

## Features of the method of large-scale paleolandscape reconstructions

Vyacheslav Nizovtsev (1), Natalia Erman (2), and Irina Graves (1)

(1) lomonosov Moscow State University, Moscow, Russian Federation (nizov2118@yandex.ru), (2) S.I.Vavilov Institute for the History of Science and Technology of the Russian Academy of Sciences, Moscow, Russian (erman.natalie@mail.ru)

The method of paleolandscape reconstructions was tested in the key area of the basin of the river Dubna, located at the junction of the Taldom and Sergiev Posad districts of the Moscow region. A series of maps was created which shows paleoreconstructions of the original (indigenous) living environment of initial settlers during main time periods of the Holocene age and features of human interaction with landscapes at the early stages of economic development of the territory (in the early and middle Holocene). The sequence of these works is as follows. 1. Comprehensive analysis of topographic maps of different scales and aerial and satellite images, stock materials of geological and hydrological surveys and prospecting of peat deposits, archaeological evidence on ancient settlements, palynological and osteological analysis, analysis of complex landscape and archaeological studies. 2. Mapping of factual material and analyzing of the spatial distribution of archaeological sites were performed. 3. Running of a large-scale field landscape mapping (sample areas) and compiling of maps of the modern landscape structure. On this basis, edaphic properties of the main types of natural boundaries were analyzed and their resource base was determined. 4. Reconstruction of lake-river system during the main periods of the Holocene. The boundaries of restored paleolakes were determined based on power and territorial confinement of decay ooze. 5. On the basis of landscape and edaphic method the actual paleolandscape reconstructions for the main periods of the Holocene were performed. During the reconstructions of the original, indigenous flora we relied on data of palynological studies conducted on the studied area or in similar landscape conditions. 6. The result was a retrospective analysis and periodization of the settlement process, economic development and the formation of the first anthropogenically transformed landscape complexes.

The reconstruction of the dynamics of the development of landscapes and lake system in the early and middle Holocene in the middle reaches of the river Dubna helped restore paleo-ecological picture and nature use system in the studied area in the Mesolithic, Neolithic and Bronze Age. The settlements, existing during several eras, are located mostly at the confluence of rivers or streams in a lake or the main river, i.e. points of the highest concentration of fish, with good overview of areas and existing water barrier against predators. Therefore, monuments of the Mesolithic and Neolithic are mainly located in dense groups. In the Bronze Age there is a transition to a producing economy - floodplain cattle breeding. The monuments of the Bronze Age, and not just settlements, were scattered farther away over the territory, in contrast to the monuments of previous eras. Apparently, Fatyanovo people, by virtue of their producing economy, were less tied to a particular landscape complexes and the resource base was crucial for cultures of appropriating economy (Mesolithic, Neolithic). Based on the analysis of open settlement locations, we can conclude that the studied settlements were clearly incorporated into the landscape conditions needed for settlers' living.

The work is performed under project № 17-05-00662 of the Russian Foundation for Basic Research