Geophysical Research Abstracts
Vol. 20, EGU2018-9101, 2018
EGU General Assembly 2018

An Overview and First Results of the PLOT (Paleolimnological Transect) Project in the Russian Arctic

Raphael Gromig (1), Andrej Andreev (1), Marlene Baumer (1), Dmitri Bolshiyanov (2,3), Grigory Fedorov (2,3), Svetlana Kostrova (4), Sebastian Krastel (5), Elodie Lebas (5), Anna Ludikova (6), Martin Melles (1), Hanno Meyer (4), Lyudmila Pestryakova (7), Larisa Sevelieva (3), Lyudmila Shumilovskikh (8), Dmitry A. Subetto (9), Bernd Wagner (1), Volker Wennrich (1), and Martin Werner (10)

(1) University of Cologne, Institute of Geology and Mineralogy, Germany (raphael.gromig@uni-koeln.de), (2) Arctic and Antarctic Research Institute, St. Petersburg, Russia, (3) St. Petersburg State University, St. Petersburg, Russia, (4) Alfred Wegener Institute for Polar and Marine Research, Potsdam, Germany, (5) University of Kiel, Institute of Geosciences, Kiel, Germany, (6) Institute of Limnology, Russian Academy of Sciences, St. Petersburg, Russia, (7) North-East Federal University Yakutsk, Russia, (8) Georg-August University Göttingen, Dept. of Palynology and Climate Dynamics, Germany, (9) Northern Water Problems Institute of Karelian Research Centre, Russian Academy of Sciences, Russia, (10) Alfred Wegener Institute for Polar and Marine Research, Bremerhaven, Germany

The joint Russian-German project ′PLOT - Paleolimnological Transect′ aims to recover lacustrine sediment sequences along a >6000 km-long longitudinal transect across the Eurasian Arctic in order to investigate the Late Quaternary climatic and environmental history. The climate history of the Arctic is of particular interest since it is the region, which is experiencing major impact of the current climate change. The project is funded for a duration of three years by the German and Russian Ministries of Research. Since 2013 extensive fieldwork, including seismic surveys, coring, and hydrological investigations, was carried out at lakes Ladoga (NW Russia), Bolshoye Shuchye (Polar Urals), Emanda (Verkhoyansk Range), Levinson-Lessing, and Taymyr (both Taymyr Peninsula). Fieldwork at lakes Bolshoye Shuchye, Levinson-Lessing, and Taymyr was conducted in collaboration with the Russian-Norwegian CHASE (Climate History along the Arctic Seaboard of Eurasia) project. A major objective of the PLOT project was to recover preglacial sediments. A multiproxy approach was applied to the analytical work of all cores, including (bio-)geochemical, sedimentological, geophysical, and biological analyses. First data implies the presence of preglacial sediments in the cores from all lakes except Lake Emanda. Age-depth models, based on radiocarbon dating, OSL dating, paleomagnetic measurements, identification of cryptotephra, and varve counting (where applicable), are in progress. The records shall be correlated to that of Lake El′gygytgyn (NE Russia), which represents the master record for the Siberian Arctic. The outcome of the PLOT project will be a better understanding of the temporal and spatial variability and development of the Arctic climate. Here, we present the major results and first key interpretations of the PLOT project. We also give an outlook on the future strategy and foci of the project. First results will culminate in a special issue in spring 2018 comprising publications about Lake Ladoga and Lake Levinson-Lessing.