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Status of Fisheries and Research carried out in Subarea 1 in 1968

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This summary is based on research reports from the following countries (Research Document number in brackets): Canada (7), Denmark (8), Federal Republic of Germany (10), Iceland (11), Norway (12), Poland (13), Portugal (14), Spain (16), United Kingdom (18), U.S.S.R. (17), U.S.A. (19). Further research documents referring to Subarea 1 are: Statistics (21-23), Hydrography (51,59), Assessments (46, 74, 85) and Salmon (5, 33, 43, 49, 50, 61, 64, 70, 72, 78, 80).

1. Status of the Fisheries

A. Subarea 1

Table 1 gives the total nominal catches from Subarea 1 of all species, of cod, and of redfish by countries for the last three years 1966 to 1968.

Table 1: Nominal catches from Subarea 1 (1000 metric tons)

	Total			Cod			Redfish		
	1966	1967	1968*	1966	1967	1968*	1966	1967	1968*
Total	404	449	379	366	418	354	17	12	9
Canada	-	-	+	-	-	+	-	-	-
Denmark F	65	64	46	65	64	46	+	-	-
Denmark G	43	44	33	29	28	21	+	+	+
France	41	43	47	41	43	47	-	+	+
Germany	101	156	145	82	142	133	14	11	9
Iceland	3	+	-	2	+	-	1	+	-
Norway	39	47	40	39	46	40	+	-	+
Poland	1	1	1	1	1	1	+	+	+
Portugal	75	63	33	75	63	33	-	+	-
Spain	4	11	22	4	11	22	-	-	-
U.S.S.R.	+	1	2	+	1	2	-	-	+
U.K.	21	21	10	19	20	10	+	+	+
Non-Member	11	-	?	9	-	?	1	-	?

*Provisional figures

The total catch of only 379,000 tons in 1968 is the lowest catch since 1960. Against 1967 the catch decreased by 14%. All nations except France, Spain and U.S.S.R. had lower catches. The biggest decrease by round about 50% was shown

Cod catches, 93% of the total catch, decreased by 64,000 tons and were the lowest since 1964. UK and Germany, which took nearly the whole amount of their catches during the first half of the year, reported about increasing catch per unit effort. In the German fishery this increase, to an average of 22.8 tons per fishing day, was mainly due to the new and very paying fishery by midwater trawls on big schools of very lazy post-spawners. The catch per fishing day can therefore no longer be taken as a measure of stock abundance. It is determined by the schooling behaviour, the development in fishing techniques, the reaction of the fish to the nets and last, but not least, by the daily working capacity of the factory trawlers.

Redfish catches, of which more than 96% were caught by German trawlers, decreased further. They now only make up 15% of those of 1962.

Salmon catches (see Table 2) showed a drastic decrease in the Greenland gill net fishery in the coastal waters. In the open sea the catches with drift nets increased due to further increase in fishing effort.

Table 2: Catches of Atlantic Salmon in Subarea 1 from 1960 to 1968 by countries in metric tons and round fresh weight. (Revised to May 1969)

	<u>Norwegian</u>	<u>Offshore Faroese</u>	<u>Danish</u>	<u>Swedish</u>	<u>Total</u>	<u>Inshore</u>	<u>Total</u>
1960	-	-	-	-	-	?	?
1961	-	-	-	-	-	127	127
1962	-	-	-	-	-	244	244
1963	-	-	-	-	-	466	466
1964	-	-	-	-	-	1,539	1,539
1965	+	36	-	-	36+	825	361
1966	32	87	-	-	119	1,251	1,370
1967	78	142	85	-	305	1,283	1,588
1968	138	134	272	4	548	579	1,127

+ Figures not available, but catch is known to be less than Faroes.

The Deep Sea Prawn fishery, which is of great commercial importance for the Greenlanders, had with 5,604 tons, nearly the same output as in 1967.

B. East Greenland

Although East Greenland is part of the NEAFC Area, its fish stocks are very closely connected with Subarea 1. Especially the cod fishery in Div. 1D, 1E and 1F can only be understood in connection with East Greenland. Therefore the East Greenlandic fishery should be part of the ICNAF reports.

Table 3 gives the nominal catches (total, cod and redfish) of the last three years. Mainly German and Icelandic trawlers fish on the rocky grounds off East Greenland. The catching possibilities are very much influenced by ice and weather conditions. In the beginning of this fishery mostly only redfish were caught and the catch per unit effort was very high, but it decreased soon to a mean level of 11 to 12 tons per fishing day. The catches of cod however on the same grounds and the same depths increased gradually up to 9 tons per day in the yearly average. The decrease of the landings from East Greenland in 1968 was mainly due to the decrease in market demands for fresh iced fish.

Table 3: Nominal catches from the waters off East Greenland (Cape Walloe to Dohrn-Bank) by countries for 1966 to 1968 in 1000 metric tons.

	Total			Cod			Redfish		
	1966	1967	1968 ^{*)}	1966	1967	1968	1966	1967	1968
Total	40	70	38	12	25	16	27	33	21
Denmark G	1	1	?	1	1	?	-	-	?
Germany	32	38	26	7	13	10	23	23	15
Iceland	7	20	12	4	10	6	4	10	6
U.K.	+	1	?	+	1	?	-	-	?
U.S.S.R.	-	+	?	-	+	?	-	-	?
	*) 1968 provisional								

2. Research Work

Research work in Subarea 1 and off East Greenland was reported by Canada, Denmark, Germany, Iceland, Norway, Portugal, U.S.S.R., U.K. and U.S.A.

A. Hydrography

Hydrographical studies were made by Canada, Denmark, Germany, Norway and U.S.S.R.

Canada reports the completion of a hydrographic atlas of oceanographic sections occupied in 1965-1967 around Greenland for the Davis Strait, the Labrador Basin and the Denmark Strait.

Germany, Norway, U.S.S.R. and especially Denmark, with the new R.V. "Adolf Jensen", worked a lot of hydrographic stations and sections, covering for the first time nearly all months of the year. All measurements indicated a very strong inflow of polar water from the East Greenland Polar Current to the West Greenland area. Since 1950 only the year 1952 showed lower temperatures. The unusual inflow of cold polar water is best demonstrated in Document 69/59 by Frede Hermann by the high negative anomalies of temperature and salinity off Fyllas Bank in July in depth from 0 down to 500 m! A severe ice situation as never seen before off South and South-West Greenland was reported by the German captains and by R.V. "Walther Herwig" up to August. Also temperature and salinity in the Irminger component of the West Greenland Current were lower. However, in October-November the hydrographic situation changed and warm Atlantic Irminger water with temperatures up to 6°C off Fyllas Bank and more than 5°C on the slope of Great Halibut Bank ended the extremely cold period.

Hydrographic sections worked by R.V. "Anton Dohrn" in the Dohrn Bank area showed very clearly warm water of the Irminger Current running coastalwards across the shelf along the eastern side of the Storfjord Deep to Øst Bank, where possibly in fall cod could be found.

The U.S.S.R. Res.Doc. 69/51 gives an interesting study to forecast the cod fishing possibilities 6 to 12 months in advance in the different divisions of Subarea 1 by means of the water temperatures, mainly those in the Fylles Bank area.

B. Plankton

The survey by the Continuous Plankton Recorder, operated by the U.K., was continued. During 1968 1,954 miles were sampled in Subarea 1.

C. Benthos

In conjunction with the International Ice Patrol West Greenland Glacier Survey U.S.A. scientists studied the benthic fauna off Disko Island.

D. Cod

1. Eggs and larvae: Eggs were found in considerable quantities by Danish and Norwegian sampling. The number of larvae found indicate that the 1968 year-class seems to be of medium strength.

2. Young fish studies: The Danish sampling of young cod age-group I, II and III with pound nets and prawn trawl indicated that the 1965 year-class seems to be well represented and might become a relatively rich year-class. This is of great surprise, for in 1967 and 1966 all sampling for young cod indicated that the 1964 to 1966 year-classes might be poor.

3. Commercial stock: The investigations by Denmark, Germany, Norway, Portugal and U.S.S.R. show that during the first half of the year, and especially in the southern divisions of Subarea 1, the very rich 1961 year-class was of the greatest commercial importance. During the second part of the year the 1963 year-class was predominant in all catches and all divisions. The 1961 year-class, a great part of which is of East Greenlandic origin, also dominated clearly with up to 60% in the German and Icelandic catches off East Greenland. Also the 1963 year-class is well represented on the eastern side of Greenland and seems mostly to be of East Greenlandic origin. Germany reports that in spring 1968 a considerable emigration of the 1961 year-class to the Icelandic spawning grounds must have taken place. For 1969 a further possibly stronger emigration to Iceland is expected. As tagging experiments have shown, these emigrated cod, grown up in the southern part of Subarea 1 and East Greenland, are lost for the fishery off Greenland. They stay, as far as we know at present, for the rest of their life in the Icelandic waters.

The most striking thing in 1968, and possibly of greatest importance for the future of the Greenland stock of cod, was the exceptionally successful midwater trawling, reported by Germany and U.S.S.R. in April and May in division 1C, and in May and June in division 1E. All attempts by R.V. "Walther Herwig" to find pelagic schools of cod also in the following months were without any success. All recorded pelagic echo traces were due to capelin, sand eels, squids, jelly fish and young flat fishes.

E. Redfish

No. redfish studies were reported.

F. Atlantic Salmon

Several scientists from Canada, Denmark and the U.K. carried out research work in the coastal area of West Greenland organized by the ICES/ICNAF Joint Working Party on North Atlantic salmon. Unfortunately the fishing for salmon was poor and only 44 salmon could be tagged. The T-nets gave the highest percentage of fish fit for tagging. From the 1967 tagging experiments in Greenland 4 recaptures were made in Ireland, Scotland and Canada. In 1968 85 recaptures in Greenland waters were reported from salmon tagged mostly as smolts in Canada (51), USA (4), Scotland (16), England (8), Ireland (1), Sweden (1) and Greenland (4). Since 1956, 570 salmon tagged in various countries were recaptured in Greenland. Researches to determine ways of identifying the home waters of the salmon caught at Greenland, e.g. morphometric, meristic, parasitological and serological studies, were continued by several scientists.

The latest results of the investigations on Atlantic salmon are described in more detail in the report of the last meeting in May 1969 of the Joint ICES/ICNAF Working Party on North Atlantic Salmon (Res.Doc.69/33). The R&S has reviewed this document. The document and the discussion are summarized in the R&S Report.



INTERNATIONAL COMMISSION FOR



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Please amend Section E, p.5 to read as follows:

E. Tagging

Danish redfish tagging experiments with pound nets in Godthaab Fjord were continued. Additionally, Greenland halibut taken by longlines in the same area have been tagged.

