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BARENTS SEA BENTHIC FAUNA IN A CHANGING SEA

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Arctic marine environments are experiencing many human-induced and natural pressures, including climate change, harvest, introduced species, pollution from ship traffic, fossil fuel exploitation, etc. The size and complexity of the Arctic benthos poses many challenges to predict how these potential cumulative pressures affect benthic species and to detect biodiversity changes. The Barents Sea, one of the shelf oceans in the Arctic, represents a transition from warm Atlantic to cold Arctic waters and consequently an area for climate change studies. Since 2007, the Norwegian-Russian annual ground fish surveys in the Barents Sea, were added benthic taxonomists and a still developing standardized monitoring of invertebrates from the fish trawls. The intension is to develop a time and cost efficient method with simple and transparent analyze tools that easily can be adopted by other national ground fish surveys. The data base, including 3073 stations, 23 Phyla, 49 taxon groups, 590 species, abundance and biomass, are continuously developing and improving. Coding species vulnerability toward trawling, temperature affinity, and preference to invasive top-predators can indicate geographical areas of particular concern. We will present the benthic Norwegian-Russian baseline map and possible indicators to follow effects from climate, trawl and invasive species in the Barents Sea.

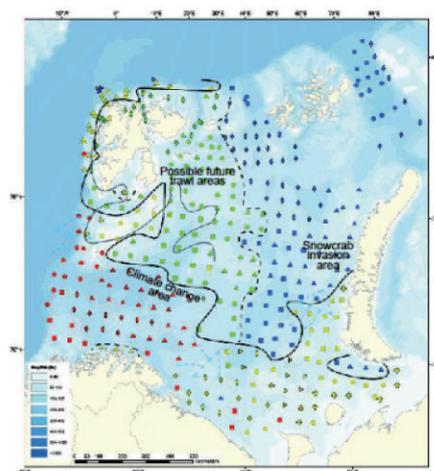


Figure 1. Barents Sea megafaunal communities divided (the black line) into the warmer and colder water masses of the Sea “the climate line”, the eastern areas with snow crab invasion, and the north western possible vulnerable communities toward trawling. Modified after Jørgensen et al 2014.

Jørgensen L.L, Ljubin P, Skjoldal HR, Ingvaldsen RB, Anisimova N, Manushin I. (2014). Distribution of benthic megafauna in the Barents Sea: baseline for an ecosystem approach to management. *ICES Journal of Marine Science*; doi:10.1093/icesjms/fsu106