

## Holocene environmental changes in the Eastern Carpathians – multi-proxy reconstructions from varved sediments of Lake Synevyr



The Department of Geomorphology and Quaternary Geology at the University of Gdańsk is looking for a motivated person for a PhD position within the National Science Centre PRELUDIUM BIS project.

**Project:** Varved sediments have been established as one of the most prominent environmental archives. Lake Synevyr is the first site in the Eastern Carpathians where varved sediments were discovered, providing the basis for completely new reconstructions of the Holocene environmental changes in this region. With our project we address the following research questions: What was the dynamics of climate change / human impact in the region during the transition from a nature-dominated to a human-dominated environment? Is the most recent time unusual within the Holocene? We aim to (1) reconstruct local vegetation changes, soil erosion and lake productivity since lake initiation to the present, and (2) evaluate the interactions between climate variability / human activity, and their impact on the lake environment.

**PhD thesis:** The PhD candidate will be responsible for the analysis of two sediment cores collected from Lake Synevyr. The scope of work will include sediment coring, sediment dating with varve counting and isotope methods, non-destructive analyses (XRF scanning and hyperspectral imaging), sedimentological and geochemical analyses. Additionally, the research will involve data analysis and environmental interpretation. The research will be conducted in close collaboration with Prof. Martin Grosjean (Bern University, Switzerland) and Dr. Gennady Laptev (UHMI Kiev, Ukraine). The expected outcome of the PhD work is a series of scientific papers on the reconstructions of environmental changes in the Eastern Carpathians during the Holocene.

**Location and Duration:** The work will be carried out from 2024 to 2028 at the Paleoenvironmental Research Laboratory, Department of Geomorphology and Quaternary Geology (Faculty of Oceanography and Geography, University of Gdańsk). In addition to the research work, the PhD candidate will also participate in the Doctoral School of Natural and Exact Sciences at the University of Gdańsk. Candidates should be ready to start working from October 2024.

**Funding:** All costs related to field and laboratory work will be covered within the project. The PhD candidate will also receive a monthly scholarship of 3,600 PLN for the first two years of study, and after a midterm evaluation, 4,600 PLN per month for the following two years. Additionally, funding for a three-month scientific internship abroad will be provided, which the PhD candidate will be obliged to undertake.

### Requirements for Candidates:

- MSc degree physical geography, geology, or related disciplines;
- enthusiasm for conducting research work and ability to work in a team;
- full-time availability (100% employment);
- ability to speak and write in English.

**Contact:** The project is led by Prof. Wojciech Tylmann from Paleoenvironmental Research Laboratory, Department of Geomorphology and Quaternary Geology. Candidates are requested to send (in one PDF file!) their CV including scientific achievements, motivation letter, references from the supervisor of their MSc thesis or immediate superior, and consent to the processing of personal data to the following email address: [wojciech.tylmann@ug.edu.pl](mailto:wojciech.tylmann@ug.edu.pl). The final deadline for submissions is July 26th at 3:00 pm, and the competition results will be announced by July 31th, 2024. Any questions regarding both the scientific scope of the project and the organizational-financial aspects can be directed to the same email address ([wojciech.tylmann@ug.edu.pl](mailto:wojciech.tylmann@ug.edu.pl)).