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Review of status of fisheries and research carried out in Subarea 2 in 1964

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The following research documents submitted to the 15th Annual Meeting of ICNAF are relevant to research and status of the fisheries in Subarea 2: 7, 11, 12, 13, 14, 16, 17, 18, 19, 24, 38, 41, 43, 46 and 62. These include reports on researches carried out in 1964 by the following member countries: Canada, Germany, Iceland, Poland, Portugal, Spain, UK and USSR.

1. Work carried out

Canada, Poland and USSR performed hydrographical investigations in Subarea 2. Distribution, size and age composition of demersal fish stocks were also studied. UK and USSR carried out plankton studies. Portugal and Spain conducted studies of size and age composition of cod.

2. Hydrography

Studies carried out by USSR showed slight warming of water masses in the beginning of 1964 in comparison with 1963. However, 1964 should be considered as a cold year. During the summer months the flow of cold polar waters increased. The cold polar current observed off the Cumberland peninsula in September was the most intensive for the last four years. The Canadian investigations conducted in July-August also showed that on the line of stations from Seal Islands to Hamilton Inlet Bank and on the deep water slopes the water temperature in 1964 was lower than in 1963.

3. Plankton Studies

United Kingdom continued studies of plankton, obtaining records of plankton distribution throughout the whole ICNAF area. (The recording vessels covered in total about 28,000 miles, of which 6,566 miles were covered within Subarea 2.) Along with the studies of hydrological conditions, the USSR research vessels conducted observations on quantity and species composition of plankton.

4. Status of the Fisheries

According to preliminary data, the total catch of all species in Subarea 2 in 1964 made up 254.6 thousand metric tons, as compared with 223.5 thousand tons taken in 1963. The catches (in thousands of metric tons) by countries were as follows:

	In 1964	In 1963
Canada (Newfoundland)	15.6	25.0
France	36.7	40.3
West Germany	9.4	2.0
Poland	6.9	2.3
Portugal	41.1	73.3
Spain	45.4	54.8
USSR	69.3	25.1
UK	1.7	0.6
Faeroes	0.3	
Iceland	0.5	
East Germany	27.6	

5. Cod

The catch of cod in 1964 decreased to 204,000 tons from 216,000 tons in 1963

According to the Canadian Research Report for 1964 the amount of cod caught in the inshore fishery by this country in Subarea 2 in 1964 decreased by 40%. The Canadian researchers note that catch per man in the Subarea 2 inshore cod fishery has declined since 1959, coincident with the increased deep-sea cod fishery. The Canadian surveys of cod distribution did not indicate the presence of pre-spawning and spawning concentrations of cod on the southeast part of Hamilton Inlet Bank in late March and early April of 1964, whereas in 1963 great concentrations were observed within this area. Because of comparatively high temperature cod were thought to have retreated northward. The best catch of cod was 960 kg of small cod (mainly immature, average weight 0.5 kg) in 238 m at 3.4°C where temperatures were almost a degree higher than in 1963. Below this depth cod were larger but scarcer at 278 m and 319 m with 290 kg (average weight 1.0 kg) in 278 m at 3.1°C and 165 kg (average weight 1.0 kg) in 319 m at 3.3°C. The catch was 120 kg of smaller cod (average weight 0.6 kg) in 362 m at 3.5°C, 7 kg (average weight 2.6 kg) in 459 m at 3.4°C and no cod in 551, 638 and 737 m at 3.4-3.5°C.

By April 2-4, 62% of the 78 mature female cod examined were spent, 8% had some clear eggs and 31% only opaque eggs. By May 11-16 in this same area at 200-220 m, of 137 mature females 135 were spent and the 2 remaining were close to spawning, one possessing some clear eggs and the other over 50% of the bulk of eggs clear.

Cod tagging experiments were carried out from the research vessel A.T. CAMERON.

According to the German research report some increase in catches of cod and redfish by German trawlers occurred in Subarea 2. However the catch per fishing day decreased for cod from 10 tons ~~5 tons~~ in 1963 to 5 tons in 1964, and for redfish from 10 tons to 8.6 tons.

The Portuguese catches of cod in Subarea 2 decreased from 73,000 tons in 1963 to 41,150 tons in 1964.

Size and age sampling of cod carried out by Portugal in Division 2J from March to October showed the domination of 5-8 year old cod (with a maximum at age 7) varying from 37 to 94 cm in length (average length was 53.5-56.4 cm).

Spanish trawlers fished cod in Division 2J where best catches were taken in spring.

Samples taken in Division 2J showed the predominance of 6 year old cod having an average size of 59.8 cm.

The USSR catch of cod in Subarea 2 rose to 57.1 thousand tons in 1964 from 20.8 thousand tons in 1963.

Studies conducted from the Soviet vessels showed that the most stable catches were in Division 2J from January to July; fishable concentrations were met with also in October-December. Large concentrations were found in Division 2H in mid-January and in Division 2G in the latter half of February. Hard ice conditions impeded the fishery in both divisions.

6. Redfish

The catch of redfish in 1964 increased to 17.1 thousand tons from 6.1 thousand tons in 1963. The redfish catch per unit effort by Polish trawlers in Division 2J was 101 tons per 100 hours of trawling, whereas Icelandic trawlers obtained 341 tons per 100 hours fished in the same area. Soviet studies continued

on strength of individual year-classes of mentella. These investigations showed the relationship between the yield of mentella and the hydrological regime off Iceland, Labrador and Newfoundland. It was ascertained that cold years produce poor year-classes of redfish while warm years result in appearance of rich year-classes. The studies carried out by USSR research vessels produced data on distribution of young redfish within the Labrador-Newfoundland area as well as evidence of redfish concentrations at depths of 200-500 and 600 meters.

During April 2-4, 1964 the Canadian research vessel A. T. CAMERON repeated a redfish survey southeast of Hamilton Inlet Bank at depths from 238 to 737 m. This area had previously been fished by the A. T. CAMERON in April, 1963.

Redfish of both species were more than 140 m for mentella and 180 m for marinus deeper than the summer-autumn levels. Catches per half-hour tow were less than 3 kg per tow at depths from 238 to 362 m at bottom temperatures of 3.1 to 3.5°C. Beyond these depths, at 459, 551, 638 and 737 m, catches were 3970, 930, 1050 and 70 kg for mentella and 140, 9, 0, 0 kg for marinus at bottom temperatures of 3.4 to 3.5°C.

Of 101 mature mentella females from this area, 6% were spent and 6% possessed unfertilized clear eggs. The remaining percentages were 1-4% hatched (1), 5-20% hatched (56), 30-60% hatched (22), 79-90% hatched (1) and partly spent (1). Of 58 mature marinus females only 1 was as far advanced as 30-60% hatched and 3 possessed unfertilized clear eggs.

7. American plaice

In the A. T. CAMERON sets southeast of Hamilton Inlet Bank, April 2-4, as described for redfish, the largest catch of American plaice (Hippoglossoides platessoides) per half-hour tow was 1670 kg (average weight 1.1 kg) at 278 m. The only other significant catch was 205 kg (average weight 1.0 kg) at 551 m. At other depths from 238 to 459 m catches ranged from 5 to 40 kg and average weights from 0.3 to 0.4 kg. Only 1 plaice was caught at 638 m and none at 737 m.

These American plaice had opaque eggs and were at least a month and possibly 1 1/2 months or more from the beginning of spawning.

8. Witch Flounder

In the A. T. CAMERON half-hour tows, April 2-4, southeast of Hamilton Inlet Bank, described above, a large catch of 3320 kg of witch flounder, Glyptocephalus cynoglossus, (1.4 kg average weight) was taken at 551 m. In April 1963 catches of 1180 and 670 kg were obtained at 549 and 640 m, but in 1964 the witch flounder were much more concentrated, and only 11 and 3 kg were obtained in the sets immediately above and below 551 m - at 459 and 638 m. As in 1963 the females possessed small opaque eggs, usually less than 0.5 mm diameter, and were at least 1-1 1/2 months from the beginning of spawning.