

Impacts of climate change on North East Atlantic species distributions and community structure

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Abstract

Climate change is modifying the environmental conditions experienced by marine taxa. The ability of species to thrive in future warming seas will depend on their environmental tolerances, their capacity to shift distributions, and their scope for local adaptation. In principle, with knowledge of the temporal shifts in abundance of species across large spatial scales, and associations with environmental variables, we can gain insight into how species may respond to projected climate change. Here, for the first time, we link and standardise demersal fish survey data across the North East Atlantic from 36°N to 71°N and 16°W to 31°E. We explore changes in species abundance over space and time, and use this baseline to project the impacts of climate change on distributions and community structure through the 21st century. Our findings have the potential to identify changes in the availability of stocks to fisheries.

Keywords:

fisheries, community, climate change, North East Atlantic, distribution

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