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Fish stocks eaten to extinction by 2050

The true scale of mankind's devastation of the oceans is finally to be revealed, writes **Jonathan Leake**

THE world is in danger of running out of fish. Mankind has consumed 95% of the large fish in many seas, and some species are on the brink of collapse, according to leading marine scientists.

They believe the global annual fish catch is now approaching 150m tons a year, far higher than official United Nations estimates of about 90m tons and well above what the oceans can sustain.

It means that unless the world finds a way to curb global fishing, many species, ranging from shark to cod, will suffer disastrous population crashes within a few decades.

The warnings come from researchers working on the Census of Marine Life, a 10-year study of the world's oceans which is due out shortly, and from Daniel Pauly, a leading fisheries researcher whose book, Five Easy Pieces, is also about to be published.

"The biomass of big fish in the sea has decreased by more than 95% over the past 100 years," said Pauly, professor of fisheries science at the University of British Columbia in Canada. "The amount of fish we are taking is simply not sustainable and it is likely many species ranging from cod to tuna will be effectively extinct by the middle of this century."

Over the past 15 years researchers such as Pauly have

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begun looking at fisheries on a global scale. This has forced scientists and governments to confront the fact that a lot of species face imminent extinction. Many shark species are now below 5% of their natural populations.

One report, published in Science magazine, showed that the world's most preferred commercial fish, such as cod, tuna, haddock, flounder and hake, were so overfished they faced extinction by mid-century.

Another looked at phytoplankton, the tiny floating green plants that ultimately provide all the food needed by fish and other sea creatures. It found that in the world's main fishing areas up to 35% of phytoplankton growth is needed simply to sustain the fish taken by humans. This means that humans are extracting a huge proportion of the ocean's productivity — leaving less for other marine creatures.

Pauly is also critical of the UN's Food and Agriculture Organisation (FAO), which puts global catches of fish, crustaceans and molluscs at about 90m tons a year. He believes that illegal and subsistence fishing, plus bycatch, the term for fish that are discarded, add an extra 50m-60m tons to the total.

"The reality is closer to 150m tons. This is just not sustainable," he said.

The sheer speed with which the fishing industry has grown is shown by past figures with just 35m tons of fish caught globally in 1950 and an estimated 10m tons in 1800.

Pauly's findings have strong support. A recent report by Boris Worm, a marine scientist at Dalhousie University, Nova Scotia, Canada, warned that the world must find a new way to oversee its fisheries.

"Global fisheries are in crisis: marine fisheries provide 15% of the animal protein consumed by humans, yet 80% of the world's fish stocks are either fully exploited, over-exploited or have collapsed," he said.

Worm is leading the Future of Marine Animal Populations project, one of the key programmes within the Census for Marine Life. One of his tasks is to predict the effects of fishing, climate change and pollution on fish stocks.

His research has shown that populations of all large fish, ranging from open ocean species such as tuna and swordfish to sea bed-dwellers such as cod and halibut, are down by at least 90% compared with 1900.

The destruction of fish stocks can have unexpected consequences, such as the shoals of giant predatory Humboldt squid along the west coast of North and South America, where fishermen have removed many of the larger fish that would once have eaten them.

In the Adriatic, the destruction of fish populations has contributed to the spread of slime mats that have forced the closure of many tourist beaches.

Callum Roberts, a marine scientist at York University, said humans would also be among the losers. "Starting with whales, we have stripped out all the larger marine species and are now moving down the food chain by targeting ever smaller fish. Eventually all that will be left for us to eat is things like jellyfish and algae," he said.

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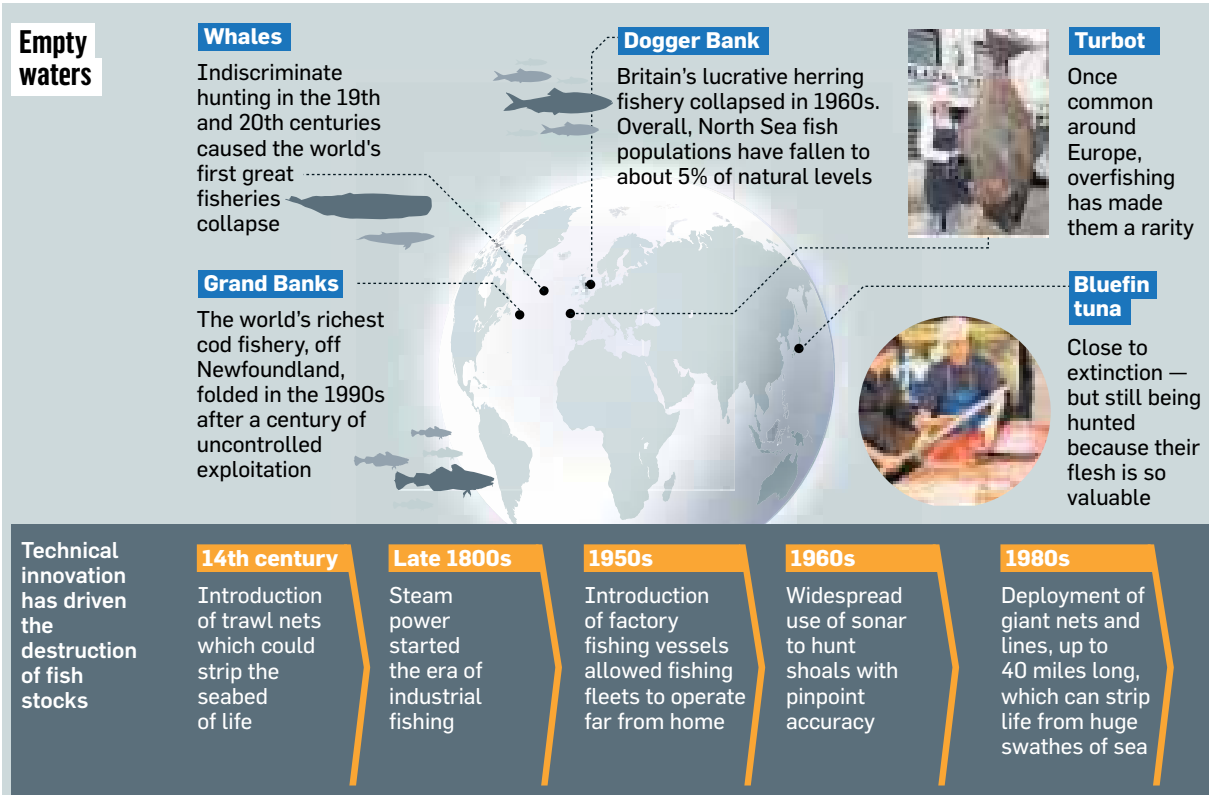

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