ENVIRONMENT

Not so long ago, fish really were that big

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THE UNNATURAL HISTORY

OF THE SEA

By Callum Roberts

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435 pages, $28

Because it sets out to document exhaustively the plundering of the world's oceans, Callum Roberts's *The Unnatural History of the Sea* could easily have resulted in something unutterably heartbreaking. But it doesn't.

The main reason is that Roberts is an optimist. He's convinced that there is an emerging consensus among scientists, governments and fishing-industry leaders around an idea that could restore a great measure of the productivity and majesty of the world's oceans.

Aside from that, *The Unnatural History of the Sea* is filled with first-hand accounts of spectacular abundances of marine life and vividly described encounters with fantastic sea creatures. Much of the book reads like it came straight from a novel by H. G. Wells.

The unique contribution Roberts makes to the growing body of literature about the collapse of global fisheries is the evidence he presents to show that these tragedies are not solely a modern phenomenon. Indeed, people have been transforming coastal ecosystems, usually for the worse, for thousands of years.

Roberts also places a nuanced emphasis on what ecologists call the problem of "shifting baselines" in natural-resource management, a problem that can be described more simply as the great folly of forgetting.

Here's the kind of thing Roberts says we should not forget: There was a time not long ago, in the waters off Nova Scotia, when fishermen were catching bluefin tuna bigger than moose. As recently as the 1950s, it was commonplace for sports fishermen to return from a day's fishing off Key West, Florida, with goliath groupers weighing more than 200 kilograms.

In the Gulf of California, there is an exceedingly rare creature known as the totoaba, a peculiar, human-sized fish known for making loud grunting noises. As recently as 1956, the avid angler and outdoor writer Ray Cannon could credibly report finding his small boat caught in a frenzy of spawning totoaba "in a five-mile stretch of water being churned as if in a volcano's crater."

Turn the clock back a few more years, and one finds nine-kilogram lobsters in the Gulf of Maine, the waters of the Caribbean were writhing with millions of sea turtles, and mariners sailed in seas where the air was heavy and pungent with the breath of whales. Porpoises in British waters were so numerous, Irish novelist Oliver Goldsmith observed, that they were routinely found in the Thames River upstream of London.

In 1793, the first American ship to visit Juan Fernandez Island, in the southeast Pacific, left for China with the pelts of 38,000 seals in its hold. That's almost four times as many Juan Fernandez seals as are believed to exist on Earth today.

The reason it's especially important for scientists and fisheries managers to remember these things is that "we could easily end up trying to maintain marine ecosystems in their present degraded states," and we shouldn't, Roberts writes. We should set our sights higher.

A professor of marine conservation at the University of York, in England, Roberts spent his teenage summers on the cliffs above the sea at Wick, on the northeast coast of Scotland. Few people today will have heard of Wick, but it was once the world's largest fishing port. It was also in those waters that global, industrial-scale overfishing began.

Roberts could be excused for being especially glum about all this, but *The Unnatural History of the Sea* makes a convincing case that the long history of efforts to restrain overfishing has at long last caught up with the capacity of the world's fishing fleets to wreak havoc. The story of those fleets runs in a technological sequence: steam trawlers, then refrigeration, then factory armadas so big they had their own floating hospitals and movie theatres, and then globalized trade.

Roberts argues for a particular cause, popularized by world-renowned fisheries scientist Daniel Pauly at the University of British Columbia, which calls for the establishment of huge marine reserves that would put fully one-third of the world's oceans off-limits to fishing.

Integrated with enlightened and cautious fisheries management, marine reserves would serve to replenish fishing grounds. Experiments with various kinds of marine reserves around the world have already produced surprising, encouraging results. Marine reserves don't just protect sea life. They make major contributions to adjacent fisheries.

It sounds like an overly ambitious and costly idea, but Roberts argues that the financial cost of maintaining and patrolling large-scale marine reserves would be much less than the annual cost of government subsidies to big-boat fisheries. It would also be less than Europeans and North Americans spend every year on ice cream.

It's not a particularly new idea, either; the first marine reserves were established in French waters, near Marseilles, in the late 19th century. That's another fascinating aspect of fisheries history that Roberts explores. There is a long and little-recognized history of strenuous efforts by ordinary people, usually fishermen, to conserve marine resources. As long ago as the 14th century, in Britain, fishermen had successfully petitioned the king to enact laws to safeguard juvenile fish from destructive fishing practices. True, those laws were later repealed.

Irish and British fishermen were rioting and burning trawlers' nets, in the 1850s, to protest the damage caused by trawlers that dragged the seafloor for their catch. Again, the bad guys won.

But Roberts argues that we still have a chance to get it right.

One can only hope. Nowadays, out on the high seas, big-boat draggers are tearing up an amount of seafloor that roughly equals two and a half soccer fields per second.

Global fish production peaked in 1988. It's been falling ever since.

Terry Glavin's most recent book is Waiting for the Macaws: And Other Stories from the Age of Extinction.