



The reconstruction of Baltic Sea relative level changes and of landscape dynamics during Holocene within Hogland (Suursaari) Island, Gulf of Finland, basing on palaeolimnological data

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Hogland Island, or Suursaari, is situated in the center of the Gulf of Finland, Baltic Sea, between the coasts of Estonia, Finland and Russia. The relief of this island is unusually high among the islands in this part of the Gulf: there are four hills up to 176 meters high above the Baltic sea present level. Several raised beaches consisting mainly of boulders and shingle could be found at different altitudes throughout the island. First attempts to measure the elevation of these ancient shorelines and to correlate them with the known stages of Baltic Sea were made during the first half of the XX century [Kurki, 1915; Sauramo, 1958], but the results weren't substantially supported by micropalaeontological analyses. Later, in 90s of the XX century, a group of Estonian researchers presented results of the study of the several lakes and mire sediments located on different altitudes on Hogland [Veski et al., 1995]. This study was focused mainly on the bottom parts of the lake sediment sequences containing data on the isolation of these water bodies from the Baltic Sea, and these basins were the highest on the island. So the data concerning the Early Holocene conditions and vegetation changes were discovered.

During the summer field season of 2014, new lake sediment sequences from two unprobed earlier inferior lakes (Lounatjarvi, around 40 meters a. s. l. and Pahalampi, around 50 meters a. s. l.) were collected with a Russian corer by a paleolimnology group from Institute of Limnology (Russian Academy of Sciences) from Saint Petersburg, Russia. Thickness of quaternary deposits taken is 2.1m and 4.95m, respectively. We have preliminary data of multiproxy analyses and it is expected that this study will result both in reconstruction of Middle and Late Holocene Baltic Sea level changes and in revealing vegetation and landscapes transformation on the Hogland Island. At this time, a litho-stratigraphic, radiocarbon (AMS) analyses are performed and pollen, diatom and LOI analyses were started. One more aim of this research is to reconstruct the Holocene dynamics of climatic parameters within the island basing on the history of vegetation changes. The importance of paleogeographical research on the Hogland Island is that it could allow filling in the deficit of the offshore biostratigraphic studies in the Gulf of Finland and therefore correlating different relative sea level curves from Northern Estonia, Southern Finland and North-Western part of Russia [Miettinen, 2004].

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