Benthic biodiversity and food web structure in the European sector of the Arctic Ocean during spring time

Arctic marine ecosystems are currently facing sea ice decrease. Changes in the sea ice cover will influence the Organic Matter (OM) fluxes to the bottom and thus benthic communities. We aimed to examine meio- and macrobenthic biodiversity and community structure, and food web, with use of stable isotopes of carbon ($\delta^{13}C$) and nitrogen ($\delta^{15}N$), in relation to depth, sea ice type, and bloom stage. Benthic samples were collected in Svalbard area during spring time in 2015 and 2016 along with samples of particulate and sediment OM. Svalbard fjords, Storfjorden, Barents Sea shelf, continental slope, and Nansen Basin were characterized by different environmental settings including various sea ice conditions, bloom stage, sediment OM and particulate OM in bottom water. The highest biodiversity and biomass were found at the shelf and slope stations where intensive bloom was observed and was related to higher concentrations of fresh, high-quality OM. Low benthic infaunal diversity, abundance, and biomass were noted in fjords and deep stations where quality and quantity of OM was markedly lower. Deposit feeders were the only feeding guild sampled in the deep stations while at other stations 3-4 trophic levels were found.

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Abstract Text

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