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International Council for
the Exploration of the Sea

C.M. 1977/F:14
Demersal Fish(Northern)
Committee

RESULTS OF DETECTION AND FISHERY OF BEAKED REDFISH
SEBASTES MENTELLA TRAVIN IN THE EAST GREENLAND AREA
IN 1975-1976

by

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Abstract

Some data on the detection and fishery of beaked redfish in the East Greenland area are given. It is stated that in 1975-76 redfish were mainly 27 to 34 cm long. Larger redfish were recorded at greater depths, mainly on the northern banks. The course of the fishery by months is given.

Resumé

D'après les données sur les recherches et la pêche de sebaste (Sebastes mentella Travin) dans la région de l'Est de Grenlande on constate que la longueur principale de sebaste pêché est environs 27-34 sm. Le sebaste d'une grande dimension se trouve dans la plus grande profondeur et surtout dans les banc du Nord.

Scant information is available on the beaked redfish of the East Greenland area. Soviet fishing vessels started redfish fishery in 1975 there. Up to that time only occasional catches were taken

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by scouting vessels. In recent years scouting work was successful due to a good recruitment to the stock.

Fishery of the East Greenland beaked redfish was started in late September 1975 when scouting big trawler "Suloy" detected dense concentrations on the Angmagssalik and Heimland Banks. At the end of October fishery was stopped because of bad weather conditions.

In April-September 1976 detection of beaked redfish was conducted off East Greenland. Fishing concentrations were detected over a wide area from Anton Dohrn Bank to Bills Bank. Those concentrations distributed at temperatures from 2.8°C to 5.1°C at a depth from 230 to 500 m (Fig.1). In the day time beaked redfish concentrations were recorded by detecting devices in a form of dense "band" with a vertical extension from 10 to 30 m. With the onset of darkness beaked redfish migrated to upper layers and dispersed into small shoals, schooling again off bottom early in the morning. Day time catches with a bottom trawl were 2-3 times higher than night ones.

The relationship between the redfish distribution and depth and temperature of near bottom waters was clearly traced: larger redfish were caught at greater depths, mainly on the northern Banks (Table 1).

According to data of Icelandic ichthyologists (Magnusson J., 1975) specimens 31 to 33 cm long prevail in the fishing stock of beaked redfish off East Greenland. Similar sizes were recorded for beaked redfish in the cruise of ERG research vessel "Walter

"Herwig" in August 1975 (Kosswig K., 1976). Approximately the same peak of size frequency was for the beaked redfish catches taken by Soviet trawlers, as evident from Table 1. Mass measurements of the beaked redfish catches taken by scouting vessel "Zarnitsa" at a depth of 350 to 400 m between $62^{\circ}=65^{\circ}\text{N}$ and $35^{\circ}=40^{\circ}\text{W}$ were made in the first half of April 1976 (Table 2). The bulk of fishes were 29 to 38 cm long. The mean length of beaked redfish made up 35 cm.

Description of the course of fishery by separate periods is given below.

In April-June fishery was conducted on the Angmagssalik, Gauss and Anton Dohrn Banks. Ice conditions were favourable for the fleet operation. In June, when redfish actively made vertical migrations, fishermen operated with bottom trawls in the day time and with pelagic trawls at night.

In July the fishing fleet operated mainly on the Angmagssalik and Heimland Banks. Fishing conditions were weak due to unstable behaviour of redfish. Drift ice hindered the fishery: when northerly and westerly winds, the vessels had to leave the most productive areas. Separate fields of ice were recorded from $64^{\circ}20'\text{N } 35^{\circ}\text{W}$ to $65^{\circ}40'\text{N } 30^{\circ}\text{W}$, and edge of close ice was recorded at $64^{\circ}50'\text{N } 35^{\circ}30'\text{W}$.

In August-September redfish were caught on the Angmagssalik, Heimland, Fylkir and Bills Banks. Depending on the fishing conditions the fishermen promptly changed fishing areas. However, due to unstable behaviour of redfish, catches varied greatly and diurnal productivity was two times lower than during the first months of the fishery.

When fishing for redfish the following fishes were recorded in the by-catch: up to 1-5 tons of cod on the Bills Bank (at a depth of 360-480 m); from 0.5 to 1.5 tons of argentine on the Angmag-

ssalik Bank; halibut from single specimens to 0.1 ton on the Anton Dohrn Bank (65°30'N 30°15'W, 66°10'N 30°45'W at a depth of 300 to 400 m), Gauss Bank (65°30'N 32°45'W at a depth of 300 to 400 m) and on the Angmagssalik Bank (64°40' - 65°20'N 34°-36°W at a depth below 360 m); enmeshed capelin between 64°30'N 35°15'W and 63°30'N 37°45'W; anchovy at 63°30'N and 37°15'W; up to 0.2 ton of shrimps on the Anton Dohrn Bank (66°10'N 30°45'W at a depth of 300 m).

When investigating the East Greenland banks young redfish (which will recruit to the fishing stock in subsequent years) were recorded in great quantities together with fishes of commercial sizes. In connection with this there are reasons to believe that the beaked ^{and} redfish abundance will remain high in the nearest years will allow to maintain yield at the level of 1976.

Table 1

Depth and water temperature off the bottom in places of beaked redfish fishing concentrations (according to information reported by masters of fishing vessels)

Month	Positions	Depth, m	Water temperature off bottom	Prevailing length cm
May	65°20'-65°30'N	400-500	4°1 - 4°7	27-32
	33°00'-33°30'W			
	64°20'-64°40'N			
	35°00'-35°30'W			
July	64°00'-64°20'N	260-330	4°8 - 5°1	27-30
	36°00'-36°30'W			
	63°20'-63°40'N			
	38°30'-39°00'W			
Aug	64°00'-64°20'N	360-420	4°8	27-32
	36°00'-36°30'W			
	63°20'-63°40'N	260-320	4°4 - 5°8	27-30
	38°30'-39°30'W			
	63°20'-63°40'N	280-350	5°0	31-34
	39°00'-39°30'W			
	62°20'-62°40'N	260-360	4°6	29-32
	40°00'-41°00'W			
Sep	63°20'-63°40'N	280-350	5°0	31-34
	39°00'-39°30'W			
	62°20'-62°40'N	300-400	4°6	27-30
	40°30'-41°00'W			

Table 2

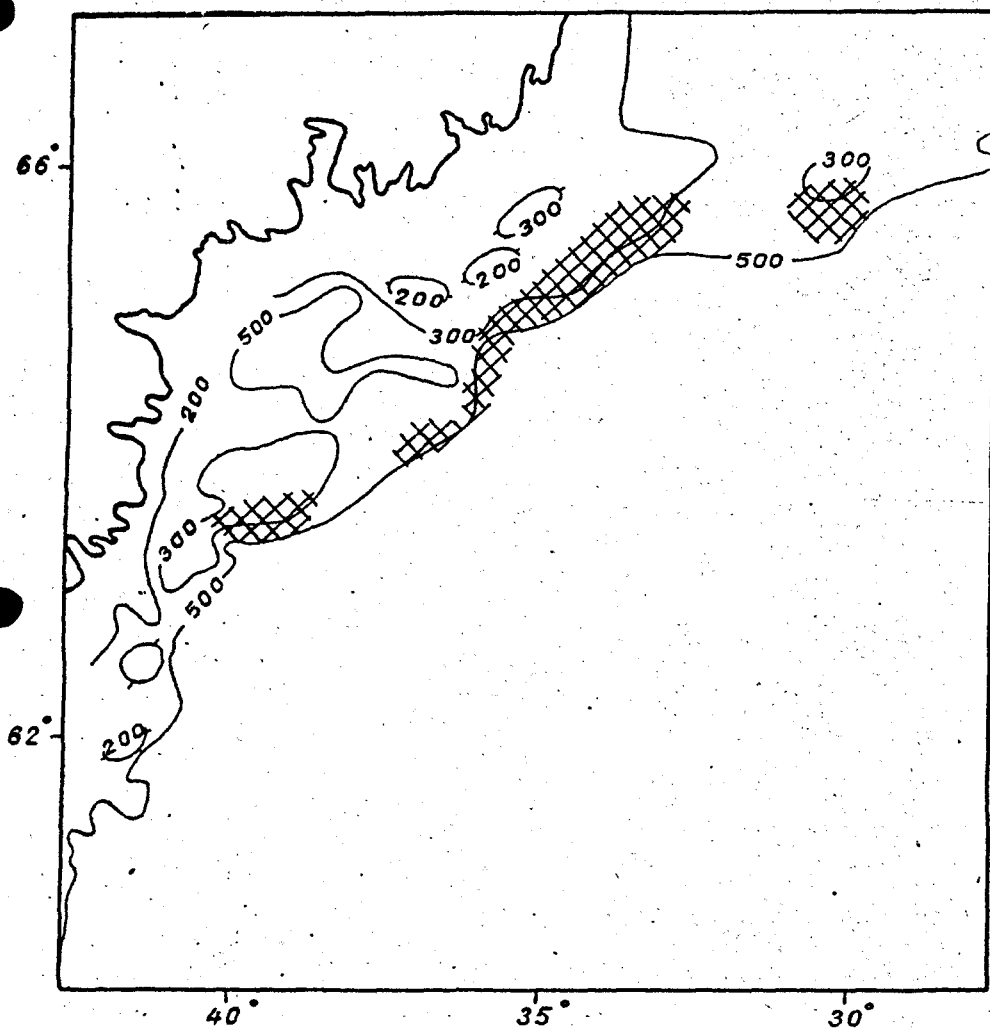
Length composition (%/.) of beaked redfish in catches taken with bottom trawl in the East Greenland area in April 1976

Total length (cm)	Males	Females	Males and females
21-22	1	1	2
23-24	5	5	10
25-26	23	15	38
27-28	49	39	88
29-30	58	52	110
31-32	70	64	134
33-34	67	65	132
35-36	57	60	117
37-38	58	53	111
39-40	36	46	82
41-42	26	26	52
43-44	21	18	39
45-46	21	16	37
47-48	13	11	24
49-50	9	5	14
51-52	4	2	6
53-54	3	1	4
Sex ratio (%/.)	521	479	1000
Number of specimens measured	2266	2096	4362
Mean length (cm)	34.99	35.03	35.01

HEADINGS FOR FIGURES

to the paper by Kudrin B.D, Ponomarenko V.P., Mukhin A.I.
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Fig.1. Distribution of fishing concentrations of beaked redfish in the East Greenland area in May-September 1976.



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Технический редактор Е.Б.Рабкина

Подп. в печ. 28/VI 1977 г.	Формат 60x84 1/8	Тираж 200
Объем 1,0 п.л.		Заказ 755

ЦНИИТЭИРХ. IOI925. Москва, ул. Архипова, 4/2