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## STRUCTURE AND DYNAMICS OF ZOOPLANKTON COMMUNITIES IN KARAKALPAKSTAN

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### Abstract

The peculiarity of this study is that hydro biological monitoring of lakes was carried out against the background of their progressive shallowing, which was accompanied by a reduction in the lakes' water area and an accelerated increase in water mineralization.

**Keywords:** zooplankton, crustaceans, rotifers, halophilic Saikul, Rotifera, Cladocera, Copepoda,

### Methods

Material collected starting from October In 2021-2023. And then three times a year (April, June, October). A total of 55 quantitative samples were taken. Hydro biological samples were collected using a small conical Djedi net, 15 cm in diameter (gas No. 76), filtering 50 liters of water through the opening of the net [Salazkin A.A. et al., 1984]; samples in a volume of 50 ml were fixed with 4% formalin or 70% alcohol and transported to the laboratory, where three groups of zooplankton (Copepoda, Rotifera, Cladocera) were determined using a binocular universal research microscope “Optika microscopes” made in Italy using generally accepted determinants [Kutikova 1970, Monchenko, 1974].

In 2021-2023 Lake Saikul was explored. During the study period, 49 species of planktonic animals were recorded in the lake. Among them, 21 rotifers, 17



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cladocerans, and 11 copepods were discovered. *Brachionus quadridentatus* Nerman, *Keratella quadrata*, Mill, *Daphnia longispina* Mill, *Ceriodaphia reticulata*, *Diaphanosoma mongolianum*, *Cyclops visinus*, *Termocyclops vermifer*, *Arctodiaptomus salinus*, *Termocyclops taihokuensis* dominated. Zooplankton is represented by widespread species, including heat-loving ones: *Keratella tropica*, *Keratella valga*, *Diaphanosoma sarsii*, *Moua veismanni*, *Macrotrix spinoza*, *Macrotrix odioza*. The lakes are brackish and there are halophilic species: *Brachionus plicatilis*, *Hexarthra oxyuris*, *Moina salina*, *Arctodiaptomus salinus*. A certain seasonality was observed in the development of zooplankton. The smallest number of plankton species was recorded in winter. Winter zooplankton is represented by cold-loving species *Keratella quadrata*, *Polyarthra minor*, *Asplanchna priodonta*, *Pilinia longiseta*, *Notolhca acuninata*, *Daphnia longispina*, *Ceriodaphnia pulchella*, *Bosmina longirostris*, *Chydorus* sp., *Cyclops visinus*, *Eucyclops serrulatus*.

During the period of spring warming of water, the diversity of zooplankton increases from 18-20 to 32-40 species, and in mid-May to 44, mainly due to rotifers. In spring, the following forms are widespread: *Asplanchna priodonta*, *Brachionus angularus*, *Brachionus quadridentatus*, *Brachionus benini*, *Brachionus calyciflorus*, *Keratella quadrata*, *Keratella tropica*, *Keratella cochiearus*, *Suncheata* sp., *Polyarthra minor*, *Pilinia longiseta*, *Daphnia longispina*, *Moina veismanni*, *Moina weberi* Richard, *Ceriodaphnia reticulata*, *Diaphanosoma mongolianum*, *Bosmina longirostris*, and *Cyclops visinus*.

The obtained hydro biological information from the studied lakes of the Aral Sea region indicates that anthropogenic factors, especially pollution, cause changes in the composition, structure and ecological state of aquatic biocenoses of varying depths.

From a scientific and practical point of view, research into the current state of the fauna of natural lakes, distribution and distribution, determination of the species composition and ecological characteristics of hydrobionts and the structure of ichthyocenoses of lakes; identifying the patterns of formation of biodiversity of aquatic biocenoses (plankton, zoobenthos), determining the abundance and biomass of plankton and benthofauna in the reservoirs of the Republic of Karakalpakstan made it possible, to a certain extent, to fill the existing information gap and assess



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the current ecological state of aquatic organisms in the system of the hydrographic network of reservoirs of Karakalpakstan.

Thus, studies have shown that in the summer, the abundance of zooplankton in shallow and small-area Saikul lakes was most often at a low level, which may be due to both their strong overgrowth and high-water temperatures.

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