

ANNUAL MEETING - JUNE, 1965Report On The Status Of The Fisheries And ResearchesIn Subarea. 3. During 1964

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A. Status of the Fisheries1. Cod

Total landings of cod increased from 466 thousand tons in 1963 to 565 thousand tons in 1964. The greatest landings were from 3L (Northern Grand Bank) where 212 thousand tons were taken and in 3K (northern part of Northeast Newfoundland shelf) where 155 thousand tons were taken. The record catches in Subarea 3 were 471 thousand tons in 1960 and 472 thousand tons in 1954.

Canada (Doc. 12) landed about 166 thousand tons from the Subarea but reported that the inshore fishery in all parts of the Newfoundland coast declined over 1963. This decline applied to the new gill net fishery as well as the trap fisheries.

Denmark (Doc. 15) landed 23,000 tons in 1964, an increase from 14,000 tons in 1963.

France (Doc. 20) landed 63,000 tons in 1964, an increase from the 40,000 tons landed in 1963.

Germany (Doc. 11) reported about 2,000 tons and Iceland less than 1,000 tons in 1964. Norway (Doc. 10) took about 7,000 tons and Poland 9,000 tons. Poland reported the greatest abundance of cod was found in 3K where the catch per 100 hours of tow was 56 tons (Doc. 16).

Portugal's catch in 1964 was about 103,000 tons compared with 81,000 in 1963 (Doc. 14).

Spain landed 117,000 tons in 1964, an increase from the 95,000 tons landed in 1963 (Doc. 19). More than half the catch was taken with pair trawlers.

Spain reported (Doc. 38) that her large trawlers fished mostly in Div. 3L and the pair trawlers in Div. 3K. Cod was abundant at the beginning of the season but declined steadily during the summer. in Div. 3L but held steady in Div. 3K. In Div. 3K the size of fish was large but in Div. 3L generally small. The average length of cod from the eastern part of the subarea was greater than that from the western side.

The USSR increased their catch of cod from the Subarea in 1964, landing 56,000 tons as compared with 40,000 tons in 1963 (Doc. 18). Big deep-freeze trawlers fished for cod mainly on Flemish Cap in March and on the northern Newfoundland Bank from February to April. Side trawlers fished on northern Newfoundland Bank in March and June and on Flemish Cap throughout the entire second half of the year.

The U.K. increased its catch of cod from 12,000 tons in 1963 to 17,000 tons in 1964 (Doc. 13).

2. Haddock

Total landings of haddock from this subarea in 1964 were 12,000 tons, down from the 14,000 tons landed in 1963. The record year was 1955 when 105,000 tons were landed. There was a steady decline in 1959, an increase in 1960 and 1961

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2. Haddock (cont'd)

and then a steady decline through 1964. Over half the catch was taken from Div. 30.

Of the total, Canada landed about 7,000 tons, Spain and the USSR each about 2,000 tons and other countries minor amounts.

3. Redfish

Total landings of redfish from Subarea 3 in 1964 were 75,000 tons, up from 69,000 tons in 1963. The record year for redfish was 1959 when 246,000 tons were landed. Highest landings (23,000 tons in 1964) were from 3Kas in 1963. Otherwise there was a shift in pattern over last year. In 1963 substantial landings came from 3N and 3P whereas in 1964 larger amounts were taken from 3M and 3O.

Canada took 16,000 tons, Germany 8,000 tons, Iceland 2,500 tons, Poland 17,000 tons, USSR 31,000 tons, the U.S. 5,000 tons and other countries smaller amounts. Poland (Doc. 16) fished mostly in 3K where the catch per 100 hours trawling was 118 tons.

The U.S. landings per day fished showed a small increase over 1963 and Canada reported her drop in landings was due more to reduced market demand rather than scarcity of fish.

4. Halibut

Total landings of halibut were 3,000 tons, over twice the 1963 figure of 1,300 tons and the highest landings recorded. The previous high for Subarea 3 halibut was 2,800 tons landed in 1960. Most countries reported a catch of halibut but Poland landed 1,400 tons which was ~~three times as much as any other country.~~

↳ of Greenland halibut.

5. Flounders

Total landings of flounders in 1964 were 48,000 tons up from 34,000 tons in 1963. Most of this was taken by Canada who reported an increase effort for plaice because of the scarcity of haddock and of some diversion of effort from redfish. Canada also reported that the recent downward trend in catch per unit of effort was reviewed in 1964.

6. Sea scallops

Canada landed 327 tons of shucked meats (2710 tons, live weight) from St. Pierre Bank (3P) in 1964. Except for small landings in 1963, virtually no effort had been expended here since 1958.

7. Harp Seals and Hood Seals

Canada took 71,000 harp seals in 1964, up from 55,000 in 1963; and about 700 hood seals, the same as in 1963.

B. Special Research Studies

I. Environmental Studies

1. Hydrographic

The 5 monitoring sections across the Labrador Current and continental shelf from Bonavista to the southern Grand Bank were occupied by Canada between July 23 and August 23 (Doc. 12). Conditions were generally not different from those in 1963 being somewhat colder in some areas and warmer in others.

The U.S. reported (Doc. 9) that the U.S. Coast Guard as part of the International Ice Patrol Program, made its usual oceanographic surveys in the area. An instrumented buoy was successfully moored on the eastern slope of the Grand Bank in 340 meters of water where it recorded temperatures and pressure at 50 meters below the buoy.

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1. Hydrographic (cont'd)

The season was characterized by a normal amount of sea ice and icebergs along the east Newfoundland Coast. The Labrador Current was about 0.3°C colder than normal, above 100 meters for the entire season, and less saline down to 500 meters by 0.05-0.10 ‰/100. The Atlantic Current intruded to the northwest more than normal giving severe horizontal temperature and salinity gradients as far north as 45°30' N.

In January, 1964 the U.S. Coast Guard initiated the first of the long term time series of oceanographic observations planned for all Ocean Stations by taking 6 three-week patrols on Ocean Station "Bravo". The ocean station vessels were also used to study the seasonal variation in flow and characteristics of the Labrador Current. This study was begun in November, 1964.

Spain reported (Doc. 38) she had investigated reports of unusually low temperatures on the bottom in the Avalon Channel. Thirty to 40 miles off the Avalon Peninsula bottom temperatures were between 0.5° and 1°C. At 15 miles south-east of Wittles Bay in August, the temperatures dropped as low as -0.5°C.

Poland (Doc. 16) conducted hydrographic studies by the WIECZNO on Ritu Bank, Flemish Cap, and the Grand Bank.

The USSR (Doc. 18) reported that five research and exploratory vessels made observations in the Subarea during 1964. They reported a slight warming in the first half of 1964. In the spring the section along 47°N the mean temperature of the 0-100 m. layer was 1.14°C higher and that of the 0-500 m. layer 0.15°C higher than in the spring of 1963.

2. Plankton

The U.K. reported (Doc. 13) that continuous plankton recorders were towed across the Subarea in 1964 on commercial vessels for a total of about 14,000 miles as a part of the Edinburgh plankton program.

The USSR (Doc. 18) conducted its annual quantitative survey of Euphausiids off Labrador and Newfoundland in January-February. Some results are reported in the document.

II Biological Studies of Fish by Species

1. Cod

Canada (Doc. 12) continued sampling the inshore cod fishery by various gears. The length and age composition varied with type of gear and with locality. The annual survey to estimate the abundance of small fish up to 2 years of age inshore was carried out from September 5 to October 22. Results indicate poor survival of the 1964 year class but good survival of the 1963 year class.

Research vessel surveys were conducted on Grand Bank, St. Pierre Bank, and Flemish Cap. Catches were generally small, seldom exceeding 450 kg per half-hour tow. Maturity studies were carried out on Funk Island Bank.

Canada (Doc. 32) also reported on an analysis of cod catch by gear in the inland fishery of Newfoundland. Six types of gear are used: trap, gillnet, line-trawl, longline, handline and jigger. The type of gear varies with area and season. The age and length distributions are different for different gears.

France (Doc. 20) conducted experiments with trawls of large vertical mouth on board the Colonel Plenen II and detected cod off the bottom.

Portugal (Doc. 14) reported on length and age composition, stage of maturity and age at first maturity. In Div. 3K lengths ranged from 37 to 91 cm with relatively small variation during the month sampled (March to September). In Div. 3L lengths ranged from 40 to 91 cm.

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1. Cod (cont'd)

In Div. 3K age group VII (1957 year-class) was dominant followed by age groups V, VI and VIII (1959, 1958 and 1956 year-classes). Age groups IV and III (1960 and 1961 year-classes) appeared, for the first time, during May and August respectively. In Div. 3L age groups VI and VII (1958 and 1957 year-classes) were dominant.

Spawning in both male and females in Div. 3K was most intense from March to June, while in Div. 3L with data from May and June only, spawning occurred mainly during June.

Spain (Doc. 22) reported on cod from Subarea 3 confirming the dominance of the 1958 and 1959 year-classes. The 1957 year-class was a very large one as it is still contributing substantially to the fishery. Maturity studies indicate age size as earliest age of first maturity. Studies of stomach contents showed that majority of stomachs were empty, but that sand eels and capelin were common articles of diet.

In Document 24 Spain reported on the age and growth of cod collected over a wide area of Subareas 2, 3, and 4 during 1964. There was a slight increase in mean length and mean age in Divisions 3K and 3L over previous years. The age at first maturity was generally somewhat less than 6 years. The proportion of males (43.6%) was higher than in previous years (1960-1962). The most common year-class was 1958 (6 year olds) in all divisions except 3N where it was 1959 (5 year olds) with also large numbers of 1958 year-class. Two percent of the otoliths had a broad second hyaline zone; in one case it was found in the fifth rather than in the second zone.

2. Haddock

Canada (Doc. 68) made an analysis of the Grand Bank haddock fishery since 1940. This is a stock which fluctuates widely due to variations in recruitment. The study presents landings by country, index of relative abundance, year class survival, mortality estimates, and a discussion of the environmental factors which might be associated with survival. The stock is at present too low to support a fishery and there is no evidence of future recruitment.

However, the Polish research vessel reported remarkable concentrations of haddock on the south-west slope of the Grand Bank (Doc. 16).

3. Redfish

The Polish researches showed that the largest redfish occurred on Ritu Bank (av. length 36.8 cm) and that this size of redfish decreased southwards (Doc. 16).

The USSR reported on assessment of year-class strength in the "beaked redfish". (Doc. 41). Year-classes can be distinguished by length frequencies of immature fish which occurred in depths of 200-300 m in the northern local stock and in depths of 50-250 m depth in the southern local stock.

Good year-classes are associated with a wider distribution of warm rich water of Atlantic origin. A rise in temperature in the Labrador and Newfoundland area is usually associated with a fall of temperature in the Icelandic area and the year-class strengths in the two areas show a similar inverse relationship.

The USSR (Doc. 46) reported on an investigation of redfish in the deep water of northeast of Ritu Bank. Catches ranging up to 5 tons per two hours trawling were made in depths of 600-700 m. (near bottom T. 3.7°C).

Biological studies of this stock indicate that it is isolated from stocks at lesser depths and possibly unable to reproduce itself. No specimens showed ripening of gonads. The USSR investigation raise the question whether this stock represents sterile hybrids of a cross between marinus and mentella but leave open the question whether they may be a form of the common beaked redfish which ripens later.

In another paper (Doc. 43) the USSR reported on the distribution of young S. mentalla Tr. in the Labrador-Newfoundland area, analysing the length and ages at maturity in different areas and different depths. In the Flemish Cap Area (3M) the immature portion of this stock consists of males and females with lengths to 25 cm and ages to 7 years, on the southwestern slope of the Newfoundland Bank (3-0)

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3. Redfish (cont'd)

and the St. Pierre Bank (3P) the males and females with length of up to 20 cm and at the age of up to 6 years form the immature portion.

The greatest concentrations of immature fish tend to concentrate at particular depths according to the area. Normally heavy fishing does not occur at these depths except in the Flemish Cap area where immature fish occur at depths of 250-300 meters.

This report also relates the hydrographic conditions to the age at maturity and depth distribution emphasizing particularly the effect of this warm Atlantic water on the Flemish Cap area.

4. Other

Canada (Doc. 12) occupied a series of stations on predetermined lines across the slope of the Grand Bank in Div. 3N and 3O to determine the percentage species composition of groundfish to obtain information relative to a proposal for exemption provisions in those areas.

Canada (Doc. 58) also analysed groundfish landings in Newfoundland in 1962 and 1963 in respect to possible exemption provisions.

These studies will be reported in detail under agenda item 6.
