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ON THE CHARACTERISTICS OF THE ICHTYOFAUNA SPECIES DIVERSITY IN THE PIVDENNE RESERVOIR

Abstract. *The qualitative and quantitative composition of Pivdenne reservoir ichthyofauna was studied. It was established that at the current stage, the ichthyofauna of this reservoir includes 9 families, of which cyprinoid fishes dominate. The obtained data indicate that the species diversity of the reservoir is quite significant, but there is a gradual decrease in native species and an increase in introduced and alien acclimatized species. It should be noted that representatives of low-value and non-industrial species have recently begun to increase their number at the expense of gobies and bitterlings.*

Key words: *ichthyofauna, reservoir, species composition, native species, alien species.*

Topicality of the problem. Most of the reservoirs in the mouths of Ukrainian rivers were built relatively recently, so formation of ichthyofauna in them has not been completed. However, there is already an obvious tendency to crowd out valuable species of fish: pike, zander, catfish, wild carp (sazan), ide, mudfish with low valued ones (perch, gobies, roach, crucian carp, etc.) [2,3].

This process is intensified by unfavorable conditions for spawning in reservoirs of such fishes as sazan, pike, and sabrefish. In addition, great damage to the fish stock is caused by the mass reproduction of blue-green algae in reservoirs, which is observed in summer months due to overheating of water under insufficient rate of water exchange. Therefore, the issue of ichthyofauna diversity in Pivdenne reservoir requires a more detailed study, as the species composition is constantly changing.

Objective: characterizing species composition of the Pivdenne reservoir and determining the main measures to improve the state of the reservoir's ichthyofauna.

Materials and methods of researches. The research was carried out in the water area of the Pivdenne reservoir, located in the southwestern part of the Dnipropetrovsk region. Studied were: species composition, numerical indicators of the main groups of hydrobionts, including ichthyofauna. The work uses ichthyological material collected according to generally accepted methods. To determine the species composition, distribution of fish, concentration of nonmigratory ichthyofauna, young fish fingering trawl, as well as pond nets, were used. Materials collected and processed in accordance with the "Methodology for Collection and Processing of Ichthyological and Hydrobiological Materials for the Purpose of Determining Limits of Industrial Extraction of Fish from Large Reservoirs and Estuaries of Ukraine", as well as other methodological developments and manuals [1].

Results of researches and their discussion Formation fish population of Pivdenne reservoir, as an artificially created water ecosystem, took place quite dynamically in several periods. At the construction site of this reservoir there was a ravine that was periodically filled with water (an unnamed temporary watercourse). There was no non-migratory ichthyological complex, so the fish fauna was initially formed at the expense of Kakhovske reservoir ichthyofauna (breeders, spawn and juveniles of various fish species through the Dnipro-Kryvyi Rih Canal) [4].

According to our research, ichthyofauna of Pivdenne reservoir is systematically divided into 9 families. Cyprinidae family (cyprinoid fishes) is dominant - 13 species, representatives of the Gobiidae family (gobies) including 6 species is in second place. Percidae (perch) include 2 species, Clupeidae (herrings), Esocidae (pikes), Cobitidae (true loaches), Siluridae (sheatfishes), Atherinidae (hardyheads), Syngnathidae (pipefishes), Centrarchidae (sunfishes) - 1 species each.

Currently, in the water area of the reservoir there are no species of aquatic plants and animals and endemic species (including fish) listed in the Red Book of Ukraine and the Red Book of the Dnipropetrovsk region

There are 23 species (79.3% of the modern species composition) based on the origin of the representatives of the aquatic ichthyological complex. Adventitious (alien) species include 6 species (20.7% of the species composition).

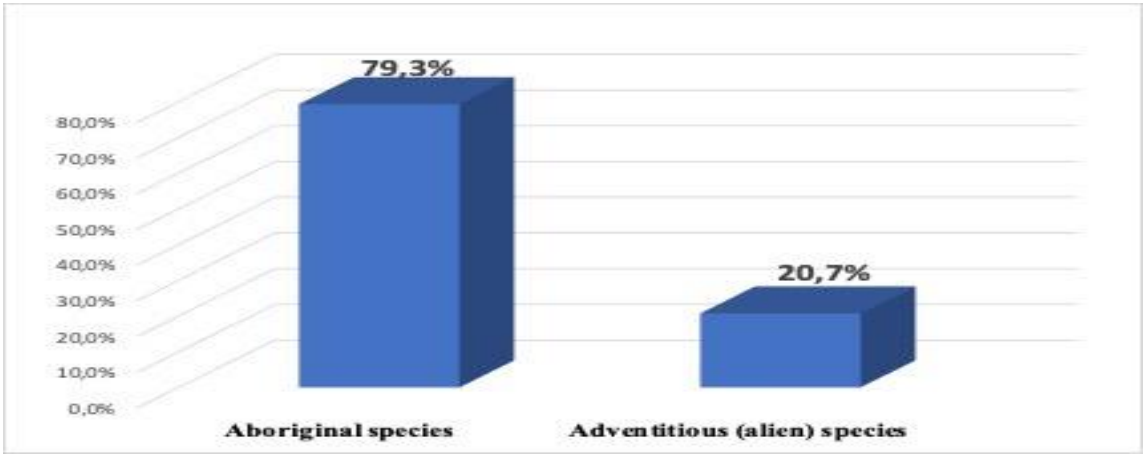

Fig.1 Representatives of the aquatic ichthyological complex

Silver carp, bighead, grass carp are objects of biomelioration, they are introduced regularly. Stone morocos, sunfish and spot-tail pinfish have passed the stage of full acclimatization and are currently effectively and fully reproduce themselves in the reservoir. . These species are already common and widespread in the Dnipro basin, in particular in Dniprovske and Kakhovske reservoirs.

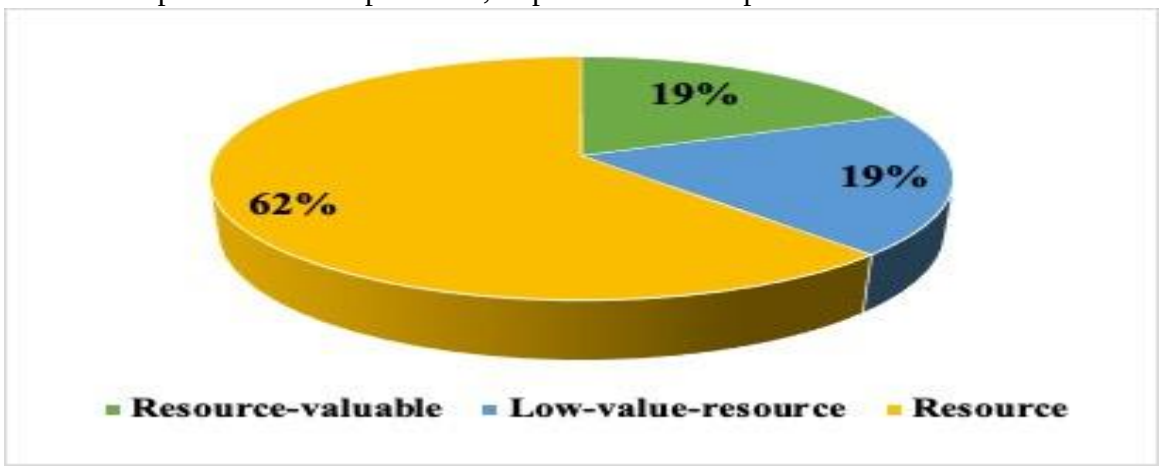

Fig.2 Resource species of Pivdenne reservoir ichthyofauna

The resource ichthyological complex of Pivdenne Reservoir includes 16 species, of which 3 species (bream, carp, zander) belong to the resource-valuable category, 10 species (pike, grass carp,

silver carp, bighead, roach, spot-tail pinfish, rudd, silver bream, catfish, perch) belong to resource-rich ones, 3 species (ruff, bleak and clupeonella) belong to low-value-resource ones, 13 species belong to non-resource ones.

The state of natural reproduction of most species that simultaneously spawn in shallow waters (most phytophilous species, which are background industrial species) is quite unstable and has a significant share of anthropogenic dependence. Accordingly, based on indicators of the number of young fishes, the overall level of natural reproduction in Pivdenne reservoir is unsatisfactory.

The peak of water level fluctuation and water intake in Pivdenne reservoir falls on the spring and summer periods, which are crucial for the process of effective reproduction of fish species, as well as other hydrobionts. Therefore, the level of natural reproduction of fish of the aboriginal ichthyological complex in Pivdenne reservoir is characterized as unfavorable. The conditions for fish-growing period (year-olds), due to water level fluctuations in the summer period and a decrease in the production of foraging hydrobionts, are also not favorable, therefore there is a need to further study this issue and find ways to overcome the adverse effects of factors.

Conclusions. Twenty nine (29) species of fish families were noted in the ichthyological complex of Pivdenne reservoir: Cyprinidae, Gobiidae, Percidae, Clupeidae, Esocidae, Cobitidae, Siluridae, Atherinidae, Syngnathidae, Centrarchidae.

In general, the basis of the number of groups during the research was short-cycle coastal (bitterlings) and pelagic (silverside) species, their share in the total number is 52.6%.

By origin, representatives of the aquatic ichthyological complex account for 79.3% of the modern species composition, while adventive (alien) species make up 20.7% of the species composition. Introduced species are silver carp, bighead, grass carp. Alien species include stone morocos, sunfish and spot-tail pinfish have passed the stage of full acclimatization and are currently effectively and currently they fully reproduce themselves in the reservoir.

Thus, it should be noted that the process of natural reproduction and further development of non-migratory fish complex in Pivdenne reservoir is in a dynamic state, although quantitative indicators of coastal fish communities testify to the tense conditions of reproduction and growing period of young fishes.

Taking into account the data presented above, it is necessary to continue research to be used as a basis for taking required measures on rational use of aquatic biological resources, provided that their biodiversity is preserved.

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