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Zooplankton communities and pelagic fish diet in the Barents Sea during recent warming period

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Zooplankton abundance and biomass as well as the diet of the most abundant pelagic fishes, capelin and polar cod, were investigated based on the data collected during the joint Russian-Norwegian ecosystem surveys in the Barents Sea 2004-2014 and in some national research surveys. Interannual dynamics of meso- and macrozooplankton communities (species and stage composition, abundance, and biomass of the most abundant species and groups) were investigated. The diet of capelin and polar cod and the role of zooplankton species and groups in their diet were compared to changes occurring in zooplankton communities. Inter-annual variability in copepod abundance on the Fugløya-Bjørnøya section in the western entrance and the Kola Meridian in the central Barents Sea reflects the importance of transport of plankton from the Norwegian Sea into the Barents Sea. In the northern Barents Sea, the general tendency was decreasing abundance of large copepods e.g. *Calanus finmarchicus* and *Calanus glacialis* and increasing abundance of small copepods e.g. *Pseudocalanus* sp. These changes in feeding conditions seem to have a negative impact on growth conditions of capelin and polar cod. Euphausiid abundance in general remained on a quite high level with more warm water species such as *Meganyctiphanes norvegica* entering the Barents Sea. In contrast, the abundance of the Arctic pelagic hyperiid amphipod, *Themisto libellula* showed a decreasing trend with a distribution shift more northwards.

Keywords: Barents Sea, zooplankton, copepods, euphausiids, hyperiids, capelin, polar cod, diet

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