

# Oceans

# More fish in the water, more food on the plate



**“When fishermen see the ocean as a renewable resource, they will protect it. Together, we then can bring the ocean back to life.”**

**Amanda Leland**  
*Senior VP Oceans*

Growing up in New England, Amanda Leland always loved the sea. Her great-grandfather was a lobsterman, and as a kid she would fish for “blues” with her grandfather. The decline of the New England cod fishery inspired her career in marine science.

Leland, now EDF’s senior VP for oceans, recalls a fisherman once telling her, “If I don’t catch the last fish, someone else will.” She grew convinced that fishermen shouldn’t have to choose between conserving the resource and providing for their families. And as a marine biologist, she knew that smart management could unleash the ocean’s natural resilience and achieve a dramatic recovery in fish populations.

EDF has championed an innovative approach that grants fishermen secure rights to fish, now and in the future. This creates more of an incentive to fish sustainably, because local fishermen and their communities benefit





economically as the fishery grows and catch limits are raised. “With secure fishing rights,” says Leland, “fishermen’s incentives flip from catching as much as possible today to protecting the fishery for the long term.”

Globally, three billion people rely on seafood as an important source of protein, but 40% of the world’s fisheries are in trouble. Climate change, habitat loss, ocean pollution and other threats

contribute to the problem, but overfishing is the leading cause of fishery depletion worldwide.

Now, new research by EDF and partners at the University of California at Santa Barbara and the University of Washington quantifies the immense potential of fisheries to recover if we manage them properly. Presented at the 2015 World Ocean Summit in Lisbon, our research shows that sustainable fishing could more than double the number of fish in the water by 2050, in most places, when compared to current trends. A typical fishery could recover in just nine years.

EDF’s growing list of successes in the United States, Belize and Mexico demonstrates what’s possible with the right set of policies and incentives. We’re now focusing on a dozen governments that account for more than three-fifths of the global catch, including the European Union, where we helped reform the common fisheries policy, committing Europe to end overfishing by 2020.

Reforms at this scale could tip the global fishing economy so that sustainable methods of catching fish take hold worldwide.

## THE OCEAN’S VAST POTENTIAL

New research by EDF and our partners shows that by 2050, compared to current trends, sustainable fishing could result in:



**112%**  
more fish in the water



**23%**  
more seafood on the plate



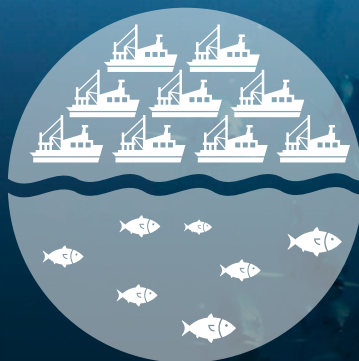
**315%**  
increase in value



# How fishing rights work

With secure fishing rights, a percentage share of the allowed catch—or a fishing area—is dedicated to individual fishermen, communities or fishery associations. The sustainable limit on the total catch is determined each year. Fishermen then have the flexibility to fish when they choose, so long as they stay within the limit.

## PROBLEM: TOO MANY BOATS, TOO FEW FISH



In a classic “tragedy of the commons,” fishermen try to catch the last fish before someone else does. In the frenzy, catch limits are breached, habitats are destroyed and fish are wasted, thus accelerating a downward spiral that can only end in collapse.

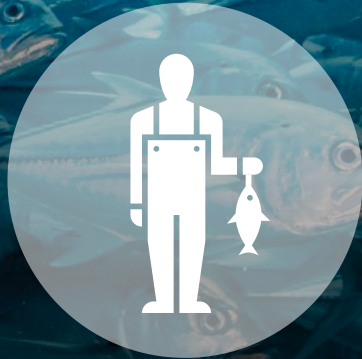
## A SOLUTION BASED ON SCIENCE



Scientists and policy makers determine a sustainable limit for each fishery that allows fish populations to rebound. Fishermen—or communities—are assigned percentage shares, based on their catch history. As fish populations recover, the percentage shares grow.

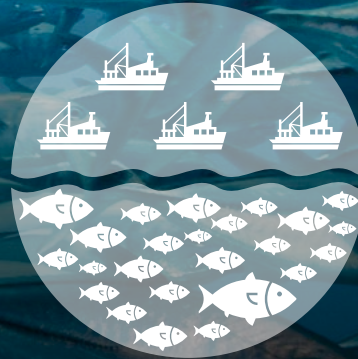


## FISHERMEN CONTROL THEIR DESTINY



As owners of a renewable asset, fishermen now have a sense of security and take pride in their stewardship of the fishery for the long haul. With renewed dignity as providers for their families, they look forward to handing down their secure share of the catch to their children.

## RETURN TO ABUNDANCE



Many fishermen who were once opponents of protected areas have become strong advocates. Secure fishing rights provide more fish in the water, more food on the plate and more prosperity for fishermen and fishing communities.

Granting fishermen secure fishing rights, known as catch shares in the United States, has proven successful in more than 200 fisheries around the world. The approach works because it aligns the needs of fishermen with the needs of the oceans and all the people who depend on them for food.



# The path of U.S. fisheries reform

For centuries, people have thought of the oceans as an inexhaustible source of seafood. But generations of heavy fishing and ill-conceived management have proved devastating for fish and coastal communities.

In the United States, fishery managers typically tried to control fishing by shortening the season, which gave rise to dangerous races in which boats go out in any weather. In the frenzy, crews were forced to discard tons of dead or dying fish. The heavy-handed regulations failed to solve the overfishing problem.

EDF proposed a simpler, smarter approach: Why not reward fishermen for being stewards of the resource? We brought fishermen to Washington and helped end a Congressional moratorium on market-based methods to protect fisheries. We then helped design a catch share program for red snapper in the Gulf of Mexico. Since the program began in 2007, Gulf snapper



Joe Pennisi, a fourth-generation fisherman from Monterey, CA, has partnered with EDF to design a light-trawl net that cuts fuel costs and won't damage sensitive habitats.







U.S. catch shares  
save enough fish from  
being discarded to  
feed **17 million people**  
their seafood for an  
entire year.



populations have tripled, and other species such as grouper have been added to the program.

In 2010, NOAA adopted catch shares as part of its official policy, and EDF helped implement programs in New England and on the West Coast. Today, 65% of fish caught in federal waters are under catch shares. Fishermen who once fiercely competed now share information to avoid overfished species. And rather than fighting against protected areas, many are now putting this conservation tool into action on their own.

In 2015, the National Marine Fisheries Service declared that overfishing in U.S. waters

is steadily declining, in part due to catch shares. In recent years, 32 commercially important fish stocks have been restored, including several species of Pacific groundfish.

We're now working to develop catch share programs for recreational fishing, which accounts for half the red snapper catch in the Gulf of Mexico but currently is poorly managed. We're also using science to understand how fisheries are changing as a result of global warming and to help inform how fisheries can be managed for greater resiliency in the face of climate change.

# Gulf Wild: The next wave in sustainable seafood

Wouldn't it be nice to know where the fish on your plate came from—and that it was caught sustainably? In the Gulf of Mexico, red snapper and grouper fishermen worked with EDF to create Gulf Wild, a system for verifying the safety, sustainability and location of their catch. At a time when up to a third of the seafood sold in the U.S. is mislabeled, the Gulf Wild label guarantees authenticity.



## FROM GULF

Under catch shares, fishermen are assigned a percentage of the scientifically determined allowable annual catch. This permits them to fish when weather and market prices are good—and gives them an incentive to conserve, because their shares grow as fish populations recover.

## TO DOCK

Fishermen who are part of Gulf Wild, like Buddy Guindon, sign a "conservation covenant" that commits them to practices above and beyond federal regulations. This reduces waste. "We're catching bigger fish," says Guindon, "and our prices at the dock have increased."





## TO MARKETS

The recovery of the fishery has been so remarkable that the Monterey Bay Aquarium took Gulf red snapper off the “Avoid” list of its Seafood Watch guide in 2013. Now consumers nationwide can get a steady supply of fresh, sustainably caught fish.



## TO THE DINNER PLATE

As Gulf red snapper stocks rebound, chefs like Rick Moonen are featuring freshly caught snapper on their menus. More than 1.2 million Gulf Wild fish have been sold since the program began in 2011.

“This is exactly what diners are demanding. They want to know that the Gulf fish we are buying is authentic, safe and from a sustainable fishery. Gulf Wild provides that assurance.”

**Chef Rick Moonen**  
*RM Seafood, Las Vegas, NV*

# Reviving fisheries around the world

With the success of catch shares in U.S. waters, EDF scientists have been asked to advise on fishery management in other countries around the world. Similar approaches can work for large commercial fisheries in Europe and elsewhere, as well as for small-scale fisheries within a few miles of shore. Nearly half the wild fish people eat are caught in small-scale fisheries, many of which are poorly managed or have no rules at all.

Working with local fishermen and governments, EDF is using science to show how sustainable management can turn the tide.

In Belize, the Mesoamerican Reef—the largest barrier reef in the Western Hemisphere—supports more than 500 species of fish, but overfishing is taking a toll. EDF teamed up with the Wildlife Conservation Society and local partners to enlist fishermen and policy makers to help protect this extraordinary reef. The government authorized two fishing-rights pilot







projects in 2011. Under the programs, local fishermen have secure rights to fish in a designated area. In exchange, they help crack down on illegal fishing, a major problem.

After four years, fish populations are rebounding and illegal fishing has dropped 60%. That success led the government of Belize to ask for EDF's help rolling out the system nationwide. In 2015, the national cabinet approved the plan.

EDF fishing rights programs are also beginning to take hold in Mexico's Gulf of California, where we are helping restore the curvina fishery by reducing the total catch, boosting profits and ensuring the long-term

health of the species. To augment incomes, EDF helped create the Gulf's first women-run fishing cooperative.

"EDF's approach has the flexibility needed to adapt to varying cultural and legal circumstances," says Dr. Laura Rodriguez, oceans director for EDF de México.

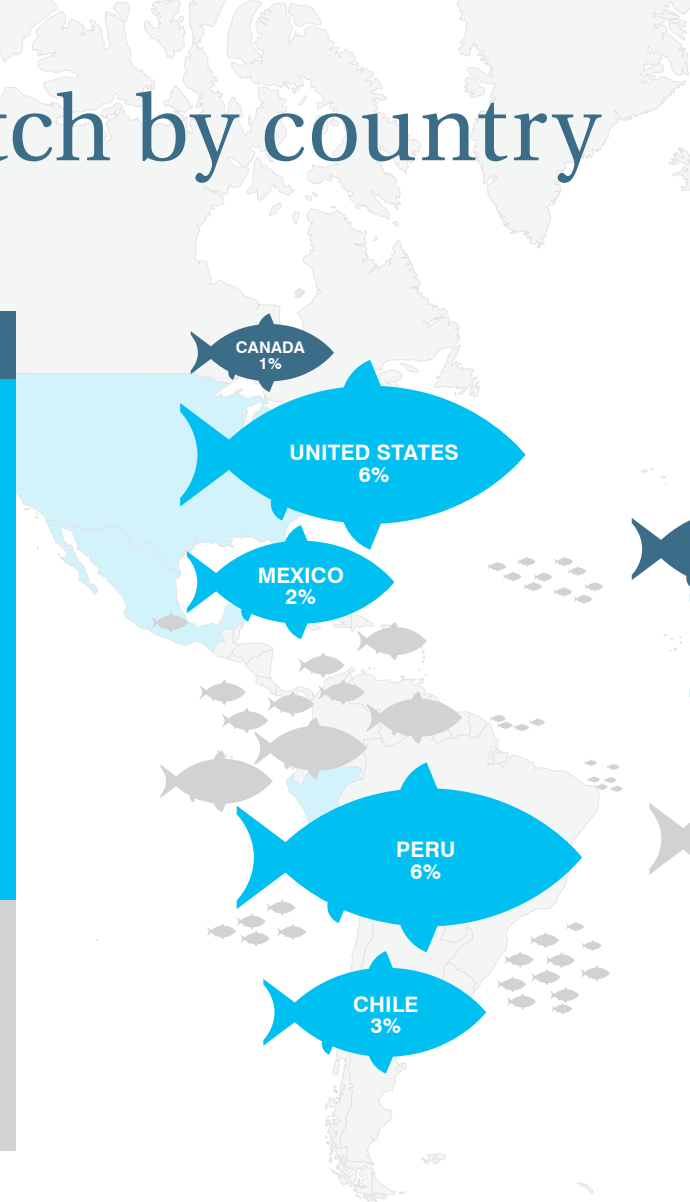
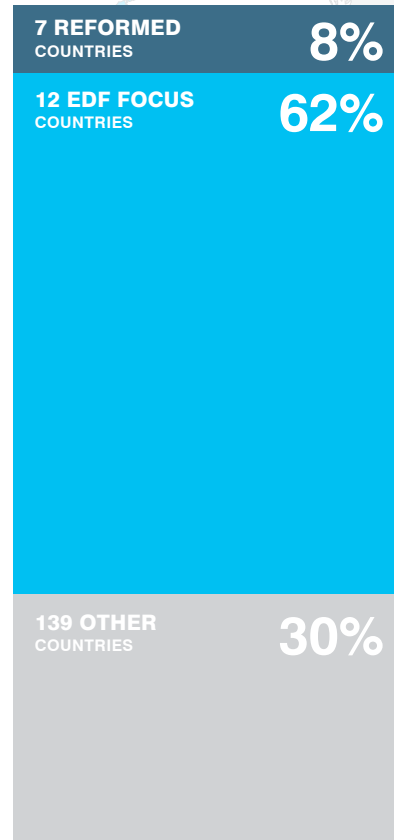
Now the idea is catching on. EDF has been invited to help with reforms in Asian states that produce nearly 20% of the world's seafood: Indonesia, Japan, Myanmar, the Philippines and the Pacific island states that together control the world's largest tuna fishery.

To succeed globally, fisheries reform must include the Asia Pacific region, one of the most heavily fished parts of the world. So EDF is working with fishermen, leaders and local partners in several key Asian countries.

## Oceans of abundance

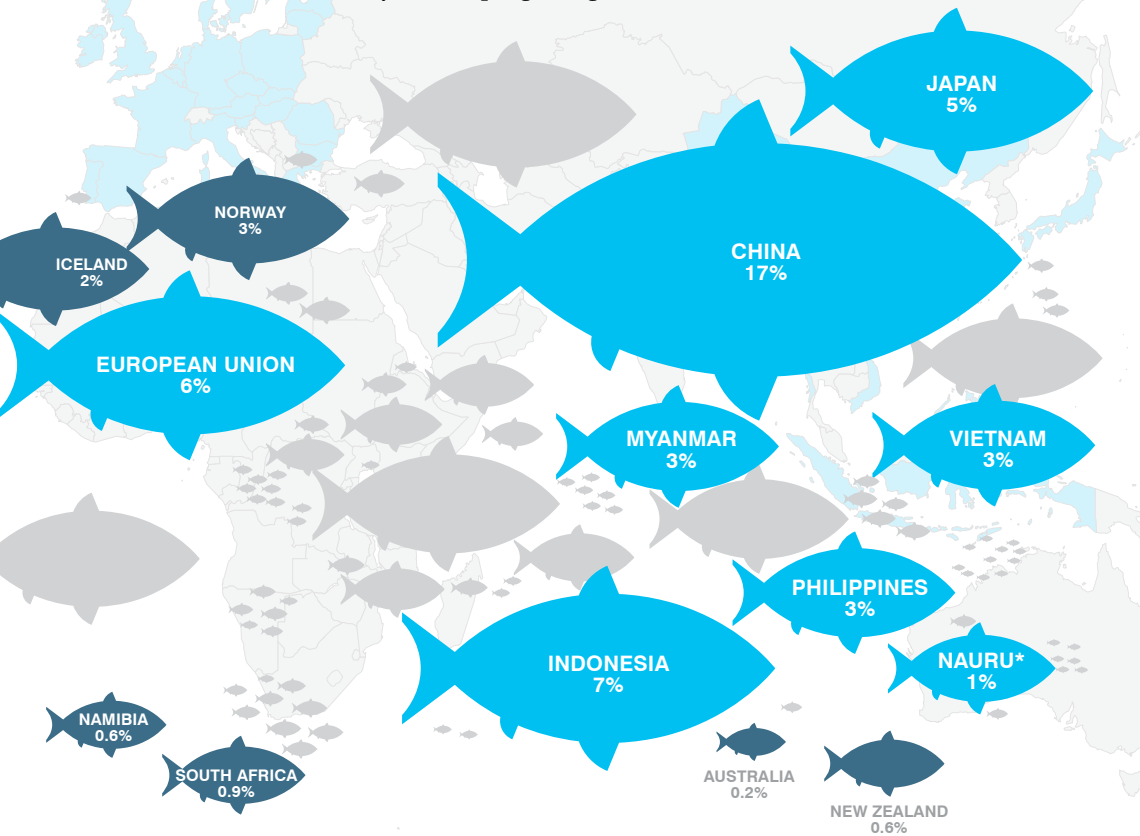
EDF is providing practical, science-based advice to governments and partnering with fishermen to help make sustainable fishing the norm in countries that account for more than three-fifths of the global catch. Reforms at this scale could tip the entire global fishing economy toward sustainable fishing.

## World catch by country





Seven countries, shown in dark blue, already have transformed their policies and practices to sustainable fishing. EDF is focusing on 12 additional governments, shown in bright blue and representing 62% of the catch. Many partners with essential local expertise, such as the Wildlife Conservation Society, are helping bring about reforms in these areas.



\*Nauru refers to the Parties to the Nauru Agreement governing tuna fishing: Micronesia, Kiribati, the Marshall Islands, Nauru, Palau, Papua New Guinea, the Solomon Islands and Tuvalu.  
All percentages for 2012.

“EDF takes a pragmatic approach and works with fishermen and tries to involve them. That has enormous potential at the EU and national level.”

**John Goodlad**

*Chair, Fisheries Innovation Scotland*

# A shared vision for Cuba

A half-century of limited development has meant that Cuba's coastal waters have escaped much of the devastation seen elsewhere in the Caribbean. This could soon change. As Havana opens the door to private enterprise and tourism, safeguards are critically needed.

Operating under a special license from the U.S. government, EDF has been working with Cuban scientists for 15 years. Our efforts helped build and support an island-wide network of marine protected areas, including the Gardens of the Queen, a marine park that teems with large fish rarely encountered in the region.

This success helped set the stage for a formal U.S.-Cuba agreement in 2015 to collaborate on the science and management of marine protected areas. Such joint scientific work is critical for the two countries, whose ecosystems are interconnected.

Sharks are particularly vulnerable. Populations of some large sharks have fallen dramatically, perhaps by as much as 90% in the Gulf of Mexico. In 2015, EDF helped the Cuban government develop its national plan of action for sharks. The plan includes protection for juveniles, improved monitoring of threatened species and conservation areas where fishing for sharks is prohibited.

To curb overfishing, the Cuban government is also engaged in an initiative with EDF called SOS Pesca aimed at combining fishing rights with catch limits and marine protected areas. This community-based project will equip local leaders with the tools to manage their own fisheries.

"Our goal is to build capacity to protect our shared resources," says Dan Whittle, director of EDF's Cuba program.







EDF and Cuban scientists have identified possible nursery grounds for globally threatened whitetip sharks off Cuba's northwest coast.

Cuba has 3,000 miles of coastline and four primary reef systems, each roughly as long as the Florida Keys.

## AN OCEANS CHAMPION: KATHRYN MURDOCH



"Overfishing is a problem we can turn around in years—not decades," says Kathryn Murdoch, speaking of her close partnership with EDF's staff to revive the world's fisheries.

Murdoch, an avid scuba diver, is an EDF trustee and co-founder of the Quadrivium Foundation with her husband, James Murdoch.

"I believe in EDF because they understand human nature," she says. "Most people want to do the right thing, but they need help to align their economic needs with conservation goals. That's where EDF excels."

Murdoch believes that most people see environmental problems as too big and hopeless. "EDF shows there are solutions. We can do this," she says. It's a message she wants to share. "You don't have to be an environmentalist. People who care about poverty, health, children and nutrition can all get behind this work."

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**"Every bit of what EDF does is grounded  
in science. I really respect that."**

**Kathryn Murdoch**

“The combination of rights-based management and fully protected marine reserves, long advocated by EDF, gives me great hope that we can revive global fisheries.”

**Dr. Jane Lubchenco**

*Former Administrator, National Oceanic and Atmospheric Administration; Vice Chair, EDF Board of Trustees*

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