



Serial No. 2104  
(D.5)

ICNAF Res. Doc. 68/103  
(Revised)

ANNUAL MEETING - JUNE 1968

Status of Fisheries and Research Carried Out in Subarea 3 in 1967

by

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I. Pertinent Documents

The following research documents contain information relating to Subarea 3:

68/3, 68/5, 68/7, 68/8 (Part II), 68/9, 68/11, 68/12, 68/14, 68/18, 68/20, 68/29, 68/37, 68/47-68/49, 68/51, 68/69, 68/71, 68/75, 68/83, 68/93, 68/95 and 68/100. The latest information regarding the state of the fish stocks is given in the Report of the Assessments Subcommittee.

II. Status of the Fisheries

Table 1 gives the total nominal catches from Subarea 3 of all species, and of cod, haddock, redfish and herring considered separately, for the year 1967 and the four preceding years.

Table 1. Nominal catches from Subarea 3 (thousand metric tons round fresh)

	1963	1964	1965	1966	1967
All species	609	784	740	748	1,059*
Cod	466	581	498	499	708*
Haddock	15	12	9	10	12*
Redfish	69	95	112	79	61*
Herring	6	3	8	23	78*

\*may include some part of catches by non-member countries taken in Subarea 2.

Table 2 gives the nominal catches of other species from Subarea 3 for the years 1966 and 1967.

Table 2. Nominal catches of other species taken from Subarea 3 in 1966 and 1967 (metric tons round fresh).

Species	1966	1967
Halibut	1,138	6,366*
Greenland halibut	16,947	18,712
American plaice	56,934	59,604
Witch	5,877	7,969
Yellowtail flounder	4,317	2,178
Flounder (not spec.)	28,078	61,471**
Other groundfish	11,306	21,611

\* Includes some 'true' halibut

\*\* Does not include some part of catches by non-member countries. It is fairly certain that most unspecified flounder is in fact American plaice.

Table 3 gives the nominal catches in Subarea 3 by species and country for the years 1966 and 1967. The catches of most member countries showed substantial increases, particularly those of the USSR (+150,000 tons), Spain (+51,000 tons), Canada (+46,000 tons) and UK (+18,000 tons). The catches by non-member countries probably also increased substantially, the 1967 total catch for Subareas 2 and 3 combined being 115,000 tons compared with the 1966 figure of 80,000 tons. The catches of Germany and Iceland decreased.

TABLE 3 Nominal catches from Subarea 3 in 1966 and 1967 by species and country. (Thousand metric tons roundfresh)

Species	Year	Total	Canada	Denmark	France	Germany	Iceland	Norway	Poland	Portugal	Spain	USSR	UK	USA	Non members
Cod	1966	499	140	15	57	9	1	-	6	70	124	49	25	-	3
	1967	708	128	15	72	1	ø	-	19	114	178	142	43	-	n.a.
Haddock	1966	10	2	ø	ø	1	-	ø	-	-	2	4	1	-	-
	1967	12	2	ø	ø	-	-	-	-	-	4	5	ø	-	-
Redfish	1966	79	20	-	2	ø	2	-	14	-	-	31	ø	ø	9
	1967	61	15	-	2	ø	2	-	9	-	-	33	ø	ø	n.a.
Greenland Halibut	1966	17	16	-	-	-	-	-	1	-	-	-	-	-	-
	1967	19	17	-	-	-	-	-	2	-	-	-	-	-	-
American Plaice	1966	56	54	-	2	-	-	-	-	-	-	-	ø	-	1
	1967	60	58	-	2	-	-	-	-	-	-	-	ø	-	2
Flounders	1966	38	10	-	2	-	-	-	3	-	-	24	ø	-	1
	1967	72	19	-	1	-	-	-	5	-	-	55	1	-	n.a.
Other Groundfish	1966	11	2	ø	ø	ø	ø	-	-	-	1	5	1	-	2
	1967	23	2	ø	ø	ø	ø	-	-	-	1	18	1	-	n.a.
Herring	1966	23	23	-	-	-	-	-	-	-	-	-	-	-	-
	1967	78	78	-	-	-	-	-	-	-	-	-	-	-	-
Total All species	1966	748	279	16	63	9	3	-	23	70	127	115	27	ø	15
	1967	1,059	325	16	78	1	2	-	35	114	178	265	45	ø	n.a.

ø = < 500 tons  
n.a. = not available included in joint total with subarea 2.

### Cod

The increased cod catches were taken principally by France, Poland, Portugal, Spain and, especially, USSR. Catches of Canada, Germany and Iceland decreased. These changes resulted partly from changes in the amount of effort but the fishing benefited from the good year-classes of 1961, 1962 and 1963 (Res.Doc.68/12, 68/15). The 1964 year-class now entering the fishery is also reported to be very strong (Res.Doc.68/15, 68/16) especially on the southern part of the Grand Bank and on St. Pierre Bank.

### Haddock

Catches of haddock are still very poor. The spawning stock of haddock in Subarea 3 is now at a very low level with no indication of successful year-classes on the Grand Bank but an indication of minor success for the 1966 year-class on St. Pierre Bank (Res.Doc. 68/5).

### Redfish

The bulk of the redfish catch was taken by Canada (N), USSR and Poland. The catch by USSR increased slightly but catches by Canada and Poland decreased. The USA reported landings per day fished from Div.3N and P for each of the years 1962-1967, showing a substantial reduction over the period but because of reduced fishing effort in recent years this may not be indicative of abundance trends (Res.Doc.68/17).

### Herring

The sharp rise in herring landings results from the development of an industrial purse seine fishery by Canada in Div. 3K, 3L and, especially, 3Pn and 3Ps. 89% of these landings were used for fish meal compared with 69% of the smaller landings of 1966 (Res.Doc. 68/5).

### Halibut and Greenland Halibut

The apparent great increase in the nominal catch of halibut from 1,158 tons in 1966 to 6,359 tons in 1967 is likely to be an artifact due to reporting of Greenland halibut catches by USSR vessels as 'true' halibut. If this is so, catches of Greenland halibut again increased rather sharply in 1967. Catch per unit effort of this species is reported to have fallen in the Canadian gill net and long line fisheries (Res.Doc. 68/5). Catches of 1,100 kg of Greenland halibut per hour's trawling were obtained by Polish vessels in Div. 3K in August at depths of 400-500m (Res.Doc.68/11).

### Flounders

Total catches of flounders of all kinds (excluding Greenland Halibut) rose by about 30% (Table 2). Since a high proportion of the catch is taken incidentally during fishing for cod this increase suggests that effort increased appreciably in 1967.

### Other Groundfish

The doubling of the catch of 'other groundfish' was due to a new fishery for a grenadier (Macrurus rupestris) by the USSR in Div. 3K at depths of 600-800 m. The total catch of this species amounted to 16,000 tons.

### III. Research Work

Research work in Subarea 3 was reported by Canada, France, Poland, Portugal, USSR, UK and USA.

#### Hydrography

Hydrographical studies were made by Canada, France, USSR and USA. In the Newfoundland area the temperature of the main (cold) branch of the Labrador Current was below the average of recent years, but in the mixed waters offshore it was higher than average during the spring and summer and near average in autumn. Although, on the whole, the temperature conditions in 1967 were above the long-term average, a tendency towards cooling has been observed during the most recent years.

Evidence of a relationship between sea temperature and the availability of cod to capture at the northern edge of Subarea 3 and in Subarea 2 was presented by the USSR which may be useful in forecasting.

The French research report (Res.Doc. 68/7) gives a general survey of sea temperature distribution in March and April in the southern part of the Subarea based on the occupation of 72 stations between latitudes 42°50' and 46°00' North.

Canada continued a major hydrographic charting survey on the Grand Bank with approximately 85,000 sq. km. being surveyed in 1967.

Canada also continued a programme of drifter experiments in Div. 3K, 3L, 3O and 3Ps as part of a programme of circulation studies at the surface and along the bottom.

#### Plankton

Few plankton studies were reported. The survey by the Continuous Plankton Recorder, operated by the United Kingdom, was continued in 1967 along the same general lines as in 1966. This sampling covered a total of 12,700 miles in Subarea 3. The spring outburst of plankton was earlier than usual in Subarea 3. Adult Calanus were present in below average numbers on the Grand Banks.

#### Young fish studies

The USSR Research Report contains a summary of the results of trawl surveys of young cod (0-3 group) carried out annually since 1958 in Div. 3K, N, O and P. The great abundance of the 1964 year class is clearly shown and the 1963 year class is also above average.

In Canadian surveys of one-year-old haddock on St. Pierre Bank catches were reported to be good but not equal to that of the 1955 year class at the same age and it is doubtful whether the 1966 year class will become of much commercial importance.

During December the Canadian Research Vessel A.T. Cameron made good catches of baby redfish on the southern slope of the Grand Bank. The largest catch was 9,750 juvenile fish in a 30 minute haul (mean length around 11.5 cm.).

#### Tagging

The USSR continued the marking of cod in Subarea 3; in 1967 2,980 tagged fish were liberated. The marking confirms that the limits of distribution of the two main cod stocks (Labrador and Southern Newfoundland) lie approximately along latitude 46°N. The cod of Flemish Cap is considered to be a separate stock. This is confirmed by examination of blood samples (U.K. Research Report).

### Selectivity

Selectivity studies were reported by Canada, Poland, Portugal and the United Kingdom. Poland examined the effect of using heavier twine in a Stylon Polish type topside chafer and found no effect on selection (Res.Doc. 68/4); Portugal confirmed that a standard Polish type chafer did not reduce selectivity (Res.Doc. 68/100); and the UK tested a codend (without chafer) made of heavier than normal terylene twine with satisfactory results in commercial use. Canada examined the selectivity of four nets for redfish (Res.Doc. 68/83).

### Availability

Canada reported the results of a study of variation in availability of redfish of different sizes by day and by night (Res.Doc. 68/83). A comparison of day and night catches of American plaice by A.T.Cameron at a locality on the North east slope of the Grand Bank (110m.) gave largest catches in the early morning and early evening and smallest during the night (Res.Doc.68/5).

### Herring

Canada reported extensive studies of the rapidly developing Newfoundland herring fishery.

### Pink salmon

In 1967 the known returns of adult pink salmon from a planting in 1965 of 3 million eggs in a controlled flow channel in North Harbour River, St. Mary's Bay, Newfoundland were 8,440. It is believed that in addition large numbers passed unrecorded in the commercial fishery outside St. Mary's Bay. It is concluded that conditions of survival in the sea were unusually favourable for the 1967 fish.

### FAO Area reviews of living resources

Res.Doc. 68/75, compiled by FAO, gives estimates of the potential yields by Subarea of the ICNAF region. For Subarea 3 cod is estimated at 450,000-600,000 tons, haddock at 10,000-70,000 tons, American plaice at 100,000 tons plus and redfish at 100,000 tons plus. The prospects of developing fisheries on species lightly exploited or at present unexploited are also considered. It is suggested that greatly increased catches of launce, capelin and Myctophids could be taken.