



## Atlantic climate governs oceanographic and ecological variability in the Barents Sea

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Limnol. Oceanogr., 46(7), 2001, 1774-1780 | DOI: 10.4319/lo.2001.46.7.1774

**ABSTRACT:** In the arcto-boreal Barents Sea, temperature variability is an important source for the pronounced year-to-year fluctuations in fish recruitment. Sea temperature is closely linked to the volume flux of the relatively warm Atlantic water masses flowing in from southwest, as well as to regional heat exchange with the atmosphere. We examine the relations between Barents Sea temperature, inflow, and North Atlantic scale climate variability. For the last three decades, large-scale climate forcing statistically has accounted for 75% of the variability in the barotropic inflow, whereas the North Atlantic Oscillation and sea temperature combined statistically explain 55% of the variability in cod recruitment. Our results suggest a chain-of-events relationship between large-scale atmospheric variability, Barents Sea oceanography and the ecology of this highly productive region.

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