

INTERNATIONAL COMMISSION

**FOR THE
NORTHWEST ATLANTIC FISHERIES**



ANNUAL PROCEEDINGS

Vol. 19

for the year

1968-69

Issued from the Headquarters of the Commission

Dartmouth, N. S., Canada

1969

Letter of Transmittal

The Chairman of the International Commission for the Northwest Atlantic Fisheries presents his compliments to the Governments signatory of the International Convention for the Northwest Atlantic Fisheries signed at Washington under date of 8 February 1949, and to the Commissioners and Observers representing those Governments and has the honour to transmit herewith annual proceedings of the International Commission for the Northwest Atlantic Fisheries for the year 1968-69.

This is the 19th annual report of proceedings of the Commission and is an authoritative record of its activities and achievements from 1 July 1968 to 30 June 1969. The report contains an account of the activities of the Commission's Secretariat; an account of the 19th Annual Meeting; summaries of research carried out in each of the five Convention subareas; new Rules of Procedure for the Commission and for the Panels adopted by the 19th Annual Meeting to be effective on 7 June 1969.

This report is prepared and transmitted conformity with the requirements of Article VI (1) (f) of the International Convention for the Northwest Atlantic Fisheries and Rules 3.2 (g) and 9.1 of the Rules of Procedure of the Commission.

A handwritten signature in black ink, appearing to read 'V. M. Kamentsev', is written over a horizontal line.

V. M. Kamentsev,
Chairman,
International Commission for the
Northwest Atlantic Fisheries.

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PART 1

Administrative Report for the Year Ending 30 June 1969

I. The Commission's Officers

Chairman of Commission	—	Mr V. M. Kamentsev (USSR)
Vice-Chairman of Commission	—	Dr A. W. H. Needler (Canada)
Chairman of Panel 1	—	Mr O. Lund (Norway)
Chairman of Panel 2	—	Mr G. Möcklinghoff (Fed. Rep. Germany)
Chairman of Panel 3	—	Dr F. Chrzan (Poland)
Chairman of Panel 4	—	Captain T. de Almeida (Portugal)
Chairman of Panel 5	—	Mr T. A. Fulham (USA)
Chairman of Panel A (Seals)	—	Mr H. J. Lassen (Denmark)

These officers, with two exceptions, were elected at the 1967 Annual Meeting to serve for a period of 2 years. At the 1968 Annual Meeting, Mr G. Möcklinghoff was elected Chairman of Panel 2, replacing Mr W. C. Tame (UK), and Mr H. J. Lassen was elected Chairman of Panel A to serve for a period of 2 years.

Chairman of Standing Committee on Research and Statistics	—	Mr Sv. Aa. Horsted (Denmark)
Chairman of Standing Committee on Finance and Administration	—	Mr R. W. Green (USA)
Chairman of Standing Committee on Regulatory Measures	—	Mr J. Graham (UK)

The Chairmen of Research and Statistics and Finance and Administration were elected at the 1967 Annual

Meeting to serve for a period of 1 year and were unanimously re-elected at the 1968 Annual Meeting. The Chairman of the Standing Committee on Regulatory Measures was elected at the first meeting of the Committee, 30 January 1968.

2. Panel Memberships for 1968 - 69

Panel:	1	2	3	4	5	A	Total
Canada		+	+	+	+	+	5
Denmark	+		+			+	3
France	+	+	+	+			4
Germany	+	+	+				3
Iceland	+						1
Italy			+	+			2
Norway	+		+			+	3
Poland	+	+	+	+	+		5
Portugal	+	+	+	+			4
Romania					+		1
Spain	+	+	+	+			4
USSR	+	+	+	+	+		5
UK	+	+	+				3
USA			+	+	+		3
TOTAL	10	8	12	8	5	3	46

3. The Commission's Office Accommodation

The office of the Commission has, since 1 August 1963, been located in the Bedford Institute under a lease arrangement with the Canadian Department of Energy, Mines and Resources. The present lease arrangement has been approved by the Canadian Government for a period of 3 years to 1 August 1970.

4., The Commission's Secretariat

The staff members of the Secretariat are:

Executive Secretary	—	L. R. Day
Assistant Executive Secretary	—	B. J. Kowalewski
Editorial Assistant	—	W. H. Champion

Senior Secretary	—	(Miss) Jean Maclellan
Clerk-Stenographer	--	(Miss) Gertrude Schrader
Clerk-Typist	—	(Mrs) Carol Turple (to 15 November 1968)
	—	G. T. Clark (from 15 November 1968 to 6 June 1969)

Additional clerical help was provided by:

- (Mrs) Vivian Kerr (Special Publication No. 7)
- (Miss) Marilyn Saunders (indexing of ICNAF documents and library holdings, Special Publication No. 7)
- (Mrs) Valerie Caton (Sampling Yearbook Vol. 12 and annual meeting documents)

Following the 1968 Annual Meeting in London, the Executive Secretary attended the ICES/FAO/ICNAF/UNESCO/IBP Marine Food Chains Symposium (23-26 July 1968, Aarhus, Denmark); attended the ICES Symposium on the Biology of Early Stages and Recruitment Mechanisms of Herring (26-28 September 1968, Copenhagen); attended the 56th Statutory Meeting of ICES (30 September - 9 October 1968, Copenhagen); attended the ICES/ICNAF/IOC Coordinating Group for North Atlantic Oceanography (3 October 1968, Copenhagen); discussed arrangements for the 19th Annual Meeting of the Commission with officials of the Central Fisheries Board (October, 1968, Warsaw); discussed arrangements for the 20th Annual Meeting of the Commission with officials of the Canadian Department of Fisheries and Memorial University of Newfoundland (October, 1968, St. John's); attended an informal meeting of ICNAF Advisers on Cooperative Research in Subarea 5 and Adjacent Waters (9-12 December 1968, Boothbay Harbour, Maine); attended meetings of the Assessments Subcommittee (22-25 January 1969, London); attended meetings of the ICES/ICNAF Joint Working Party on North Atlantic Salmon (26 January 1969, London); attended meetings of the Standing Committee on Regulatory Measures (27-29 January 1969, London); attended meetings of the Subcommittee on Financial and Administrative Matters (30-31 January 1969, London); and attended meetings of the Coordinating Working Party on Atlantic Fishery Statistics (3-7 February 1969, Charlottenlund, Denmark).

The Assistant Executive Secretary visited ICES in June 1968 to discuss statistical problems affecting both agencies.

5. The Commission's Publications

The *1968 Meeting Proceedings* (113 p.) was distributed in July 1968. It contains the reports of the meetings of the Plenary and of the Panels, the Standing Committee on Finance and Administration, the Standing Committee on Regulatory Measures and the *ad hoc* Committee on Trawl Regulations, held during the Commission's 18th Annual Meeting, London, 4 - 8 June 1968.

The *Redbook* 1968 was issued in three parts. Part I (96 p.) contains the proceedings of the 1968 meeting of the Standing Committee on Research and Statistics and its subcommittees. It was distributed in September 1968. Part II (143 p.) contains the reports by member countries on research conducted in the Convention Area in 1967. It was distributed in November 1968. Part III (112 p.) contains selected scientific papers presented to the 1968 meeting. It was distributed in January 1969.

The *Statistical Bulletin* Vol. 17 for the year 1967 (115 p.) was distributed in May 1969.

The *Annual Proceedings* Vol. 18 for the year 1967 - 68 (50 p.) was distributed in January 1969. It contains the Administrative Report with audited financial statements for the year ending 30 June 1968, the Report of the 18th Annual Meeting, 1968, and Summaries of Research carried out in each subarea of the Convention Area in 1967.

The *Research Bulletin of ICNAF* No. 5 (140 p.) containing 10 scientific contributions was distributed in March 1969.

The *Research Bulletin of ICNAF* No. 6 is in preparation with 10 scientific contributions some of which, because of limited space, could not be included in No. 5 of the series. It is in page-proof stage and will be distributed in October 1969.

The *Sampling Yearbook* Vol. 12 for the year 1967 (215 p.) was distributed in May 1969. The volume contains length and age data for the major species sampled by the research agencies of the member countries in the ICNAF divisions in 1967.

The *Special Publication* No. 7 (ICNAF Environmental Survey: NORWESTLANT 1 - 3, 1963) will be distributed in 1969 as follows: Part I Text (256 p.) in May 1969; Part II Atlas (286 p.) in June 1969; Part III Oceanographic Data Record Vols. 1, 2, and 3, and Part IV Biological Data Record in the autumn of 1969.

The *ICNAF Handbook* which was issued from the headquarters of the Commission in September 1965 is being updated and reprinted. Copies of the 1969 edition will be available in October 1969.

The *ICES Cooperative Research Report*, Series A, No. 12 "Second Report of the ICES/ICNAF Joint Working Party on North Atlantic Salmon, May 1968" (18 p.) was distributed in February 1969. ICNAF contributed toward the preparation of the manuscript and shared the cost of publication equally with ICES.

The *Symposium on Marine Food Chains* (ICES, FAO, ICNAF, UNESCO, and IBP) is being printed by Oliver and Boyd in the United Kingdom and University of California Press in USA. ICNAF contributed \$5,000 to the printing costs. The publication should be available later in 1969.

6. Cooperation with Other International Organizations

Close collaboration and cooperation was maintained with other international organizations with related objectives, particularly FAO Department of Fisheries, ICES, NEAFC, IOC, and OECD.

In the field of fishery statistics, the Secretariat continues to work closely with Mr L. P. D. Gertenbach of FAO in his role as Secretary of the FAO/ICES/ICNAF Coordinating Working Party on Atlantic Fishery Statistics (CWP), formerly the Continuing Working Party on North Atlantic Fishery Statistics. Active participation at the 6th meeting of the CWP, Copenhagen, February 1969, has resulted in further contributions toward the development and improvement of statistical procedures for the Atlantic area.

The Joint ICES/FAO/ICNAF/UNESCO/IBP Symposium on Marine Food Chains, Aarhus, Denmark, July 1968 was successfully completed. Cost of publication of the proceedings and papers is being borne by the Commission.

Cooperative studies of the differences in selection properties of various net materials are being completed by the ICES/ICNAF Joint Working Group on Selectivity Analysis, Moscow, March 1969.

Plans for a symposium on physical variability of the North Atlantic, Dublin, September 1969 under the joint auspices of ICES/ICNAF/IAPSO/SCOR/IOC/UNESCO are complete. Dr A. Alexeev (USSR) represented the Commission on the planning group.

Collaboration begun in 1966 with ICES continues in a North Atlantic study of the effect of open ocean fishing for Atlantic salmon on the stocks in home waters by a joint working party and the second report of the working party was approved and published jointly in February 1969 in the ICES Cooperative Research Report, Series A.

The Commission, through its representative on the organizing committee, Mr R. Hennemuth (USA), is collaborating with ICES and FAO in preparing a symposium on the relation between stock and recruitment to be held in July of 1970.

Plans for coordination of oceanographic programs in the North Atlantic were discussed by IOC, ICES, and ICNAF representatives at Copenhagen, October 1968.

Exchange of reports and observers continue to provide closer relations between ICNAF, ICES, NEAFC, IOC, SCOR, and OECD.

7. Cooperation with Non-Member Countries

The Governments of Japan and Cuba continue to show interest in the fisheries and the work of the Commission in the Northwest Atlantic. Publications and reports are forwarded to them regularly. Invitations were again extended to these Governments to send observers to the 1969 Annual Meeting. Both governments supply statistics on their catches and activities in the Convention Area.

Invitations to be represented by observers at the 1969 Annual Meeting were forwarded to the Governments of Belgium, Ireland, Netherlands, and Sweden which, because of their fishing in the Northeast Atlantic and membership in NEAFC, are vitally interested in the effect of management of the fisheries in the Northwest Atlantic on the fisheries in the Northeast Atlantic.

8. Programs and Reports of Research

Reports of research carried out in 1967 by 13 of the 14 member countries were reviewed at the 1968 Annual Meeting by the Standing Committee on Research and Statistics and were subsequently published in the ICNAF Redbook 1968, Part II which was distributed in October 1968.

Programs of research to be carried out in 1969 in the Convention Area were received from most member countries and distributed widely early in 1969.

Reports of Research carried out in 1968 by the member countries under the Commission's research program were prepared as documents for study by the Standing Committee on Research and Statistics at the 1969 Annual Meeting.

9. Mid-Year Meetings

The first meeting of the Joint ICES/ICNAF/IOC Coordinating Group for North Atlantic Oceanography was held in Copenhagen on 3 October 1968 at the time of the 56th Statutory Meeting of ICES. ICNAF was represented by Mr J. A. Posgay (USA) and the Executive Secretary. Exchange of plans and programs was agreed.

Between 23 and 28 January 1969 in London, Mr R. Hennemuth (USA) and the Executive Secretary attended a series of meetings to organize an ICES/FAO/ICNAF Symposium on Stock and Recruitment for 1970. A prospectus was drafted for approval of the three agencies. ICNAF has been asked to contribute to the cost of publication of the Symposium papers.

ICNAF scientific advisers met informally concerning cooperative research in Subarea 5 and adjacent waters from 9 to 12 December 1968 in Boothbay Harbour, Maine, USA. Programs of research on groundfish, plankton, benthos, and water temperature trends were reviewed. Later (19 December 1968) Canadian and US herring scientists discussed the sampling, ageing, and recruitment problems and made recommendations for ICNAF consideration.

The Subcommittee on Assessments met in London, 22 - 25 January 1969, under the Chairmanship of Mr B. B. Parrish (UK). The question of catch-quota regulations for Subarea 1 cod and Subarea 5 haddock was considered in detail. Provisional estimates of the quotas

which would have to be set at the present time to achieve specific reductions in fishing mortality rate were drawn up.

The Standing Committee on Regulatory Measures met in London, 27 - 29 January 1969, under the Chairmanship of Mr J. Graham (UK). The Committee examined a statement from the Assessment Subcommittee meeting of 22 - 25 January 1969 and proposals on catch-quota regulatory systems by USSR and USA. Guidelines were proposed for the negotiation, enforcement and monitoring of catch limitations.

An informal meeting of ICNAF and ICES salmon experts was held in London, 28 January 1969, under the Chairmanship of Mr B. B. Parrish (UK), to discuss progress on Greenland salmon research in 1968 and to make preliminary plans for work in 1969.

The Subcommittee on Financial and Administrative Matters met in London, 30 - 31 January 1969. Timing of the various ICNAF meetings was examined. Commission and Panel Rules of Procedure were redrafted for possible approval.

The Sixth Meeting of the FAO/ICES/ICNAF Coordinating Working Party on Atlantic Fishery Statistics (formerly the Continuing Working Party on Fishery Statistics in the North Atlantic Area) met in Copenhagen, 3 - 7 February 1969, under the Chairmanship of Mr A. Proulx (Canada). The Commission was represented by Dr A. W. May (Canada), Chairman of the Subcommittee on Statistics and Sampling, and the Executive Secretary.

The ICES/ICNAF Working Group on Selectivity Analysis met in Moscow, 26 - 29 March 1969, under the Chairmanship of Dr A. I. Treschev (USSR). Properties of net materials, validity of selectivity experiments and selectivity data for cod, haddock, and redfish were items considered.

The International Fisheries Commissions Pension Society met at the headquarters of the Commission on 2 March 1969. Society benefits were discussed with the members of the ICNAF Secretariat.

10. Statistics and Sampling

Collection and compilation of the statistics on the fisheries in the Commission area continue to improve. The data for 1967 published in Statistical Bulletin Vol. 17 and distributed in printed form in May of this year

contained, for the first time, complete catch and effort data for a non-member country which accounts for about 5% of fish caught in the Commission's statistical area. This and improved data submissions by all member countries has resulted in an increase of over 10% in the amount of data published in Statistical Bulletin Vol. 17. A further and larger increase can be expected in future Statistical Bulletins when national offices begin to submit statistics on the fisheries from the East and West Subdivisions of Div. 5Z, from the Divisions of Statistical Subarea 6, and on the seal hunt from the Gulf of St. Lawrence, Labrador-Newfoundland, and West Greenland regions of the Northwest Atlantic.

Statistical Tables 1 and 3 of Statistical Bulletin Volume 18 for 1968 were compiled from the STANA 2 submissions and distributed as an annual meeting document.

Information was collected by the Secretariat on the criteria used by ICNAF countries when completing the box "main species sought" on the STANA 1W forms. In addition, proposals have been made about blueback herring and the rough scad.

As in past years, statistics on fish discarded at sea and fish turned into meal and oil at sea were collected and were summarized for presentation to the Annual Meeting.

The Commission continues to benefit from the cooperation on statistical matters from the national statistical offices and from FAO, ICES, and OECD both directly and through the CWP. Special thanks are again due Mr. D. Gertenbach of the Dept. of Fisheries of FAO for his contributions, as Secretary to the CWP, to the Commission's statistical program.

11. Sampling

Sampling Yearbook Vol. 12 for 1967 also increased in size by about 10%. In addition to the data on length and age presented by species, subarea, division, gear, month, country, vessel type, and vessel tonnage for 1967, the Yearbook also contained, for the first time, a summary of length and age sampling by species, subarea, and country in relation to nominal catch in 1966 and 1967.

In accordance with a request of the 1968 meeting of R and S (Redbook 1968, Pt. 1, p. 86, Rec. 10), the Secretariat consulted with herring workers to develop a

suitable format for the publication of herring sampling data in the Sampling Yearbook.

12. Otolith and Scale Exchange Programs

Exchange programs recommended by the 1968 meeting of R and S for herring (Redbook 1968, Pt. 1, p. 84, Rec. 33) and redfish (Redbook 1968, Pt. 1, p. 88, Rec. 12) have been initiated.

Color transparencies of type 1 otoliths were received from Mr. Blacker of the Lowestoft Laboratory and are available for reference.

13. International Regulation of Trawl Fisheries

No proposals for regulation of the international trawl fishery in the Convention Area were adopted at the 1968 Annual Meeting of the Commission.

The 1965 proposal for codification of the trawl regulations in Subareas 1, 2, and 3 came into effect on 21 September 1968. The 1963 savings gear proposal for Subarea 5 will come into effect on 4 July 1969. The 1966 proposal for 130mm mesh size in Subarea 1 came into effect on 21 September 1968. The result is that all proposals for regulation of the international trawl fishery in the Convention Area are in effect except the 1967 proposals regarding mesh measurement in Subareas 1 - 5.

On 28 August 1968, a simplified guide to the ICNAF fishery regulations for 1968 - 69, adopted by the Commission on 9 June 1968, was circulated to Contracting Governments as ICNAF Notification Series No. 7.

14. Financial Matters

The ICNAF staff assessment scheme which was set up with Canadian Government approval, effective 1 January 1968, has operated successfully, based on the federal tax portion only of the basic tax for Canadian employees of ICNAF. During the fiscal year 1968 - 69, the Executive Secretary again approached the Nova Scotian taxation authorities regarding a possible amendment to the Nova Scotia Income Tax Act to provide for a tax credit similar to that allowed by the Canadian Income Tax Act. Circumstances beyond the control of the Government of Nova Scotia have so far prevented setting up the provincial portion of the assessment scheme.

In February 1969, the Executive Secretary was advised by the Canadian Government that any International Commission with headquarters in Canada who employ Canadian citizens or citizens of a country other than Canada who are not entitled to benefits under the law of their country could be designated as having the Canadian Government's Employees Compensation Act applicable. This matter was placed before the Commission for a decision.

**15. Financial Statements for the Fiscal Year
Ending 30 June 1969.**

The accounts of the Commission for the year ending 30 June 1969 show that Can. \$105,700 was appropriated by the Commission for ordinary expenditures and

Can. \$8,000 transferred to the General Fund from the Working Capital Fund to cover the costs of the Marine Food Chains Symposium.

Obligations incurred during the fiscal year totalled Can. \$109,012 which was Can. \$4,688 less than the total of Can. \$113,700 appropriated by the Commission.

An audit of the Commission's finances was completed in July 1969 by the Office of the Auditor General of Canada, in accordance with new Financial Regulations adopted for the Commission 1 July 1968. (Annu. Proc. for 1967 - 68, Vol. 18, p. 37 - 41, 1968).

The report of the Auditor General dated 22 August 1969 to the Chairman and Members of the Commission reads, in part, as follows:

EXHIBIT I

Statement of Budget Appropriations, Obligations Incurred, and Balances of Appropriations for the year ended 30 June 1969

(Expressed in Canadian Dollars)

<u>Purposes of Appropriation</u>	<u>Appropriated by Commission</u>	<u>Obligations Incurred</u>	<u>Surplus or Deficit (-) Balances of Appropriations</u>
Personal services —			
Salaries	\$ 59,000	\$ 58,653	\$ 347
Superannuation and Canada Pension Plan	1,800	1,681	119
Additional help	1,200	1,357	- 157
Group medical and insurance plans	500	306	194
Retroactive salaries	1,200	1,243	- 43
Travel	6,500	3,320	3,180
Transportation	500	207	293
Communications	3,500	4,117	- 617
Publications	14,000	16,017	- 2,017
Other contractual services	4,000	3,979	21
Materials and supplies	3,500	2,455	1,045
Equipment	1,000	63	937
Annual meeting	6,000	6,452	- 452
Contingencies	3,000	1,868	1,132
	<hr/>	<hr/>	<hr/>
Totals, ordinary budget	105,700	101,718	3,982
Transferred from Working Capital Fund —			
Marine Food Chains Symposium	8,000	7,294	706
	<hr/>	<hr/>	<hr/>
	\$ 113,700	\$ 109,012	\$ 4,688
	<hr/> <hr/>	<hr/> <hr/>	<hr/> <hr/>

EXHIBIT II – GENERAL FUND

Statement of Income and Expenditure for the year ended 30 June 1969
(with comparative figures for the year ended 30 June 1968)

(Expressed in Canadian dollars)

	<u>1969</u>	<u>1968</u>
Income (and Source of Funds):		
Members' contributions assessed –		
Canada	\$ 10,922	\$ 11,506
Denmark	4,684	4,919
France	8,843	9,310
Germany, Federal Republic	6,764	4,919
Iceland	2,605	2,723
Italy	4,684	4,919
Norway	6,764	4,919
Poland	10,922	7,114
Portugal	8,843	9,310
Romania	2,605	2,723
Spain	8,843	9,310
Union of Soviet Socialist Republics	10,922	11,506
United Kingdom	6,764	7,114
United States of America	<u>6,764</u>	<u>7,114</u>
	\$ 100,929	\$ 97,406
Miscellaneous income –		
Staff assessment (Miscellaneous Fund, 1968-69)		4,326
Bank interest (Working Capital Fund, 1968-69)		<u>995</u>
		5,321
Transferred from Working Capital Fund	8,000	7,500
Surplus, 30 June 1968 appropriated for 1968-69 obligations	<u>4,771</u>	<u>544</u>
	113,700	110,771
Obligations incurred (Exhibit I)	<u>109,012</u>	<u>105,988</u>
	4,688	4,783
Deduct balances of appropriations carried to Working Capital Fund (Appendix I)	<u>4,688</u>	<u>12</u>
Amount carried to Surplus Account	<u>\$ –</u>	<u>\$ 4,771</u>

EXHIBIT III

Statement of Assets and Liabilities as at 30 June 1969
(with comparative figures as at 30 June 1968)

(Expressed in Canadian dollars)

Assets		Liabilities	
	1969	1968	
GENERAL FUND			
Cash on hand and in bank . . .	\$ 8,168	\$ 11,591	Unliquidated obligations \$ 7,581
Accounts receivable	320	3,943	Credits due to Member Governments 907
			Surplus Account (Appendix I) —
	<u>\$ 8,488</u>	<u>\$ 15,534</u>	
			<u>\$ 8,488</u> <u>\$ 15,534</u>
WORKING CAPITAL FUND			
Cash on deposit	\$ 13,852	\$ 17,620	
Accounts receivable:			
Publications \$ 3,183			
Sales taxes 2,965	6,148	—	Principal of Fund (Appendix I)
	<u>\$ 20,000</u>	<u>\$ 17,620</u>	<u>\$ 20,000</u> <u>\$ 17,620</u>
MISCELLANEOUS FUND			
Cash on deposit	\$ 12,884	\$ —	Principal of Fund (Appendix I)
	<u>\$ 12,884</u>	<u>\$ —</u>	<u>\$ 12,884</u> <u>\$ —</u>

APPENDIX I

SURPLUS ACCOUNT			
Balance, 30 June 1968			\$ 4,771
Deduct: Appropriated for 1968-69 obligations			<u>4,771</u>
Balance, 30 June 1969			<u>\$ —</u>
WORKING CAPITAL FUND			
Balance, 30 June 1968			\$ 17,620
Add: Balances of 1968-69 appropriations		\$ 4,688	
Sales of publications		3,562	
Sales tax refunds		2,965	
Bank interest		<u>2,169</u>	<u>13,384</u>
			<u>\$ 31,004</u>
Deduct: Appropriated for Marine Food Chains Symposium		8,000	
Transfer to Miscellaneous Fund		<u>3,004</u>	<u>11,004</u>
Balance, 30 June 1969			<u>\$ 20,000</u>
MISCELLANEOUS FUND			
Staff assessments 1968-69			\$ 9,880
Transfer from Working Capital Fund			<u>3,004</u>
Balance, 30 June 1969			<u>\$ 12,884</u>

PART 2

Report of 19th Annual Meeting of the International Commission for the Northwest Atlantic Fisheries Warsaw, Poland, 2-7 June 1969

BY THE CHAIRMAN, MR V. M. KAMENTSEV

1. Introduction

Under the terms of a Convention signed in 1949, the International Commission for the Northwest Atlantic Fisheries (ICNAF) is responsible for the investigation, protection, and conservation of the fisheries of the Northwest Atlantic in order to make possible the maintenance of a maximum sustained catch from these fisheries. Based on the results of scientific investigations promoted and coordinated by the Commission, measures to ensure wise use of the stocks of commercial fish are recommended to member governments.

The Commission has six panels, five of which review the fisheries and recommend conservation measures in geographic subareas of the Convention Area (Subarea 1, off West Greenland; Subarea 2, off Labrador; Subarea 3, off South and East Newfoundland; Subarea 4, the Gulf of St. Lawrence and Nova Scotian Banks; and Subarea 5, the Gulf of Maine). The sixth panel has jurisdiction respecting harp and hood seals in the Convention Area.

In addition, the Commission has Standing Committees on Research and Statistics, on Finance and Administration, and on Regulatory Measures.

2. Time and Place of Meeting

The 19th Annual Meeting of ICNAF was held, at the invitation of the Government of the Polish People's Republic, at Jablonna Palace, near Warsaw, from 2 to 7 June 1969 under the chairmanship of Mr V. M. Kamentsev of the USSR.

From 21 to 30 May the Standing Committee on Research and Statistics and its various subcommittees and working groups held scientific meetings under the general chairmanship of Mr Sv. Aa. Horsted (Denmark).

The Joint ICES/ICNAF Working Party on North Atlantic Salmon met 21 - 22 May at Charlottenlund, Denmark under the chairmanship of Mr B. B. Parrish (UK). The Assessments Subcommittee met 24 May and during the following week under Mr B. B. Parrish. The Steering and Publications Subcommittee met 25 May under Mr Sv. Aa. Horsted. Between 26 May and 30 May, the Statistics and Sampling Subcommittee met under Dr A. W. May (Canada) and the Environmental Subcommittee under Dr H. W. Graham (USA).

The Standing Committee on Research and Statistics met daily in plenary session throughout the week to coordinate the work and to receive the reports and recommendations of the various subcommittees and working groups.

Scientific Advisers to each of the Commission's six panels met on 30 and 31 May.

The Commission met in plenary session daily from 2 to 7 June. Plenary agenda items were assigned to, and reports and recommendations were received from, meetings of each of the three Standing Committees and the six panels.

3. Participants (Appendix I)

Commissioners with their Advisers and Experts were present from all 14 member countries. Observers attended from the Food and Agriculture Organization of the United Nations (FAO), the International Council for the Exploration of the Sea (ICES), the General Fisheries Council of the Mediterranean (GFCM), the International North Pacific Fisheries Commission (INPFC), the North-East Atlantic Fisheries Commission (NEAFC), the Scientific Committee on Oceanic Research of the

International Council of Scientific Unions (SCOR) and the Governments of Cuba, Ireland, and Japan.

Meeting participants are recorded in Appendix I to this Report. The organization and officers of the Commission for the year 1969 - 70 are recorded on the inside front cover of these Proceedings.

4. Opening of the Meeting (Agenda Item 2)

The Opening Session of the 19th Annual Meeting was convened in Jablonna Palace, near Warsaw, on 2 June 1969. The Chairman, Mr V. M. Kamentsev (USSR), welcomed the meeting participants and guests and introduced Mr J. Szopa, Minister of Shipping, who welcomed the Commission on behalf of the Government of the Polish People's Republic as follows:

"It is my great privilege and honour, on behalf of Polish People's Republic, to welcome you, Mr Chairman, and you, Dr Needler, the Vice-Chairman of this organization, as well as all the representatives of the member countries, the Observers and the Experts, who have for the first time arrived at the capital of Poland - Warsaw - to take part in the XIX Session of the International Commission for the Northwest Atlantic Fisheries.

"I have also the pleasure to welcome the representatives of the Food and Agriculture Organization of the United Nations, of the International Council for the Exploration of the Sea, of the North-East Atlantic Fisheries Commission, and of the International North Pacific Fisheries Commission, and observers from Cuba, Ireland and Japan.

"I wish also to welcome Mr L. R. Day, the Secretary of the Commission, who has rendered so much assistance to Polish colleagues in the organization of this conference.

"Mr Chairman, gentlemen, this Commission incorporates into its membership a great majority of countries with long standing fishing traditions, with well advanced sea fisheries and numerous distinguished scientists, the researchers of the sea. This is a great pleasure for us, as the hosts, to be able to entertain here such an eminent group of economists, scientists and experts, who devote their great experience and knowledge to maintaining the rational exploitation of the fish resources in one of the richest areas of the Atlantic.

"The 1949 Convention, prepared by the Commission, undoubtedly presents an important legal act, which serves as a good basis for international cooperation. This cooperation is being steadily improved and more and more effectively fulfills its role to the satisfaction of the member countries, who sponsored its creation.

"Since its creation, the work of the Commission has resulted in considerable progress in the scope of fishery regulations. We are aware, however, that further steps will be necessary, the working out of which will not be an easy task. The actual Session is facing a number of important problems which involve detailed discussions in order to draw proper conclusions.

"Let me mention some of them:

"The observance of the regulations in respect of mesh size would create the necessity for a prompt implementation of an adequate control. This also involves the need for setting up bilateral agreements between member countries in the scope of exchange of inspectors aboard fishing vessels for the inspection of fishing gear.

"Another important task which requires a detailed analysis is the correct assessment of fish stocks of particular species in the ICNAF subareas. The results of research work, conducted within the program realized by the common effort of the scientists from member countries, may be of essential importance in helping to undertake further steps in the formulation of the conclusions and recommendations.

"We are all aware of how important is the representative quality of research materials and statistical data for the assessment of fish resources, the more so in view of the fact that the recommendations of the Commission have close bearing on economic consequences, which may be of drastic character for those member countries which are developing their fisheries.

"In spite of great technical progress all the world over and of steadily improving methods of scientific research, we may assume that in the marine environment there still occur a number of phenomena which as yet may not be authoritatively estimated and formulated by science.

"The migration of fish stocks, the changes in hydrological conditions, etc., upon which man can exert

no influence, impede the scientific estimation of the actual resources of fish. The extent and the scope of investigations on fish over many years may give a rough picture in what state these resources of particular species are.

“There is an obvious necessity for a broad international cooperation to help to improve the standard of nourishment in the world and this is fully appreciated by our Government.

“For many years we have been a member of the Food and Agriculture Organization and acting within the scope of its activity we have declared our participation in the program of investigations of the natural protein basis of the seas and undertaken the training of fishery experts for developing countries, which also includes the building of a research vessel with up-to-date equipment for this purpose. We are also prepared to make bilateral and multilateral agreements for carrying out the research on marine resources and their rational utilization.

“Poland is especially interested in developing its own fisheries since we belong to those countries which suffered greatest destruction during World War II, that caused particularly great devastation in Polish fisheries.

“The Government of the Polish People’s Republic pays great attention to the problem of developing its fishing industry in order to give us the possibility of filling up the deficiency in protein for human consumption. For, as it is known, the consumption of protein per capita in Poland is below the average standard among the countries belonging to this organization.

“Mr Chairman, I believe that with full consideration of the needs of one another and with good attitude to the situation of the countries developing their fisheries in order to utilize the natural resources of the sea – there do exist great possibilities for rational management of these resources for the common benefit.

“I do hope that I am expressing not only my own opinion that the resolutions and recommendations of the XIX ICNAF Session will make another step toward closer cooperation between member countries, and profiting by the privilege of the host, I wish the

honourable participants both fruitful meetings and a pleasant time during their stay here”

Following the Opening Session, the Chairman convened the First Plenary Session. Second, Third, Fourth, Fifth, and Sixth Plenary Sessions were convened on 4, 5, 6, and 7 June.

During the 19th Annual Meeting the following business of the Commission was concluded.

5. Agenda (Item 2)

The agenda which was circulated 60 days in advance of the meeting, in accordance with Rule 12 of the Commission’s Rules of Procedure, was adopted at the First Plenary Session.

6. Publicity for the Meeting (Item 3)

The Commission agreed that a Committee on Publicity should consist of the Chairman of the Commission and the Chairman of the Standing Committee on Research and Statistics and the Standing Committee on Finance and Administration with the Executive Secretary.

7. Report of the Standing Committee on Finance and Administration (Item 29)

At the First Plenary Session, the Commission assigned all financial and administrative items on its agenda (Items 4, 5, 6, 7, 8, and 34) to the Standing Committee for consideration. The Standing Committee gave attention to these and other items on its agenda at two meetings held 3 and 5 June 1969. Reports and recommendations of the Standing Committee were presented to the Fifth Plenary Session of the Commission on 6 June 1969.

a) Panel memberships

In accordance with Article IV (2) of the Convention, the Standing Committee reviewed panel memberships. Application by Denmark for membership in Panel 3 was adopted by the Commission following the recommendation of Panel 3 and the Standing Committee. Panel memberships total 46 for the year 1969 - 70 and are distributed among the 14 member countries as follows:

Panel:	1	2	3	4	5	A	Total
Canada		+	+	+	+	+	5
Denmark	+		+			+	3
France	+	+	+	+			4
Germany	+	+	+				3
Iceland	+						1
Italy			+	+			2
Norway	+		+			+	3
Poland	+	+	+	+	+		5
Portugal	+	+	+	+			4
Romania						+	1
Spain	+	+	+	+			4
USSR	+	+	+	+	+		5
UK	+	+	+				3
USA			+	+	+		3
TOTAL	10	8	12	8	5	3	46

b) Reports by the Secretariat

The Executive Secretary submitted the following reports on administrative and financial matters:

- i) Auditor's Report for the fiscal year ending 30 June 1968 (1968 Annu. Proc. Vol. 18, p. 11 - 13);
- ii) Administrative and Financial Report for the fiscal year ending 30 June 1969 (complete to 15 May 1969) (Comm. Doc. 69/10);
- iii) Budget estimate for the fiscal year ending 30 June 1970 (Appendix I to the 1969 Agenda for the Standing Committee on Finance and Administration);
- iv) Budget forecast for the fiscal year ending 30 June 1971 (Appendix II to the 1969 Agenda for the Standing Committee on Finance and Administration).

c) Recommendations on finance and administration

The Commission adopted the following recommendations:

- i) that the Auditor's action in adjusting the 1967-68 audit to show Can. \$550 appropriated from surplus in the 1966-67 Audit Report instead of from the Working Capital Fund be approved;

ii) that the carry-over to 1967 - 68 of Can. \$6,000 appropriated in 1965 - 66 from the Working Capital Fund for the Marine Food Chains Symposium be approved;

iii) that the Auditor's Reports for 1966 - 67 and 1967 - 68 be adopted;

iv) that the provisional Administrative Report with financial statements for the fiscal year ending 30 June 1969 (estimated from 15 May 1969) be adopted;

v) that steps be taken by the Executive Secretary to have the Canadian Government Employees' Compensation Act applied to the staff of the Secretariat and that the Commission express its thanks to the Government of Canada for making the scheme available;

vi) that the following be added to Rule 6 of the Financial Regulations, effective on the date that the Canadian Government Employees' Compensation Act becomes effective with respect to the staff of the Commission:

"6.5 The Canadian Government Employees' Compensation Act shall be applicable to the staff, as provided by the Government of Canada. With respect to amounts charged to the Commission under the Act, the Executive Secretary is authorized to make payments from current appropriations which are otherwise unobligated and which would be surplus at the end of the financial year and credited to the Working Capital Fund in accordance with Rule 4.4.c, to the extent possible. The Executive Secretary shall include in the estimates every other amount charged to the Commission, including any amount which is to be charged annually after the initial payment."

vii) that the following be added to Rule 3 of the Financial Regulations:

"However appropriations from the Working Capital Fund for capital and special expenditures shall remain available, as determined by the Commission, until expended or no longer needed for the purpose for which appropriated."

- viii) that the Rules of Procedure for the Commission adopted by the Commission to 1 July 1968 be repealed and new Commission Rules of Procedure as revised by the Subcommittee on Financial and Administrative Matters (Appendix III) be adopted;
- ix) that the Rules of Procedure for the Panels adopted by the Panels and the Commission to 1 July 1968 be repealed and new Panel Rules of Procedure as revised by the Subcommittee on Financial and Administrative Matters (Appendix IV) be adopted;
- x) that, for the time being, the Research and Statistics and the Commission meetings continue to be held concurrently; that no change be made in the starting time of the Research and Statistics Committee meetings; that the Assessments Subcommittee hold a mid-year meeting and make its report available to Commissioners and Advisers well before the 1970 Annual Meeting of the Commission; and that the need for a recess to study the provisional Report of the Standing Committee on Research and Statistics on the first day of the Annual Meeting be decided at the First Plenary Session;
- xi) that the Contracting Governments be billed by the Commission for payments due, under the 1969 - 70 Administrative budget, in accordance with Article XI of the Convention, on 15 August 1969;
- xii) that the 1971 Annual Meeting be scheduled tentatively at Halifax, Nova Scotia, during the first week of June and the kind invitation of the United States of America to hold the 1972 Annual Meeting at a site to be selected later, during the first week of June, be accepted with thanks;
- xiii) that the amount in the Working Capital Fund in excess of Can. \$20,000 be transferred to the Miscellaneous Fund to reduce the 1969 - 70 appropriations from Contracting Governments;
- xiv) that the Commission appropriate a sum of Can. \$116,300 from Contracting Governments, and the Miscellaneous Fund, to meet ordinary expenditures for the fiscal year ending 30 June 1970, the appropriations to be used for the following purposes:

1. Personal Services	
a) Salaries	\$ 67,000
b) Superannuation	2,000
c) Additional help	1,200
d) Group medical and insurance plans	500
e) Contingencies	6,600
2. Travel	6,500
3. Transportation	500
4. Communications	3,500
5. Publications	15,000
6. Other Contractual Services	4,000
7. Materials and Supplies	3,500
8. Equipment	1,000
9. Annual Meeting	4,000
10. Contingencies	1,000
Total ordinary expenditures	<u>\$ 116,300</u>

xv) that the Executive Secretary be authorized to increase staff salaries and to make retroactive payments effective on the date of the anticipated salary increases for the Public Service of Canada to the extent possible within the Retroactive Salary item of the 1969 - 70 appropriations.

xvi) that the Contracting Governments give consideration at the 1970 Annual Meeting to authorizing appropriations of Can. \$121,700 for the ordinary expenses of the Commission and Can. \$5,000 from the Working Capital Fund for the Stock Recruitment Symposium for the fiscal year ending 30 June 1971:

1. Personal Services	
a) Salaries	\$ 67,000
b) Superannuation	2,000
c) Additional help	1,200
d) Group medical and insurance plans	500
e) Contingencies	3,000
f) Forecast clerical increase	7,000
2. Travel	6,500
3. Transportation	500
4. Communications	3,500
5. Publications	15,000
6. Other Contractual Services	4,000
7. Materials and Supplies	3,500
8. Equipment	1,000
9. Annual Meeting	6,000
10. Contingencies	1,000
Total ordinary expenditures	\$ 121,700
Special appropriation W. C. F. (Stock Recruitment Symposium)	\$ 5,000

xvii) that the Executive Secretary, in preparation for the 1970 Annual Meeting, consider the needs of the Commission in terms of staff and other resources, on a hypothetical basis, bearing in mind the various proposals and suggestions being considered in the Standing Committee on Regulatory Measures and in the Panels;

xviii) that the Commission note the unanimous re-election of Mr R. W. Green (USA) as Chairman of the Standing Committee on Finance and Administration for the year ending 30 June 1970.

8. Status of Commission Proposals (Item 10)

a) International regulation of fisheries

The Commission reviewed the status of the proposals adopted by the Commission for international regulation of the trawl fisheries. It **noted** that all trawl regulations proposed by the Commission came into force on a current basis on 21 September 1968 except the 1963

proposal relating to chafing gear in Subarea 5 which, with acceptance by Romania on 4 March 1969, will enter into force on 4 July 1969. The 1967 proposals relating to mesh measurement in Subareas 1 - 5 require acceptance by several Contracting Governments to bring the proposals into force for each of the five subareas.

b) Changes in the Convention

The Commission **noted**, with great regret, the Protocol, adopted 7 June 1963 by the Commission, which would allow it to make proposals for national and international measures of control on the high seas to ensure application of the regulatory measures in force under the Convention and the Protocol, adopted 6 June 1964 by the Commission, which would establish less time-consuming procedures for bringing into effect regulatory measures adopted by the Commission, had not entered into force. Ratifications were required from the Governments of Italy and Portugal. The Portuguese Delegate reported that his Government's ratification was on its way to the Depositary Government. The Commission **agreed** that Depositary Government be asked to study the problem with a view to achieving the remaining necessary ratification and with a view to preventing similar difficulties occurring in the future. The Depositary Government agreed to consider the matter and to report to the Commission at an early date.

9. Other Items Concerning Commission Trawl Regulations (Items 13, 14, 15, and 16)

At the first plenary session, the Commission assigned plenary agenda items 13 - 16 to an *ad hoc* Committee on Trawl Regulations. In order to expedite matters, the Commission subsequently considered the items at its third plenary session.

a) Annual returns of infringements

The Commission reviewed reports from the Contracting Governments relating to the mesh size in use, the obstruction of mesh openings and the landings in excess of legal limits for the calendar year 1968. The reports were adopted.

b) Simplification of Commission trawl regulations

The Commission **took note** of a Simplified Guide to ICNAF Trawl Regulations for 1969 - 70 (including authorized topside chafing gear, mesh gauges and mesh size differentials) which will be circulated in the ICNAF

Notification Series. The Commission **suggested** that a simplified guide to trawl regulations be included in the 1969 revision of the ICNAF Handbook.

c) Topside chafing gear

The Commission **noted** the decrease in use of topside chafing gear with the increase in use of strong synthetic net twines and looked forward to the eventual elimination of a need for topside chafing gear on the codend of otter trawls.

d) Mesh measuring

The Commission **noted** that an ICES/ICNAF Working Group on Selectivity Analysis was completing its work and preparing a report which would be pertinent to this item, in Charlottenlund, Denmark, 2-6 September 1969. The report would be presented to the 1970 Annual Meeting of the Commission.

10. International Control (Items 17 and 18)

a) Exchange of national inspection officers

The Commission noted that bilateral exchanges of fisheries enforcement officers among the Member Countries was continuing to provide useful information and experience for establishing and administering an international inspection scheme. Successful bilateral exchanges were reported between Canada and France, USA and USSR, and Portugal and Spain.

b) Form of international inspection scheme

The Commission reviewed the steps taken at the 1968 Annual Meeting to modify the NEAFC international inspection scheme for ICNAF (1968 ICNAF Meeting Proceedings No. 19) and noted that NEAFC reaffirmed its 1968 decision to bring its scheme of joint enforcement into effect on 1 January 1970. The Commission took note of the Polish Delegate's report that, in accordance with its recommendation at the 1968 Annual Meeting encouraging all Member Countries to strengthen their national control systems, the Polish national control system was now operating on the high seas. There was considerable discussion along lines similar to those of the 1968 Annual Meeting of the proposed form and adoption of an international inspection scheme for ICNAF. Although most Member

Countries would agree to an international joint inspection scheme, it was apparent that difficulties remained regarding international inspection of catch and gear. Because of this and because the 1963 Protocol to the Convention Relating to Measures of Control still was not in effect, thus allowing the Commission to adopt a scheme of international enforcement, the Commission again strongly **recommended** that Member Countries establish and strengthen their national inspection schemes, if necessary or possible.

11. Amendment to Convention Articles VII and VIII Relating to Regulatory Measures (Item 11)

The Commission had before it the Protocol, agreed to in principle at the 1968 Annual Meeting, for the amendment of Convention Articles VII and VIII to provide greater flexibility in the types of fisheries regulatory measures which the Commission might propose. Following an expression of the views of the delegates of the Contracting Governments, the Commission **adopted** the Protocol for presentation to Contracting Governments by Depositary Government. Article I of the Protocol reads as follows:

"Paragraph 2 of Article VII of the Convention shall be amended to read as follows:

- "2. Each Panel, upon the basis of scientific investigations, and economic and technical considerations, may make recommendations to the Commission for joint action by the Contracting Governments within the scope of paragraph 1 of Article VIII."

and Article II reads as follows:

"Paragraph 1 of Article VIII of the Convention shall be amended to read as follows:

- "1. The Commission may, on the recommendations of one or more Panels, and on the basis of scientific investigations, and economic and technical considerations, transmit to the Depositary Government appropriate proposals, for joint action by the Contracting Governments, designed to achieve the optimum utilization of the stocks of those species of fish which support international fisheries in the Convention Area."

12. Amendment to Convention Article IV Relating to Panel Membership (Item 12)

The Commission considered a Canadian proposal to amend Convention Article IV (2) in order to establish a broader basis for the determination of representation on the Commission's Panels. Article IV (2) has limited the basis to "... current substantial exploitation of fishes of the cod group (*Gadiformes*), of flatfishes (*Pleuro-nectiformes*) and of rosefish (genus *Sebastes*), ...". It neglects the fact that other fish species, such as the herring, now support major international fisheries and that the provisions of the Convention are now applicable with respect to molluscs and harp and hood seals. Following unanimous agreement in the Commission that the basis for representation should be broadened, the Commission **adopted** a draft Protocol for presentation to Contracting Governments by Depositary Government. Article I of the Protocol reads as follows:

"Paragraph 2 of Article IV of the Convention shall be amended to read as follows:

2. Panel representation shall be reviewed annually by the Commission which shall have the power, subject to consultation with the Panel concerned, to determine representation on each Panel on the basis of current substantial exploitation of the stocks of fish in the subarea concerned or on the basis of current substantial exploitation of harp and hood seals in the Convention Area, except that each Contracting government with coastline adjacent to a subarea shall have the right of representation on the Panel for the subarea."

The Commission then **adopted** a suggestion of the Delegate of the Federal Republic of Germany to request the Depositary Government to consider the possibility of combining the Amendments to Convention Articles IV (2), VII (2) and VIII (1) (see Section 11 above), into a single Protocol for presentation to Contracting Governments.

13. Report of the Standing Committee on Research and Statistics (Item 28)

The Committee met under the chairmanship of Mr Sv. Aa. Horsted (Denmark) with Mr D. J. Garrod (UK) and Dr W. Templeman (Canada) as Rapporteurs from 26 to 30 May 1969. The Subcommittees on Assessments

and Steering and Publications held meetings on 24 and 25 May 1969 respectively. The Subcommittee on Assessments also held a mid-term meeting in London from 22 to 25 January 1969. The ICES/ICNAF Working Group on Selectivity Analysis met in Moscow from 26 to 29 March 1969 and the Joint ICES/ICNAF Working Party on North Atlantic Salmon met in Charlottenlund on 21 and 22 May 1969.

The Report of the Standing Committee with subcommittee and working group reports as appendices is published separately as ICNAF Redbook 1969 Part I. The Report was adopted by the Commission on 7 June 1969. The major items in the Report are summarized below:

a) Assessments

The Assessments Subcommittee reported

- 1) that the total nominal catches of all species in the Convention Area increased more than 10% from 1967 to 1968. Nominal catches of groundfish decreased about 18% in Subarea 1, increased about 20% in Subarea 2, increased 21% in Subarea 4 and remained at the 1967 level in Subareas 3 and 5. The herring fishery has continued to expand in Subareas 3, 4, and 5 with a total increase of about 43%.
- 2) that, as reported in 1968, for cod in Subarea 1, any increase in fishing beyond the present level would not result in any long-term increase in average annual yield, and that a reduction of fishing mortality rate of up to 25% would not result in any significant reduction in yield per recruit and would increase the catch per unit effort. Examples of the catch quotas to achieve a cutback in fishing mortality rate of 25% in 1969 were presented and it was stressed that regulation of fishing mortality at this time would prevent the adverse effects on long-term yield that could follow a substantial increase of fishing effort in the subarea should a strong year-class be recruited in future.
- 3) that the haddock stock abundance in Subarea 5 in 1968 was at the lowest observed level on record, approximately one-third of that during the 1935 - 63 period of stabilized fishing. Projected estimates of the 1969 and 1970 catches based on a

fishing mortality rate which gave a maximum yield per recruit over the period 1935 - 60 showed that such a level of catch would not allow any increase in stock density through 1970 and, in fact, would decrease it from 1969. Therefore, to allow the stock to recover (and with it the probability of producing good year-classes such as the last one in 1963) would require no, or very little, fishing for a period of not less than 4 - 5 years, and until a moderate to strong year-class has recruited and grown to maturity. Benefits of the application of closed season (during spawning in March and April) or closed area (principal spawning grounds) regulations, or both, as alternatives or in conjunction with a catch quota were pointed out.

- 4) that the haddock stocks in Div. 4X are now fully exploited and as the only remaining sizable haddock resource in the Convention Area will be subject to the increased effort diverted from the overexploited Subarea 5 and Div. 4VW haddock stocks. To prevent a rapid and serious decline in stock density would require action to avoid catches greater than the previous long-term average annual landings over at least the next 5 years.
- 5) that cod catches in Div. 2G and 3L have risen more than 30% since 1967 when assessments indicated that fishing level was already producing at least 81% of the maximum sustainable yield. It is unlikely that the 1968 catch level can be maintained.
- 6) that, if fishing effort is maintained at the recent high level on cod in Div. 3NO, larger year to year variations in catches will occur since the increased effort that the strong 1964 year-class attracted when recruiting to the markedly improved fishery in 1967 has reduced its potential yield.
- 7) that, in regards to the general state of the groundfish stocks in the Convention Area, it is unlikely that the record catches of cod in Convention Area in 1968 (about 1,850,000 tons) can be sustained. The high 1967 - 68 catches are due partly to good year-classes and partly to the removal of an accumulated stock of older age-groups. Prospects for recruitment in the near future are poor compared to the size of year-classes that sustained the fishery in 1967 - 68. The effect

of weak year-classes on the catches of the next few years will be made worse in some areas by the heavy fishing on the preceding good year-classes. This heavy fishing has

- i) reduced, to some extent, the total yield from the good year-classes during their life-span in the fishery,
- ii) concentrated the yield of a year-class into fewer years and thereby,
- iii) caused higher year to year variability in catches especially of haddock and the same is expected for some cod stocks,
- iv) reduced spawning abundance of most of the haddock and cod stocks.

The last feature is possibly the most serious although, even in the best-studied stock, the relation between spawning stock and average recruitment is not well established. However, there seems to be increasing evidence that a substantial reduction in spawning stock may lead to a progressive decline in average recruitment. Therefore, while stressing the need for the specific limitation for Subarea 1 cod, and Subarea 5 haddock and associated limitation of catch in Div. 4X haddock, regulation in these areas should only be the preliminary for a more widely based scheme to at least stabilize the fishing effort on the major demersal stocks over the whole ICNAF Area.

- 8) that, in view of the rapid increase in exploitation of herring from 1960 to 1968 in Subareas 3, 4, and 5, further assessments of the state of the adult stock abundance and its mortality rate would be made at the next meeting of the Assessments Subcommittee.
- 9) that there would be increases in catches per recruit with increases in mesh size to at least 150 mm in the fisheries for cod in Subarea 1 and Div. 3NO.

b) Statistics and sampling

The Committee adopted the report of the subcommittee which included the following summary:

- i) that the stocks and areas for which more adequate sampling of the important ICNAF fisheries be identified;

- ii) that herring length and age/length key data from 1961 to 1968 be published in a special issue of the ICNAF Sampling Yearbook;
- iii) that a draft version of a joint ICES/ICNAF list of vessels be prepared by the Secretary of the Coordinating Working Party (CWP) for the 1971 ICNAF and ICES meetings;
- iv) that the adequacy of vessel characteristics and of the methods used to arrive at fishing effort estimates be considered by the Special ICES Meeting on Measurement of Fishing Effort in 1970.

c) Environmental studies

The Committee noted that the results of the plankton collections from a joint USA/USSR Georges Bank-Gulf of Maine Environmental Survey in 1967 will be presented to the 1970 meeting, that attempts were made in 1968 on Georges Bank by the USA to obtain a haddock egg production curve, that a joint plankton survey was carried out by USA, USSR, and Canada in 1968, that work on sampling design and analysis and comparison of grid sampling and random sampling schemes will be carried out in 1969; and **recommended**

- i) that a 2 day symposium be held at the 1971 R&S meeting to review the environmental conditions in the Convention Area during the decade 1960 - 1969;
- ii) that the Oceanographic Laboratory, Edinburgh, be invited to submit a paper to the 1970 R&S meeting on the distribution and abundance of redfish larvae and to send a speaker to the 1971 R&S meeting to describe the Undulating Oceanographic Recorder;
- iii) that a speaker from one of the World Data Centres be invited to address the 1970 R&S meeting.

d) Gear and selectivity

The Committee noted that the ICES/ICNAF Working Group on Selectivity Analysis established to study *inter alia* the variability of selection data, including the scientific basis of mesh size differentials for different

twine materials will prepare a final report from 2 to 6 September 1969 in Copenhagen for presentation to the 1970 meeting of ICNAF.

e) Ageing techniques

The Committee noted that a promising method for preparation of redfish scales would be presented to the 1970 R&S meeting; that the first age validation studies on the American plaice had been completed; and that a preliminary exchange of herring scale and otolith photographs gave levels of agreement between readers broadly similar to those of validation studies for Northeast Atlantic herring stocks.

f) ICES/ICNAF Joint Working Party on North Atlantic Salmon

The Committee reviewed the report of the meeting of the Working Party held in Copenhagen, 20 and 21 May 1969, and noted that attention was confined to (a) further consideration of the salmon fishery off West Greenland and of the assessment of its effects; (b) making a preliminary appraisal of data available for high seas fishery for salmon in the Northeast Atlantic.

The Committee noted that, in the opinion of the Working Party, it is not possible, from the data currently available to estimate accurately the proportion of the total losses to home water catches suffered by the fisheries of different countries and that the largest proportion of the total losses have continued to be experienced by the fisheries for salmon in Canada and the United Kingdom.

The Committee noted the sharp increase in salmon catch in the Norwegian offshore longline fishery in 1968 and that any effects of this fishery on home water stocks is likely to be principally on their large salmon (with two or more sea winters) component.

The Committee noted with approval the increased cooperative research program proposed for 1969 between Canada, Denmark, and the UK at West Greenland and by Denmark, Norway, and Sweden for the Northeast Atlantic, the research program to include important work on the relation between the size of the spawning stock and smolt production in home waters and on the estimation of exploitation rate over a broad range of home water fisheries.

14. Reports of the Standing Committee on Regulatory Measures (Item 19 and 30)

In accordance with requirements of the 1968 Annual Meeting (Annu. Proc. Vol. 18, p. 27 - 28), the Standing Committee met in January 1969 under the chairmanship of Mr J. Graham (UK) and gave special attention to the development of guidelines for the negotiation of catch limitation schemes (Comm. Doc. 69/2). The Standing Committee considered that a scheme of catch limitation involves the establishment of (a) the total allowable catch, and (b) the proportion in which this total catch is to be shared between the participating countries. The total allowable catch and the area and species to which it should apply would be decided by the Commission with the objective of maintaining the stocks in question at or near to the maximum sustainable yield level or of restoring overfished stocks to the maximum sustainable yield level or to take a step towards doing so, or to stabilize the position and prevent it getting worse. The Commission would decide between these objectives which means, in effect, determining the mortality rates on the stocks in question to be arrived at. The alternatives open to the Commission and the catch limit (total catch) needed to achieve the Commission's choice of mortality rates can be objectively assessed on the basis of scientific evidence by the Standing Committee on Research and Statistics. The Standing Committee concentrated its attention on the method of apportioning among the participating countries the total catch as determined by the Commission. The Standing Committee generally agreed that the shares of participating countries should be based mainly on historical performance (average catches over a datum period[s]) with a small proportion of the total allowable catch set aside to provide for new entrants in the fishery, for non-member fishing countries, for member countries with developing fisheries, for coastal state preferences and for the fleets of member countries which were incapable of being diverted to other fisheries. The Standing Committee also offered guidelines in general terms for the adjustment of initial quotas, over-utilization and under-utilization of quotas, enforcement and monitoring of the regulations. Finally, the Standing Committee **recommended** that their conclusions, if the Commission approved, should be drawn to the attention of the Panels for consideration of the possible quota scheme for which areas and species would be desirable.

At its meeting on 3 June 1969, the Standing Committee on Regulatory Measures heard further

reporting on the tasks it set for the Standing Committee on Research and Statistics in 1968 (Redbook 1969, Pt. I, p. 29 - 37; Annu. Proc. Vol. 18, p. 27 - 28). It agreed that the report of its January 1969 meeting (Comm. Doc. 69/2) should go forward without change for consideration by the Commission. There was a short discussion of the administrative, practical, and financial requirements for the Commission in controlling fishing (see also Section 7 [b] [v]).

The Commission, in Plenary Session, reviewed and adopted the reports of the Standing Committee on Regulatory Measures. There was general agreement with the principles set out by the Standing Committee on Regulatory Measures as guidelines for negotiation of catch limitation schemes. The USA felt that Panel 5 should now be asked to apply the Standing Committee on Regulatory Measures guidelines and, for this purpose, a special meeting of Panel 5 might be held sometime before the 1970 Annual Meeting. Following discussion of the future of the Standing Committee on Regulatory Measures, the following US proposal was **adopted** by the Commission:

- i) that the Standing Committee on Regulatory Measures examine the various administrative, legal and technical factors involved in instituting controls on fishing effort at the national level;
- ii) that such a study (a) include a review of the principal problems being encountered in countries experimenting with effort controls and those problems anticipated by countries who plan to institute such controls in the future and (b) indicate some of the most promising approaches devised to resolve difficulties encountered in applying limits on fishing, taking into account differing economic systems in various countries;
- iii) that work on such a study be instituted and coordinated at a midterm meeting of the Standing Committee on Regulatory Measures in January 1970.

15. Reports of Meetings of Panels (Items 20, 21, 22, 23, 31, and 32)

At its first Plenary Session, the Commission assigned plenary item 20 on conservation measures for Atlantic salmon to a Joint Meeting of Panels 1 - 5, item 21 on

conservation measures for seals to Panel A, item 22 on additional regulations for haddock in Subareas 4 and 5 to a Joint Meeting of Panels 4 and 5 and item 23 on regulations for hakes in Subarea 5 to Panel 5. The Commission received the reports of these meetings as well as the reports of Panels 1 - 5. The status of the fisheries, research carried out and plans for future research were reported to each panel by its group of scientific advisers.

- a) **Panel 1.** The panel under the chairmanship of Mr O. Lund (Norway) extended its best wishes and thanks to Dr Paul Hansen (Denmark) who had served the Panel and the Commission faithfully and well for many years and was now retiring. The panel noted that, according to its scientific advisers, (1) the rate of exploitation of cod is close to the maximum sustainable yield per recruit, (2) a reduction of the fishing mortality rate of up to 25% for cod would not result in any significant reduction in yield and would increase the catch per unit effort and (3) year-classes since 1963 that are now recruiting to the cod fishery are weaker than those of recent years and the catch rate is likely to decrease in the immediate future whatever course of action might be adopted, (4) a further increase in mesh size up to 150 mm would be beneficial and increase the yield. The panel expressed its satisfaction that special emphasis was being placed on research into the effect of a larger minimum mesh size, the problem of early estimates of the strength of pre-recruit year-classes, the blood-type studies of Greenland-Iceland cod and a review in 1971 of environmental conditions in the Commission area. Mr K. Løkkegaard (Denmark) was elected chairman for the 2 ensuing years.
- b) **Panel 2.** The panel, under the chairmanship of Mr G. Möcklinghoff (Fed. Rep. Germany), noted that mesh-size increases to 130 mm or even to 150 mm for Div. 3N and 30 would produce long-term benefits to the cod fisheries and that a reassessment of mesh-size increases for Subarea 2 and Div. 3K and 3L was planned for next year. Several panel members pointed out that a uniform mesh size for Subareas 1, 2, and 3 of at least 130 mm which is already in force

in Subarea 1 would be desirable both for conservation and practical purposes. The panel further suggested that during the next Annual Meeting of the Commission, a joint meeting of Panels 1, 2, and 3 be held to discuss the possible introduction of a uniform mesh size in the respective areas and hoped that the results of the scientific reassessment would be available at that time. Dr Rodriguez Martin (Spain) was elected chairman for the 2 ensuing years.

- c) **Panel 3.** The Panel, under the chairmanship of Professor F. Chrzan (Poland), noted that recent mesh assessment for cod from Div. 3N and 30 indicated that mesh size increases up to 150 mm would result in long-term benefits and that for practical purposes Subareas 2 and 3 should be considered together for an appropriate minimum mesh size next year when new mesh assessments would be available for Div. 3K and 3L and possibly 3M as well as Subarea 2. The panel noted that the assessments of the herring stocks in the Convention Area would be carried out. The panel unanimously approved the application of Denmark for panel membership. Mr A. Volkov (USSR) was elected chairman for the 2 ensuing years.
- d) **Panel 4.** The panel, under the chairmanship of Captain T. de Almeida (Portugal), received a Canadian proposal for the establishment of an annual quota of 18,000 tons of haddock in 1970, 1971, and 1972 in Div. 4X and the closure of Div. 4X south of 43°00'N and west of 64°30'W in March and April 1970, 1971, and 1972 to fishing any species of groundfish with any type of gear. The panel noted that difficulties in implementing the statistical requirements of the proposal and other matters were also inherent in the US proposal for regulation of the haddock fishery in Subarea 5. It was agreed, therefore, that the Canadian proposal should be considered at a joint meeting of Panels 4 and 5. Mr R. Lagarde (France) was elected chairman for the ensuing 2 years.
- e) **Panel 5.** The panel, under the chairmanship of Mr T. A. Fulham (USA), received a US

proposal for new conservation measures to protect the haddock of Subarea 5 and, while allowing some fishing, maintain the haddock stock at a level at which it could theoretically have a small increase in 1970. There was general agreement that these measures should include a closure of two areas of Georges Bank for the two haddock spawning months of March and April and that a yearly overall haddock catch quota should be set for Subarea 5 for 3 years beginning 1 January 1970 low enough to produce the necessary conservation effects. The panel agreed that the proposals should be referred to the joint meeting of Panels 4 and 5.

Under Plenary Agenda Item 23, the panel received a US statement regarding the low levels of the red hake, *Urophycis chuss* (Walb.) and silver hake, *Merluccius bilinearis* (Mitch.) and a proposal for the regulation of these fisheries by establishing a closed season for these species for the four months January-April in the area of Subarea 5. Following a discussion, the panel **recommended**

“that the Commission transmit to the Depositary Government the following proposal for joint action by the Contracting Governments: ‘that the Contracting Governments take appropriate action to prohibit the taking of red hake, *Urophycis chuss* (Walb.), and silver hake, *Merluccius bilinearis* (Mitch.), during the periods 1 January to 31 March of 1970, 1971, and 1972 in the area bounded by 69°00’W, 39°50’N, 71°40’W, and 40°20’N, provided however that during this period groundfish vessels may be permitted to take on each trip during which they fish in the said areas red and silver hake in amounts not to exceed 10% each of the total catch taken in the said area on that trip.’” Mr S. Perkowicz (Poland) was elected chairman for the ensuing 2 years.

- f) **Panel A (Seals).** The panel, under the chairmanship of Mr H. J. Lassen (Denmark), received briefs from the International Society for the Protection of Animals (ISPA), and the World Federation for the Protection of Animals (WFPA). The panel heard evidence from its scientific advisers that there was increasing evidence of mixing of the Front and Gulf harp seal herds and

the two breeding areas could not be considered as entirely discrete and separate as had once been supposed. There was general agreement that some conservation measures for harp seals were necessary and that quotas on catch was one possibility. However, recently the Canadian sealing industry had suggested an alternative of a later opening date and the hunt being applied to moulted juvenile harp seals rather than whitecoats. The panel agreed to discuss the matter further at an interim meeting at the Commission headquarters during the week of 22 September 1969.

- g) **Joint Meeting of Panels 4 and 5 (Item 22).** A joint meeting of Panels 4 and 5 was held on 5 June 1969 under the joint chairmanship of Captain T. de Almeida (Portugal), Chairman of Panel 4, and Mr T. A. Fulham (USA), Chairman of Panel 5, to consider Canadian and US proposals for additional regulation of the haddock fisheries in Subareas 4 and 5 (see also Section 15 (d) and (e)). Following discussion of the two proposals and some redrafting to include agreed changes, Panel 4 **recommended**

“that the Commission transmit to the Depositary Government the following proposal for joint action by the Contracting Governments:

1. That the Contracting Governments take appropriate action to regulate the catch of haddock by persons under their jurisdiction fishing in Div. 4X of Subarea 4 so that the aggregate annual landings of haddock by vessels taking haddock in Div. 4X of Subarea 4 in each year during 1970, 1971, and 1972 shall not exceed 18,000 metric tons.
2. That Competent Authorities of each Contracting Government shall report bi-weekly haddock landings taken in Div. 4X of Subarea 4 by persons under their jurisdiction to the Executive Secretary of the Commission not later than 7 days after the end of a 2-week reporting period. Information of haddock by-catch taken by the vessels which do not conduct specialized fishing for haddock shall be reported to the Executive Secretary of the

Commission in 700 ton increments. The Executive Secretary shall notify each Contracting Government of the date on which accumulative landings in Div. 4X of Subarea 4 equal 80% of the allowable landing stated in paragraph 1. Within 10 days of receipt of such notification from the Executive Secretary each Contracting Government shall prohibit landings of haddock caught in Div. 4X of Subarea 4 by persons under its jurisdiction except as provided in paragraph 3.

3. That in order to avoid impairment of fisheries conducted primarily for other species and which take small quantities of haddock incidentally, the Contracting Governments may permit persons under their jurisdiction to have in possession on board a vessel fishing primarily for other species subsequent to the closure referred to in paragraph 2, haddock caught in Div. 4X of Subarea 4 in amounts not exceeding 10% by weight of all other fish on board caught in Div. 4X of Subarea 4.
4. That the Contracting Governments take appropriate action to prohibit persons under their jurisdiction from fishing with gear capable of catching demersal species during March and April of 1970, 1971, and 1972 in that part of Div. 4X of Subarea 4 that lies between 42°00'N Lat and 43°00'N Lat, and between 67°00'W Long and 64°30'W Long."

and Panel 5 recommended

"that the Commission transmit to the Depository Government the following proposal for joint action by the Contracting Governments:

1. That the Contracting Governments take appropriate action to regulate the catch of haddock by persons under their jurisdiction fishing in Subarea 5 so that the aggregate annual landings of haddock by vessels taking haddock in Subarea 5 in each year during 1970, 1971, and 1972 shall not exceed 12,000 metric tons.

2. That Competent Authorities of each Contracting Government shall report bi-weekly haddock landings taken in Subarea 5 by persons under their jurisdiction to the Executive Secretary of the Commission not later than 7 days after the end of a 2-week reporting period. Information of haddock by-catch taken by the vessels which do not conduct specialized fishing for haddock shall be reported to the Executive Secretary of the Commission in 700 ton increments.

The Executive Secretary shall notify each Contracting Government of the date on which accumulative landings in Subarea 5 equal 80% of the allowable landing stated in paragraph 1. Within 10 days of receipt of such notification from the Executive Secretary each Contracting Government shall prohibit landings of haddock caught in Subarea 5 by persons under its jurisdiction except as provided in paragraph 3.

3. That in order to avoid impairment of fisheries conducted primarily for other species and which take small quantities of haddock incidentally, the Contracting Governments may permit persons under their jurisdiction to have in possession on board a vessel fishing primarily for other species subsequent to the closure referred to in paragraph 2, haddock caught in Subarea 5 in amounts not exceeding 10% by weight of all other fish on board caught in Subarea 5.
4. That the Contracting Governments take appropriate action to prohibit persons under their jurisdiction from fishing with gear capable of catching demersal species during March and April of 1970, 1971, and 1972 in areas of Subarea 5 bounded by straight lines connecting the following coordinates in the order listed:
 - (a) 70°00'W, 42°10'N
69°10'W, 41°10'N
68°30'W, 41°35'N
69°20'W, 42°30'N

- (b) 67°00'W, 42°20'N
 67°00'W, 41°15'N
 65°40'W, 41°15'N
 65°40'W, 42°00'N
 66°00'W, 42°20'N"

- h) **Joint Meeting of Panels 1 - 5** (Items 20 and 32). The joint meeting of Panels 1 - 5 met under the chairmanship of Mr V. Kamentsev (USSR) to consider conservation measures for Atlantic salmon (Plenary Agenda Item 20). The meeting noted that a resolution of the 1968 Annual Meeting had requested that member countries consider urgently the desirability of preventing increase in high seas fishing for salmon by their nations in the ICNAF Area for the time being and that high priority be given to studies of the effects of such high seas fishing on the resources (Annu. Proc. Vol. 18, p. 30). Consideration was given to a Canadian proposal to prohibit fishing for Atlantic salmon on the high seas in the Convention Area (Comm. Doc. 69/19). Following lengthy discussion, the following resolution, as amended by the Commission in plenary session on 6 June 1969, was **adopted** by a two-thirds majority:

"that the Commission recommend to the Contracting Governments that the fishing for salmon in the waters outside national fishery limits should be prohibited in the Convention Area."

16. International Cooperation (Items 24, 25, 26, 27)

- a) **UN Resolution 2172 (XXI) on Resources of the Sea**

The Commission was informed of the work completed on the Resolution in drawing IOC, WMO and FAO together, with IOC the coordinating and focal point and expressed a wish to be kept informed.

- b) **Cooperative systematic studies in the North Atlantic**

The Commission received the Report of the First Meeting of the ICES/ICNAF/IOC Coordinating Group

for North Atlantic Oceanography (Comm. Doc. 69/4). The Commission was assured that the Group has not been constituted to plan any new large-scale programs but will coordinate oceanographic work being undertaken.

c) Relations with other International Organizations

The Commission heard reports from Commission observers to NEAFC, INPFC, ICES, IOC, and SCOR. Following discussion, the Commission agreed that observers should not be sent to meetings of other international bodies working in the field of fisheries and oceanography for 2 or 3 years, after which it should review the situation. It was noted that most meeting participants were already receiving the full reports and documents of all such meetings. The Commission agreed that the Executive Secretary should continue to attend relevant meetings of fisheries research and management organizations.

17. Election of Chairman and Vice-Chairman (Item 33)

The Commission unanimously elected Dr A. W. H. Needler (Canada) as Chairman and Mr K. Løkkegaard (Denmark) as Vice-Chairman for the 1969 - 1970 and 1970 - 1971 sessions.

18. Acknowledgements and Adjournment

The Chairman voiced the Commission's indebtedness to the Polish Government for all the fine facilities and kind hospitality, to the meeting participants who had contributed to the progress of the Commission's work, and to the Secretariat for their assistance over the past 2 years.

Observers from FAO, ICES, Cuba, Ireland, and Japan expressed appreciation for the opportunity to participate.

The new Chairman, Dr Needler, thanked the Commission for honouring him and congratulated Mr Kamentsev, the outgoing Chairman, for the efficient way in which he had conducted the course of the Commission's work over the past 2 years.

There being no other business, the Chairman declared the 19th Annual Meeting of the Commission adjourned at 1340 hrs, 7 June 1969.

APPENDIX I

List of Participants

CANADA

Commissioners:

Mr S. G. Lake, H. B. Clyde Lake Limited, Burgeo, Newfoundland.
 Dr A. W. H. Needler, Department of Fisheries and Forestry, Ottawa, Ontario.
 Mr H. D. Pyke, National Sea Products Limited, Lunenburg, Nova Scotia.

Advisers:

Dr A. W. May, Fisheries Research Board of Canada, St. John's, Newfoundland.
 Dr F. D. McCracken, Fisheries Research Board of Canada, St. Andrews, New Brunswick.
 Dr D. E. Sergeant, Fisheries Research Board of Canada, Ste. Anne de Bellevue, P. Q.
 Dr G. F. M. Smith, Fisheries Research Board of Canada, Ottawa, Ontario.
 Dr W. Templeman, Fisheries Research Board of Canada, St. John's, Newfoundland.
 Mr E. B. Young, Department of Fisheries and Forestry, Ottawa, Ontario.

DENMARK

Commissioners:

Mr C. Djurhuus, Tinganes Torshavn, Faroe Islands.
 Mr H. J. Lassen, Ministry for Greenland, Copenhagen.
 Mr K. Løkkegaard, Ministry of Fisheries, Copenhagen.

Advisers:

Mr Sv. Aa. Horsted, Grønlands Fiskeriundersøgelser, Charlottenlund.
 Dr E. L. B. Smidt, Grønlands Fiskeriundersøgelser, Charlottenlund.

FRANCE

Commissioner:

Mr R. A. Lagarde, Secrétariat General de la Marine Marchande, Paris.

Adviser:

Mr J. Morice, Institut Scientifique et Technique des Pêches Maritimes, St. Pierre & Miquelon.

FEDERAL REPUBLIC OF GERMANY

Commissioners:

Mr G. Möcklinghoff, Bundesministerium für Ernährung, Landwirtschaft und Forsten, Bonn.
 Mr E. von Puttkamer, Foreign Office, Bonn.

Advisers:

Dr H. Bohl, Bundesforschungsanstalt für Fischerei, Hamburg.
 Dr J. Genschow, Association of German Trawler Owners, Bremerhaven.
 Dr J. Messtorff, Bundesforschungsanstalt für Fischerei, Bremerhaven.
 Dr A. Meyer, Bundesforschungsanstalt für Fischerei, Hamburg.
 Dr U. Schmidt, Bundesforschungsanstalt für Fischerei, Hamburg.
 Dr A. Schumacher, Bundesforschungsanstalt für Fischerei, Hamburg.

ICELAND**Commissioner:**

Dr J. Jonsson, Marine Research Institute, Reykjavik.

ITALY**Commissioner:**

Mr S. Santaniello, Embassy of Italy, Warsaw, Poland.

NORWAY**Commissioners:**

Mr E. Kvammen, Ministry of Fisheries, Oslo.

Mr O. Lund, Directorate of Fisheries, Bergen.

Dr B. Rasmussen, Institute of Marine Research, Bergen.

Advisers:

Mr E. Bratberg, Institute of Marine Research, Bergen.

Mr P. Karlsen, Norwegian Fishermen's Organization, Brandal via Aalesund.

Mr T. Øritsland, Institute of Marine Research, Bergen.

Mr L. Rosseland, Directorate for Game, Wildlife and Freshwater Fishery, Vollebekk.

Mr B. Saunes, Norwegian Fishermen's Organization, Aalesund.

Mr R. Vik, Zoological Museum, University of Oslo, Oslo.

Mr E. Wolni, Directorate for Game, Wildlife and Freshwater Fishery, Trondheim.

POLAND**Commissioners:**

Dr F. Chrzan, Sea Fisheries Institute, Gdynia.

Mr S. Jaskolski, Fisheries Central Board, Szczecin.

Mr S. Perkowicz, Ministry of Shipping, Warsaw.

Advisers:

Mr Z. Boguslawski, PPD i "Dalmor", Gdynia.

Prof W. Cieglewicz, Sea Fisheries Institute, Gdynia.

Prof T. Dabrowski, Sea Fisheries Institute, Gdansk.

Mr M. Fila, Polish Maritime Mission, 52 - 54 Gracechurch St., London E. C. 3, England.

Mr J. Hebel, "ODRA" Deep Sea Fishing Co., Swinouscie.

Mr J. Netzel, Sea Fisheries Institute, Gdynia.

Mr Z. Pietniewicz, Fisheries Central Board, Szczecin.

Prof J. Popiel, Sea Fisheries Institute, Gdynia.

Mr S. Prüffer, Fisheries Central Board, Szczecin.

Dr E. Stanek, Sea Fisheries Institute, Gdynia.

Dr W. Strzyzewski, Sea Fisheries Institute, Gdynia.

Prof R. Zaorski, Marine Institute, Gdansk.

Dr L. Zmudzinski, Sea Fisheries Institute, Gdynia.

Mr J. Zommer, Szczecin Marine Office, Szczecin.

PORTUGAL

Commissioners:

Captain Tavares de Almeida, Comissão Consultiva Nacional das Pescarias do Noroeste do Atlântico, Lisbon.
Commodore A. V. Botelho de Sousa, Gabinete Estudos das Pescas, Lisbon.

Advisers:

Dr R. Monteiro, Instituto de Biologia Maritima, Lisbon.

ROMANIA

Commissioner:

Dr M. Niculescu-Duvaz, Research and Designing Fish Culture Institute, Bucharest.

Adviser:

Mr L. Popescu, Ministry of Foodstuff Industry, Bucharest.

SPAIN

Commissioners

Mr A. deBordon y Caralt, Ministerio de Asuntos Exteriores, Madrid.
Dr O. Rodriguez Martin, Direccion General de Pesca Maritima, Madrid.

Adviser:

Mr F. Bozzano, Instituto Espanol de Moneda Extranjera, Warsaw.

UNION OF SOVIET SOCIALIST REPUBLICS

Commissioners:

Dr A. S. Bogdanov, All-Union Research Institute of Marine Fisheries and Oceanography (VNIRO), Moscow.
Mr V. M. Kamentsev, Ministry of Fisheries, Moscow.

Advisers:

Dr A. P. Alexeev, Polar Research Institute of Fisheries and Oceanography (PINRO), Murmansk.
Mr A. A. Volkov, Ministry of Fisheries, Moscow.
Mr L. M. Zheltov, Ministry of Fisheries, Moscow.

UNITED KINGDOM

Commissioners:

Mr A. J. Aglen, Department of Agriculture and Fisheries, Edinburgh 1.
Dr H. A. Cole, Fisheries Laboratory, Lowestoft.
Mr J. Graham, Ministry of Agriculture, Fisheries and Food, London S. W. 1.

Advisers:

Mr D. J. Garrod, Fisheries Laboratory, Lowestoft.
Mr M. J. Holden, Fisheries Laboratory, Lowestoft.
Mr A. J. Lee, Fisheries Laboratory, Lowestoft.
Mr B. A. Parkes, British Trawler Owners' Federation, Hull.
Mr B. B. Parrish, Marine Laboratory, Aberdeen.

UNITED STATES

Commissioners:

Mr T. A. Fulham, 253 Northern Avenue, Boston, Massachusetts.
 Dr L. L. Glasgow, Department of the Interior, Washington, D. C.
 Mr R. W. Green, Department of Sea and Shore Fisheries, Augusta, Maine.

Advisers:

Mr H. R. Beasley, Bureau of Commercial Fisheries, Washington, D. C.
 Mr S. T. Chmura, Massachusetts State Legislature, Boston, Massachusetts.
 Mr J. J. Dykstra, Box 735, Narragansett, Rhode Island.
 Dr R. L. Edwards, Bureau of Commercial Fisheries, Woods Hole, Massachusetts.
 Dr H. W. Graham, Bureau of Commercial Fisheries, Woods Hole, Massachusetts.
 Mr R. C. Hennemuth, Bureau of Commercial Fisheries, Woods Hole, Massachusetts.
 Captain F. D. Heyward, US Coast Guard Headquarters, Washington, D. C.
 Mr J. B. Kimsey, Bureau of Sport Fisheries and Wildlife, Washington, D. C.
 Mr D. L. McKernan, Department of State, Washington, D. C.
 Mr W. MacLean, Massachusetts State Legislature, Boston, Massachusetts.
 Mr R. W. McVey, United States Embassy, Copenhagen, Denmark.
 Dr B. H. Oxman, Department of State, Washington, D. C.
 Mr J. A. Posgay, Bureau of Commercial Fisheries, Woods Hole, Massachusetts.
 Mr J. B. Skerry, Bureau of Commercial Fisheries, Gloucester, Massachusetts.
 Mr A. P. Skinner, New Bedford Fishermen's Union, New Bedford, Massachusetts.
 Mr B. E. Skud, Bureau of Commercial Fisheries, Boothbay Harbour, Maine.
 Mr W. L. Sullivan, Jr. Department of State, Washington, D. C.
 Mr W. M. Terry, Bureau of Commercial Fisheries, Washington, D. C.

CUBA

Observers:

Mr A. Sujo Sujo, Flota Cubana de Pesca, Havana.
 Mr J. A. Varca Rivero, Centro de Investigaciones Pesqueras, Havana.

FOOD AND AGRICULTURE ORGANIZATION

Observers:

Mr L. P. D. Gertenbach, Department of Fisheries, FAO, Rome, Italy.
 Mr J. A. Gulland, Department of Fisheries, FAO, Rome, Italy.

GENERAL FISHERIES COUNCIL OF THE MEDITERRANEAN

Observer:

Mr J. A. Gulland, Department of Fisheries, FAO, Rome, Italy.

INTERNATIONAL COUNCIL FOR THE EXPLORATION OF THE SEA

Observers:

Mr J. Møller Christensen, ICES, Charlottenlund, Denmark.
 Dr A. E. J. Went, Department of Agriculture and Fisheries, Dublin, Ireland.

INTERNATIONAL NORTH PACIFIC FISHERIES COMMISSION

Observer:

Mr D. L. McKernan, Department of State, Washington, D. C., USA.

INTERNATIONAL SOCIETY FOR THE PROTECTION OF ANIMALS

Guest:

Mr C. Platt, European Field Officer, ISPA, 106 Jermyn Street, London S. W. 1, England.

IRELAND

Observer:

Dr A. E. J. Went, Department of Agriculture and Fisheries, Dublin.

JAPAN

Observers:

Mr T. Ono, Fisheries Agency, Ministry of Agriculture and Forestry, Tokyo.

Mr M. Tadashi, Japan Trawlers' Association, Tokyo.

NORTH-EAST ATLANTIC FISHERIES COMMISSION

Observer:

Mr G. Möcklinghoff, Bundesministerium für Ernährung, Landwirtschaft und Forsten, Bonn.

SCIENTIFIC COMMITTEE ON OCEANIC RESEARCH

Observer:

Mr A. J. Lee, Fisheries Laboratory, Lowestoft, England.

WORLD FEDERATION FOR THE PROTECTION OF ANIMALS

Guest:

Dr E. Simpson, 36 Gerrard Road, London N. 1, England.

SECRETARIAT

Mr L. R. Day, Executive Secretary.

Dr B. J. Kowalewski, Assistant Executive Secretary.

Mr W. H. Champion, Editorial Assistant.

Miss Jean Maclellan, Secretary.

Miss Gertrude Schrader, Clerk-Stenographer.

SECRETARIAL ASSISTANCE STAFF

Mrs Lucy Kierasinska.

Miss Ela Kosewska.

Mrs Natalia Motoczynska.

Miss Magda Rochowicz.

Miss Janina Sadowska.

Miss Jadwiga Szymanska.

Mrs Lorna Tunstall, Department of Agriculture and Fisheries, Edinburgh, Scotland.

CONFERENCE LIAISON OFFICER

Mrs Stella Laszczyk, Central Fisheries Board, Szczecin, Poland.

APPENDIX II

Agenda

PROCEDURES

1. Opening.
2. Agenda.
3. Publicity.

ADMINISTRATION

4. Panel Memberships.
5. Administrative Report.

FINANCE

6. Auditor's Report (to 30 June 1968) (Ann. Proc. Vol. 18, p. 11 - 13).
7. Financial Statement, 1968 - 69 (preliminary).
8. Budget estimate, 1969 - 70 (App. I, Agenda of F & A).
9. Budget forecast, 1970 - 71 (App. II, Agenda of F & A).

COMMISSION PROPOSALS

10. Status of proposals adopted by Commission.
 - a) for changes in the Convention.
 - b) for regulation of fisheries.

AMENDMENTS TO CONVENTION

11. Consideration of the views of Member Countries concerning the Protocol to the Convention, drafted at the 1968 Annual Meeting, relating to regulatory measures to be proposed by the Commission.
12. Consideration of a proposal to amend Article IV (2) of the Convention, relating to the fish groups whose current exploitation is the basis for panel membership.

TRAWL REGULATIONS

13. Annual Returns of Infringements.
14. Simplification of international trawl regulations.
15. Topside chafer.
16. Mesh measuring.

ENFORCEMENT

17. Exchange of national inspection officers.
18. Form of international inspection scheme.

CONSERVATION

19. General principles and problems of limiting fishing as a conservation measure.
20. Conservation measures for Atlantic salmon.
21. Conservation measures for seals.
22. Additional regulation of the haddock fishery in Subareas 4 and 5, including the possibility of a complete cessation of haddock fishing in Subarea 5.
23. Regulation of the fishery for hakes in Subarea 5.

INTERNATIONAL COOPERATION

24. UN Resolution 2172 (XXI) on Resources of the Sea, 6 December 1966.
25. Report on the development of cooperative systematic studies in the North Atlantic, IOC, ICES, and ICNAF (Resolution of the 5th Session of IOC).
26. Reports by Commission observers to meetings of other organizations concerned with fisheries (INPFC, NEAFC, ICES, FAO, IOC, SCOR).
27. Appointment of Commission observers to meetings of other organizations concerned with fisheries.

REPORTS OF COMMITTEES AND PANELS

28. Report of Standing Committee on Research and Statistics.
29. Report of Standing Committee on Finance and Administration.
30. Report of Standing Committee on Regulatory Measures.
31. Reports of Panels 1 - 5 and Panel A (Seals).
32. Report of Joint Meeting of Panels 1 - 5.

OTHER MATTERS

33. Election of Chairman and Vice-Chairman for 2 ensuing years.
34. Date and place of 1971 and 1972 Annual Meetings.
35. Press statement.
36. Other business.
37. Adjournment.

APPENDIX III

INTERNATIONAL COMMISSION FOR THE NORTHWEST ATLANTIC FISHERIES

A. Rules of Procedure for the Commission

(Adopted 7 June 1969)

Representation

Rule 1

1.1 Each Government shall notify the Executive Secretary as soon as possible the names of its Commissioners.

1.2 The Commissioners shall inform the Executive Secretary of the names of members of any Advisory Committee established in accordance with Article V (1) of the Convention who are authorized to attend non-executive meetings of the Commission.

1.3 The Commission may invite any Government not a party to the Convention and any international organization to be represented at meetings of the Commission by an observer or observers.

Voting

Rule 2

2.1 Observers, experts, and advisers may address plenary or committee meetings of the Commission, but shall not be entitled to vote.

2.2 At meetings of the Committees appointed by the Commission a simple majority of all members of such committees shall be decisive.

2.3 Votes shall be taken by show of hands, by roll call in the English alphabetical order of the names of the countries, or by ballot, as in the opinion of the Chairman appears to be most suitable.

2.4 Between meetings of the Commission or in the case of an emergency, a vote of the Commissioners may be taken by mail, or other means of communication.

Chairman and Vice-Chairman

Rule 3

3.1 The Chairman and Vice-Chairman shall take office at the conclusion of the annual meeting at which they are elected.

3.2 The powers and duties of the Chairman shall be:

- a) to declare the opening and closing of each meeting of the Commission;
- b) to preside at all meetings of the Commission;
- c) to decide all questions of order raised at meetings of the Commission, subject to the right of any Commissioner to request that any ruling by the Chairman shall be submitted to the Commission for decision by vote;
- d) to call for votes and to announce the result of the vote to the Commission;
- e) to determine after consultation with the Commissioners and the Executive Secretary the provisional agenda for the annual Commission meeting;
- f) to arrange for the appointment of the members of committees established in accordance with the provisions of Rule 6;
- g) to sign, on behalf of the Commission, a report of the proceedings of each annual or other meeting of the Commission, for transmission to Contracting Governments, Commissioners, and others concerned, as an authoritative record of what took place;
- h) generally, to make such decisions and give such directions to the Executive Secretary as will ensure, especially in the interval between

the meetings of the Commission, that the business of the Commission is carried out efficiently and in accordance with its decisions.

3.3 Whenever the Chairman of the Commission is unable to act, the Vice-Chairman shall exercise the powers and duties prescribed for the Chairman.

3.4 If the office of Chairman is vacated, the Vice-Chairman shall become Chairman for the unexpired balance of the term.

3.5 If the offices of Chairman and Vice-Chairman are vacated, the Chairman of the Standing Committee on Finance and Administration shall exercise the powers and duties prescribed for the Chairman, and the first order of business at the next regular annual meeting or special meeting of the Commission shall be election of a Chairman and a Vice-Chairman for the unexpired balance of the term.

Executive Secretary

Rule 4

4.1 The Commission shall designate staff positions to be filled through appointments made by the Executive Secretary. The Commission shall fix the tenure, rate of remuneration, and travelling expenses for the members of the Secretariat.

4.2 The Executive Secretary shall:

- a) have full power and authority over the Secretariat, subject to the general supervision of the Commission; make all necessary arrangements for Commission, Panel and Committee meetings; and perform such other functions as may be assigned to him by the Commission, its Chairman, or the Chairman of a Panel or a Committee;
- b) transmit the provisional agenda for the annual Commission meeting to all Contracting Governments and Commissioners not less than 60 days in advance of the meeting;
- c) address communications to the Depositary Government, in

pursuance of the provisions of Articles VI (2) and VIII of the Convention, to the Secretary of State of the United States of America;

- d) receive the credentials of the Commissioners, and report thereon to the Commission from time to time.

Order of Business

Rule 5

5.1 Except as provided in paragraph 5.2, no order of business which involves amendment of these Rules of Procedure, budget or related financial matters, Panel membership modifications under Article IV (2) of the Convention, boundary modifications under Article VI (2) of the Convention, or transmittal of proposals or recommendations under Article VIII of the Convention, shall be the subject of a decision by the Commission unless the subject matter has been included in the provisional agenda and in a memorandum which has been circulated with the provisional agenda by the Executive Secretary to all Commissioners at least 60 days in advance of the meeting at which the matter is to be discussed.

5.2 The Commission, with the unanimous agreement of Commissioners representing all Contracting Governments may take decisions on the transmittal of proposals or recommendations under Article VIII of the Convention; and with the unanimous agreement of Commissioners of all Contracting Governments represented at a meeting may take decisions on the other matters mentioned in paragraph 5.1.

Committees

Rule 6

6.1 The Commission may establish such *ad hoc* Committees as it considers to be required.

6.2 There shall be a Standing Committee on Finance and Administration consisting of one nominee from each of five Contracting Governments who may be assisted by experts and advisers and which shall advise the Commission on: (a) matters relating to the Secretariat; (b) the budget of the Commission; (c) the time and place of meetings of the Commission; (d) publications of the Commission. The Committee shall choose its own Chairman from among the nominees. The Chairman shall

have no vote but his Contracting Government may designate an alternate nominee who shall cast its vote. The Executive Secretary shall be an *ex officio* member of this Committee without vote.

6.3 There shall be a Standing Committee on Research and Statistics, consisting of one nominee from each Contracting Government who may be assisted by experts or advisers, and of observers from non-Contracting Governments and from the Food and Agriculture Organization of the United Nations and the International Council for the Exploration of the Sea. The Committee shall: (a) develop and recommend to the Commission such policies and procedures in the collection, compilation, analysis and dissemination of fishery statistics as may be necessary to ensure that the Commission has available at all times complete, current, and equivalent statistics on fishery activities in the Convention area and adjacent waters; (b) shall keep under continuous review the research programs in progress in the Convention area and adjacent waters, and shall develop and recommend to the Commission from time to time such changes in existing programs, or such new programs as may be deemed desirable; (c) keep under review the state of exploited fish stocks and the effects of fishing on these and provide the Commission and Panels with regular assessments. The Committee shall choose its own Chairman. The Executive Secretary shall be an *ex officio* member of this Committee without vote.

6.4 There shall be a Standing Committee on Regulatory Measures consisting of one nominee from each Contracting Government who may be assisted by experts or advisers, and of observers from non-Contracting Governments and from the Food and Agriculture Organization of the United Nations, the International Council for the Exploration of the Sea, the North-East Atlantic Fisheries Commission and the Organization for Economic Cooperation and Development. The Committee shall:

- a) consider possible measures for the regulation of fishing in relation to the stocks of fish, or of any particular species of fish in the Convention area, or any part thereof;
- b) consider the economic and administrative problems involved in the application of such measures and, in consultation with the

Standing Committee on Research and Statistics, the scientific and statistical information required for their solution;

- c) make appropriate recommendations to the Commission.

The Committee shall choose its own Chairman. The Executive Secretary shall be an *ex officio* member of this Committee without vote.

Language of the Commission

Rule 7

English shall be the official and working language of the Commission and its subsidiary bodies but, if desired, any other language may be used, it being understood that persons doing so at meetings will provide their own interpreters. All official publications and communications of the Commission shall be in English.

Records of Proceedings of the Commission and of its Committees

Rule 8

8.1 Records of all meetings of the Commission shall be provided by the Executive Secretary and shall be circulated promptly to all Contracting Governments and Commissioners.

8.2 Summary minutes of the proceedings of all meetings of Panels and Committees shall be furnished to the Commission.

Reports

Rule 9

9.1 The Commission shall publish annually, following its regular annual meeting, a report of its activities during the preceding year. Such report shall include a summary of its findings and of statistical, scientific, and other information gathered pertaining to the fisheries of the Convention area, the Chairman's report of the annual meeting, and a financial statement.

9.2 Commissioners should arrange, where feasible, for all reports on subjects of interest to the Commission which are published in their own countries to be sent to the Executive Secretary of the Commission for record purposes. English translations where available should be provided.

APPENDIX IV

B. Rules of Procedure for the Panels

(Adopted 7 June 1969)

Representation

Rule 1

At any meeting of the Panel, Commissioners of Contracting Governments not participating in the Panel shall inform the Executive Secretary or Panel Chairman of their attendance and of the names of experts and advisers accompanying them.

Chairman shall be submitted to the Panel for decision by vote;

d) to call for votes and to announce the result of the vote to the Panel;

e) to determine after consultation with the Commissioners of the Governments participating in the Panel the provisional agenda for every meeting, and to submit it to the Executive Secretary for transmittal to all Contracting Governments and Commissioners not less than 60 days in advance of the meeting;

Voting

Rule 2

2.1 Observers, experts, and advisers may address meetings of the Panel but shall not be entitled to vote.

2.2 Votes shall be taken by a show of hands, by roll call in the English alphabetical order of the names of the countries, or by ballot, as in the opinion of the Chairman appears to be most suitable.

2.3 Between meetings of the Panel or in the case of an emergency, a vote of the Commissioners of the Governments which participate in the Panel may be taken by mail or other means of communication.

f) to submit to the Commission and the participating Governments on the Panel a summary report of each meeting of the Panel;

g) generally, to make such decisions and give such directions to the Executive Secretary as will ensure, especially in the interval between the meetings of the Panel, that the business of the Panel is carried out efficiently and in accordance with its decisions.

Chairman

Rule 3

3.1 If the office of Chairman is vacated, a new Chairman shall be elected at the next meeting of the Panel for the unexpired balance of the term.

3.2 The powers and duties of the Chairman shall be:

a) to declare the opening and closing of each meeting of the Panel;

b) to preside at all meetings of the Panel;

c) to decide all questions of order raised at meetings of the Panel, subject to the right of a Commissioner of any participating Government to request that any ruling by the

Order of Business

Rule 4

4.1 Except as provided in paragraph 4.2, no order of business which involves amendment of these rules of procedure or recommendations or reports under Article VI (2), VII, or VIII (3) of the Convention shall be the subject of a decision by the Panel unless the subject matter has been included in the provisional agenda and in a memorandum which has been circulated with the provisional agenda by the Executive Secretary to all Commissioners at least 60 days in advance of the meeting at which the matter is to be discussed.

Meetings

4.2 The Panel, with the unanimous agreement of Commissioners representing all Contracting Governments participating in the Panel, may take decisions or recommendations under Article VII (2) or VIII (3) of the Convention; and with the unanimous agreement of Commissioners of all Contracting Governments participating in the Panel and represented at a meeting may take decisions on the other matters mentioned in paragraph 4.1.

Rule 6

The Panel shall hold a regular annual meeting in conjunction with the annual meeting of the Commission. Any other meetings of the Panel may be called by the Chairman at such time and place as may be agreed upon by a simple majority of the Governments participating in the Panel.

Committees**Financial****Rule 5**

The Panel shall not incur any expenditure except in accordance with directions given by the Commission.

Rule 7

The Panel may establish such working groups as it considers to be required.

PART 3

Summaries of Research and Status of Fisheries by Subareas, 1968

The following summaries were prepared from the research reports and other pertinent documents submitted to the 1969 Annual Meeting of the Commission from each Member Country. The summaries were prepared by the Chairman of the Groups of Scientific Advisers to the Panels administering the work of the Commission in the Subareas. The Chairmen were:

for Subarea 1 – A. Meyer (Federal Republic of Germany);
for Subarea 2 – A. S. Bogdanov (USSR);
for Subarea 3 – H. A. Cole (UK);
for Subarea 4 – R. Monteiro (Portugal);
for Subarea 5 – G. F. M. Smith (Canada).

Subarea 1 and East Greenland

Reports on research in 1968 were submitted by Canada, Denmark, Fed. Rep. Germany (FRG), Iceland, Norway, Portugal, Spain, UK, USSR, and USA.

1. Status of the Fisheries

Total catch of all species was 379,000 metric tons, excluding catch by non-member countries, the lowest catch since 1960, and 20% less than the 1967 catch. Catches by countries in 1968, with the 1967 catch in parentheses, were: Denmark (Faroes) 46,000 tons (64,000); Denmark (Greenland) 33,000 tons (44,000); FRG 145,000 tons (154,000); Iceland 300 tons (300); Norway 40,000 tons (53,000); Poland 1,000 tons (1,000); Portugal 33,000 tons (63,000); Spain 22,000 tons (11,000); USSR 2,000 tons (1,000); UK 10,000 tons (21,000); and non-member countries did not report catch (11,000).

Cod catches formed 93% of the total catch of 354,000 tons in 1968, a decrease of 75,000 tons. Catches were the lowest since 1964. UK and FRG, fishing mainly during the first half of the year, reported increased catch per unit effort. In the FRG fishery the increase was due mainly to a new fishery by midwater trawls on big schools of lazy post-spawners.

Redfish catches, mainly by FRG trawlers, decreased further to 9,000 tons, the lowest since 1952.

Salmon inshore catches decreased from about 1,300 tons to 580 tons, while the offshore catches increased from 300 tons to 550 tons due to increased fishing effort by Norwegian, Faroese, and Danish drift netters.

The East Greenland fishery for cod and redfish carried out mainly by FRG and Icelandic trawlers decreased by almost 50% from a total of 70,000 tons in 1967.

2. Work Carried Out

a) **Canada:** Oceanographic atlas of temperatures, salinity, dissolved oxygen, and silica in 1965-67 around Greenland including Davis Strait, Labrador Basin, and the Denmark Strait. Research work on salmon in West Greenland with Danish and UK scientists.

b) **Denmark:** Hydrographic sections by R/V *Adolf Jensen* April - November in West Greenland waters. Sampling for cod eggs, larvae, and young fish. Length and age of commercial cod. Cod tagging (2,562 cod). Salmon fishing experiments for tagging. Capelin studies. Trawling experiments for the deep sea prawn, *Pandalus borealis*.

c) **FRG:** Hydrographic observations by R/V *Walther Herwig* July and August from Cape Farewell to Great Halibut Bank. Sampling cod in West and East Greenland. Hydrographic observations by R/V *Anton Dohrn* in the Dohrn Bank area of East Greenland.

d) **Iceland:** Length and age samples in East Greenland cod fishery.

e) **Norway:** Five hydrographic sections between Nunarsuit and Sukkertoppen in April and May. Length and age samples of cod. Cod egg sampling. Survey for cod distribution. Hook selection experiments.

f) **Portugal:** Samples for length, age, and maturity of cod.

g) **USSR:** Hydrographic section 8-A between 59°24'N, 44°24'W, and 58°09'N, 46°55'W. Size and age composition of cod catches.

h) **UK:** Plankton recorder sampling 1,954 miles.

i) **USA:** Benthic studies off Disko Island.

3. Hydrography

Nearly all months of the year were covered for the first time. There was a very strong inflow of polar water from the East Greenland Polar Current and the West Greenland area. Since 1950 lower temperatures have been recorded in 1952 only. The most severe ice conditions ever seen were reported off southwest Greenland up to August. Temperatures and salinities in the Irminger component of the West Greenland Current were lower. In October - November, however, warm Atlantic Irminger water ended the extremely cold period. Warm Irminger Current water ran coastward across the shelf in the Dohrn Bank area with prospects for good fall cod fishing.

4. Cod

a) **Eggs and larvae:** Eggs were found in considerable quantities by Danish and Norwegian sampling. Larval numbers indicated a medium strength 1968 year-class.

b) **Young fish (age-groups 1-3):** Danish sampling indicated that the 1965 year-class was well represented and might become a relatively rich year-class.

c) **Commercial stock:** Investigations by Denmark, FRG, Norway, Portugal, and USSR show that, during the first half of the year, and especially in the southern divisions, the rich 1961 year-class was of the greatest commercial importance. During the second part of the year, the

1963 year-class was predominant in all catches and all divisions. The 1961 year-class, a great part of which is of East Greenlandic origin, also dominated clearly with up to 60% in the German and Icelandic catches off East Greenland. Also the 1963 year-class is well represented on the eastern side of Greenland and seems mostly to be of East Greenlandic origin. Germany reports that in spring 1968 a considerable emigration of the 1961 year-class to the Icelandic spawning grounds must have taken place. For 1969 a further possibly stronger emigration to Iceland is expected. As tagging experiments have shown, these emigrated cod, grown up in the southern part of Subarea 1 and East Greenland, are lost for the fishery off Greenland. They stay, as far as we know at present, for the rest of their life in the Icelandic waters.

The most striking thing in 1968, and possibly of greatest importance for the future of the Greenland stock of cod, was the exceptionally successful mid-water trawling reported by Germany and USSR in April and May in Div. 1C, and in May and June in Div. 1E. All attempts by R/V *Walther Herwig* to find pelagic schools of cod also in the following months were without any success. All recorded pelagic echo traces were due to capelin, sand eels, squids, jelly fish, and young flatfishes.

5. Atlantic Salmon

Poor salmon fishing resulted in only 44 salmon tagged in the coastal area of West Greenland. The 1967 taggings resulted in four recaptures in Ireland, Scotland, and Canada. In 1968, 85 recaptures in Greenland waters were reported from salmon tagged mostly as smolts in Canada (51), USA (4), Scotland (16), England (8), Ireland (1), Sweden (1), and Greenland (4). Since 1956, 570 salmon tagged in various countries have been recaptured in Greenland. Other researches to determine ways of identifying the home waters of the Greenland-caught salmon, e.g. morphometric, meristic, parasitological, and serological studies continued. For further details see Part 2 of this Annual Proceedings.

Subarea 2

Reports on research were submitted by the following countries: Canada, Federal Republic of Germany (FRG), Poland, Portugal, Spain, USSR, and UK.

1. Status of Fisheries

Total catch of all species was over 426,000 metric tons, excluding catches made by non-member countries,

compared to 329,000 tons in 1967. Catches by countries in 1968 with the 1967 catch in parentheses were: Canada 19,000 tons (29,000); France 39,000 tons (25,000); FRG 55,000 tons (34,000); Iceland 270 tons (130); Norway 16,000 tons (2,000); Poland 74,000 tons (43,000); Portugal 60,000 tons (53,000); Spain 33,000 tons (37,000); USSR 119,000 tons (31,000); UK 12,000

tons (9,000); and non-member countries not reported for 1968 (66,000).

Cod made up over 95% of the total catch of all species. Catches increased from 298,000 tons in 1967 to 406,000 tons in 1968. Increases were mainly due to larger trawl catches by USSR (21,000 to 104,000 tons), Poland (38,000 to 70,000 tons), FRG (32,000 to 54,000 tons), France (25,000 to 39,000 tons) and Norway (2,000 to 16,000 tons). Catches by Canada decreased from 28,000 to 18,000 tons mainly due to a poor inshore fishery and by Spain from 37,000 to 33,000 tons.

Redfish catches made mainly by USSR and Poland declined from 17,000 tons in 1967 to 5,000 tons in 1968.

2. Work Carried Out

a) **Canada:** Inshore cod sampling for length, age, sex, maturity, and food. Exploratory fishing for salmon with drift nets, March - April from R/V *A. T. Cameron*.

b) **FRG:** Hydrographical and biological studies from R/V *Walther Herwig* in Div. 2J in February 1969.

c) **Poland:** Cod sampling for length and age from commercial vessels and R/V *Wieczno*. Redfish (*mentella*-type) samples taken by factory trawler *Aries*. Sampling of American plaice.

d) **Portugal:** Samples for length, age, and sexual maturity of cod in Div. 2J in February.

e) **USSR:** Hydrographic section off Hamilton Inlet by R/V *Neptun*. Length and age composition of cod. Length composition of *Macrourus* catches.

f) **UK:** Length and age sampling of commercial landings. Sampling plankton with Continuous Plankton Recorder (3,460 miles).

3. Hydrography

In November the temperature of the cold component of the Labrador Current in the layers below 50 m was lower than the mean long-term temperature by 0.50° to 0.97°C and in the 0 - 50 - m layer was 0.60°C above it. At the end of December 1968, near bottom waters with temperature below 2°C spread more easterly than during the same period in 1963 and 1966. Temperatures are expected to be much below normal, as in 1965.

4. Plankton

Continuous plankton recorder survey sampled 3,460 miles of water.

5. Cod

Cod were scarce in inshore waters and extremely abundant in off shore waters. FRG fishery conducted from February to mid-April in Div. 2J took 35.7 tons per day (previous highest was 31.4 tons in 1965) despite a much higher fishing intensity as compared to other years. Polish catches were predominantly fish 42 - 65 cm long at ages 5 - 10 years. The 1965 year-class was very abundant. Portuguese catches in Div. 2J in February consisted of cod 31 - 85 cm long mainly of the 1962 year-class. USSR catches were predominantly 5- to 8-year-old cod and consisted mainly of the 1961, 1962, and 1963 year-classes.

6. Redfish

Redfish were taken by the FRG fleet at the rate of 0.2 tons per day. Polish catches consisted of the *mentella*-type with the males 24 - 25 cm long and the females 25 - 50 cm long.

7. Roundnose Grenadier (*Macrurus* sp.)

USSR catches contained specimens 22 - 97 cm in length.

Subarea 3

Reports on research were submitted by Canada, Poland, Portugal, USSR, UK, and USA.

1. Status of the Fisheries

Total catch of all species was 1,157,000 tons, excluding catches by non-member countries, a 54,000 tons increase from 1967. Catches by Canada increased

by over 70,000 tons to 396,000 tons; by Denmark by 1,000 to 17,000 tons; by Norway 20,000 to 24,000; by Portugal 5,000 to 119,000 tons; by Spain 28,000 to 206,000 tons; by USSR 7,000 to 272,000 tons. Catches by France decreased by 13,000 to 65,000 tons; by Poland 4,000 to 31,000 tons; by UK 20,000 to 25,000 tons. Non-member countries took 40,000 tons in 1967; catch figures are not available for 1968.

Cod catches made up about 65% of the total catch of all species and increased from 721,000 tons in 1967 to 743,000 tons in 1968. Substantial increases in catch were reported by Canada, Norway, and Spain. France, Poland, USSR, and UK reported decreases of up to 10%.

Haddock catches decreased from 11,000 to 6,000 tons.

Redfish catches declined over 40,000 tons to 48,000 tons. However, the catch by non-member countries was 29,000 tons in 1967 and is not available for 1968.

Herring catches continued to increase sharply to 155,000 tons from 78,000 tons in 1967 and 23,000 tons in 1966. All catches were made by the Canadian fishery using mainly purse seiners.

Flounders, mainly American plaice, contributed 132,000 tons and were taken almost entirely by Canada and USSR.

The catch of harp seals (young and adult) in the "Front" area (Div. 2J, 3K, and 3L) by Canadian and Norwegian vessels increased considerably to about 220,000 animals in March - April of 1969 from about 130,000 in 1968.

2. Work Carried Out

a) Canada: Oceanographic section St. John's - Flemish Cap in February - March and in July. Station 27 off Cape Spear occupied once or twice a month over the year. Planktonic foraminifera of the water column and the sediments. Charting surveys off eastern Newfoundland. Investigations of the deep scattering layer along the 2,000-m depth contour east and south of Newfoundland with mid-water trawl fishing at 900 - 1,100 m. Surveys and sampling of inshore and offshore cod and offshore haddock, redfish, American plaice, yellowtail flounder, and Greenland halibut. Investigations of herring, capelin, Atlantic salmon, and transplanted pink salmon.

b) Poland: R/V *Wieczno*. Biology of cod, redfish, American plaice, witch, and Greenland halibut. Hydrographic section over Grand Bank, Green Bank, and St. Pierre Bank (26 stations) in February.

c) Portugal: Biology of cod

d) USSR: R/V *Rossia*. Hydrographical observations on Grand Bank, North Newfoundland Bank, and Flemish Cap Bank. Young cod and haddock surveys. Cod tagging

at Grand Bank (2,439 fish). Biology of cod, haddock, and roundnose grenadier.

e) UK: Sampling commercial cod catch. Continuous plankton recorder survey (14,630 miles). Selectivity experiments.

f) USA: International Ice Patrol oceanographic sections and ocean stations.

3. Hydrography

The Gulf Stream influence along the southern slopes of the Grand Bank was stronger than usual resulting in near-bottom temperatures in May - June of 8° to 10°C in comparison with the 6° to 7°C normal. Temperatures in the offshore portion of the Labrador Current on the eastern slope of the Grand Bank were, however, somewhat lower than normal.

4. Plankton

The spring bloom of the phytoplankton was early. Phytoplankton was abundant on the Grand Banks from February to March with a maximum in March. *Calanus* was abundant earlier than usual and was above average for most of the year. Redfish larvae were scarce over the American shelf and slope waters.

5. Cod

Winter catches per hour trawling in the northern part of the subarea by the Polish trawlers were three times those obtained in 1967. The fishery was mainly dependent on the good 1961, 1962, 1963, and 1964 year-classes. Catches declined in the southern part of the subarea. The rich 1964 year-class of cod is apparently already heavily exploited. Surveys indicate that the 1965 and 1966 year-classes are weaker than the rich 1964 year-class but are quite abundant in Div. 3NOP. Tagging results confirmed that the boundary between the Labrador-Newfoundland and southern Grand Bank cod stocks lies between 46° and 47°N.

6. Haddock

There was no evidence of a new year-class on the Grand Bank. On St. Pierre Bank the 1966 and 1967 year-classes were reported to be stronger than in previous years.

7. Redfish

Polish surveys indicate that fishing prospects in the immediate future are poor.

8. Pink salmon

Egg deposition of the 5,334 pink salmon allowed to spawn naturally in 1967 in North Harbour River, St.

Mary's Bay, Newfoundland, was estimated to be 4,400,000. Of the 5,900,000 eggs from British Columbia planted in November 1966, 1,353 fish returned in 1968 between August and October. An additional 933 fish were reported from the commercial salmon fishery.

Subarea 4

Reports on research were submitted by Canada, Federal Republic of Germany (FRG), Poland, USSR, UK, and USA.

1. Status of the Fisheries

Total catch increased by 217,000 tons from 723,000 tons in 1967 to 940,000 tons in 1968. Eight member countries fished in the subarea: Canada 741,000 tons (596,000 in 1967); France 25,000 tons (13,000); FRG 10,000 tons (nil); Poland 1,000 tons (200); Portugal 7,000 tons (700); Spain 63,000 tons (48,000); USSR 66,000 tons (11,000); UK nil (5,000); and USA 26,000 (30,000). Nominal catch of groundfish and flounders increased from 420,000 tons in 1967 to 509,000 tons in 1968; catches of pelagic species increased from 273,000 tons to 371,000 tons, 75,000 tons of the increase being herring.

Cod catches increased by 53,000 tons to 246,000 tons due mainly to the increased Canadian and French catches in Div. 4R (west coast of Newfoundland) and Spanish catches in Div. 4Vs (northeastern edge of the Nova Scotian Banks).

Haddock catches continued to decline to 46,000 tons from 49,000 tons in 1967 due mainly to poorer catches in Div. 4X (southwestern part of Nova Scotia Banks).

Increased catches of redfish from 88,000 tons in 1967 to 103,000 tons in 1968 was due mainly to improved Canadian Catches in Div. 4R and S (western Gulf of St. Lawrence).

Herring catches increased dramatically from 261,000 tons in 1967 to 348,000 tons in 1968, mainly due to the rapidly expanded Canadian industrial fishery in Div. 4X (Southwest Nova Scotia) and 4T (southern Gulf of St. Lawrence). Pelagic trawl fishing introduced for the first time by FRG took over 10,000 tons.

Increases were also reported in the catch of pollock from 15,000 tons to 18,000 tons; of mackerel 11,000 tons to 21,000 tons and of sea scallops 7,000 tons to 15,000 tons.

A total of over 35,000 harp and hood seals were taken by Canada in the Gulf of St. Lawrence in 1969.

2. Work Carried Out

a) Canada: R/V *A. T. Cameron* and other research vessels. Plankton, fish eggs and larval sampling in Div. 4T. Ice forecasting in Div. 4RST. Halifax oceanographic section (Div. 4W) occupied six times. Moored buoy program in Div. 4X and W continued. Studies of Labrador Current and Gulf Stream mixing. Productivity studies St. Margaret's Bay. Long- and short-term variations of water properties in Southwest Nova Scotia and Bay of Fundy-Gulf of Maine areas. Cod studies in Gulf of St. Lawrence. Haddock survey Browns to Sable Island Banks. Biology of silver hake, sand lance, and argentine. Herring studies in Bay of Fundy and Gulf of St. Lawrence. Mackerel sampling. Salmon smolt tagging and scallop studies with submarine. Experimental fishing with acoustic echo-counting equipment.

b) FRG: Biological studies of herring in December in Div. 4Vn and 4Vs.

c) Poland: R/V *Wieczno* and *Walpurza*. Oceanographical observations from Banquereau to Emerald Banks. Biological studies of herring, haddock, redfish, American plaice, and yellowtail.

d) USSR: Four seasonal hydrographic surveys. Biological studies of silver hake, haddock, and bottom species.

e) UK: Continuous plankton recorder surveys sampled 4,651 miles.

f) USA: Cooperative studies of haddock with Canadian scientists in Div. 4X.

3. Hydrography

Canadian observations suggested that gyres, 10 - 20 km in diam, were present and moving in the southern Gulf of St. Lawrence. Average surface drift in the Gulf of St. Lawrence showed a counter-clockwise circulation

with no evidence of return circulation along the north shore of the Gulf. Surface and bottom circulations in the eastern Gulf of Maine are best described, for the moment, as those of an upwelling area with bottom convergence towards the southwestern Nova Scotia coast. This convergence appeared stronger in spring and summer and weaker in autumn and winter. The long-term cooling trend along the Canadian Atlantic coast was still evident in 1968 although to a less degree than previously. Between January and April an intrusion of relatively high temperature and high salinity waters occurred in the deeper layers of the Gulf of Maine with influences on the waters of the Bay of Fundy-Gulf of Maine area from surface to bottom. Surface temperatures were generally higher than normal in the summer and winter in the southwestern Gulf of St. Lawrence. Polish observations showed a rise in surface and bottom temperatures from east to west on the Scotian Shelf in March. USSR surveys showed that the heat content in water masses was higher in 1968 than in 1967 at all seasons and may be due to an intensive inflow of Gulf Stream water.

4. Plankton

In the St. Margaret's Bay-LaHave Basin area, in spring, largest plankton population densities are found inshore from the 50-fathom line.

5. Cod

Small-mesh, otter trawl survey for cod in the southern Gulf of St. Lawrence (Div. 4T) indicated that in September the usually dominant 3-year-old cod were not as abundant as in 1967. Also, the 1964 year-class (3-year-olds in 1967) was not as abundant in 1968 as had been expected, but was still above average. Sizes and ages of cod were similar to 1967, with a modal size at 46 cm and 4-year-old fish (1964 year-class).

6. Haddock

Canadian surveys in Div. 4W and X reaffirmed that the 1964-67 year-classes were weak and that, probably, the 1968 year-class would be better than those of the previous 4 years in Div. 4W. Mean length of fish was 49.7 cm. US-Canadian research in Div. 4X shows an

increase in mortality rate and a decrease in abundance of haddock.

7. Herring

Artificially fertilized ova from spring spawners from the Gulf of St. Lawrence (Div. 4T) hatched in 17 days, ova from autumn spawners in 14 days. Studies in Div. 4X (Southwest Nova Scotia), 5Y (Gulf of Maine), and 5Z (Georges Bank) show variations in vertical distribution with size of larvae. The 1966 year-class was dominant (80-90%) in Southwest Nova Scotia (Div. 4X) and the 1959 and 1960 year-classes were most abundant in Div. 4T. Investigations by FRG showed that herring from Misaine Bank (Div. 4Vs) had different meristic characteristics from those from Georges Bank (Div. 5Ze). In Div. 4Vs catch per day by German stern trawlers using pelagic trawls in December was over 55 tons per day; by Polish trawlers in March, June, and July was 22 tons per day. Canadian studies on fat content shows that seasonal variation is greater for spring spawners than autumn spawners, that there is no consistent relationship between mean length and fat content, that fat content is highest during May and June.

8. Silver Hake

Incidence of a gill disease in silver hake was lower than in 1967. Increased abundance of juveniles in research vessel catches indicates increasingly good year-classes in 1967 and 1968 which should be of commercial size in 1970-72. Age composition of fish from Emerald Bank (Div. 4W) showed 3-, 4- and 5-year-olds were predominant in May and June but 2- and 3-year-olds in September and October.

9. Atlantic Salmon

From 63,000 salmon smolts tagged and liberated in Canadian studies in 1965 (1,090 adult salmon recoveries) and 87,000 liberated in 1966 (795 adult recoveries), approximately 12% of the recoveries were made in West Newfoundland, about 40% as large salmon in Canada and 45-50% as grilse in Canada. From 128,000 tagged smolts liberated in 1967 there have been 457 recoveries, for which the ratio of recaptures in West Greenland to grilse in Canada is 1 to 10. Nearly 165,000 tagged smolts were liberated in 1968.

Subarea 5

Reports on research were submitted by Canada, Federal Republic of Germany (FRG), Poland, Romania, USSR, UK, and USA.

1. Status of the Fisheries

The total nominal catch rose from 732,000 tons in 1967 to 813,000 tons (excluding catches by non-member countries) in 1968 but was less than the high total of 890,000 tons in 1965. Canada took 100,000 tons (81,000 in 1967); FRG 70,000 tons (28,000 in 1967); Poland 80,000 tons (41,000 in 1967); Romania 3,000 tons (2,000 in 1967); Spain 18,000 tons (16,000 in 1967); USSR 282,000 tons (268,000 in 1967); USA 260,000 tons (274,000 in 1967). Thus all Member Countries fishing the subarea, except USA, increased their total catch.

Cod catches increased to 49,000 tons in 1968 from 43,000 tons in 1967, but this was accompanied by a decrease in haddock to 44,000 tons in 1968 from 57,000 tons in 1967 and 127,000 tons in 1966. The decrease is attributed to decreased abundance.

Silver hake again decreased to 80,000 tons in 1968 from 101,000 tons in 1967 and 162,000 tons in 1966. Red hake showed a similar trend to 20,000 tons in 1968 from 45,000 tons in 1967 and 89,000 tons in 1966. Both of these decreases are attributed to decreased abundance with resulting decreased effort.

Yellowtail catches increased to 33,000 tons in 1968 from 26,000 tons in 1967 to be about the same as 31,000 tons in 1966.

Herring catches again increased greatly to 339,000 tons in 1968 from 250,000 tons in 1967 and 166,000 tons in 1966. All Member Countries fishing herring in the area shared in this increase which is attributed to increased effort.

Sea scallops decreased to 40,000 tons in 1968 from 53,000 tons in 1967 and 49,000 in 1966 while the fishing effort increased slightly.

Redfish continued to decline to 7,000 tons in 1968 from 11,000 tons in 1967 due to decreased effort.

Mackerel increased to 47,000 tons in 1968 from 16,000 tons in 1967 and alewives to 22,000 tons in 1968 from 9,000 tons in 1967.

2. Work Carried Out

a) Canada: Collection of scallop statistics. Larval herring abundance. Biology of swordfish. Tagging tuna, sharks and swordfish, short-tailed squid. Otter-trawl survey from Georges Bank south. Joint environmental surveys with USA and USSR.

b) FRG: Herring sampling on Georges and Misaine Banks for comparison of meristic characters.

c) Poland: Length and age herring sampling. Studies of haddock. Hydrographic observations in September and October.

d) Romania: Sampling of herring, mackerel, cod, haddock, and silver hake. Hydrographic observations in September and October.

e) USSR: Hydrographic surveys in January, May, August, and October. Zooplankton and ichthyoplankton sampling. Studies of silver hake, haddock, herring, and red hake. Joint surveys with Canada and USA. Immunoserological studies on silver hake. Blood studies of herring groups.

f) UK: Continuous plankton recorder sampling (981 miles).

g) USA: R/V *Albatross IV* and Coast Guard vessels. Hydrographic cruises. Quarterly cruises to monitor plankton in coastal waters of Gulf of Maine. Experimental plankton samples. Cooperative environmental research with Canada and USSR. Benthic studies. Continued studies of haddock population dynamics and of the timing and distribution of haddock spawning with USSR. Length-weight and age validation studies of silver hake. Joint USSR-US groundfish studies. Herring larval studies of mortality, feeding and condition. Salmon studies. Lobster population and culture studies.

3. Hydrography

Mean annual surface water temperature in coastal waters (8.1°C) was the highest since 1964 and had the greatest upswing in 1 year since the downward trend started in 1951. In the Georges Bank area from May to August, there was an intense warm water inflow through the East Channel. During September cold currents influenced the water temperatures at the surface. In

October, the warm water inflow intensified and warm waters filled the deeps north of the Banks and areas outside it. The heat content of water masses off Georges Bank was close to that in 1962 - 63 and higher than in 1967.

4. Haddock

Because of the critically low level of the Georges Bank haddock stock, studies of the dynamics of the population were intensified. Overexploitation and abnormal recruitment has caused an extensive departure from the equilibrium state corresponding to the maximum harvestable samples. Calculation of the number of fish in the population which are available as surplus production were completed by US scientists and indicate that very severe reduction in removals is required to begin the process of rebuilding the stock to levels providing maximum surplus production. Earlier haddock spawning on Georges Bank in 1968 is correlated with higher water temperatures.

5. Silver Hake

Georges Bank catches were made up of 3-, 4- and 5-year old fish which ranged in average monthly length from 27 to 40 cm. Silver hake specific blood antigens distinguished Sable Island, Georges Bank, and Middle Atlantic states populations. Immature fish (less than 30

cm in length) feed mainly on Euphausiids: fish from 35 to 40 cm feed mostly (42 - 96%) on fish.

6. Herring

Offshore herring catches consisted mainly of 5-, 6-, and 7-year old fish (1961, 1962, and 1963 year-classes). In 1969 the herring stocks will include poor year-classes that undoubtedly will influence the fishery in 1969 and 1970. Immunoserological studies of spawning concentrations of fish from the northern part of Georges Bank suggests that two groups of herring are present. The inshore sarding-herring catches were mainly of the 1966 year-class as 2-year-old fish. In 1968, 4-year-old fish were only 0.5% of the catch. In 1967 they contributed 15%, the highest recorded.

7. Joint US-USSR Groundfish Studies

In October and November 1968, joint trawling operations which were begun in 1967 extended southward to Cape Hatteras and monitored the distribution and abundance of trawl-caught fish. In the Georges Bank area, the catches were more evenly divided among the different fish species rather than being dominated by a few species as in the southern part of the survey area. The north-south distribution pattern presumably is related to water temperature since the southern part of the area is generally warmer than the northern part.

PART 4

List of Scientists and Laboratories Engaged in the Commission's Work

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A. W. May	Anadromous fishes	"	"	"	"
A. A. Blair	Pink salmon	"	"	"	"
A. R. Murray	Atlantic salmon	"	"	"	"
O. L. Nyman	Serology	"	"	"	"
J. H. C. Pippy	Parasites	"	"	"	"
V. M. Hodder	Herring	"	"	"	"
L. S. Parsons	Herring	"	"	"	"
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S. N. Messieh	Herring	"	"	"	"
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P. J. G. Carrothers	Gear engineering	"	"	"	"
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D. L. Peer	Biologist	"	"	"	"
R. W. Sheldon	Environmental oceanography	"	"	"	"

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