**Diatoms indicated the main factor affecting the local climatic conditions of the Aleutian islands in the past**

The Aleutian Islands constitute a region that attracts the attention of researchers of various specialties. In recent years, interest in the Aleutian Islands has increased further, a large number of articles have been published devoted to the study of the dynamics of climate, their flora and fauna and the history of human settlement of the islands.

The article, recently published in the journal Water (MPDI), highlights the results of the work of scientists from three structural divisions of the IEE RAS (laboratory of ecology of aquatic communities and invasions, laboratory of historical ecology and laboratory of population ecology) on the study of the past ecosystems of this region. For the first time to analyze the peat deposits of one of the islands of the ridge, a new approach was applied, combining the results of classical diatom analysis and modern methods of statistical analysis.

The purpose of this work was to describe the dynamics during the Holocene of the diatom community of a small reservoir located on Shemya Island and to identify the main global and local factors that determine these changes. Diatoms, whose silicon valves are perfectly preserved in millennial sediments, are good indicators of the environment and objects for paleoreconstruction. According to the results of radiocarbon dating, the formation of the deposit began at 9300 cal. years ago. The analysis of the main components made it possible to link the dynamics of the diatom community with certain ecological conditions and factors that influenced coastal ecosystems during the period of its formation.

According to the results of this study, the change in ocean level was the main factor affecting the diatom community, having both direct (through changes in microclimate) and indirect effects on the studied reservoir (since the advancement of the seashore towards the reservoir led to an increase in the impact on it from bird colonies located on the coast of the island). Since 3000-2000 years ago, the anthropogenic factor (decrease in the number of bird colonies due to hunting by inhabitants) has also become significant for the dynamics of diatom communities. Interestingly, throughout the history of the reservoir, the diatom community was influenced by global factors (for example, sea level rise) gradually, by increments. On the contrary, the influence of local factors (the formation and destruction of bird colonies as a result of human activity) led to abrupt and transient changes. The relatively stable global ecological conditions in the late Holocene were a favorable background for seeing how dramatic the changes caused by zoogenic and anthropogenic factors were.

The authors believe that further work with the material of peat deposits of other islands will make it possible to understand the general picture of changes in diatom communities in the Holocene and to interpret it in connection with climatic changes in the region.