

Researching Antarctica, and especially studies of their glaciers and climatic global relations are of popular interest for decades now. One of the key elements of Antarctic ecosystem is the Ross Sea together with its extensive ice shelf. At first glimpse, it appears to be devoid of life, however, careful studies reveal much different picture.

Initial investigations of rich material collected during scientific cruise NBP15-02 in the Ross Sea during the austral summer of 2014/2015 revealed surprisingly abundant and diverse benthic foraminiferal assemblages in late-Quaternary sediments. Based on sedimentary features, they were interpreted as of sub ice-shelf or even subglacial. Very limited reports on ice-proximal foraminiferal biota have been published to date; therefore, their detailed description is needed. The main aim of this project is to understand late-Quaternary grounding-line proximal habitats inhabited by benthic foraminifera, focusing on assemblages that lived beneath the formerly much expanded Ross Ice Shelf. This new information will allow for a better understanding of late-Quaternary deglaciation history of the Ross Sea as well as changes in its ice-shelf geometry. Both elements are of prime interest to understand past and future dynamics of West and East Antarctic Ice Sheets.

Showing a considerably common occurrence of calcareous benthic foraminifera in sub ice-shelf settings may provide a breakthrough in studies of late-Quaternary deglaciation processes. The prevailing understanding of these environments resulted in assuming low probability of finding *in situ* biogenic carbonate and placed little importance on methodical foraminiferal investigations. Rather than using previously assumed reworked carbonate for dating, alternative dating methods (IOM, compound specific) were employed; however, they are imperfect, thus, as a consequence, the time-frame of major post-LGM events in the Ross Sea history awaits independent confirmation. Reversing the false assumption of foraminiferal deficiency in sub ice-shelf habitats could be of great value for paleoenvironmental reconstructions and radiocarbon dating.

Results of the proposed study will also allow verification of the applicability of sedimentological criteria used for determining paleoenvironmental setting. Some foraminiferal assemblages that seem to be *in situ* are associated with sediments interpret as subglacial. Reevaluation of all data will either disprove their *in situ* character or require alternative sediment interpretation.