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**Expeditional Report on the
Programme of Research Scientific
Expeditional Work on Investigation of
Salmons Stock Localization in the
Pacific Ocean in April-June 1995**

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Expeditional report
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ESSAY

Over the period of SRTM "Nazarovsk" marine expedition to the Northwest Pacific Ocean and West Bering Sea from 1 of June to 18 of July 1995 the trials of the troll and the jiggers for salmon catching for the purpose of tagging were conducted. It showed ineffectivity of these tool application from the side of SRTM (Russian middle size trowl) type vessels. Standart hydrological survey in West Bering Sea was made too.

INTRODUCTION

Expeditional work in Northwest Pacific Ocean and West Bering Sea were carried out following to the programme of KamchatNIRO (theme 1, stage 1.02.01) and the agreement between "Fish Rein Company" and KamchatNIRO for the purpose to reseive information, conserning locations and migrations of different pacific salmons stocks in spring-summer period 1995. These work was carried out in the bounds of international assistance programme.

1. The basis of selected theme of investigation.

The basis of conducted investigations was the intention of assistance, signed by participants of Russian-American Governmental Consultative Fisheries Commetee in October 1993 in Seattle and in October 1994 in Vladivostok (NPAFC No. 99).

Before 1991 the investigations were carried out for the purpose to estimate driftern oceanic fisheries influence on the stock abundance of salmons. In 1991 the fisheries was prohibited, however all countries-participants of investigations staid interested in proseedng of the research programme. The importance of next work is explained by the changes, that now take place in north Pacific ichthyocenosis and obtained data consern the minimaly investigated life period in salmons. In two

resent decades, beside fisheries prohibition, some changes followed in hatchery salmon reproduction. Only Japanese hatchery reared and released chum number increased from 3 miln. sampl. in 1970 to 62 miln. sampl. in 1990, that had an effect to the condition of natural reproduction of salmons in Pacific ocean.

In carried out, before 1991 works on analising of tagging results in salmons were discribed the changes of distribution boundaries in different salmon stocks and their location places in the ocean. One of the possible explanation for it could be varing abundance in some stocks, that determins redislocation of forage areals. It was speculated, that location changes in stocks consequently could affect stocks productivity. It is especially important for Kamchatka region pink, Asiatic chum and sockeye of Bristol Bay. Thus, the importance of monitoring investigations appears undoubt.

One of effective methods to determin stock location and forage condition in the ocean is tagging during the period before anadromous migration in salmons.

In relation with foregoing, the main tasks of last marine expedition were :

- 1) to conduct salmons tagging from the troll and jiggers catches;
- 2) to make a sumpling of skales for local stocks differentiation;
- 3) to collect characterizing the forage conditions in the ocean materials.

The works were planed to conduct in April-August over the large aquatory to west from 180°.

2. A content and results of the expedition.

There are some terms for useful for the tagging individuals. The fish must be caught via the most sparing method with a preservation of maximal viability after the catch and safe scale

cover. Till nowadays the catch was carried by purse sein, caught salmons always met necessary requirements. Due to it was impossible during the expedition to use the sein for the purpose of catching for the tagging, hook mode fishing-tackle (troll and jiggers) were proposed. Hook mode fishing-tackle (плавной ярус), in accordance with available data, was effectively used by japanise scientists for analogical aims.

2.1. Catching of salmons by hook mode fishing-tackle.

To catch salmons for the purpose of tagging at the fishing desk along SRTM "Nazarovsk" left side were placed 13 uprights for the fastening of electronic rods (jiggers) - "Oilwind 03-08" made in Norway and "Boachellan" bobbins with mounted electronic control and three fishing-lines with up to 15 hooks with different baits could be placed in each of lines (pict.). The baits were artificial only - spoon-baits, imitators of squide, juveniles of fishes and etc.

The work on troll fishery technical mastering was started just after the vessel left the port in 01.06.95. Near the Kommander Islands during 5 days from 03.01 to 08.01 six troll catches of 4-12 hour duration were done. During the catch process 1-2 fishing lines 250-300 m in length were reliased, there were 15 hooks with different-size spoon-baits and squide imitators in each line. The hooks were connected from loose end with 2,5 m intervals. In 30-45 min intervals fishing-lines were pulled to a side to control the catch. During the very first attempts of troll catching it became clear, that even at the lowest speed of the vessel it was impossible to keep 1,5 knots, recommended for this fishing-tackle. Therefore the vessel firstly was started at lowest speed, then main engine was stoped and the vessel via inertia got 1-1,2 knots; lowest speed was turned on again when the vessel lost a control. In noted district no one attempt of catching was successful, no one salmon sample was caught, otherwise, located in this district driftern fishing-tier "Rubinoviy" caught daily more than 3 ton

of salmons by gill nets.

We made first attempt of salmons catching by jiggers. Due to inexpediency of vertical using of rods (usual position) it was disided to use rather light plummet to provide fishing-line with minimal angle to the water when drifting (left side to the wind) and to catch in water layer 0-10 m below the surfase. Three electronic rods were set, however due to the absence of technical documentation the rods weren't programed on discribed earlier method of catching, so we removed closer to the shore, where the depth was convinient for the common, vertical, using of jiggers for bottom fishing, then switched over the necessary method. For this purpose the vessel came to Shipunsky Cape , during the fishing technics mastering the pipe of high pressure, that supplies rod hydraulic mechanism with oil was damaged, since that the useing of rods became impossible.

Since 13.06 to 15.06 it was done one else attempt to catch the salmons by troll. During 3 days we carried out three catches as it was discribed earlier with same results, after that the work was over because of uneffectivity of fishing-tackle.

3. Supplementary work.

Originaly it was supposed to collect oceanography information, which enough completely characterizes hydrological and feeding conditions for salmons during the period of their prespawning migrations. However poor technical equipment at the vessel and, in the first place, the absence of hydrulogical winch didn't allow us to execute this section of the programme. We tried to adapt common chargo winch for the work with Melnikov trawl and mid midel of Jedy net, however the using of this winch led to the rope break. Beside it such mode of work was degerous for operator. In accordance with listened reasons from the very beginning of the expedition we had to refuse of hydrobiological observations. This observation consisted of sounding of 200m water layer by STD-1000 probe. Standard observations were

carried 18-29 of June with one week break at the middle of the schedul because of the vessel must leave for fresh water bunkering and one person of the stuff was seek. Collected during this period data were send to the institute for operative analysing of hydrobiological conditions of salmons migrations.