

Climate Change, Overfishing Influence Mercury Accumulation In Fish: IIT Hyderabad, Oxford Study

This seminal work has been published in the August 2019 issue of the prestigious international peer-review journal Nature.



Climate change, overfishing influences mercury accumulation in fish: Study (Representational)

HYDERABAD: A joint Research of Indian Institute of Technology (IIT) Hyderabad, Harvard University, and Fisheries and Oceans Canada, a Canadian Government Agency, has been researching how climate Change impacts mercury accumulation in fish. This seminal work has been published in the August 2019 issue of the prestigious international peer-review journal Nature. Modelling studies by the international team of scientists found that although there has been a decrease in levels of mercury pollution due to various environmental regulations, the amounts of mercury found in fish have been different in different species - some types of fish have less mercury than before, and some, alarmingly more. These variations have been a result of changes in sea temperature in recent years and the changes in dietary pattern due to overfishing, said an official statement from IIT Hyderabad.

The Research was led from India by Dr. Asif Qureshi, Associate Professor, Department of Civil Engineering, IIT Hyderabad, and co-authored by Dr. Amina Schartup, Dr. Colin Thackray, Dr. Clifton Dassuncao, Dr. Kyle Gillespie, Dr. Alex Hanke and Dr. Elsie Sunderland.

The researchers focused on whether have these and other environmental measures alleviated or overall exacerbated the problem of elevated mercury levels in fish. This is the question that the consortium of international scientists, which included the IIT Hyderabad researcher, hoped to answer

They chose the Gulf of Maine, a well-studied but also exploited, marginal sea in the Atlantic Ocean, to study the trends in mercury accumulation in fish.

The researchers used three decades of data on ecosystem and mercury concentrations and developed a model for mercury bioaccumulation.

Explaining the complexity of the problem, Dr. Asif Qureshi, who wrote the first versions of the model code, said, "There are three factors that affect mercury accumulation in fish- overfishing, which leads to dietary changes among marine animals, variations in the temperature of the sea water, which leads to changes in fish metabolism that gears towards survival rather than growth, and changes in the amounts of mercury found in sea water as a result of pollution."

The researchers included all three factors in their modelling studies.

They modelled the changes in mercury levels in tissues of the Atlantic cod and spiny dogfish that would result from the three factors - overfishing, increase in sea temperature and reductions in mercury emissions.

Although this study was carried out in the Atlantic Ocean, mercury levels in fish in other seas and oceans are likely to have a similar relationship with sea temperature, fishing practices and mercury pollution levels, said the statement.

Dr. Qureshi believes that regulatory efforts must not only control the release of mercury into the atmosphere, but also significantly reduce greenhouse gas emissions that lead to sea water warming.

Source: NDTV

Date: 10/08/2019