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Subarea 2

Reports on reseaches in 1961 are submitted by the following member countries, Canada, Germany, Iceland, Portugal, Spain, USSR and USA, and by the High Sea Fishery Institute in Rostock (eastern Germany).

1. **Work Carried out.**

a. **Canada:** Various research vessels. A hydrographic section across Hamilton Inlet Bank and seawards, 31 July-1 Aug. Oceanic cruise in Aug.-Sept. Sampling of commercial catches.

b. **Germany:** Scouting trawler. Sampling of Commercial landings of cod and redfish from Division 2J.

c. **Iceland:** Commercial trawler. Sampling of redfish, length measurements.

d. **Portugal:** Sampling of catches of cod aboard commercial trawlers in 2J, length measurements and weight data.

e. **Spain:** Sampling of catches of cod aboard commercial trawlers in 2J, length measurements and age-determinations. Collection of data on discards (quantities and sizes of fish discarded).

f. **USSR:** R/V "*Topseda*" and scouting trawlers. Hydrographic section from the coast of Labrador and seawards (June-July). Age- and length observations on cod and redfish in 2J. Tagging of cod in 2J. Observations on occurrence of fish eggs and larvae.

g. **United Kingdom:** Factory vessels. Sampling of cod. Continuous plankton recorder surveys.

h. **USA:** Hydrographic section Labrador-Cape Farewell, July.

i. **High Sea Fishery Inst. Rostock:** R/V "Eisenach" and commercial trawlers. Cod in 2J, length measurements.

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2. Hydrography.

The International Ice Patrol US Coast Guard occupied the Labrador - Cape Farewell section from July 3-11. The section off southern Labrador showed positive anomalies both in volume and temperature.

Canada took the southern Labrador section off Seal Island at the usual time, July 31-Aug. 1. In spite of the unusually cold winter and the greater amount of ice, the temperatures of the cold intermediate layer and of the deep water between Hamilton Inlet Bank and the coast were higher than usual.

The USSR vessel *Topseda* made two hydrographic surveys in the Labrador area, in May-June and August-September. In July the mean temperatures of the whole Labrador Current in Subarea 2 approached the normal value. The core of the Labrador Current was cooler than usual.

3. Plankton.

Distribution of plankton from Continuous Plankton Record surveys to the southern part of 2J are reported by UK. USSR has studied the plankton in the southern part of the Subarea.

4. Fish Eggs and Larvae.

The USSR data show that spawning of cod and American plaice occurs off southern Labrador, in Division 2J. The maximum spawning of cod is in April-May; American plaice spawns in April-June.

5. Cod.

In Canadian investigations in 1960 the 1953 and 1955 year-classes were most abundant in 2J and the 1957 year-class in 2H. There were no great variations in year-class strength.

Portugal sampled the cod in 2J in May, September and November. Lengths were mainly between 43 and 73 cm. Fish from night and day samples had approximately the same length.

Spain reported lengths and data on age and growth and reproductive biology for cod in 2J from May-November. The most frequent lengths caught were from 48 to 65 cm. The most numerous ages were 4-8 but there was no considerable dominance of any year-class. The growth rate was lower in 2J than in the neighbouring 3K and essentially the same as in 1960.

Most of the cod obtained by USSR scouting trawlers were of the 1953, 1954 and 1955 year-classes in 2J and of the 1951, 1952 and 1953 year-classes in 2H. The size-and age distributions of the Labrador cod have not changed much during 1957-1961. Growth rates for cod in 2H, 2J and the adjacent 3K are similar and lower than for the southern Grand Bank. Most Labrador cod spawn in April. Cod tagged in the Labrador area were returned from near the tagging area, at least up to 3-7 months later. Cod disappeared from the deep water of the Hamilton Inlet Bank area in early June, presumably becoming pelagic and migrating coastward. Studies of the distribution of cod eggs and larvae indicated cod spawning grounds in 2J. The greatest numbers of young cod were found on and west of Hamilton Inlet Bank and south of Hawke Channel.

In the fishery by trawlers from eastern Germany in 2J the peak of the cod length frequencies was at 60-70 cm in January and in May and June at 50-60 cm. In May the 1952 and 1953 year-classes were most numerous.

6. Redfish

In 2H males dominated the USSR redfish catch in May (79%) but in July the sex ratio became 1:1 as the larger females became available. In 2J the numbers of males and females were similar throughout the year; the dominant age for males was 13-14 years with some as old as 23 years, and for females 15-19 years with a few 18-year-old specimens. The feeding habits were studied. The distribution of young redfish was investigated; no concentrations of young below about 12 cm were encountered.

The redfish length-frequency curves for catches by east German trawlers showed two peaks, at 31 and 41 cm for females and at 29 and 35 cm for males. Females predominated in the catch but this may have been due partially to greater mesh selection escapement of the smaller males.

7. Stock Divisions.

Summaries of information on cod stock divisions and on halibut distribution have been prepared by Canada, and the USSR reports information on stock divisions in cod and redfish.

8. Status of the Fisheries.

Cod landings of 263 thousand metric tons represent a considerable increase over the 188 thousand tons landed in 1960 and the 60 thousand tons in 1959. The 1961 cod landings from this area constitute by far the greatest landings from the area since 1936. During the period 1936-59 the landings have only exceeded 100 thousand metric tons on one occasion (1953) when 111 thousand tons were landed.

Redfish landings of 25 thousand metric tons declined greatly from the 1960 landings of 83 thousand tons which were the greatest annual landings from the subarea since the beginning of the fishery in 1958 when 71 thousand tons were landed.

Apparently the effort by trawlers for cod in the southern part of this subarea has been considerably increased over the past two years with the development of a great new deep water winter and spring fishery for this species. At the same time there has been a corresponding decrease in the effort for redfish.

German trawlers obtained good cod catches on the southern Labrador Shelf from Hamilton Inlet Bank southwards (2J) in Jan.-March, and fair catches (70%), the remainder being redfish, in April at 360-400 m. The main Icelandic fishery for redfish in the Subarea took place – as in previous years – in the vicinity of Sundall Bank in 2J. The main Spanish fishery for cod in the Subarea was on Hamilton Inlet Bank, and the best catches were made in May. USSR trawlers fished mainly on the southeast slopes of this Bank at 285-360 m (3-3.8°C) and in the first part of the year. UK factory trawlers operated in the southern part of the Subarea, 2J.

Trawlers from eastern Germany caught in 2J in January three times as much redfish as cod and in May twice as much. In June the catch was almost entirely cod, but from July onward large amounts of redfish were caught.