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Comparison of meiofauna communities on soft bottom in two different fjords of Spitsbergen

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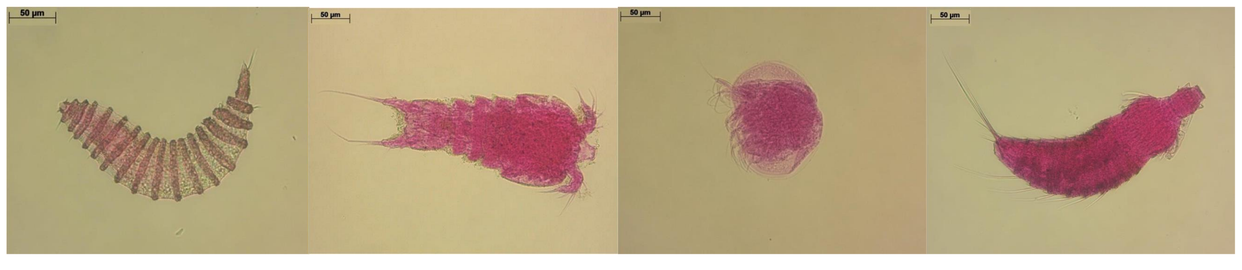
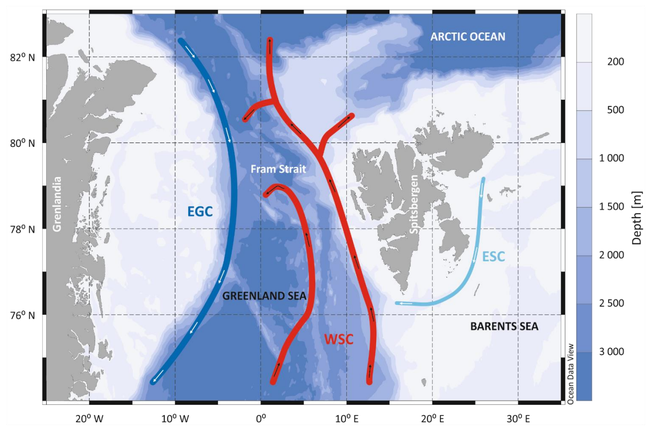
Introduction

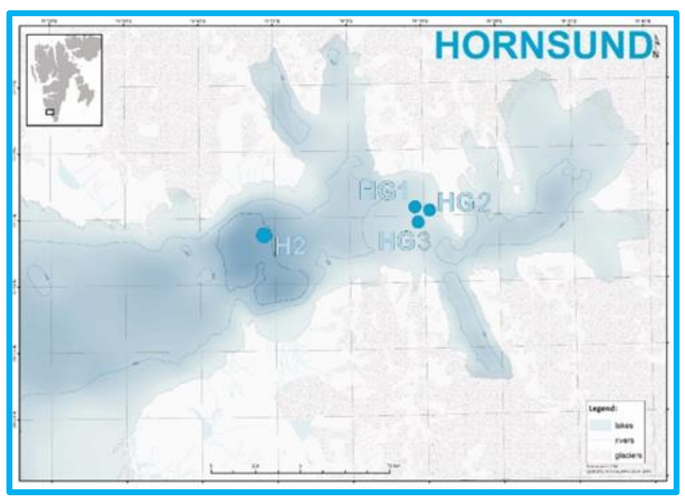
The Arctic is a region particularly exposed to the increase of temperature, which significantly affects the glaciers, causing the regression of ice on the entire northern hemisphere. Changes in environmental conditions directly affect the marine ecosystem, both at the level of the entire fauna, as well as individual populations or organisms. Meiofauna because of it's great diversity and rapid response to environmental variations can be used to monitor changes in benthic ecosystems.

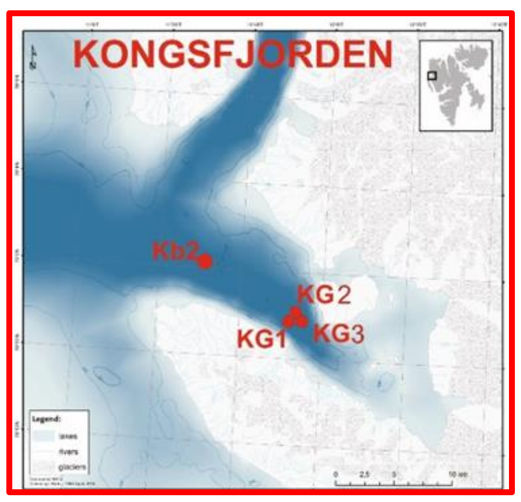


Study Area

Two west Spitsbergen fjords: **Hornsund** and **Kongsfjorden** were investigated.
Hornsund is mainly under the influence of cold water from the Arctic Barents Sea, while Kongsfjorden is to a greater extent under the influence of warm Atlantic waters.



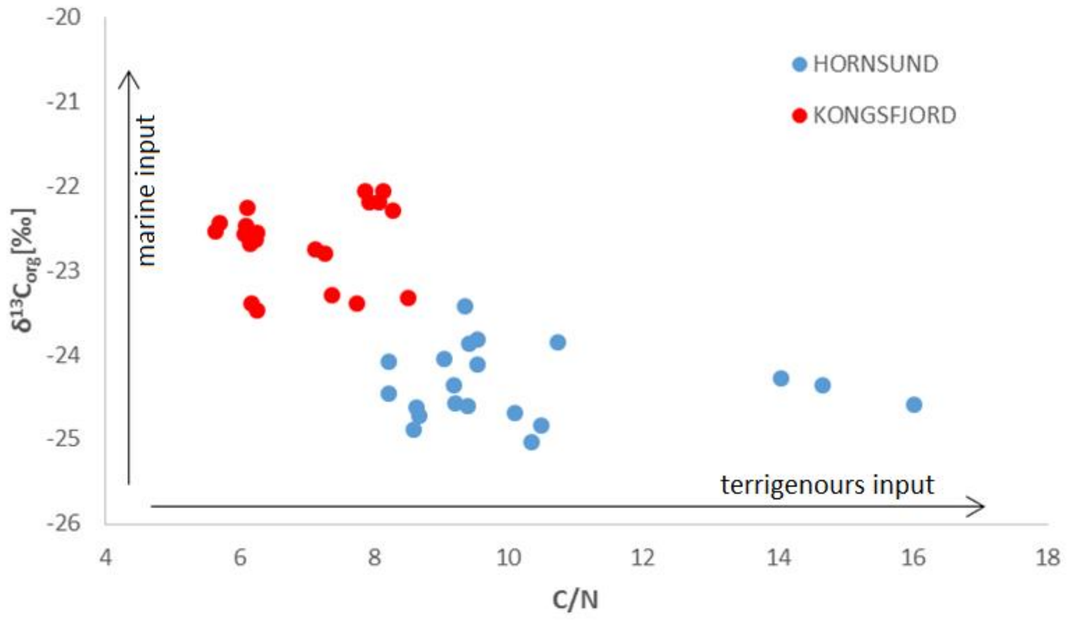




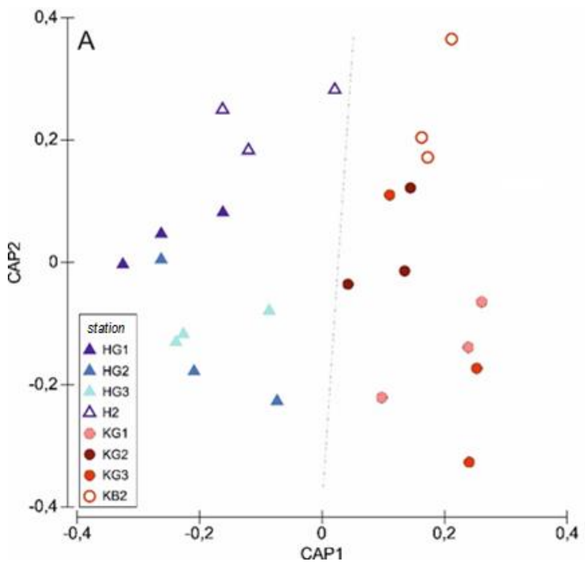
The research material was collected in July and August 2013 during the IO PAS *R/V Oceania* cruise. Quantitative and qualitative analyses, morphometric measurement of Nematodes for calculation of biomass and additional analysis: grain size, carbon isotope, CHN, content of chlorophyll *a* in the sediment were carried out.

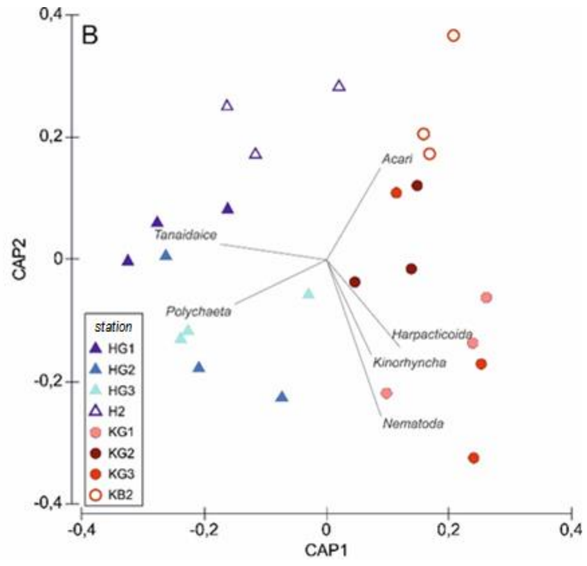
Results

Source & fate of organic matter

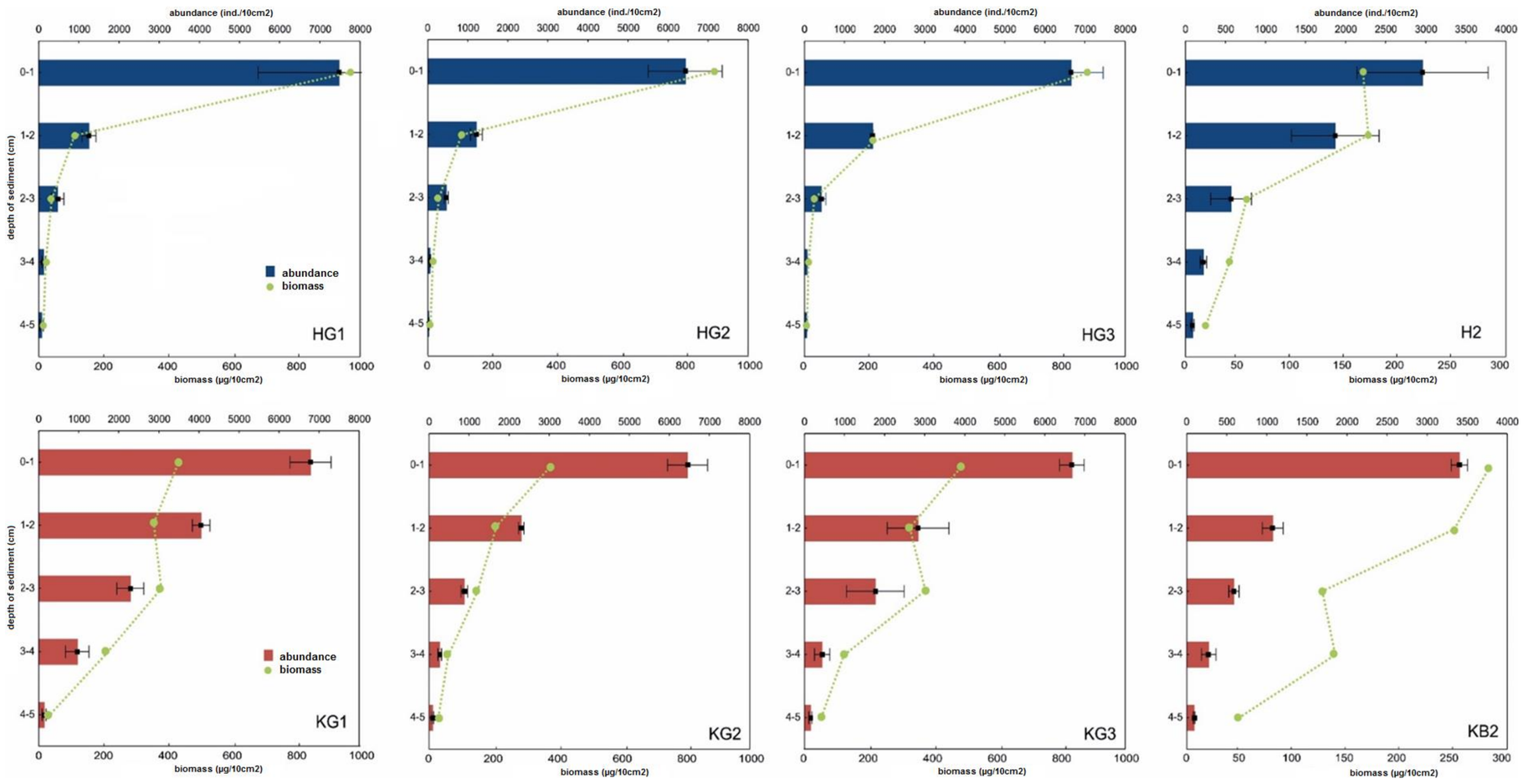


Meiofauna community structure





Vertical distribution of meiofaunal abundance & biomass



Conclusions

- no differences in total meiofauna abundance and biomass between fjords
- differences in community structure
- differences in the vertical distribution of meiofauna abundance and biomass in the sediments
- Kongsfjorden receives a higher input of carbon of marine origin, which can be used more efficiently by organisms → that may support deeper penetration and more even distibution of meiofauna within the sediment layers in comparison to Hornsund