

THE GLOBE AND MAIL WORLD

European over-fishing began 1,000 years ago

There are 85 to 90 per cent fewer fish and marine mammals than there once were, ambitious study determines

Anne McIlroy

Globe and Mail Update, Sunday, May. 24, 2009 02:08PM EDT

An international team of researchers has combed through old ships' logs, tax accounts, ancient texts and other records to reconstruct the vast number of whales, other sea creatures that once swam in the earth's oceans.

Their work, to be presented at a conference in Vancouver this week, offers an unprecedented global overview of the once astonishing abundance of fish and marine mammals, 10 times more than can be found beneath the waves today.

A text written in Sicily in 1153 describes the seas of the North Atlantic as having "animals of such great size that the inhabitants of the islands use their bones and vertebrae in place of wood to build houses. They make hammers, arrows, spears, knives, seats, steps and in general every sort of thing elsewhere made of wood. In Britain, manuscripts from the 17th and 18th centuries and harbour statistics show that large pods of blue whales and orcas, blue sharks and thresher sharks dot the waters off Cornwall, England, and that herds of harbour porpoise chased fish upriver.

Today, there are 85 to 90 per cent fewer fish and marine mammals than there once were, said Poul Holm, professor of environmental history at Trinity College and the global chair of the History of Marine Animal Populations project.

"We can now confirm this is a global picture, fairly consistent in the developed and developing world," he said.

He is chairing a conference in Vancouver this week where paleontologists, archeologists, historians, ecologists and other researchers will present their individual findings and start to synthesize them for a report that will be published next year. They are working on the historical component of the international Census of Marine Life, ambitious project to track the life forms that inhabit the oceans today that involves 2,000 researchers from more than 80 countries, including Canada.

The researchers used a number of novel approaches to learn about the past. Loren McClenacha of the Scripps Institution of Oceanography in California compared groups of trophy fish landed by sports fishermen in the Key West area of Florida between 1956 and 2007. The average fish size dropped by almost 90 per cent, 20 kilograms to 2.3 kilograms.

Others looked further back in time, and found that dramatic losses hit much earlier than previously known.

People began having an impact on marine life in the Middle Stone Age – 300,000 to 30,000 years ago.

Large freshwater fish began to disappear in medieval times, and people headed to sea in search of food.

The shift from eating locally caught freshwater fish to marine species occurred around 1000 AD, probably because of increased exploitation and pollution, research from Britain and Germany found.

In the Baltics, there was a dramatic increase in the consumption of exotic fish in the 1680s due to rising standards of living and trade outside the region, said Dr.

"It is a reminder of what is happening today. We are eating into the biodiversity of the southern hemisphere," he said.

In the early to mid 1800s, overfishing and extreme weather conditions led to the collapse of the European herring fishery.

Heike Lotze, a researcher at Dalhousie University in Halifax, said she was struck by how, wherever you look in the world, at whatever period, the story is the same. "People are trying to get the biggest and yummiest fish."

Right whales, however, were hunted for their oil and baleen, used for corsets and other products. An examination of more than 150 whaling logbooks and other records found that the New Zealand southern right whale numbered between 22,000 and 32,000 in the early 1800s, but that by 1925, only 25 reproductive females were left. Today there are 1,000 animals.

There is hope that depleted populations can recover, the researchers say.

Sea otters in western North America were once down to as few as 64. Today, there are about 2,000, says Dr. Lotze.

Elephant seals off the coast of Baja California were almost hunted to extinction, killed for their blubber, which provided oil. Today their population is well over 100,000. "In the past, some combination of reduced or banned exploitation, pollution controls or habitat protection, especially of breeding colonies and feeding grounds, probably helped recovery," said Dr. Lotze, who holds a Canada Research Chair in marine renewable resources.

Some species can recover more quickly than others, said Dr. Holm. European herring stocks were knocked off again in the 1970s, but due to a massive conservation effort were rebuilt within a decade, he said.

Other species, such as Atlantic cod, can take much longer to rebuild, he said.

"There are fairly convincing studies that show management helps, and if we make a concerted effort and take the time to do it right there is a good chance fish stocks can be rebuilt," he said. "The ocean is a much more resilient system than the land."

© Copyright 2009 CTVglobemedia Publishing Inc. All Rights Reserved.
The Globe and Mail is a division of CTVglobemedia Publishing Inc., 444 Front Street West,
Toronto, ON Canada M5V 2S9
Phillip Crawley, Publisher