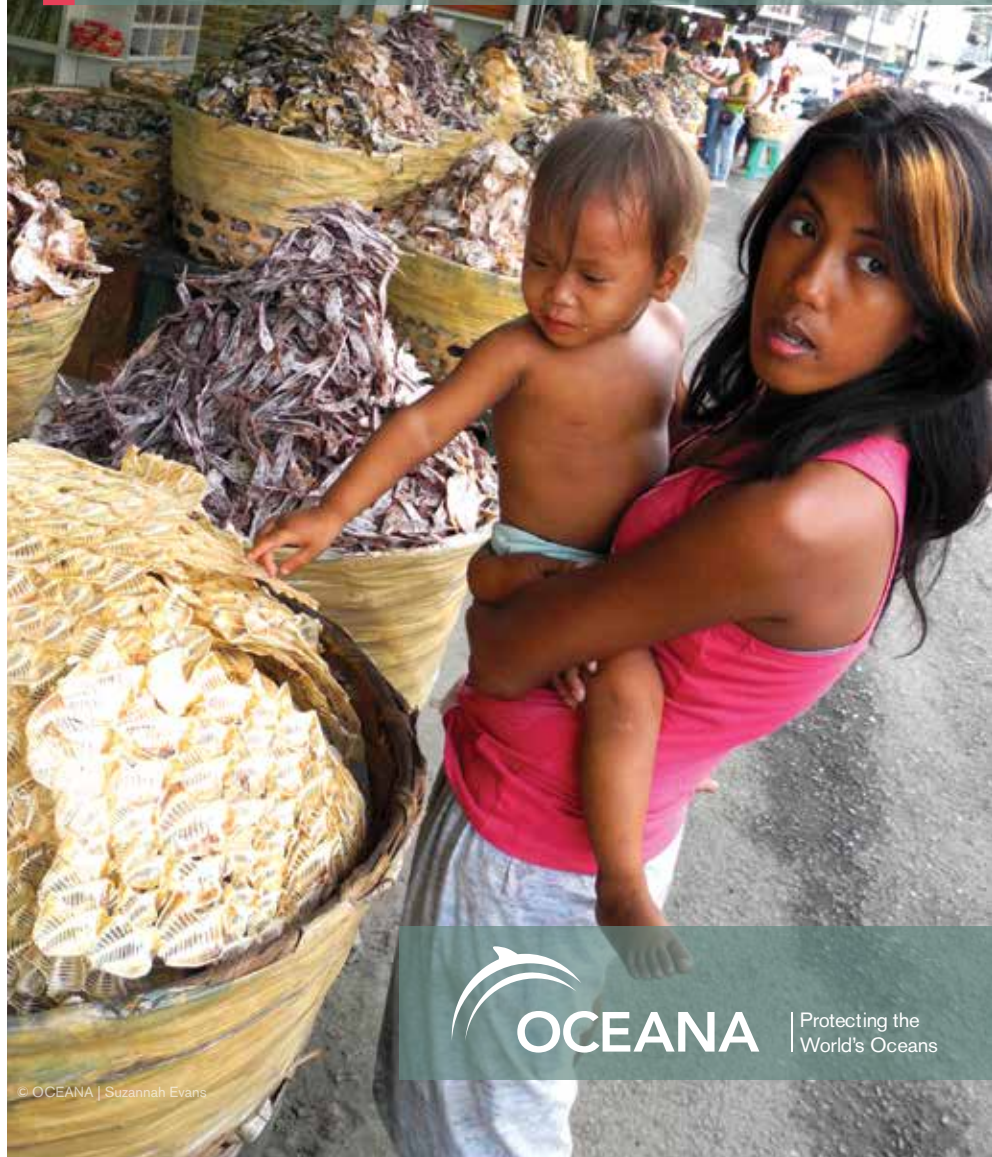


SAVE THE OCEANS: FEED THE WORLD



OCEANA

| Protecting the
World's Oceans



Our oceans can, if properly tended, provide a nutritious meal every day for 700 million people.

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WE LIVE ON A HUNGRY PLANET. The U.N. predicts that the world population will grow by 28 percent, from seven billion today to over nine billion in 2050. It also estimates that the world must produce 70 percent more food to meet expected greater demand. And today, one billion people already wake up hungry every day. Experts rightly ask: Given the earth's already stressed systems, where will all the food come from?

One answer – too often overlooked – is our oceans. Our oceans can, if properly tended, provide a nutritious meal every day for 700 million people. But the oceans are in trouble because of overfishing, and if we don't take action, wild seafood may soon essentially disappear as a major food source for a hungry planet. Fortunately, it is possible to reverse this trend and save the oceans by putting in place science-based fisheries management that would stop overfishing, reduce bycatch and protect habitat in the 25 countries that produce and control 90 percent of the world's wild seafood.

If we save the oceans, we can help feed the world.



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925M

PEOPLE DO NOT
HAVE ENOUGH
TO EAT

400M+

HUNGRY PEOPLE
LIVE IN MAJOR FISHING
COUNTRIES

Source: World Food Programme

The combined effect of population growth, strong income growth and urbanisation is expected to result in almost the doubling of demand for food, feed and fibre. – FAO Director-General Jacques Diouf

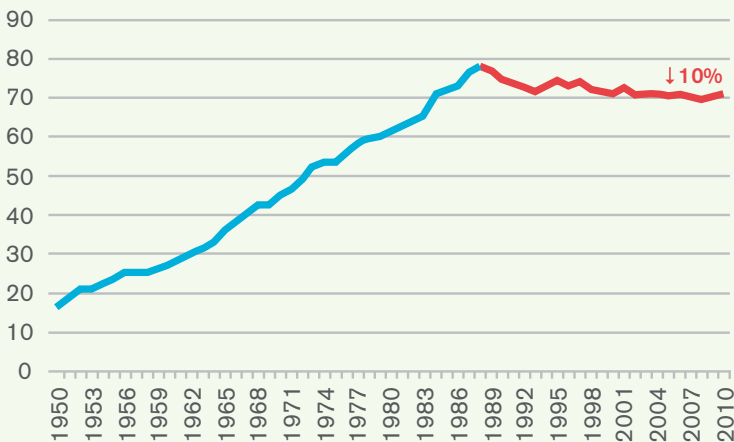


On a global basis, a fully productive ocean could provide a meal a day for 700 million people, or 13 to 15 percent of the animal protein produced on the entire planet. However, almost no one is planning for the oceans to play this vital role in feeding humanity. Why?

Because ocean productivity is already in decline. In the late 1980s, the world's wild fish catch peaked and has been headed downwards ever since, despite the use of state of the art technology and materials and very large numbers of fishing vessels. Due to \$16 billion a year in government subsidies, the global fleet is estimated to be 250 percent larger than needed to fish responsibly.

Global Catch Has Been Declining Since 1988

(Million metric tons, China constant and no anchoveta)



Source: FAO, CEA 2012

Producing more food on land, particularly animal protein, is complicated. The resources needed to grow food through land-based agriculture are increasingly scarce or involve developing and deforesting lands that have irreplaceable natural value, like rainforests. More frequent droughts due to climate change and the transfer of arable lands from agriculture to biofuels will also contribute to the declining land space and fresh water available to grow crops and graze livestock.

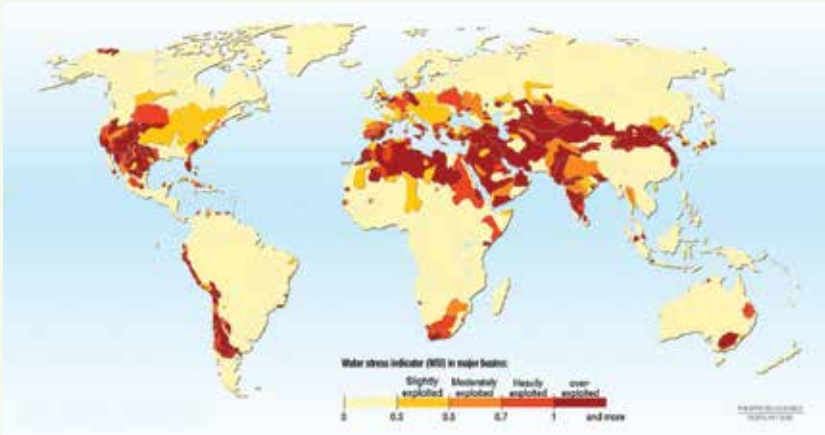


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Our population is growing faster than the supply of arable land – the FAO notes that the amount of arable land per person declined by 40 percent from 1962 to 1998.

Many of the World's Breadbaskets are Headed for Drought

Percent change in water availability from 1961–1990 average to 2050



Sources: UNEP, Smakhtin, Revenga and Döll, 2004.

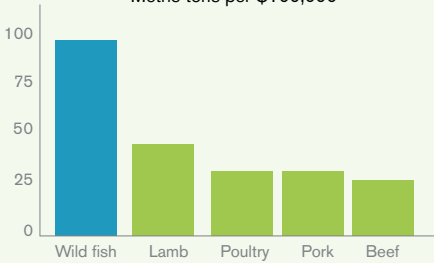


Wild seafood is a worthwhile investment

because it requires minimal fresh water to produce, emits little carbon dioxide, doesn't use up any arable land, and provides healthy, lean protein at a cost per pound lower than beef, chicken, lamb or pork.

Wild Fish is Most Cost Effective Animal Protein

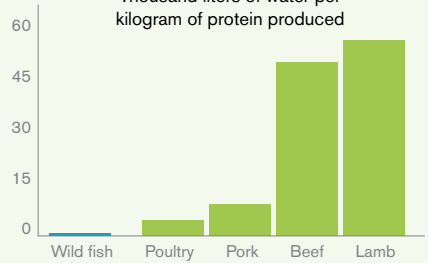
Metric tons per \$100,000



Source: FAO / Sea Around Us Project

Wild Fish Uses Minimal Water in Production

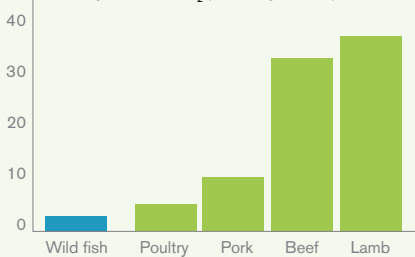
Thousand liters of water per kilogram of protein produced



Source: Pimentel 2004

Wild Fish is Lowest Producer of CO₂

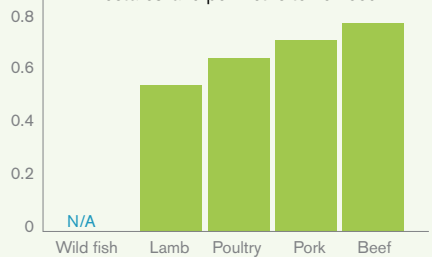
Kilograms of CO₂ per kilogram of protein



Source: Environmental Working Group / SINTEF

Wild Fish Requires No Arable Land

Hectares land per metric ton of food

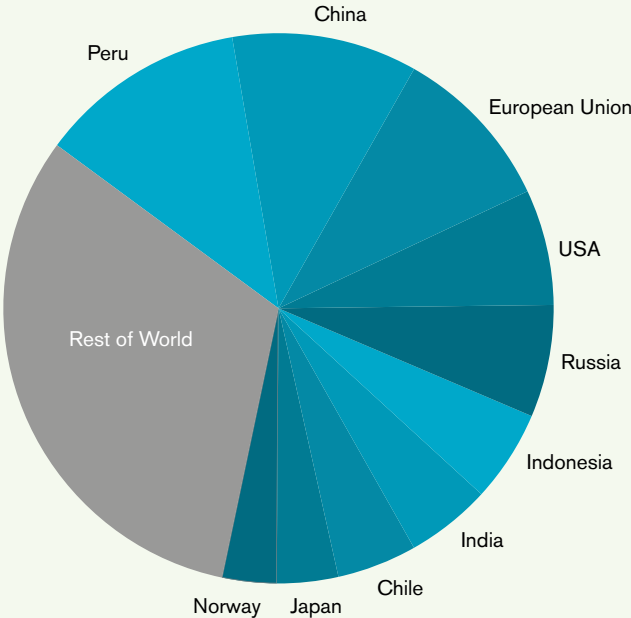


Source: DEFRA 2006

Restoring ocean productivity is a surprisingly manageable task because the world's most productive

waters lie within the territory of a small number of sovereign nations. There is no need to work through the UN because most of the world's wild catch by weight is caught in the territory of individual nations. Sixty-eight percent of the world's wild seafood is caught in just 10 countries, and 90 percent is caught in just 25 countries.

Nine Countries and the EU Catch 68 Percent of the World's Wild Ocean Fish



Source: Sea Around Us Project



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Saving wild seafood is an achievable goal.

Many fish reproduce at astonishing rates, with some producing millions of eggs in one spawning season. Consequently, fish can bounce back when responsible ocean policies are put into place and they are given a break. Wild seafood is a truly renewable resource.

Many countries have learned from experience how to protect wild seafood stocks: avoid overfishing by setting responsible catch limits; minimize bycatch, or accidental harm to marine life; and protect habitat.

Healthy and productive fisheries can be restored through science-based fisheries management:

- (1)** Stop overfishing
- (2)** Prevent bycatch
- (3)** Protect habitat.



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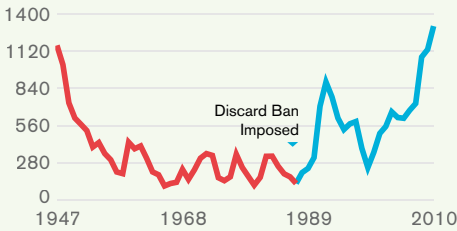


There are many examples of fish rebounding under science-based management. In Japan, protecting habitat

from bottom trawling increased the snow crab catch by 240 percent. In Norway, a total ban on discarding unwanted fish allowed cod in the Northeast Arctic to rebound at 18 percent per year. In Kenya, a ban on fine-mesh nets boosted income 60 percent by providing more fish for poor fishing families.

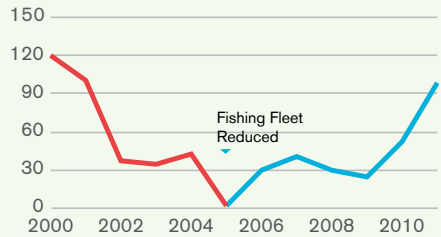
Norway Arctic Cod Recovers After Discards Reduced

Spawning biomass in 1000 metric tons



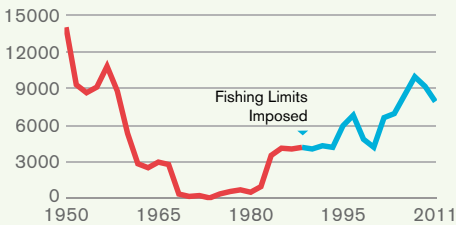
EU Bay of Biscay Anchovy Recovers After Fishing Limited

Spawning biomass in 1000 metric tons



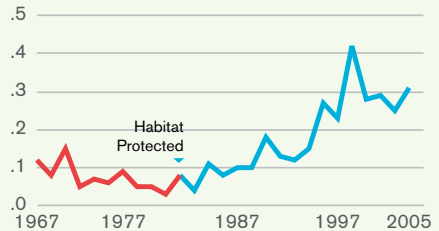
Norway Herring Recovers After Fishing Limited

Spawning biomass in 1000 metric tons



Japan Snow Crab Recovers After Habitat Protected

CPUE in metric tons per day



Sources: ICES 2011; Brooks, "B. Georges bank haddock". 2008; Diamond and Beukers-Stewart. Norway IMR. 2011; New Zealand Ministry of Fisheries, 2011.

Oceana is in a strong position to protect our last major source of wild protein.

By campaigning for responsible fishing practices, Oceana has succeeded in setting catch limits, restricting bycatch and preserving habitat around the world.

For example, in South America Oceana convinced the Chilean government to put scientific limits in place for the first time on jack mackerel, setting this major fishery on a path to recovery. In North America we won a major victory when the U.S. government put strict limits on salmon bycatch in the pollock fishery, one of the largest fisheries in the world. Worldwide we've protected over 1 million square miles of habitat from bottom trawling, and were instrumental in getting a ban on all forms of trawling in Belize, which is home to the second largest coral reef in the world.

Oceana and our supporters have an enormous opportunity to replicate these victories around the world.



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A recent study showed that ocean philanthropists are spending nearly six times more to protect biodiverse places rather than productive ones.

This creates a huge opportunity for strategic philanthropy. Oceana has shown that we can win practical ocean policies at the national level. With just \$100 million in additional resources, it is possible to go to the most productive parts of the world's oceans and win the policy victories that could feed hundreds of millions of people while also restoring and protecting the oceans' biodiversity.

If we save the oceans, we can help feed the world.

NGO Spending Focused on Biodiversity, Not Landings

BIODIVERSITY HOT SPOTS

\$5,300,000

per million metric ton of fish

REST OF WORLD

\$895,000

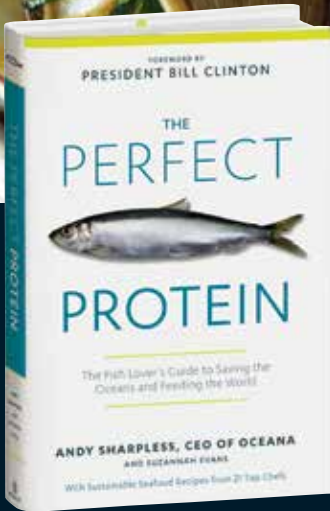
per million metric ton of fish



Oceana is the largest international advocacy group working solely to protect the world's oceans. Oceana wins policy victories for the oceans using science-based campaigns. Since 2001, we have protected over 1.2 million square miles of ocean and innumerable sea turtles, sharks, dolphins and other sea creatures. More than 500,000 members and e-activists support Oceana. Global in scope, Oceana has offices in North, South and Central America and Europe. To learn more, please visit www.oceana.org.

“... the *Omnivore’s Dilemma* for the Oceans”

— Ted Danson



In a provocative and welcome new book for seafood and ocean lovers everywhere, Andy Sharpless, CEO of Oceana, reveals how seafood is not only good for our health but how it can also help to save the planet.

Find out more: www.theperfectprotein.com
<https://www.facebook.com/ThePerfectProtein>