



Name	Common large-scale responses to climate and fishing across Northwest Atlantic ecosystems
Description	Abstract: "Investigating whether there were common biological responses to climate and fishing across seven Northwest Atlantic ecosystems, a minimum/maximum autocorrelation factor analysis of biological indicators for each region revealed a common primary multivariate trend of a rapid change during the 1980s and early 1990s. There was a strong common pattern in the biological indicators responsible for the primary multivariate temporal trend in the five more northerly regions: an increase in the abundance of phytoplankton, an increase in biomass at mid-trophic levels, and a decline in predatory groundfish size. The common associations between patterns and drivers were fishing indices and the Atlantic Multidecadal Oscillation, but all associations weakened when co-varying drivers were held constant. The results are consistent with known long-term effects of intense fishing, such as a decline in average fish size and changes in species composition. Less fishing pressure has allowed some regions to recover to former predatory biomass levels since the late 1990s, but the bulk of the biomass consists of fewer species. However, fishing was not the only driver, and a more mechanistic understanding of how the climate affects lower trophic levels is needed to contextualize climate effects in heavily fished ecosystems.
Type	- PRODUCTS: Plans, Assessments, Studies
Sector	- Managed Ecosystems - Natural Ecosystems - Biota
Focus Area	- Sustainability of Marine Ecosystems - Conservation/ Restoration of Sensitive Species and Habitats
Region	- Regional Or State -- New England -- Mid-Atlantic
Lead Agencies	Publication, ICES Journal of Marine Science
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