Seas of Plenty

Our marine wildlife heritage is simply astonishing. It's time to fight for its return, says Professor Callum Roberts.

"The crews caught the fish as fast as they could bait and haul and it is stated that when any of the cod broke from the hook, great monstrous sharks as blue as if painted with a brush darted round the ship's side and swallowed them in an instant."

This passage could easily be mistaken for an account of fishing in tropical seas. But the cod here are not exotic species like groupers, but the cod of the North Atlantic. The report was written in 1862 and describes the experience of fishermen when they first discovered the rich (and at that time unexploited) Rockall Bank, 200 miles northwest of Scotland. By then the North Atlantic had been intensively fished for hundreds of years so the abundance, size and voracity of life at Rockall came as a shock.

As well as sustaining extraordinary numbers of large blue sharks and metre-and-a-half long cod, Rockall in the mid-19th century supported, *"numberless whales sporting and rising on every side"*, large groups of dolphins, and seabirds tame from unfamiliarity with people. Today, we tend not to think of the UK as a place that could ever boast a profusion of giant fish and cetaceans, but even as little as a century ago it was a very different place. The seas around our islands were home to a remarkable marine megafauna.

UK waters are among the most productive in the world. Or at least they were before we reached our present state of extreme over-fishing. The UK lies moored amid one of the world's largest continental shelves. Such shallow seas, stirred by tidal currents and winter storms, are rich in the nutrients essential for plankton growth. Copious plankton can support huge populations of shoaling 'forage' fish, such as herring, pilchard and sprat. Up to the early 20th century, shoals of herring so vast they appeared limitless approached UK coasts every spring and summer to spawn. One 18th century traveller to Loch Fyne, on Scotland's west coast, commented that it contained one part water and two parts herring. Dense pilchard shoals, containing hundreds of millions of fish, crowded the cliffs and bays of southwest England, passing like dark summer clouds across the blue waters.

PROF. CALLUM ROBERTS
Callum is professor of marine conservation at the University of York. His recent book, *The Unnatural History of the Sea,* explores 1000 years of exploitation of the world's seas, drawing on extensive worldwide research.

Scarborough, 1933

North Sea anglers first became interested in bluefin tuna in 1911. A summer sport began and the official UK record, seen here, weighed 851lb (386kg). Over-fishing of herring hastened the decline of this 45mph, warm-blooded predator off the UK's North Sea coast. Its spawning grounds include the western Mediterranean and Gulf of Mexico.

Many species of whale, including the world's largest, the blue whale, lived in or visited our shores, drawn by the immense quantities of plankton and fish. Whales were among the first species targeted by people, with significant hunts off southern England by French and Basque whalers from at least the 11th century. Medieval records of a decline in whale strandings suggest a fall in abundance by the 14th century, probably as a result of hunting. However, faster-swimming species, such as fin and minke, remained plentiful until the late 19th century when steam-powered whaleboats were introduced. The 20th century persecution so reduced whale numbers that in most places a sighting today is a rare joy. Even porpoises and dolphins were once far more common than they are now. An early 18th century parliamentary report stated, *"Porpoises abound in almost innumerable shoals on the western shores of Ireland"*. In 1750, Charles Smith wrote in his history of Cork, *"I have seen an army of porpoises, as it were, guarding the mouth of Youghall harbour, where they made great havoc among shoals of salmon which were then entering the Blackwater River, and even chased some on shore"*. Similar eyewitness accounts can be found from places all around the UK up to the early 20th century. Today, the entire UK population of bottlenose dolphins numbers only five or six hundred and the armies of porpoises are long gone.

Also in pursuit of forage fish were sharks – not just the blues seen at Rockall, but porbeagle, mako, thresher, tope and others. Blue sharks were sworn enemies of the pilchard fishers because they passed, *"up and down the nets, and often when tearing the fish out of the net cut out great pieces of it"*. Schools of immense bluefin tuna troubled fishers in much the same way, often crowding boats as the nets were hauled to feast on fish held in the meshes.

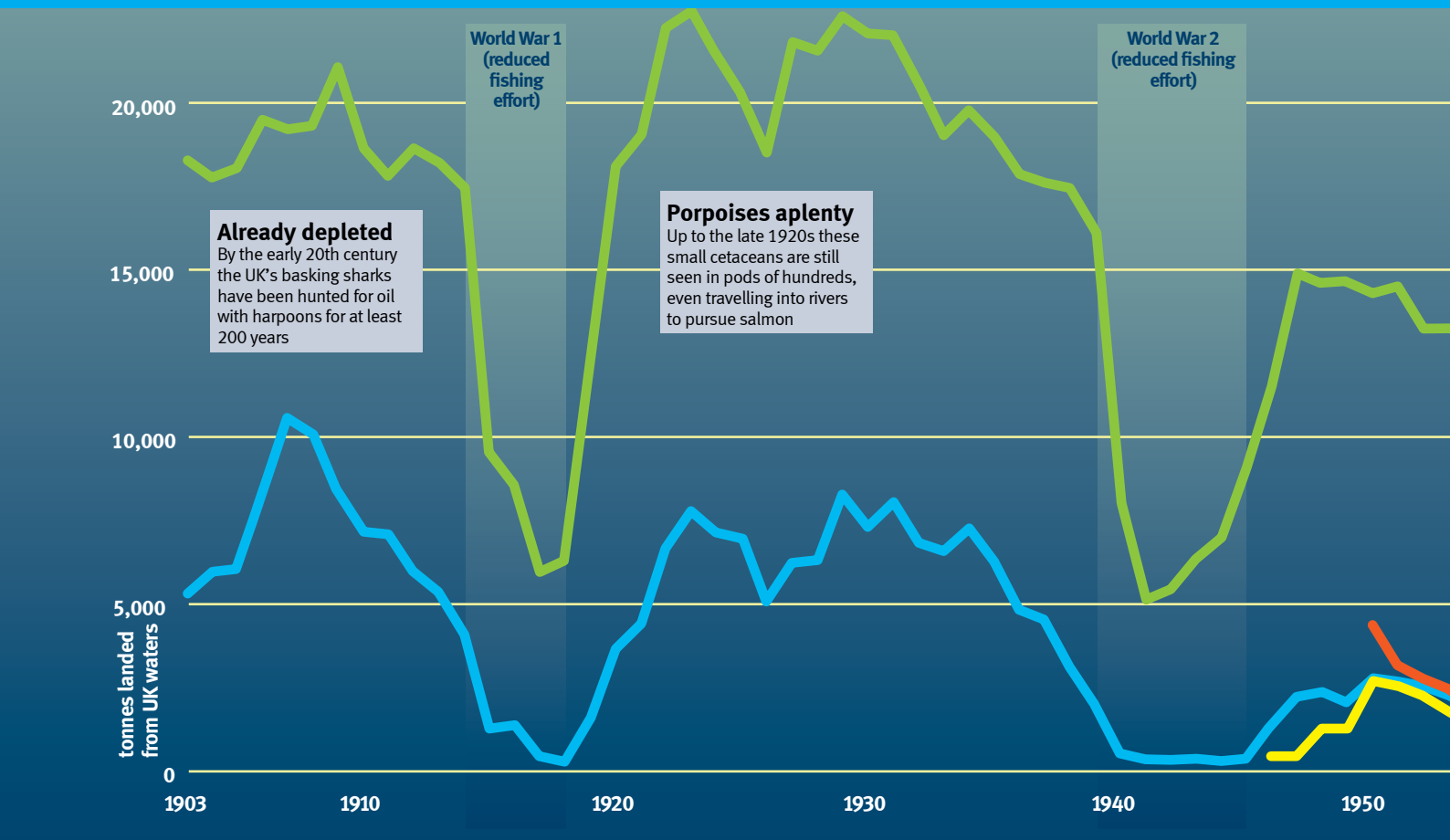
We have lost much of our magnificent marine megafauna by past indiscriminate slaughter for food, oil, and fur and by over-fishing their prey. Today, we continue to destroy small cetaceans by allowing the use of pair trawls and gill nets that kill thousands around our coasts every year. In recent decades, sharks too have become targets. Although shark finning is banned in EU waters, sharks are still landed whole and the fins then sold, as well as the meat in some cases. The seas are being stripped of these ancient predators. Angel sharks – three-metre fish half way between skate and shark – were once common in the English Channel and southern North Sea. They were recently declared extinct in the North Sea and are rare throughout most of their range. Porbeagle sharks, muscular and swift predators of mackerel, are deeply threatened by commercial fishing to supply continental gourmands.

To restore our megafauna and the many other species that have suffered directly or indirectly, we urgently need more protection. To be effective, that protection must include bans on damaging fishing methods such as pair-trawling and gill netting, or at least strict limits on where these gears can be used. And fishing restrictions have to be underpinned by extensive networks of marine reserves that the best available science suggests should cover around 30 percent of our seas.

In a world with ever-rising human needs, we cannot return the oceans to some primordial state. But we should set our sights for conservation much higher and aim to restore some of the splendour lost through centuries of overexploitation. Bringing back the largest species in the sea is a work that will span human generations. Most large animals recover slowly because they mature late in life and produce relatively few young, but resolute protection may yield long-term dividends. The grey whale of the eastern Pacific has recovered from a few

Boom and bust: a century of over-exploitation

A look at just four sets of long-term data shows our refusal to live within nature's limits



Lowestoft, 1911

East Anglia was once the base for one of the world's great herring fisheries, with huge catches commonplace. Shoals of 'forage' fish like this attracted whales, porpoises, sharks, tuna and many other predators. The East Anglian herring population collapsed in the 1950s due to over-fishing. It has never recovered.

hundred individuals in the early 20th century to over 20,000 today following protection from commercial whaling, introduced in the 1940s. But the grey whale also illustrates the perils of waiting too long. Despite the same protection, the western Pacific population has not recovered and now numbers just 100 animals.

The UK government and European Commission have been warned repeatedly in the last decade that many shark populations are near the point of no return. If these animals lived on land, they would get far greater protection. Sadly, few sharks have yet made the jump from commodity to conservation icon.

We lost much of our land-living megafauna as we spread across the planet. We ate our way through the moas of New Zealand, the elephant birds of Madagascar, the mammoths of Europe and scores of others. The extinction of our aquatic megafauna is happening today and only today's generations can save it. If we take the route of protection, future generations may once again see hundreds of porpoises pursuing fish up rivers, dozens of spouting whales chasing herring, and flotillas of basking sharks enjoying the spring plankton bonanza. If we stay on the present path, many of these great animals will disappear forever.

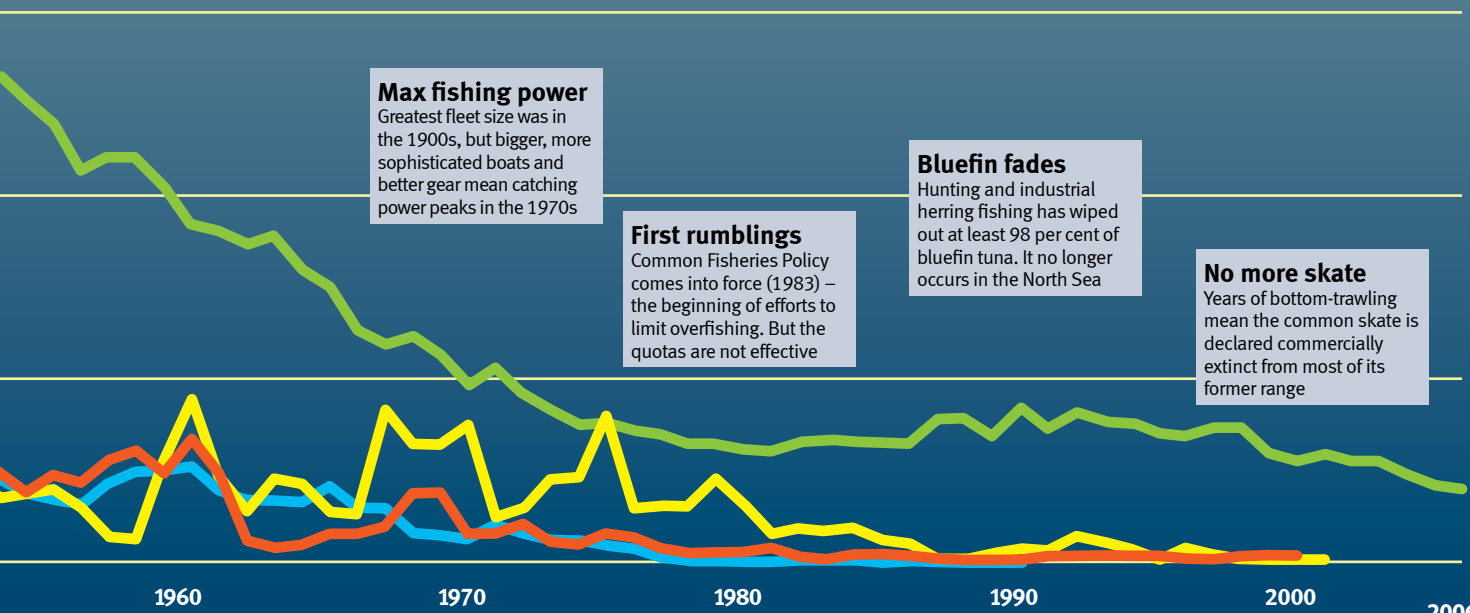
KEY TO CHART

BASKING SHARK
Max size: 12m (39ft), 18 tonnes
Lifespan: up to 50 years
Age at maturity: 6-8(m), 12-16(f)

HALIBUT
Max size: 3m (10ft), 300kg
Lifespan: up to 50 years
Age at maturity: 6-7 years

PORBEAGLE SHARK
Max size: 3.2m (11ft), 280kg
Lifespan: up to 50 years
Age at maturity: 7-8(m), 13-19(f)

SKATES AND RAYS
Max size (skate): 2.7m (9ft), 400kg
Lifespan: up to 50 years (skate)
Age at maturity: 10 (skate)



Porbeagle data: 1950-72: FAO. 1973-2001: ICES working group estimates. **Halibut, skate and ray data:** Ruth Thurstan, University of York. Basking shark data: A field guide to sharks of the world, Collins

How to bring back our marine giants

It starts with new laws to rebuild a healthy ecosystem, says The Wildlife Trusts' Lisa Chilton

Can we really bring back huge whales, dolphins, sharks and other fish?

Ecologically it is possible, but it's a great international challenge. Many of these spectacular, long-lived species range over huge distances and the effects of climate change are hard to predict. But if we can provide the right conditions there is a chance that, given time, we could see at least some of them again.

What would it take to do that?

We have to change the way we think about our sea, and what it is for. The crucial tools are Marine Protected Areas (MPAs), fisheries controls and specific protection for individual species. The planning and licensing of marine industry also needs to work around these species' requirements.

Most big marine animals are migratory, so how could a specifically protected area help?

It's true that an MPA can only offer protection for part of a journey or lifecycle. But if we can identify important areas – for example, where animals gather to feed, breed or socialise – then an MPA gives them a chance. But only if it offers real protection (see below).

What do we have like this at the moment?

Two existing MPAs for megafauna are the European Marine Sites in Cardigan Bay (Wales) and the Moray Firth (Scotland), which are home to the UK's largest remaining populations of bottlenose dolphin. Both have recently been earmarked for oil and gas exploration. Cardigan Bay's MPA appears to have gained a reprieve for now, but the Moray Firth dolphins are still under immediate threat. We need effective MPAs, not just lines on maps.

Surely that has to improve?

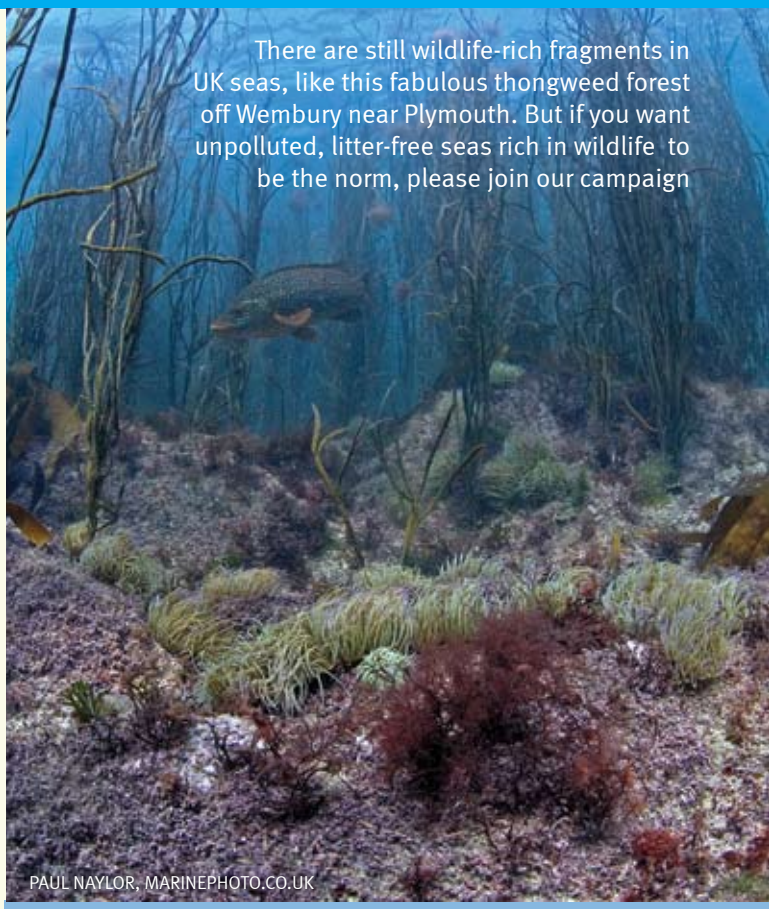
As Callum Roberts suggests, we really need marine reserves: MPAs which are fully protected from all damaging activities. To do that we need the forthcoming Marine Bill to succeed. That way we can offer the highest level of protection to the most important areas for large species. More importantly, a comprehensive network of marine reserves and other MPAs will help rebuild a healthy ecosystem, without which our megafauna stands no hope of recovery. For more on marine reserves, see The Wildlife Trusts' recent report *Marine Reserves - TLC for our seas and sea life*. Visit www.wildlifetrusts.org and click on 'Publications'.

How much sea should be protected?

We feel that going into debate about percentages could threaten the entire Marine Bill. Our priority is to get new laws requiring the creation of an effective and adequate network of MPAs. Once we have those laws, we can look at how much should be protected, based on ecological need, not economics.

So there's uncertainty about the Marine Bill?

It's critical that it becomes law without being watered down. As well as bringing in new MPA laws, the Bill must strengthen the management of inshore fisheries (including powers to protect wildlife), and create an integrated marine planning system. Our megafauna doesn't recognise national boundaries, so international law and policy will also be important.



There are still wildlife-rich fragments in UK seas, like this fabulous thongweed forest off Wembury near Plymouth. But if you want unpolluted, litter-free seas rich in wildlife to be the norm, please join our campaign

PAUL NAYLOR, MARINEPHOTO.CO.UK

What you can do

MPs - Champion the Marine Bill and help ensure that it delivers robust nature conservation measures. Contact us for more information and materials.

Divers and sailors - Look back through your old logbooks and tell us your stories of marine wildlife loved and lost. How have your old haunts – and the marine wildlife they support – changed over the years?

Everyone - Send a copy of this leaflet to your MP, with a letter or email in your own words, asking him/her to keep up the pressure for an effective Marine Bill. Use the online version of the leaflet, or contact us if you need printed copies. Be sure to send us a copy of your letter too.

- Join the Save Our Seas team, our online marine campaign group. www.wild-net.org/saveourseas.
- Sign our Marine Reserves Petition and download our report *Marine Reserves - TLC for our seas and sea life.* www.wildlifetrusts.org

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