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# DANISH RESEARCH REPORT, 1969

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## SUBAREA 1

### A. Status of the fisheries

The table shows the nominal catch by species taken by Denmark (Greenland) in Subarea 1, 1969:

| Species | Nominal catch+ (in tons) | Increase or decrease from 1967 (%) |
|---|---|---|
| Cod | 21,343++ | -22 |
| Redfish | 136 | -22 |
| Wolffish | 3,836 | +42 |
| Greenland halibut | 1,571 | -14 |
| Atlantic salmon | 580+++ | -56 |
| Capelin | 200 | -95 |
| Sand eel | 235 | -39 |
| Other fish | 223 | +10 |
| Deep sea prawn | 5,604 | - 1 |
| Total | 33,728 | -23 |

\+ Preliminary figures.
++ Excl. 7,204 tons landed by small Faroese boats in Færingehavn (1D).
+++ Excl. Danish drifters (app. 280 tons).

The total catch decreased considerably in 1968. Only the fishery for wolffish and lumpsucker (roe) increased, and the deep sea prawn fishery was constant. The main trends for the most important fisheries are:

I. COD

1. The fisheries. The great overall decrease from 1967 to 1968 was due to a failing fishery in the northern districts (1A-1D). In the southernmost districts (1E-1F) the fishery increased. The main cause of the decrease is possibly that the dominating new year-class 1963 did not compensate for the decline in the previous dominating year-class 1961. Another cause may be that the Greenlanders are mainly fishing in inshore waters, where many small sized fish are taken in pound nets while the offshore long line fishery from big cutters has hitherto been a failure.

2. Forecast for the cod fishery. The Greenlanders' cod fishery is expected to become somewhat better in 1969 than in 1968 because of the growth of the dominating year-class 1963. Further, the year-class 1965 is expected to be of some importance as small sized fish in the pound net catches.

II. ATLANTIC SALMON

The decline in the Greenland gill net fishery for salmon seems to be due to smaller fish stocks in the coastal waters than in previous years. In the open sea, where Danish, Norwegian and Faroese drift net fishing is carried out, the stock seems to have been more constant.

III. OTHER FISH

The fishery for wolffish increased in the northern divisions, partly due to increasing interest when cod fishery failed here. A smaller decrease occurred in catches of redfish and flatfishes, and a considerable decrease took place in the fishery for industrial fish, especially capelin.

IV. DEEP SEA PRAWN

A small decrease in the prawn fishery must be ascribed to the market conditions as there are no signs of a decrease in stock.

## B. Special Research Studies

I. Environmental Studies

1. Hydrography. See F.Hermann, pp.

II. Biological Studies

1. Cod.

a. Eggs and larvae. In connection with the hydrographic investigations samples were taken by 2 m stramin net in Davis Strait on the standard sections and on the fixed station in the mouth of the Godthåb Fjord. Continuous hauls were made in the upper water layer from about 50 m to the surface (maximal wire lengths 225 m).

Eggs (Fig.1) were taken in considerable quantities in April and May on the Sukkertoppen, Godthåb and Frederikshåb sections, mainly over the western slopes of the fishing banks. ... Few were taken in June.

Larvae were taken in June-August, mainly in July (Fig.2) when the greatest numbers were taken on the Sukkertoppen section and on some stations between the Sukkertoppen and the Holsteinsborg sections. The numbers of larvae do not indicate a rich year-class 1968 for the future fishery, but perhaps one of mean strength.

b. Occurrence of small cod (age-groups I, II, and III). In pound net catches from Holsteinsborg, Sukkertoppen and Godthåb districts (Nos. 20, 29, and 21 in Fig.4) and in a catch taken with prawn trawl in the Davis Strait W.of Godthåb (depth 300 m, January 1969) the year-class 1965 was well represented. Presumably it will become a relatively rich year-class in the commercial catches Report, 1965, because of favourable water temperatures that year.

c. Age and size of cod in the commercial stock. Fig.3 (samples 1-7) shows age and size of cod taken by a Faroese trawler, and in Fig.4 (samples 8-12) are shown age and size of some Greenland catches taken by various gears (long line, hand line, and pound net). Further Fig.4 shows age and size of

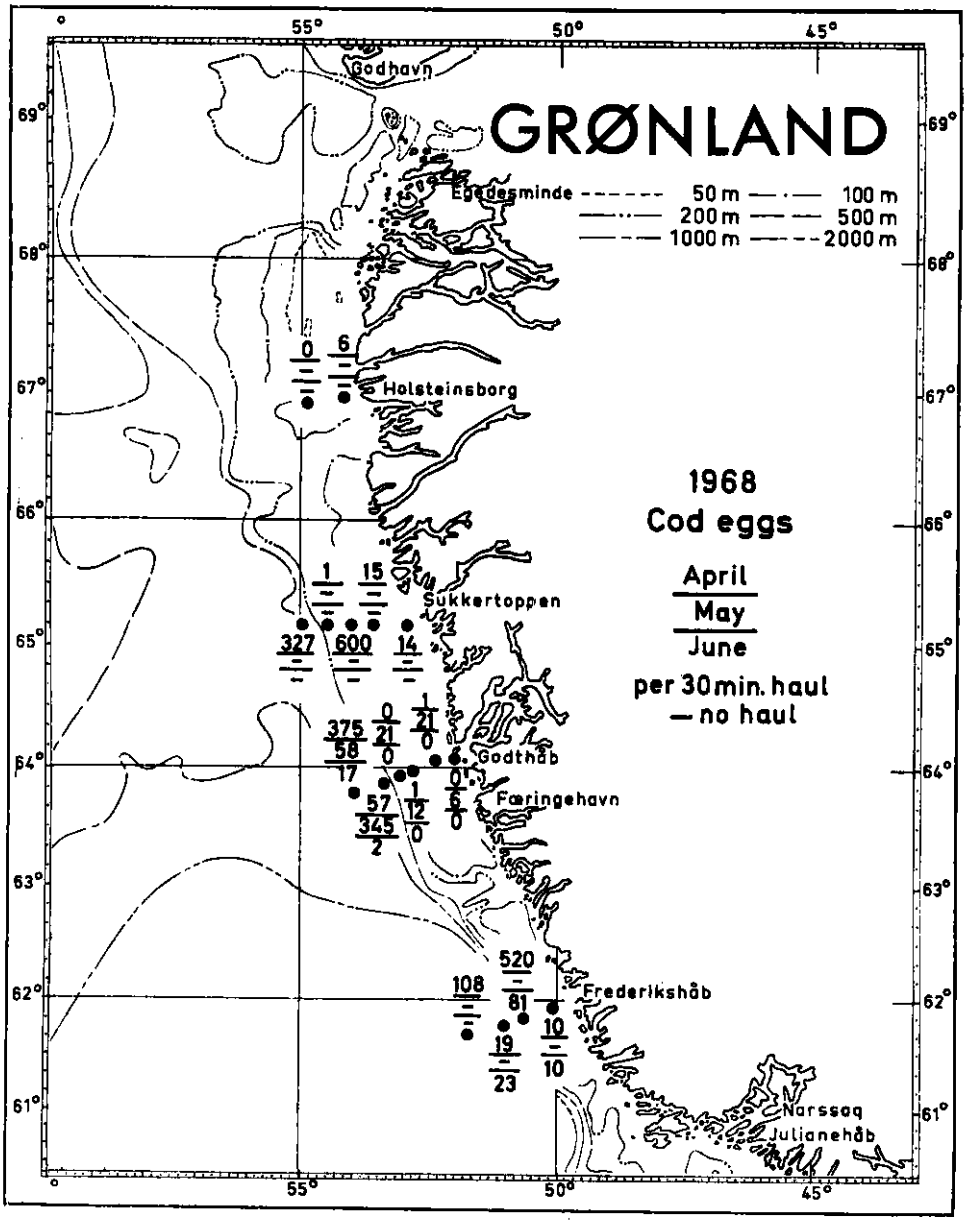


Fig.1. Cod eggs (nos.per ½ hour) taken by 2 m stramin net in the upper water layers (max.depth ca. 50 m).

research catches (samples 13-29) taken by various gears. The figures, which are based on a total of 5082 age determinations and 24.217 length measurements, show the year-class 1963 was predominant in most catches in 1968, followed by year-class 1961, which was predominant in 1967. The previous rich year-class 1960 was only scarce in 1968.

d. Tagging experiments. A total number of 2562 cod was tagged. Of these 1513 were small cod (less than 50 cm total length) caught mainly in inshore waters by pound nets. Details are given in the table:

| Div. | Inshore | | Offshore | |
|---|---|---|---|---|
| | small cod | big cod | small cod | big cod |
| 1B | 462 | 143 | 7 | 495 |
| 1C | - | - | 1 | 40 |
| 1D | 1011 | 12 | - | - |
| 1F | 32 | 359 | - | - |
| Total | 1505 | 514 | 8 | 535 |

2. Atlantic salmon.

The research work, which is organized by the ICES/ICNAF Joint Working Party on North Atlantic Salmon, was carried out by British, Canadian and Danish scientists from 23 August to 4 November in Godthåb and Julianehåb districts. Fishing experiments were made with poor results, 676 salmon being taken in gill net, 26 in T-net and only 11 on drift lines. Only 44 salmon were tagged.

From the tagging experiments in Greenland in 1967 9 recaptures have been reported, 5 from the same district in Greenland and 2 from Ireland, 1 from Canada and 1 from Scotland.

The tagging experiments in 1968 gave 4 recaptures all in the same district, Godthåb (1D), and few days after tagging.

Following salmon tagged in other countries were recaptured in Greenland waters: from Canada 51, USA 4, Scotland 16, England 8, Ireland 1, Sweden 1.

3. Other fish species.

Materials for capelin studies were collected in different districts, and tagging experiments on redfish and on Greenland halibut in Godthåb Fjord were continued.

4. Deep sea prawn.

Trawling experiments for Pandalus borealis in Davis Strait have been continued in 1968 with good results in the deep north of Store Hellefiske Bank and in the Sukkertoppen Deep and the Godthåb Deep.

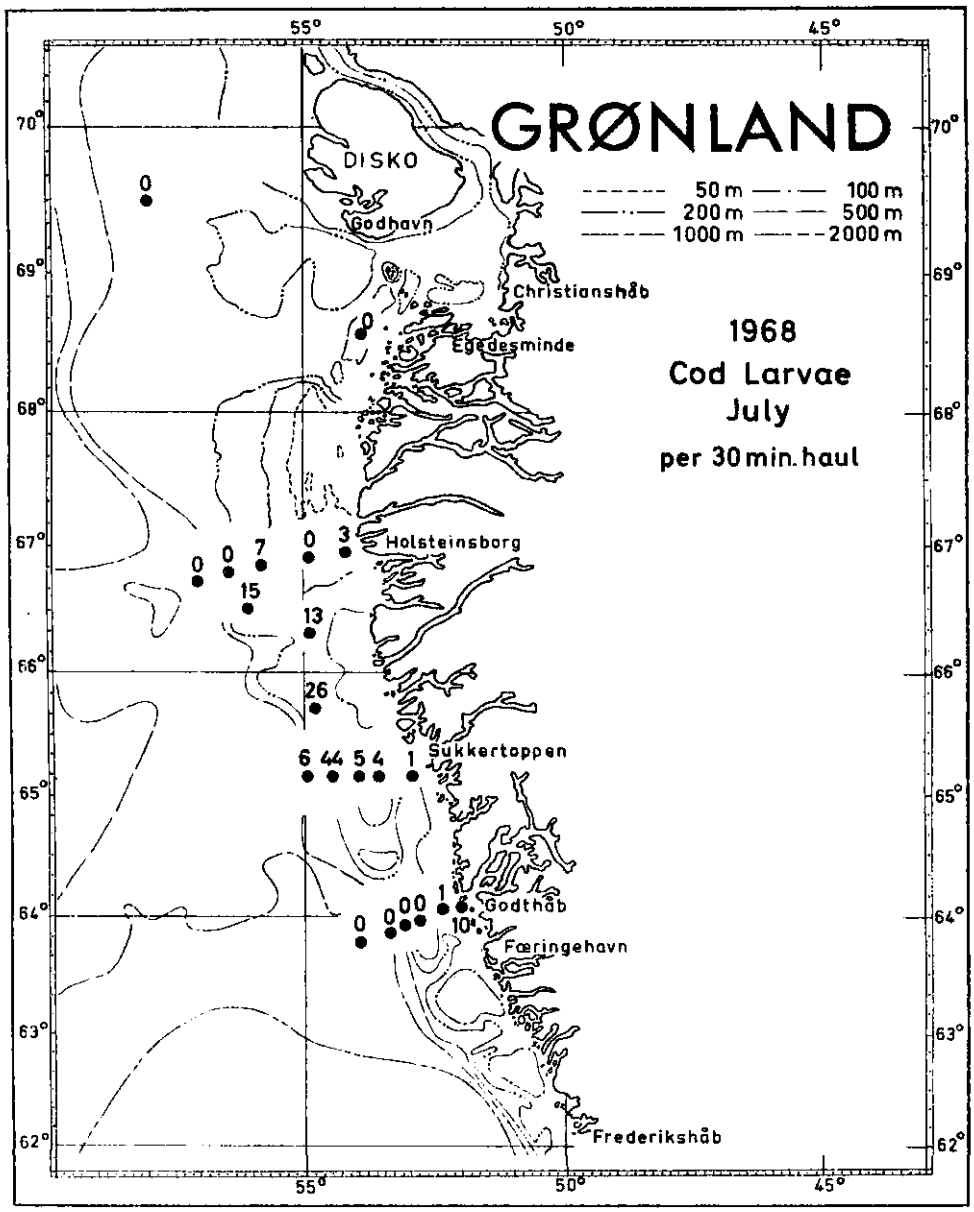


Fig.2. Cod larvae (nos.per ½ hour) taken by 2 m stramin net (max.depth ca. 50 m).

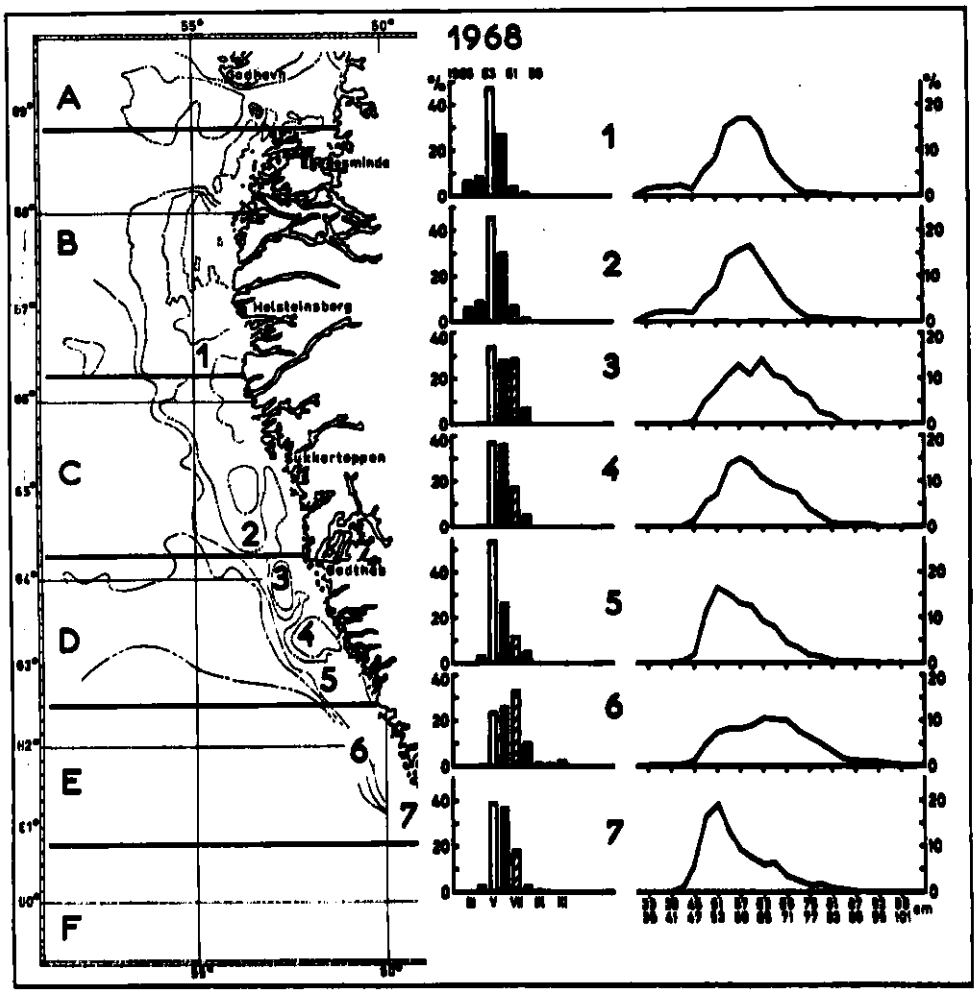


Fig.3. Age and length compositions of cod taken by the Faroese trawler SKALABERG. Samples 1-7.

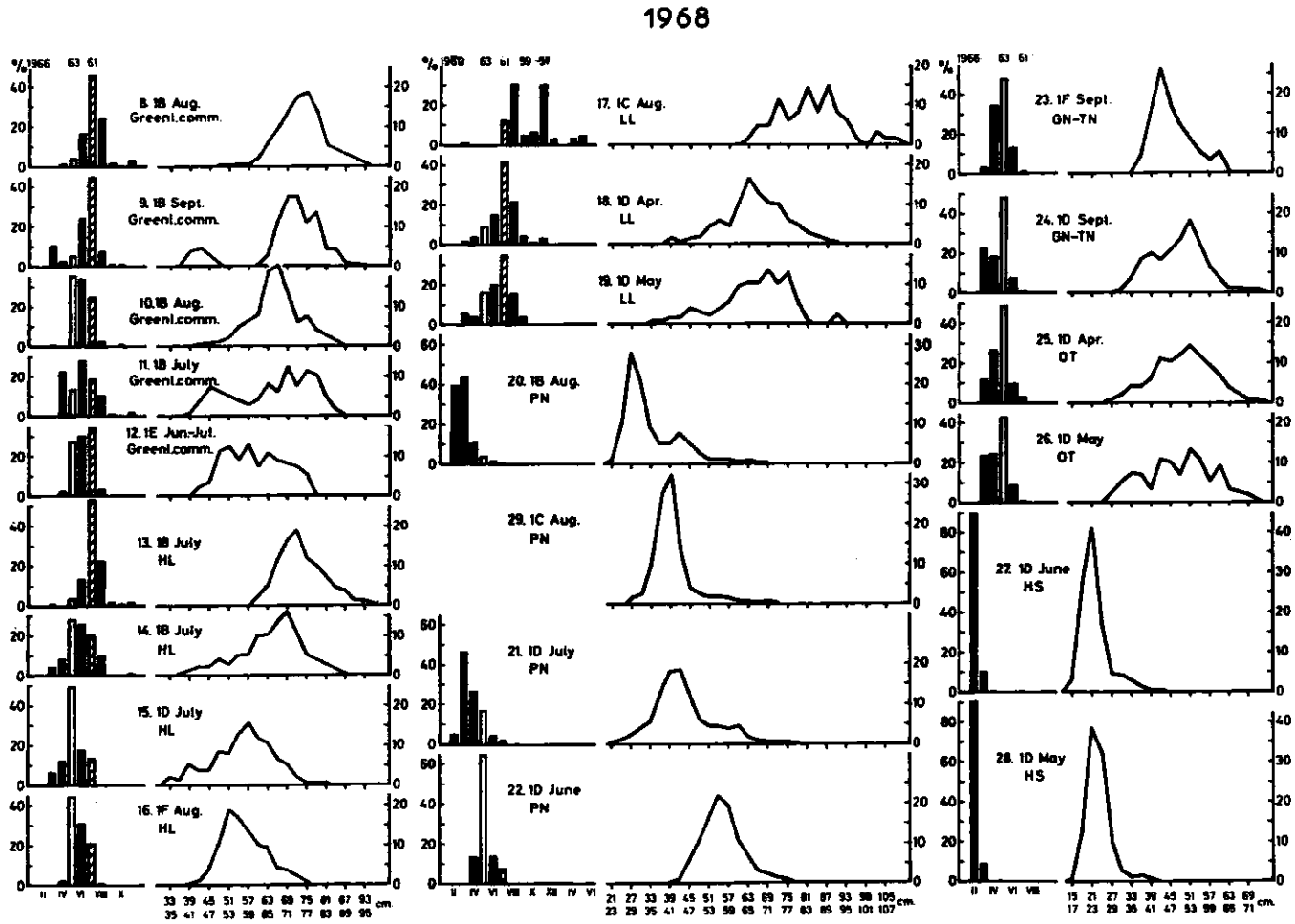


Fig. 4. Age and length compositions of cod from Greenland commercial catches (samples 8-12) taken by different gears (longlines, handlines and pound nets) and from research catches (samples 13-29) taken by handlines (HL), longlines (LL), pound nets (PN), gill nets and T-nets (GN-TN), otter trawl (OT, mesh size 36 mm), hand seine (HS, small meshes).

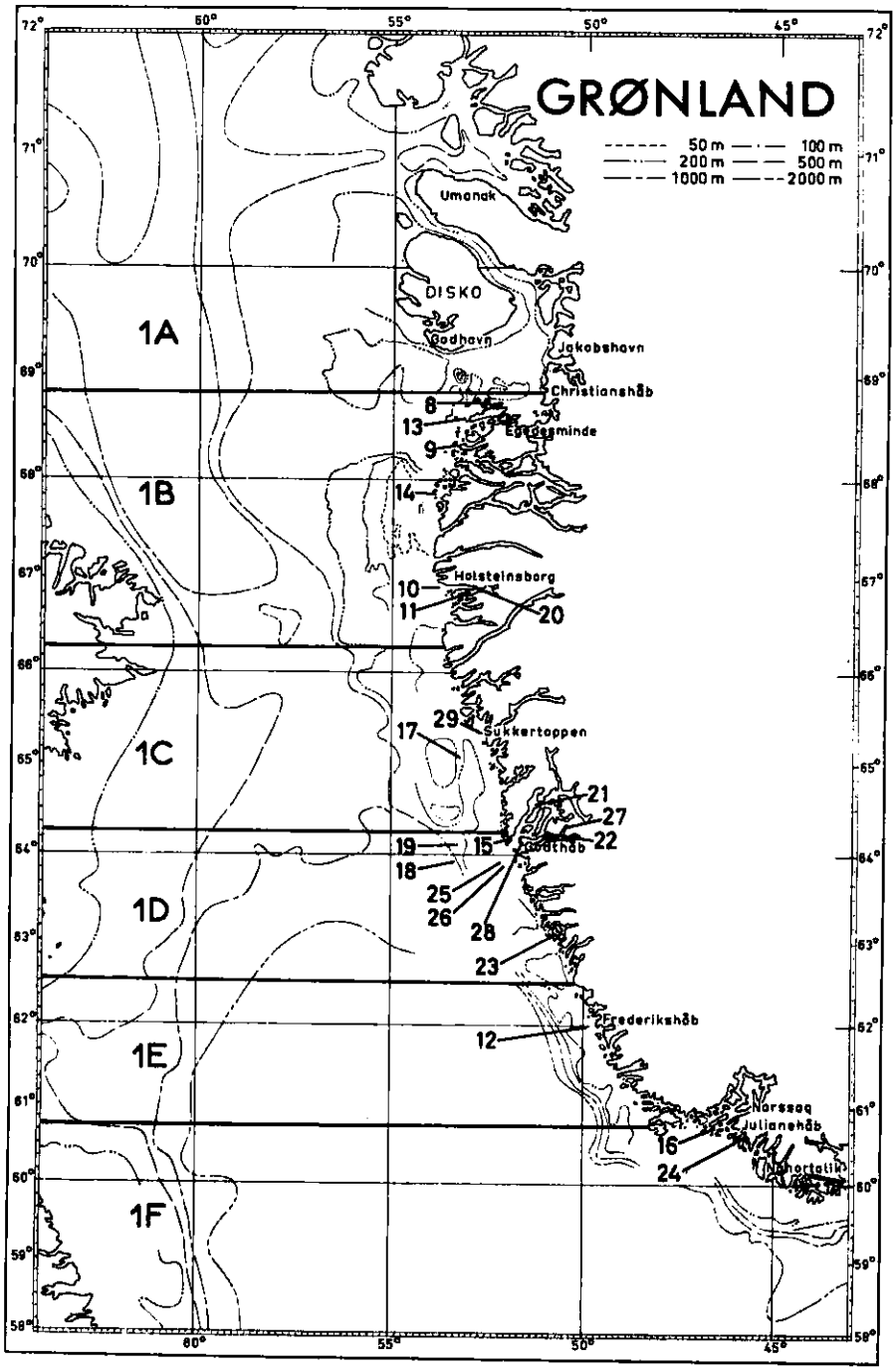


Fig.5. Map showing sample localities for Fig.4.