

# **POSTGLACIAL VEGETATION AND CLIMATE HISTORY OF THE NORTHERN LAKE ONEGA REGION INFERRED FROM PALYNOLOGICAL RECORD OF RAZLOMNOE PEATBOG**

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This study aims at pollen analysis of the 885 cm long sediment core from Razlomnoe peatbog and pollen-based reconstruction of the postglacial vegetation and climate history of the northern Lake Onega Region from the end of the Younger Dryas to the present (i.e., during the past ~12000 years). For the first time, the quantitative pollen-based reconstruction of the regional vegetation history was carried out using an objective method of biomization. For the first time, the mean temperature of the coldest (January) and warmest (July) months, average annual temperature and precipitation values were reconstructed using the method of modern analogues applied to the Razlomnoe core pollen record and a reference modern pollen dataset of more than 4000 surface pollen spectra from the northern part of Eurasia. The evaluation of the obtained sedimentary and pollen data supported by the results of radiocarbon dating ( $^{14}\text{C}$  yr BP) allowed (i) to identify eight stages of vegetation development, (ii) to determine the time and main features of the Holocene thermal maximum (from ~8000 to ~5800  $^{14}\text{C}$  yr BP or ~8900 to ~6600 cal yr BP), as well as (iii) the first appearance of alder trees and the initiation of peat deposition (~8000  $^{14}\text{C}$  yr BP or ~8900 cal yr BP) and (iv) the first appearance of spruce (~7600  $^{14}\text{C}$  yr BP or ~8400 cal yr BP) in the study area. The obtained results compared to the summarized results of previous studies provide important new details to the vegetation and climate history of the northern Lake Onega Region. Last but not least, the analyzed core from Razlomnoe peatbog reveals continuous sedimentation at a rate of 10-15 years per cm over the past 12000 years and demonstrates the potential for further multi-proxy analyses and very high-resolution paleoenvironmental reconstructions.