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**NEWS****Cod numbers hit by climate change****TARA GREAVES**

13 February 2009 06:32

North Sea cod numbers could drop by 20pc as climate change causes species to shift around the world, according to a new report out today by Norfolk scientists.

The first comprehensive predictions of the impact of climate change on global marine biodiversity and fisheries shows there will be a huge shift in the distribution of more than 1,000 species.

As species move northwards, their predictions for the North Sea include a 20pc reduction in Atlantic cod but a 10pc rise in the more southerly European Plaice.

Published this week in the journal Fish and Fisheries, the research was carried out by scientists at the University of East Anglia, the Sea Around Us project at the University of British Columbia and Princeton University.

The findings will also be presented at the American Association for the Advancement of Science (AAAS) annual meeting in Chicago today by the paper's lead author Dr William Cheung of UEA's School of Environmental Sciences.

"Our research shows that the impact of climate change on marine biodiversity and fisheries is going to be huge," said Dr Cheung.

"We must act now to adapt our fisheries management and conservation policies to minimise harm to marine life and to our society.

"For example, we can use our knowledge to improve the design of marine protected areas which are adaptable to changes in distribution of the species."

It has long been known that ocean conditions such as temperature and current patterns are changing due to climate change, and that these changes directly affect the numbers and locations of different species of fish.

Dr Cheung and his team have developed a new computer model that predicts for the first time exactly what might happen under different climate scenarios to the distribution of commercially important species - including cod, herring, sharks, groupers and prawns.

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Current conservation and fisheries management measures do not account for climate-driven species distribution shifts and it is hoped this research will change this.

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**MY NORFOLK**

But Donny Cole, who co-owns the Swan Inn in Barnby, which is shortlisted for the Seafood Pub of the Year award, said he thought there would still be plenty of fish in the North Sea.

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"My personal opinion is there are plenty of fish in the North Sea and it's now being caught on the line which is the best way. The fish head north naturally but they come back. And if climate change does mean they move it will mean other fish will come through."

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The results in the report demonstrate for the first time:

There will be a large-scale re-distribution of species, with most moving towards the Pole.

On average, fish are likely to shift their distribution by more than 40km per decade and there will be an increasing abundance of more southern species.

Developing countries in the tropics will suffer the biggest loss in catch.

Nordic countries such as Norway will gain with increased catch.

In the North Sea, the northward shift of Atlantic Cod may reduce its abundance by more than 20pc, while European plaice - a more southerly fish - may increase by more than 10pc.

In the US, there may be a 50pc reduction in the number of some cod populations on the east coast by 2050.

Some species will face a high risk of extinction, including Striped Rock Cod in the Antarctic and St Paul Rock Lobster in the Southern Ocean.

The invasion and local extinction of species may disrupt marine ecosystems and biodiversity.

Dr Cheung said the next step would be for the research to focus on the socio-economic impact of the predicted scenarios.

The capacity and likelihood of climate change adaptation in the world's fisheries by William Cheung (UEA), Vicky Lam (UBC), Jorge Sarmiento (Princeton), Kelly Kearney (Princeton), Reg Watson (UBC) and Daniel Pauly (UBC) is published today in 'Fish and Fisheries'.

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