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OBSERVATIONS ON ROMANIAN FISHING IN NORTH-WEST ATLANTIC AREA, IN 1974.

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ABSTRACT:

The observations were carried out on Romanian trawlers in January-September 1974, in Subarea 5 and Statistical Area 6. The detailed study of species composition of catches lead to a realistic assesment of it. Investigations concerning lengths and ages composition of main fished species have permitted acquiring state of reserves.

In 1974 Romanian trawlers operated only in southern part of ICNAF Area, mainly in Subarea 5 and Stat. Area 6, from January to September.

Total Romanian catches have shown a very small decrease, from 10544 tons in 1973 to 9890 tons in 1974 (Table 1).

A few trawlers (4) have realized 524 days fished, mostly equally in both divisions: 264 days fished in 5 mainly in summer, and 260 days fished mainly in winter period.

Principal species caught were mackerel (70 %) and herring (20 %) (Table 2).

Table 1

Romanian catches between 1970-1974
(metric tons)

Subareas	1970	1971	1972	1973	1974
Subarea 2	4665	1034	1123	397	-
Subarea 3	3274	2330	2889	3005	-
Subarea 4	85	37	-	-	-
Subarea 5	2258	5026	2797	1196	3701
Stat. Area 6	-	3669	2546	5946	6189
Total	10282	12096	9355	10544	9890

Table 2

Species composition of annual catches:
during 1970-1974

Species	1970	1971	1972	1973	1974
Cod	4104	2795	2694	2671	3
Silver hake	184	658	168	48	329
Red hake	-	-	43	2	200
Amer. plaice	1787	640	663	273	-
Halibut	52	55	165	80	-
Redfish	1224	229	387	310	0
Mackerel	687	4519	2517	5875	6966
Herring	292	893	2156	296	2019
Scup	-	-	12	375	6
Blueback	218	-	-	38	252
Bluefish	-	4	-	153	0
Squids	-	-	67	153	9
Other species	1734	2298	483	270	106
Total	10282	12096	9355	10544	9890

Subarea 5

A. STATUS OF THE FISHERIES

A number of 4 trawlers have fished from April to August mainly on George's Bank.

In 1974 total catch taken in Subarea 5, increased from 1196 tons in 1973 to 3701 tons (Table 3).

Table 3

Catch and fishing effort in Subarea 5
in 1974

Div.	CATCH (metric tons)					Hours fishing	Days fished	
	Mackerel	Herring	Silver hake	Red hake	Dogfish			
5 Ze	1491	1549	204	149	8	-	2887	241
5 Zw	237	43	5	-	20	2	183	21
5 Y	-	1	-	-	-	-	87	2
Total	1718	1593	209	149	28	2	3097	264

During the whole period mean yield per day was 14 tons (Table 4).

Table 4

Mean yields per hour and per day in successive months

Months	Yield per hour tons/hour	Yield per day tons/day
January	2.79	11.9
April	2.47	22.7
May	2.11	27.1
June	1.11	11.9
July	0.76	10.6
August	0.71	8.5
September	0.47	4.7
Total	1.19	14.0

In comparison with the year 1973, the annual yield per unit of fishing effort decreased due to the poor catches taken from June to September (Table 5).

Table 5

Comparison between the yields per unit of fishing effort in 1973 and 1974

Div.	1973		1974	
	Tons/hour	Tons/day	Tons/hour	Tons/day
5 Ze	2.1	17.0	1.18	14.2
5 Zw	3.26	23.2	1.61	14.0
5 Y	-	-	0.05	0.7
Total	2.68	19.6	1.19	14.0

B. SPECIAL RESEARCH STUDIES

1. Biological

a/ Mackerel (*Scomber scombrus*). In Subarea 5 a greater density of mackerel in winter and spring was observed. In the period from June to August 1100 fish were measured and 400 otoliths read for age. Their length ranged from 17 to 18 cm with the predominant range 33-35 cm, in June, and 22-24 cm in August. Their ages ranged from 1 to 9 years with 5, 6 and 2 year-old dominant. (1) (Table 6).

Table 6

Percent of year class composition of mackerel caught in 1974

Year-class								
1973	1972	1971	1970	1969	1968	1967	1966	1965
5.2	19.7	2.0	4.8	44.5	18.5	4.5	-	0.8

In June dominated 1969 year-class, whereas in August dominated 1972 and 1973 year-classes.

Females were more numerous than males and their mean length was 32.78 cm. Mean length of males was 31.90 cm (Fig.1).

Stage of maturity was pre-spawning and spawning in June, and post-spawning in August.

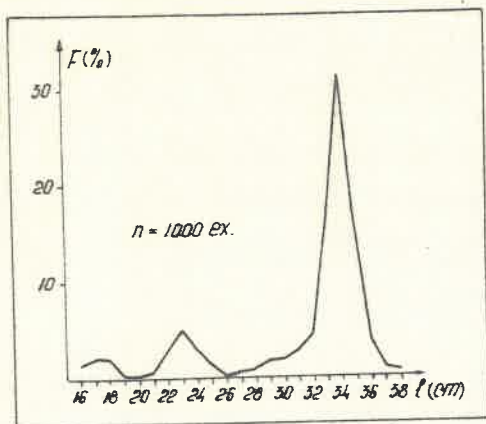


Fig.1 - Length frequency of mackerel in Subarea 5 (une-ugust)

b/ Herring (*Clupea harengus*). In 1974 herring catches were taken in Subarea 5 especially in 5 Ze from May to September.

Table 7

Herring catches in successive months in 1974

Months	Catch-metric-tons		
	5 Ze	5 Zw	5 Y
January	-	6.3	-
April	71.2	6.0	-
May	417.3	-	-
June	286.8	30.2	-
July	524.7	-	-
August	235.0	-	1.0
Septembre	14.2	-	-

Length composition ranged from 22 to 30 cm, with the predominance of 24-26 cm length classes (Fig.2).

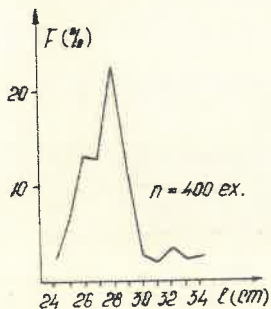


Fig.2 - Length frequency of herring caught in Subarea 5 (June - August)

The majority of fishes were in III-IV stage of maturity. In August predominated individuals in IV stage. Age composition ranged from 3 to 8 year-olds 1970 and 1969 year-classes were dominants (1) (Table 8).

Table 8

Percentage age composition of herring caught in Subarea 5, in 1974

1971	1970	1969	1968	1967	1966
5.3	52.3	29.7	2.7	9.3	0.7

c/ Silver hake (*Merluccius bilinearis*). In Subarea 5 the catch of silver hake was 209 tons, 204 tons being taken in 5 Ze.

From measurements carried out in August, length composition ranged from 20 to 46 cm and corresponding weights from 63 to 890 grams. Lengths between 24-28 dominated (Fig.3).

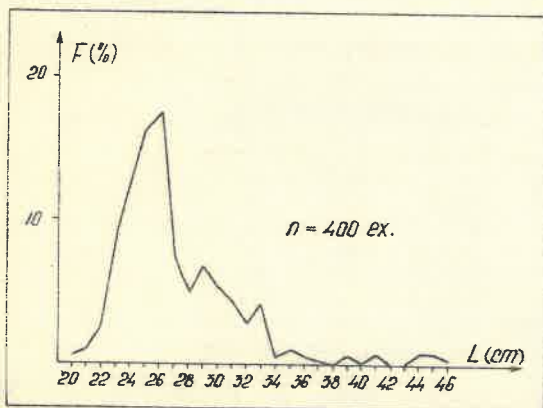


Fig.3 - Length frequency of silver hake caught in Subarea 5 (August)

Age composition shows a dominance of 1970-1971-1972 year-classes (Table 9).

Table 9

Percentage age composition of herring caught in Subarea 5 in 1974

Year-classes					
1972	1971	1970	1969	1968	1967
27.3	45.3	19.7	4.0	2.3	1.4

Statistical Area 6

A. STATUS OF THE FISHERIES

In this subarea, 4 trawlers operated during mainly the five months of the year. Total catch has shown a very small increase from 5946 in 1973 to 6189 in 1974 (Table 10). About 52% from this catch was taken in 6 A.

Table 10

The catch and fishing effort in Statistical Area
in 1974

Div.	CATCH - metric tons								Hours fi- shing	Days fi- shed
	Ma- ckereel	He- rring	Blue- back	Silver hake	Red hake	Dog- fish	Scup	Squids		
6 A	2685	329	52	67	39	37	6	4	1428	131
6 B	1833	97	155	40	12	24	-	3	797	103
6 C	730	-	45	13	-	16	-	-	196	26
Total	5248	426	252	120	51	77	6	7	2421	260

The species composition was net dominated by mackerel - 83 %.

The best yields were realised in February-March in 6C (Table 11).

Table 11

Yields (tons per day) in successive months of
the 1974 year

Months	Tons per day			Total
	6A	6B	6C	
January	24.4	18.1	-	21.0
February	33.4	28.5	44.4	31.7
March	19.6	12.6	26.9	19.1
April	26.4	23.5	-	25.4
May	25.4	20.4	-	24.6
June	10.2	12.0	-	10.8
Total	24.6	21.0	30.9	23.8

In comparison with previous year, yields per unit of fishing effort were greater (Table 12).

Table 12

Comparison between yields per unit of fishing effort
in 1973 and 1974

Div.	1973		1974	
	Tons/hour	Tons/day	Tons/hour	Tons/day
6 A	2.78	24.5	2.25	24.6
6 B	2.23	21.6	2.71	21.0
6 C	-	-	4.10	30.9
Total	2.48	21.8	2.56	23.8

B. SPECIAL RESEARCH STUDIES

1. Biological

a/ Mackerel (Scomber scombrus). A greater density of mackerel during first quarter was observed. Fork length measurements ranged from 24 to 42 cm (Fig.4). Mean length was 33,94 in January and 32,64 cm in April.

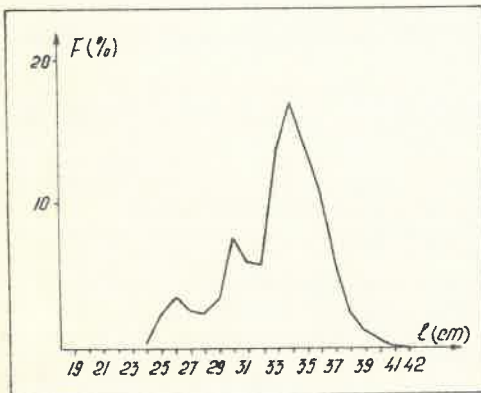


Fig.4 - Length frequency of mackerel caught in Stat. Area 6 (January-April)

The great differences between sexes length were not registered.

Stage of maturity shows a dominance of III stage in majority of individuals. IV state is more evident at males in April.

Age composition ranged from 2 to 10 year-olds with 3 to 7 year-olds dominants (1) (Table 13).

Table 13

Percentage age composition of mackerel caught in Statistical Area in January-April 1974

1973	1972	1971	1970	1969	1968	1967	1966	1965	1964
0.2	4.9	13.5	13.2	23.4	22.0	14.2	5.1	1.2	2.3

1968 and 1969 year-classes were more abundant.

b/ Blueback (*Pomolobus aestivalis*). Appeared in small quantities in mackerel captures. During February-March, length ranged from 16 to 27 cm with groups of 20-24 cm dominants (Fig.5).

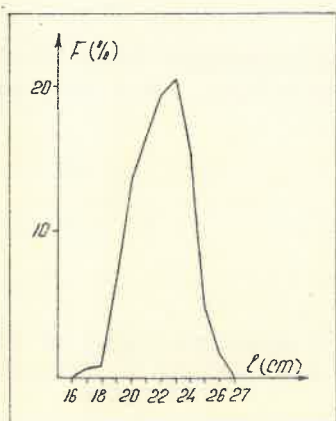


Fig.5 - Length frequency of blueback caught in Stat. Area 6 (Feb.-March)

Age composition ranged from 3 to 6 year-olds. 1970 year-class represented 65% from the total measurements.

Stage III of maturity was more evident at males, whereas II, II-III stages were more frequent at females.

c/ Menhaden (*Brevoortia tyrannus*). Measurements were carried out in February. Length composition ranged from 17 to 32 cm and 21 to 22 cm were dominants (over 50%) (Fig.6).

Age composition was dominated by 3 year-olds group, but ranged from 2 to 5 year-olds.

Majority of individuals were in II stage of maturity, more evident at males.

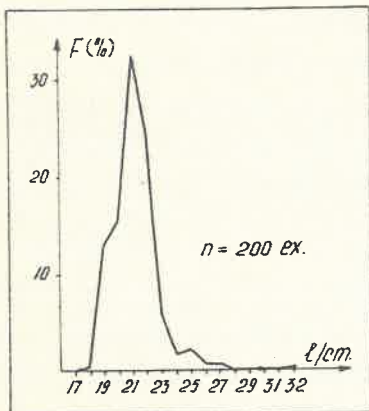


Fig.6 - Length frequency of menhaden caught in Stat. Area 6 (February)

d/ Silver hake (Merluccius bilinearis). Romanian trawlers did not fish intentionally for silver hake, but they caught it occasionally in mackerel captures.

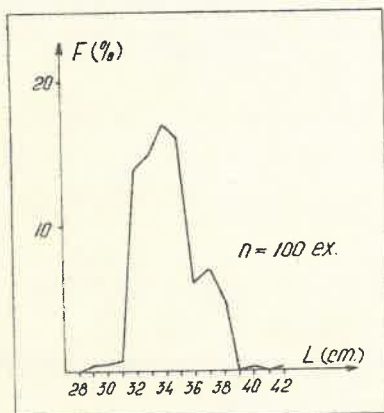


Fig.7 - Length frequency of silver hake caught in Stat. Area 6 (February)

Measurements were carried out in February and their length ranged from 28 to 42 cm. The 32 to 35 cm groups dominated (Fig.7).

Age composition ranged from 3 to 10 year-olds with predominance of 4,5 and 6 year-olds (over 85%). 1969 and 1970 year-classes were more abundant.

Stage of maturity shows that males were in majority in II-III stage and females were in II, II-III and III stages.

CONCLUSIONS:

In 1974 Romanian trawlers operated in Subarea 5 and Statistical Area 6 only, with better results in the first four months of the year. Thus Statistical Area 6 provided 62.6 % from 1974 catches.

Yields varied between 31.7 tons/day in february and 8.5 tons/day in august.

Concerning the future of Romanian fishing in the southern part of ICNAF Area in the next two years mackerel and silver hake will be the basis of the fishing.

1968 and 1969 year-classes will provide the basis of the mackerel fishing, the medium 1972 year-class will complete the mackerel stock.

May be pay a special attention to silver hake therefore results will be obtained on the basis of the rich 1970-1972 year-classes, specially 1971 year-class.

The hering reserves will not increase, and fishing will be based on 1970 year-class, subsequent poor year classes can't exploitable stock in next two years.

REFERENCES:

1. ICNAF - 1974 - Red book, 20-21; 21-25; 31-36; 37-50.