishing or otherwise harming marine life will reduce marine life's abundance. Hence, not fishing or otherwise harming marine life should have the opposite effect of enhancing it. So, what is the rub? Why is it necessary to repeatedly write that MPAs are needed to protect marine life from industrial, largely out-of-control fisheries pillaging the world's oceans? And why are there still so few MPAs?

The first reason is that MPAs are ferociously opposed in most countries by the fishing industry despite MPAs contributing to high catches in areas near them (see image above). The other reason is that the public-at-large, in most countries, still doesn't 'get' that seascapes and the wildlife they contain – including fish – need to be protected from our depredations in the same manner that landscapes and their flora and fauna are. On land, we have national parks. Hardly anyone argues that we do not need them to maintain forests or other terrestrial ecosystems and the animals therein, whether it is deer, elk, wolves, and bears in Canada, or zebras, wildebeests, and lions in Kenya.

Fish are not commodities-in-waiting, created to be processed into breaded sticks. They are wildlife, and if we put no limit on their hunt, their populations will decline and disappear, just as elks and zebras would if hunted relentlessly. However, informing the public about MPAs is difficult. There are always bigger issues to consider; also, the associated issues are complicated, notably because there are different types of MPAs.

MPAs can be small and allow lots of activities – including angling – within their limits. Such MPAs are often ineffective in enhancing the fish populations they are supposedly designed to protect. Alternately, MPAs can be large 'marine reserves' that are well-enforced and protect a vast array of species and habitats. The large MPA created by the

U.S. government around the Northwest Hawaiian Islands – called the Papahānaumokuākea Marine National Monument – is an example of an effective new marine reserve. This example is being emulated throughout the world; Chile created large marine reserves around its oceanic islands, the UK declared the Chagos Archipelago in the Indian Ocean a large no-take area, and Kiribati created the Phoenix Islands Protected Area (PIPA). Hopefully, the Peruvian government will follow suit and declare the Nazca Ridge a marine reserve, too.

An immense literature documents the many benefits of MPAs, which not only allow for marine biodiversity to recover from injuries inflicted by fisheries, but also help in the fight against global warming and contribute to the sustainability of fisheries and availability of trophy fish.

The benefits for fisheries may seem counterintuitive to non-biologists (how can not fishing be good for fisheries?) but are not difficult to explain. If a previously overfished area is strongly protected, the area's fish population will increase, and, after a while, this area will become crowded. Therefore, fish will leave this area, and fishers, including anglers, will have excellent catches at the MPA borders; This is known as 'fishing the line.'

A quasi-MPA surrounds Cape Canaveral, i.e., an area where fishing is prohibited, and 'fishing the line' around that area is – oh, irony – one of the few places where you can get trophy fish in Florida, where MPAs are vociferously fought against by anglers' associations. Thus, those who oppose MPAs may do well to ponder the ways they benefit from them. ■

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.

A United States Coast Guard vessel is pictured in Tampa, Florida. In the U.S., the Coast Guard and National Oceanic and Atmospheric Administration (NOAA) jointly work to protect the National Marine Sanctuary System.

New York Gala

Oceana's first-ever online New York Gala was held October 12, 2020 and raised nearly $1.2 million for ocean conservation. The special guest of the evening was two-time Academy Award-winning actor, author, and activist Jane Fonda, who was honored for her many contributions to the environment.

After being introduced by 2019 Oceana New York Gala honoree Diane Lane, Fonda spoke about the existential threat that climate change poses. Our oceans, she said, can act as a solution if we protect them properly.

"We tend to not really understand the true value of things until they're threatened, and then we scramble to try to fix them in time. We're scrambling now to save our planet, and the world's oceans are our biggest ally in this fight," Fonda said.

"Not enough people understand the essential role the oceans play in combating the climate crisis. Do you know that oceans absorb 93% of the heat we generate and roughly 40% of the carbon dioxide we produce, and they provide almost half of the oxygen that we need to survive? Everything depends on our succeeding in saving the oceans."

Despite the gravity of the climate crisis, many of the evening's speakers offered messages of hope and inspiration. In his speech, former President Bill Clinton said, "Oceana's Gala has become something I look forward to every fall because it's impossible to come away from it without feeling a little bit better about our future. With sound science and hard work, Oceana is proving that in a world hungry for hope, progress is possible."

Oceana Board Members Susan and David Rockefeller, Jr. hosted the gala, and Oceana Board Chair Sam Waterston and Board Member Ted Danson served as the masters of ceremonies. Distinguished guests included former New York City Mayor Michael Bloomberg, actor Leonardo DiCaprio, actor and Oceana ambassador Cobie Smulders, journalist Paula Zahn, professional surfer Kai Lenny, and chef and author Dan Barber.

The evening ended on an uplifting note with a virtual dance party, featuring performances by Sting, Nile Rodgers and Chic, Shwayze, and The Rakiem Walker Project.

Former New York City Mayor Michael Bloomberg

Former U.S. President Bill Clinton

Oceana CEO Andy Sharpless

Journalist Paula Zahn in conversation with actor Jane Fonda

Actor and Oceana ambassador Cobie Smulders

Actor Diane Lane

Oceana Board Members Ted Danson, Susan Rockefeller, and Sam Waterston

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OCEANA Protecting the World's Oceans

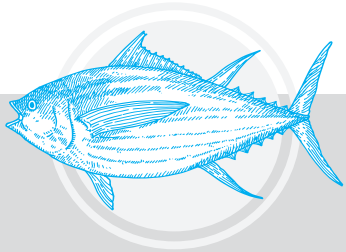
Visit oceana.org/legasea for more information.
Email **plannedgiving@oceana.org** or call **(202) 833.3900** to request our LegaSea Circle brochure.

Chef's Corner

Ceviche

Can't travel? Bring a taste of Peru to you.

Courtesy of Chef Gastón Acurio



When you think of Peruvian cuisine, what comes to mind? Perhaps citrusy, succulent slivers of fish, better known as ceviche. This refreshing appetizer (or light meal) is so beloved that it's the national dish of Peru, and each year on June 28, the country celebrates "Ceviche Day."

The recipe on this page comes from acclaimed chef Gastón Acurio, who popularized ceviche and other Peruvian dishes around the world. Instead of using white fish – the traditional choice – this recipe calls for bonito, a blue fish that ranges from Northern Peru to Southern Chile. (The main difference between white and blue fish comes down to fat content, with blue fish containing a higher percentage of healthy fats.)

If you're in Peru, opting for a blue fish like bonito helps diversify the types of fish being consumed, alleviating some of the demand for overfished white fish species. Keep in mind, though, that even bonito can fall prey to overfishing. When possible, seek out sustainable local options.

Even though Acurio created this recipe with blue fish in mind, certain white fish species can also be substituted. For those in North America, consider swapping out bonito for sole, also known as flounder. The Monterey Bay Aquarium's Seafood Watch guide indicates that butter sole and dover sole are your best bets in terms of sustainability, but it never hurts to check with your local fishmonger to see if another white fish is local, in season, and safe to eat unheated. Even though ceviche is not technically raw, having been partially "cooked" (or denatured) by the acidity of the lime juice, it is best to play it safe by getting fresh fish. Your taste buds will thank you, too.

Gastón Acurio is an author, TV host, and world-renowned chef with restaurants in 12 countries. Known as "Peru's gastronomic ambassador," he is credited with exposing a wider international clientele to Peruvian cuisine. Astrid y Gastón, the Lima-based restaurant that Acurio and his wife Astrid opened in 1994, earned the top spot on the prestigious "Latin America's 50 Best Restaurants" list in 2013.

Gastón Acurio's Classic Bonito Ceviche

Serves: 2
Time: 45 minutes

Ceviche ingredients:
180 g of bonito, tuna, or a local alternative
Leche de tigre, a ceviche marinade
(see ingredients below)
2 limes
1 sour orange (also called bitter or Seville orange)
1 teaspoon of chopped cilantro
1 teaspoon of minced chili pepper
(habanero or similar)
½ teaspoon ground garlic
1 teaspoon of ginger juice
1 celery stick finely chopped
Salt to taste

***Leche de tigre* ingredients:**
20-30 g of your preferred fish
Juice of 6 limes
2 tablespoons of fresh yellow chili pepper paste
(or 3 raw yellow chili peppers without seeds or veins)
1/4 of red onion
1 celery stick
1/2 chili pepper
3 cilantro sprigs
Salt to taste

Instructions

Instructions for the *leche de tigre:*
1. *Blend the lime juice with the pieces of fish, onion, celery, and salt.*
2. *Add the chili pepper and cilantro and blend for a few seconds. This will make the ingredients release their flavor without coloring the mix.*
3. *Strain the preparation and set aside.*

Instructions for the ceviche:
1. *Cut the bonito fish into pieces approximately 2.5 cm x 2.5 cm and put them in a bowl.*
2. *Add salt, garlic, chili pepper, cilantro, chopped celery, and ginger juice. Mix carefully.*
3. *Add the sour orange and leche de tigre with two ice cubes. Mix.*
4. *Try the mix and add more lime juice as needed.*
5. *Julienne the onion and add it to the bowl. Mix once again and remove the ice cubes.*
6. *Taste and add salt if desired. Serve it with lettuce, corn, sweet potato, corn nuts, and/or banana chips.*

A small-scale artisanal fisher is pictured in the municipality of Camocim, located within the Brazilian state of Ceará. Brazil has roughly 21,000 fishing vessels classified as artisanal, and many of these fishers are concentrated in Ceará.

OCEANA Protecting the World's Oceans

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Whale sharks are the world's largest fish, with some individuals growing to the size of a school bus. Popular with tourists in the Philippines and many other countries, these gentle giants feed exclusively on small prey such as plankton, crustaceans, and squid.

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