

RESTRICTED

International Commission for



the Northwest Atlantic Fisheries

Serial No. 3581  
(D.a.74)

ICNAF Summ.Doc. 75/25  
Addendum

ANNUAL MEETING - JUNE 1975

French Research Report, 1974

Part I. France (Metropolitan) Fishery

In 1974 most of the cod fishing by metropolitan vessels took place in the first part of the year in Subareas 3 and 4. Greenland was abandoned due to the poor condition of the stock, and Labrador (Div. 2J) was visited only in January-February but not really fished due to ice conditions (503 tons); some catches have also been made in Div. 3K, mostly during February-March (1,516 tons). The cod fishery was concentrated in the Gulf of St. Lawrence in Div. 4R in January and February with diversion to Subdiv. 4Vn, 3Pn, and 3Ps in February-March when ice invaded the Gulf, and back again to the Gulf in April-May, giving catches of approximately 14,000 tons in Div. 4RT, 4,500 tons in Subdiv. 4Vn, 4,469 tons in Subdiv. 3Pn, and 5,614 tons in Subdiv. 3Ps.

Total cod catches made in the ICNAF Area in 1974 amounted to 30,576 tons, the remainder of the French (M) catches (about 50,000 tons) being fished in the Northeast Arctic where the vessels were attracted by the good fishery in that area.

As in 1973, fishing for herring was undertaken mostly in Subdiv. 5Ze (3,700 tons) in September-October, with some catches in Subdiv. 4Vs in August (178 tons), and in Div. 4X in October (137 tons).



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Part II. St. Pierre and Miquelon Fishery

A - Status of Fisheries.

In 1974, total landings in St Pierre and Miquelon represented 5466 metric tons, i.e. 17 per cent less compared to 1973.

For the industrial vessels, this decrease was partly due to a decline of fishing effort (26 per cent less compared to 1973). The total fishing effort was sustained by subareas 3 (68 per cent) and 4 (32 per cent) and decrease was more important in subarea 4 (43 per cent) than in subarea 3 (14 per cent). The divisions 3 P and 4 V sustained the most important fishing effort (respectively 38 and 19 per cent) and the effort in divisions 4 R, 4 S and 4 T represented 15 per cent of the total in 1974.

For most of the species, landings decreased ; for example, the catches of redfish were smaller than in 1973 (1701 m.tons in 1973 compared to 951 m.tons in 1974, i.e. 44 per cent less) and mostly in divisions 4 R, 4 S and 4 T (1973 = 1270 t, 1974 = 283 t, i.e. 78 per cent less). On the other hand, redfish catches in division 4 V increased respectively 271 and 410 t in 1973 and 1974, i.e. 34 per cent more.

For the other species, the most important decline is noted for yellowtail (about 80 per cent less). In 1973, this species was caught in division 3 LNO, where the fishing effort was weaker in 1974. An important decrease can also be noted in american plaice landings (31 per cent less) and in grey sole landings (11 per cent less).

On the other hand, cod landings were greater (738 t in 1973, 1730 t in 1974). So, this species represented 44 per cent of the total trawlers landings. Good catches were made in division 3 P from January to March (895 t, i.e. 52 per cent of trawlers landings) and also in division 4 R, 4 S, 4 T (460 t, i.e. an increase of 59 per cent compared to 1973). An important increase of wolffish can be also noted (14 t in 1973, 96 t in 1974, i.e. 85 per cent more).

Traditionnal fishing was only carried out in subdivision 3 Ps ; the drop of landings was important in this case = 1140 t in 1973, 599 t in 1974, i.e. about 50 per cent less. At the same time, the fishing effort decreased of 17 per cent.

The cod catches have declined very much (976 t in 1973, 490 t in 1974, i.e. 50 per cent less) and also those of mackerel (164 t in 1973, 109 t in 1974, i.e. 34 per cent less).

B - Special research studies.

The CRIP at Saint Pierre and Miquelon with the R/V Cryos carried out 5 surveys in the ICNAF Convention area during 1974 :

1. Cod : 14 january - 14 march 1974

3 Pn - 3 Ps - 4 R - 4 T - 4 Vn - 4 Vs  
244 stations = 130 hauls + 114 hydro  
Plancton tows : january 3, february 5, march 7

2. Herring : 18 to 27 march 1974

4 Vn - 4 Vs  
38 stations = 23 hauls + 15 hydro

3. Herring and Squids : 4 september - 13 october 1974

4 X - 5 Y - 5 Ze - 5 Zw - 6  
222 stations = 124 st. Bongo + 50 plancton tows  
(19 neuston, 26 Hensen, 5 Hensen F 200) + 48  
hydro

4. Cod : 6 to 18 november 1974

4 R  
97 stations = 35 hauls + 62 hydro (XBT) + 6 plancton tows

5. Shellfish : 25 november - 7 décembre 1974

3 Ps  
88 stations = 88 dredging

During these cruises, several data were collected in order to study the biology of the main commercial species and their environment.

I - Subarea 3.

a. Environmental studies.

Here, the thermic conditions were observed in subdivision 3 Pn and 3 Ps thanks to the data collected during the cruise n° 1 after each trawl haul with bathythermograph or XBT.

In addition, some plancton samples were made in subdivision 3 Pn and 3 Ps during the cruise n° 1, as indicated above.

b. Biological studies.

1. Cod.

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

During the winter survey, the results of trawlings show that in this zone, the best yields (300 to 400 kg/1/2 h) were obtained in 3 Pn between 150 and 200 m at temperatures from 3 to 5° C.

The length frequency in 3 Pn ranged from 25 to 110 cm with a modal length of 57 cm.

2. Redfish.

Data on length frequencies collected in division 3 P during some of the surveys of the R/V Cryos were transmitted to the ICNAF Secretariat in early 1975.

3. Yellowtail.

Further samplings of this flatfish were made on Saint Pierre bank (subdivision 3 Ps) for growth studies.

4. Shellfish.

During the dredging cruise carried out in winter 1974, samples of Placopecten magellanicus and Chlamys islandicus were made on St Pierre bank (3 Ps).

The results show the weak rate of reproduction of Placopecten due to the intensive exploitation in this area. On the other hand, this 3 Ps stock of Chlamys is abundant enough to sustain a controlled exploitation.

II - Subarea 4.

a. Environmental studies.

Most of the data were collected in this subarea during the surveys n° 1-2 and 4. During the cruise n° 4 (november, division 4 R), an hydrographic study was undertaken, in co-operation with Canadian scientists (Québec) ; all the thermic data were obtained by XBT.

From Fig. 1, showing the bottom temperatures distribution, we can observe that the 2° C to 5° C isotherms are very close, following the 200 m contour. The banks, except the coastal zone, are covered by waters of about 1.5° C. Deeper (200-300 m), the temperatures are greater than 5° C, to decline (4° C) after 300 m.

Three thermic sections (fig. 2, 3 and 4) show the same general structure from the north to the south, except for the coastal zone. The thermic minimum (< 0° C) is located from 85 to 95 m, in waters surrounding the 300 m level. The thermic maximum (> 5° C) becomes larger toward the south.

The surface temperature shows in this period variations from 3.8° C to 4.1° C. Some warm residual waters (> 6° C) are still present between 5 and 15 meters.

The general structure so described in 1974 is the same than this observed in 1973 but the temperature means are lightly higher.

Plancton samples in division 4 R were made in relation to the concentrations of commercial species.

b. Biological studies.

1. Cod.

Here again, biological data were obtained on cod stocks exploited by the French fishing fleet, i.e. in ICNAF divisions 4 Vn and 4 R.

From the winter survey, we can note that in subdivision 4 Vn, the best yields were obtained between 250 and 300 m (1800 kg/½ h) at temperature ranging from 5 to 6° C. The length frequencies varied here from 30 to 95 cm with a modal length of 46 cm for the males and 41 cm for the females.

In division 4 R, the best yields were made between 200 and 280 m (700 to 900 kg/½ h) in temperatures from 4 to 5° C. The length frequencies ranged in this division from 28 to 115 cm with a modal length of 55 cm for the males and 58 cm for the females.

2. Herring.

In march 1974, the systematic sampling of herring populations was continued during the cruise n° 2. The meristic characteristics of the 4 V stock were studied and results presented in Res.Doc. 75/30. Length frequencies of these populations were also given to the ICNAF Secretariat.

3. Larval Herring.

Following the ICNAF recommendations, a study of larval herring was carried out in the south of the Nova-Scotia shelf (division 4 X) during the cruise n° 3.

The results, given in Res.Doc. 75/71, show that the herring larvae were caught only in the area where the environmental conditions were good compared to those on Georges bank.

In the area, the length frequencies of larval herring ranged from 4 to 22 mm, those from the south of Nova-Scotia being smaller (4 to 9 mm with a modal length of 5 mm).

4. Redfish.

Length frequencies data for the divisions 4 V W X were transmitted to the ICNAF Secretariat in early 1975.

A study of relationships between the redfish catches and the environment was undertaken in division 4 R. More details are given in the following table.

Range of temperature (° C)	Total weight caught (kg)	Number of trawlings	Mean weight caught (kg)
0-1	2	1	2
1-2	17,5	3	5,8
2-3	317	4	79,2
3-4	836	2	418
4-5	1 510	1	1 510
5-6	5 206,5	8	650,8
6-7	592	2	296

Data on fishing effort in subarea 4 have been collected and age determination using vertebrae have been tried.

5. Yellowtail.

Samples collected in division 4 Vs, in deeper waters (200-300 m) will be compared, by means of meristic studies, to the samples obtained in usual depth (30-100 m) in the same area.

III - Subarea 5.

a. Environmental studies.

Data on the hydrographic conditions and planctonic distribution (in division 5 Z) have been collected during the cruise n° 3 and presented in the Res.Doc. 75/71.

b. Biological studies.

1. Herring.

During the cruise n° 3 some samples of Georges bank herring population were collected. Meristic characteristics of this population was studied. The gonads examination shows that most of them were at stages 5 and 6.

Length frequencies data for this division 5 Z were sent to the ICNAF Secretariat in early 1975.

2. Larval herring.

Following the ICNAF recommendations, a study of larval herring in Georges bank (5 Z) was undertaken during the survey n° 3.

No herring larvae were found in this area at this time of the year, probably due to bad environmental conditions.

Details are given in Res.Doc. 75/71.

3. Squids.

Samples of squids Loligo pealei and Illex illecebrosus were examined after the cruise n° 3 carried out in division 5 Zew and statistical area 6.

Results on yields per strata and length composition for both species as well as their relationships with the thermic environment are given in Res.Doc. 75/64.

4. Redfish.

Length frequencies data obtained from division 5 Z-Y, during the cruise n° 3, were sent to the ICNAF Secretariat in early 1975.

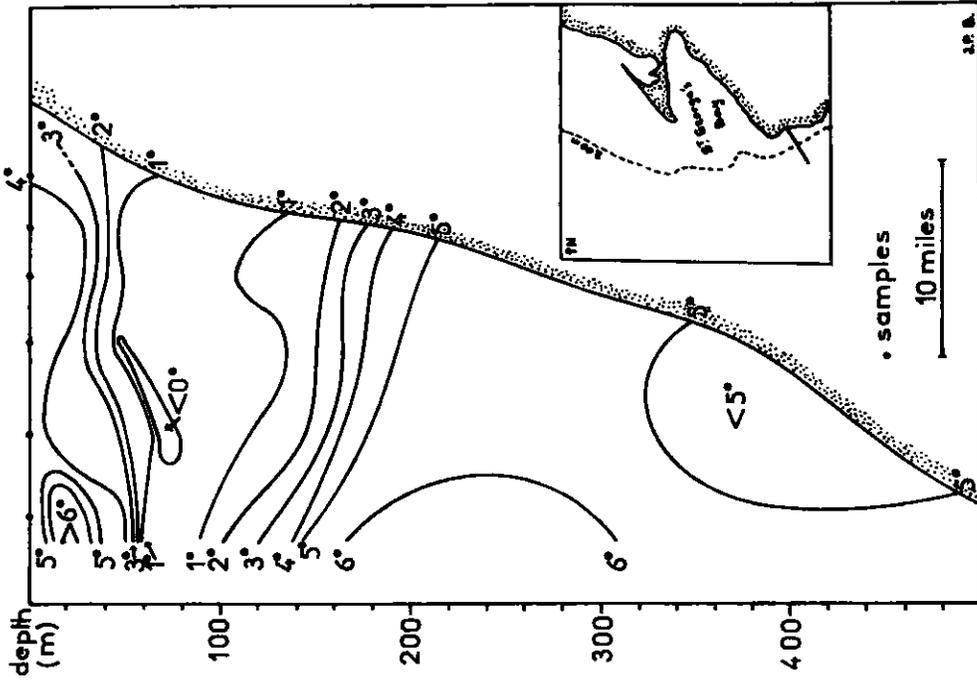


Fig. 2.

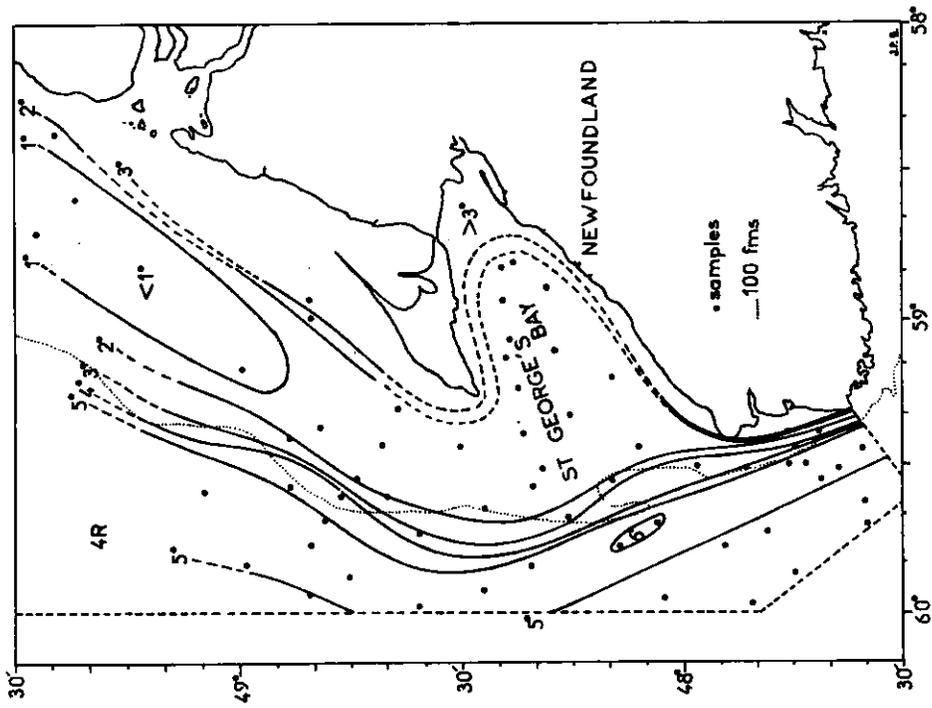


Fig. 1.



