

ANNUAL MEETING - JUNE 1965Polish Research Report, 1964

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## SUBAREAS 1-5

A. Status of the Fisheries

In 1964, 10 Polish factory trawlers fished mainly for redfish and less for cod in ICNAF Subareas 2 and 3. They made 21 trips to the ICNAF area compared with 15 in 1963. Total catches amounted to 37,843 metric tons, an increase from the 23,248 metric tons taken in 1963.

Catches by major species in 1964 and 1963 are shown in Table 1.

Table 1. Catches by Polish factory trawlers in the ICNAF area in 1964 and 1963

	1964 metric tons (%)	1963 metric tons (%)
Redfish	21,414 (56.6)	12,975 (55.8)
Cod	10,865 (28.7)	7,736 (33.3)
Flatfish	4,888 (12.9)	2,193 (9.4)
Other groundfish	641 (1.7)	93 (0.4)
Herring	35 (0.1)	251 (1.1)
Total	<u>37,843</u>	<u>23,248</u>

The above percentage data show relative increase of landings of redfish, flatfish and other groundfish. The tonnage of cod caught was greater in 1964 but the percentage of cod caught was lower than in 1963.

The catch distribution and total fishing effort in 1964 is shown in Table 2.

Table 2. Catch and effort by the Polish fishing fleet in ICNAF Divisions

ICNAF Div.	Catch (in m. tons)	No. hours fishing	No. hauls	No. days fished
1C	81	32	30	3
1D	14	10	7	1
2J	6,935	4,123	1,735	266
3K	27,558	13,839	7,809	1,024
3L	1,678	1,284	696	94
3M	855	467	244	38
5Z	723	566	312	34

There was 1 trip only to Subarea 1. Because of very low fishing yield, the trawler left the Greenland fishing grounds for fishing grounds in Subarea 2. The data given in Table 2, indicate that the main Polish catches took place in Div. 2J and 3K, where yield per fishing unit remained high throughout the fishing period. The yield per day fishing in these two Divisions in 1964 was 26.1 and 26.9 tons respectively. In other Div. fished, the yield per day ranged from 17.8 to 22.5 tons.

The development of Polish catches in the ICNAF area and changes in yield per day fished and yield per hour trawling are given in Table 3.

Table 3. Polish landings and yield per fishing unit, 1961-64 inclusive

Year	Total catch (tons)	No. days fished	No. hours fished	Yield	
				per day (tons)	per hour (tons)
1961	3,923	236	2,488	16.6	1.58
1962	8,667	409	5,243	21.1	1.65
1963	22,992	850	10,733	27.0	2.15
1964	37,843	1,460	20,321	25.9	1.86

Increase in catch is quite obvious, but the yield per unit effort in 1964 was less than in 1963. It should be mentioned, however, that the yield in the last two years was higher than in previous years.

#### I. Redfish

Table 4 shows that the most important fishing grounds for redfish were in Div. 3K, where the catch per 100 hours trawling was 118 tons for this species in 1964. The second most important grounds were in Div. 2J, where pure catches of redfish per 100 hours amounted to 101 tons.

Table 4. Total catch (in metric tons) of redfish and cod by Polish vessels in the ICNAF area in 1964

ICNAF Div.	Redfish	Cod
1C	3	81
1D	-	11
2J	4,180	2,058
3K	16,399	7,710
3L	704	240
3M	128	717
5Z	-	48

#### II. Cod

Table 4 shows that cod were found in greatest abundance in Div. 3K and 2J. In Div. 2J, the average catch per 100 hours trawling was 50 tons and in Div. 3K, 56 tons.

### B. Special Research Studies

#### I. Hydrography

Hydrographic studies were carried out in June and July by the WIECZNO in the Hamilton Isle Bank, Ritu Bank, Flemish Cap, Great Bank of Newfoundland, Brown Bank, and Georges Bank areas. Plankton samples were collected at some stations.

#### II. Biological Studies

1. Sampling. Between 18 June and 29 July 1964, catches made by the WIECZNO were sampled in Div. 2J, 3K, L, M, O, 4W, X and 5Z. The results will be presented in the Sampling Yearbook. The total number of samples are shown in Table 5.

Table 5. Samples taken in ICNAF area in 1964

Species	No. measured	No. of pairs of otoliths
Redfish ( <i>mentella</i> )	7,629	891
Redfish ( <i>marinus</i> )	1,382	435
Cod	9,029	2,247
Haddock	3,882	833
Silver hake	4,529	707
Red hake	689	159
Coalfish	60	60
American plaice	4,718	435
Witch flounder	121	121
Yellowtail	989	101
Greenland halibut	187	187
Halibut	1	1
Herring	5,794	374
Argentine	2,399	272
Alewife	119	119
Blueback	549	115

2. Cod. Some observations have been made on the biology and identity of cod stocks on the Labrador and Newfoundland fishing grounds. Length measurements show that cod caught in June on Hamilton Inlet Bank were 20-70 cm long (mean length, 44.7 cm). On Sundall Ground the cod were 19-86 cm long (mean length, 46.3 cm). Remarkable differences in length were observed on Ritu Bank, where, in the 135-150 m water layer, cod of 16 to 82 cm (mean length, 48.9 cm) were taken, while from the 145-250 m layer the cod were 16-91 cm long (mean length, 41.2 cm). The largest cod were taken on Woolfall Bank, and had a length from 16-125 cm (mean length, 63.6 cm). The smallest cod were taken in Div. 3M and had a mean length of 38.6 cm.

3. Redfish. Sebastes marinus caught in June in Div. 3K had a length of 20-63 cm (mean 47.3 cm), while in Div. 3M the length was 20-52 cm (mean 38.4 cm).

Polish trawlers exploited the concentrations of Sebastes mentella appearing in June and July in Div. 3K and 3M. Measurements of these species on board the research vessel have shown that the largest redfish (mentella) (mean length 36.8 cm) were taken on Ritu Bank. Here, the fish ranged in length from 15 to 51 cm.

Observations on the length of redfish (mentella) have shown that the fish become smaller to the southward. The smallest redfish (mentella) (12-37 cm, mean 24.8 cm) appeared in July on Sable Island Bank.

4. Haddock. In July, remarkable concentrations of haddock were found over the south-west slopes of the Great Bank of Newfoundland and on Emerald Bank, Brown Bank and Georges Bank. The highest yield, about 150 kg per one hour trawling, was obtained on Brown Bank. But here the haddock was small (mean length, 18.6 cm). The largest haddock were taken on Georges Bank, where despite the considerable amounts of smaller fish, mean length was 58.9 cm.

5. Other species. Data concerning other species have been presented to the Fifteenth Annual Meeting in the following documents: Research Document No. 33, J. Netzel and E. Stanek "Some biological characteristics of Blueback (Pomolobus aestivalis Mitch.) and Alewife (Pomolobus pseudoharengus Wils.), based on sampling material taken in Georges Bank (July and October, 1964); Research Document No. 34, J. Netzel, E. Stanek and C. Zukowski "The size and sexual maturity of herring (Clupea harengus L.) on the fishing grounds of Nova Scotia and Georges Bank in July 1964"; Research Document No. 35, F. Chrzan and C. Zukowski "Some characteristics of Argentine (Argentina silus Asc.) occurring in the region of Nova Scotia".