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SUMMARIES OF RESEARCH, 1962, BY SUBAREAS

SUBAREA 4.

Reports on 1962 researches carried out in this subarea have been submitted by the following member countries: Canada, France, Spain, USSR and USA.

1. Work Carried Out:

a. CANADA: Several research vessels were involved. Hydrographic sections were made off Halifax and across Cabot Strait and regular hydrographic observations were taken at coastal stations. Other environmental studies concerned water circulation on the Scotian Shelf, in Gulf of Maine-Bay of Fundy area and benthos communities in the Gulf of St. Lawrence (4T) were plotted in relation to sediment types. Zooplankton was collected in 4T, and fish eggs and larvae in 4X. Groundfish surveys involving cod, haddock, redfish, pollock, American plaice and herring were made throughout the year. Special attention was devoted to migrations of 4T cod, life history of pollock, movement of larval herring in 4X and 4T and to discards at sea of fish caught in commercial trawls.

b. FRANCE: From July to September THALASSA carried out experimental trawling to study lateral and vertical distribution of species in relation to variable environmental factors in 4X, W and V. She collected data on hydrography, redfish, silver hake, argentine and lobsters.

c. SPAIN: A detailed study was made of the cod fishery which uses pair-trawlers in 4V and W; growth rates, age-composition and size-composition of cod stocks; conversion factors for translating dressed, salted weights to whole fresh weights, discards at sea and the possibility of increasing value of catches by using a greater variety of species of fish.

d. USSR: The USSR program involved scouting in 4W for silver hake and fishing concentrations of them from July to December; scouting in 4V for herring in April and drift-netting them and studies of size composition of stocks, hydrography and fish eggs and larvae.

e. USA: This program included sampling of commercial groundfish catches noting day-to-night differences; research vessel studies of benthic communities, hydrography, currents and fish eggs and larvae; an intensive study of herring and co-operative research with Canada on haddock.

2. HYDROGRAPHY

Canadian hydrographers recorded the lowest February water temperatures ever found on Emerald Bank but the summer temperatures in the Scotian Gulf were slightly higher than in 1961 but still below the long-term average. These trends are corroborated by observations reported by France, Spain and USSR. Patterns of surface and bottom drift are slowly appearing from current measurements and from returns of seabed drifters and drift bottles.

3. PLANKTON: Canadian Chaleur Bay (4T) sampling showed heavier summer zooplankton production than in 1961 but the species composition was the same. Much new information on distribution of fish eggs and larvae was assembled by USSR. If this work is continued and the results integrated with data being assembled by Canada and the USA, the factors influencing success of spawnings should soon begin to appear. Already there are signs that variable currents sweep some groundfish eggs out of the area.

4. BENTHOS: Canada is now mapping bottom sediments in 4T and describing and delineating communities of bottom fauna and USA is doing similar work in 4X. Results show how productivity levels change from place to place and may clarify problems of distribution, growth rates and feeding habits of fish.

5. COD: Canadian data indicate that cod are being more and more heavily fished. Line fishing is becoming less important and trawling more important. Because of heavy fishing the catch per unit of effort is decreasing, large fish are becoming scarce, and Canadians are now using smaller fish than formerly. In spite of these long-term downward trends in abundance the mean size of cod is expected to increase slightly in 1963, because 7- and 8- year-old fish are more abundant than usual, and landings are expected to be maintained or increased to about 1959 levels, because of intensive fishing efforts. Tagging shows that 4T and 4S stocks mingle. Until now they were considered distinct. Inshore stocks fished with lines in 4V and W still seem to be distinct from those fished offshore with trawls. Clearer information on seasonal distribution or large and small fish and their migration patterns related to depth and temperature has been collected.

6. HADDOCK: The haddock is another intensively fished species that is protected by an ICNAF 4 1/2-inch mesh regulation. Compared with cod it is less common inside the Gulf of St. Lawrence than on the Nova Scotia banks. In 1962 it was more abundant on the western than on the eastern banks. In the winter, haddock were at 250 m in 4T and at 90 to 140 m in 4W. The 1958 year class seems weak and younger fish are also scarce. Prospects are that small (scrod) haddock catches will be poor for the next few years.

7. POLLOCK: Pollock have been little exploited in Subarea 4 but are becoming increasingly important to the Canadian fishery. They are le sought after by European craft in the subarea. Life history studies a producing results that should be helpful in making the fullest use of the species. It moves south in winter and spawns in the Gulf of Maine. Young fish are found inshore and move offshore when they are two years old and 20 to 25 cm long. They grow fast in the offshore areas but school separately from large pollock. Because of this, and because the fishery aims at taking only the large fish, mesh regulation is unlikely to have any "savings" effect. Pollock in commercial catches are smallest in western Nova Scotia , medium size around Grand Manan and largest on the north side of the Bay of Fundy. In this last area the growth rate is about the same as that in western Norway and faster than that in the Barents Sea.

8. REDFISH: Much new information is being gathered by France, Poland, USA and USSR on abundance and depth of commercial-sized fish. They are generally scarce at the surface and down to 120 m but, below that, their abundance may not be much affected by depth although size composition may change. USSR observations on larvae are adding to our knowledge of the lifehistory of the species.

9. HERRING:

Canada and the USA are interested in sardine-size herring in 4X. USSR is interested in adult sizes and did trial fishing in 4V and heavy commercial fishing in Subarea 5. It is not clear whether the stocks in 5 and 4X are distinct. For this reason intensive racial studies and observations on larval movements are under way chiefly by USA and USSR.

10. HALIBUT, AMERICAN PLAICE, GREAT SILVER SMELT & SILVER HAKE.

Canada has fisheries for halibut and plaice for many years. Canada and France are studying the great silver smelt (argentines) which are being exploited by USSR. The USSR fished silver hake on a substantial scale in 1962 and France did experimental fishing. New information was gathered on all four species including size-composition of stocks, growth rates and life histories.

11. DISCARDS:

Records of discards at sea were received from Canada and USA. More data are needed.

12. STATUS OF FISHERIES:

Canada, France, Italy, Portugal, Spain, USSR and USA participated in the 1962 fishery in Subarea 4.

Total groundfish landings (397,000 tons) were slightly above those of 1961 with Canada taking 60% of the total (See table). Most of the groundfish fisheries, for example, haddock and redfish, showed only minor changes but there was a substantial increase in "other groundfish". This is attributed largely to USSR catches of great silver smelt (argentines) and silver hake and increased Canadian catches of pollock. The catch of cod also increased slightly but the Assessment Subcommittee was unable to determine from the data available to it whether this change should be attributed to changes in distribution of fish since 1961 or to changes in fishing effort.

Pelagic species contributed substantially to the increased total landings from Subarea 4. The new USSR April driftnet fishery for herring in 4V (Banquereau area) were partly responsible. No Norwegian porbeagle catches were reported from Subarea in 1962.

1962 landings by convention countries from ICNAF Subarea 4 in thousands of metric tons (round, fresh) comparison with 1961 (bracketed values). These data were taken from the Assessment Sub-Committee's report for 1962 and from 1963 Meeting Document 36.

Country	Total Groundfishes	Cod	Haddock	Redfish	Halibut	Flounders	Other GF	Herring (Pelagic)
Canada	219,556	106,823	30,499	9,112	2,158	23,797	47,167	103,992
Canada N.	25,025	23,327	199	807	158	507	27	1,983
Denmark F.	----------	----------	NO REPORT	----------	----------	----------	----------	----------
Denmark G.	-	-	-	-	-	-	-	-
France	15,599	15,327	11	-	2	-	259	-
France St.P&M	-	-	-	-	-	-	-	-
Germany	-	-	-	-	-	-	-	-
Iceland	-	-	-	-	-	-	-	-
Italy	679	659	15	2	3	-	-	-
Norway	-	-	-	-	-	-	-	-
Poland	-	-	-	-	-	-	-	-
Portugal	14,413	14,413	-	-	-	-	-	-
Spain	60,408	54,589	4,330	-	-	-	1,489	-
U.S.S.R.	21,331	2,463	2,567	3,975	21	671	11,634	9,260
U.K.	----------	----------	NO REPORT	----------	----------	----------	----------	----------
U.S.A.	39,698	1,257	6,440	29,637	17	316	2,231	-
Total 1962	396,709	218,858	44,061	43,333	2,359	25,291	62,807	115,235
1961	(375,422)	(212,040)	(46,897)	(41,875)	(2,358)	(26,956)	(45,296)	(81,128)