

# Food web structure of the epibenthic community at the sea ice edge in Baffin Bay, Canada

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## Abstract

In polar areas, the pelagic-benthic coupling plays a fundamental role in ensuring organic matter flow across depths and trophic levels. Climate change impacts the Arctic's physical environment and ecosystem functioning, affecting the sequestration of carbon, the structure and efficiency of the benthic food web and its resilience. In the Arctic Ocean, highest atmospheric warming tendencies (by  $\sim 0.5^{\circ}\text{C}$ ) occur in the east of Baffin Bay making this area an ideal site to study the effects of climate change on benthic communities. We sampled epibenthic organisms at 13 stations bordering the sea ice between June and July 2016. The epibenthic taxonomic composition was identified and grouped by feeding guilds. Isotopic signatures ( $\delta^{13}\text{C}$  -  $\delta^{15}\text{N}$ ), trophic levels and trophic separation and redundancy were measured and quantified at each station. In the light of the results obtained, the stability of the benthic community in the Baffin Bay at the sea ice edge is discussed.

**Keywords:** Epibenthic community, food web, stable isotopes, Fatty acids, Canadian Arctic, Baffin Bay