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Title (max 20 words**)**
Arctic benthic diversity research with PANABIO: scale, sharing, and modelling

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Abstract (max 200 words)
Arctic marine biota are affected profoundly and at large scales by accelerating environmental change, such as ocean warming and sea-ice decline. Moreover, increasing human activities add further cumulative pressures. Substantial shifts in ecosystem functions and services, including biodiversity, are expected. To understand, predict, and mitigate the profound ecological consequences of such shifts, it is critical to identify and analyze the relationships between environmental drivers and ecosystem functions at a range of scales (local, regional, and pan-Arctic). We address this challenge by means of a pan-Arctic knowledge system on benthic biota (PANABIO). Underpinned by international efforts to combine data and expertise, PANABIO integrates quality-controlled and geo-referenced data on benthic communities in a public information system. The system allows for (a) providing ecological baseline-data to gauge ecosystem changes, (b) analysing coupling mechanisms between environmental drivers and ecosystem functions/services on regional and pan-Arctic scales, (c) developing future ecosystem scenarios in response to external forcing, and (d) creating online stakeholder-oriented visualization and analysis tools. The talk will demonstrate the huge up-scaling of benthic data with PANABIO, our achievements to support data-sharing, as well as first results of community-level distribution models to discern benthic communities in relation to multiple-factor environmental forcing, including sea-ice dynamics.

Key words (max four):
Arctic, benthos, data, up-scaling

Short description (max 120 characters):
PANABIO - a novel public information system for analyzing and up-scaling geo-referenced Arctic benthic biodiversity data