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French Research Report

by

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A - Status of the fisheries

In 1975 most of the French metropolitan Cod fishery took place from January to April in 4 R (13,200 t) with some catches in 4 T (1,200 t) and 4 S (400 t). During that period fishing was also conducted in 3 P (6,000 t) and 4 V (4,800 t). In 2 J 3 KL effort was moderate resulting in 2,600 t in Winter.

Catches of herring were made mostly in 52 in August-September for a total of 3,300 t. Occasional fishing also occurred in 4 V in March-April (750 t) and 4 X in August-October (750 t).

Total catch of Cod and herring amounted to 28,500 t and 4,800 t respectively.

In Saint-Pierre and Miquelon the catch amounted to a total of 6,377 t of various fishes caught as last year from Subarea 3 and 4.

We can point out an increase in the landing: 40 p.cent more than 1974 (4,513 tons), with a total fishing effort fairly the same (2,506 D.F. in 1975, 2,544 D.F. in 1974) for traditional fishing and slightly weaker (548 L.F. in 1975, 592 in 1974) for trawlers.

This increase is mainly due to greater landings of redfish and cod.

Once again we may point out the very small quantity of haddock (70 per cent less), yellowtail (15 tons compared to the 82 tons in 1974 and greysole (31 per cent less).

For the other species the catches were roughly speaking the same.

Cod is caught by trawlers from December to May in the Subareas 3 and 4.

Traditionnal fishing was only carried out in Subdivision 3 Ps, from May to November and landed 585 tons i.e 19 per cent of the total catch (3004 tons).

The redfish catches increased with 1906 tons in 1975 against 951 tons in 1974.

#### B - Special research studies.

Throughout the year 1975 various investigations were carried out by R/V CRYOS in the ICNAF convention area.

1) Cod : 17 January - 24 February.

3 Pn - 3 Ps - 4 R - 4 T - 4 Vn - 4 Vs

202 stations = 82 hauls + 95 hydro + 25 tagging stations.

2) Herring : 19 - 30 April

3 Pn - 4 R - 4 T - 4 Vn - 4 Vs - 4 W

69 stations = 30 hauls + 28 hydro + 11 plancton tows.

3) Squid : 3 - 19 May

4 X - 5 Ze - 5 Zw

137 stations = 57 hauls + 53 hydro + 27 plancton tows.

4) Shellfish : 27 October - 10 November

3 Ps.

5) Squid and Groundfish : 4 W - 4 X - 5 Ze - 5 Zw - 6

94 stations = 47 hauls + 47 hydro.

#### I - Subarea 3.

##### 1. Environmental studies.

##### a) Hydrographic studies.

The thermic conditions were observed in Subdivision 3 Pn and 3 Ps during the cruise n° 1 and n° 2, after each trawl haul with bathythermograph or XBT (30 stations).

## 2. Biological studies.

### Cod.

Biological study of cod was continued especially on the stock submitted to french fishery effort in Subdivisions 3 Pn and 3 Ps.

28 trawl hauls have been carried out in this area. The results of trawlings show that in this zone best yields (300 to 700 kg/1/2 h) were obtained in 3 Pn between 150 and 220 m at temperature from 4 to 6° C.

5224 specimens have been measured and sexed. 405 tagged fishes were released.

### Redfish.

Data on length frequencies were collected in Division 3 P during some of the surveys of the R/V CRYOS (3348 specimens).

### American plaice.

Samplings were carried out in North St Pierre bank and Burgeo bank. The yields were generally scarce and irregular.

### Shellfish.

During the dredging cruise carried out in winter 1975, samples of Chlamys islandicus were made on St Pierre bank (3 Ps).

## II - Subarea 4.

### 1. Environmental studies.

Most of the data were collected in this Subarea during the surveys n° 1 and 2.

82 hydrographic stations, with bathythermograph or XBT SIPPICAN, have permitted to study the environmental conditions.

In addition, some plancton samples were made in Subdivision 4 R.

### 2. Biological studies.

#### Cod.

Here again, biological data were obtained on cod stocks exploited by the french fishing fleet, in Divisions 4 V and 4 R.

We can note that in Subdivision 4 Vn, the best yields were obtained between 180 and 250 m (458 to 3386 kg/ $\frac{1}{2}$  h) in temperature from 0.7° C to 7.4° C.

In Division 4 R, the best yields were made between 150 m to 220 m (450 to 2024 kg/ $\frac{1}{2}$  h) in temperature from 0.4° C to 4.8° C.

6825 fishes were measured and sexed. 465 tagged fishes were released in this division.

#### Herring.

The systematic sampling of herring populations was continued during the cruises n° 1-2.

The meristic characteristics of the stocks are studied on 1950 specimens.

In Subdivision 4 T length measurements of samples ranged between 29 and 39 cm with a mean length of about 34 cm.

In Subdivision 4 R the length composition is plurimodal with three groups which are distinguished by the following modal values : 27 cm - 32.5 cm - 36.5 cm.

In Subdivision 4 W the modal length composition is at 30 cm.

In Subdivision 4 Vs we can note 2 groups, the first between 21 and 27 cm, the second between 27 and 35 cm.

#### Redfish.

Data on length frequencies were collected in Division 4 V (1671 specimens) and 4 R ( 3132 specimens) during the surveys of R/V CRYOS.

#### American plaice.

American plaice was caught in some stations only. Samples were collected for length measurements in Divisions 4 V (1469 specimens) and 4 R (1612 specimens).

#### Squids.

R/V CRYOS has carried out two surveys on commercial squids in N.W. Atlantic.

During the spring cruise catches were rather poor.

758 specimens have been measured in Division 4 X during spring time and 498 specimens during fall time.

III - Subarea 5.

1. Environmental studies.

a) Hydrographic studies.

Data on the hydrographic conditions and planktonic distribution have been collected during the cruises n° 3 and 5 as noted above.

2. Biological studies.

Squid.

During the first cruise the catches were rather weak. The best yields were 32 to 34 kg/ $\frac{1}{2}$  h on the Northern slopes of St Georges bank for Illex illecebrosus, and 44 to 57 kg/ $\frac{1}{2}$  h on the South of St Georges bank for Loligo pealei.

During this survey 3076 length measurements were made.

Illex modal values are as following :

14.5 - 16 cm for males, 15 - 16 cm for females.

and

Loligo modal values :

8-12 cm for males, 9-15 cm for females.

During the other survey, in November, 6756 squids were measured. Length range between 5 and 27 cm for Loligo and between 10 and 30 cm for Illex.

The yields were generally better. The best samplings were 185 and 260 kg in half an hour's time for Loligo.

However catches increase from the North to the South.

During this campaign 830 kg of Illex were caught.

Silver hake.

This species was present at most of the stations. The best yields were obtained during the spring cruise : 596 - 718 - 840 and 925 kg in half an hour.

In November the yields were less productive than the ones in May. The best catch was 271 kg in half an hour fishing. In this period of the year the length measurements ranged between 20 and 40 cm.

During the first survey the main modes ranged from 28 to 35 cm.

Wholly 2939 length measurements were made.

IV - Subarea 6.

1. Environmental studies.

8 hydrographic stations were carried out on this Subarea in November.

2. Biological studies.

Squid.

During the survey carried out by R/V CRYOS samples of squid were measured in Subarea 6 :

993 specimens of Illex and  
1817 specimens of Loligo

For Loligo the length distribution showed one mode at 11-12 cm.

For Illex we can observe two modes at 15-16 cm and 23-24 cm.