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Review of status of fisheries and research carried out in Subarea 5 in 1964

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1. The following research documents relate to Subarea 5: Nos: 3, 5, 7, 9, 12, 13, 16, 18, 30, 34, 40, 48, 61, 65. Report of the Subcommittee on herring and other pelagic fish (Proceedings No. 1, Appendix 1).

2. Introduction

In 1964 the number of countries engaged in the fishery in Subarea 5 increased in comparison with 1963. However, 99% of the total catch in this area was taken by Canada, USSR and USA. The results of investigations were presented by Canada, USSR, USA, UK and Poland.

This report is based on the summary of research reports submitted by mentioned countries.

Preliminary catch data for 1964 are tabulated below:

Landings of main commercial species in Subarea 5 (thousand tons of fresh round fish)[1)]

Species	Canada		USSR		USA	
Years	1963	1964	1963	1964	1963	1964
Silver hake	-	-	107,400	167,308	42,000	39,479
Herring	-	636	97,329	130,723	66,552	27,976
Haddock	8,381	11,695	2,361	5,483	48,868	51,892
Cod	7,837	7,133	5,350	5,428	16,499	15,481
Flatfish	398	733	308	59	47,561	49,481
Redfish	20	56	1,086	445	8,871	7,812
Sea scallop	-	49,310	-	-	66,941	54,074
	5,943*	5,941*	-	-	8,100*	6,424*
Fish used for industrial purposes	-	-	-	-	41,414	56,130

* Weight of adductor muscle only

1) Doc. 7,9,12,13,16,18

Poland and the U.K. took small quantities of haddock and cod from the Georges Bank area (Docs. 13, 16).

3. Silver Hake

Landings of silver hake in Subarea 5 exceeded the landings of other species by 38% as compared with 1963. This is attributed to the increased catch of the USSR fleet. In January, February and March the Soviet stern trawlers fished the concentrations of silver hake on the northern slopes of Georges Bank. In April, May, June and July this fishery was carried out in the southwest and south area of Georges Bank whereas in August-September it shifted to the northwest slopes of the Bank. During October through December silver hake fishery was not carried out on Georges Bank.

The catches per hour by Soviet stern trawlers were: January 3.3 tons, February 3.0 tons, March 4.2 tons, April 4.6 tons, May 2.9 tons, June 2.9 tons, July 2.5-4.0 tons, August-September about 3.0 tons. The bulk of fish was constituted by 3-4 year olds (28-33 cm). The share of fish over 5 years was only 11%. This may be explained by high rate of natural mortality of silver hake over 4 years old (Doc. 18).

The United States silver hake fishery is conducted mostly in inshore waters. The 1964 average daily catch per vessel was 15.1 tons against 17.4 tons in 1963.

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The U.S. landings of silver hake for human consumption amounted to about 40,000 tons and for industrial purposes about 20,000 tons which was approximately 12,000 tons above the level of 1963. The main part of catches was consituted by fish 3-4 years old having a length between 25 and 38 cm (Doc. 9).

The Soviet research covered the studies of hydrological factors affecting the distribution of silver hake vertically and horizontally as well as time and location of pre-spawning concentrations.

There were 5,200 silver hake tagged, 55 tags were recovered.

The United States continued investigations into size-age composition of silver hake, catches statistics per unit effort with breaking down by depth zones and ships' tonnage. The selectivity of cod-ends with respect to silver hake was studied. (Doc. 61).

The U.S., Canada and the U.S.S.R. exchanged silver hake otoliths in an attempt to further ageing studies. The U.S. has been collecting large samples from fish of all sizes and areas in order to validate ageing procedures (Doc. 65).

4. Herring

In 1964 the USSR continued an adult herring fishery on Georges Bank. In contrast to the previous years this fishery was carried out only with trawls, mostly from medium trawlers. The catch per hour trawled increased to 1.94 tons against 0.79 tons in 1963. As a result in 1964 the USSR catch of adult herring exceeded the 1963 year catch by 33,000 tons. The increase in catches was due to the increased abundance of herring resulting from recruitment of 1960 rich year-class in the area of Georges Bank (this year-class contributed to 48% of the catch in July, 46% in August and 34% in September).

There is good evidence that the 1960 year-class will be dominant on Georges Bank in 1965.

The US landings of herring amounted to 26,244 tons. The bulk of fish was caught in inshore waters by means of purse seines, traps, weirs and other bottom fixed fishing gear. In this case evaluation of catch per unit effort presents considerable difficulties. The US catches included 72% of the 1962 year-class and 12% of the 1963 year-class. A comparatively low catch in the Gulf of Maine is evidently attributed to low availability. There are no data on Canadian herring fishery in Subarea 5.

Apart from determining size and age composition of catches and studying the distribution of herring in relation to environment the USSR conducted observations over spawning grounds in the north of Georges Bank. In yearly October, masses of eggs were discovered over an area of about 50 km square on the northern slopes of Georges Bank. In that area herring eggs were deposited in layers 0.5 to 4 cm thich on pebble, gravel and shelly grounds. Temperature ranged from 6^{o} - 12^{o} C.

The USA conducted studies of size and age composition of herring as well as herring larval studies in the offshore waters of Georges Bank and in the Gulf of Maine. Behaviour studies were being carried out to learn some of the responses of herring to variations in environmental conditions. There were performed serological and biochemical studies on herring with a view to identifying herring populations in the Gulf of Maine and Georges Bank.

Canada and Poland carried out investigations on the size and age composition of herring in Subarea 5 (Docs. No. 9, 33, 34, 40).

5. Haddock

The total landings of haddock in Subarea 5 in 1964 were 69,070 tons, 9,460 tons more than in 1963. The U.S. landed 75% of the total haddock catch from the area. Canada increased its landings by 3,000 tons. Although the USSR has also increased the catches of haddock in Subarea 5, the share of haddock was rather insignificant - 1.6% of the total yield taken by that country in Subarea 5.

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Catch per unit effort rose from 4.4 tons in 1963 to 5.3 tons in 1964. This is still lower than the indices in 1961 and 1962 (about 6.4 tons per day), mostly because the 1958 and 1959 year-classes are losing their dominant role in the landings, and the 1960-62 year-classes were rather poor. The 1963 year class is apparently very abundant (Docs. 9, 12, 18).

6. Cod

In 1964 landing of cod was 28,042 tons, somewhat lower (1,645 tons) than in 1963. Canadian and USSR landings changed unconsiderably whereas the USA landings decreased approximately by 1,000 tons with sharp reduction in catch per effort (2 tons per day fishing in 1964 against 3.3 tons in 1963). In 1964 the USSR, Canada and USA did not carry out special studies on cod in Subare 5 (Docs. 9, 12, 18).

7. Flounder

The major portion of the flounder landings in Subarea 5 was taken by the US. Its landings averaged 49,370 tons, 73% of which were yellowtail flounder. The US catch of this species from the Georges Bank area in 1964 increased by 4,000 tons as compared with 1963 and made up in total 14,914 tons. The catch per effort also increased up to 4.2 tons per day fishing. It should be noted that landings from S. New England Grounds and Cape Cod grounds declined to some extent. Canada and USSR did not conduct investigations on yellowtail flounder.

The USA continued the studies of size-age composition of three individual stocks of yellowtail flounder in Subarea 5 (Docs. 9, 12, 18).

8. Redfish

The bulk of the redfish catch in Subarea 5 was taken by the US (7,812 tons). The shares of Canada and USSR were negligible. According to US data the catch per unit effort was 2.5 tons per day in 1964, a decrease over previous years. The decrease was primarily in the latter half of the year, and may reflect diversion of effort to other species rather than a decrease in stock density. Redfish stocks in the Subarea are not now intensively exploited. (Doc. 9).

9. Large pelagic fish

With recent increase in catches of swordfish, tuna, bonito and skipjack in Subarea 5 and more southern areas USA and Canada began studies of these species. The U.S. catch of swordfish in Subarea 5 declined in 1964, but catches from waters south of the Convention Area increased. The studies covering biology and distribution of mentioned species as well as their fishery show a trend to further expansion (Docs. 9, 12).

10. Industrial fishery

The USA is the only country which conducts industrial fishery in Subarea 5. In 1964 the US catch for industrial purposes amounted to 56,130 tons which is 36% over the level of 1963. Industrial fishing is carried out mostly in the southern part of Subarea 5. The main species intended for industrial purposes were red and silver hake the share of which was 72.5% in 1964 against 63.8% in 1963 (Doc. 9).

11. Sea scallop

The US landings of sea scallop in 1964 decreased by 23% in comparison with 1963, while Canadian landings of this species remained approximately at the level of 1963.

Abundance on the grounds has continued to decline since all of the year-classes recruited in recent years have been much smaller than the extremely numerous year-class which entered the fishery in 1959 (Docs. 9, 12).

12. 10% Annual Exemption

The U.S. reported on the operation of the 10% Annual Exemption in Document 30. In 1964 the number of exempted vessels dropped as did the number of trips and the amount of haddock landed. The amount of cod landed increased from 1.9% in 1963 to 2.1% in 1964. There were no violations of the 10% exemption in 1964.
