

New Information on the Species Composition of the Fishes of Lake Khadicha, Bukhara Region

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Abstract

The article established for the first time that 16 species of fish live in Lake Khadicha, located in the Bukhara region. The names of the identified fish species are given in the table and compared.

Keywords: Uzbekistan, Navoi, Zarafshan, Kashkadarya, Amudarya Khadycha, Kumsultan, Ichthyological, Medicine, Amu Karakul Amu-Bukhara.

Relevance of the topic. In order to achieve sustainable development, a balanced and positive change of political, economic, social and ecological stability factors in any country or society is required at the same time. In the Republic of Uzbekistan, economic development, financial development and prevention of environmental degradation at the global level, issues of preventing the occurrence of environmental disasters in nature, ensure the process of sustainable development in society.

The rational use of water resources, the development of fisheries from them, and the supply of dietary meat products to our people are among the urgent problems that await their solution. According to medical standards, a person should eat 12-14 kg of fish or up to 25 kg of fish products per year. This indicator currently does not exceed 0.1 - 0.2 kg. If 10-12 feed units are used to grow beef, 6 feed units to grow 1 kg of mutton, then 3.4 kg of feed units are required to grow 1 kg of fish meat.

Material and methodology. The process of collecting material for the study of fishes from Lake Khadycha was carried out during 2018-2023. Fishing was carried out at different points of the Khadicha lake basin. Fish samples were taken in field conditions with mesh nets of different sizes (35, 45, 55, 65 mm). For catching small fish, a net with a mesh size of 15-30 mm, a bredden net with a mesh size of 8-10 mm, a composite net and fishing rods were used. Caught fish were fixed with 4% formalin. All indicators were carried out according to the method and indicators of ichthyological studies (Kotlyar O.A., Mirabdullaev I.M., etc.) specified in the literature [2; s. 3-180, 3; 3-107-b].

Since 1950, there was a need to take water from the Amudarya due to problems in supplying the cultivated fields of the Bukhara region with water from the Zarafshan river. Waters of the Amudarya were connected to the Zarafshan River through the Amu-Karakol and Amu-Bukhara canals to irrigate cultivated fields, and the regional irrigation networks began to operate as a completely new system. Through the construction of multi-level water pumping stations, water distributors, there were fundamental changes in the water supply of the lower regions of the

Zarafshan River in the Bukhara region and Navoi regions. together with subspecies, 45 species, including 16 species of fish, were found in Khadicha Lake [1; 44-49 p].

Comparing the 16 types of fish mentioned above with the results of our observations, we did not find 6 types of fish in Khadichha Lake of Bukhara region, which indicates that the information in the literature is partially outdated. These are Striped carp - *Alburnoides taeniatus*, Samarkand carp - *Varicorhinus heratensis steindachneri*, Eastern carp - *Alburnoides bipunctatus eichwaldi*, Eastern white carp - *Abramis brama orientalis*, White carp - *Ctenopharyngodon idella*, Amudarya naked fish - *Nemacheilus oxianus*.

Fish and other hydrobiont organisms of the lakes of Khadichha Lake area, where research is being conducted M.A. Abdullaev (1969), Dj.U. Urchinov (1989) D.S. Niyazov (2011), G'.M. Sayfullaev (1999), A.R. Partially studied by Kuzmetovlar (2019). Today, the hydrobiology of the lake requires an in-depth study.

Lake Khadichha is one of the abandoned lakes in the Bukhara region, located in the south-east of the region. This lake is the largest lake in the Qarovulbazar oasis. Lake Khadija is located on the right bank of the Amu-Bukhara Motor Canal (ABMK) near the Havana bridge (Havana most). Khadichha lake was created in the place of ancient valleys (deep depressions) of the Kashkadarya basin. Lake Khadicha is separated from ABMK by a 50-100 m wide road. But the water of ABMK does not fall into Khadicha Lake.

The morphometric data of the lake are as follows:

- The length of the lake is 18-20 km;
- The widest part is 8-10 km;
- Water capacity 150 mln/m³;
- The greatest depth is 10.8 meters (122.5 million/m³);
- Average depth is 4.6 meters (57.5 million/m³);
- The coastal circumference of the lake is 18.3 km.

Water supply of the lake. The water source of Lake Khadichha is mainly the Karshi collector (flowing from the territory of Kashkadarya region). Water comes through 5 pipes with a diameter of 1 meter. However, the amount of water poured into the lake from this collector is not evenly distributed throughout the year. Oil and gas drilling is carried out 10-15 km from the Khadicha Lake area, and a collector formed from waste water of an oil refinery at a distance of 50-65 km also discharges its water into a separate ditch. The water from this ditch flows into Kumsultan lake.

As a result of our scientific research and observations, 16 species of fish were found in Khadicha lake in Bukhara region. (Table 1)

Species composition of fish in Lake Khadycha, Bukhara region (table 1)

№	Fish species	Devkhana lake Tashov H.M (2021)	Karakyr lake Qabilov A.M (2020)	Khadicha lake Rakhimov J.R (2023)
1	<i>Pseudoscaphirychus Kaufman</i>	-	-	-
2	<i>Rutilus rutilus aralensis (Berg)</i>	-	+	+
3	<i>Aspiolucius esocinus</i>	-	+	+
4	<i>Varicorhinus heratensis steindachneri</i>	-	-	-
5	<i>Rutilus rutilus aralensis</i>	+		+
6	<i>Aspiolucius esocinus</i>	-	-	-

7	<i>Gobio lepidolaemus</i>	+	+	+
8	<i>Barbus capito conocephalus</i>	+	-	+
9	<i>Chalcalburnus chalcoides</i>	+	+	+
10	<i>Alburnoides holciki</i>	-	-	-
11	<i>Alburnoides bipunctatuseichwaldi</i>	-	-	-
12	<i>Alburnoides taeniatus</i>	-	-	-
13	<i>Bramis brama</i>	+	-	+
14	<i>Carassius gibelio</i>	+	+	+
15	<i>Cyprius carpio</i>	+	+	+
16	<i>Nemachilus stoliezkai</i>	-	-	-
17	<i>Pungitius Platydaster</i>	-	-	-
18	<i>Silurus glanis</i>	+	+	+
19	<i>Sander lucioperca</i>	+	+	+
20	<i>Gambusia holbrooki</i>	+	-	+
21	<i>Gambusia affinis</i>	-	+	+
22	<i>Ctenopharyngodon idella</i>	-	+	-
23	<i>Hypophthalmichthys molitrix</i>	+	+	+
24	<i>Pseudorasbora parva</i>	+	-	+
25	<i>Leuciscus lehmanni</i>	-	-	-
26	<i>Oxunoemacheilus oxianus</i>	-	-	-
27	<i>Noemacheilus malapteruras longicauda</i>	+	-	+
	Жами	13	11	16

Fish and fish products are considered high-quality human nutrition. In order to provide the population with fish, reservoirs, lakes, rivers and artificial fish breeding ponds need to be brought to a rational level. Therefore, fish breeding in our republic requires a deep analysis of its quality and quantity indicators, biology, productivity.

To sum up, 16 types of fish were recorded today in Khadicha lake of Bukhara region. Among these fish species, there are industrially important fish species, khashaki fish species, and species included in the "Red Book" of the Republic of Uzbekistan.

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