

Description for the general public

Arctic Ocean is one of the regions on the Earth the most effected by climate change. Recently, mainly due to increased temperatures, Arctic Ocean is experiencing dramatic decrease in sea ice cover and thickness. In order to understand how Arctic marine ecosystem works, we need to understand how each of its elements works. Organisms that dwell at the sea floor, the benthic fauna, play important roles in the ecosystem functioning thus it is critical to improve our knowledge on their functioning and their trophic relationships.

The main goal of this project is to answer the key question how **benthic communities structure and function change along with changes in sea ice cover and primary production**, in particularly sensitive Arctic areas, during **spring to summer** transition time, in the Barents Sea and north off Svalbard.

In order to understand how bottom fauna is changing along with changing environmental conditions, we will compare data collected at stations characterized by different sea ice conditions and different type and stage of bloom. Project will be structured around samples that were collected during cruise of German icebreaker R/V Polarstern in May and June 2015, in the deep sea basin north off Svalbard. Additional samples will be collected during next cruise in Svalbard area, that will take place in May 2016. Samples will be analyzed to determine species composition, abundances and biomass and environmental conditions in both water column and sediment at different stations. This will allow to answer the question on what each organism feeds and how trophic relations are structured between organisms.

Results will be published in international peer reviewed journals and presented at international conferences. This project will generate **new knowledge on Arctic sea bottom communities functioning**, as well as **climate change impacts on their functioning**. It will allow creating **future scenarios** of Arctic ecosystems functioning in the Arctic Ocean, where only seasonal sea ice cover occurs.