

Ref.#: Ma\_33  
mateusz.ormanczyk@gmail.com

## ABSTRACT

### **Zooplankton structure in the high latitude fjords with contrasting oceanographic conditions: Hornsund and Kongsfjorden, Spitsbergen**

Mateusz Ormańczyk<sup>1</sup>

<sup>1</sup>*Institute of Oceanology of Polish Academy of Sciences (IO PAS), Marine Ecology,  
Poland,*

Two fjords with contrasting oceanographic conditions located on the island of Spitsbergen in Svalbard Archipelago (European Arctic), were investigated in the study "Growing of the Arctic Marine Ecosystem" (GAME). The goal of the study was to investigate possible reaction of Arctic marine ecosystems to temperature rise. Hornsund, fjord considered an example of a site with 'cold' environmental conditions, and Kongsfjorden, fjord typified as 'warm' site, were compared in regards of an array of abiotic and biotic environmental characteristics. For this study, data on temperature and salinity, the basic hydrographic parameters of the studied ecosystems, and data on zooplankton abundance, biomass and its composition were used. Data on zooplankton were gathered based on examination of samples collected with nets of different mesh size, in order to describe wider zooplankton size spectrum. The mean abundance of mesozooplankton, the size structure containing the main part of total zooplankton biomass in the studied fjords, was almost three times lower, while the mean mesozooplankton biomass was nearly two times lower in Hornsund in comparison to Kongsfjorden. Similar patterns were observed for other zooplankton size fractions. Differences between zooplankton communities in the two fjords compared referred also to contribution of particular taxa to total abundance and biomass, indicating, for example, presence of more Arctic-origin zooplankton in Hornsund and more Atlantic-origin zooplankton in Kongsfjorden. These results combined with oceanographic data support the working hypothesis indicating Hornsund as a more Arctic marine ecosystem and Kongsfjorden as an Arctic ecosystem already influenced by warmer Atlantic waters.