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Romanian Research Report, 1978

by

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General tendence in decline of overall catches from the ICNAF Convention Area met to all fleets which are fishing in this region was observed and to the Romanian catches. In 1978 a further substantial diminishing of Romanian catches was recorded from 5432 tons in 1977 to 4131 tons in 1978 (Table 1).

Table 1. Romanian catches in ICNAF Subarea 2-5 and Statistical Area 6 in 1977 and 1978.

S p e c i e s	1977		1978	
	Metric tons	%	Metric tons	%
Cod	24	0.4	3	0.1
Haddock	1	0.0	-	-
Redfish	312	5.7	24	0.6
Greenland halibut	12	0.2	3	0.1
Witch	-	-	3	0.1
Roundnose grenadier	7	0.1	108	2.6
Silver hake	22	0.1	17	0.4
Red hake	8	0.1	-	-
Atlantic round herring	-	-	25	0.6
Capelin	2610	48.1	2663	64.6
Mackerel	1070	19.7	21	0.5
Herring	9	0.2	-	-
Scup	10	0.2	-	-
American sand lance	-	-	124	3.0
Butterfish	16	0.3	83	2.0
Bigeye tuna	-	-	2	0.0
Squid - illex	1304	24.0	1036	25.4
Squid - Loligo	-	-	17	0.4
Other finfish	27	0.5	2	0.0
<b>TOTAL</b>	<b>5432</b>	<b>99.9</b>	<b>4131</b>	<b>100.0</b>

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The major share in the catches constituted capelin (2663 tons) and squid-illax (1036 tons).

Table 2. Romanian main species caught in ICNAF Subareas 1-5 and Statistical Area 6 in 1977 and 1978.

Species	1977		1978	
	Metric tons	%	Metric tons	%
Capelin	2610	48.1	2663	64.5
Squid - Illax	1304	24.0	1036	25.1
Mackerel	1070	19.7	21	0.5
Other finfish	448	8.2	411	9.9
<b>TOTAL</b>	<b>5432</b>	<b>100.0</b>	<b>4131</b>	<b>100.0</b>

Analysing 1977 catches in the different ICNAF subareas are remarking an uniform distribution of them and quite different in 1978, when the greatest catches were realized in Subarea 3 (57%) (Table 3).

Table 3. Romanian catches in ICNAF Area and Statistical Area 6, by Subareas in 1977 and 1978 (in metric tons).

Species	1977					1978				
	2	Subarea 3	4	6	Total	2	3	Subarea 4	5	Total
Cod		24			24		3			3
Haddock			1		1					-
Redfish		312			312		24			24
Greenland halibut		12			12	1	2			3
Witch							3			3
Roundnose grenadier		7			7		108			108
Silver hake			10	12	22				2	15
Red hake				8	8					-
Atlantic round herring									11	14
Capelin	1346	1264			2610	588	2075			2663
Mackerel				1070	1070			4	1	16
Herring				9	9					-
Scup				10	10					-
American and lance							124			124
Butterfish				16	16				64	19
Bigeye tuna									1	1
Squid-illax		3	1301	1304				977	27	32
Squid-Loligo									2	15
Other finfish				27	27				1	1
<b>TOTAL:</b>	<b>1346</b>	<b>1622</b>	<b>1312</b>	<b>1152</b>	<b>5432</b>	<b>589</b>	<b>2239</b>	<b>981</b>	<b>109</b>	<b>113</b>

The drop in Romanian catches in the southern regions, respective Subarea 5 and Statistical Area 6, was mainly due to the lower catch quotas allocated to Romania for 1978 (for all species except Silver hake) and the new fishery re-

gulations (windows, closed fishing seasons) which changed the traditional effort distribution of the fishing fleets. These last factors, as the state of environmental conditions in the last months of the 1978, have mostly contributed to the much lower catches than the quota level, especially in the southern subareas in last three months of the year.

The quotas and the percentage at which the Romanian quota was used is given in Table 4. It must be underlined that only on squid - *Illex* from Subarea 4 and capelin from Div.3 L the quota were realised, for the others species and Divisions the quotas use varied between 0.8% and 36.4%.

Table 5. Romanian catch quota and catches in 1978, in ICNAF Area (in metric tons).

Species	Stock division	Catch quotas	Catches	Catch quota	%
Cod	2 GH	650	-	-	-
	2 J + 3 KL	250	3	1.2	
Capelin	2 J + 3 K	7000	2551	36.4	
	3 L	100	105	105.0	
	3 NO	900	7	0.8	
Roundnose grenadier	2 + 3	500	108	21.6	
Squid - <i>Illex</i>	4	100	977	97.7	

#### FISHING EFFORT

In the 1978 year the Romanian fishing fleet has activated with 2 vessels (3960 G R T each) in SA 2, 3 and 4 and another one (2700 G R T) in Subarea 5 and Stat.Area 6. The vessels activity carried out in function of the access possibilities and the magnitude of allocated quotas.

The fishing began in May, continuing till to the November in Labrador, Newfoundland and Nova Scotia, and from October to the end of the year in Nova Anglia and SA-6.

At all, were carried out 3039 towing hours in 292 fishing days and 1009 tows (Table 5).

Table 5. Romanian fishing effort, catches and CPUE, by months in Northwest Atlantic Ocean, 1978.

	Month												Total
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	
No. of vessels	-	-	-	1	1	1	2	2	2	3	3	1	3
Fishing days	-	-	-	20	13	43	47	38	61	51	19	292	
Hauls number	-	-	-	51	36	158	162	102	181	247	72	1009	
Trawl hours	-	-	-	160	150	496	471	340	591	585	246	3039	
Tons/day	-	-	-	6.95	9.77	23.1	20.4	15.2	15.6	6.49	2.68	14.14	
Kg/rawl hour	-	-	-	869	847	2000	2040	1700	1611	566	207	1359	
Total catch-	-	-	-	139	127	992	961	578	952	331	51	4131	

Good efficiencies were obtained in July-August period.

Facing to the previous years, fishing activity in 1978, and 1977 too, are characterizing with an enlargement of the fishing area, till to the 1976 year that continuing to be mostly in the southern subareas.

## SUBAREA 2

Romanian catches from Subarea 2 in 1978 amounted to 589 tons, a decrease of about 65% from the 1346 tons taken in 1977 (Table 6).

The catches composition was the same in the last two years, capelin representing the main species caught, exclusively in Div. 2 J in August and September.

Table 6. Romanian catches in SA 2, 1978 (in metric tons).

Species	2 H	2 J		Total
	VIII	VIII	IX	
Capelin	-	199	389	588
Greenland halibut	1	-	-	1
TOTAL	1	199	387	589

The catch of demersal species like cod, Greenland halibut, redfish or witch wasn't carried out due presence in this Sub-area in an inadequate fishing season to them.

## CAPELIN

Romanian capelin catches from Subarea 2 declined from 1346 tons in 1977 to 586 tons in 1978 due, to changes in environmental condition on one hand, and changed in magnitude of reserves and behaviour of fish concentrations.

In Div. 2 J there were carried out samples for length, sex, weight and age on 545 specimens (2 samples) in August and 2579 specimens (10 samples) in September. Mean lengths were 17.1 cm for females and 16.8 cm for males in August and 16.5 cm and 15.5 cm respectively, in September.

For ageing were analysed 91 specimens in August and 843 in September. Predominant were females of 3 and 4 years old comprising 75-90% of Romanian commercial capelin catches and males of 2 and 3 years old comprising 85-90%.

## SUBAREA 3

Comparing with 1977 when the Romanian commercial catches were distributed relativ uniformly between ICNAF Subareas, in

1978 in Subarea 3 were obtained 56.6% of overall catches caught in the Northwest Atlantic ocean.

As in previous year, Romanian trawlers activated in 1978 mainly in Div. 3 K (Table 7).

Table 7. Romanian catches in Subarea 3, 1978 (in metric tons).

Species	Subarea 3				Total
	3 K	3 L	3 M	3 N	
Cod		3			3
Redfish			24		24
Witch		3			3
Greenland halibut	2				2
Roundnose grenadier	108				108
Capelin	1963	105		7	2075
American sand lance		4		120	124
<b>TOTAL</b>	<b>2073</b>	<b>115</b>	<b>24</b>	<b>127</b>	<b>2339</b>

The main component of the catches was the capelin; cod, redfish, roundnose grenadier and American sand lance were of much less importance.

Both the capelin and all others species have been caught with pelagic gears in the period May-November.

#### CAPELIN

The best results in capelin fishery have been obtained in the last decade of August and the first decade of September, in 3 K (Table 8), resulting for all Newfoundland area 2075 tons in 1978 confronted by 1264 tons in 1977.

Table 8. Romanian capelin catches in Subareas 2 and 3, 1978 (in metric tons).

Divisions	Months												Total
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	
2 J								199	389				588
3 K								662	191	939	173		1963
3 L					105								105
3 N						7							7
<b>TOTAL</b>					<b>105</b>	<b>7</b>		<b>861</b>	<b>580</b>	<b>937</b>	<b>173</b>		<b>2663</b>

Catches in Div. 3 L and 3 N were unimportant, they been realised in the first part of fishing activity.

For the capelin fished in Div. 3 K were carried out biological studies on 1775 specimens (5 samples) in August 1978 (4 samples) in September, 3546 (12 samples) in October and 584 (2 samples) in November. For ageing were collected otoliths from 544 specimens in August, 237 in September, 700 in October and 165 in and November.

Mean lengths by month and sexes in Div. 3 K were:

- 16.3 cm females and 16.1 cm males in August;
- 15.0 cm females and 14.7 cm males in September;
- 15.5 cm females, 14.8 cm males and 11.3 cm immatures in October;
- 15.1 cm females, 14.7 cm males and 11.5 cm immatures in November.

According to the age/length tables annexed to this report the main groups were those of 3 (40%) and 4 (46%) years for females and 2 (41%) and 3 (52%) years for males.

#### ROUNDNOSTE GRENADE

Romanian roundnose grenadier catches in Subarea 3 increased from 7 tons in 1977 to 108 tons in 1978. That species was fished with pelagic trawls only in Div. 3 K, in July - 79 tons and August - 29 tons.

Samples for lengths, weights, sexes and ages has been made on 620 females and 437 males, in August.

Total lengths means by sexes was 56.9 cm for females and 55.8 cm for males.

The most part of specimens having caudal fin broken, the total length measurements was impossible. In that case, have been made measurements from the top of the snout till to the first anal fin ray. Thus the mean lengths were of 13.8 cm for females and 13.3 cm for males.

The resulting age distribution was not available for the preparation of this report.

#### SUBAREA 4

According to the Table 2, Subarea 4 is on the second place by the realised catches in ICNAF Area in 1978. In this Subarea Romanian fishing fleet has activated with 2 vessels in accordance with the fishing-licence provisions.

The total catch from Subarea 4 amounted to 981 tons whence 977 consisted by squid-Illex. The remainder of 4 tons consisted by mackerel that has appeared only in one tow.

Confronted by the 1977, catches decreased with about 20% as a result of the squid quota reduction for 1978.

# SQUID (ILLEX)

The all squid catch has been realised in Div. 4 W in July and August (Table 9).

Biological observations on squid-Illex caught in Div. 4 W consisted in the mantle length and weights determination by sexes on 3427 specimens (13 samples) in July and 628 specimens (2 samples) in August.

The mean lengths by sexes were of 19.56 cm - females and 19.06 cm - males in July, and 18.87 cm females and 18.37 cm - males in August.

From 119 specimens were taken statoliths in an attempt to determine the age of the squids.

Table 9. Romanian squid catches in Subareas 3-5 and Statistical Area 6, 1978 (in metric tons)

Species	Div.	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Total
Squid Illex	4 W							907	70					977.0
	5 Zc										0.7	11.7		12.4
	5 Zw										0.3	13.9		14.2
	6 A											3.7		3.7
	6 B											28.4		28.7
TOTAL								907	70		1.0	58.0		1036.0
Loligo	5 Zw										4.0	1.3	0.4	2.1
	6 A											0.1	11.7	11.8
	6 B										0.1	1.4	1.4	2.9
TOTAL											0.5	2.8	13.5	16.8

# MACKEREL

During the July, in the squid fishery from Div. 4 W, as by-catch, appeared the mackerel. The catch amounted to 4 tons. On one sample of 202 specimens were determined the fork lengths, total weights, sex, stage of maturity, etc. Mean lengths were 36.8 cm and 36.5 cm for females and males respectively. For 78 specimens were taken otoliths for ageing. Have dominated individuals of 3-5 and 7-8 years.

# SUBAREA 5

The introduction of open "windows" and closed seasons for mackerel and herring fisheries in 1978 caused a drastic reduction in Romanian catches in 1978. Fishing activity have begun with one vessel, in October. Subarea 5 Romanian catches amounted to 108 tons (Table 2), the main component

(59%) being butterfish together with that, appearing in a small amount, the silver hake, Atlantic round herring, mackerel, bigeye tuna, squids *Illex* and *Loligo*.

During the October have been made length measurements on different species as follows:

- Squid - *Illex* - 200 specimens (1 sample) with the mantle mean length of 23.7 cm for females and 22.2 cm for males;
- Squid - *Loligo* - 475 specimens (3 samples) with the mantle mean length for both sexes of 10.7 cm;
- Atlantic round herring - 532 specimens (3 samples) with mean lengths of 17.6 cm for females and 17.2 cm for males;
- Butterfish - 590 specimens (3 samples) with 18.5 cm and 18.0 cm mean lengths for females and males respectively.

In November:

- Squid - *Loligo* - 1000 specimens (5 samples) with the mantle mean length for the two sexes of 12.1 cm;
- Butterfish - 800 specimens (4 samples) with mean lengths by sexes of 18.5 cm for females and 18.3 cm for males.

For all species except the squids, were taken scales or otoliths for age determination, however, the resulting age distribution is not available for the preparation of this report and we hope that till to the end of March they will be brought to an end.

#### STATISTICAL AREA 6

The drastic reduction of Romanian catches in statistical Area 6 in 1978 has same reasons as those met in SA - 5 fisheries. The total catch dropped with more than 90% from 1152 tons in 1977 to 114 tons in 1978 (Table 10).

In the last quarter of 1978, the fishery was conducted to silver hake, but dominant were squids, especially in November in 6 B, other species being caught as by-catch, and invariably in small amounts.

Length measurements, by months were follows:

- in 6 A - December - Butterfish, 800 specimens (4 samples) with mean lengths of 18.6 cm for females and 18.7 for males;



Table 10. Romanian catches in Statistical Area 6, 1979 (in metric tons).

Species	6 A			6 B			Total
	X	XI	XII	X	XI	XII	
Squid-Illex	4.7			28.7			33.4
Squid-Loligo	0.1	11.7		0.1	1.4	1.4	14.7
Silver hake	3.3	0.9		0.2	10.2	0.1	14.4
Atlantic round herring	0.3				14.1		14.4
Mackerel		11.5			4.7	0.2	16.4
Butterfish		9.6			0.1	9.2	18.9
Bigeye tuna		0.4			0.4		0.8
Other finfish		0.4	0.2			0.1	0.7
TOTAL		8.4	34.5	0.5	59.6	11.0	114.0

- in 6 B - November - Mackerel, 200 specimens (1 sample) with mean lengths by sexes, 37.4 cm females, 36.7 cm males;
- silver hake, 200 specimens (1 sample) with mean of the total lengths, 27.7 cm females, 25.9 cm males;
- Butterfish, 800 specimens (4 samples) with mean lengths of 18.5 cm and respectively 18.3 for females and males;
- Squid-Illex, 1600 specimens (8 samples) with mean mantle lengths of 24.6 cm females and 22.5 cm males;
- December-Mackerel, 200 specimens (1 sample) with 37.5 cm females and 38.0 cm males;
- Squid-Loligo, 600 specimens (3 samples) with mean mantle length for both sexes of 14.9 cm.

The structure used for ageing was not available to us in time for reading. There were taken otoliths from butterfish, mackerel and silver hake, in 6 A and 6 B, in November and December.

