

SPRING PHYTOPLANKTON OF LAKE BAIKAL IN 2007-2009 IN COMPARISON WITH THE 1964-1990 MULTIYEAR

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Lake Baikal situated in the East Siberia is the most ancient (25 My), the deepest (1637 m) and the largest (23,000 km³) freshwater body on the Earth (Grachev, 2002). Lake Baikal phytoplankton plays an important role in the creation of primary organic matter and responds sensitively to environmental changes which sometimes cannot be registered by other research methods. Therefore, it is necessary to observe regularly the phytoplankton of this unique lake.

As Lake Baikal is characterized by well-expressed spring maximum of phytoplankton, when the main mass of large-sized phytoplankton is formed (Antipova, 1963; Popovskaya, 1977; Popovskaya, 2000; Popovskaya *et al.*, 2001, Popovskaya, Genkal & Likhoshway, 2008), permanent regime observations were performed immediately after ice break on the lake.

The aim of this work was to study spring phytoplankton of the Lake Baikal pelagic area by data of expeditions around Lake Baikal in 2007-2011 with their compilation with perennial data of 1964-1990.

It is shown that in 2007-2011, diatoms, like during the previous 50-years period, made 80-90 % from total phytoplankton abundance and biomass. Phytoplankton development level and composition of dominant species during the years of studies was not identical. E.g., in 2007, at major part of lake open water, there was abundant development of an endemic species *Aulacoseira baicalensis* (K. Meyer) Simonsen, this year can be considered as a high-productive *Melosira* (*Aulacoseira*) year (Popovskaya *et al.*, 2007). During the next 2008, there dominated in Southern and Central Baikal *Synedra acus* subsp. *radians* (Kützting) Skabitchevsky, its biomass also reached values characteristic for high-productive years. It was possible to observe similar alternation of dominant species as well during previous years. E.g., in 1982, there developed in Lake Baikal abundantly *A. baicalensis*, and 1983 was high-productive for *Synedra*. In 2009-2011, the level of phytoplankton development was slightly lower. These years were characterized in different pelagic area sites as medium-high-productive or medium-low-productive, but the dominant species was as well *S. acus* subsp. *radians* accompanied by *A. baicalensis*, *Stephanodiscus meyeri* Genkal & Popovskaya, *Aulacoseira islandica* (O. Müller) Simonsen and Chrysophyta, mainly *Dinobryon cylindricum* Imhof.

The comparison of phytoplankton abundance and biomass in 2007-2011 and in 1964-1990 showed that they meet the scale of perennial oscillations with a species block characteristic for this period. Consequently, the primary part of Lake Baikal ecosystem exists in the common regime.

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