Change in Number of Sakhalin-Kuril Pacific Salmon in Connection with Hatchery Development

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For 50 years large changes in number of pink salmon reproducing in rivers of the Sakhalin-Kuril region have taken place. After the period of relatively stable reproduction when annual catches averaged 10-20 thousands tons between1946-1970, considerable population growth occurred and, as a consequence, growth of catches. First peak of catches was observed in the second half of the 1970s. A second peak occurred at the end of the 1980s and beginning of the 1990s. For the period 1991-1995, pink salmon annual catch averaged 76 thousands tons. Changes of pink salmon catches differ between areas of the Sakhalin region. In north-western and north-eastern parts of the Sakhalin coast, in Terpenie Gulf and at Kunashir Island catch has increased 2-3 times, in south-eastern Sakhalin coast, Aniva Bay and at Iturup Island 6-7 times, while in south-western part of Sakhalin catches, in fact, did not change and even decreased in comparison with the period 1965-1975.

We may suppose that change of stocks can be due as to general ecological causes and to development of fish culture. A six-fold times increase of catches was registered in regions possessing high-capacity hatcheries, and at Iturup Island catches increased 7-fold.

Construction of hatcheries, use of additional feeding for juveniles and optimum means for their release in natural waters favoured considerable growth of pink salmon numbers. Pink fishing is concentrated in places where hatcheries are located. Perfection of artificial propagation biotechnique caused the increase of return rates for pink salmon.

However, chum propagation has not led to considerable stock increase of this species up to the present time.