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Status of Reporting 1971 Statistical and Sampling Data by Member Countries

by

Assistant Executive Secretary
ICNAF

At the 1972 Annual Meeting the Plenary and Panels strongly endorsed the recommendation of STACRES concerning the vital need of more and better biostatistical data. Consequently, the Secretariat in consultation with the Chairmen of Scientific Advisers to Panels 1-5 issued on 15 February 1973 Circular Letter 73/15 entitled "Memorandum on the Need for More and Better Biostatistical Data" together with a report on "Status of Reporting Statistical and Sampling Data for 1971". Each country's report contained information on deficiencies in both statistical and sampling data and on the need for speeding up its reporting to meet the deadlines established for the submission of the various reports.

In order that Commissioners and their Scientific Advisers become fully aware of the overall problem of deficiencies in the biostatistical data which are vitally needed for accurate stock assessments, both the Memorandum (I) and the reports (II), covering the deficiencies in Member Countries' submissions to the Secretariat, are set out in the following pages.

Circular Letter 73/15

P.O. Box 638
Dartmouth, Nova Scotia, Canada

15 February 1973

I. Memorandum on the Need for More and Better Biostatistical Data

1. At the 22nd Annual Meeting of the Commission in June 1972, when a number of proposals for catch quota regulation of various stocks and species were adopted, it was frequently stressed that the demands of the Commission require that its scientists have a much higher level of knowledge about the stocks than in the past. Any failure by scientists to assess the correct allowable catches may result in losses to the fisheries. It is, therefore, extremely important not only for science but also for the fisheries that scientists are provided with adequate statistical and sampling data by all countries participating in the fisheries. Accordingly, the Plenary, recognizing the need for more and better biostatistical data as the basis for reliable scientific assessment and sound advice to the Commission on management of the Northwest Atlantic fish stocks as urged by STACRES, strongly urged

(a) that Member Countries make every effort to greatly improve the coverage, accuracy and speed of reporting of national statistics and to extend their biostatistical sampling programs,
(b) that Member Countries give strong support to programs designed to obtain estimates of stock size independent of catch and effort data, e.g. acoustic surveys and tagging experiments, and
(c) that Member Countries give strong support in research vessel time and effort to programs designed to give reliable estimates of future recruitment to the fisheries, e.g. larval, 0-group and groundfish surveys.

2. All five Panels strongly endorsed the recommendation of STACRES regarding the vital need for all Member Countries to supply basic data on catch and fishing effort and on size and age composition of catches. In particular, Panel 1, recognizing that some Member Countries have failed to fulfill even the minimum statistics and sampling requirements, recommended

that the statistical and catch sampling requirments be set out by the Chairman of the Scientific Advisers in consultation with the Secretariat and be sent out to all Member Countries fishing in the Subarea with the request that they implement their collection and reporting as a matter of high priority.

3. Recognizing the strong endorsements of the STACRES recommendation by the Panels and the Plenary, the Chairmen of Scientific Advisers to Panels 1-5 subsequently agreed to adopt a procedure similar to that recommended for Subarea 1 to inform Member Countries of the current status of their reporting of biostatistical data in relation to the minimum statistics and sampling requirements as set out below.

(a) Minimum biological sampling requirements were adopted by the Commission at its Annual Meeting in June 1970. These involve the measurement by each country of a minimum of 200 fish for every quarter of the year in every division for each 1,000 tons of each species caught. In conjunction with data on size composition of catches, countries are expected to collect sufficient material for age determination and report on the age composition of catches. Insofar as the prediction of future stock and yield is concerned, Member Countries are also urged to participate in coordinated programs designed to give estimates of future recruitment (larval, 0-group and groundfish surveys). The deadline for the submission of Sampling Data is 1 August or earlier, if possible.
(b) Requirements for statistical reporting are brought to the attention of Member Countries each year in connection with the distribution of the joint ICES/ICNAF/FAO standard forms (STATLANT 21A and 21B for the Northwest Atlantic) by the Secretary of the CWP (Coordinating Working Party on Atlantic Fisheries Statistics) and with the distribution of certain special ICNAF forms and requests for information by the Secretariat. The types of forms, nature of the data required and the deadlines for receipt of the submissions at the Secretariat are as follows:

	Form and Data	Deadline
(1)	STATLANT 21A: Annual nominal catches by species for each division (or subdivision where applicable)	15 April
(2)	STATLANT 21B: Fishing effort and nominal catches by vessel, gear and tonnage classes, and by main species and month for each division (or subdivision)	15 June
(3)	ICNAF Stat. 4: Data on discards and industrial fish by vessel and tonnage class for each division (or subdivision)	15 July

Form and Data	Deadline
(4) Data on Trawl Materials and Mesh Sizes Used in the Commercial Fisheries	31 March
(5) Reports on Research Carried Out by Member Countries	15 April
(6) Annual Return of Infringements to ICNAF Trawl Regulations	31 March

(c) Other requirements involve the need for Member Countries to give strong support in research vessel time and effort to programs designed to provide estimates of stock size independent of catch and effort data (e.g. acoustic surveys and tagging experiments) and to give reliable estimates of future recruitment to the fisheries (e.g. larval and groundfish surveys).

4. Deficiencies, if any, in the statistics, sampling and research reporting by your country are set out in the attached report covering data submissions for 1971. It is important that every effort be made to decrease or eliminate any deficiencies in your country's data submissions for 1972 and subsequent years.

Sv.Aa. Horsted	(Denmark)	Chairman, Scientific Advisers to Panel 1
A.W. May	(Canada)	" " " " Panel 2
H.A. Cole	(UK)	" " " " Panel 3
J.A. Posgay	(USA)	" " " " Panel 4
F.D. McCracken	(Canada)	" " " " Panel 5

Yours sincerely

V.M. Hodder

VMH:VCK
Encls.

V.M. Hodder
Assistant Executive Secretary

Distribution:

Bulgaria - Mr Ivanov, Mr Gaidarov, Dr Ivanov
Canada - Dr Needler, Mr Henriksen, Mr Young, Mr Shepard, Mr Creeper, Mr Cowley, Dr McCracken, FRB Marine Ecology Laboratory, Dr May, Mr Fleming, Mr Tibbo, Mr Iles, Dr Halliday, Mr Pinhorn, Mr Winters
Denmark - Mr Løkkegaard, Mr Nolsøe, Mr Horsted, Mr Djurhuus, Mr Jensen
France - Mr Touya, Mr Thibaudau, Mme Rossignol, Mr Letaconnoux, Mr Morice, Mr Coudray
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Norway - Mr Lund, Mr Raasok, Mr Saetersdal, Mr Mietle, Mr Ulltang
Poland - Dr Pietraszek, Mr Fila, Mr Kalinowski, Dr Popiel, Dr Chrzan, Dr Draganik, Central Fisheries Board, Dr Maj
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Spain - Mr Bermejo, Dr Larrañeta
USSR - Mr Kamentsev, Mr Volkov, Dr Bogdanov, Dr Noskov, Dr Alekseev, Mr Nikolaev
UK - Mr Graham, Mr Aglen, Dr Cole, Mr Parrish, Mr Garrod
USA - Mr Terry, Mr Green, Ambassador McKernan, Mr Sullivan Jr, Mr Hennemuth, Dr Grosslein, Dr Brown, Dr Anthony, Dr Edwards, Mr Norris, Dr Anderson
FAO - Mr Gulland, Mr Gertenbach

Chairman, STACRES
Chairman, Scientific Advisers to Panel 1 (Mr Horsted)
Chairman, " " " Panel 2 (Dr May)
Chairman, " " " Panel 3 (Dr Cole)
Chairman, " " " Panel 4 (Mr Posgay)
Chairman, " " " Panel 5 (Dr McCracken)

II. Status of Reporting Statistical and Sampling Data for 1971

BULGARIA

1. Bulgaria became a member of ICNAF on 21 August 1972.

2. Statistics

Catch/effort statistics of Bulgarian fisheries in the ICNAF Area in 1971 were reported on STATLANT 21A and STATLANT 21B forms which were received at the Secretariat on 16 August and 11 October 1972, respectively. The forms were generally well prepared with the data broken down by gear, tonnage class, division, month and species, and both "Days Fished" and "Hours Fished" were provided on the 21B forms. However, a considerable quantity of fish (5,600 tons) were designated as "Miscellaneous marine fishes, not specified".

3. Sampling

No length and age sampling data were reported for 1971.

4. General Comments

The total nominal catch of all species by Bulgarian vessels in 1971 was about 45,000 tons, of which 28,500 tons of mackerel and 4,500 tons of herring were taken in Subarea 5 and Statistical Area 6. It is important that Bulgaria initiate length and age sampling of its vessels' catches as soon as possible in accordance with the minimum sampling requirements and provide future reports of any other information as outlined in the memorandum covering this report.

CANADA (Maritimes and Quebec)

1. Promptness in Reporting Biostatistical Data

Report	Deadline	Received	Comment
STATLANT 21A	15 April 1972	19 April 1972	-
STATLANT 21B	15 June 1972	19 April 1972	Catch/effort data on punched cards received in July 1972
ICNAF Stat. 4 (Discards and Industrial Fish)	15 July 1972	-	No report received
*Trawl Materials and Mesh Size Sampling	31 March 1972	23 May 1972	7 weeks late
*Annual Return of Infringements	31 March 1972	23 May 1972	7 weeks late
*Research Report	15 April 1972	12 April 1972	-
ICNAF Stat. 3 (Summary of Fishing Effort)	1 May 1972	11 May 1972	Use of this form discontinued in 1972
Sampling Data			
- groundfish (length only)	1 August 1972	23 August 1972	3 weeks late
- herring (length and age)	1 August 1972	3 August 1972	-

* Reports pertain to Canada (M) and Canada (N).

2. Deficiencies in Statistical Reporting

Catch and effort data were reported on computer printout pages in a format very similar to that of STATLANT forms. The submission constituted more than 1,000 pages of computer sheets (11" x 15"). At the request of the Secretariat the STATLANT 21B data were computer-punched on cards in a format similar to that used at the Secretariat. Since the Canadian codes used for such categories as gear, tonnage class, main species, etc. differed from those used by ICNAF, considerable editing was necessary; however, the receipt of the punched cards eliminated the need for the manual transcription of such a massive amount of data from computer sheets to coded forms for punching manually. The translation of the Canadian codes to those used by ICNAF was achieved by the computer-punching of a new set of data cards at the Bedford Institute.

The most significant deficiencies in the data were as follows:

(a) Little or no effort data were provided for the catches of several important gears, e.g. mid-water trawls, purse seines, pair seines, gillnets, fixed gears, etc., and only partial data for longlines and Danish-type seines; even the otter-trawl data were somewhat incomplete for nearly all tonnage classes of vessels.

(b) While the data were broken down by main species for cod, haddock, redfish, halibut and herring, no such breakdown was given for most of the other species individually, but rather the Main Species were designated as Flounders, Other Pelagics, Crustaceans, etc., when these species groups dominated in the catches.

(c) In editing at the Secretariat, it was sometimes noted that certain species were reported caught by gears which are obviously incapable of catching those species. Such discrepancies would seem to be due to inaccurate coding of either the species or the gear, and their occurrence in the statistical submission (even though only a few instances have been noted) suggests that the editing of the data report is inadequate at the regional statistical offices.

(d) Canadian data were tabulated by 0-25 and 26-50 tonnage classes, thus necessitating the manual combination of the data for these two classes into a single 0-50 tonnage class as required by ICNAF for publication in the Statistical Bulletin.

3. Deficiencies in Sampling

The following table shows the amount of sampling data reported for publication in the Sampling Yearbook, relative to the nominal catches by Canada (M&Q) vessels in the ICNAF Area for 1971 (* = inadequate sampling; ** = no sampling or no data reported).

Species	Divisions or Subareas	Gear	Catch (000 tons)	Number Measured		No. of Ages	Comments
				Commercial	Research		
COD	3P	OT	0.7	326	-	-	-
	4R-T	OT	22.1	1,168	-	-	*
		DS	2.3	2,284	-	-	-
		GN	12.9	178	-	-	*
		LL	3.3	-	-	-	**
		HL	4.3	-	-	-	**
		Oth.	4.4	-	-	-	**
	4V	OT	13.6	6,181	-	-	-
		LL	4.0	1,018	-	-	-
		Oth.	1.6	-	-	-	
	4W	OT	4.6	711	-	-	*
		LL	4.2	304	-	-	*
		Oth.	2.3	-	-	-	
	4X	OT	5.8	905	-	-	*
		LL	7.7	425	-	-	*
		HL	4.4	-	-	-	*
		Oth.	2.3	-	-	-	
	5Y-Z	OT	3.1	288	-	-	*

Species	Divisions or Subareas	Gear	Catch (000 tons)	Number Measured Commercial	Number Measured Research	No. of Ages	Comments
HADDOCK	4V-W	OT	8.7	5,598	-	-	-
		LL	0.7	966	-	-	-
	4X	OT	12.4	5,866	-	-	-
		LL	3.0	436	-	-	*
		Oth.	1.0	-	-	-	
	5Y-Z	OT	1.7	474	-	-	-
REDFISH	4R-T	OT	58.0	2,437	-	-	*
	4V-X	OT	25.0	6,801	-	-	-
AMERICAN PLAICE	3K-L	OT	1.9	175	-	-	*
	3N-O	OT	2.9	-	-	-	**
	3P	OT	1.3	-	-	-	
	4R-T	OT	7.7	184	-	-	*
	4V-X	OT	6.9	600	-	-	*
YELLOWTAIL	3K-L	OT	0.9	-	-	-	
	3N-O	OT	3.5	400	-	-	*
	4V-X	OT	1.0	-	-	-	
WITCH	3K-L	OT	+	216	-	-	-
	4R-T	OT, DS	1.6	-	-	-	-
	4V-X	OT, DS	6.3	1,255	-	-	-
POLLOCK	4V-X	OT	10.1	853	-	-	*
	5Y-Z	OT	1.6	-	-	-	**
WHITE HAKE	3	OT	3.4	-	-	-	**
	4	OT	10.5	-	-	-	**
HERRING	4R-T	...	131.8	8,633	791	4,387	*
	4Vn	...	8.0	2,655	200	857	-
	4W	...	53.3	8,403	-	1,499	*
	4X	...	68.0	30,867	688	8,984	-
	5Y	...	15.5	1,179	-	470	*
	5Z	...	12.9	4,349	-	695	-
MACKEREL	4R-T	...	5.9	-	-	-	**
	4V-X		7.4	-	-	-	**

With reference to the minimum sampling requirement (i.e., 200 fish measurements per 1,000 tons of fish caught), the following observations can be made:

Cod - catches in most areas by various gears are generally inadequately sampled or not sampled at all;
Haddock - sampling generally exceeds the minimum requirements;
Redfish - sampling inadequate in Div. 4R-T;
American plaice - sampling inadequate for all areas;
Yellowtail - sampling inadequate for all areas;
Witch - sampling is barely minimal;
Pollock - sampling inadequate;
White hake and mackerel - no sampling data reported;
Herring - length sampling was very inadequate in Div. 4R-T, 4W and 5Y.

In addition to the length sampling discrepancies noted above, a very significant omission in the submission of Canada (M&Q) sampling data was the reporting of age or year-class data for all species, except herring.

4. Research Vessel Activities

Research activities in 1971 are summarized in the Canadian Research Report (Redbook 1972, Part II). Section II of the Report indicates that research vessel surveys were undertaken to study hydrographic conditions in Subarea 4 and the biology and ecology of many of the important commercially-exploited species in various parts of the Subarea. Of particular importance to ICNAF was the study of larval herring in the Bay of Fundy-Gulf of Maine area.

5. General Comments

The great amount of data submitted on computer printout sheets in the STATLANT 21B format had in the past taken up a great amount of time at the Secretariat in compiling the data for publication in the Statistical Bulletin. More recently, for the 1970 and 1971 catch/effort data, the ICNAF Statistical Bulletin has been produced from computer compilations. This involves the copying of STATLANT 21B data onto coded sheets followed by key-punching and verifying. The arrangement of the Canadian data on the computer sheets suggested that the monthly data could also be summarized and output on punched cards at the same time that the printouts were made. Consequently, in the spring of 1972 the Secretariat requested that, in addition to the usual computer printouts for the 1971 data, a set of punched cards be supplied in a format specified for use in the preparation of Statistical Bulletin Table 4. The data subsequently were supplied on cards for the Canada (Maritimes and Quebec) statistics, but not for the Canada (Newfoundland) data. While the cards as submitted had to be subjected to considerable editing at the Secretariat (due mostly to inconsistencies between the Canadian codes used for such categories as gear, tonnage class, main species, etc., and the ICNAF codes), the experiment was quite successful. It is hoped that the submission of summary data on punched cards, in addition to computer printout, can become a permanent feature of both the Canada (M&Q) and Canada (N) STATLANT 21B submissions of 1972 data and those of future years. The problem of inconsistencies in coding can be readily solved through close collaboration between the Secretariat and Canadian personnel responsible for the compilation of the regional statistics.

Regarding the deficiencies in sampling indicated in paragraph 3 above, it would be greatly appreciated if the quality and quantity of sampling could be improved at least to a level which fulfills the minimum ICNAF requirements. Future submissions should include data on the age composition of the catches.

Intensification of research to include pre-recruit investigations of the important commercially-exploited stocks, especially those under management quotas, is urged. Of immediate concern is greater Canadian participation in ICNAF coordinated larval and juvenile herring surveys in Subareas 4 and 5.

CANADA (Newfoundland)

1. Promptness in Reporting Biostatistical Data

Report	Deadline	Received	Comment
STATLANT 21A	15 April 1972	24 April 1972	-
STATLANT 21B	15 June 1972	19 April 1972	-
ICNAF Stat. 4 (Discards and Industrial Fish)	15 July 1972	13 July 1972	-
*Trawl Materials and Mesh Size Sampling	31 March 1972	23 May 1972	7 weeks late
*Annual Return of Infringements	31 March 1972	23 May 1972	7 weeks late
*Research Report	15 April 1972	12 April 1972	-
ICNAF Stat. 3 (Summary of Fishing Effort)	1 May 1972	12 May 1972	Use of this form discontinued in 1972
Sampling Data (lengths only)	1 August 1972	12 June 1972	-

* Joint reports for Canada (Newfoundland) and Canada (Maritimes and Quebec).

2. Deficiencies in Statistical Reporting

Catch and effort data were reported on computer printout sheets in a format very similar to that of STATLANT forms. The submission constituted more than 500 pages of computer sheets (11" x 15"). The most significant deficiencies in the data were as follows:

(a) Little or not effort data were provided for the catches of several important gears, e.g. midwater trawl, purse seines, gillnets, fixed gears, longlines, etc.; even the otter trawl effort data were incomplete, especially for 0-50 and 51-150 class vessels.

(b) While the data were broken down by main species for cod, haddock, halibut, redfish and herring, no such breakdowns were given for most of the other species individually, but rather the main species was designated as Flounders, Other Pelagics, Crustaceans, Molluscs, etc., when these species groups dominated in the catches.

(c) In editing at the Secretariat, it was sometimes noted that certain species were reported caught by gears which are obviously incapable of catching those species; such discrepancies would seem to be due to inaccurate coding of either the species or the gear, and their occurrence in the statistical submission (even though only a few instances have been noted) suggests that the editing of the data report is inadequate at the regional statistical offices.

(d) Canadian data were tabulated by 0-25 and 26-50 tonnage classes, thus necessitating the manual combination of the data for these two classes into a single 0-50 tonnage class as required by ICNAF for publication in the Statistical Bulletin.

3. Deficiencies in Sampling

The following table shows the amount of sampling data reported for publication in the Sampling Yearbook, relative to the nominal catches by Canada (Newfoundland) vessels in the ICNAF Area for 1971 (* = inadequate sampling; ** = no sampling or no data reported).

Species	Divisions or Subareas	Gear	Catch (000 tons)	Number Measured		No. of Ages	Comments
				Commercial	Research		
COD	2G-J	FIX	1.6	3,351	-	-	-
		SGN	0.7	514	-	-	-
		Oth.	1.0	-	-	-	
	3K-L	OT	10.9	5,569	-	-	-
		SGN	23.0	10,258	-	-	-
		FIX	24.0	11,479	-	-	-
		HL	7.0	2,416	-	-	-
		LL	5.0	1,543	-	-	-
		Oth.	0.2	-	-	-	
	3N-O	OT	1.9	-	-	-	**
	3P	OT	9.0	-	-	-	**
		LL	13.8	-	-	-	**
		SGN	7.4	3,515	-	-	-
		FIX	9.5	5,149	-	-	-
		Oth.	2.3	-	-	-	**
	4R-T	OT	7.5	-	-	-	**
		LL	3.1	-	-	-	**
		SGN	3.7	120	-	-	*
		FIX	3.8	201	-	-	*
		Oth.	1.8	-	-	-	**
	4V	OT	2.1	-	-	-	**
HADDOCK	3	OT	1.2	-	-	-	
	4	OT	0.4	-	-	-	
REDFISH	3P	OT	5.3	-	-	-	**
	4R-T	OT	16.6	-	-	-	**
	4V-X	OT	4.4	-	-	-	**
AMERICAN PLAICE	3K-L	OT	36.9	9,618	-	-	-
	3N-O	OT	10.1	-	-	-	**
	3P	OT	4.7	-	-	-	**
	4R-T	OT	1.6	-	-	-	
GREENLAND HALIBUT	3K-L	...	9.4	-	-	-	**
YELLOWTAIL	3K-L	OT	5.7	1,012	-	-	-
	3N-O	OT	14.1	1,016	-	-	*

Species	Divisions or Subareas	Gear	Catch (000 tons)	Number Measured Commercial	Number Measured Research	No. of Ages	Comments
WITCH	3K-L	...	8.0	-	-	-	**
	3P	...	2.2	-	-	-	**
	4R-T	...	1.6	-	-	-	
HERRING	3K-L	...	3.3	-	-	-	
	3P	...	114.5	19,832	-	-	*
	4R-T	...	14.3	1,650	-	-	*
	4V	...	3.4	250	-	-	*
	4W-X	...	0.3	650	-	-	-
MACKEREL	3	...	1.3	-	-	-	

With reference to the minimum sampling requirement (i.e., 200 fish measurements per 1,000 tons of fish caught), the following observations can be made:

Cod - catches in Div. 2G-J and 3K-L are generally adequately sampled for lengths, but those of Div. 3N-O, 3P and 4R-T are either inadequately sampled or not sampled, except for traps and gillnets in Div. 3P;
Haddock - catches are probably incidental small quantities taken with other species;
Redfish - no sampling data reported for catches in Div. 3P, 4R-T and 4V-X;
American plaice - length sampling data reported for Div. 3L, but none for Div. 3N-O and 3P;
Greenland halibut - no sampling data reported;
Yellowtail - sampling was barely minimal in Div. 3L and inadequate in Div. 3N-O;
Witch - no sampling data reported;
Herring - sampling was generally inadequate in all areas reported.

In addition to the length sampling deficiencies noted above, a very significant omission in the submission of Canada (N) sampling data was the reporting of age or year-class data. However, the number of otoliths collected for ageing was reported and these are listed under "Notes to Sampling Data" in the Sampling Yearbook.

4. Research Vessel Activities

Research activities in 1971 are summarized in the Canadian Research Report (Redbook 1972, Part II). Section I of the Report indicates that research vessel surveys were undertaken to study hydrographic conditions in Subareas 2 and 3, and the biology of many of the most important commercially-exploited species in various parts of those subareas. In particular, scientists on the R/V *A.T. Cameron* participated in the tagging of salmon off West Greenland during the autumn and contributed to other studies aimed at elucidating the migratory movements of this species.

5. General Comments

The great amount of data submitted on computer printout sheets in the format of STATLANT 21B had in the past taken up a great amount of time at the Secretariat in compiling the data for publication in the Statistical Bulletin. More recently, for the 1970 and 1971 catch/effort data, the ICNAF Statistical Bulletin has been produced from computer compilations. This involves the copying of STATLANT 21B data onto coded sheets followed by key-punching and verifying. The arrangement of the Canadian data on the computer sheets suggested that the monthly data could also be summarized and output on punched cards at the same time that the printouts were made. Consequently, in the spring of 1972 the Secretariat requested that, in addition to the usual computer printouts for the 1971 data, a set of punched cards be supplied in a format specified for use in the preparation of Statistical Bulletin Table 4. The data subsequently were supplied on cards for the Canada (M&Q) statistics, but not for the Canada (N) data. While the cards as submitted had to be subjected to considerable editing at the Secretariat (due mostly to inconsistencies between the Canadian codes used for such categories as gear, tonnage class, main species, etc., and the ICNAF codes), the experiment was quite successful. It is hoped that the submission of summary data on punched cards, in addition to computer printout, can become a permanent feature of both the Canada (M&Q) and Canada (N) STATLANT 21B submissions on 1972 data and those of future years. The problem of inconsistencies in coding can be readily solved through close collaboration between the Secretariat and Canadian personnel responsible for the compilation of the regional statistics.

Regarding the deficiencies in sampling indicated in paragraph 3 above, it would be greatly appreciated if the quality and quantity of sampling could be improved at least to a level which fulfills the minimum ICNAF requirements and to include the submission of data on age composition of the catches.

Intensification of research to include pre-recruit investigations of the important commercially-exploited stocks, especially those under management by quotas, is urged.

DENMARK (FAROE ISLANDS)

1. Promptness in Reporting Biostatistical Data

Report	Deadline	Received	Comment
STATLANT 21A	15 April 1972	8 June 1972	8 weeks late
STATLANT 21B	15 June 1972	21 November 1972	6 months late (Report not suitable for use)
ICNAF Stat. 4 (Discards and Industrial Fish)	15 July 1972	25 April 1972	No data reported
Trawl Material and Mesh Size Sampling	31 March 1972	10 August 1972	No data reported
Annual Return of Infringements	31 March 1972	-	No report
Research Report	15 April 1972	-	No report
ICNAF Stat. 3 (Summary of Fishing Effort)	1 May 1972	-	Use of this form discontinued in 1972
Sampling Data	1 August 1972	-	No report

2. Deficiencies in Statistical Reporting

STATLANT 21A data were not reported by divisions in the 4 subareas where Faroese vessels fished (Subareas 1, 2, 3 and 4).

STATLANT 21B data as reported could not be used because the monthly breakdown pertained to the whole ICNAF Area without a breakdown by divisions or even subareas. Also, the return gave no indication of the gears used, no breakdown by tonnage classes and no effort data.

Either no data were reported or no reports received for the remaining 6 Reports (see paragraph 1) that Member Countries are required to submit annually.

3. Deficiencies in Sampling

The following table shows the amount of sampling data reported for publication in the Sampling Yearbook, relative to the nominal catches by Faroese vessels in the ICNAF Area for 1971 (* = inadequate sampling; ** = no sampling or no data reported).

Species	Divisions or Subareas	Gear	Catch (000 tons)	Number Measured		No. of Ages	Comments
				Commercial	Research		
COD	1 (NK)	NK	16.4	-	-	-	**
	2 (NK)	NK	0.4	-	-	-	
	3 (NK)	NK	14.2	-	-	-	**
	4 (NK)	NK	3.0	-	-	-	**

With reference to the minimum sampling requirement (i.e., 200 fish measurements per 1,000 tons of fish caught), no sampling data were reported.

4. Research Activities

No research report was submitted and the Secretariat has no evidence that Faroe Islands conducted research in the ICNAF Area.

5. General Comments

The Faroese fleet catches significant quantities of cod in the various divisions of Subareas 1 and 3, but no sampling data has been reported in recent years. Since the fleet operates a variety of gears (trawls, lines, etc.), it would be greatly appreciated if the minimum requirements for length sampling could be fulfilled and age sampling (otoliths) for various gears, areas and seasons.

The Faroese statistical returns are very inadequate and every effort should be made to improve the quality of the data submitted on STATLANT forms, and to report these data in accordance with the deadlines established (see paragraph 1).

DENMARK (GREENLAND)

1. Promptness in Reporting Biostatistical Data

Report	Deadline	Received	Comment
STATLANT 21A	15 April 1972	17 July 1972	13 weeks late
STATLANT 21B	15 June 1972	20 October 1972	5 months late
ICNAF Stat. 4 (Discards and Industrial Fish)	15 July 1972	25 April 1972	No data to report
Trawl Materials and Mesh Size Sampling	31 March 1972	10 July 1972	No data to report
Annual Return of Infringements	31 March 1972	-	No report
Research Report	15 April 1972	25 April 1972	1-1/2 weeks late
ICNAF Stat. 3 (Summary of Fishing Effort)	1 May 1972	25 April 1972	Use of this form discontinued in 1972
Sampling Data - length and age data for cod, redfish, American plaice, Greenland halibut	1 August 1972	25 April 1972	-

2. Deficiencies in Statistical Reporting

STATLANT 21A catch data were not reported in time for inclusion in the statistical tabulations prepared for the Annual Meeting.

STATLANT 21B submission was inadequate in many ways, the most significant of which were: no effort data, no breakdown by tonnage classes for more than 80% of the catch reported, no breakdown by gear for any of the data, substantial quantities designated as month (NK) and division (NK), quantities reported as "lumpfish roe" and "shark meat" not converted to nominal catches by the application of an appropriate conversion factor.

No information was provided on some of the other requirements listed in (1) above.

3. Deficiencies in Sampling

The following table shows the amount of sampling data reported for publication in the Sampling Yearbook, relative to the nominal catches by Greenland vessels in the ICNAF Area for 1971 (* = inadequate sampling; ** = no sampling or no data reported).

Species	Divisions or Subareas	Catch (000 tons)	Gears Used	Gears Sampled	Number Measured Commercial	Number Measured Research	No. of Ages	Comments
COD	1A-B	2.1	NK	PN	812	-	262	
				HL	-	459	-	
	1C-D	5.8	NK	OT	4,983	3,628	2,858	
				PN	2,718	-	552	
				LL	-	254	254	
				HL	-	112	-	
	1E-F	5.6	NK	OT	2,393	-	840	
					199	-	198	
	1 (NK)	5.9	NK	-	-	-	-	**

Species	Divisions or Subareas	Catch (000 tons)	Gears Used	Gears Sampled	Number Measured Commercial	Number Measured Research	No. of Ages	Comments
REDFISH	1A-F	0.3	NK	OT	-	5,988	-	
				LL	-	171		
AMERICAN PLAICE	1A-F	+	NK	OT	-	7,403	-	
GREENLAND HALIBUT	1A-F	1.2	NK	OT	-	3,568	-	

Note: In addition, information on sampling was provided for *G. ogac*, *G. saida*, Arctic char, capelin, salmon, shrimp and queen crab.

While the quantity and quality of sampling of the exploited species was generally adequate, the quality of catch statistics to which the sampling data has to be applied is lacking. For example, in the statistical submissions, the commercial catches were not broken down by the various gears used.

4. Research Activities

The Denmark (Greenland) Research Report for 1971 indicates that research activities in Subarea 1 were fairly substantial. Environmental studies involved the continuation of the hydrographic and plankton program. Biological studies included surveys for cod eggs and larvae, occurrence of pre-recruit cod, cod tagging experiments, salmon tagging, and the collection of information on several other species of fish and shellfish.

5. General Comments

As mentioned above the quality of the data provided on STATLANT forms (especially 21B) is far from adequate, and every effort should be made to establish better statistical coverage of the commercial fisheries. This coverage should include more refined breakdowns of the nominal catches by gears, tonnage classes, main species and divisions, as well as the allocation of all of the data by months. Also, effort data should be supplied, at least for trawlers and other vessels 50GRT and over. Conversion factors should be obtained so that such categories as quantities of lumpfish roe and shark meat can be converted to nominal catches in round fresh weights.

Regarding research activities, intensification of pre-recruit studies on cod would be greatly appreciated.

FRANCE (Metropolitan)

1. Promptness in Reporting Biostatistical Data

Report	Deadline	Received	Comment
STATLANT 21A	15 April 1972	4 April 1972	-
STATLANT 21B	15 June 1972	4 April 1972	-
ICNAF Stat. 4(Discards and Industrial Fish)	15 July 1972	13 July 1972	-
Trawl Materials and Mesh Size Sampling	31 March 1972	4 April 1972	-
Annual Return of Infringements	31 March 1972	4 April 1972	-
Research Report	15 April 1972	22 May 1972	5 weeks late
ICNAF Stat. 3 (Summary of Fishing Effort)	1 May 1972	13 July 1972	Use of form discontinued in 1972
Sampling Data	1 August 1972	-	No data reported

2. Deficiencies in Statistical Reports

STATLANT Forms were reasonably well prepared with a breakdown of the data by gear type, tonnage class, main species, division, month and species. However, catches in Div. 3P and 4V were not allocated to their corresponding subdivisions 3Pn, 3Ps, 4Vn and 4Vs. Also the only effort data provided was "Days Fished", whereas both "Hours Fished" and "Days Fished" are requested.

3. Deficiencies in Sampling

The following table shows the amount of sampling reported for publication in the Sampling Yearbook, relative to the nominal catches by French vessels in the ICNAF Area for 1971 (* = inadequate sampling; ** = no sampling or no data reported).

Species	Divisions or Subareas	Gear	Catch (000 tons)	Number Measured		No. of Ages	Comments
				Commercial	Research		
COD	1C-D	OT	3.6	-	-	-	**
	1E-F	OT	0.5	-	-	-	
	2G-J	OT	5.9	-	-	-	**
	3K-L	OT	3.5	-	-	-	**
	3M	OT	9.0	-	-	-	**
	3P	OT	2.7	-	-	-	**
	4R-T	OT	24.4	-	-	-	**
	4V	OT	0.6	-	-	-	

With reference to the minimum sampling requirement (i.e., 200 fish measurements per 1,000 tons of fish caught), no sampling of the cod fisheries by France (M) vessels were carried out in 1971.

4. Research Vessel Activities

See Item 4 under France (St. Pierre and Miquelon).

5. General Comments

In past years the French fleet was one of the major cod-fishing fleets in Subareas 1 to 4, yet no sampling of the commercial catches has been reported. Length and age compositions of the commercial catches by French vessels are urgently required, and high priority should be given to sampling in the northern divisions of Subarea 1 and in Division 3M, where sampling coverage of the fisheries is non-existent or very poor.

The work undertaken in recent years by the *Thalassa* on groundfish and environmental conditions is highly appreciated. In this connection, the continued need for pre-recruit surveys is stressed.

FRANCE (ST. PIERRE AND MIQUELON)

1. Promptness in Reporting Biostatistical Data

Report	Deadline	Received	Comment
STATLANT 21A	15 April 1972	20 April 1972	-
STATLANT 21B	15 June 1972	19 June 1972	-
ICNAF Stat. 4 (Discards and Industrial Fish)	15 July 1972	-	No report
Trawl Materials and Mesh Size Sampling	31 March 1972	-	No report
Annual Return of Infringements	31 March 1972	-	No report
Research Report	15 April 1972	22 May 1972	5 weeks late

Report	Deadline	Received	Comment
ICNAF Stat. 3 (Summary of Fishing Effort)	1 May 1972	9 May 1972	Use of this form discontinued in 1972
Sampling Data - cod, haddock, redfish, silver hake, American plaice, herring	1 August 1972	28 July 1972	-

2. Deficiencies in Statistical Reporting

STATLANT reports were generally well prepared with catch and effort data broken down into the various gears, tonnage classes, main species, months, divisions, etc., as required.

3. Deficiencies in Sampling

The following table shows the amount of sampling data reported for inclusion in the Sampling Yearbook, relative to the catches of France (SP) vessels fishing in the ICNAF Area for 1971 (* = inadequate sampling; ** = no sampling or no data reported).

Species	Divisions or Subareas	Gear	Catch (000 tons)	Number Measured		No. of Ages	Comments
				Commercial	Research		
COD	3P	OT	0.5	-	1,958	-	
		MISC	1.2	-	-	-	
HADDOCK	3P	OT	< 0.1	-	318	-	
	4V	OT	< 0.1	-	355	-	
REDFISH	3P	OT	1.4	-	11,654	1,639	
	4V	OT	0.3	-	3,102	264	
SILVER HAKE	4V-W	OT	-	-	2,600	363	
	5Y-Z	OT	-	-	2,932	455	
AMERICAN PLAICE	3	OT	1.1	-	2,853	-	
	4	OT	< 0.1	-	6,772	-	
HERRING	4V	OT	-	-	2,838	1,029	
	5Z	OT	-	-	2,039	389	

All sampling data reported were presumably obtained from the catches of research vessel surveys.

4. Research Activities

A research vessel, operating from the Saint Pierre Research Centre, carried out a number of surveys in Subareas 3, 4 and 5 during 1971. Hydrographic observations were obtained and biological studies made on herring, haddock, American plaice, silver hake and shrimp in various divisions. In particular, the R/V *Cryos* participated in the ICNAF larval herring survey program during the autumn of 1971.

5. General Comments

The research activities undertaken at the Saint Pierre Research Centre are greatly appreciated, and it is hoped that these can be continued in future years, particularly in relation to coordinated groundfish and pelagic fish survey programs being developed to obtain information on pre-recruits.

Length and age sampling of commercial catches of cod, redfish and American plaice would be appreciated.

FEDERAL REPUBLIC OF GERMANY

1. Promptness in Reporting Biostatistical Data

Report	Deadline	Received	Comment
STATLANT 21A	15 April 1972	19 April 1972	-
STATLANT 21B	15 June 1972	12 May 1972	-
ICNAF Stat. 4 (Discards and Industrial Fish)	15 July 1972	22 March 1972	-
Trawl Materials and Mesh Size Sampling	31 March 1972	6 March 1972	Nil return
Annual Return of Infringements	31 March 1972	4 April 1972	-
Research Report	15 April 1972	9 May 1972	3 weeks late
ICNAF Stat. 3 (Summary of Fishing Effort)	1 May 1972	18 July 1972	Use of this form discontinued in 1972
Sampling Data - cod length and age - herring length and age	 1 August 1972 1 August 1972	 10 March 1972 26 October 1972	 - Earlier submission of herring data not received

2. Deficiencies in Statistical Reports

STATLANT Forms were generally well prepared with the data broken down by gear, tonnage class, division (subdivision, where applicable), month and species. In some cases, the Main Species was designated, and in others it was given as "Mixed". Also, the only effort data provided was "Days Fished", whereas both "Hours Fished" and "Days Fished" are requested.

3. Deficiencies in Sampling

The following table shows the amount of sampling data reported for publication in the Sampling Yearbook, relative to the nominal catches by Fed. Rep. Germany vessels in the ICNAF Area for 1971 (* = inadequate sampling; ** = no sampling or no data reported).

Species	Divisions or Subareas	Gear	Catch (000 tons)	Number Measured		No. of Ages	Comment
				Commercial	Research		
COD	E Greenland	OT	?	3,198	-	1,278	-
	SE Greenland	OT	?	4,209	-	1,425	-
	1C-D	OT	14.7	6,785	2,720	1,646	-
	1E-F	OT	26.1	13,815	1,550	3,818	-
	2G-J	OT	19.7	-	-	-	**
	3K-L	OT	10.5	-	-	-	**
	3M	OT	1.6	-	-	-	
REDFISH	1A-F	OT	2.0	-	-	-	
HERRING	5Y	OT	1.7	-	-	-	
	5Z	OT	54.7	18,466	-	1,134	-
	6	OT	1.6	-	-	-	
MACKEREL	5	OT	1.2	-	-	-	
	6	OT	1.6	-	-	-	

With reference to the minimum sampling requirement (i.e., 200 fish measurements per 1,000 tons of fish caught), the length and age sampling of cod in Subarea 1 and herring in Subarea 5 was adequate with good seasonal coverage of the fisheries. However, there was no sampling of the commercial cod catches in Subarea 2 and Divisions 3K and 3L where substantial catches were made.

4. Research Vessel Activities

R/V *Walther Herwig* carried out selectivity experiments on cod in Subdivision 4Vn in August-September, participated in the ICNAF Larval Herring Survey in the Gulf of Maine-Georges Bank area during 31 October-12 November, and carried out groundfish surveys in Division 3K, Subarea 2 and Divisions 1C-F during 24 November-11 December 1971. Hydrographic observations were carried out on standard sections in most of the areas surveyed.

5. General Comments

Sampling of the cod catches by German (FR) vessels in Subarea 1 has generally been very good, and information on maturation, spawning and migration, in addition to lengths and ages, is highly appreciated. It is extremely important that this be continued, since the German (FR) fleet is the most important one exploiting the Subarea 1 cod stocks.

The sampling of commercial cod catches by German (FR) vessels in Divisions 2J, 3K and 3L has generally been non-existent or data, if available, have not been reported to ICNAF. It is extremely important that a sampling program be initiated for the cod fishery in these divisions as soon as possible, and also in Division 3M where overall sampling has been generally poor or non-existent.

Although the German (FR) catch of mackerel in Subareas 5 and 6 has been very small, it is important that sampling of this species be started and expanded if catches increase in the future.

Sampling of commercial herring catches on Georges Bank has generally been adequate.

Environmental studies and larval and demersal surveys by German (FR) research vessels have provided much valuable information on the state of the various fish stocks, and it is hoped that these will continue and be expanded in future years.

ICELAND

1. The Icelandic fishery in the ICNAF Area in 1971 was at a very low level, the total catch of all species being only 284 tons. STATLANT 21A and 21B reports were received on 9 May and 4 July 1972, respectively, and other statistical returns, received on 27 March 1972, indicated that no data were available due to the low level of fishing activity.

2. Should the fishing activity by Icelandic vessels increase in the future, it would be greatly appreciated if length and age sampling of the fisheries were undertaken to fulfill the minimum sampling requirements as set out in the memorandum covering this report.

ITALY

Since no biostatistical reports were received for 1971, the Secretariat is not aware of any fishing activity by Italian vessels in the ICNAF Area during 1971.

JAPAN

1. Promptness in Reporting Biostatistical Data

Report	Deadline	Received	Comment
STATLANT 21A	15 April 1972	5 May 1972	3 weeks late
STATLANT 21B	15 June 1972	26 September 1972	15 weeks late
ICNAF Stat. 4 (Discards and Industrial Fish)	15 July 1972	5 May 1972	-
Trawl Materials and Mesh Size Sampling	31 March 1972	5 May 1972	5 weeks late
Annual Return of Infringements	31 March 1972	8 June 1972	10 weeks late
Research Report	15 April 1972	5 May 1972	3 weeks late
ICNAF Stat. 3 (Summary of Fishing Effort)	1 May 1972	8 June 1972	Use of this form discontinued in 1972
Sampling Data - lengths of cod, haddock, redfish, silver hake, red hake, herring, mackerel, argentines, butterfish and squid	1 August 1972	3 October 1972	9 weeks late

2. Deficiencies in Statistical Reports

STATLANT Forms were generally well prepared with the catch and effort data broken down by gear, tonnage class, divisions (subdivisions, where applicable), month and species. However, while data for "Hours Fished" was provided, none were given for "Days Fished" as required. Also, while the space to list "Molluscs" and "Crustaceans" on STATLANT 21B is limited, it would be useful to designate the species of Crustaceans and Molluscs, using the bottom margin of the form, if necessary.

3. Deficiencies in Sampling

The following table shows the amount of sampling reported for publication in the Sampling Yearbook, relative to the nominal catches by Japanese vessels in the ICNAF Area for 1971 (* = inadequate sampling; ** = no sampling or no data reported).

Species	Divisions or Subareas	Gear	Catch (000 tons)	Number Measured Commercial	Number Measured Research	No. of Ages	Comments
COD	4V	OT	+	111	-	-	-
	5Y-Z	OT	+	27	-	-	-
HADDOCK	4V-W	OT	+	108	-	-	-
	5Y-Z	OT	+	149	-	-	-
REDFISH	3K-M	OT	4.0	1,950	-	-	-
	3N-O	OT	1.3	212	-	-	-
	3P	OT	2.5	1,420	-	-	-
	4V-X	OT	1.2	450	-	-	-
SILVER	5Y-Z	OT	0.1	1,206	-	-	-
HAKE	6A-C	OT	+	353	-	-	-
RED HAKE	6	OT	+	201	-	-	-
HERRING	5Z	OT	2.4	2,293	-	-	-
MACKEREL	6	OT	0.8	199	-	-	-
ARGENTINE	4V-X	OT	3.2	892	-	-	-
	5Y-Z	OT	5.4	2,237	-	-	-

Species	Divisions or Subareas	Gear	Catch (000 tons)	Number Measured Commercial	Number Measured Research	No. of Ages	Comments
BUTTERFISH	5Z	OT	1.0	315	-	-	-
	6	OT	4.8	1,849	-	-	-
SQUID	5Z	OT	4.7	704	-	-	-
	6	OT	5.9	2,358	-	-	-

With reference to the minimum sampling requirement (i.e., 200 fish measurements per 1,000 tons of fish caught), the length sampling of the various species fisheries by Japanese vessels in 1971 was generally adequate. However, no age composition data were reported, and these are essential for assessment purposes.

4. Research Vessel Activities

None indicated in the Research Report.

5. General Comments

Age composition data of the various fish species sampled are very important for assessment purposes and future submissions of sampling data should include them. Also, it is urgently stressed that the earlier reporting of STATLANT 21B statistics and sampling data is essential to avoid unnecessary delay in the preparation and publication of the ICNAF Statistical Bulletin and the Sampling Yearbook.

NORWAY

1. Promptness in Reporting Biostatistical Data

Report	Deadline	Received	Comment
STATLANT 21A	15 April 1972	12 May 1972	4 weeks late
STATLANT 21B	15 June 1972	11 August 1972	8 weeks late
ICNAF Stat. 4 (Discards and Industrial Fish)	15 July 1972	-	No report
Trawl Material and Mesh Size Sampling	31 March 1972	27 July 1972	No data to report
Annual Return of Infringements	31 March 1972	-	No report
Research Report	15 April 1972	-	No report
ICNAF Stat. 3 (Summary of Fishing Effort)	1 May 1972		Use of form discontinued in 1972
Sampling Data	1 August 1972	-	No report

2. Deficiencies in Statistical Reporting

Otter trawl catch and effort data on STATLANT 21B were generally well prepared with the necessary breakdowns by gear, tonnage class, main species, division (or subdivision, where applicable), month and species. However, no effort data was provided for nominal catches by gillnets and longlines, nor were these catches given by divisions; rather the catches were reported from Subarea 1 (NK) in the case of the West Greenland fishery and from Subareas 2 and 3 (NK) in the case of the Newfoundland-Labrador fishery.

3. Deficiencies in Sampling

The following table shows the amount of sampling data reported for publication in the Sampling Yearbook, relative to the nominal catches by Norwegian vessels in the ICNAF Area for 1971 (* = inadequate sampling; ** = no sampling or no data reported).

Species	Divisions or Subareas	Gear	Catch (000 tons)	Number Measured Commercial	Number Measured Research	No. of Ages	Comment
COD	1C-D	OT	1.6	-	-	-)	
	1E-F	OT	0.6	-	-	-)	**
	1 (NK)	LL, GN	4.0	-	-	-)	
	2G-J	OT	5.6	-	-	-	**
	3K-L	OT	2.2	-	-	-	**
	3 (NK)	LL	18.5	-	-	-	**
GREENLAND HALIBUT	1	LL	1.2	-	-	-	

With reference to the minimum sampling requirement (i.e., 200 fish measurements per 1,000 tons of fish caught), Norway did not report any length and age sampling of cod catches in 1971.

4. Research Vessel Activities

Norway did not submit a Research Report for 1971 and, consequently, the Secretariat has no information on research carried out.

5. General Comments

Norwegian sampling of commercial catches in Subarea 1 has been virtually non-existent in recent years, although some sampling was carried out in some years in the 1960's. Also, no sampling has been carried out in Subareas 2 and 3, where substantial longline fisheries are carried on.

It would be greatly appreciated if Norway could make a special effort to fulfill the minimum sampling requirements. This is especially important because the Norwegian fisheries are conducted by long-lines and gillnets, as well as otter trawl, and the length and age composition of catches by the different gears may differ considerably from those of other fleets.

It is also important that Norway make every effort to allocate on STATLANT 21A and 21B forms the nominal catch data of the longline fleet to ICNAF Divisions (or subdivisions, where applicable) and also provide at least one of the required effort measures (e.g. Days Fished, if Hours Fished, or Hooks Fished cannot be given). The submission of nominal catch data from Subareas 2 and 3 (NK) (as was the case for 1971 data) presents difficulties in the allocation of these catches to one or the other of the Subareas for automatic data processing at the Secretariat.

POLAND

1. Promptness in Reporting Biostatistical Data

Report	Deadline	Received	Comment
STATLANT 21A	15 April 1972	8 June 1972	8 weeks late
STATLANT 21B	15 June 1972	27 July 1972	6 weeks late
ICNAF Stat. 4 (Discards and Industrial Fish)	15 July 1972	9 August 1972	3 weeks late
Trawl Materials and Mesh Size Sampling	31 March 1972	19 April 1972	3 weeks late
Annual Return of Infringements	31 March 1972	19 April 1972	3 weeks late
Research Report	15 April 1972	10 May 1972	3 weeks late
ICNAF Stat. 3 (Summary of Fishing Effort)	1 May 1972	10 May 1972	The use of this form was discontinued in 1972
Sampling Data - cod and herring	1 August 1972	18 July 1972	-
Sampling Data - redfish and mackerel	1 August 1972	6 September 1972	5 weeks late

2. Deficiencies in Statistical Reports

STATLANT Forms were well prepared and the data well organized with the necessary breakdowns by gears, tonnage classes, divisions (or subdivisions, where applicable), months and by species. The major deficiency was that the catch and effort data (on STATLANT 21B) were not reported by Main Species, the appropriate space on the forms being left blank. Consequently, when the data were published in Statistical Bulletin Vol. 21, Tables 4 and 5, the catch/effort data are designated as "MIX" in the "Main Species" column.

3. Deficiencies in Sampling

(a) The following table shows the amount of sampling data reported for publication in the Sampling Yearbook, relative to the nominal catches by Polish vessels in the ICNAF Area for 1971 (* = inadequate sampling; ** = no sampling or no data reported).

Species	Divisions or Subareas	Gear	Catch (000 tons)	Number Measured		No. of Ages	Comment
				Commercial	Research		
COD	2G-J	OT	17.0	16,859	-	-	No ages reported
	3K-L	OT	12.2	3,182	-	-	" " "
	Other Div.	OT	0.1	-	-	-	
REDFISH	2G-J	OT	0.8	1,295	-	285	-
	3K-M	OT	6.1	-	-	-	**
	3N-O	OT	0.2	293	-	104	-
	4V-X	OT	1.3	-	-	-	**
	5Y-Z	OT	0.1	903	-	197	-
GREENLAND HALIBUT	2	OT	2.4	-	-	-	**
	3	OT	2.8	-	-	-	**
WITCH	2	OT	1.0	-	-	-	**
	3	OT	4.4	-	-	-	**
HERRING	5Z	OT	69.1	13,267	7,435	1,590	-
	6	OT	19.2	4,383	-	1,134	-
MACKEREL	5Z	OT	43.7	8,130	-	1,281	*
	6	OT	68.6	6,499	-	1,191	*
OTHER FISH (mostly not specified)	1-5	OT	12.3				
	6	OT	8.4				

With reference to the minimum sampling requirements (i.e., 200 fish measured per 1,000 tons of fish caught), the following observations can be made:

Cod - length sampling was generally adequate, but no age data were submitted.

Redfish - no sampling data reported for Div. 3K-M where most of the fish were caught. Also the data reported were not given by sexes as required.

Herring - length and age sampling were generally adequate.

Mackerel - length sampling was less than the minimum requirement, especially in Statistical Area 6.

Greenland Halibut and Witch - caught in Subareas 2 and 3 were either not sampled or no data reported.

Other Fish - more than 20,000 tons of other fish were caught in Subareas 1-5 and Statistical Area 6, of which 16,200 tons were reported as "Other Fish - Not Specified".

(b) The Polish Research Report for 1971 (Redbook 1972, Part II) indicates that ages were obtained for cod in Subarea 2 and Div. 3K. The Report also shows that redfish were sampled for length and age in Div. 3K and in Subarea 4, some American plaice in Div. 3K and 3L and some yellowtail in Subarea 5. However, none of these data were reported to the Secretariat for inclusion in Sampling Yearbook Vol. 16, for the year 1971.

4. Research Vessel Activities

While research vessel operations were carried out in the region of Georges Bank in the autumn of 1971, specifically in connection with the Herring Larval Survey Program, no research vessel data, except for some hydrographic observations in Subareas 3 and 4, were reported for other subareas.

There is the need for young fish surveys (especially cod) in Subarea 2 and Div. 3K and 3L, as well as more intensified research on mackerel in Subareas 5 and 6.

PORTUGAL

1. Promptness in Reporting Biostatistical Data

Report	Deadline	Received	Comment
STATLANT 21A	15 April 1972	11 April 1972	-
STATLANT 21B	15 June 1972	11 April 1972	-
ICNAF Stat. 4 (Discards and Industrial Fish)	15 July 1972	11 April 1972	-
Trawl Materials and Mesh Size Sampling	31 March 1972	11 April 1972	1-1/2 weeks late
Annual Return of Infringements	31 March 1972	11 April 1972	1-1/2 weeks late
Research Report	15 April 1972	2 May 1972	2-1/2 weeks late
ICNAF Stat. 3 (Summary of Fishing Effort)	1 May 1972	11 April 1972	-
Sampling Data - cod length and age	1 August 1972	2 May 1972	-

2. Deficiencies in Statistical Reports

STATLANT Forms were well prepared and the data well organized with the necessary breakdowns by gears, tonnage classes, divisions (or subdivisions, where applicable), months and species.

3. Deficiencies in Sampling

(a) The following table shows the amount of sampling data reported for publication in the Sampling Yearbook, relative to the nominal catches by Portuguese vessels in the ICNAF Area for 1971 (* = inadequate sampling; ** = no sampling or no data reported).

Species	Divisions or Subareas	Gear	Catch (000 tons)	Number Measured Commercial	Number Measured Research	No. of Ages	Comment
COD	1C-D	OT	1.2	-	-	-	
		DV	5.0	-	-	-	**
	2G-J	OT	34.3	2,900	-	700	*
	3K-L	OT	61.9	6,395	-	1,115	*
		DV	17.8	-	-	-	**
	3M	OT	7.3	-	-	-	**
	3N-O	DV	6.5	-	-	-	**
	3P	OT	1.1	-	-	-	

Species	Divisions or Subareas	Gear	Catch (000 tons)	Number Measured Commercial	Number Measured Research	No. of Ages	Comment
COD	4R-T	OT	17.1	-	-	-	**
	Other Div.	OT	0.3	-	-	-	
OTHER SPECIES			NIL				

With reference to the minimum sampling requirements (i.e., 200 fish measured per 1,000 tons of fish caught), the following observations can be made:

Cod - both length and age sampling was inadequate in the areas where some sampling was carried out;
- otter trawl sampling was restricted to the second and third quarters of the year, but over 60,000 tons of cod were taken in the first and fourth quarters in all areas;
- there was no sampling of DV (dory vessel gear, lines and gillnets) catches in any area.

(b) The Portuguese Research Report for 1971 (Redbook 1972, Part II) indicates that 1,000 length measurements were taken in May 1971 in Div. 1C-E, but these data were not submitted for inclusion in the Sampling Yearbook.

4. Research Vessel Activities

None.

5. General Comments re Sampling

While some sampling of the Portuguese otter trawl catches have been reported from various ICNAF Divisions, where the main fisheries take place, from year to year, information on DV (dory vessel) fishing is lacking. The importance of sampling catches by the DV fleet is stressed because of the probable difference in age composition between catches by various gears. This may be especially true for dory vessels which use several gears, gillnets, handlines, longlines, etc. Therefore, age sampling, preferably stratified, is very important for these catches. The above comments re DV sampling pertains to the fisheries in the various divisions of Subareas 1 and 3.

More intensified sampling of otter trawl catches is stressed for Subareas 1, 2, 3, and 4.

ROMANIA

1. Promptness in Reporting Biostatistical Data

Report	Deadline	Received	Comment
STATLANT 21A	15 April 1972	-	No report
STATLANT 21B	15 June 1972	10 July 1972	3-1/2 weeks late
ICNAF Stat. 4 (Discards and Industrial Fish)	15 July 1972	-	No report
Trawl Materials and Mesh Size Sampling	31 March 1972	-	No report
Annual Return of Infringements	31 March 1972	-	No report
Research Report	15 April 1972	-	No report
ICNAF Stat. 3 (Summary of Fishing Effort)	1 May 1972	-	Use of this form discontinued in 1972
Sampling Data	1 August 1972	-	No report

2. Deficiencies in Statistical and Sampling

As noted in Item 1 above, the only report submitted (except for List of Vessel data) was STATLANT 21B catch/effort statistics. These forms were generally well prepared with the data broken down into the required categories of gear, tonnage class, main species, division, etc.

With regard to sampling of the commercial catches, Romanian vessels caught a total of 12,000 tons in the ICNAF Area in 1971 of which the most important species catches were 4,500 tons of mackerel from Subareas 5 and 6 and 2,800 tons of cod from Subareas 2 and 3, but no sampling data were reported.

3. Research Vessel Activities

No Research Report was received and the Secretariat has no information about research carried out.

4. General Comments

It is important that Romania participate in the scientific activities of ICNAF by initiating the collection and reporting of data and information about its fisheries in the ICNAF Area, especially length and age sampling of the catches and any other types of data required to meet the requirements as specified in Item 1 above and in the memorandum covering this report.

SPAIN

1. Promptness in Reporting Biostatistical Data

Report	Deadline	Received	Comment
STATLANT 21A	15 April 1972	13 April 1972	-
STATLANT 21B	15 June 1972	12 May 1972	-
ICNAF Stat. 4 (Discards and Industrial Fish)	15 July 1972	14 June 1972	-
Trawl Materials and Mesh Size Sampling	31 March 1972	13 July 1972	15 weeks late
Annual Return of Infringements	31 March 1972	8 June 1972	10 weeks late
Research Report	15 April 1972	26 April 1972	1-1/2 weeks late
ICNAF Stat. 3 (Summary of Fishing Effort)	1 May 1972	8 June 1972	Use of form discontinued in 1972
Sampling Data - cod length and age	1 August 1972	26 April 1972	-

2. Deficiencies in Statistical Reports

STATLANT Forms were generally well prepared with the data broken down by tonnage classes, divisions (or subdivisions, where applicable), months and species. While a gear distinction was made for "Pair Trawler" and "Otter Trawler", the latter was not designated as "Side" or "Stern" as required.

On the STATLANT 21B submission for 1971 all Pair Trawlers are grouped in the 151-500 ton class; yet in the ICNAF "List of Vessels, 1971", Table 5, Pair Trawlers range in size from about 200 to 1,400 gross tons, with 30 vessels in the 501-900 class and 11 vessels in the 901-1,800 class. This is a major discrepancy which should be corrected in future statistical reports.

3. Deficiencies in Sampling

The following table shows the amount of sampling reported for publication in the Sampling Yearbook, relative to the nominal catches by Spanish vessels in the ICNAF Area for 1971 (* = inadequate sampling; ** = no sampling or no data reported).

Species	Divisions or Subareas	Gear	Catch (000 tons)	Number Measured Commercial	Number Measured Research	No. of Ages	Comments
COD	1A-B	PT	1.6	-	-	-	**
	1C-D	PT	19.8	-	-	-	**
	1E-F	PT	0.6	-	-	-	
	2G-J	OT	5.6	-	-	-	**
	3K-L	OT	14.0	2,145	-	93	*
		PT	45.1	-	-	-	**
	3M	OT, PT	1.1	-	-	-	
	3N-O	PT	89.8	-	-	-	**
	3P	OT	2.5	2,459	-	94	-
		PT	16.8	-	-	-	**
	4R-T	OT	5.7	-	-	-	**
	4V	OT	8.4	4,829	-	267	
		PT	19.9	-	-	-	**
	4W	PT	12.8	-	-	-	**
	4X	PT	2.6	-	-	-	**
	5Y-Z	PT	7.6	-	-	-	**
HADDOCK	3	OT	3.1	-	-	-	**
	4	PT	3.1	-	-	-	**
	5	PT	1.3	-	-	-	
SQUIDS	5-6	OT	4.2	-	-	-	**

With reference to the minimum sampling requirements (i.e., 200 fish measured per 1,000 tons of fish caught), the following observations can be made:

Cod - both length and age sampling was inadequate in the areas where some sampling was carried out;
- otter trawl sampling was restricted to the first and second quarters only (actually February, March and April);
- there was no sampling of Pair Trawl catches in any part of the ICNAF Area, although Pair Trawlers caught more than 85% of the cod catches by Spanish vessels.

4. Research Vessel Activities

None.

5. General Comments re Sampling

The Spanish fleet is one of the most important components in the offshore cod fisheries of Subareas 1 to 4. Fishing by pair trawlers have become increasingly important (in 1971 pair trawlers caught 218,000 tons in the ICNAF Area), yet no sampling takes place. Since the pair trawler fleet operates in certain divisions poorly covered by sampling (e.g. Div. 3N and 3O), it is highly important that length sampling be started and the minimum ICNAF requirements fulfilled as soon as possible. Adequate age sampling should also be carried out in conjunction with the length sampling program.

Information on discards (both quantities and size compositions) is also needed.

USSR

1. Promptness in Reporting Biostatistical Data

Report	Deadline	Received	Comment
STATLANT 21A	15 April 1972	25 May 1972	6 weeks late
STATLANT 21B	15 June 1972	15 August 1972	8 weeks late
ICNAF Stat. 4 (Discards and Industrial Fish)	15 July 1972	15 August 1972	4 weeks late

Report	Deadline	Received	Comment
Trawl Materials and Mesh Size Sampling	31 March 1972	6 April 1972	-
Annual Return of Infringements	31 March 1972	6 April 1972	-
Research Report	15 April 1972	9 May 1972	3 weeks late
ICNAF Stat. 3 (Summary of Fishing Effort)	1 May 1972	15 August 1972	Use of this form discontinued in 1972
Sampling Data - length and age data for cod, silver hake, red hake, herring and mackerel, and length data for redfish and alewifes)	1 August 1972	9 May 1972	-

2. Deficiencies in Statistical Reporting

STATLANT Forms were generally well prepared with the catch and effort data broken down by gear, tonnage class, division, month and species. However, the following observations can be made:

(a) There was no breakdown by "Main Species", the appropriate space on the form being left blank, and consequently, the data were published in Tables 4 and 5 of Statistical Bulletin, Vol. 21, as "MIX" under the "Main Species" column.

(b) In the case of data from Div. 3P and 4V, the appropriate subdivisions were not provided (see footnote on pages 67 and 84 of Statistical Bulletin, Vol. 21).

(c) In the case of reporting by divisions or subdivisions, nearly 53,800 tons of fish taken in Subarea 5 were not allocated to divisions or subdivisions but reported as Subarea 5 (NK), and more than 4,000 tons were likewise unallocated by divisions in Statistical Area 6.

(d) An unusually large quantity of fish was reported as "Miscellaneous Marine Fishes, not specified": quantities were 3,000 tons, 5,300 tons, 11,800 tons and 8,700 tons in Subareas 2, 3, 4 and 5, respectively, and 3,700 tons in Statistical Area 6.

(e) Although the amount of space on the STATLANT forms for listing species of Shellfish is limited, it would be very helpful to list the catches by species, utilizing the bottom margin of the form, if necessary.

3. Deficiencies in Sampling

The following table shows the amount of sampling reported for publication in the Sampling Yearbook, relative to the nominal catches by USSR vessels in the ICNAF Area for 1971 (* = inadequate sampling; ** = no sampling or no data reported).

Species	Divisions or Subareas	Gear	Catch (000 tons)	Number Measured		No. of Ages	Comment
				Commercial	Research		
COD	2G-J	OT	61.6	-	74,028	300	-
	3K-L	OT	19.1	-	11,716	300	-
	3M	OT	5.5	-	-	-	**
	3N-O	OT	19.3	-	-	-	**
	4W	OT	4.3	-	-	-	**
	5Y-Z	OT	1.3	-	-	-	
REDFISH	2G-J	OT	5.5	-	2,751	-	-
	3K-M	OT	10.9	-	-	-	**
	3N-O	OT	42.3	-	-	-	**
	3P	OT	18.0	-	-	-	**
	4V-X	OT	20.5	-	-	-	**
	5Y-Z	OT	3.4	-	-	-	**

Species	Divisions or Subareas	Gear	Catch (000 tons)	Number Measured		No. of Ages	Comments
				Commercial	Research		
SILVER HAKE	4V-X	OT	128.6	11,924	-	1,528	-
	5Y-Z	OT	81.5	35,750	-	2,785	-
	6A-C	OT	7.0	9,236	-	1,042	-
AMERICAN PLAICE	2	OT	1.7	-	-	-	
	3	OT	19.6	-	-	-	**
	4	OT	6.7	-	-	-	**
YELLOWTAIL	3	OT	13.1	-	-	-	**
	4	OT	0.7	-	-	-	
	5	OT	0.9	-	-	-	
GREENLAND HALIBUT	2	OT	7.4	-	-	-	**
	3	OT	1.8	-	-	-	
WITCH	2	OT	0.9	-	-	-	
	3	OT	15.9	-	-	-	**
	4	OT	11.0	-	-	-	**
	5	OT	2.7	-	-	-	**
RED HAKE	5	OT	25.4	13,415	-	766	-
	6	OT	8.3	1,616	-	-	-
HERRING	4V	OT	1.7	-	-	-)	**
		PS	4.0	-	-	-)	
	4W-X	OT	5.9	2,233	-	679)	*
		PS	17.5	-	-	-)	
	5Z	OT	48.9	21,601	-	1,882)	_
		PS	15.0	-	-	-)	
	6	OT	17.4	2,129	-	893	*
MACKEREL	4	OT	9.5	-	-	-	**
	5	OT	54.0	-	-	-	**
		PS	5.1	-	-	-	**
	6	OT	68.8	-	-	-	**
ROUNDNOSE GRENADIER	1	OT	4.1	-	-	-	**
	2	OT	55.8	-	-	-	**
	3	OT	18.4	-	-	-	**
ALEWIFE	5	OT	9.0	-	-	-)	**
	6	OT	2.3	-	-	-)	
SQUIDS	4	OT	7.2	-	-	-)	**
	5	OT	5.7	-	-	-)	

With reference to the minimum sampling requirement (i.e., 200 fish measurements per 1,000 tons of fish caught), the following general observations can be made:

(a) Except for the small number of ages for cod in Div. 2G-J and 3K-L, and no ages for redfish in Div. 2G-J, length and age sampling generally exceeded the minimum sampling requirement.

(b) No sampling data were reported for the areas and species designated by ** above, although nominal catches were quite large in several instances.

(c) Sampling of cod was designated as research sampling rather than commercial sampling; in such cases, some indication should be given as to how representative the research samples are to the catches by the fishing fleet.

4. Research Vessel Activities

From the USSR Research Report for 1971, indications are that USSR extensively conducted environmental and biological studies in all Subareas of the ICNAF Area. In particular, USSR survey vessels participated in ICNAF Coordinated Groundfish Surveys and in ICNAF Herring Larval Surveys. Their contribution to the ICNAF Research Program is greatly appreciated.

5. General Comments

While USSR sampling has generally been carried out extensively in many parts of the ICNAF Area on a variety of species, there are many gaps in the sampling program (or reporting of sampling data) as indicated in the table of paragraph 3 above. It would be highly appreciated if sampling could be undertaken as soon as possible on the cod stocks in Div. 3M and 3N-O, redfish in parts of Subareas 3 and 4, American plaice and yellowtail in Subarea 3, witch in Subareas 3 and 4, and mackerel in all areas where they are caught. Also, information on any other species sampled would be highly appreciated.

Regarding the submission of Statistical Reports, any attempt to speed up the submission of the data would be appreciated. Because of the time lag of several weeks between the mailing of reports and their receipt at the Secretariat, when these are sent by surface mail, the delays indicated in paragraph 1 could probably be reduced or eliminated if Airmail services were used.

UNITED KINGDOM

1. Promptness in Reporting Biostatistical Data

Report	Deadline	Received	Comment
STATLANT 21A	15 April 1972	17 April 1972	-
STATLANT 21B	15 June 1972	4 July 1972	3 weeks late
ICNAF Stat. 4 (Discards and Industrial Fish)	15 July 1972	14 February 1972	Nil Return
Trawl Materials and Mesh Size Sampling	31 March 1972	31 January 1972	Nil Return
Annual Return of Infringements	31 March 1972	31 January 1972	Nil Return
Research Report	15 April 1972	10 April 1972	-
ICNAF Stat. 3 (Summary of Fishing Effort)	1 May 1972	17 April 1972	Use of this form discontinued in 1972
Sampling Data	1 August 1972	-	None reported

2. Deficiencies in Statistical Reporting

STATLANT Forms were generally well prepared with the data broken down by gear, tonnage class, main species, division (or subdivision, where applicable), month and species. Also, both "Hours Fished" and "Days Fished" were reported.

Nil Returns were submitted for three of the statistical reports as noted in Item 1 above.

3. Deficiencies in Sampling

The total fish catch in the ICNAF Area by UK vessels amounted to 7,700 tons, of which 2,400 tons of cod were taken in Subarea 1 and 4,600 tons in Divisions 3K and 3L. However, no sampling data were reported for inclusion in the Sampling Yearbook.

4. Research Vessel Activities

UK scientists, in collaboration with Danish fishery workers, continued their investigations of the West Greenland salmon fishery in 1971. These included the collection of samples for serological studies and experimental drift-netting in preparation for the 1972 International Salmon Tagging Experiment.

5. General Comments

Although the UK cod fishery in Subarea 1 has decreased considerably in the most recent years, it is still important that sampling of the commercial catches be maintained, at least at a level to fulfill the minimum sampling requirements. This also applies to UK fishing in Subareas 2 and 3.

The most recent surveys by UK research vessels is highly appreciated, and their continued participation in groundfish surveys, especially for pre-recruit cod, is stressed.

UNITED STATES

1. Promptness in Reporting Biostatistical Data

Report	Deadline	Received	Comment
STATLANT 21A	15 April 1972	2 May 1972	3 weeks late
STATLANT 21B	15 June 1972	22 June 1972	-
ICNAF Stat. 4 (Discards and Industrial Fish)	15 July 1972	-	Report not received
Trawl Materials and Mesh Size Sampling	31 March 1972	9 February 1972	-
Annual Return of Infringements	31 March 1972	9 February 1972	-
Research Report	15 April 1972	15 May 1972	4 weeks late
ICNAF Stat. 3 (Summary of Fishing Effort)	1 May 1972	14 May 1972	Use of this form discontinued in 1972
Sampling Data			
- herring	1 August 1972	2 March 1972	-
- groundfish	1 August 1972	7 August 1972	-

2. Deficiencies in Statistical Reporting

Catch and effort data were reported on computer printout sheets and sets of punched cards submitted as requested by the Secretariat. The editing and compilation of the US data at the Secretariat required very little effort as the data were submitted in the format (both card layout and codes) as devised and used by ICNAF. The only significant deficiency is the absence of data for "Hours Fished".

3. Deficiencies in Sampling

The following table shows the amount of sampling data reported for publication in the Sampling Yearbook, relative to the nominal catches by US vessels in the ICNAF Area for 1971 (* = inadequate sampling; ** = no sampling or no data reported).

Species	Divisions or Subareas	Gear	Catch (000 tons)	Number Measured		No. of Ages	Comments
				Commercial	Research		
COD	5Y	OT	5.2	-	-	-)	**
		Oth.	2.2	-	-	-)	
	5Z	OT	13.2	4,425	-	-	-
		Oth.	2.6	-	-	-	**
HADDOCK	4W-X	OT	1.2	-	-	-	
	5Y-Z	OT	8.5	11,542	-	2,300	-
REDFISH	4R-T	OT	4.7	3,000	-	-	-
	4V-X	OT	6.3	3,600	-	-	-
	5Y-Z	OT	16.3	7,400	-	-	-

Species	Divisions or Subareas	Gear	Catch (000 tons)	Number Measured Commercial	Number Measured Research	No. of Ages	Comments
SILVER HAKE	5	OT	13.3	3,059	-	-	-
	6	OT	3.0	-	-	-	**
AMERICAN PLAICE	5	OT	2.2	-	-	-	**
YELLOWTAIL	5	OT	22.3	20,157	-	8,617	-
	6	OT	6.9	-	-	-	*
WITCH	5	OT	3.2	-	-	-	**
WINTER FLOUNDER	5	OT	10.4	-	-	-	**
	6	OT	1.4	-	-	-	
POLLOCK	5	OT	4.7	-	-	-	**
RED HAKE	5	OT	2.8	2,092	-	-	-
	6	OT	0.8	695	-	-	-
HERRING	5Y	...	31.5	9,226	-	9,226	-
	5Z	...	2.4	1,050	-	1,051	-
	6	...	1.4	305	-	305	-
MACKEREL	5	...	1.6	-	-	-	
	6	...	0.8	-	-	-	

With reference to the minimum sampling requirement (i.e., 200 fish measurements per 1,000 tons of fish caught), the following observations can be made:

Cod - no data reported for gears other than OT, no data for Div. 5Y, and no age compositions;
Haddock - sampling in Div. 5Y-Z exceeds the minimum request;
Redfish - length sampling adequate but no age data reported;
Silver hake - no age data reported;
Yellowtail - sampling was very adequate in Subarea 5 but no data reported for Statistical Area 6;
Other flounders - no sampling data reported;
Pollock - no sampling data reported;
Herring - sampling exceeded minimum requirement;
Mackerel - no sampling data reported.

4. Research Vessel Activities

Research activities in 1971 are summarized in the US Research Report (Redbook 1972, Part II). The Report indicates that surveys were carried out to study environmental conditions in Subarea 4, 5 and 6, and the biology and ecology of important commercially-exploited species in the various parts of these Subareas. Of particular importance to ICNAF was US research vessel participation in the ICNAF joint herring larval survey during the autumn.

5. General Comments

The Secretariat is grateful for the cooperation received from United States statistical personnel concerning their efforts to submit US catch and effort data for 1971 in a format which conformed with that used by ICNAF in the coding of such data. It is hoped that this collaboration will continue for future submissions.

Regarding deficiencies in sampling, it would be greatly appreciated if sampling could be improved to at least fulfill the minimum ICNAF sampling requirement for species and/or areas not currently covered by the US sampling program. These include the reporting of age data for cod, redfish, silver hake and red hake, and both length and age data for pollock, mackerel and various species of flounders, except yellowtail.

Continued US participation in coordinated groundfish and herring larval surveys will be greatly appreciated.

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