INTERNATIONAL COMMISSION FOR THE NORTHWEST ATLANTIC FISHERIES

Serial No. 2859
(D.b. 71)

ICNAF Res.Doc. 72/128
Revised

ANNUAL MEETING - JUNE 1972

Status of Fisheries and Research Carried out in Subarea 2 in 1971

by

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Reports on research in Subarea 2 were submitted by the following countries: Canada, Fed. Rep. Germany, Poland, Portugal, USSR, and UK, Information pertinent to fisheries and research in Subarea 2 may be found in Research Documents 1-3, 25, 31, 32, 33, 35-45, 57, 82, 108, 109, 124 and 125.

1. Status of Fisheries

Nominal catches of the major species fished in Subarea 2 are listed in Table 1. Total catch of all species was low in relation to the peak years of 1968 and 1969. The cod fishery, which accounts for the major part of the catch, was at its lowest level since 1959. As in previous years, most of the cod catch was taken in Divison 2J. Catches of other species were relatively small, with the exception of roundnose grenadier, for which catches increased from a relatively small amount in 1967-70 to 57,000 tons in 1971. The major part of this catch was reported from Division 2G.

Table 1. Nominal catches from Subarea 2, 1967-1971, ('000 tons round fresh).

	1967	1968	1969[a]	1970	1971
All Species	328	482	441	239	247
Cod	298	449	412	224	164
Redfish	17	9	6	11	7
American plaice	+	+	+	2	2
Witch flounder	+	+	+	5	1
*Greenland halibut	5	8	10	4	10
Flounder (not specified)	3	3	7	+	1
Roundnose Grenadier	1	7	1	+	57

a catches by non-member not allocated by subareas and not included.

\+ catch less than 500 tons

Nominal catches of cod by each country fishing in Subarea 2 from 1967 to 1971 are given in Table 2. Catches by all countries were lower than during the peak years of 1968 and 1969, in most cases substantially lower. The inshore small boat catches remained at the abnormally low level experienced in 1969 and 1970, and in 1971 were less than 15% of the 1960-68 average.

Table 2. Nominal catches of cod in Subarea 2 1967-1971, by country ('000 tons round fresh).

Country	1967	1968	1969	1970	1971
Canada	28	18	5	2	3
Denmark	-	-	-	+	NA
France	25	39	30	16	6
Germany	32	54	72	50	20
Norway	2	8	7	3	6
Poland	38	70	62	36	17
Portugal	53	60	66	42	34
Romania	-	-	3	3	2
Spain	37	33	33	11	6
USSR	21	104	131	50	62
UK	9	12	2	3	-
USA	-	-	+	1	-
Non-members	53	51	NK*	8	9
Total	298	449	412	224	164

\+ catch less than 500 tons

* catches of 55,000 tons of cod in the Convention Area, but not allocated by subareas

NA Not available

2. Work Carried Out

(a) Canada. The hydrographic section off Seal Island was occupied in early August. Distribution and abundance of cod were investigated during a spring research vessel cruise in Division 2J, sampling of inshore catches was continued, and population assessments using the virtual population technique were carried out. Atlantic salmon were tagged in a Labrador river, on the Labrador coast and in the Labrador Sea.

(b) Fed. Rep. Germany. Hydrographic observations were made in late November, and 3 sections across the Labrador shelf were occupied. At the same time a one week groundfish survey was carried out.

(c) Poland. Sampling of commercial catches of cod and redfish for age and length was continued.

(d) Portugal. Commercial samples of cod were collected in Division 2J for studies of size and age composition, growth and maturity.

(e) USSR. Hydrographic observations were made in early November. Biological studies were carried out on cod, Greenland halibut and roundnose grenadier. Fishery forecasts for 1972 were made.

(f) UK. Continuous plankton recorder surveys were continued and over 2,300 miles sampled in 1971.

3. Hydrography

In general, water temperatures in Subarea 2 in 1971 were below normal. In early August, temperatures of the inner portion of the Labrador current were below the 1951-65 average, and volume of water less than 0°C was above this average; conditions in this respect were similar to those prevailing in 1970. In the offshore portion of the Labrador current temperatures were much lower than in 1970, and in fact were close to the 1951-65 average. Temperatures below normal values were also recorded in November, and extended to a depth of 1,000 meters.

As in 1970, severe ice conditions hampered fishing operations early in the year. Severe ice conditions, even worse than in the previous two years, also prevailed in 1972.

4. Plankton

Continuous plankton recorders sampled 2.315 miles in Subarea 2 in 1971. Phytoplankton abundance was below average in the oceanic parts of the area, with the spring peak in May, a month earlier than the long-term mean. Copepods were correspondingly early and highest numbers were again observed in May. In contrast to the copepods, the peak abundance of euphausiids was about a month later than usual in Subarea 2.

5. Cod

The Canadian inshore fishery improved marginally over 1970 (3,320 tons as opposed to 2,038 tons), but in both years was less than 15% of the 1960-68 average. Reductions in inshore catches of cod in these years were due to decreased abundance or lesser availability rather than any decline in inshore effort. The inshore fishery has traditionally depended on mature fish which migrate to the coast after spawning.

Immature fish did not form a significant part of the inshore catch even when no offshore fishing existed. It is probable that the reduction in age, and in numbers of mature fish, by the offshore fishery has been responsible for a much less pronounced migration of cod to shore in recent years.

Cod catches, as well as fishing effort, by the Federal Republic of Germany continued the decline begun in 1970. The catch in 1971 was 42% of the record 1969 catch, while effort (days fished) was reduced by 53% from 1969. Fishing was carried on only from early January to mid February, when ice conditions forced the fleet to move. Catch per day was reduced 23% from the 1968-70 average. Over 80% of the cod taken during a groundfish survey in November were 5-8 years old (1963 to 1966 year-classes). Mean lengths were below 50 cm in Divisions 2G to 2J. Fishing operations in 1972 were again restricted by ice, and catches are expected to be lower than in 1971.

The Polish fishery took place mainly in January and February, since ice conditions forced withdrawal of most of the fleet by early March. Cod catches per day fished were lower than in 1970, and fishing effort (hours fished) declined 23% from the previous year. The most abundant year-classes in the catch were those of 1964 to 1966. Average length was below 50 cm.

Most of the cod catch by Portugal was taken in the first quarter of 1971. Biological sampling during the second quarter indicated that the 1964 to 1966 year-classes were most abundant. A very high percentage of the fish sampled were immature.

Cod fisheries by USSR were conducted mainly in January and February, and operations were irregular following departure of the fleet in mid February due to ice conditions. Catch per unit effort was lower than in 1970. Cod of the 1964 to 1966 year-classes were most abundant in the catches, accounting for almost 70% of the fish sampled. An improvement in catches is forecast for 1972 on the basis of recruitment of fish of ages 4 and 5 (1967 and 1968 year-classes). Canadian surveys indicate that the 1967 year-class may be the more abundant of the two, while USSR surveys indicate that the 1968 year-class is more abundant.

Assessments of the cod stock complex extending from Div. 2J to Div. 3L were completed in 1971. Natural mortality from Div. 2J data was estimated to be between 0.15 and 0.21. Fishing mortality estimates for Div. 2J cod for the period 1965 to 1968 show a significant increase in 1968. Overall stock size from 1964-68 was estimated to be about the same as from 1959-63, though numbers of cod of ages 8 and above accounted for less than 20% of the overall stock. For the stock as a whole

it was concluded that fishing mortality rate over the period 1967-70 was in excess of that which would produce the maximum long term yield per recruit, and some reduction from the 1967-70 level would be necessary to achieve this.

6. Redfish

Commercial sampling of Polish catches gave a length range of 20-47 cm and an age range of 6-16 years, with fish of ages 8, 9 and 10 most abundant.

7. Atlantic salmon

In May, 24 salmon were tagged from driftnets and 35 from longlines, all in the mid Labrador sea. Eight recaptures were reported, 2 from the former group and 6 from the latter, all from Canada. Tagging from a research vessel using drift nets was also carried out on the Labrador coast in July. Most fish tagged were of one year sea age (grilse) and returns were almost entirely from the Labrador coast. Smolts and adults tagged in a Labrador river in 1970, gave in each case approximately equal returns from Labrador and from Greenland fisheries in 1971.