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German Democratic Republic Research Report for 1979

by

S. Möller and H. Schultz
Institut für Hochseefischerei und Fischverarbeitung
251 Rostock-Marienehe 5, German Democratic Republic

The overall nominal catch from GDR fisheries in the NAFO Area in 1979 was 11 479 tons. This was an increase of about 4 thousand tons compared to 1978. As in the previous year fishing was only conducted in Subareas 2 and 3. The cod fishery increased from 2 to 10 thousand tons, whereas fishing for all other main species decreased (table 1).

Table 1: Nominal catches for species in the NAFO Area

	1979	1978
Cod	10 012*	2 177
Redfishes	711	1 061
Roundnose grenadier	480	1 801
Greenland halibut	178	1 632
Witch	22	51
American plaice	9	6
Wolffishes	64	3
Skates	3	42
Capelin	-	404
Atlantic halibut	-	2
Flatfishes n.e.i.	-	14
Sandeels	-	169
<u>total</u>	<u>11 479</u>	<u>7 362</u>

* Includes 8,470 tons taken by GDR vessels under cooperative arrangements with Canada.

Subareas 0 and 1

No commercial fishing and no research were carried out in this area.

Subareas 2 and 3

A. Status of the Fisheries

The entire fishing activity in 1979 was again strongly associated with the quota regulations, so that the distribution of the fleet and also the realization of the fishery do not show in all cases the real catch possibilities and the effect of environmental conditions. 90 % of the total catch was taken by sterntrawler of the "Zubringer-Trawler"-type, the remainder by factory trawlers.

1. Cod

The cod fishery took place mainly in February to May and to a lesser extent in October/November and December, whereas in 1978 fishing for cod had been conducted mainly in February. 74 % of total cod catches were reported from Div. 3 K, the remainder from 3 L and 2 J (table 2).

Table 2: Nominal catch (tons) in SA 2 and 3 by divisions

	2G	2H	2J	3K	3L	total 1979
Cod	-	-	949	7 417	1 646	10 012
Redfish	-	10	74	459	168	711
Roundnose grenadier	5	258	216	-	1	480
Greenland halibut	-	5	52	58	13	178
others	-	3	11	78	6	98
total	5	326	1 302	8 012	1 834	11 479

83 % of the total catches were taken in the spring season. On the contrary to 1978, fishing proved to be more effective in SA 3 than in SA 2. Totally, in the spring season the catch per hour of sterntrawlers was nearly the same as in the previous year, but the catch per day fished decreased by 20 %. This tendency was observed in a comparable fishing time (February) for this type of vessel, too. In February the catch per hour of factory trawlers was the same as in the foregoing year, but the catch per day fished increased by 50 % (from 14.2 to 21.4 tons).

The cod fishery in autumn mainly conducted in Div. 3L yielded 17 tons per day fished. The highest yield was obtained in November when catch per day amounted to 23 tons. In the foregoing year no directed cod fishery had been conducted in this period. Fishing effort and catch per effort in the directed cod fishery are given in tables 3, 4 and 5.

Table 3: Fishing effort and c.p.n.e. (tons) of sterntrawlers directed for cod in SA 2 and 3 in spring 1979

	Feb	Mar	Apr	May	total 1979	Jan-Febr 1978
days fished	144	266	69	15	494	44
hours fished	1283	2561	791	160	4795	504
<u>cod</u>						
catch/d	16.5	14.1	19.8	23.6	15.9	19.8
catch/h	1.85	1.46	1.73	2.21	1.64	1.73
<u>redfish</u>						
catch/d	1.2	0.3	2.1	-	0.8	2.2 ¹⁾
catch/h	0.13	0.03	0.19	-	0.08	0.19

1) Greenland halibut

Table 4: Fishing effort and c.p.n.e. (tons) of sterntrawlers, mainly directed for cod in autumn 1979

Division Month	2J Oct	3L Oct	3L Nov	3L Dec	Total
days fished	11	22	54	9	96
hours fished	75	301	696	107	1179
<u>cod</u>					
catch/d	1.8	8.1	23.4	20.9	17.2
catch/h	0.27	0.59	1.82	1.76	1.40
<u>redfish</u>					
catch/d	0.6	0.05	0.6	1.3	0.6
catch/h	0.09	+	0.05	0.11	0.05
<u>Greenland halibut</u>					
catch/d	0.1	-	0.2	0.2	0.1
catch/h	0.01	-	0.01	0.02	0.01

Table 5: Fishing effort and c.p.n.e. of factory trawlers, mainly directed for cod in 1979

Division	2J Feb	3K Feb	3K ¹⁾ Mar	3L Oct	3L Nov	3L Dec	2 - 3 Jan-Feb 1978
days fished	6	15	10	22	54	9	67
hours fished	56	180	137	301	696	107	530
<u>cod</u>							
catch/d	15.3	20.7	9.9	8.1	23.4	20.9	15.7
catch/h	1.64	1.72	0.72	0.59	1.82	1.76	1.99
<u>redfish</u>							
catch/d	1.8	2.0	6.3	0.05	0.6	1.3	1.1
catch/h	0.20	0.17	0.46	+	0.05	0.11	0.14
<u>Greenland halibut</u>							
catch/d	-	-	-	-	0.2	0.2	-
catch/h	-	-	-	-	0.01	0.02	-

1) partly directed for cod, partly directed for redfish

2. Redfish

The nominal catches declined again somewhat. Most of the catches were taken in 3K as by-catches in the cod fishery (table 2).

A directed fishery was carried out by a factory trawler in 3L and 3K in March and April. Totally, the catch per effort in the first half of the year was at about the same level as in 1978 (table 6).

Table 6: Fishing effort and c.p.u.e. of factory trawlers, mainly directed for redfish

	2J Jan	3K Jan	3L Mar	3L Apr	Total 1979	3L, K Feb-Jun 1978
days fished	1	1	9	8	19	49
hours fished	11	6	87	62	166	508
<u>redfish</u>						
catch/d	8.0	4.0	7.0	7.2	7.0	7.1
catch/h	0.73	0.67	0.72	0.94	0.80	0.69
<u>Greenland halibut</u>						
catch/d	-	-	0.3	-	0.2	0.1
catch/h	-	-	0.03	-	0.02	0.01
<u>cod</u>						
catch/d	-	-	-	1.2	0.5	0.5
catch/h	-	-	-	0.16	0.06	0.05

3. Roundnose grenadier

Due to reduced effort the nominal catches decreased to 480 tons. Sterntrawlers and a factory trawler tried to conduct a directed fishery on roundnose grenadier in Div. 2H and J in October and November, but changing of the fishing positions frequently necessary for keeping the by-catch of greenland halibut at the 10 %-limit made the fishery to a very difficult one. As in the last years the fishery was disappointing, the catch per effort was as low as in 1978 (table 7). On the contrary to 1978 no midwater trawling was conducted.

Table 7: Fishing effort and c.p.u.e. (tons) of sterntrawlers, directed for roundnose grenadier

Bottom/Midwater Division Month	B 2H Oct	B 2H Nov	B 2J Nov	B Total 1979	B 2H Sep-Oct 1978	M 2G Oct 1978
days fished	11	5	11	27	39	140
hours fished	93	40	89	222	375	1364
<u>roundnose grenadier</u>						
catch/d	5.4	4.8	8.4	6.5	6.8	8.5
catch/h	0.65	0.60	1.03	0.79	0.70	0.87
<u>greenland halibut</u>						
catch/d	1.3	2.6	1.3	1.5	3.6	0.3
catch/h	0.15	0.33	0.16	0.18	0.38	0.03
<u>redfish</u>						
catch/d	0.4	0.2	0.6	0.4	0.8	+
catch/h	0.04	0.03	0.07	0.05	0.08	

4. Greenland halibut

In 1979 fishing vessels of the GDR were not allowed to fish on greenland halibut directly. As a result nominal catches diminished to a very low level and the catch per effort was pressed down to less than 50 % compared to 1978(table 7).

Table 8: Fishing effort and c.p.u.e. of factory trawlers, directed for roundnose grenadier in 1979

Division Month	2H Oct	2H Nov	2J Nov	Total
days fished	14	5	13	32
hours fished	110	39	92	241
<u>roundnose grenadier</u>				
catch/d	10.6	5.2	9.5	9.3
catch/h	1.35	0.67	1.35	1.24
<u>greenland halibut</u>				
catch/d	1.0	2.8	1.7	1.6
catch/h	0.13	0.36	0.24,	0.21
<u>redfish</u>				
catch/d	0.4	-	0.5	0.3
catch/h	0.05	-	0.07	0.05

B Special Research Studies

1. Environmental Studies

During a groundfish survey from 20 November to 13 December by chartered sterntrawler "Walter Barth" a total of 74 hydrographic stations were conducted in Divisions 2 G, 2 H and 2 J. Temperature and Salinity were measured at the surface and at the bottom. The results of these investigations and those of the survey in autumn 1978 are presented in a Research Document to the STACFIS Meeting 1980 by N. Verch. The mean temperature in 1979 were up to 0.75 °C lower than in 1978. The largest differences were observed at depths down to 500 m in Div. 2 G. Salinities at depths down to 500 m were also lower in 1979, but the situation was reversed at depths greater than 500 m.

2. Biological Studies

Biological stock data were provided

- a) by sampling during the cod fishery aboard the mothership of the sterntrawler fleet in Div. 3 K in February and March and
- b) during the groundfish survey in Div. 2 G-J in November/December mentioned above.

Data on the amount of the commercial and research sampling are given in table 9.

Results of the groundfish survey including a biomass estimate for redfish and greenland halibut are given in a Research Document by U. Berth and B. Vaske presented at the STACFIS Meeting 1980.

Table 9: Volume of sampling in SA 2 and 3

Species	Quarter	Sampling area	Samples	Measured	Aged
<u>Commercial sampling</u>					
Cod	I	3K	28	3202	299
<u>Research sampling</u>					
Cod	IV	2G	8	121	88
		2H	11	225	79
		2J	24	650	330
Redfish (S. mentella)	IV	2G	19	3650	300
		2H	14	1368	300
		2J	40	6334	1000
Greenland halibut	IV	2G	20	1524	698
		2H	15	1200	348
		2J	40	2565	1028
Roundnose grenadier	IV	2G	6	797	286
		2H	4	420	100
		2J	13	1770	500
Roughhead grenadier	IV	2G	19	545	76
		2H	14	506	-
		2J	40	783	65

Subarea 4

No commercial fishing and research were conducted in this area.

Subarea 5 and Statistical Area 6

A. Status of the Fisheries

As in the previous year there was no commercial fishing in these areas.

B. Special Research Studies

1. Environmental Studies

During the Young Herring and Groundfish Surveys in which R/V "Eisbär" participated from 20 April to 5 May a total of 56 hydrographic stations were conducted in Div. 5 Z and 6 A. Temperatures at the surface and at the bottom were measured. Charts of isotherms are presented in a Research Document on that survey to the STACFIS Meeting 1980 by K. Lambert, N. Schultz and N. Verch.

2. Biological Studies

Biological investigations were carried out during the Young Herring and Groundfish Survey of R/V "Eisbär". 57 fishery stations and 58 plankton stations (by Bongo and neuston nets) were made. Plankton samples were handed for analyses to NEFC, Woodshole

The amount of the main fish stock sampling is given in table 10.

Table 10: Volume of sampling on main fish species during research survey in Div 5 Z and 6 A in April/Mai

<u>Species</u>	<u>Samples</u>	<u>Measured</u>	<u>Aged</u>
Herring	16	178	155
Mackerel	15	148	129
Red hake	35	2405	-
Spiny dogfish	45	1829	-
Silver hake	48	1516	-
Sand lance	11	1237	-
Alewife	28	1003	-
Butterfish	28	779	-
Little skate	46	620	-
Four spotted flounder	17	353	-
Offshore hake	3	319	-
Yellowtail	18	300	-

A full list of all species measured and results of the survey are given in the Research Document mentioned above.