

Project acronym: ETANGO

Project title: Ecology and diversity of Tardigrada in the northern glacial biome – are they unique?

Project leader: Krzysztof Zawierucha, Adam Mickiewicz University, Poznań, Poland

Discipline: Life Sciences & Biotech

Station(s): Finse Alpine Research Station, Norway

The project will be conducted in Finse Alpine Research Center that support excellent access to Hardangerjøkulen and Blåisen Glaciers. Tardigrada is a phylum of micro-invertebrates inhabiting inter alia extreme environments as the surface of glaciers. Glaciers and ice sheets cover ca. 10% of land's surface and they constitute an extreme biome where Tardigrada are considered to be top consumers. Preliminary studies show that tardigrades on glaciers form unique assemblages affected by extreme conditions and there is no correlation between communities structure and the size of habitat. There is still lack of comprehensive information on the changes in the density and diversity of tardigrades along environmental gradients. Currently, the project leader is in a possession of the material with tardigrades from the glaciers of Svalbard, Greenland, Asia, Alps and Africa. Scandinavia is still gap on the biogeographical map of glacier dwelling micro-fauna. The main aim of the study is a survey on the diversity and habitat preferences of tardigrades in the northern glacial biome.

Particular hypotheses will be tested: (H1) Tardigrade assemblages are changing in transects along main axis of glacier with higher mortality towards firn area, (H2) cryoconite holes are inhabited by unique tardigrade assemblages, (H3) assemblages of tardigrades in cryoconite holes constitute exclusively herbivore and microbivore species. The results of these studies will help to understand the diversity and distribution of top consumers (Tardigrada) in latitudinal and altitudinal gradients in a glacial biome and will be addressed to a wide audience of scientists – taxonomists, ecologists and biogeographers.