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DIRECTED AND SPONTANEOUS FORMATION OF ICHTHYOFAUNA IN RESERVOIRS

Nurmatova Rukhsora Utkir kizi
Student of branch of Astrakhan State Technical University in Tashkent region

Annotation: *The targeted formation of the ichthyofauna of reservoirs includes the introduction, acclimatization and breeding of fish. These activities are carried out with the aim of enriching the species composition and increasing the fish productivity of reservoirs.*

The spontaneous formation of ichthyofauna occurs under the influence of natural processes, such as migration and settlement of fish, as well as interactions between species. This process may be the result of the unintentional or accidental introduction of new species that adapt to new conditions and begin to reproduce successfully.

After the reservoir is filled with water, the ichthyofauna can form spontaneously. Representatives of reservoirs are fish from the rivers in which they are created, as well as from tributaries, streams and floodplain lakes that fall into the flood zone. Such formation of ichthyofauna can lead to different results.

Thus, if the reservoir turns out to have low flow, then rheophilic fish (anadromous and semi-anadromous) will move to sections of the river above or below the water backwater zone in search of favorable conditions for reproduction. Aquatic fish such as bream, carp, pike, roach, crucian carp, on the contrary, will begin to concentrate in this reservoir, since it will have good conditions for feeding and reproduction.

During the spontaneous formation of the ichthyofauna of reservoirs, usually ruffe, roach, perch and other low-value fish, unpretentious to environmental conditions, outnumber carp, bream, pike perch and other valuable fish species, especially if these valuable fish were few in the river before the formation of the reservoir.

Good indicators can be obtained through targeted formation of the ichthyofauna of reservoirs.

To do this, they first study the technical design and documentation for research work, which makes it possible to establish the future hydrological regime of the reservoir, depths, soils, water quality, distribution of plant substrate, and food supply.

Then the composition of commercial fish in this reservoir is outlined and the percentage ratio between their individual species is determined in such a way as to make fuller use of its food resources and obtain the most valuable fish products.

At the same time, the species composition and biological features of the local river ichthyofauna are studied. When it is determined that the valuable fish species that are expected to populate the reservoir are present in the future flooding zone, measures are taken to improve their protection.

At the same time, intensive fishing of low-value fish is carried out. In the absence of any valuable fish that should be included in the intended composition of the ichthyofauna, they are imported after filling the reservoir from other reservoirs.

In the directed formation of the ichthyofauna of reservoirs, it is necessary to know that in the process of populating it with commercial fish, their natural reproduction and feeding in the first 2-3 years after settlement is important.

However, the exploitation of the reservoir for energy and irrigation purposes determines the variability of its level regime, which creates significant difficulties for the formation of fish stocks.

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Usually, during the spring flood period, reservoirs are filled with water to the maximum level, and then throughout the year it is processed with varying intensity in different seasons of the year.

A sharp decrease in the reservoir level in the spring leads to the drying of shallow waters where the spawning grounds of phytophilous fish are located, and the area of the coastal zone, the place where juveniles develop, is also reduced. Therefore, it is necessary to regulate the water level in reservoirs:

1. In the spring, ensure a constant water level during fish spawning or its gradual rise.

2. In summer, the water level must be lowered by 1-1.5 m to free the coastal zone from water and to form vegetation cover in the drained areas - a substrate for lithophilous fish.

3. It is advisable to start lowering the level in winter before freeze-up, so that the fish leave the shallow water areas of the reservoir for the deep-water ones.

The targeted formation of ichthyofauna is also achieved through the acclimatization of valuable species of fish and food invertebrates. Thus, in the Novosibirsk Reservoir, acclimatized bream and pike perch account for more than half of the catches.

In the southern regions of the country, good results are achieved by acclimatized herbivorous fish, especially silver carp, which is a good bio reclamation agent.

Artificial reproduction of fish is also an important way of forming ichthyofauna in reservoirs.

Enterprises for the reproduction of fish stocks raise juveniles of valuable fish species and release them into reservoirs to preserve and increase their commercial stocks.

Based on the nature of the technology, these enterprises are divided into fish hatcheries, fish hatcheries, water storage facilities, and commercial farms.

Among the valuable species of aquatic fish, from which the ichthyofauna of reservoirs is formed, objects of artificial reproduction are carp, carp, bream, pike perch, herbivorous fish, sterlet, bester, pike, and salmon. NVHs are located near reservoirs and are called coastal ones. They come in 3 types:

1. The biotechnical process involves the creation of conditions close to natural for fish reproduction;

2. Biotechnology is based on artificial production of reproductive products from producers, insemination and incubation of eggs in machines;

3. The technology of artificial reproduction of fish has elements of both the first and second types.

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