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German Democratic Republic Research Report for 1990

by

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This report gives a review for the period up to the end of September 1990. The results and reports of the scientifical activities and the fisheries of the formerly G.D.R., which are carried out from October to December 1990, are described in other publications.

The total catch within the NAFO convention area amounted to 10 712,3 t in 1990 (Table 1). The overall catch of G.D.R. fleet was about 12 322 t lower than in 1989 (23 034 t). The reasons of this decreasing are the time of report (January till September in 1990) and the total decline of the traditional directed fisheries of roundnose grenadier and Greenland halibut of Subareas 2 and 3 in the 4th quarter of the year. Because of the modification of the political conditions of Germany there were no possibilities to carry out a licenced fishery.

Therefore, in opposition to the years before, the fisheries were carried out within Subareas 3, 5, and 6 only.

Again, as in the years before, the catch of the Atlantic mackerel of the Subarea 6 dominated with a nominal catch of about 6 530 t. These were 61 % (1987 58 %, 1988 69 %, 1989 78 %) of the total G.D.R. catch within the NAFO area, followed by the directed fishery of Atlantic mackerel of the Subarea 5 (1990 21 %, 1989 0,4 %, 1988 7 %, 1987 9 %), and by the redfish directed fishery in the Subareas 3 (1990 18 %) (Table 2).

Subareas 0, 1, 2, and 3

A. Status of fishery

In 1990 the bottom trawl-fishery was carried out in Subarea 3 only. The redfish directed fishery was the only one in this Subarea.

Redfish directed fishery

The fishery was carried out by factory trawlers within Division 3M at Flemish Cap, generally along the southwestern, southern and southeastern slope in depth between 300 and 550 m from August 1st to August 29th and September 12th to the beginning of the new year and in Divisions 3LN on the eastern part of the Grand Bank off Newfoundland in main fishing depth from 350 to 500 m (August 14th - September 11th). At Flemish Cap there were fished rather stable concentrations in August, but the redfish were too small. Therefore, the G.D.R. fleet changed the grounds and continued fishing on the Grand Bank. Here no stable concentrations could be fished. In September there were found better fishery conditions at Flemish Cap. Effective hauls were obtained only during daytime.

The c.p.u.e. was stable more or less in the season. The results of fishery of the sterntrawler FVS IV (FAO-Code 090, representative type of trawler in the redfish directed fishery) are given in table 3.

B. Special studies

1. Environment

   As in the year before, G.D.R. specialists took part in the research trip of the USSR FRV "Kapitan Shaytanov" to the Northwest Atlantic during the 4th quarter of 1990 (groundfish survey in the NAFO Subareas 0, 1, 2, and 3 with emphasis on Greenland halibut. Therefore, all data are published in the USSR papers.

2. Biological studies

   Redfish (S. mentella TRAV.), roundnose grenadier (C. rupestris GUNN.), Greenland halibut (R. hippoglossoides WALB.)
   see point Environment

Subareas 5 and 6

A. Status of fishery

Atlantic mackerel (Scomber scombrus L.)

The season of mackerel fishery in 1990 started mid December of 1989 by three factory vessels. The supplying fishery off Long Island was very fluctuating in December and at the beginning of January, but some days were very successful.

Until the beginning of March mackerel were found almost only within the 20 n.m. zone, where they occurred sometimes unusually close to the coast-line (2 - 5 n.m.). In February beyond the 20 n.m. zone no indicationes could be found anymore. Even within the 20 n.m. zone the fishing situation got worse drastically. Mackerel was found only in a distance of 2 to 5 n.m. off the coast. Only in the 3rd decade of February a good fishery took place in daytime with a shift to the north within the 20 n.m. zone.

In March mackerel indications were found again beyond the 20 n.m. zone at 37.40 N. Therefore, on March 10th, 1990 a mackerel fishery began in the NAFO Division 6A, even on fluctuating concentrations.The night fishery in March was more successful than in April during day time. But the fishery in NAFO Division 5Zw brought sometimes good results during daytime.

From March to May the catches more or less consisted of by-catch species (herring, breams, butterfish and others).

In May mackerel indications occurred only occasionally and mainly between 17 hours and 4 hours in the Black Canyon (Div. 5Zw) and Atlantis Canyon (Div. 5 Zw).

From the 11th of May 1990 the fishery got more and more instable and not lucrative anymore. Opposite to the last year until the beginning of March, except of a few days in the 2nd half of December, mackerel were found almost exclusively, within the 20 n.m. zone, occurring sometimes unusually close to the coast (2 to 5 n.m.). On the other hand, the usual shift to the south from the area off Long Island could not be noticed. Only from the beginning of March a dislocation of mackerel shoals in northeastern direction was perceptible. Here also indications were found beyond the 20 n.m. zone. During this fishing season in 1990 the 100-fathom line was not limitating.

G.D.R. mackerel catches, season 1989/90

	Dec.	Jan.	Febr.	March	April	May	total
5Zw					2216.1		2216.1
6	423.7	982.5	265.7	3104.0	1608.2	569.9	6954.0

B. Special Research Studies

1. Environment

No data

2. Biological Studies

During the quarters one and two of 1990 and December 1989 biological samples and data were collected, the results of them are summarized in tables 4 and 5. The length distributions were analysed according to the NAFO standards and submitted to the NAFO secretariate. Table 6 shows the number of mackerels caught per length group. During the investigation period of March/April the sex ratio did not change at all.

The maturity increased distinctly during the two investigation months at both sexes.

sex ratio (%)

	males	females
March	49	51
April	49	51

stage of maturity		1	2	3	4	5
March	males	17	24	39	20	-
	females	18	20	50	12	-
April	males	2	2	6	90	-
	females	1	6	13	70	10

Table 1: G.D.R. nominal catches (tons) of species in the NAFO area for 1989 and 1990 (Jan. - Sept.)

Species	1989	1990
Cod	32.7	-
Redfish	738.3	1953.4
Roundnose grenadier	2351.8	0.6
Greenland halibut	1726.5	11.9
American plaice	0.3	-
Roughhead grenadier	42.3	-
Skates and rays, n.e.i.	121.4	-
Catfish	0.3	-
Baird's smoothhead	7.6	-
Atlantic mackerel	17908.8	8670.6
Alewife	22.2	14.1
Witch flounder	3.9	-
Long-finned squid	1.6	0.4
Silver hake	7.2	0.9
Atl. butterfish	0.9	1.9
Atl. halibut	0.6	-
Blue antimora	0.6	-
Marine fishes, n.e.i.	67.0	58.5
Total	23034.0	10712.3

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Table 2: G.D.R. nominal catches (tons) of species by Divisions of the Subareas 3, 5 and 6 for 1990 (Jan. - Sept.)

	3L	3M	3N	3	5Zw	5	6A	6B	6	
Redfish	642.2	1221.0	90.2	1953.4	-	-	-	-	-	
Roundnose grenadier	0.6	-	-	0.6	-	-	-	-	-	
Greenland halibut	11.9	-	-	11.9	-	-	-	-	-	
Atlantic mackerel	-	-	-	-	2210.6	2210.6	3436.8	3023.2	6460.0	
Alewife	-	-	-	-	0.5	0.5	3.5	10.1	13.6	
Long finned squid	-	-	-	-	0.3	0.3	0.1	-	0.1	
Silver hake	-	-	-	-	0.4	0.4	0.2	0.3	0.5	
Atl.butter-fish	-	-	-	-	0.9	0.9	0.2	0.8	1.0	
Marine fishes n.e.i.	-	-	-	-	3.4	3.4	16.7	38.4	55.1	
Total	654.7	1221.0	90.2	1965.9	2216.1	2216.1	3457.5	3072.8	6530.3	

Table 3: C.P.U.E. in August and September
(factory trawlers, FAO-Code 090)

Division		August	September	total
3L	total catch (t)	168.9	196.5	365.4
	catch per fishing day (t)	7.7	8.9	8.3
	catch per trawling hour (t)	1.3	0.8	1.0
3N	total catch (t)	90.2	-	90.2
	catch per fishing day (t)	9.0	-	9.0
	catch per trawling hour (t)	1.7	-	1.7
3M	total catch (t)	93.9	635.4	728.7
	catch per fishing day (t)	10.4	20.5	18.2
	catch per trawling hour (t)	1.4	2.7	2.4

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Table 4: Length distribution (fork length in o/oo) of Atlantic mackerel in catches taken by commercial pelagic trawls, NAFO-Divisions 5Zw,6A, 6B, December 1989 - April 1990

NAFO-Div.	5Zw	6A					6B		
month / Lf (cm)	April	Dec.	Jan.	Febr.	March	April	Dec.	Jan.	March
19									2
20									6
21									6
22					1				2
23					1				2
24					2				3
25			20	13	7				8
26	+		142	43	44	+		5	32
27	+		159	147	66	1		35	52
28	4	10	123	114	47	2		10	36
29	1	10	40	54	20	3		52	18
30	4	10	79	50	29	2	53	60	33
31	11	30	60	77	38	18	60	65	48
32	24	106	179	80	54	41	20	83	59
33	34	93		47	39	40	40	73	30
34	45	30		33	45	56	60	111	36
35	50	46	99	13	41	62	80	81	40
36	109	103	20	77	83	114	60	156	80
37	230	159	40	70	143	205	160	98	154
38	272	281	20	100	175	244	240	93	188
39	146	99	20	33	97	137	187	63	108
40	43	7		17	35	45		15	29
41	16	10		17	14	11			14
42	5	7			8	10	20		5
43	4			7	6	4			6
44	2				3	3	20		2
45	+			3	1	1			1
46	+			3					
total	1000	1001	1001	998	999	999	1000	1000	1000
No.fish meas.	4850	302	302	299	3090	3251	300	602	4069
mean length (cm)	37,58	36,47	30,72	32,71	35,11	37,35	36,96	34,69	35,16

Table 5: Age distribution (in o/oo) of Atlantic mackerel in catches taken by commercial pelagic trawls
NAFO-Divisions 5Zw, 6A, 6B, January - April 1990

Div.	5Zw	6A				6B	
month / age	April	Jan.	Febr.	March	April	Jan.	March
1				4			15
2	4	468	350	178	8	109	157
3	109	321	260	182	126	312	172
4	65	105	105	124	119	104	50
5	164	20	70	115	119	127	83
6	142	27	68	116	118	61	89
7	272	44	92	175	176	94	166
8	205	11	35	81	304	183	234
9	24	1	6	8	14	8	22
10	11		-	1	5		
11	2		7	9	2		2
12	-		4	4	6		7
13	1				-		1
14					1		
total	999	997	997	997	998	998	998

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Table 6: G.D.R. Atlantic mackerel catch by numbers in 1990 (number x 10^3)

NAFO-Div.	5Zw	6A				6B	
month / age	April	Jan.	Febr.	March	April	Jan.	March
1				8.75			70.22
2	14.73	240.20	194.67	389.38	25.50	213.21	734.93
3	401.51	164.75	144.61	398.13	401.69	610.27	805.14
4	239.43	53.89	58.40	271.25	379.38	203.43	234.05
5	604.10	10.26	38.93	251.56	379.38	248.41	388.53
6	523.07	13.85	37.82	253.75	376.19	119.32	416.62
7	1001.93	22.58	51.17	382.81	561.10	183.86	777.06
8	755.13	5.66	19.47	177.19	969.18	357.95	1095.37
9	88.41	0.51	3.34	17.50	44.63	15.65	102.98
10	40.52			2.19	15.94		-
11	7.38		3.89	19.69	6.38		9.36
12	-		2.22	8.75	19.13		32.77
13	3.68				-		4.68
14					3.19		
total	3679.89	511.70	554.52	2180.95	3181.69	1952.10	4671.71