There is substantial evidence that climate warming is driving changes in zooplankton. Freshwater zooplankton is recognized as sensitive indicator of environmental changes. Climate change has already altered abundance, species composition, structure of freshwater zooplankton and the timing of seasonal behavior, events and life-history parameters. In recent decades, due to climate warming, the ice-free period, the «biological summer» period, the river runoff have increased in Lake Onego. We have identified 5 phenological phases (winter, spring, early summer, late summer, autumn) on the base of the ratio of the main taxonomic groups of zooplankton using discriminant analysis. The date of the beginning and the end of each phenophase, the duration of the phenological phases were determined. Comparison of long-term data with current data showed a phenological phases shifts. Early summer phenophase has occurred about 30 days earlier. Autumn phenophase has occurred on average 23 days earlier. Knowledge of phenology zooplankton in Petrozavodsk bay of Lake Onego makes it possible to detail the mechanisms of its functioning and to describe the response to climate change.

**Keywords:** phenology, phenological phase, freshwater zooplankton, Onego

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degradable organic matter introduced by river waters. In our view, phenological shift in the community occurred due to an increase in temperature and the abundance of saprophytic bacteria.

In the first half of August 2014–2017 the community structure corresponded to the autumn phenophase. Autumn phenophase has occurred on average 23 days earlier than it did in 1988-2011. Summer temperatures in 2014-2017 corresponded to long-term average temperatures. The values of bacterioplankton, saprophytic bacteria, and the content of chlorophyll “a” in the 2000s markedly decreased compared to the 1990s due to a decrease in the anthropogenic load in the bay. Only the total abundance of zooplankton, the abundance of cladoceran and the abundance rotifera were significantly lower than the long-term average values. From our point of view, the shift in autumn phenophase may be associated with a decrease in the level of trophy and / or a shift in the date of the beginning of the late summer phenophase. Further research is required to provide evidence. Dates of other phenological phases have not changed compared to 1988-2011.

Knowledge of phenology zooplankton in Petrozavodsk bay of Lake Onego makes it possible to detail the mechanisms of its functioning and to describe the response to climate change.

The study was conducted in accordance with a state assignment given to the Karelian Research Center of the Russian Academy of Sciences (Northern Water Problems Institute, KRC, RAS).

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