

International Commission for



the Northwest Atlantic Fisheries

Serial No. 5222
(D.a.77)

ICNAF Sum. Doc. 78/VI/14

ANNUAL MEETING - JUNE 1978

GDR Research Report, 1977

by

L. Danke, R. Eggers and N. Schultz
Institut für Hochseefischerei und Fischverarbeitung
Rostock-Marienehe, German Democratic Republic

The overall nominal GDR-catch of 1977 for the ICNAF Subareas 0-6 amounted to 18,347 tons which is by 48,825 less than in 1976. While the catches decreased in the main species mackerel, herring, cod and redfish, they increased somewhat in greenland halibut and capelin and they reached the same level in roundnose grenadier.

Table 1: Species composition of GDR-catches 1977 in Subarea 0-6 (metric tons)

	<u>1977</u>	<u>1976</u>
Capelin	1014	-
Alewife	69	1260
Greenland halibut	2528	1672
Witch	203	110
American plaice	41	23
Cod	4301	11830
Silver hake	-	1
Pollock	24	1747
Roundnose grenadier	674	678
Wolffishes	37	-
Redfishes	1449	2473
Bluefish	-	1
Scup	-	3
Herring	-	8
Mackerel	7981	38150
Picked dogfish	6	12
Skates	11	-
Squid (Loligo)	9	317
Squid (Illex)	-	996
<u>total</u>	<u>18347</u>	<u>67172</u>

Subarea 0

A Status of the Fisheries

The total catch of 287 t (240 t greenland halibut, 47 t roundnose grenadier) shows that the Baffinland-Fishery 1977 was not important. Probably due to changing of environmental conditions the greenland halibut predominated in catches. The fishery took place in September

* Executive Secretary, ICNAF, P. O. Box 638, Dartmouth, Nova Scotia, Canada B2Y 3Y9

to December by ships of the type "Zubringer" and factory trawlers and catch depths between 450-900 m. The catch per day was not satisfying.

B Special Research Studies

No samplings or other studies were carried out in this subarea during 1977.

Subarea 1

A Status of the Fisheries

As in Subarea 0 also in Subarea 1 the fishery hasn't had a great importance. The total catch amounted to 349 tons (335 tons greenland halibut, 14 tons roundnose grenadier). From October to December the fishery was carried out by 1-2 Zubringer-Trawlers and 1-2 factory trawlers. The portion of catches from the Divisions 1 C and 1 D were 123 and 226 tons, also with a remarkable predominance of greenland halibut.

B Special Research Studies

No samplings or other studies were carried out in this Subarea during 1977.

Subarea 2 and 3

A Status of the Fisheries

In 1977 both Subareas developed to the main fishing areas of the GDR in the Northwest Atlantic.

Nevertheless the catch 1977 decreased another time and reached 9646 tons, 8508 tons less than 1976, mainly due to the quota-regulations.

Table 2: Nominal catches (in 000 tons) in SA 2 and 3

	2G	2H	2J	3K	3L	Total 1977	Total 1976
Cod	-	+	1,9	2,3	0,1	4,3	11,8
Redfish	0,1	0,2	0,1	0,8	0,2	1,4	2,5
Roundnose grenadier	0,2	0,4	+	-	-	0,6	0,5
Greenland halibut	0,6	1,2	+	0,1	+	1,9	1,5
Capelin	-	-	-	1,0	-	1,0	-
others	+	0,1	0,1	0,2	+	0,4	1,8
	0,9	1,9	2,1	4,4	0,3	9,6	18,1

The fishery 1977 shows three periods, January, February - cod fishery, June to August fishery for greenland halibut and in October to December a mixed fishery for greenland halibut, round-

nose grenadier and redfish in Subarea 2 and a special fishery for capelin in Subarea 3.

1. Cod

As in previous years the cod-fishery took place from January to March (15.1.-5.3.1977). The portion of the total GDR-catch in Subarea 2 and 3 for this time was 55.7 % whereas the portion of cod-catches were 99.8 %.

Also the effort of ("Zubringer-trawler" decreased another time. For the catch per unit effort the results of 1977 doesn't show any clear picture.

Table 3: Catch per hour of the "Zubringer-trawler" in SA 2 and 3 for Januar- March in t

Year	Total			Cod		
	Jan.	Febr.	March	Jan.	Febr.	March
1976	1.37	2.50	2.04	0.83	2.09	0.39
1977	1.40	1.63	2.66	1.32	1.20	1.19

More as in the last years the unfavourable fishing conditions (wind) in addition with the stock-situation affected the catch per hour. Also the length composition of cod caught had an influence on the fleet movement. Catch-depth was from 280-550 m. The absence of older cod and the incoming of the stronger year classes 1972 and 1973 affected the ^{decrease} ~~increase~~ of the mean length. In the main fishing area 2 J and 3 K the year classes of 1972 and 1973 predominated, a sign for the age-reduction of the stock.

2. Greenland halibut

A special greenland halibut fishery was carried out by factory ships in Subdivision 2 H and 2 G in June and July. The often varying fishery conditions showed great differences in the catch per effort. Also in October till December greenland halibut was caught in a mixed fishery for roundnose grenadier and greenland halibut (for catches see table 2).

3. Redfish

A special redfish-fishery as in March 1976 was not carried out. A great portion of redfish was caught in February in SA 3 during the cod fishery and as bycatches in the second half of the year.

4. Roundnose grenadier

The total catch of 613 t is on the same level as in 1976. Nearly all roundnose grenadier was caught in October to December in Subdivisions 2 G and 2 H. The fishery was very instable. Compared

with previous years the catches of North-labrador were better than in Baffinland area.

5. Capelin

For the first time a special capelin-fishery took place in November/December. After some days with low catches the fishery became stable from the middle of the month. The catch per day for factory-ships varied in the range of 9 to 47 tons. After reports from sea the length range was from 10-19 cm with an optimum (82 %) of 13-16 cm in November.

B Special Research Studies

1. Environmental studies

In Subareas 2 and 3 no special studies were done.

2. Biological studies

During 1977 there was only sampling of fish samples on board the commercial vessels by fishermen for upworking ashore.

Table 4: Biological samples, 1977, ICNAF 2 and 3

species	sampling area	month	measured	aged
cod	3 K	February	33	33
	2 J	"	142	142
greenland halibut	2 H	June	435	400
halibut	2 H	July	411	300
	2 G	July	250	250
roundnose grenadier	2 H	December	100	100
capelin	3 K	December	531	150

a) Cod

The very small cod samples show a predominance of the 1972 and 1973 year-classes with a length range of 40-45 cm in Subdivision 2 J as well as in 3 K. Older age groups (7,8) were nearly absent, less than 5 %.

b) Greenland halibut

Samples of greenland halibut from June/July in Subareas 2 H and 2 G showed a length range from 40-70 cm. The mean length for 2 G greenland halibut is somewhat lower than in 2 H (55,64 cm : 57,87 cm). The female-male-relation was 40 % : 60 %. The mean length does not change within a little deeprange (510-600 m).

c) Roundnose grenadier

In December the length range was 44-76 cm, the mean length of

females was lower than males (62,78 cm and 63,60 cm) the relation between females and males was 42 : 58.

d) Capelin

In December the length range was between 15 and 21,5 cm, the mean length for females 17,93, for males 18,35 and the female : male relation was 48 : 52 %.

Subarea 4

A Status of the Fisheries

Commercial fisheries were not carried out

B Special Research Studies

One hydrographic station was done.

2. Biological Studies

During participation in "Joint-Herring-Programme" one station in Division 4 X was elaborated by "Görlitz". 120 kg was caught with the main species redfish and picked dogfish.

Subarea 5 and Stat. Area 6

A. Status of the fisheries

In 1977 the nominal all species catch totalled to 8065 metric tons. That is a decline by 83 % in comparison to 1976, mainly due to the reduced mackerel quota and a herring catch of zero.

Table 5: Nominal catches ('000 metric tons) in Subarea 5 and Stat. Area 6

	5 2	6	total 1977	total 1976
Mackerel	0.782	7.199	7.981	38.15
Herring	-	-	-	7.89
Alewife	-	0.069	0.069	1.26
Squid	-	0.009	0.009	1,32
Other species	-	0.006	0.006	0.06
total	0.782	7.283	8.065	48.68

1. Mackerel

As in previous years 85 % of mackerel catch was taken by factory trawlers and all the catch in spring fishery. In 1977 the mackerel fishery took place only in a limited area ("window") during first two month of the year. The nominal catch in spring fishery decreased from 31,562 tons in 1976 to 7.981 tons in 1977 due to a decrease of effort and c.p.u.e.

Table 6: c.p.u.e. in metric tons per day fished (factory trawler type)

		mean	
		weighted	unweighted
Jan.-Febr.	1975	43,3	42,0
	1976	48,7	48,7
	1977	33,5	34,9

2. Herring

In 1977 the herring fishery took place without any herring catches in a limited area.

B Special Research Studies

1. Environmental Studies

Participating in "Juvenile Herring and Groundfish Survey" ROS 224 "Görlitz" worked 106 hydrographic stations and salinity in Subarea 5 and Stat. area 6.

2. Biological Studies

a) Mackerel

For sampling on commercial catch see the following table.

Table 7: Numbers and sizes of samples from commercial catch

	Div.	State of samples	Number of samples	specimens measured	specimens aged
Jan.	6 A	frozen	3	763	293
	6 B	frozen	2	458	192
Febr.	6 A	frozen	3	1087	298
	6 B	frozen	7	1068	678
total	6 A+B	frozen	15	3876	1461

On board "Görlitz" 14 samples (183 specimens measured, 117 specimens in 2 samples aged) were taken in March (Div. 5 Z). In research samples year-class 75 (Subdiv. 5 Ze and 5 Zw) was predominant. Most abundant in commercial catch were the 75,74 and 73 year-classes.

b) Herring

26 length samples and 5 age samples were taken by ROS 224 "Görlitz" in Subarea 5 and Stat. area 6 during the "Juvenile Herring and Groundfish Survey; in March/April.

Table 8: Herring samples (specimens) by ROS 224 "Görlitz"

Div.	month	measured	aged
5 Y	April	3	-
5 Z	March	645	160
	April	52	45
6 A	March	2	-
total		702	205

In age composition year class 1973 was predominant.

All results of "Juvenile Herring and Groundfish Survey" were given to the "Northeast Fisheries Center Woods Hole."

c) Other species

Samples of other species see following table.

Table 9: Species, numbers and size of samples by ROS 224 "Görlitz" taken during the "Juvenile Herring and Groundfish Survey" in March/April

Species	Number of samples	Specimens measured
Sea lamprey	2	2
Spiny dogfish	60	2309
Little skate	50	390
Big skate	15	62
Thorny skate	23	61
Smooth-tailed skate	15	31
Atlantic torpedo	1	1
Blueback herring	19	484
Alewife	72	2245
American shad	33	328
American conger eel	1	1
Snake eel	1	1
Cusk	3	3
Four-bearded rockling	3	3
Atlantic cod	57	509
Haddock	37	788
Offshore hake	5	216
Silver hake	72	4796
Pollock	52	213
Longfin hake	2	2
Spotted hake	5	136
White hake	35	221
Red hake	49	2092
Longnose grenadier	2	6
Alfonsin a Casta	1	2
Tilefish	10	57
Weakfish	1	1
Scup	1	1
Cunner	1	1
American sandlance	1	4
Blenny-like-fishes	1	1
Atlantic wolffish	2	2
Rock eel	1	1
Ocean pout	42	230
Butterfish	17	762
Atlant. silverside	1	1
Atlant. argentine	3	7
Green eye	1	2
Blackbelly roosefish	10	459
Redfish	16	574
Northern sea robin	7	160
Armored sea robin	7	19
Artic hookear sculpin	1	1
Atlantic sea raven	19	49
Longhorn sculpin	37	317
Lumpfish	1	1
Summer flounder	16	63
Four-spotted flounder	28	815
Windowpane flounder	41	997
Witch flounder	32	154
Amer. plaice	30	268

Species	number of samples	specimens measured
Monkfish, uncle	1	1
Monkfish	22	54
Atlant. halibut	1	1
Yellowtail flounder	25	354
Winter flounder	13	24
Gulfstream flounder	16	79
Shameface crab	2	3
Jonah crab	29	138
Lady crab	3	5
Red crab	3	4
Lobster	18	68
Deep sea scallop	7	35
Ocean quahog	1	1
Longfin squid	24	1791
Shortfin squid	11	173
total: 67 species	1119	22582

=====