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Status of Fisheries and Research Carried out in Subarea 3 in 1972

by

H. A. Cole

I. Pertinent Documents

The following research documents contain information relating to Subarea 3: 73/3, 4, 5, 13, 22, 26, 29, 33, 34, 39, 40, 41, 42, 43, 44, 49, 50, 51, 60, 71, 72, 73, 78, 79, 80, 81, 82, 83, 87, 88, 89, 90, 105, 113, 116. The relevant summary documents are 73/2, 3, 5, 8, 9, 17, 18, 23, 25 and the national research reports Summ.Doc. 73/12, 13, 14, 15, 20, 22, 24, 26, 27, 29, and 31. Documents relating solely to salmon have been omitted.

Information regarding the state of the fish stocks and the most recent assessments are given in the Report of the Assessments Subcommittee.

II. Status of the Fisheries

Table 1 gives the total nominal catch from Subarea 3 of all species and of cod, haddock, redfish, and herring, considered separately, for the year 1972 and for the four preceding years.

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

	1968	1969	1970	1971	1972
All Species	1,146	999	973	954	952
Cod	734	572	533	514	522
Haddock	7	5	7	5	4
Redfish	54	93	84	102	120
Herring	145	145	135	118	52

Table 2 gives the nominal catches of selected other species taken in Subarea 3 for the years 1970, 1971 and 1972.

Table 2. Nominal catches from Subarea 3, 1970-72 (metric tons round fresh).

	1970	1971	1972
Halibut	842	842	686
Greenland halibut	26,277	14,420	17,613
American plaice	89,486	79,839	71,011
Witch	22,018	31,306	27,908
Yellowtail flounder	26,899	37,686	39,749
Roundnose grenadier	22,524	18,447	21,277

Table 3 gives the nominal catches from Subarea 3 of all species combined by countries for the years 1971 and 1972 and a breakdown by main species.

The total nominal catch of all species was similar to that of 1971 as also was the catch of the main species - cod. The USSR catch increased by rather more than 100,000 tons due mainly to larger catches of cod, redfish and capelin. Canada's catch declined by about 100,000 tons, about half of this being herring. The catch of Norway declined sharply; countries showing small increases included the Fed. Rep. Germany, Poland, UK and a non-member.

Cod

Total nominal catch from Subarea 3, at 522,000 tons, was similar to those of the previous 3 years. Table 4 compares the 1972 nominal catches with the average catches taken in the 10 years 1961-70, and shows also the quotas for 1973 (where allocated) and the total allowable catches (TAC's) recommended by the Assessments Subcommittee for 1974.

Table 3. Nominal catches from Subarea 3 in 1971 and 1972 by species and country (thousand metric tons round fresh).

Species	Year	Total	Bul	Can	Den	Fra	FRG	Ice	Jap	Nor	Pol	Por	Rom	Spa	USSR	UK	GDR
Cod	1971	514	-	116	14	17	12	Ø	Ø	21	12	95	-	169	44	5	6
	1972	522	Ø	96	8	16	20	Ø	-	6	23	89	2	158	81	8	16
Haddock	1971	5	-	1	Ø	Ø	-	Ø	-	-	-	-	-	3	Ø	Ø	-
	1972	4	-	1	-	Ø	-	-	-	-	-	-	-	2	Ø	Ø	-
Redfish	1971	102	-	6	Ø	1	1	Ø	8	Ø	6	-	Ø	-	71	Ø	9
	1972	120	Ø	7	-	1	1	Ø	1	Ø	3	-	Ø	-	105	Ø	2
Greenland halibut	1971	14	-	9	-	-	-	Ø	-	-	3	-	Ø	-	2	-	Ø
	1972	18	-	9	-	-	-	-	-	-	4	-	Ø	-	4	-	Ø
American plaice	1971	80	-	58	-	1	-	-	-	-	1	-	Ø	Ø	20	Ø	-
	1972	71	-	49	-	1	Ø	-	-	-	3	-	1	-	17	Ø	Ø
Witch	1971	31	-	10	-	Ø	Ø	-	-	-	4	-	-	-	16	Ø	1
	1972	25	-	11	-	Ø	Ø	-	Ø	-	3	-	Ø	-	12	Ø	1
Yellowtail flounder	1971	38	-	24	-	Ø	-	-	-	-	-	-	-	-	13	-	-
	1972	40	Ø	27	-	1	-	-	-	-	-	-	-	-	12	Ø	-
Total all species	1971	954	-	361	14	21	12	Ø	8	21	27	95	2	174	198	5	16
	1972	952	1	268	8	19	21	Ø	2	6	36	89	3	161	310	10	19

Table 4. Subarea 3 cod catches by divisions (thousand metric tons).

Division	2J	3K	3L	3M	3N	3O	3Pn	3Ps	Total
Average 1961-70	-	107	200	30	53	51	18	61	515
Provisional 1972	149	146	158	56	48	55	8	46	522
Quota allocated 1973		575.5		na	103.5		na	50.5	
Recommended TAC 1974		650		35	85		nr	70	

na - not allocated nr - none recommended

(The quotas allocated for 1973 do not include catches taken from the stocks in inshore waters outside the Convention Area.)

The nominal catch from the Div. 2J-3K-L cod stock increased slightly to 453,000 tons (1971 - 421,000 tons) due mainly to improved catches in Div. 3K. Fishing was severely restricted in the spring by ice, especially in Div. 2J. Catches from Div. 3M (Flemish Cap) increased sharply to 56,000 tons (1971 - 25,000 tons) due probably to increased effort. The catch from Div 3N-O was very similar to the 10 year average; those from Subdiv. 3Ps and 3Pn decreased. Table 3 shows that cod catches by Portugal and Spain changed only slightly, but that of the USSR nearly doubled and Poland increased by 11,000 tons. The Canadian catch declined by 20,000 tons and that of Norway by 15,000 tons. Fed. Rep. Germany, UK and a non-member (GDR) recorded slight increases.

Low catches continued in the Canadian coastal fisheries during the peak summer season, particularly in the trap fishery. The 1964 year-class made a strong contribution to the deep gillnet catch but trap catches were dominated by the 1968 year-class (Summ.Doc. 73/14).

In the Portuguese fleet the changeover from dory vessels to gillnets continued: the proportions of the catch landed by trawlers, dories and gillnets in 1972 being approximately 77, 10 and 13% respectively in Subarea 3 (Summ.Doc. 73/24).

Polish trawlers fished mainly in Div. 3K; the catch per day was generally higher than in 1971, especially in January and June (Summ.Doc. 73/27). Spanish vessels fished heavily in Div. 3L, 3N 3O and Subdiv. 3Ps; the dominant year-classes were those of 1966 and 1968 (Summ.Doc. 73/29).

Soviet research vessel surveys during the period April - July 1972 confirmed the forecast of an improvement in cod catches in Div. 3N, 3O and 3P due to the strong incoming 1968 year-class: the more recent year-classes are poorer (Summ. Doc. 73/22 and Res.Doc. 73/22). On the other hand, the 1968 year-class did not contribute significantly to the 1972 catch, as expected. Therefore, it might not be as abundant as previously thought.

Haddock

Landings of haddock from Subarea 3 fell to a new low level and there are no indications of a recovery of the stock (Res.Doc. 73/14). The Assessments Sub-committee recommended that removal from the stock should be minimized.

Redfish

Redfish landings again increased to 120,000 tons, a level only twice exceeded since the collection of ICNAF statistics began in 1954. The whole of the increase was taken by USSR vessels which fished mainly in Div. 3M, 3N and 3O. Catches declined in Div. 3L, 3O and 3P, but this was offset by an increase in Div. 3M from 8,000 tons in 1971 to 40,000 tons in 1972, which is considerably above the long-term average catch of 16,000 tons, and was probably due to increased effort in 1972. There are indications from Canadian workers of a strong incoming year-class of young redfish in Div. 3P (Res. Doc. 73/88). Recent increases in redfish catches are attributed by Soviet workers to good recruitment and it is stated that in Div. 3NO and P no depletion of the stock has been observed (Summ. Doc. 73/22). Soviet ichthyologists claim that in addition to Sebastes mentella and S. marinus another species, S. fasciatus, is present in catches from the southern

portion of Subarea 3 (Summ. Doc. 73/22).

Commercial catch per hour in Subarea 3 has been declining in recent years, and recent catch levels are in excess of estimated MSY levels for some of these stocks (Div. 3LN, 30 and 3P).

Soviet scouting and research vessel surveys on the slopes of the Grand Bank show that at all periods of the year the mean lengths of both male and female beaked redfish increase with depth down to 700 meters (Res.Doc. 73/44).

Because regulation of other species could result in re-deployment of effort on redfish, the Assessments Subcommittee recommends that total allowable catches of redfish for 1974 be set at the estimated maximum sustainable yields as indicated by present analyses - 20,000 tons for Div. 3LN; 15,000 tons for Div. 30; and 23,000 tons for Div. 3P, until more adequate data are available for assessments.

American Plaice

American plaice landings again declined slightly both in total and from each of the main fishery areas, Div. 3L and 3N. Catches from Div. 3K and 30, however, increased slightly. The bulk of the catch was taken by Canada and the USSR. The Assessments Subcommittee has recommended a total allowable catch for 1974 of 60,000 tons to include 8,000 tons allocated to Div. 30.

Yellowtail

The rapid increase in catches of yellowtail in Subarea 3 in recent years slowed down, the provisional 1972 total catch being 40,000 tons (1971 - 38,000 tons). It seems that the spread of this species to the shallower parts of the Grand Bank may be nearly complete. In Div. 3L and 3N there was strong recruitment of 5- and 6-year-old fish to the exploited stock and the Canadian catch was composed almost entirely of fish aged 5-9 years old (Summ.Doc. 73/14).

The Assessments Subcommittee recommended a total allowable catch of 40,000 tons of yellowtail from Div. 3L, 3N and 30, including an allowance of 5,000 tons from Div. 30.

Witch

Total landings of witch from Subarea 3 appear to have declined slightly in 1972. There is little information about this species but the USSR presented a study of breeding and larval development (Res. Doc. 73/49) and Canada examined recent trends in the fishery (Res. Doc. 73/80). A summary of landings over the period 1962-72 and a suggested grouping of stocks appears in the Assessments Subcommittee Report. It is suggested that it would be prudent to limit removals of witch to a level not substantially above recent landings, i.e. about 30,000 tons (to include Div. 2J).

Capelin

Substantial development of the capelin fishery took place in 1972, the total nominal catch rising from 2,862 tons in 1971 to 52,535 tons in 1972. The only participants were USSR, Canada and, to a very small extent, a non-member. The heaviest catches were made in Div. 3K and 3N but smaller quantities were taken from Div. 3L, 30 and Subdiv. 3Ps There appear to be several stocks, mostly spawning in the coastal waters of Newfoundland and Labrador but also one spawning offshore on the southeastern shoal of the Grand Bank (Res.Doc. 73/90, 73/33). The fishery is presently exploiting both mature and immature fish (Res.Doc. 73/26). The importance of capelin as food for cod in Div. 2J and 3KLNO was investigated by Canada (Res.Doc. 73/90 Addendum). The Assessments Subcommittee although concluding that the catch could be increased considerably, perhaps to 750,000 tons, recommends that pending the collection of information on which to base an adequate assessment of its potential, control of the developing fishery should be maintained by limiting catches in 1974 to 250,000 tons.

Herring

Canadian herring catches from Div 3K and 3L were similar to those of 1971, but landings from Subdiv. 3Pn and 3Ps declined drastically, so that the total catch from Subarea 3 was approximately 45% of that in the previous year. Japan took a small quantity from Subdiv. 3Ps. The cause of the decline was said to be poor fishing weather and low recruitment (Summ.Doc. 73/14). Three research studies relating to herring from Subarea 3 were presented by Canada (Res.Doc. 73/29, 37, 81) and one by France (Res.Doc. 73/77).

Other Species

Landings of Greenland halibut improved slightly to near the average of recent years. Catches of white hake (Urophycis tenuis) reached 6,397 tons, mostly taken by Canada and the USSR from Div. 3O and Subdiv 3Ps. The USSR reported investigations of feeding, maturity and length/age composition of this species in Subarea 3 (Res.Doc. 73/39). USSR vessels continued to exploit the stock of roundnose grenadier, the slightly increased catch of 21,271 tons all coming from Div. 3K.

Squid (Illex illecebrosus) landings from Subarea 3 fell to a negligible figure in 1972. Canada reported four research studies (Res.Doc. 73/71, 72, 73, 79) which include an analysis of the distribution of catches of this seasonally migrant species in Canadian Atlantic waters during the period 1920-1968.

Mackerel catches increased slightly to 1,579 tons, due to the influx of the strong 1967 year-class (Summ.Doc. 73/14). One mackerel out of 1,450 tagged near Cape St. John, Newfoundland, was recovered four months later 1,400 miles further south in Stat. Area 6A (Res.Doc. 73/82).

Groundfish landings reported as "not specified" were again negligible and "other fish, not specified" fell to only 5,497 tons, mostly taken by the USSR.

Adequacy of Sampling

Reporting of 1971 statistical and sampling data by member countries is analysed in detail by the Assistant Executive Secretary in Summ.Doc. 73/2. With the possible exception of the Labrador - East Newfoundland cod, sampling of the major commercial stocks generally falls short of the minimum standards adopted by ICNAF. The lack of commercial sampling of the Div. 3NO cod stock is particularly serious.

III. Research Work

Research studies made in Subarea 3 were reported by Canada, France, Fed.Rep. Germany, Japan, Norway, Poland, Portugal, Spain, USSR, UK and USA.

Hydrography

Hydrographic surveys were carried out in Subarea 3 by Canada, Fed. Rep. Germany, Poland, USSR, UK and USA, some of the main results being reported in Res. Doc. 73/42, 43, 44, 50, 113 and 116 and Summ. Doc. 20. These show that 1972 was a particularly cold year in the surface layers on the Grand Banks and within the area of influence of the Labrador Current, the coldest since 1936 (Res. Doc. 73/43). The low temperatures and correspondingly low salinities were associated with a higher-than-normal transport of the Labrador Current in April and May causing particularly severe ice conditions. However, above average temperature were recorded on the southern and southwestern slopes of Grand Bank, particularly in the 200-500 m layer, suggesting some increase in heat transport within the Gulf Stream.

An unusual feature of the hydrographic program was the extensive use of recording current meters by Canada, USA and UK (only the latter reported at this meeting in detail) in a cooperative investigation extending into Subarea 4 and Stat. Area 6, and the sampling of oxygen, silicate and phosphate, as well as the more usual temperature and salinity, by these three countries and Poland

1972 was exceptional both in oceanographic conditions and in data coverage; the Environmental Subcommittee therefore suggests that a special half-day session be arranged at the 1974 ICNAF Meeting to assess the conditions during 1972, and to examine their relation to the fisheries.

Plankton

Plankton studies were reported by the UK and the USSR.

The survey with the Continuous Plankton Recorder operated from the Oceanographic Laboratory, Edinburgh, was continued in 1972 on the same basis as in other years: 12,400 miles were sampled in Subarea 3. A survey of the plankton in the ICNAF Area during the 11 years 1961-71 is reported in Res.Doc. 73/78. In 1972 the spring outburst of phytoplankton was rather late; abundance of Calanus was above average during the late spring and summer. As in 1971 numbers of redfish larvae were low in Subarea 3.

A Soviet research vessel sampled fish eggs and larvae from 21 April to 31 May in Div. 3K, 3L, 3M and 3N. Comparable data are available from earlier years. Numbers of American plaice eggs were twice those of the last two years (Summ.Doc. 73/22).

Groundfish Surveys

Groundfish surveys made in 1972 are reviewed in the Report of the Assessments Subcommittee. In Subarea 3 survey activity by Canada and USSR was about the same as in 1971. The provisional program for 1973 shows a small increase in the number of trawl hauls proposed and slightly wider coverage: the countries concerned are Canada, Fed. Rep. Germany and the USSR.