

Do you know where the fish on your plate comes from? If all of us wondered it would change everything. Unfortunately, while the disastrous situation facing fish stocks leaves us a sliver of hope, we must act now and do it fast.

Fish consumption continues to rise all over the world, from 10kg per capita in 1960 to more than 19kg in 2012. At the same time, many fish stocks are declining, with a documented drop of up to 90% in the population of many marine species.

According to the Food and Agriculture Organisation of the United Nations (FAO), 71% of the commercially important marine fish stocks they monitor are fished within biologically sustainable levels. That leaves 29% overfished, meaning one in three fish on our plates belongs to overfished or endangered species.

There's international consensus that one of the biggest pressures on marine ecosystems comes from overfishing. "There are too many boats chasing too few fish," says Dr Boris Worm, Professor in Marine Conservation Biology at Dalhousie University in Canada.

Fisheries form the livelihoods of 10-12% of the world's population; our global fishing capacity is now estimated to be four times larger than the amount of fish left to catch. In 2006 Dr Worm led a controversial study published in *Science* that predicted the world would run out of seafood in 2048 if rates of exploitation current at the time persisted. He explains overfishing like this:

"It's very simple; we are now borrowing against the future. It's like a bank account, you can't take more than the interest; in the oceans you cannot live off credit. The good thing is that scientists understand now how to solve overfishing."

The solution is relatively simple. It doesn't depend on one single action, but a bunch of measures, like catch restrictions, gear modification and closed areas, that together can help restore fisheries and rebuild ecosystems.

Dr Audum Lem, Deputy Director of the Policy and Economics Division at FAO's Fisheries and Aquaculture Department, points out that to protect fish stocks from depleting we need to "strengthen efforts at all levels against illegal, unreported and unregulated fishing, including at national and regional levels".

Oceana, a non-profit conservation group, has estimated that fish piracy represents as much as \$10 to \$23 billion in global losses each year. Maria José Cornax, Oceana's fisheries campaign manager for Europe, stresses that "vulnerable countries - that don't have the means to fight illegal international fleets going into their waters - are the most affected by illegal fishing. It is a global problem that needs international cooperation to be fixed."

Project Eyes on the Seas (set up by the Pew Charitable Trusts) might soon change that. This new monitoring system, launched last January, uses current satellite networks together with powerful software to cross-check information on tens of thousands of fishing boats operating around the globe in real time. It brings a glimpse of hope that illegal fishing can be eliminated, especially in those territories that lack the resources to monitor it themselves. Pew estimates that around one fish in five sold in shops or restaurants is caught illegally.

The European Common Fisheries Policy (CFP) was reformed last year and in its new state, it aims to guarantee that all fish stocks are managed at sustainable levels following scientific advice known as maximum sustainable yield (MSY) by 2020 at the latest. Nevertheless, in the UK the 2015 quota for cod increased 5%, though scientific advice suggested it be cut by 20%.

According to Greenpeace EU oceans policy adviser, Justine Maillot, "a higher quota should be given to fishermen with small vessels who contribute more to the local economy and whose activities have a lower impact on environment". Greenpeace is now taking the UK government to court over their decision to continue to give nearly the entire UK fishing quota to domestic industrial and foreign corporations.

90%

A documented drop of up to 90% in the population of many marine species since 1960

The CFP also includes a much-awaited landing obligation. "This requires fishermen to land and document all catches of specified species. The intention was to address the wasteful discarding of healthy fish back to sea and in doing so reduce the number of fish being removed in the first instance which in turn would lead to increased stocks," explains Tracy Cambridge, WWF-UK seafood and fisheries manager. Currently fleets are still able to discard 5% of their catch and many believe there are loopholes in legislation.

Marine Protected Areas provide vital benefits to ecosystems in which they're located. Despite an international community target to reach 10% by 2020, currently only 3% of the world's oceans are legally protected. "In our experience, marine areas protected from all kinds of fishing or interacting with human beings recover extremely fast on their own, after the right amount of time," says Dr Mario Lebrato, of the Scripps Institution of Oceanography in California.

Last March, the British government announced a special budget to create the world's largest fully protected single marine reserve around the Pitcairn Islands, an overseas territory in the South Pacific Ocean. Tracking on IUU fishing will be provided by Eyes on the Seas.

In the meantime, world aquaculture production continues to grow and now provides almost half of all fish for human consumption, while also presenting issues such as pollution, disease spread to wild populations and the fact that they are stocked with wild fish.

All these measures taken to protect and recover depleted and overfished stocks need backing from consumers, Dr Worm warning that we must make informed choices about the fish we eat. Our choices do have a direct effect on marine ecosystems: under new EU regulation all seafood labelling must include commercial designation and scientific name, production method, catch area, fishing gear and if the product has been defrosted.



This App tells you which fish are good to eat, and which to avoid based on whether they come from well managed, sustainable stocks or farms. Includes almost every fish you could hope to find in UK shops, restaurants and markets, allowing you to make the best seafood choices.

Among the most harmful fishing techniques is bottom trawling. This sledgehammer approach employs giant nets weighed down with ballasts that damage the seabed and destroy everything in their path. This results in massive amounts of bycatch, including those fish at risk of extinction or ancient coral. This practice is often used by industrial boats in the high seas and, thanks to the new labelling, is easy to avoid when buying seafood.

Ruth Westcott, Sustainable Fish Cities' project officer at Sustain, points out the most important things to consider when buying seafood. "First, does it have an ecolabel, like the MSC or ASC or organic? If it does, you don't need to worry about anything else. Second, is the species high up on the food chain? Lower is better, so sardines, herring, mussels, crab, mackerel are good, while swordfish, sharks, dogfish, tuna, salmon or king prawns are bad."

Between 60 and 75% of all seafood eaten in UK are cod, haddock, tuna, salmon and prawns, so being more adventurous would be beneficial. Dr Worm recommends using apps like Fish Online, created by the Marine Conservation Society. By entering the species, the app can tell you whether it's a sustainable or unsustainable choice.

In 2009 Dr Worm, together with an international team of scientists, published a paper in *Science* showing that in half of ten ecosystems studied in detail, the average exploitation rate (rate at which fish is taken out of the sea) was decreasing, at the rate predicted to reach sustainability for seven systems. This indicates that an ecological and economic recovery is possible to achieve with the right management practices.

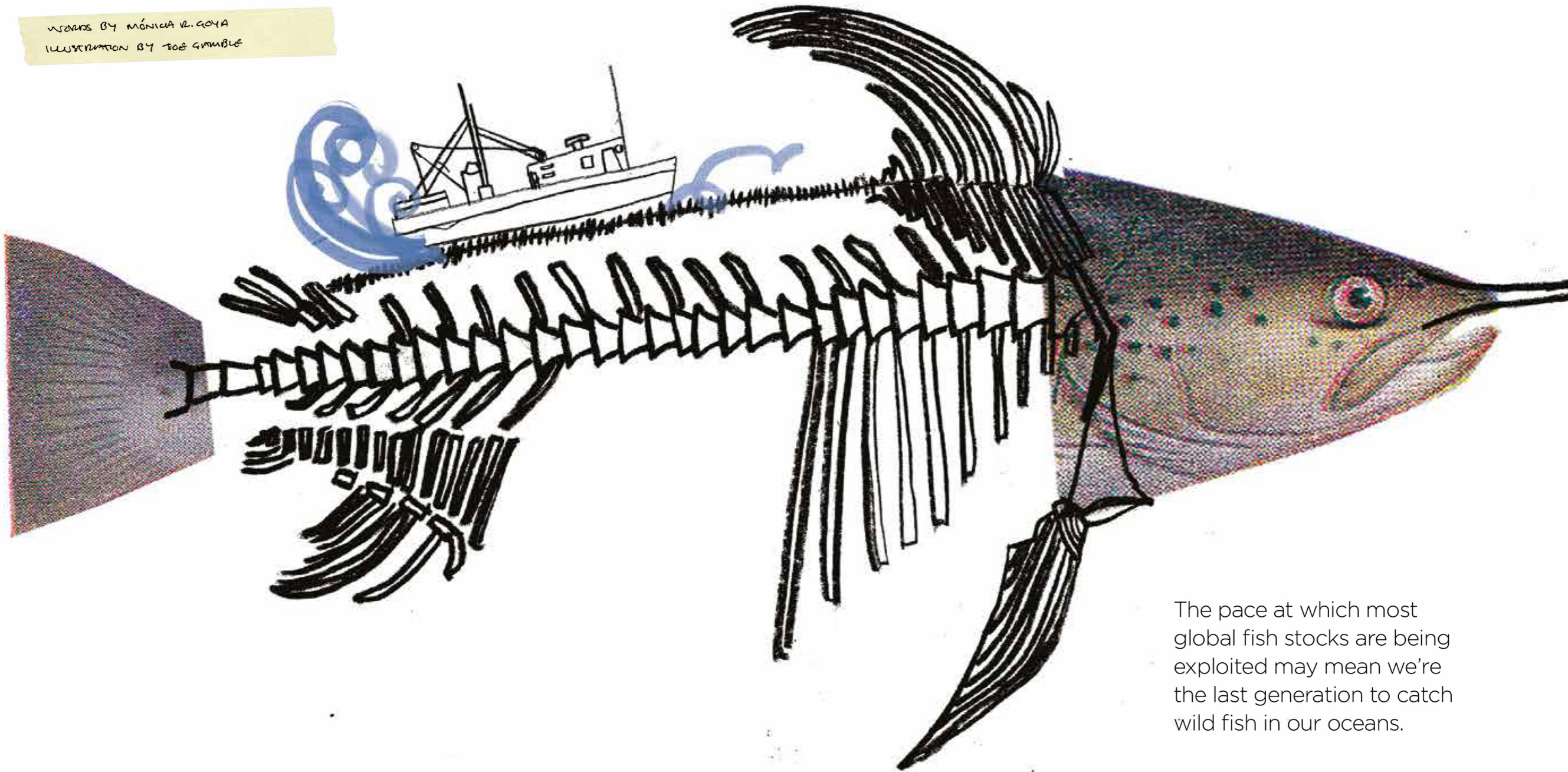
Nevertheless, 63% of assessed global fish stocks require rebuilding. We now know that the words of Thomas Huxley in 1884 - "probably all the great sea fisheries are inexhaustible" - are sadly no longer applicable. The good news is, it's still not too late to halt the disastrous depletion of the oceans if we act now.

\$10 TO \$23

Fish piracy represents as much as \$10 to \$23 billion in global losses each year

TOO MANY BOATS, TOO FEW FISH

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The pace at which most global fish stocks are being exploited may mean we're the last generation to catch wild fish in our oceans.