

International Commission for



the Northwest Atlantic Fisheries

Serial No. 3536
(D.a.74)

ICNAF Summ.Doc.75/28

ANNUAL MEETING - JUNE 1975

POLISH RESEARCH REPORT, 1974

by

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Total Polish catches in the ICNAF Areas 1-5 and in the Statistical Area 6 decreased from 255.031 tons in 1973 to 215.142 tons in 1974. Detailed data concerning Polish catches of particular species in SA 1-6 in 1974 and 1973 are contained in table 1.

These data show that in 1974, in SA 1-6 mackerel was mainly caught /96.104 tons/, next herring /39.513 tons/, Cod /33.749 tons/, Capelin /9.476 tons/, Greenland halibut /7.105 tons/, Squids /6.709 tons/ and witch /6.202 tons/. Other species were of a relatively small significance in catches.

The best catch results in 1974 were obtained by Polish fisheries in SA 5 /89.342 tons/ and in SA 6 /63.369 tons/. Much less catch results attained in SA 2 /36.866 tons/ and SA 3 /24.465 tons/. In SA 4 catch results were insignificant /921 tons/. As to SA 1 Polish trawlers did not operate there. The decrease in Polish catches in the ICNAF area was due to the smaller fishing output of mackerel, herring, Greenland halibut, witch and American plaice due to the introduction of fishing limitations.

Applied to the species mentioned above in 1974 and to the difficulties met in attaining the given limitations of cod in

Table 1

Polish catches in the ICNAF and Statistical SA
broken down by species, in 1974 and 1973

/in metric tons/

Species	1974		1973	
	metric tons	%	metric tons	%
Mackerel	96,104	44,7	117,254	46,2
Herring	39,513	18,4	50,307	19,8
Cod	33,749	15,7	28,800	11,3
Redfish	4,865	2,3	5,199	2,0
Haddock	-	-	480	0,2
Silver hake	140	0,1	343	0,1
Red hake	-	-	158	0,1
Pollock	4	+	23	+
Greenland halibut	7,105	3,3	9,066	3,6
Witch	6.202	2,9	11,812	4,6
American plaice	706	0,3	1,381	0,5
Halibut	3	+	126	0,1
Roundnose grenadier	181	0,1	294	0,1
Scup	-	-	651	0,2
Angler	-	-	160	0,1
Searobins	542	0,2	1,052	0,4
Wolfishes	-	-	166	0,1
Bluefish	56	+	197	0,1
Swordfish	-	-	74	+
Butterfish	3,508	1,6	2,804	1,1
Capelin	9,476	4,4	3,417	1,3
Alewife	1.088	0,5	3,308	1,3
Rought scad	11	+	491	0,2
Dogfish	3,848	1,8	3,850	1,5
Tuna	3	+	-	-
Squids	6,709	3,1	9,427	3,7
Sea breams	181	0,1	-	-
Other species	1.148	0,5	4.191	1,4
Total	215.142	100,0	255.031	100,0

SA 2 and 3. Precise data on how the given fishing limitations for particular species were followed by Polish fisheries according to Stock areas are contained in Table 2.

In ICNAF areas in 1974 there operated factory trawlers, freezer trawlers and side motor trawlers. Factory trawlers operated mainly in SA 3 and 2 where as freezer trawlers and side motor trawlers in SA 5 and 6.

SUBAREA 2

Status of the Fisheries

In 1974 Polish trawlers in SA 2 mainly operated in Div. 2J, and during a relatively short period in Div. 2H. No catches were performed in Div. 2G. In SA 2, in 1974, the catch results attained 36.866 tons. The main fish component was Cod and next Greenland halibut, witch and redfish. In Div. 2J catches were mainly carried out from January to April and in Div. 2H from June to September. In SA 2 no catches were carried out in October and November. In January and February the main fish component was Cod and in the other months Greenland halibut, witch and also Capelin and redfish.

The composition of Polish catches in SA 2 in 1974 broken down by species is shown in table 3.

C o d

Cod catches in SA 2 in 1974 reached 24.002 tons whereas in 1973 they hardly attained 3.104 tons. This catch growth in

Table 2

Polish catch quota and catches in 1974
in ICNAF Area and Statistical SA

in metric tons

Species	Stocks Divisions	Catch quota for 1974	Catches in 1974	Percent catches as to the quota
Cod	2 GH	4.500	900	20,0
	2J+3KL	43.400	31.583	72,8
	3 M	800	700	87,5
	5 Z	487	479	98,4
Redfish	2 + 3K	4.000	3.646	91,2
	3 LN	1.000	397	39,7
	4 VWX	1.300	803	61,8
American plaice	3 LNO	900	615	68,3
Witch	2J + 3KL	6.000	5.302	88,4
Greenland halibut	2 + 3KL	7.000	7.105	101,5
Herring	5Z + 6	39.000	39.312	100,8
Mackerel	5 + 6	96.000	96.103	100,1
Squids /Loligo/	5 + 6	6.800	6.709	98,7
Other species	5 + 6	10.000	10.095	101,0

Table 3

Polish catches in SA 2 broken down by species
and Divisions, in 1974

in metric tons

Species	Subarea 2		Total
	2H	2J	
Cod	900	23.102	24.002
Redfish	242	846	1.088
Witch	900	2.832	3.732
Greenland halibut	1.724	3.359	5.083
American plaice	11	68	79
Capelin	6	2.580	2.586
Roundnose grenadier	102	76	178
Halibut	1	-	1
Other species	23	94	117
T o t a l	3.909	32.957	36.866

Div. 2 is connected with the amelioration of fishing conditions in this division in 1974. In 1974, 23.102 tons of cod were caught in Div. 2J but only 900 tons in Div. 2H.

In SA 2 January was a period of good catch results /1.890 kg/h/ and February too /1.773 kg/h/ but only in Div. 2J /table 4/. In Div. 2H Cod was almost exclusively fished in July and the catch results obtained there at that time were low /190 kg/h/.

From the biologic research carried out in SA 2, Div. 2J /20.460 specimens were measured and 1.738 aged/ it results that catches in January were composed of 30-80 cm long fish aged 4-12 years and in February of 27-80 cm long fish aged 3-12 years /table 5/. In January as well as in February the main fish component in catches was 6 years old cod of the 1968 year class and 7 years old cod of the 1967 year class. Fish younger than the 1968 year class considered as poor, had no significance in catches.

R e d f i s h

Redfish catches in SA 2 decreased from 1.260 tons in 1973 to 1.088 tons in 1974. In 1974, 846 tons were caught in Div. 2J and 247 tons in Div. 2H. In comparison with the year 1973 there was a decrease in catches in Div. 2H and an increase in Div. 2J. Redfish was mainly fished in March, April and February.

The length measurement of redfish /1.881 specimens measured/ show that in January in Div. 2J, 23-43 cm long fish was caught /mainly 24-27 cm long - the mean length was 26,6 cm/ and in March,

T a b l e 4

Polish cod catches in SA 2 and 3 in particular months of 1974
/in metric tons/

Statistical divisions	M o n t h s												Total
	Jan.	Feb.	Mar.	Apr.	May	June	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	
2H	-	-	-	-	-	5	890	-	-	-	-	5	900
2J	10487	11449	304	426	4	-	37	85	181	-	-	129	23.102
3K	-	4261	1782	2372	2	57	-	-	-	-	-	-	8.474
3L	-	-	-7	-	-	-	-	-	-	-	-	-	7
3M	-	-	700	-	-	-	-	-	-	-	-	-	700
Total	10487	15710	2793	2798	6	62	927	85	181	-	-	134	33.183

Table 5

Percent age composition of Polish cod catches in Div. 2J, 3K and 3L
in 1974

Divisions	Months	Year classes and age groups										Total %
		1971	1970	1969	1968	1967	1966	1965	1964	10+		
2J		3	4	5	6	7	8	9	10	10+		
	Jan.	-	1,2	17,4	42,4	28,2	7,7	2,0	0,6	0,5	100,0	
3K	Feb.	0,1	1,2	14,1	38,1	30,2	11,0	3,5	0,9	0,9	100,0	
	Jan.	-	1,6	16,3	40,5	24,7	9,5	4,2	1,6	1,6	100,0	
3L	Mar.	-	0,4	15,8	45,3	26,5	8,7	2,2	0,7	0,4	100,0	
	Feb.	0,6	7,1	12,4	26,2	26,5	5,1	2,5	4,5	15,1	100,0	

26-48 cm long fish /mainly 29-35 cm long - the mean length was 34,9 cm/.

Greenland Halibut

Greenland halibut catches in SA 2 decreased from 7.115 tons in 1973 to 5.083 tons in 1974 - which is connected with the value of the given national fishing quota in 1974. In 1974, 3.359 tons of Greenland halibut were caught in Div. 2J and 1.724 tons in Div. 2H.

In SA 2 Greenland halibut was fished all the year /except in October and November/ - most from January to June. The highest fishing output was obtained in Div. 2H - in June /41,7 tons per day/, in Div. 2J - in May /24,2 tons per day/ and in June /41,7 tons per day/.

Length measurement of the Greenland halibut /5.223 specimens were measured/ showed that in the catches in Div. 2J, during the period from January to April, there occurred 30-90 cm long fish /mainly 50-55 cm/. In comparison with the results of the investigations of previous years no essential changes in the length composition of the Greenland halibut were observed /according to A.Kosior/.

Witch

Polish catches of witch in SA 2 increased from 79 tons in 1973 to 3.732 tons in 1974. This species was mainly fished

in Div. 2J where catches results attained 2.832 tons and at a smaller degree in Div. 2H where only 900 tons were caught.

Biologic studies /1.028 specimens were measured/ show that catches included specimens having a length from 35 to 71 cm and an age of 7-20 years mainly 9-16 years. In comparison with the results of studies carried out in the previous years no changes are noted in catches, in the length composition and age /according to A.Kosior/.

American plaice

American plaice catches in SA 2 in 1974 gave only 79 tons and they constituted as in 1973 /40 tons/ a by-catch to cod. They consisted of 25 to 60 cm specimens aged 3 to 17+, mainly 8 to 13 years /1.374 specimens were measured - according to A.Kosior/.

Capelin

Polish catches of Capelin in SA 2 increased from 1.396 tons in 1973 to 2.586 tons in 1974. Almost the totality of catches came from Div. 2J in August. No biological studies were carried out.

Roundnose Grenadier

Catches of this species in SA 2 in 1974 amounted to 170 tons, of which 102 tons came from Div. 2H and 76 tons from Div. 2J. In comparison with 1973 /88 tons/ a increase of 100% in catches was

noted. Catches in 1974 came mainly from the August and September period and constituted only a bycatch to the Greenland halibut. No biologic research was carried.

SUBAREA 3

Studies of the Fisheries

In 1974, in SA 3 Polish trawlers mainly operated in Div. 3K and with a small fishing effort in Div. 3L and 3M. Catches were exclusively carried out in the first half year - including Div. 3K mainly from February to April. Catches amounted to a total of 24.465 tons and contained first of all cod and then capelin, redfish, witch and Greenland halibut. Polish catch composition in SA 2 in 1974 broken down ^{by} ~~in~~ species and divisions is given in table 6.

C o d

Cod catches in SA 3 in 1974 amounted to 9.181 tons, of these 8.474 tons in Div. 3K, 700 tons in Div. 3M and only 7 tons in Div. 3L. In comparison with 1973 /25.244 tons/ a significant decrease in catches - about 150% was observed.

The best cod catch season in Div. 3K was the period from February to April. The best catch results were obtained in February /1.523 kg/h/ smaller ones in April /882 kg/h/ and in March /279 kg/h/.

Table 6

Polish catches in SA 3 broken down by species
and Divisions, in 1974

in metric tons

Species	Subarea 3			Total
	3K	3L	3M	
Cod	8.474	7	700	9.181
Redfish	2.558	397	17	2.972
Greenland halibut	2.022	-	-	2.022
American plaice	12	615	-	627
Witch	2.470	-	-	2.470
Halibut	2	-	-	2
Roundnose grenadier	3	-	-	3
Capelin	3.148	3.742	-	6.890
Other species	298	-	-	298
T o t a l	18.987	4.761	717	24.465

Biologic research in Div. 3K /where 9.493 specimens were measured and 1.000 specimens aged/ show that catches in February consisted of 30-89 cm long and 4-13 years old cod and in March they comprised 33-74 cm long and 4-11 years old cod. In Div. 3L, in February cod catches included 27-119 cm long and 3 to 10+ years old cod. In Div. 3K there was a prevalence of 6 years old specimens from the 1968 year class and in Div. 3L, 6 and 7 years old specimens from the 1968 and 1967 years class. In Div. 3L the 1962 year class was relatively well represented.

In Div. 2J as well in Div. 3KL a rather significant increase in length and age of cod as compared to this structure in the years 1972-1973 was observed. This was due to the prevalence of the exploited two older year classes from 1968 and 1967, and to the absence of young year classes born after 1968 to complete the stock. In connection with the disappearance of the abundant 1968 and 1967 year classes and the absence of abundant year classes in 1976 there will probably occur a decrease in the biomass of fish of this species in Div. 2J and 3KL. It seems that the biomass reduction cannot have any connexion with overfishing as, during the last years, catches were significantly limited due to natural conditions which rendered difficult the catches during the spawning period.

Redfish

Redfish catches SA 3ⁱⁿ in 1974 amounted to 2.972 tons, of which 2.558 tons were caught in Div. 3K, 397 tons in Div. 3L and only 17 tons in Div. 3M. In comparison with 1973 the 1974 catches were lower by 90 tons. In 1974, in SA 3 redfish was mainly caught in April and March.

In Div. 3K, in February, redfish catches consisted of 21-58 cm long specimens /mainly 32-40 cm - the average being 38,0 cm long, and 1.251 individuals were measured/ and in Div. 3M they consisted of 23-43 cm long specimens /mainly 25-30 cm long - the average being 28,8 cm, and 889 individuals were measured/.

Greenland halibut

In SA 3 Greenland halibut catches in 1974 came mainly from Div. 3K where 2.588 tons were caught - which, in comparison with the year 1973 constituted an increase of 637 tons. Greenland halibut was mainly fished during the first half year. The largest yield was obtained in May /16,5 tons per day/ and in June /17,3 tons per day/.

April catches consisted /according to A.Kosior/ of 40-80 cm long individuals /mainly 50-60 cm long - the average being 55,6 cm and 591 specimens were measured/.

Witch

In 1974, in SA 3 witch was exclusively caught in Div. 3K where 2470 tons were fished. The total catches came mainly from the period of February to April. Due to limitations witch catches as compared to 1973 decreased by 9.263 tons.

Catches in February and March /according to A.Kosior/ consisted of 32-73 cm long witch with a preponderance of 45-60 cm long individuals. 1.374 specimens were measured and there was a prevalence of 9-16 years old fish.

American plaice

Polish catches of American plaice in SA 3 decreased from 1.341 tons in 1973 to 627 tons in 1974. The best results - 615 tons - were obtained in Div. 3L and 12 tons in Div. 3K. Catches were carried during the period from January to April.

In February 20-63 cm long American plaice were caught /the average length being 35,5 cm and 765 individuals were measured/ and they consisted mainly of 5-9 years old individuals /according to A.Kosior/.

Capelin

Capelin catches in SA 3 increased from 2.021 tons in 1973 to 6.890 tons in 1974. This species was fished in Div. 3K /3.148 tons/ during the period of October and November and in Div. 3L during the period from March to July. No biological research was carried.

SUBAREA 4

Status of the Fisheries

Due to the fact that in SA 4 Poland was given only an insignificant quota of redfish in 1974, catches decreased from 1969 tons in 1973 to 921 tons in 1974 /table 7/. Catches were carried out in Div. 4X only, where they were composed of 803 tons of redfish, 98 tons of herring and 20 tons of other species. No biological research was made in SA 4 in 1974.

SUBAREA 5 and 6

Status of the Fisheries

In SA 5 Polish fisheries in 1974 amounted to 89.341 tons. Catches in this subarea decreased from 170.087 tons in 1973 to 89.341 tons in 1974 mainly due to the increased exploitation of mackerel in SA 6. In 1974 nearly the totality of catches /89.341 tons/ came from Div. 5Z. The main object of Polish catches in SA 5 were herring, mackerel and squids. Dogfish, butterfish and others were of a less importance. Detailed data concerning the catch composition in SA 5 are to be found in table 8. Polish catches in the statistical SA 6 increased from 20.221 tons in 1973 to 63.369 tons in 1974 as a result of the catch intensification of mackerel - Div. 6 AB included.

Catches were mainly carried in Div. 6A /46.526 tons/ next in Div. 6B /16.526 tons/. The basic component in SA 6 was mackerel and next butterfish, dogfish, herring and squids. Precise data concerning catches in SA 6 broken down in species and divisions are contained in table 9.

Table 7

Polish catches in SA 4 broken down
by species and Divisions, in 1974

in metric tons

Species	Subarea 4	Total
	4X	
Herring	98	98
Redfish	803	803
Mackerel	1	1
Other species	19	19
T o t a l	921	921

Table 8

Polish catches in SA 5 broken down by species
and Divisions, in 1974

in metric tons

Species	Subarea 5		Total
	5Z	5Y	
Mackerel	38.542	-	38.542
Herring	38.586	103	38.689
Cod	479	-	479
Redfish	2	-	2
Silver hake	117	-	117
Pollock	4	-	4
Bluefish	54	-	54
Butterfish	1.453	47	1.500
Alewife	676	-	676
Dogfish	2.500	-	2.500
Squids	6.229	-	6.229
Seabreams	136	-	136
Tuna	2	-	2
Other species	561	-	561
T o t a l	89.341	150	89.341

Table 9

Polish catches in Statistical SA 6, broken down
by species and Divisions, in 1974

in metric tons

Species	Subarea 6				Total
	6A	6B	6C	6D	
Mackerel	42.802	14.434	233	92	57.561
Herring	624	100	2	-	726
Cod	66	7	14	-	87
Searobins	260	282	-	-	542
Butterfish	1.061	947	-	-	2.008
Alewife	383	29	-	-	412
Silver hake	20	3	-	-	23
Rought scad	11	-	-	-	11
Bluefish	2	-	-	-	2
Dogfish	653	695	-	-	1.348
Sea breams	43	2	-	-	45
Squids	474	-	6	-	480
Other species	126	27	-	-	153
Tuna	1	-	-	-	1
T o t a l	46.526	16.526	255	92	63.399

M a c k e r e l

In 1974 Polish catches of mackerel in ICNAF SA 5 and in statistical SA 6 amounted to 96.103 tons. Of these, 38,542 tons i.e. 40,1% were caught in SA 5 and 57,561 tons i.e. 59.9% in SA 6, hence like in 1971 and 1972 most catches came from SA 6 /table 10/.

The highest catch results, constituting 65,4% of yearly output were obtained in January, February and December in SA 6. Catches in the first trimester constituted 54,3% of the yearly output.

The output of freezer-trawlers B-29/S, amounting to 28,5 tons per day last year /only such months were taken into consideration during, which the participation of mackerel reached over 60%/ increased to 32,4 tons per day.

The output of freezer-trawlers B-18, however, decreased from 35,1 tons per day to 33,7 tons per day. It should be mentioned, however, that the participation of trawlers B-18 in total catches amounted to a little more than 20%, whereas the participation of trawlers B-29 and B-29 S was approaching 60%. The output of all the above mentioned types of fishing vessels showed a mean increase from 32,5 tons per day to 34,0 tons per day /the weighed mean value divided by catches/ that is a 5% increase.

Biologic studies of mackerel were carried out on samples collected on commercial vessels which fished by means of pelagic trawlnets. To perform length measurements 21,325 specimen were

Table 10

Polish commercial mackerel catches in ICNAF S.A. 5 and Statistical Area 6, 1974

Subarea	M o n t h s												Total
	Jan.	Feb.	Mar.	Apr.	May	June	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	
5 + 6	m. 28714 tons	16320	7111	8960	4604	1114	-	86	170	2134	9159	17731	96.103
	%	17,0	7,4	9,3	4,8	1,1	-	0,1	0,2	2,2	9,5	18,5	100,0
5	m. 7 tons	-	6627	8001	4479	1114	-	86	170	2134	9159	6765	38.542
6	m. 28707 tons	16320	484	959	125	-	-	-	-	-	-	10966	57.561

taken and to determine age and degree of sexual maturity 5,748 specimens were studied.

The mean length of caught mackerel oscillated between 24,0 cm and 34,2 cm and it must be mentioned that it was relatively high in SA 6 during the period from January to April /29,0 cm - 32,0 cm/ and lowest in September and October in SA 5 /24,0 cm-25,5 cm/. This must be explained by the appearance of fish born in 1974 in the exploited stock.

In catches there was a prevalence of the year class born in 1973 /29,9%/ which, together with the 1971 and 1973 class constituted a total of 62,9% /table 11/. The participation of these year classes compared to 1973 increased by 16,4 %. The participation of yearlings decreased, however, if compared to the previous year; this is certainly connected with the high abundance of 1972 and 1971 classes, by which their availability augmented and the intensity of catches shifted towards two years old and older fish shoals. In catches during the period of October to December there occurred also relatively numerous mackerel of the 0 age group born in 1974. Catch results in January and February 1975 show the abundance of this year class.

The estimation of the mackerel stock resources in SA 3-6 by the method of virtual population shows that the population biomass attains about 1.5 million tons and that if the 1976 limit remains at the same level as in 1975 it will not cause any decrease in the mackerel resources in the discussed sub-areas.

T a b l e 11

Percent age composition of Polish mackerel catches
in SA. 5 and SA. 6, in 1974

Subarea	A g e g r o u p									
	0	1	2	3	4	5	6	7	8	9+
5	1.3	11.8	40.3	21.1	8.1	9.1	4.5	3.0	0.7	0.1
6	0.9	17.6	25.9	15.4	9.7	9.8	9.3	8.3	2.1	1.0
Total	1.0	16.0	29.9	17.0	0.3	9.6	8.0	6.8	1.7	0.7

H e r r i n g

In 1974 the Polish fleet caught mainly herring in SA 5 and 6. A total of 39,312 tons were caught. As compared to the year 1973 a decrease of 22% occurred in the catches as a result of the diminution of the fishing quota. Similar to the previous year the best catching results were attained during the period from September to October /table 12/. In spite of a decrease in catches there occurred a significant increase in the output which in the case of trawlers B-18 reached 26% and gave 38,7 tons per day.

The biologic materials constituting the base of study of the herring stock composition in this area consisted of 99 length measurements including 34,724 measured fish and of 71 detailed analyses comprising 7,034 age readings.

The herring catches were composed of 20 to 37 cm long specimens. Specimens having a length of 28 and 29 cm were the most numerous. The average length attained 29,4 cm. As compared to the year 1973 there was a significant increase in the mean length of fish - over 2 cm. In the catches there was a preponderance of 4 years old specimens - 90%. The participation of young fish was insignificant and did not exceed 3% /table 13/. The participation of older fish, however, which in 1973 reached almost 22% has now diminished and attains about 6%.

The estimation of the resources of herring stock at George's Bank, taking into consideration landings in 1974, shows that in 1975 the 4 years old and older fish stock will remain on the same level as in 1974 /ab. 400 thousand tons/.

In case the stock were not completed by more abundant year class in the years 1975 and 1976 there should be expected a decrease in fish resources down to about 280,000 tons.

Squids

Polish catches of squids in 1974 in SA 5 and 6 amounted to 6.709 tons, of these 6.229 tons i.e. the largest quantity, was caught in Div. 5Z and only 474 tons in Div. 6A. Compared to 1973 year catches in 1974 were lower by 2.490 tons.

The fishing season of squids in 1974 lasted from March to July and from October to December - mainly in April and May. Catches consisted of *Illex illecebrosus* and *Loligo pealei*. *Loligo* was mainly fished as bycatch especially from October to December in Div. 5Z and 6A. *Illex* was fished in SubDiv. 5Zw in April and in SubDiv. 5Ze in May. The maximum fishing output attained 12 tons per day /3,6 tons per day as an average/. During the remaining period *Illex* was fished in Div. 5Z as well as in Div. 6A.

Illex catches /according to M.Lipiński/ in June and July consisted of 5-25 ML specimens, mainly 16-19 cm ML /6.310 specimens were measured/, and in September and October of 7-28 cm ML specimens, mainly 17-22 cm ML /5.384 specimens were measured/.

Special Research Studies

Hydrographic and plankton studies

Hydrographic and plankton studies were carried on r/v "Wieżno" from September 27 to October 10, 1974, in Div. 4X, 5Z

Table 12

Polish commercial herring catches in SA. 5 and 6 in 1974
/in metric tons/

Subarea	M o n t h s												Total
	Jan.	Feb.	Mar.	Apr.	May	June	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.	
5	32	-	1474	1048	2310	2376	824	909	7333	17685	4502	100	38.586
6	238	310	80	91	-	-	-	-	-	-	-	-	726
Total	270	310	1554	1139	2310	2376	824	909	7333	17685	4502	100	39.312

T a b l e 13

Age composition of Polish Herring catches / by numbers/
in ICNAF S.A. 5 in 1973 and 1974

Year	Y e a r c l a s s											Total in millions
	1972	1971	1970	1969	1968	1967	1966	1965	1964	1963		
1973	No	-	-	250100	43200	14800	5400	4000	1000	300	500	319.300
	%	-	-	78,3	13,5	4,6	1,7	1,3	0,3	0,1	0,2	100,0
1974	No	79	7036	170678	7971	2139	1117	287	124	-	-	189.431
	%	0,04	3,71	90,10	4,21	1,13	0,59	0,15	0,07	-	-	100,0

and 5Y on 146 fixed stations within the scope of the International Research Program. A total of 1,200 water temperature, salinity and diluted oxygen contents and phosphates measurements as well as meteorological observations have been performed.

Plankton samples were counted on the Bongo grid equipped with two nets whose mesh size was 0,333 and 0,505 m. Mr. Thomas Morris from the Northeast Fisheries Center /Woods Hole, Mass. USA/ participated in the research studies.

In 1974, in the studied area /according to W.Masło and S.Grimm/ higher than long term mean temperatures of water masses were noted in the vicinity of George's Bank. The adjacent warm water masses of the Gulf Stream prevented the inflow of cold and rich in biogenic salt waters of the Labrador Current. This type of hydrology anomaly caused that herring formed at the beginning short lasting and small Spawning concentrations which shifted in the search for adequate thermic conditions to spawn. It was observed that the occurring quantity of herring larvae after spawning in 1974 had attained the highest level of larvae quantity ever observed in 1973. Hence it may be assumed that the 1974 herring year class is abundant and shall fairly reinforce the spawning stock in 1977.

