

Preliminary studies of zooplankton communities and assesment of the ecological status of lake suturuokha (Ne Siberia, Russia)

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Abstract

© SGEM2017. Lake Suturuokha (69°06' N, 145°23' E) is a unique lake within the Indigirka River basin, which is located on the border of the forest-tundra and taiga in the north of the Republic of Sakha (Yakutia). Formed due to the influence of glaciers of several glaciations in the late Pleistocene, the lake has a large area (69 km²) and comparatively shallow depths (2 - 2.5 m). Because of its unusual genesis and low study, the lake is of great interest to scientists. In August 2015, in the framework of the research expedition, an assessment of the current ecological conditions of Lake Suturuokha was implemented, in the course of which hydro-biological samples were selected from 16 different points located in different biotopes of the lake's water area. According to the research conducted, Lake Suturuokha can be referred to as highly productive due to the active blooming blue-green and green algae and a mass accumulation of effipium of *Daphnia middendorffiana* (Fischer, 1851), Cladocera. 53 species and forms in species diversity of zooplankton community were revealed; of these, 31 were Rotifera, 12 Cladocera and 11 Copepoda. High frequency indicators belonged to the rotifers *Brachionus angularis* (Gosse, 1851), *Collotheca pelagica* (Rousselet, 1893), *Kellicotia longispina* (Kellicot, 1879), as well as the cladocera *Daphnia middendorffiana* (Fischer, 1851) and the juvenile Copepoda. 76.6 % of the total zooplankton abundance included rotifers, 21.7 % and 1.7 % of the abundance involved Copepod and Cladocera. The average value of the zooplankton abundance of the lake was 35.10 thousand ind./m³. Biomass of zooplankton of the lake Suturuokha on the average had a value of 295.2 mg/m³. 64.1 % of it were Cladocera, especially large *D. middendorffiana*. 36.7 % of the biomass contained Copepoda, 1.7 % - of rotifer biomass. Mass clusters of Cladocera *efippia*, formed primarily by *D. middendorffiana*, were discovered. Estimators of Shannon's index and saprobity index defined that the lake was located on the border to pure and moderately polluted waters and had oligosaprobic level (the average values 2.57 and 1.47 accordingly). The prevalence of littoral species (44 %) and cosmopolitan species (53 %) in zooplankton was explained by the small depths of the lake. However, quantitatively, the dominant structure of zooplankton was cold-water species.

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Keywords

Cladocera, Lake Suturuokha, Siberia, Zooplankton

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