Beat: Technology

Ocean warming pushes cold water plankton towards extinction

-, 18.10.2013, 16:44 Time

USPA News - Cold water plankton, which is a vital food source for fish such as cod and hake, are being pushed towards extinction as they struggle to adapt to changes in sea temperatures, according to a new study that suggests the changes will likely harm local fisheries. British and Australian researchers have found that Calanus finmarchicus, which is a species of cold water plankton in the North Atlantic, is in decline as the oceans warm.

The research, led by Deakin University and Swansea University, showed that the species has continued to contract its range over 50 years of warming. "There is overwhelming evidence that the oceans are warming and it will be the response of animals and plants to this warming that will shape how the oceans look in future years and the nature of global fisheries," said Graeme Hays, professor of marine science at Deakin University in Australia. Hays said warm water species are continuing to expand their ranges as warming occurs, but research shows that cold water species such as Calanus finmarchicus are unable to gradually adapt to withstand the warming seas. "Even over 50 generations, each plankton lives for one year or less, there is no evidence of adaptation to the warmer water," he said. For the study, the research team examined a 50-year time series from the North Atlantic on the distribution and abundance of two very common but contrasting species of ocean plankton, namely Calanus helgolandicus that lives in warmer water and Calanus finmarchicus that lives in cold water. Both species are vital food for fish and underpin many commercial fisheries in the North Atlantic region. "The consequences of this study are profound. It suggests that cold water plankton will continue to become scarcer as their ranges contract to the poles, and ultimately disappear," Hays said. "So certainly for these animals, thermal adaptation appears unlikely to limit the impact of climate change." Hays added that continued declines in the abundance of these species will have a negative impact on the long-term viability of cold water fisheries in the North Sea and other areas in the southern part of their range. "At the same time the continued increase in abundance of the warm water plankton, C. helgolandicus, will likely play a role in the emergence of new fisheries for warm water species," he said. The researchers said the impact of ocean warming is not confined to the North Atlantic region, but will also affect other areas around the world such as southern hemisphere locations like Australia, South Africa and South America that support important fisheries dependent on plankton.

Article online:
https://www.uspa24.com/bericht-1498/ocean-warming-pushes-cold-water-plankton-towards-extinction.html

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