Northwest Atlantic Fisheries Organization

Serial No. N2999 **NAFO SCS Doc. 98/6**

SCIENTIFIC COUNCIL MEETING - JUNE 1998

RUSSIAN RESEARCH REPORT FOR 1997

PART I - AtlantNIRO Research by V. A. Rikhter and I. K. Sigaev
PART II - PINRO Research by A. A. Vaskov and B. I. Berenboim

PART I - RESEARCHES CARRIED OUT BY ATLANTNIRO IN NAFO SUBAREA 4 IN 1997

by

V. A. Rikhter and I. K. Sigaev

Atlantic Scientific Research Institute of Marine Fisheries and Oceanography
(AtlantNIRO), 5 Dm. Donskoy St., Kaliningrad, 236000 Russia

A. State of Fishery

In 1997 no silver hake fishery was carried out by Russia, therefore sampling from commercial catches was impossible.

As regards the prospects for 1999, the abundance of 1995, 1996 and 1997 year-classes estimated on the basis of the young fish trawling surveys, significantly exceeds the average level and allows to assume significant increase of commercial biomass in the above year. Therefore, in spite of the strict restriction of foreign fishery, hake catches per unit effort may be rather high at least in February-April.

B. Special researches

Environmental researches

In 1997 researches of hydrological conditions in Scotian Shelf area and adjacent waters were restricted to analysis of SST and water temperature according to the results of Candian-Russian survey of 0-group silver hake. In 1997 the process of water temperature increase in the area of Labrador current impact has continued. This

process was started in 1995 and was particularly apparent in 1996 when average monthly SST anomalies in Labrador and Newfoundland areas became positive for the first time since early 80s. Thus in 1996, SST increase for Labrador water mass in the area of Newfoundland and Labrador results in increase of the latter transport into the Scotian shelf area, where it occupies the intermediate cold layer. At the same time, the increase of warm slope water advection into the deepwater part of Scotian Shelf during summer and fall as compared to 1996 was observed. Near-bottom water was warmer and distributed over the larger area in 1997 as compared to 1996. Among the most important features of hydrological conditions in 1997 should be mentioned such as positive temperature anomalies exceeding 1°C in shallow area of Sable Island which may become one of the reasons of optimal conditions for hake spawning, eggs and larvae survival and occurence of anomalously abundant year-class of hake for the latest 16 years.

Biological researches

In October 1997 the trawling survey of 0-group silver hake was carried out aboard Canadian research vessel where two AtlantNIRO scientists were involved. According to preliminary estimation,1997 year-class was the most strong one for the whole period of observations, as well as 1981 year-class.

In general the article invited has been completed where long-term observations of environment, biology and abundance dynamics of Scotian silver hake are summarized. Plots of stock-recruitment relation of silver hake were analysed in 4 areas (4VWX, 5Y, 5Ze and 5Zw+6) aimed at the possibility to reveal the reference point of precautionary approach, such as $B_{lim.}$ Detailed description of the research is presented in appropriate scientific document.

Other researches

Some problems of ocean fisheries management in relation to development of precautionary approach strategy and definition of appropriate reference points were examined. Scientific document on that problem has been also prepared.

PART II - REPORT ON PINRO RESEARCH IN THE NAFO AREA IN 1997

by

A. A. Vaskov and B. I. Berenboim

Polar Research Institute of Marine Fisheries and Oceanography (PINRO)
6 Knipovich St., Murmansk, 183763, Russia

SUBAREAS 0 AND I

A. Status of the fisheries

No fishery was conducted off the Baffin Land and West Greenland.

B. Special Research Studies

No special environmental studies, including hydrographic and biological studies were performed.

SUBAREAS 2 AND 3

A. Status of Fisheries

Redfish. In 1997, the Russian fleet carried out the redfish fishery in the Div. 3N only. RTMS KV-7563 has caught 15 t from May, 22, to May, 30, i.e. per 8 days, four boat-days of which were fishing days. RTMS KV-7207 fished there from June, 02, to July, 23. The catch constituted 325 t per 48 days, average daily catch was 6.8 t. The largest catches, 20 t per a boat-day in average, were in the second ten days of July.

According to preliminary data, total redfish catch constituted 340 t.

Other species. No directed fishery for other species was conducted.

Northern shrimp. In 1997, the fishery for northern shrimp was conducted by Russian vessels on the Flemish Cap Bank from February to September. One vessel carried out fishery to May. In

May, two more Russian trawlers began to fish. Fishery for shrimp was carried out at depths 270-350 m, mainly, in the western part of the bank: in Subareas 3 and 4.

The basis of catches was males (71-82 %) with the length of carapace 9-25 mm. Length frequency of males consisted of two moda groups, 14 and 19 mm. Primary females were presented by specimens with 20-27 mm carapace and 24 mm moda, whereas the secondary ones - 21-31 mm carapace and 26 mm moda.

Main by-catch species during Russian shrimp fishery were young redfish, catfish and flatfishes (Table 1). Sometimes, capelin, Atlantic saury, eelpouds and Illex squid were in by-catches.

According to preliminary data for 1997 the shrimp catch taken by Russian vessels amounted to 1.090 t.

Table 1. By-catches during the Russian shrimp fishery on the Flemish Cap in May/June, 1997 (number/t of shrimp).

By-caught species	May		June	
	Subarea 3	Subarea 4	Subarea 3	Subarea 4
Redfish	50-60	65-70	70-80	80-100
Wolffish	5-7	8-10	9-12	10-15
Eelpout	3-5	7-8	7-10	9-12
Halibut	1-2	1-3	2-4	3-4
Flounders	2-4	3-6	5-8	7-10
Rock grenadier	2-3	2-4	3-5	4-7

B. Special Research Studies.

No environmental and oceanographic studies were carried out.