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Polish Research Report, 1986

by

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INTRODUCTION

The overall catch by the Polish fishing fleet in NAFO Subareas 2-6 in 1986 was 7,125 tons /Table 1/. About 93% /6,626 tons/ of that catch was taken under cooperative research mackerel program between Sea Fisheries Institute /MIR/ Gdynia - Northeast Fisheries Center /NEFC/ Woods Hole, USA /Table 5,6/.

The remaining 7% of the catch constituted mainly redfish /297 tons/ and Greenland halibut /177 tons/.

SUBAREA 2

The total catch by Polish vessels in Subarea 2 was 282 tons /Table 3/. The prevailing amount of the total in Subarea 2 constituted Greenland halibut /51%/ and redfish /45%/.

Greenland halibut. The catch of that species /144 tons/ taken in Div. 2H and 2J was much lower than that in 1985.

No biological sampling was carried out in this division due to lack of technical staff to cover fishing operations.

Redfish. An increase of redfish catches in Subarea 2 to 128 tons in 1986 /Table 3/ resulted from a proportional increase of fishing effort.

No biological samples were collected due to the same reasons as in the case of Greenland halibut.

SUBAREA 3

The overall catch in Subarea 3 was only 217 tons in 1986 /Table 4/. The whole catch was taken in Div. 3K. Almost 78% of the total constituted redfish and 15% Greenland halibut.

No biological samples were collected in Subarea 3.

## SUBAREA 5 and STATISTICAL AREA 6

Status of the Fisheries and Research. Fishing operations in Subarea 5 and Statistical Area 6 were conducted under cooperative mackerel research program between MIR and NEFC. Two freezer trawlers of equivalent types /B-29 and B-418/ provided with commercial pelagic trawls were employed. The overall catch in Subarea 5 was 1776 tons while in Subarea 6 was 4850 tons. Bycatch species were blueback herring 0.6%, spiny dogfish 0.2%, silver hake 0.2% and menhaden 0.1% /Tables 5 and 6/.

Mackerel. The total mackerel catch in Subarea 5 and Subarea 6 was 6514 tons. More than 73% was taken in Subarea 6 and only 27% in Subarea 5. The greatest catches in Subarea 6 amounted almost 48% were taken in Div. 6C /Table 9/.

Biological sampling was conducted from aboard both trawlers by Polish and US scientists, technicians and observers. Sampling comprised length and weight measurements, detailed biological analysis and measurements of relevant environmental parameters.

Length measurements were performed on 44314 specimens. Average length of mackerel decreased from 33.8 cm /February/ to 33.1 cm /April/, /Table 10/. The age compositions was dominated by 1981 year-class /31.3%/, followed by 1980 year-class /24.6%/, 1979 year-class /14.1%/, 1978 year-class /14.7%/, and 1973 year-class /0.7%/, /Table 11/.

Mackerel at developing stage D was predominant constituting 77.4-82.5% of fish in sampling from 36% /February/ to 16.9% /April/ of fish had empty stomachs.

**Table 1** Polish catches in NAFO Subareas 2-5 and Statistical Area 6 in 1985 and 1986

Species	1985		1986	
	tons	%	tons	%
Cod	20	0.2	2	+
Redfish	70	0.9	297	4.2
American plaice	18	0.2	1	+
Witch flounder	565	7.2	3	+
Greenland halibut	460	5.8	177	2.5
Skates	54	0.7	2	+
Roundnose grenadier	12	0.2	17	0.2
Mackerel	6221	78.9	6514	91.4
Alewife	-	-	5	0.1
Manhaden	81	1.0	7	0.1
Butterfish	2	+	2	+
Spiny dogfish	89	1.1	13	0.2
Squid - Illex	-	-	3	+
Silver hake	15	0.2	13	0.2
Gurnard	-	-	1	+
Dogfish sharks	73	0.9	6	+
Greenland sharks	-	-	11	0.2
Porgies soabreams	-	-	5	0.1
American shad	3	+	4	0.1
Blueback herring	157	2.0	42	0.6
Atlantic herring	8	0.1	-	-
Scup	18	0.2	-	-
Wolffishes	26	0.3	-	-
<b>Total</b>	<b>7892</b>	<b>99.9</b>	<b>7125</b>	<b>99.8</b>

**Table 2** Polish allocation versus catches in NAFO area  
in 1986 /metric tons/

Species	Stock division	Catch quotas	Catches	Catch quota %
Cod	2 GH	500	-	-
	3 M	500	-	-
Redfish	2 + 3K	660	297	45.2
Witch flounder	2J + 3KL	1600	3	+
Greenland halibut	2GH	500	122	24.4
	2J + 3KL	650	55	8.5
Roundnose grenadier	2 + 3	800	17	2.1
Squid - Illex	3 + 4	1000	-	-
Mackerel	5 + 6	5000 <sup>1/</sup>	6514	130.3

<sup>1/</sup> Special quota for fishing operations within MIR-NEFC  
cooperative research mackerel program.

**Table 3** Polish catches in SA 2, 1986 /metric tons/

Species	Subarea 2		Total
	2H	2J	
Redfish	28	100	128
American plaice	1	-	1
Greenland halibut	122	22	144
Roundnose grenadier	3	6	9
Total	154	128	282

Table 4 Polish catches in SA 3, 1986 /metric tons/

Species	Div. 3K	Total
Cod	2	2
Redfish	169	169
Witch flounder	3	3
Greenland halibut	33	33
Roundnose grenadier	8	8
Skates	2	2
Total	217	217

Table 5 Polish catches in SA 5, 1986 /metric tons/

Species	Subarea 5		Total
	5 Ze	5 Zw	
Gurnard	-	1	1
Mackerel	812	942	1754
Batterfish	1	1	2
Silver hake	11	1	12
Greenland sharks	4	1	5
Squids	1	1	2
Total	829	947	1776

Table 6 Polish catches in Statistical Area 6, 1986 /metric tons/

Species	Statistical Area 6			Total
	6A	6B	6C	
Mackerel	787	863	3110	4760
Alewife	1	1	3	5
Manhaden	-	1	6	7
Spiny dogfish	-	-	13	13
Silver hake	1	-	-	1
Greenland sharks	4	1	1	6
Porgies seabreams	4	1	-	5
American shad	2	-	2	4
Blueback herring	1	10	31	42
Squids	1	-	-	1
Dogfish sharks	-	1	5	6
Total	801	878	3171	4850

Table 7 Polish Greenland halibut catches in SA 2 and 3, 1986 /metric tons/

Div.	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Total
2H	-	-	-	-	-	-	69	53	-	-	-	-	122
2J	-	-	-	-	-	-	-	16	6	-	-	-	22
3K	-	-	-	-	-	-	-	18	8	7	-	-	33
Total	-	-	-	-	-	-	69	87	14	7	-	-	177

Table 8 Polish redfish catches in SA 2 and 3, 1986 /metric tons/

Div.	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Total
2H	-	-	-	-	-	-	6	22	-	-	-	-	28
2J	-	-	-	-	-	-	-	27	71	2	-	-	100
3K	-	-	-	-	-	-	-	49	95	25	-	-	169
Total	-	-	-	-	-	-	6	98	166	27	-	-	297

Table 9 Polish mackerel catches in SA 5 and 6, 1986 /metric tons/

Div.	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Total
5Ze	-	-	-	529	283	-	-	-	-	-	-	-	812
5Zw	-	-	-	942	-	-	-	-	-	-	-	-	942
6A	-	15	272	500	-	-	-	-	-	-	-	-	787
6B	-	200	585	78	-	-	-	-	-	-	-	-	863
6C	-	2054	1056	-	-	-	-	-	-	-	-	-	3110
Total	-	2269	1913	2049	283	-	-	-	-	-	-	-	6514

Table 10 Length frequencies of mackerel from directed research fishery in SA 5 and SA 6 February-May 1986 /per mille/

Length class /cm/	February	March	April	May
10	+	+		
20	+			
21	+			
22	+			
23	+	+	+	+
24	+	+		
25	1	1		
26	5	3	1	1
27	16	11	2	2
28	28	22	8	6
29	25	20	14	22
30	19	14	10	37
31	54	45	19	40
32	203	201	136	176
33	287	314	300	326
34	178	196	262	220
35	65	66	105	74
36	33	29	54	27
37	19	20	28	15
38	9	7	12	5
39	6	5	6	5
40	10	9	10	5
41	15	14	14	18
42	14	13	13	12
43	6	5	5	9
44	2	1	1	+
45	+	+	+	
46		+	+	
47				
48	+			
Total	1000	1000	1000	1000
Number measured	16267	12929	13588	1530
Mean length	33.8	33.3	33.1	33.4
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Table 11 Age composition and mean length at age of mackerel from Polish research catches in SA 5 and SA 6, February-May 1986

	Year - class													
	1982	1983	1980	1979	1988	1977	1976	1975	1974	1973	1972	1971	1970	1969
Per mille	17	313	246	141	147	73	21	11	7	7	2	5	7	3
Mean length /cm/	29.0	30.3	33.1	34.7	35.0	36.2	38.9	39.3	40.8	41.1	42.0	41.5	42.1	42.5