



## Late Glacial lakes – uniform or contrasting ecosystems?

Izabela Zawiska (1), Monika Rzodkiewicz (2), Agnieszka M. Noryśkiewicz (3), Milena Obremska (4), Florian Ott (5), Mateusz Kramkowski (5,6), Michał Słowiński (6), Mirosław Błaszczewicz (6), and Achim Brauer (5)

(1) Polish Academy of Sciences, Department of Geoecology and Climatology, Warsaw, Poland, (2) Adam Mickiewicz University Poznań, Department of Quaternary Geology and Palaeogeography, Institute of Geoecology and Geoinformation, Poznań, Poland, (3) Nicolaus Copernicus University, Faculty of History, Institute of Archaeology, Toruń, Poland, (4) Polish Academy of Sciences, Research Centre in Warsaw, Institute of Geological Sciences, Warsaw, Poland, (5) Helmholtz-Centre Potsdam – GFZ German Research Centre for Geosciences, Section 5.2 Climate Dynamics and Landscape Evolution, Telegrafenberg, Potsdam, Germany, (6) Polish Academy of Sciences, Department of Environmental Resources and Geohazards, Toruń, Poland

Climate changes are one of the most investigated topic in paleolimnology. The Late Glacial and Early Holocene time are specially interesting as than most abrupt changes happened. Lake sediments are known to be great source of information of the past environments. They are functioning as natural archives because in them preserve animal and plants remains. In this study we investigated three cores of the biogenic sediments from the lakes located in close vicinity in Tuchola Forest (Northern Poland): paleolake Trzechowskie, Lake Czechowskie-deepest part and Lake Czechowskie-bay. We made Cladocera, diatom and pollen analysis, the chronology was determined by varve counting, Laacher See Tephra (12,880 yrs BP) and  $^{14}\text{C}$  dating.

The aim of our research was to find out the response of zooplankton, phytoplankton, lake and catchment vegetation to abrupt climate changes. We were interested in similarities and differences between those three locations in response of entire communities but also species composition. The preliminary results revealed that the Cladocera, diatoms and plants communities were sensitive to climatic shifts and it is well shown in the results of ordination method (PCA). However in the Cladocera and diatoms assemblages, which reflect well lake environment conditions, the dominant species and total number of species present, were different in all three locations. Especially great difference was noted between paleolake Trzechowskie and Lake Czechowskie (core from the deepest part).

The results of our research shows that in Late Glacial time landscape in Lake Czechowskie region (Tuchola Forest, Northern Poland) had mosaic character. Local factors such as relief, edaphic conditions strongly modified type of vegetation and in close vicinity existed lakes that had very diverse environments.