TO THE 80TH ANNIVERSARY OF THE OZERNOVSKY OBSERVATION STATION OF KAMCHATNIRO ON THE KURILE LAKE

This issue of the magazine is thematic. It is dedicated to the 80th anniversary of the KamchatNIRO scientific observation station on the Kurile Lake – the cradle of sockeye salmon (*Oncorhynchus nerka*) in the Ozernaya River basin, the biggest stock of this species of Pacific salmon in Asia.

Sockeye salmon is one of the most valuable and currency-profitable species of Pacific salmon. In 2001–2021 coastal catches of the Ozernaya River sockeye salmon were averaged 19.3 thousand tons per year, what was 62.3% of the catch of this species in Kamchatka.

First data on the biology and ecology of sockeye salmon stock of the Ozernaya River were obtained during expeditions organized in September–November 1932 and in the spring and autumn of 1933 by Faina Vladimirovna Krogius and Evgeny Mikhailovich Krokhin to the Kurile Lake. The results of these expeditions were published in the fourth edition of the Pacific Committee Proceedings in 1937.

The content of the Proceedings included a large essay about biology of sockeye salmon and conditions of its reproduction in the Kurile Lake (*Krokhin E.M., Krogius F.V.* 1937. Essay on the Kurile Lake and biology of sockeye salmon (*Oncorhychus nerka*) in its basin // Proceedings of the Pacific Committee. Issue IV. M.-L.: Academy of Sciences of the USSR. Pp. 3–165.). It aslo included particular articles with the first data on the species composition, distribution and quantitative evaluation of zooplankton (*Akatova N.A.* 1937. To the knowledge about zooplankton of the Kurile Lake // Proceedings of the Pacific Committee. Issue IV. M.-L.: Academy of Sciences USSR. P. 167–176) and phytoplankton (*Voronikhin N.N.* 1937. Phytoplankton of the Kurile Lake // Proceedings of the Pacific Committee. Issue IV. M.-L.: Academy of Sciences of the USSR. P. 177–188) of the Kurile Lake.

"It was impossible, however, to find out the reasons for the fluctuations in the efficiency of the natural reproduction of sockeye salmon and to characterize the dynamics of their numbers only through expeditionary research to obtain materials for making a forecast" (*Lagunov I.I.* 1968. Review of scientific fisheries research conducted in Kamchatka during the years of Soviet period // Izvestiya TINRO, vol. 64, pp. 3–13). Therefore, in 1940, a fence for counting spawners (RUZ) to evaluate spawnin escapement from the Ozernaya River to the lake was built approximately in 9–12 km from the river source. It was mounted annually in vicinity of Kutkh' Baty, and in 1967 it was moved upper the stream, no far from the source of the river.

A stationary observation station was organized in 1941. By Order No. 21 issued in March 14 for the Kamchatka station of VNIRO (now the Kamchatka Branch of VNIRO (KamchatNIRO)) the fish breeding and biological laboratory "Kurilskaya" (now the Ozernovsky observation station) was organized on the shore of the Kurile Lake not far from the river source (Sockeye salmon of the Kurile Lake – a reference guide for sockeye salmon lovers. 2010. Petropavlovsk-Kamchatsky: Novaya Kniga. 20 p.).

Initially, the study of sockeye salmon implied counting the fish entered the laketo spaw, collecting the data on the biology of these fish (body length and weight, sex composition, fecundity, age), assessment of the quality of downstream juveniles, smolts (body length, weight, age), survival of eggs and larvae in nests. In addition, there were researches of the condition of juvenile sockeye salmon forage base in the lake, collecting data on the abundance and biomass of zooplankton, the amount of the dominant phytoplankton diatom melosira, as well on the thermal regime of the lake.

Over time, the range of the research work has expanded. In the late 1970s, the vertical and horizontal distribution of sockeye salmon juveniles in the pelagial of the lake was studied, and karyological studies of sockeye salmon were started, in the 1980s – population-genetic, and from 2003 – virological and parasitological ones.

In 1980, a comprehensive monitoring of the lake ecosystem was organized, which included regular collecting data on the thermal and hydrochemical regime of the lake, bacterio-, phyto- and zooplankton, primary production of phytoplankton and bacterial destruction, hydrometeorological observations at an equipped site and a gauging station. Also, much attention was paid to the use of hydroacoustic methods, which have now reached a new level, which makes it possible to count spawning fish and estimate the number of juveniles feeding in the lake.

Since 2016, the research work in the Kurile Lake basin has become seasonal and is currently carried out only in the summer.

During 80 years of the complex studies of sockeye salmon stock of the Ozernaya River has accumulated a gigantic pool of various data. A part has been published, but most still remain in reports, in diaries and journals of regular observations, or are lost in the flow of time. So, for example, it happened with the results of counting individuals of the other Pacific salmon species at RUZ.

This issue contains, among other things, the first and only results of studies of littoral plankton, the first data on the feeding of juvenile sockeye salmon in the littoral, as well as the first data on the benthos of the littoral biotopes of the Kurile Lake.

We tried to save author's style and structure of the texts as much as possible in accordance with the level of knowledge and views on the subject of the time of research.

My deepest gratitude to all colleagues who selflessly collected invaluable data on the Kurile Lake for many years.

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