

# North Atlantic Oscillation and fisheries management during global climate change

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## Abstract

The North Atlantic Oscillation (NAO) is the most important large-scale climatic oscillation affecting the North Atlantic region. The variability introduced by the NAO affects many meteorological parameters, including wind speed and direction, and differences in air temperature and rainfall, particularly during the boreal winter. The NAO is also known to affect the ocean by changing heat content, sea surface temperature, gyre circulation, mixed layer depth, salinity, high-latitude deep water formation, and sea ice cover. Consequently, the NAO has been widely used to analyze the variability of marine ecosystems. Several researchers found that fishery resources were teleconnected with the NAO variability, resulting in a significant relationship between this climatic oscillation and fishery yields. More precisely, the NAO affects the target species abundance, recruitment, catchability, and body condition. These effects can be cumulative over time and act synergistically. In this study, the available information about this topic is reviewed, and the importance of the NAO as a large-scale climatic oscillation in fisheries management is discussed using an ecosystem approach. We also discuss the possible effects of climate change on Atlantic and Mediterranean fisheries if this change were to affect the NAO pattern.

## Author keywords

Fisheries  
Food security  
Global warming  
Large-scale climatic oscillation  
North Atlantic region  
Northern hemisphere