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Status of Fisheries and Research carried out in Subarea 1, Statistical Area 0 and off East Greenland in 1975.

by

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I. Pertinent Documents

The following Research Reports by ICNAF member countries contain information on fisheries and/or research carried out in Subarea 1 and Stat. Area 0, and off East Greenland in 1975 (1976 Summ. Doc. No. in brackets): Canada (23), Denmark (32), Federal Republic of Germany (31), German Democratic Republic (18), Norway (19), Portugal (37) Spain (15), UK (12) and USSR (20). Also Res. Doc. 76/VI/15-16-50-113 (shrimp assessment), 76/VI/17 (cod assessment), 76/VI/109 (Greenland halibut), 76/VI/27-93-112 (grenadiers), 76/VI/94 (lumpsucker), 76/VI/70-71-92 (hydrography) and 76/VI/73 (plankton) contain information on research carried out in 1975.

II. Status of the Fisheries

A. Subarea 1 and Stat. Area 0

Table 1 gives the nominal catches by species or groups of species for the last six years in Subarea 1. Table 2 shows total catches and catches of cod by countries for the same years. Nominal catches from Stat. Area 0 are given in Table 3.

Total nominal catches in Subarea 1 increased from 111,000 tons in 1974 to 142,000 tons in 1975 mainly as a result of a sharp increase in catches of Greenland halibut and shrimps. Cod catches showed no further decline from 1974 to 1975. There was a marked increase in catches of redfish, while the catches of grenadiers decreased to the level prior to 1974.

Fed. Rep. Germany and USSR showed marked increased total catch from Subarea 1 from 1974 to 1975. The increase by Fed. Rep. Germany was primarily due to increased effort in the cod fisheries compared to the extraordinary low level in 1974. The USSR increase was primarily due to increased catches of Greenland halibut and the new fishery for shrimps. Also Denmark (F), Norway and Spain showed some increase in total catch from 1974 to 1975 due to the shrimp fishery.

Total nominal catches from Statistical Area 0 decreased from 3565 tons in 1974 to 1888 tons in 1975. The 1975 catch consisted of 1648 tons of Greenland halibut and 213 tons of roundnose grenadier while the figures for 1974 were 889 tons and 2661 tons respectively.

Denmark (G), Denmark (F) and USSR were the only countries reporting catches from the area in 1975.

Table 1. Nominal catches from Subarea 1 (thousands of metric tons) by principal species (excluding mammals) (figures from ICNAF Statistical Bulletin and Summ. Doc. 76/VI/35).

	1970	1971	1972	1973	1974	1975
All species	146	150	139	104	111	142
Cod	113	121	111	63	48	48
Redfish	5	3	3	3	3	9
Grenadiers	6	4	3	4	10	5
Greenland halibut	2	3	4	7	13	23
Salmon	2	3	2	2	2	2
Shrimps	9	9	9	13	18	38
Other species	9	6	7	12	16	17

Table 2. Nominal catches from Subarea 1 (thousands of metric tons) by countries. Only countries with total catches exceeding 1000 m.tons in at least one of the years are shown separately (figures from ICNAF Statistical Bulletin and Summ. Doc. 76/VI/35).

	All species (excluding mammals)						Cod					
	70	71	72	73	74	75	70	71	72	73	74	75
Denmark (F)	8	17	11	6	8	11	8	16	10	4	5	5
Denmark (G)	37	37	41	41	51	47	20	19	23	18	20	19
Denmark (M)	+	1	+	1	1	2	-	-	-	-	-	-
France	5	4	6	+	-		5	4	6	+	-	
F.R. Germany	45	43	20	9	2	16	41	41	17	6	2	10
German D.R.	5	3	+	3	3	+	2	3	+	-	-	-
Norway	7	8	33	19	10	12	6	6	32	16	4	3
Portugal	9	6	8	8	10	5	9	6	8	8	10	5
Spain	19	23	13	10	6	12	19	22	13	10	6	4
USSR	8	5	4	6	18	37	1	+	1	+	1	1
UK	4	3	1	1	2	+	3	2	1	+	1	+
Total	146	150	139	105	111	142	113	121	111	63	48	48

Table 3. Nominal catches from Statistical Area 0 (thousands of metric tons) (figures from ICNAF Statistical Bulletin and Summ. Doc. 76/VI/35)

	Total						Greenland halibut						Roundnose grenadier					
	70	71	72	73	74	75	70	71	72	73	74	75	70	71	72	73	74	75
Den(G)				1	+	+				1	+	+						+
Den						1						1						
GDR			1						1							+		
USSR	1	6	15	2	4	1	+	1	9	1	1	+	1	4	6	1	3	+
total	1	6	16	3	4	2	+	1	10	2	1	2	1	4	6	1	3	+

B. East Greenland

Nominal catches from waters off East Greenland in the last six years are shown in Table 4.

Table 4. Nominal catches from East Greenland waters (thousand metric tons)
(figures from Summ. Doc. 75/38 and 76/VI/31).

	Total						Cod						Redfish					
	70	71	72	73	74	75	70	71	72	73	74	75	70	71	72	73	74	75
FRG	31	44	30	14	5	7	14	29	22	9	2	2	16	14	7	4	3	5
Iceland	7	-	-	-	-	-	5	-	-	-	-	-	1	-	-	-	-	-
Others	1	1	1				1	1	1									
TOTAL	39	45	31	14	5	7	20	30	23	9	2	2	17	14	7	4	3	5

There was a small increase in total catch from 1974 to 1975 due to increased catches of redfish by Fed. Rep. Germany. Cod catches decreased slightly.

III. Research Work

Research work related to Subarea 1, Stat. Area 0 and East Greenland in 1975 has been reported by Canada, Denmark, Federal Republic of Germany, German Dem. Rep., Spain, UK and USSR.

A. Hydrography.

(See also the Report of the Environmental Subcommittee)
(Denmark, Fed. Rep. Germany, USSR)

Work was carried out on the standard hydrographic sections off West Greenland.

The winter cooling was very strong. In February the water over the shallow part of Fyllas Bank was cooled to the freezing point and sea ice formed. In May, June and July a relatively strong heating occurred in the upper 50 meters and the temperatures were probably high enough to allow for a relatively good survival of cod larvae.

B. Ice observations

No reports.

C. Other environmental studies

(Denmark)

As part of a study of the environment in areas where drilling for oil can be expected in the nearest future samples of the benthic fauna were taken by Denmark in Div. 1 B - 1 D.

In the Umanak Fjord (Div. 1 A, inshore) studies of the environment at the lead and zinc mine continued in April and September.

D. Plankton

(Denmark, UK)

The Continuous Plankton Recorder Survey, operated on commercial vessels by the Oceanographic Laboratory, Edinburgh, covered 1308 miles in Subarea 1 in 1975. As in 1974 there were no sampling from January to May.

Denmark sampled the standard sections off Godthåb, Sukkertappen and Holsteinsborg in July, and a standard station at Godthåb from April to August.

On the Fylla Bank section the Danish samples showed a considerable increased mean volume of plankton from 1974 to 1975, the volume in 1975 being close to the mean for the 1961 - 68 period.

E. Cod (Denmark, Fed. Rept. Germany, USSR)

1. Eggs and larvae

Denmark reports that the number of cod larvae found in the plankton was somewhat greater in 1975 than in the preceeding cold years 1969-

1974. As mentioned in Paragraph A the temperatures in June - July were probably high enough to allow for a relatively good survival of the cod larvae. It remains, however, to see what influence the extreme cold winter 1975/76 may have had on the further survival of young cod. It also should be noted that the difference between larvae of cod and those of Gadus ogac is not sufficiently well known, and therefore some of the observed larvae may belong to the apparent increasing stock of the latter species.

2. Young fish (age-groups I, II and III)

After several years without significant number of small cod in research catches in Subarea 1, Denmark reports that catches in 1975 of small cod, especially 2 year-old, were observed both in research catches with small-meshed otter trawl and as under-sized fish (discards) in the commercial pound net catches. The 1973 year-class seems to be especially frequent in the southern divisions and is likely to be of East Greenland origin. Danish observations in 1976 have so far confirmed their earlier assessment of abundance of the 1973 year-class.
Also Fed. Rep. Germany reports that the 1973 year-class was well represented in the research catches both in Subarea 1 and off East Greenland.

3. Cod in commercial catches

Denmark reports that the 1968 year class as expected dominated in most samples in Subarea 1. Samples taken in January-May, when about 84% of the Greenland trawl catches of cod were taken, contained however a considerable number of the 1969 year class and younger year-classes. Also Fed. Rep. Germany reports that the catches contained a considerable number of fish from younger year-classes. It is possible that the 1968 year-class is emigrating to the more southern divisions and to East Greenland and therefore will not contribute much to future catches in Divs. 1B - 1D. Fed. Rep. Germany reports that the 1968 and 1970 year-classes dominated in the catches off East Greenland.

4. Tagging

Denmark tagged 1852 cod in 1975, the majority being small cod tagged inshore in Div. 1 D.

F. Roundnose Grenadiers

(Denmark, USSR)

During a scouting trip for roundnose grenadier to Statistical Area 0 by one of the Greenland trawlers grenadiers were caught around 62°N. lat., 61°W. long. at depths of 600-800 meters. By far most grenadiers were roundnose grenadier (C. ruspestris) but about 10-12 specimens of roughead grenadier (M. berglax) were taken in each haul. Stomach content consisted of crustaceans, worms and small redfish. Material was collected to study the relation between total length and the length from the tip of the snout to the anal fin of roundnose grenadier. (Res. Doc.76/VI/93).

USSR sampled roundnose grenadiers taken from waters of the Greenland - Canadian Ridge at depths of 700-800m for length and sex composition. About 60% were males. The lengths ranged from 30 to 90 cm, with a mean length for both males and females of about 56 cm. All dissected fish (1000 specimens) were immature, and shrimps dominated in the stomach content.

G. Greenland halibut

(Denmark, USSR)

Denmark tagged 95 Greenland halibut in Subarea 1 in 1975.

USSR sampled Greenland halibut taken along the continental slope of Baffin Land for length and sex composition. About 70% were males. The lengths ranged from 36 to 81 cm for males with a mean length of 60 cm, while the females

ranged from 40 to 101 cm with a mean length of 66 cm. Redfish, grenadiers and other deep water fish were found in their stomachs. 2 research vessels and 16 fishing vessels took part in a USSR trawl survey in December 1975 in an attempt to estimate the stock size of Greenland halibut in different areas of the North-West Atlantic. (Res. Doc. 78/VI/109)

H. Salmon

(Canada, Denmark, UK)

About 500 Atlantic salmon were caught by the Danish research vessel DANA off West Greenland in August. Blood and scales were sampled for further studies on stock separation (European and North American component) by Canadian scientists who participated in the cruise. UK scientists were involved in the preparation of detailed scientific reports on aspects of the international tagging experiment at West Greenland in 1972. Smolt tagging experiments were also continued in English and Scottish river systems to provide furhter information on the origion of salmon in the West Greenland stock.

In the Irminger Sea the R/V DANA carried out drift net fishing to study distribution and abundance of salmon in the area.

I. Other fish

(Denmark, USSR)

Denmark reports that samples of capelin have been obtained from a number of locations by pelagic trawling and by beach seining. Age and/or length samples of exploited species other than those already mentioned above have been taken from research vessels' catches. Especially samples of American plaice and redfish are of a considerable size.

Material has been collected to study the relation between weight of roe and of whole fish of Lumpsucker. (Res. Doc. 78/VI/94).
USSR sampled 759 redfish from the southern part of Statistical Area 0 for length and sex composition. Prespawning and spawning concentrations of American Plaice on Lille Hellefiske and Banan Banks in Subarea 1 were also sampled for length and sex composition.

J. Crustaceans

(Denmark, USSR)

1. Shrimps. (Pandalus barealis)

Denmark reports that a number of standard stations for trawling have been established in Disko Bay and also on offshore grounds. From the catches on the standard stations samples for length frequencies by sex and maturity stages are taken.

About 2000 photographs of the sea bed were taken in the Disko Bay. The technique seems promising for obtaining an index of the density of shrimps and further work will be done especially on offshore grounds in 1976-77.
About 10,000 shrimps were tagged in the Disko Bay in 1975, but returns have been very limited.

A program is being initiated to collect catch/effort statistics by small area units (7½ minutes lat. by 15 minutes long.) by means of log books.

Results of USSR surveys on shrimps indicate that shrimps spawning in 1975 started in the middle of August in the Store Hellefisk Bank area. The size of the shrimps stock was estimated by a combination of trawl survey and underwater observations. (Res. Doc. 76/VI/113).

2. Queen crab (Chionoecetes opilio)

Trap fishing experiments continued in Div. 1D inshore and Div. 1C inshore in 1975. Also some localities in the Disko Bay were included in the experiments.