



Holocene palaeoclimatic and environmental reconstructions on Southern Karelia (NW Russia) based on multy-proxy records of lake sediments

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Lake Onega, one of largest lakes in Europe. The deglaciation of the Lake Onega occurred about 11600 years ago. As the glacier retreated from the Lake Onega depression, the ice-dammed lake occupied it and reached its maximum size (Filimonova, Lavrova, 2017; Shelekhova, Subetto, 2016).

Lakes from the Lake Onega catchment are located at different hypsometric levels and contain paleogeographic information about the development of the region. Lake Polevskoe (62.31 N, 35.28 E; 54.7 m a.s.l.) located in the middle of Zaonezhye Peninsula (South Karelia). The lake has tectonic origin and its development was influenced by the level fluctuations of the Onega Lake after Last Glacial (Subetto, Shelekhova, 2015). Lake Yuzhnoe Khaugilampi (63.55 N, 33.33 E; 153 m a.s.l.) is located to the north and characterizes the development of the Southern Karelia where Lake Onega didn't play any significant role as a climate-forming factor.

We reconstructed Holocene environmental conditions for the Southern Karelia by chironomid analysis using chironomid-based inference model (Nazarova et al., 2015). Such investigations are rare in the northern part of European Russia (Iljashuk 20013; Nazarova et al., 2018). Chironomids (Chironomidae; Insecta: Diptera) are known as bioindicators especially for quantitative reconstruction of mean July air temperature (Syrykh et al., 2017).

Qualitative and quantitative palaeoecological reconstruction of the natural environment of Southern Karelia using chironomid analysis was compared to the results of a complex analysis of the lake sediments including lithostratigraphic and geochemical analyses. Our results revealed differences in sedimentation processes of the studied lakes depending on their location and influence of the Onega Lake at different stages of the lakes development.

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