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Status of Fisheries and Research carried out in Subarea 1 and East Greenland in 1970

by

Arno Meyer

Institut für Seefischerei
Hamburg, Germany

This summary is based on research reports from the following countries (Research Document number in brackets): Canada (43), Denmark (49), Federal Republic of Germany (47), France (46), Japan (45), Poland (50), Portugal (51), Spain (48), USSR (53), United Kingdom (54), USA (55). Further Research Documents referring to Subarea 1 are: Statistics (26,27), Cod stock (9,11,58,103), Macrurus (89), Hydrography (86,97), Salmon (2,3,4,24,25,33,63-70,72,73, Comm.Doc. 14).

1. Status of the Fisheries

A. Subarea 1

Table 1 gives the nominal catches from Subarea 1 (total, cod, and redfish) for 1962, 1968, 1969 and 1970. The catches of non-members are unknown for 1969 and 1970 but are thought to be small.

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

| | Total | | | | Cod | | | | Red fish | | | |
|-------------------|-------|------|-------------------|-------------------|------|------|-------------------|-------------------|----------|------|-----------------|-----------------|
| | 1962 | 1968 | 1969 | 1970 | 1962 | 1968 | 1969 | 1970 | 1962 | 1968 | 1969 | 1970 |
| Total (all years) | 530 | 420 | 225 ^{x)} | 140 ^{o)} | 451 | 382 | 205 ^{x)} | 112 ^{o)} | 61 | 9 | 4 ^{x)} | 4 ^{x)} |
| Canada | - | + | - | - | - | + | - | - | - | - | - | - |
| Denmark (F) | 93 | 46 | 19 | 8 | 93 | 46 | 18 | 8 | + | - | - | + |
| Denmark (G) | 41 | 33 | 38 | 38 | 35 | 21 | 24 | 20 | + | + | + | + |
| Denmark (M) | - | - | + | + | - | - | - | - | - | - | - | - |
| France | 53 | 47 | 25 | 5 | 53 | 47 | 25 | 5 | - | + | - | + |
| Fed. Rep. Germany | 192 | 145 | 83 | 45 | 125 | 133 | 79 | 41 | 55 | 9 | 4 | 4 |
| Iceland | 6 | + | + | - | 1 | + | + | - | 4 | - | - | - |
| Japan | - | + | + | - | - | + | + | - | - | + | + | + |
| Norway | 32 | 51 | 19 | 7 | 32 | 51 | 19 | 6 | - | + | + | + |
| Poland | 1 | 1 | + | + | + | 1 | + | + | + | + | + | + |
| Portugal | 92 | 33 | 16 | 9 | 92 | 33 | 16 | 9 | - | - | - | - |
| Spain | 3 | 22 | 24 | 19 | 3 | 22 | 24 | 19 | - | - | - | - |
| U.S.S.R. | - | 2 | + | 8 | - | 2 | + | 1 | - | + | + | + |
| UK | 17 | 10 | 1 | 3 | 16 | 10 | 1 | 3 | + | + | - | + |
| USA | - | - | + | + | - | - | + | + | - | - | + | - |
| Non Member | - | 29 | ? | ? | - | 28 | ? | ? | - | + | ? | ? |

^{x)} catch from non member countries; 1969 and 1970 not yet reported

The total catch from Subarea 1 decreased to 140,000 t (62% of the 1969 catch). This is only just 26% of the highest recorded catch in 1962 and 134,000 t lower than the lowest catch since publication of ICNAF statistics began in 1952. The sharp downward trend is most obvious in the catches of Denmark (Faroes), France, Germany, Norway, and Portugal.

Cod catches decreased by a further 93,000 t. The cod catch of 112,000 t in 1970 is only one quarter of that of 1962. Also the percentage of cod in the total catch decreased in 1970 to 80% (1969: 90%), an indication of the increase in catches of capelin, Macrurus, lumpsucker, Greenland halibut and deep sea prawn. The reasons for the further sharp decline of cod in 1970 are thought to be - as also expressed in last year's report -:

1. very severe ice conditions - now for the 3rd time in succession - which from March to August reduced considerably the availability of cod,
2. relatively poor recruitment of young cod in recent years, which had an adverse effect on the fishery in the second half of the year, when younger cod are normally fished, and
3. the combined effects of 1 and 2 above, which led to a diversion of fishing effort to other areas.

Redfish catches were again as low as in the preceding year and made up only 7% of those of 1962.

As in other areas the fishery for Capelin (1970: 3,100 t) seems to be of growing importance.

Salmon catches made by Denmark (335 t), Faroes (259 t), Greenland (1,267 t), Norway (270 t), and Sweden (8 t) made up 2,146 t (including 7 t caught in the northern Labrador Sea) and were 64 t less than in 1969.

The fishery for Deep Sea Prawn is of growing importance. The catches, now coming also from offshore grounds, increased by a further 27% to 8,400 t.

B. East Greenland

Table 2 shows the nominal catches (total, cod, and redfish) of the last 3 years, nearly all taken by German and Icelandic trawlers off East Greenland. The decrease by 11,000 t to 39,000 t in 1970 was the consequence of less fishing activity of German wetfish trawlers due to a decrease in market demand for fresh fish. The catch of cod, however, was slightly increasing and in 1970, for the first time since fishing off East Greenland started in 1954, the cod catches exceeded those of redfish.

Table 2: Nominal catches from East Greenland 1000 metric tons

| | Total | | Cod | | Redfish | |
|-------------------|-------|------|------|------|---------|------|
| | 1968 | 1970 | 1968 | 1970 | 1968 | 1970 |
| Total | 40 | 39 | 16 | 20 | 23 | 17 |
| Denmark (G) | 1 | 1 | 1 | 1 | + | + |
| Fed. Rep. Germany | 27 | 31 | 8 | 14 | 18 | 16 |
| Iceland | 13 | 7 | 7 | 5 | 6 | 1 |
| USSR | - | + | - | + | - | + |
| UK | + | - | + | - | - | - |

2. Research Work

Research work in Subarea 1 and off East Greenland was reported by Canada, Denmark, Federal Republic of Germany, France, Poland, USSR and UK.

A. Hydrography

Hydrographic studies, covering the whole Greenlandic area from Dohrn Bank off East Greenland to north of Disko Island off West Greenland, were performed by Canada, Denmark, France, Germany and USSR. 1970 was again a severe ice year. The northward flow of ice started earlier than in 1969. Already in March the ice, which normally progresses no further than Cape Desolation ($60^{\circ}45'N$), reached the northern edge of Fiskenaes Bank ($63^{\circ}30'N$). In April it extended to north of Godthaab ($64^{\circ}30'N$). Northerly winds in May temporarily scattered the ice, however in July to August again the "Storis" extended to north of Godthaab.

As in the two preceding years, the temperatures were unusually low in the upper 100 m. On the western slope of Fyllas Bank negative temperatures were measured by Denmark for the first time as late as September. The temperature and salinity anomalies (from the mean of 1950 to 1966) in the upper 400 m, in July west of Fyllas Bank, in the range of -1.12 to $-2.06^{\circ}C$ and -0.3 to $-0.6^{\circ}/\text{oo}$ respectively indicate an unusually strong inflow of polar water to the West Greenland area.

USSR scientists showed that in September and October off South Greenland temperatures were 1 to $4^{\circ}C$ lower than ever found since their investigations started in 1961.

The strong decrease in temperatures in the last half of the sixties is rather alarming especially in respect to the survival of cod larvae (see D).

B. Geophysics

Geophysical surveys were carried out by Canada in Baffin Bay.

C. Plankton

Continuous Plankton Recorders, operated from the Oceanographic Laboratory in Edinburgh, sampled 1,370 miles in Subarea 1.

D. Cod

1. Eggs and Larvae

Eggs and larvae were sampled off West Greenland in May to July by Denmark and France. The numbers found were even smaller than in 1969, when eggs and larvae also were scarce. The sampling results as well as the hydrographic conditions indicate a very poor West Greenland 1970 year-class.

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

The young fish studies by Denmark with small-meshed trawls and pound nets showed that in Division 1B as well as in Divisions 1D and 1F the year-classes 1967 to 1969 were very poor. Standard trawling stations for better information of pre-recruits are now continuously fished.

3. Commercial Stock

The investigations by Denmark, Germany, Poland and USSR show, that in the commercial catches in the northern Divisions 1B to 1D, the year-classes 1965 and 1966 are by far the most important. Both year-classes were found to be of pure West Greenland origin and therefore are more or less missing from the southern Divisions 1E and 1F.

In 1970, the 1965 year-class reached for the first time commercial importance in the offshore catches, whilst nearly up to the end of the year the 1966 year-class only was fished off the shore. These two year-classes, which probably are at least of medium size, will become of increasing importance for the West Greenland fishery in 1971 and 1972.

Off Southwest and South Greenland, where during the last 2 years, especially however in 1970, the fishing activity by the German fleet increased in proportion to the northern divisions, the 1963 year-class dominated followed by the 1962 and 1961 year-classes. Most of these 7 to 9-year-old cod were born off East Greenland. They were mostly fished during the first half of the year off Southwest, South and East Greenland: on their way to the spawning places off East Greenland, during spawning, and on their way back to Southwest Greenland and as post-spawners. In the catches on the spawning grounds the cod of the rich 1961 year-class were dominant. A considerable part of the mature cod emigrated to Iceland for spawning.

The already mentioned unusual strong ice-cover over the fishing banks must have again reduced considerably the fishing mortality of the older cod especially during the time of its post-spawning migration.

4. Tagging

A total of 1,642 cod were tagged by Denmark of which 796 were small cod.

E. Atlantic Salmon

The latest results of salmon investigations are presented in the report of the meeting of the ICES/ICNAF Joint Working Party on North Atlantic Salmon, Pitlochry, March 29 - April 1, 1970 (see Comm.Doc.71/14).

G. Other Fish

Denmark started studies on American plaice, as this species is regarded as a possible resource for the industry. In the Godthaab Fjord, 639 Greenland halibut were tagged. In the same area, and in the Julianshaab district herring catches were investigated and 305 herring tagged.

The USSR reported on feeding and migration of the Roundnose grenadier and their length composition and sex ratio in West Greenland waters.

H. Deep Sea Prawn

Denmark extended its offshore research catches for deep sea prawn in Divisions 1B and 1D also to Division 1E.