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Section I - Subareas 1, 2, 3, and 4

by

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Nominal catches in 1976 by species and areas are given in Table 1. Total Norwegian catches decreased from 52 566 tons in 1975 to 42 789 tons in 1976 due to a decrease in catches of capelin from 37 479 tons to 23 183 tons. Cod and prawn catches showed some increase from 1975 to 1976.

Subarea 1

A. Status of the Fisheries

Cod. Catches of cod decreased from 3 068 tons in 1975 to 2 825 tons in 1976. 2 467 tons were taken by longliners and 358 tons by gillnetters (mainly in Div. 1 D).

Deep sea prawn The fishery for deep sea prawn in Subarea 1 expanded further in 1976. Catches increased from 8678 tons in 1975 to 11605 tons in 1976. 26 trawlers participated in the fishery. Most of the catches were taken on the continental slope off Store Hellefiskebank. (Div. 1 B).

Table 2 shows catch and catch per hour of trawling for 1976 by ICNAF Division and month. Catch per hour of trawling increased by 6.5 % in Div. 1 B and 32.3 % in Div. 1 C compared to 1975, while it remained at about the same level (0.8 % decrease) in Div. 1 D.

B. Special research studies

An observer from the Institute of Marine Research, Bergen, collected data on size composition of catches, and on discards and by-catches, in the prawn fishery. Age groups IV and V made the bulk of the catches, and most of the prawns were fully mature females.

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The amount of discards was about 9 % (in weight). The only numerous fish in the bycatches were 10-20 cm long red fish.
For further details, see Res. Doc. 76/XII/155.

Subarea 2.

A. Status of the Fisheries

Cod. Cod catches increased from 211 tons in 1975 to 1009 tons in 1976. Most of the catches were taken by trawl.

Deep sea prawn 286 tons were taken in Div. 2H and 2J.

Subarea 3

A. Status of the Fisheries

Cod Cod catches increased from 1066 tons in 1975 to 3837 tons in 1976. 2694 tons were taken by longliners and 1143 tons by trawlers.

Capelin Capelin catches decreased from 37 478 tons in 1975 to 23 183 tons in 1976, probably due to a decrease in the abundance of spawning capelin on Southeast Shoal of Grand Banks. All catches were taken from this spawning capelin, and nearly all of them were caught by purse seine.

B. Special research studies

The capelin catches were sampled for age and length composition and maturity stages. 3 years old capelin dominated in contrast to previous years when the 4 years old have been more abundant.
A tagging experiment was conducted to get information on distribution of capelin and size of the spawning stock on Southeast Shoal. Due to several factors it was not possible to estimate the spawning stock with any confidence from the experiment, but it confirmed that the stock on Southeast Shoal was at an unusual low level in 1976 as indicated by the decrease in catches. For further details, see Res. Doc. 77/VI/5, Serial No. 5018.

Subarea 4.

A. Status of the Fisheries.

26 tons of cod were caught by longline in Div. 4Vs.

Table 1. Nominal catch in metric tons, 1976 (provisional figures).

Subarea and Division	Capelin	Deep sea prawn	Cod	Greenland Halibut	Total
1 A		28			28
1 B		9895	30		9925
1 C		392	567		959
1 D		487	482		969
1 E			901	3	904
1 F		1	845	4	850
SA 1, Total		11605 [1]	2825	7	14437 [1]
2 H		159	504		663
2 J		127	505	3	635
SA 2, Total		286	1009	3	1298
3 K			1581	2	1583
3 L			41	1	42
3 M			1173	5	1178
3 N	23183				23183
3Ps			1042		1042
SA 3 Total	23183		3837	8	27028
4 Vs			26		26
Total	23183	11891	7697	18	42789

[1] Includes 802 tons not allocated to Division.

Table 2. Catch and catch per hour of trawling of deepsea prawn in Subarea 1, 1976 (preliminary data).

Month	1 A Catch	1 A CPUE	1 B Catch	1 B CPUE	1 C Catch	1 C CPUE	1 D Catch	1 D CPUE	1 F Catch	1 F CPUE	Total catch [1]
1			180	0.621	78	0.438	73	0.257			340
2			516	0.822	31	0.254	52	0.274			651
3			29	1.16	110	0.245	178	0.272			375
4			662	1.033	156	0.398	125	0.179			999
5			1684	1.328							1771
6			1032	0.603			1	0.167			1179
7			1269	0.471	14	0.259	8	0.421			1291
8			1573	0.376	2	0.2	2	0.2			1577
9			899	0.366			5	0.357			937
10			677	0.247			39	0.271	1	1	838
11	28	0.412	1190	0.265	1	0.111					1405
12			184	0.246			4	0.25			242
Total	28		9895		392		487		1		11605
Weighted average CPUE			0.622		0.345		0.249				
CPUE 76 / CPUE 75			1.065		1.323		0.992				

[1] Includes the catches not allocated to Division.

Norwegian Research Report for 1976

Section II - Seals

By

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A. Status of the fisheries

Detailed catch and effort data for Norwegian sealing on the Front off Newfoundland - Labrador (Subareas 2 and 3) have been submitted to the ICNAF Secretariat for inclusion in a Summary Document to the 1977 Annual Meeting.

Because of reduced quotas participation dropped from 8 ships in 1975 to 6 ships in 1976. These ships with a total of 113 men caught 45 483 harp seals and 8518 hooded seals. Also three polar bears were shot.

B. Special research studies

The charting of seal concentrations in relation to ice edges was continued on a commercial sealer on the Front off Newfoundland - Labrador from 13 March to 9 April by a representative of the Institute of Marine Research (B.Bergflødt, ICNAF Res.Doc. 76/X/131).

Harp seals (Pagophilus groenlandicus)

The Institute of Marine Research representative participated in attempts at ground control of Canadian aerial surveys of harp seals in the Gulf and on the Front. However, the surveys were not carried out according to the schedule.

General biological studies were made on the Front and age samples were collected from 429 breeding females and 775 moulting one-year-old and older moulting seals. Reproductive organs were collected with the age material from 209 of the females.

A total of 300 pups were tagged on the Front, and 18 of these were recaptured during the sealing season by ships or Canadian landsmen. Six of the tagged pups have since been recaptured at West Greenland.

The age samples have been processed and the data have been used to update an analysis of age frequencies and catch statistics with estimates of production, mortality and sustainable yield. These estimates indicate that the sustainable yield of the present stock of harp seals in the Northwest Atlantic is 210 thousand seals per year.

In a cooperative Norwegian-Canadian project a stochastic model has been developed for estimates of sustainable yields for the Northwest Atlantic stock of harp seals. Estimates from this model indicate that the stock now can sustain an annual catch of 190 thousand seals (T.Benjaminsen and P.F.Lett, ICNAF Res.Doc.76/X/130).

Hooded seals (Cystophora cristata)

The Institute representative collected an age sample from 687 breeding hoods on the Front. Additional samples were collected by sealers from 1065 seals, bringing the total sample up to 1752 seals. Reproductive organs were collected from 30 of the females and two adult females and three pups were tagged.

Three remarkable recaptures in 1976 of hooded seals tagged among moulting hoods in the Denmark Strait in 1974 should be reported here. Two were recaptured on the Front off Newfoundland during the sealing season, and one at Umanaq on the West coast of Greenland ($60^{o}35'N$) in May. Together with two previous recaptures of hooded seals tagged by Norway on the Front, one at Kap Farvel and one near Angmagssalik on the East coast of Greenland, these recaptures confirm the assumed connection between moulting hoods in the Denmark Strait and breeding seals at Newfoundland.

The large age sample collected on the Front has been analysed, and the data will be included in estimates from a stochastic model to be developed by joint Norwegian and Canadian effort during 1977.