

**1st International Conference
'Processes and Palaeo-environmental
changes in the Arctic:
from past to present'
(PalaeoArc)**



Book of abstracts

Adam Mickiewicz University, Poznań, Poland

Poznań, 20–24 May 2019



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Late Quaternary paleoenvironmental records of northern Eurasian large lakes obtained in the frame of RussianGerman research project “PLOT”

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Russian-German project PLOT (Paleolimnological Transect) aims at investigating the regional responses of the quaternary climate and environment on external forcing and feedback mechanisms along a more than 6000 km long longitudinal transect crossing Northern Eurasia. The well-dated record from Lake El'gygytgyn (Melles et al., 2012; Brigham-Grette et al. 2013) used as reference site for comparison the local climatic and environmental histories. Seismic surveys and sediment coring up to 54 m below lake floor performed in the frame of the project on Ladoga Lake (North-West of Russia; 2013), Lake Bolshoye Shchuchye (Polar Ural; 2016), Lake Levinson-Lessing and Lake Taymyr (Taymyr Peninsula; 2016–2017), Lake Emanda (Verkhoyansk Range; 2017). Fieldwork at Polar Ural and Taymyr Peninsula was conducted in collaboration with the Russian-Norwegian CHASE (Climate History along the Arctic Seaboard of Eurasia) project. Here, we present the major results of the project obtained so far. Some of the results recently published in special issue (Melles et al. 2019).

The multiproxy studies of sediment core from largest European Lake Ladoga allow to reconstruct deglaciation history (Gromig et al. 2019) as well as climate and paleohydrology of Lateglacial and Holocene (Savelieva et al. 2019; Kostrova et al. 2019). Low part of the same core used for MIS 5 climatic history reconstruction (Andreev et al. 2019).

A seismic survey of Lake Levinson-Lessing allows to reconstruct the periods of ice advances, marine waters inundations, lacustrine and purely terrestrial conditions in central Taymyr Peninsula (Lebas et al. 2019).

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References

- Andreev, A. A., et al. 2019. Environmental conditions in northwestern Russia during MIS 5 inferred from the pollen stratigraphy in a sediment core from Lake Ladoga. *Boreas*. <https://doi.org/10.1111/bor.12382>. ISSN 0300-9483.
- Brigham-Grette J., et al. 2013. Pliocene warmth, polar amplification, and stepped Pleistocene cooling recorded in NE Arctic Russia. *Science* 340: 1421–1427.
- Gromig R., et al. 2019. Deglaciation history of Lake Ladoga (north-western Russia) based on varved sediments. *Boreas*. <https://doi.org/10.1111/bor.12379>. ISSN 0300–9483.
- Kostrova S. S., et al. 2019. Holocene hydrological variability of Lake Ladoga, northwest Russia as inferred from diatom oxygen isotopes. *Boreas*. <https://doi.org/10.1111/bor.12385>
- Lebas E., et al. 2019. Seismic stratigraphic record of Lake Levinson-Lessing, Taymyr Peninsula: evidence for ice-sheet dynamics and lake-level fluctuations since the Early Weichselian. *Boreas*. <https://doi.org/10.1111/bor.12381>.
- Melles M., et al. 2012: 2.8 million years of Arctic climate change from Lake El'gygytgyn, NE Russia. *Science* 337: 315–320.
- Melles M., et al. 2019. Northern Eurasian Lakes – Late Quaternary glaciation and climate history: an introduction. *Boreas*, in press.
- Savelieva L. A., et al. 2019. Vegetation and climate changes in northwestern Russia during the Lateglacial and Holocene inferred from the Lake Ladoga pollen record. *Boreas*. <https://doi.org/10.1111/bor.12376>.