

**INTERNATIONAL COMMISSION**  
FOR THE  
**NORTHWEST ATLANTIC FISHERIES**



**ANNUAL REPORT**

(formerly Annual Proceedings)

Vol. 29  
for the period  
1 July 1978-31 December 1979

## Letter of Transmittal

The Chairman of the International Commission for the Northwest Atlantic Fisheries presents his compliments to the Governments parties to 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 reports of the International Commission for the Northwest Atlantic Fisheries for the period 1 July 1978 to 31 December 1979.

This is the 29th and final annual report of the proceedings of the Commission and is an authoritative record of its activities from 1 July 1978 to the termination of operations of the Commission on 31 December 1979. The report contains accounts of the activities of the Commission's Secretariat; an account of the 10th Special Meeting, March 1979; an account of the 29th Annual Meeting, June 1979; summaries of research carried out in each of the five Convention subareas and on seals in 1978; financial reports for the periods 1 July 1978 to 30 June 1979 and 1 July to 31 December 1979; and a statement of liquidation as at 1 January 1980.

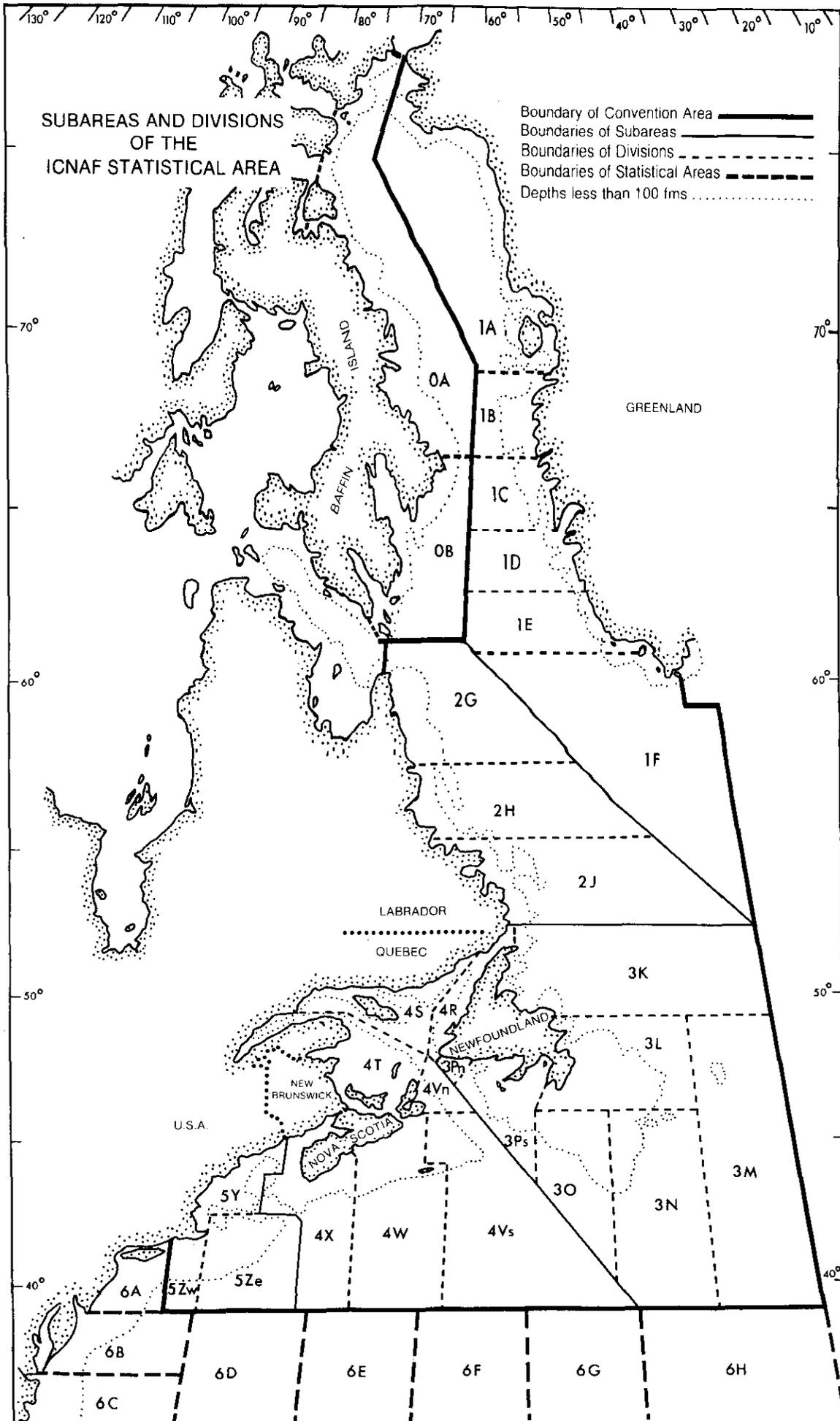
This report is prepared and transmitted in conformity with the requirements of Article VI(1) (f) of the International Convention for the Northwest Atlantic Fisheries and Rules 3.2(g) and 9.1 of the Rules of Procedure for the Commission.



S. Ohkuchi  
Chairman  
International Commission  
for the Northwest  
Atlantic Fisheries

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## Commission's Organization, 1 July 1978-31 December 1979

### Participating Governments

Bulgaria, Canada, Cuba, Denmark<sup>1</sup>, France<sup>1</sup>, Federal Republic of Germany<sup>1</sup>, German Democratic Republic, Iceland, Italy<sup>1</sup>, Japan, Norway, Poland, Portugal, Romania, Spain, Union of Soviet Socialist Republics and United Kingdom<sup>1</sup>.

#### Chairman of Commission

Mr S. Ohkuchi,  
Nippon Suisan Kaisha Ltd.,  
6-2 Otemachi,  
2-Chome Chiyoda-ku  
Tokyo, Japan.

#### Vice-Chairman of commission

Dr W. Ranke,  
VVB Hochseefischerei,  
251 Rostock-Marienehe,  
German Democratic Republic

### Panels for the Subareas

Subarea	Panel	Member Governments	Chairman
1	1	Denmark <sup>1</sup> , France <sup>1</sup> , Federal Republic of Germany <sup>1</sup> , Norway, Poland, Portugal, Spain, Union of Soviet Socialist Republics, United Kingdom <sup>1</sup> .	(Vacant)
2	2	Canada, Cuba, France <sup>1</sup> , Federal Republic of Germany <sup>1</sup> , German Democratic Republic, Iceland, Norway, Poland, Portugal, Romania, Spain, Union of Soviet Socialist Republics, United Kingdom <sup>1</sup> .	(Vacant)
3	3	Bulgaria, Canada, Cuba, Denmark <sup>1</sup> , France <sup>1</sup> , Federal Republic of Germany <sup>1</sup> , German Democratic Republic, Iceland, Italy <sup>1</sup> , Japan, Norway, Poland, Portugal, Romania, Spain, Union of Soviet Socialist Republics, United Kingdom <sup>1</sup> .	Capt. A. S. Gaspar, Praca Duque de Terceira 24-3-E, Lisbon 2, Portugal
4	4	Bulgaria, Canada, Cuba, Denmark <sup>1</sup> , France <sup>1</sup> , Federal Republic of Germany <sup>1</sup> , Japan, Poland, Portugal, Spain, Union of Soviet Socialist Republics.	(Vacant)
5	5	Bulgaria, Canada, Cuba, France <sup>1</sup> , German Democratic Republic, Japan, Poland, Romania, Spain, Union of Soviet Socialist Republics.	(Vacant)

### Panel for Harp and Hooded Seals

A	Canada, Denmark <sup>1</sup> , Norway.	(Vacant)
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## Commission's Organization, 1978/79 (continued)

### Standing Committees

Committees	Members	Chairman
On Finance and Administration	<b>One Nominee</b> from each of the Contracting Governments (Canada, Federal Republic of Germany <sup>1</sup> , Portugal, Union of Soviet Socialist Republics, United Kingdom <sup>1</sup> ).	Miss D. E. Pethick, International Directorate, Department of Fisheries and Oceans, 240 Sparks Street, Ottawa, Ontario Canada K1P 6C9
On Research and Statistics	<b>One Nominee</b> from each Contracting Government who may be assisted by experts and advisers.	Dr G. H. Winters, Northwest Atlantic Fisheries Centre, P. O. Box 5667, St. John's, Newfoundland, Canada A1C 5X1 (November 1978 and February 1979 Sessions)  Dr R. G. Halliday, Marine Fish Division, Fisheries and Oceans Canada, P. O. Box 1006, Dartmouth, Nova Scotia, Canada B2Y 4A2 (June 1979 Session)
On Regulatory Measures	<b>One Nominee</b> from each Contracting Government who may be assisted by experts and advisers.	(Vacant)
On International Control	<b>One Nominee</b> from each Contracting Government who may be assisted by experts and advisers.	Capt. A. S. Gaspar, Acting Chairman, Praca Duque de Terceira 24-3-E, Lisbon 2, Portugal

### Headquarters

Dartmouth, Nova Scotia, Canada

Executive Secretary	— Mr L. R. Day	Statistical Clerk	— Miss B. L. Perry
Assistant Executive Secretary	— Mr V. M. Hodder	(Surveys and Sampling)	(TOS 1 Jan 1979)
Administrative Assistant	— Mr W. H. Champion	Documents and Mailing Clerk	— Mrs F. E. Perry
Senior Clerk-Secretary	— Mrs V. C. Kerr	Clerk-Typist	— Mrs P. M. Wadman
Finance and Publications Clerk-Steno	— Ms E. R. Cornford (SOS 16 Feb 1979)	Statistical Clerk (Fishery Statistics)	— Mr F. D. Keating (to 31 Jan 1979)
	— Mr F. D. Keating (from 1 Feb 1979)		— Mr E. R. Amiro (TOS 12 Feb 1979) {SOS 9 Nov 1979}
Senior Statistical Clerk	— Mr G. M. Moulton		— Miss V. M. Bullen (TOS 1 Dec 1979)
Clerk-Duplicator Operator	— Mr R. A. Myers		— Miss C. L. Martin (TOS 8 Feb 1979)
Clerk-Duplicator Operator	— Mr B. T. Crawford		
Statistical Clerk	— Ms P. A. Cave (SOS 12 Jan 1979)	Data Processing Clerk	
(Surveys and Sampling)			

# PART 1

## Administrative Report for the Year Ended 30 June 1979

### 1. Future of ICNAF

At the Twenty-Eighth Annual Meeting of the Commission in Bonn, Federal Republic of Germany, the delegates from the Member Countries held further discussions on future arrangements, pursuant to the extension of fisheries jurisdiction to 200 miles offshore by the coastal states, including arrangements for the orderly transition from ICNAF to the new multilateral organization, the Northwest Atlantic Fisheries Organization (NAFO).

With the deposit of instruments of ratification by Canada, Cuba, the European Economic Community (EEC), the German Democratic Republic (GDR), Iceland, Norway, and the Union of Soviet Socialist Republics (USSR), the Convention on Future Multilateral Cooperation in the Northwest Atlantic Fisheries, done at Ottawa, Canada, on 24 October 1978, came into force on 1 January 1979.

The Governments of Denmark, France, Federal Republic of Germany (FRG), Italy, and the United Kingdom of Great Britain and Northern Ireland (UK) which were members of both EEC and ICNAF withdrew from ICNAF on 31 December 1978. The EEC became a Contracting Party to NAFO on 1 January 1979.

The Inaugural Meeting of NAFO was convened by the Depositary Government, Canada, to coincide with the Tenth Special Meeting of ICNAF in Montreal from 7 to 9 March 1979.

The Tenth Special Meeting of ICNAF noted that with the creation of NAFO on 1 January 1979, ICNAF and NAFO were operating in parallel. The Special Meeting adopted a resolution recommending that all Members of ICNAF withdraw from the Commission effective 31 December 1979, in accordance with Convention Article XVI, thereby terminating ICNAF as part of an orderly transition to management of the Northwest Atlantic fisheries by its successor organization, NAFO.

### 2. The Commission's Officers

Chairman of the Commission	— Mr S. Ohkuchi (Japan)
Vice-Chairman of the Commission	— Dr W. Ranke (German Democratic Republic)
Chairman, Panel 1	— Vacant
Chairman, Panel 2	— Vacant
Chairman, Panel 3	— Capt. A. S. Gaspar (Portugal)
Chairman, Panel 4	— Vacant

Chairman, Panel 5	— Vacant
Chairman, Panel A (Seals)	— Vacant

The Chairman and Vice-Chairman were elected at the 1978 Annual Meeting to complete the 1978/79 terms of office of Dr D. Booss (FRG) as Chairman and Mr S. Ohkuchi (Japan) as Vice-Chairman. The Chairman of Panel 3 was elected at the Tenth Special Commission Meeting, March 1979, to serve as Chairman of Joint Meetings of Panels 3 and 4. Chairmanship of Panels 1, 2, 4, 5, and A have not been filled as no meetings of these Panels have been held since the 1977 Annual Meeting.

Chairman of the Standing Committee on Research and Statistics (STACRES)	— Dr E. C. Lopez-Veiga (Spain) to 13 November 1978
	— Dr G. H. Winters (Canada) from 13 November 1978

Chairman of the Standing Committee on Finance and Administration (STACFAD)	— Miss D. E. Pethick (Canada)
Chairman of the Standing Committee on Regulatory Measures (STACREM)	— Vacant
Chairman of the Standing Committee on International Control (STACTIC)	— Capt. A. S. Gaspar (Portugal)

### 3. The Commission's Panel Memberships for 1978/79

Country	Panel					A Seals	Total
	1	2	3	4	5		
Bulgaria	—	—	1974	1975	1973	—	3
Canada	—	1952	1951	1951	1951	1966	5
Cuba	—	1976	1976	1976	1976	—	4
Denmark <sup>a</sup>	1951	—	1969	1974	—	1966	4
France <sup>a</sup>	1953	1953	1953	1953	1974	—	5
Federal Republic of Germany <sup>a</sup>	1957	1960	1977	1970	—	—	4
German Democratic Republic	—	1974	1974	—	1974	—	3
Iceland	—	1974	1976	—	—	—	2
Italy <sup>a</sup>	—	—	1977	—	—	—	1
Japan	—	—	1971	1971	1971	—	3
Norway	1952	1970	1968	—	—	1966	4
Poland	1962	1962	1962	1968	1968	—	5
Portugal	1953	1953	1953	1953	—	—	4
Romania	—	1970	1970	—	1967	—	3
Spain	1952	1954	1952	1952	1972	—	5
USSR	1958	1958	1958	1962	1962	—	5
UK <sup>a</sup>	1951	1960	1951	—	—	—	3
Total to 31 December 1978	9	13	17	11	10	3	63
Total from 1 January 1979	5	10	12	8	9	2	46

<sup>a</sup> Withdrew from ICNAF effective 31 December 1978.

## 4. The Commission's Secretariat

### a) Staff personnel

Executive Secretary	— Mr L. R. Day
Assistant Executive Secretary	— Mr V. M. Hodder
Bio-Statistician	— Vacant
Administrative Assistant	— Mr W. H. Champion
Senior Clerk-Secretary	— Mrs V. C. Kerr
Finance and Publications Clerk Steno	— Mrs E. R. Cornford (SOS 16 February 1979) Mr F. D. Keating (from 1 February 1979)
Senior Statistical Clerk	— Mr G. M. Moulton
Clerk-Duplicator Operator	— Mr R. A. Myers
Clerk-Duplicator Operator	— Mr B. T. Crawford
Statistical Clerk (Surveys and Sampling)	— Ms P. A. Cave (SOS 12 January 1979) Miss B. L. Perry (TOS 1 January 1979)
Documents and Mailing Clerk	— Mrs F. E. Perry
Clerk-Typist	— Mrs P. M. Wadman
Statistical Clerk (Fishery Statistics)	— Mr F. D. Keating (to 31 January 1979) — Mr E. R. Amiro (TOS 12 February 1979)
Data Processing Clerk	— Miss G. H. Langille (SOS 18 October 1978) — Miss C. L. Martin (TOS 8 February 1979)

### b) Staff activities

The Assistant Executive Secretary attended the ICES/FAO/ICNAF Symposium on the Biological Basis of Pelagic Fish Stock Management (Aberdeen, Scotland 3-7 July 1978), and serviced with Messrs Moulton and Myers, Mrs Kerr and Wadman, meetings of the STACRES Assessment Subcommittee (St. John's, Newfoundland, 28 March-9 April 1979).

The Executive Secretary discussed transitional arrangements for ICNAF to NAFO with the International Fisheries Directorate (Ottawa, Canada, 28 September); attended the signing ceremony for the Convention on Future Multilateral Cooperation in the Northwest Atlantic Fisheries (Ottawa, Canada, 24 October 1978); serviced with Mr Hodder and Mrs Kerr the Special STACRES Meeting on Shrimp and Seals (Bergen, Norway, 13-17 November 1978) and the Special STACRES Meeting on Capelin and Squid (Tokyo, Japan, 13-21 February 1979); serviced with Messrs Hodder, Champion, and Keating and Mrs Kerr a meeting of the STACTIC Working Group on Improvements to the Scheme of Joint International Enforcement, the Tenth Special Meeting of ICNAF and the Inaugural Meeting of NAFO (Montreal, Canada, 5-9 March 1979); and, with Mr Champion, discussed arrangements for printing the proceedings and papers from the ICES/FAO/ICNAF/IABO/SCOR Symposium on the Early Life History of Fish (Woods Hole, USA, 3 April 1979), presented proposals from the Tenth Special Commission Meeting, March 1979, to Depository Government and reviewed the draft

financial regulations for NAFO with US and Canadian officials (Washington, D. C., 5 April 1979).

The Administrative Assistant discussed arrangements for the meetings of the STACRES Assessments Subcommittee (St. John's, Canada, 5-6 February 1979).

## 5. The Commission's Publications

The Commission now prints all of its publications. The printing is done by Messrs Myers and Crawford under the supervision of Mr Champion. Mrs F. Perry is responsible for the typesetting, distribution lists and mailings.

As the Commission's contribution to the Second Symposium on the Early Life History of Fish held at the Marine Biological Laboratory, Woods Hole, Massachusetts, USA, from 2 to 5 April 1979, the Secretariat will print approximately 1,000 copies of the Symposium volume estimated at 500 p. for the ICES Rapports et Procès-Verbaux des Réunions series.

During 1978/79, the Secretariat printed and distributed approximately 2.3 million pages of print including the following:

The *Proceedings of the 28th Annual Meeting, June 1978* (48 p.) was distributed in September 1978.

The *Annual Report Vol. 28, for the year 1977/78* (58 p.), containing the Administrative Report and Financial Statements for the fiscal year ended 30 June 1978, the Report of the 28th Annual Meeting, June 1978, and the Summaries of Research and Status of Fisheries for Subareas and Seals, 1977, was distributed in April 1979.

The *Redbook 1978* (120 p.), containing the Reports of the Standing Committee on Research and Statistics (STACRES) for November 1977, February 1978, and May-June 1978, was distributed in August 1978.

The *Research Bulletin of ICNAF No. 13* (90 p.), containing seven scientific contributions, was distributed in July 1978.

The *Research Bulletin of ICNAF No. 14* (102 p.), containing six scientific contributions, will be distributed late in the summer of 1979.

The *Statistical Bulletin Vol. 27, for the year 1977* is ready for printing, except for data which is still not available from two of the Member Countries. It is hoped to distribute the book late in 1979.

The *Selected Papers of ICNAF No. 4* (76 p.), containing 11 scientific papers on shrimp, was distributed in August 1978.

The *Selected Papers of ICNAF No. 5* (82 p.), containing 9 scientific papers, was distributed in April 1979.

The *Sampling Yearbook Vol. 19 (Revised)*, for the year 1974 (46 p.), containing information on the ICNAF sampling program, notes on sampling data, list of sampling data for the 1974 commercial fisheries, and list of sampling data for the 1974 research vessel surveys, was distributed in August 1978.

The *Sampling Yearbook Vol. 21*, for the year 1976 (46 p.), containing information on the ICNAF sampling program, notes on sampling data, list of sampling data for the 1976 commercial fisheries, and list of sampling data for the 1976 research vessel surveys, was distributed in December 1978.

The *Index and List of Titles of ICNAF Meeting Documents No. 2* (140 p.), covering the years 1965-74, was distributed in November 1978. No. 1 covering the years 1950-64 inclusive will be distributed late in the summer of 1979.

The *Report of the Special Meeting of STACRES on Seals and Shrimp, November 1978* (25 p.), was distributed as *ICNAF Sum. Doc. 79/VI/1*.

The *Report of the Special Meeting on STACRES on Capelin and Squid, February 1979* (24 p.), was distributed as *ICNAF Sum. Doc. 79/VI/5*.

The *Report of the Assessments Subcommittee, March-April 1979* (32 p.), was distributed as *ICNAF Sum. Doc. 79/VI/11*.

The *Report of the Tenth Special Meeting of ICNAF, March 1979* (33 p.), was distributed as *ICNAF Sum. Doc. 79/VI/8*.

The *Status of the Commission Proposals for Changes in the Convention and for International Regulation of the Fisheries under the Convention* (as of 1 May 1979) (22 p.) was distributed as *ICNAF Com. Doc. 79/VI/12*.

## 6. The Commission's Research and Statistics Program

### a) Fisheries statistics

There has been significant deterioration in the national reporting of fisheries statistics since the publication of 1976 data in *Statistical Bulletin Vol. 26*.

The deadline for the submission of nominal catch and fishing effort data for 1977 on STATLANT 21B forms was 30 June 1978 and, allowing for some late submissions, *Statistical Bulletin Vol. 27* should have been ready for distribution in December 1978. However, despite periodic telexed requests for data from the countries concerned and the issue of two circular letters indicating the reasons for a significant delay in the publication of Vol. 27, STATLANT 21B data for 1977 were not received from Portugal and the United Kingdom until early 1979, Spanish data for Subarea 4, 5, and 6 are still outstanding (as of 7 May 1979), and no data have been received from Ireland. Also, the compilation of detailed catch and effort statistics for 1977 has been complicated by the possibility of "double-counting", in that the results of joint fishing ventures between Canada and some other states have been included in the Canadian statistics and may also be included in the statistics of the other countries concerned. As a consequence of the above-mentioned problems, *Statistical Bulletin Vol. 27* (for 1977) is unlikely to be distributed until the autumn of 1979, nearly a year after its scheduled publication date.

Since 1975, STACRES has required the reporting of preliminary catch statistics and sampling data by month and division for selected species in advance of the April Meeting of the Assessments Subcommittee, in order to facilitate the pre-meeting processing of data preparatory to their use in the assessments. The Secretariat, as in previous years, made special requests to national scientists to ensure that all statistical and biological data relevant to the assessments were forwarded to designated experts and to the Secretariat well in advance of the April 1979 Meeting. Less than half of the countries concerned bothered to submit any data, with the consequence that much of the information required was not available until the meeting was in progress, and even then the monthly catches for some countries were not available.

Since 1977, there has been continued deterioration in the promptness of reporting and the quality of the data reported, especially for stocks completely outside or overlapping the 200-mile fishery zone of the coastal state in Subarea 3. This lack of attention to prompt statistical reporting was not only apparent in the Secretariat's efforts to obtain the necessary 1977 data for *Statistical Bulletin Vol. 27* and preliminary 1978 data for the April 1979 assessments, but also in the submission of STATLANT 21A nominal catch statistics for 1978 (deadline 15 April 1979) with only 7 countries having reported up to 7 May 1979.

During 1978/79, the Secretariat has continued its program of updating national fisheries statistics of previous years and preparing the data for rapid retrieval through the Secretariat's terminal with direct access to an IBM 370/155 computer.

## b) Sampling data

Annual lists of sampling data received at the Secretariat are initially issued as Summary Documents to allow scientists to check the lists against data in their national archives and report any errors or omissions prior to publication of the lists in Sampling Yearbooks. Following the issue of a provisional list of 1976 data in *Sum. Doc. 79/VI/4*, the list was published in *Sampling Yearbook Vol. 21* (issued in December 1978). Also, a revised version of *Sampling Yearbook Vol. 19* (for 1974) was published in August 1978. Pending the final compilation of 1977 data for presentation in Vol. 22, a provisional list of data was presented in *Sum. Doc. 79/VI/12*. On the basis of the 1977 data available in the Secretariat, there are many cases of inadequate or incomplete sampling by several countries with significant fisheries in the Northwest Atlantic (*Sum. Doc. 79/VI/14*). Also, it is apparent that very little, if any, of the data collected by scientific observers through the International Observer Program have been reported to the Secretariat.

Following the extension of fisheries jurisdiction by coastal states to 200 miles in 1977, STACRES recognized the need to modify its sampling requirements and reporting forms so that a common form could be used for reporting detailed data from both inside and outside the 200-mile zones. The matter was initially considered by a working group established for this purpose and STACRES, at its Special Meeting in November 1978, adopted a format to be used for the reporting of commercial length samples and proposed a draft format for the design of a suitable form for reporting age-length keys. Both the length and age sampling forms were reviewed by the Assessments Subcommittee in April 1979 and approved with minor revisions. The forms are to be used for the reporting of 1979 sampling data.

The Secretariat has continued its program of computerizing the large volume of commercial sampling data in its files, and all available data for 1972-77 have now been processed. Computer printouts of monthly length and age frequencies, quarterly age-length keys, and mean length-at-age data are available upon request to scientists and research institutes involved in the Commission's work.

## c) List of fishing vessels for 1977

In accordance with the requirements of STACRES regarding the triennial publication of the *ICNAF List of Fishing Vessels*, the Secretariat in early 1978 requested Member Countries to submit updated lists of vessels for 1977 for publication in late 1978. Although most countries had submitted their lists before the end of 1978, the publication of the *List of Fishing Vessels for 1977* has been significantly delayed due to the absence of information from Romania and Spain. Pending the

compilation of complete information for 1977, the available information is presented in *Sum. Doc. 79/VI/13*.

## d) CWP activities relevant to ICNAF

Some matters of direct importance to ICNAF were outlined in the *Annual Report for 1977/78 Vol. 28*, (p. 11). Two additional matters warrant mention at this time:

- i) The development of 3-alpha species identifiers for the Atlantic as a whole has now been completed and the list has been deposited with the Secretary of the CWP, who shall be responsible for assigning additional identifiers as new species items are added to the current list for the Atlantic. The 3-alpha species identifiers for the ICNAF list of species items are given in *Sum. Doc. 79/VI/18*.
- ii) With reference to the problem of "double counting" noted in (a) above, attention is drawn to the recommendation of the CWP on this matter that "the flag of the vessel should, for the time being, be considered as the paramount indication of nationality and should only be overridden when it is obvious that the wording of chartering and joint venture contracts indicates otherwise or when the inter-relationships are too complicated to settle".

The Tenth Session of the CWP, which was initially scheduled to be held in early July 1979, will now be held in late August 1980 at Madrid, Spain.

## e) Index and list of titles

The index and list of titles of ICNAF meeting documents was essentially completed in 1978, except for coverage of papers presented at the First Annual Meeting, some of which the Secretariat is having difficulty in finding. Consequently, it was decided to issue the index in two volumes. Thus the *Index and List of Titles of Meeting Documents No. 2*, for the years 1965-74, was published in October 1978, and it is anticipated that No. 1 for the years 1950-64 will be issued in September 1979.

In 1978, the Secretariat initiated the annual compilation of an index and list of titles of ICNAF publications and meeting documents starting with 1975, with a view to publishing a volume at 5-year intervals. Provisional indexes for 1975 to 1978 have been issued as *Sum. Doc. 78/VI/33*, *78/VI/18*, *79/VI/3*, and *79/VI/10*, respectively. Work is in progress on updating *Special Publication No. 11* to cover the period 1950-79.

#### f) Other activities

Other research and statistical activities of the Secretariat during the year 1978/79 include:

- i) editing of the reports of STACRES meetings in November 1977, February 1978, and May-June 1978 for publication in *Redbook 1978*;
- ii) editing of nine papers selected for publication in *Selected Papers No. 5*;
- iii) editing of eight papers refereed for publication in *Research Bulletin No. 14*;
- iv) participated in a joint meeting of representatives of the CWP, ICES, and ICNAF Secretariats in October 1978, regarding the final compilation of the list of 3-alpha species identifiers for the Atlantic as a whole;
- v) updating of historical catches (1968-77) by country for all stocks under regulation in the Northwest Atlantic (*Sum. Doc. 79/VI/9*);
- vi) compilation and documentation of various biostatistical material required for scientific meetings at Bergen, Norway, in November 1978, at Tokyo, Japan, in February 1979, and at St. John's, Canada, in April 1979;
- vii) compilation and documentation of various biostatistical material required for the 1979 Annual Meeting, including provisional catch statistics for 1978; seal catch and effort data for 1978; summary of tagging activities by Member Countries in 1978; standardized numbering scheme for strata used in random-stratified surveys; summary of length conventions and sampling standards used for sampling; and analysis of sampling data for 1977 in relation to minimum requirements.

### 7. The Commission's Mid-Term Meetings

The *Special STACRES Meeting on Shrimp and Seals* met at the Institute of Marine Research, Bergen, Norway, from 13 to 17 November 1978, under the chairmanship of Dr G. H. Winters (Canada), to provide advice for the management of the harp and hooded seal stocks as requested by Canada and to assess the status of the shrimp stocks in Subarea 1 and Statistical Area 0 at the request of Canada and EEC (*Sum. Doc. 79/VI/1*). An *ad hoc* Working Group on Seals, convened by Dr A. W. Mansfield (Canada) presented evidence that the Northwest Atlantic harp seal population is continuing to increase, after declining to its lowest

level of about one million animals in 1972, and advised that it would not be prudent to increase the total allowable catch (TAC) of hooded seals from the present (1978) level of 15,000 animals. An *ad hoc* Working Group on Shrimp, convened by Mr Ø. Ulltang (Norway), advised that the 1979 TAC for shrimp should be set in the range of 27,200 – 32,000 tons which is 20-30% below the advised 1978 TAC of 40,000 tons (including discards) from the biomass on the offshore grounds in Subarea 1, including that part of the biomass in Statistical Area 0 which is an extension of the biomass in Div. 1A and 1B. An *ad hoc* Working Group on Standardization of Reporting Procedures for Sampling Data, convened by Dr W. G. Doubleday (Canada), considered the advisability of reporting individual length and age samples to the Secretariat and to develop suitable formats for reporting.

The *Special STACRES Meeting on Capelin and Squid* met at the Ministry of Foreign Affairs, Tokyo, Japan, from 14 to 21 February 1979, under the chairmanship of Dr G. H. Winters (Canada), to provide advice on the scientific basis for the management in 1979 of the capelin stocks in Subarea 2 and 3 and the squid (*Illex*) stock in Subareas 3 and 4 (*Sum. Doc. 79/VI/5*). An *ad hoc* Working Group on Capelin, convened by Dr G. H. Winters, advised TACs for 1979 of 75,000 tons in Subarea 2 and Div. 3K, and in the Div. 3LNO stock 16,000 tons for Div. 3L and no commercial fishery in Div. 3NO. An *ad hoc* Working Group on Squid (*Illex*) advised TACs for 1979 of 70,000 tons for Subarea 4 and 50,000 tons for Subarea 3 for 1979 and an opening date for the fishery of 1 July.

The *Tenth Special Commission Meeting (Sum. Doc. 79/VI/8)* was held in Montreal, Canada, 7-9 March 1979, under the chairmanship of Mr S. Ohkuchi (Japan), in conjunction with the Inaugural Meeting of the new Northwest Atlantic Fisheries Organization (NAFO). A meeting of the *STACTIC Working Group on Improvement to the Scheme of Joint International Enforcement* continued its review of proposals presented by Member Countries for improvement to the Scheme. On the recommendation of STACTIC, the Commission adopted proposals for amendments to paragraphs 4 and 5 of the Scheme including the description and use of a boarding ladder on fishing and support vessels, and for actions to be taken by the Executive Secretary following information on Member Countries reaching their catch quotas. The Commission adopted conservation measures recommended by a Joint Meeting of Panels 3 and 4 for stocks of capelin in Subarea 3 and squid in Subareas 3 and 4. As a result of consideration of financial arrangements relating to the orderly transition from ICNAF to NAFO, the Commission adopted a recommendation calling on Contracting Governments to serve, on or before 30 June 1979, notice of

withdrawal from the Convention effective 31 December 1979, in accordance with Convention Article XVI, and agreed to establish a budget for the period 1 July 1979 to 31 December 1979.

The *Assessments Subcommittee Meeting (Sum. Doc. 79/VI/11)* of STACRES was convened, under the chairmanship of Dr G. H. Winters (Canada), at the Newfoundland Environment Centre, St. John's, Newfoundland, 28 March-9 April 1979, and prepared advice on catch levels in 1980 at the request of Canada and the EEC on 11 stocks lying within or partly within the Canadian or EEC 200-mile fisheries management zones as well as on the three stocks lying completely outside the 200-mile Canadian fisheries zone in Div. 3M. An evaluation of the accuracy of commercial-fishery-based indices of abundance was carried out in cooperation with the members of the Biological Surveys Subcommittee of STACRES. Other items, including changing the mesh regulation for redfish in Div. 3M, a uniform mesh size for the silver hake and squid fisheries in Subarea 4, and a commencement date for the squid fisheries in Subareas 3 and 4 were discussed, but decisions regarding advice were deferred to the 1979 Annual Meeting of STACRES.

## 8. Status of Commission Proposals

### a) For changes in the Convention (*Com. Doc. 79/VI/12 Tabulation I*)

The *1973 Protocol Relating to Basic Payment by Contracting Governments* has, to date, only been approved by Canada, Cuba, France, FRG, Norway and Portugal. In accordance with amended Convention Article XVII, this Protocol will take effect for all Contracting Governments 120 days following the date of the notification by the Depositary Government of receipt of written notification of approval of three-quarters of all Contracting Governments, unless objected to within 90 days.

The *1976 Protocol Relating to Continued Functioning of the Commission* has, to date (1 May 1979), only been approved by Canada, Cuba, Denmark, GDR, Iceland, Norway, Romania, USSR, and UK.

### b) For international regulation of the fisheries (*Com. Doc. 79/VI/12 Tabulation II*)

*June 1978 proposal* (1) regarding catch quota regulations for 8 stocks in Subarea 3 was adopted by the Commission on 6 June 1978, transmitted to Depositary Government on 15 June 1978, and transmitted to Contracting Governments on 13 July 1978. The proposal became effective for all Contracting Governments on 13 January 1979, under the normal six-month waiting procedure.

*March 1979 proposals* (1) for amendment of the Scheme of Joint International Enforcement, (2) for actions to be taken by the Executive Secretary following information on Member Countries reaching their catch quotas, and (3) for catch quota regulations for stocks of capelin in Div. 3LNO and squid (*Illex*) in Subareas 3 and 4 in 1979 were transmitted to the Depositary Government on 5 April 1979.

## 9. The Commission's Conservation Program

Following extension of fisheries jurisdiction by the coastal states (Canada, Denmark, France, USA) in the ICNAF Convention Area to 200 miles in 1977, the Commission's STACRES, at its April 1977 Meeting, was requested to provide advice for management for 1978 on only 25 stocks — 3 were outside the 200-mile limit, 18 were partly inside and partly outside the Canadian 200-mile zone, and 4 overlapped the Canadian-Denmark (Greenland) 200-mile lines (*ICNAF Redbook 1977*). At the 1977 Annual Meeting, the Commission accepted the recommendation of a joint meeting of Panels 2, 3, and 4 for the national allocation of TACs for 1978 for the 18 stocks overlapping the Canada-ICNAF zones of jurisdiction in Subareas 2, 3, and 4 and the 3 stocks lying entirely in the ICNAF management zone in Subarea 3 (*ICNAF Annu. Rept. Vol. 27, 1976/77 p. 58-59*). In accordance with Commission requirements, the 17 Contracting Governments and the USA fishing in the ICNAF Statistical Area submitted provisional monthly catch statistics to the Secretariat for each of the 67 stocks under catch quota regulation in 1978. Many of the Governments are still not meeting the deadline for reporting their catch within a month of the month of catch. One Contracting Government has failed to meet this requirement since May of 1977; another has submitted no reports since 1976 (see Table 1 of *Com. Doc. 79/VI/17*). Provisional catch information from countries fishing in Div. 3M in 1978 show that catch allocations have been exceeded by four countries on the cod stock, and by one country on the redfish stock. One country neglected to report catches of redfish from the allocation for "other" countries in 100-ton increments as required, and the allocation of redfish for "Others" was exceeded (see Table 2 of *Com. Doc. 79/VI/17*).

At the 1978 Annual Meeting, the Commission accepted a recommendation from a meeting of Panel 3 for the national allocation of TACs for 1979 for 5 stocks overlapping Canadian and ICNAF jurisdictions and 3 stocks completely outside the Canadian fishery zone. Decisions for 1979 on 2 deferred stocks [capelin and squid (*Illex*)] were made at the 10th Special Meeting of the Commission in March 1979. Despite the withdrawal of Denmark, France, FRG, Italy, and UK from ICNAF on 31 December 1978 and the entry into force of the new

NAFO Convention, the countries which were or still are Members of ICNAF as of 1 May 1979 are continuing to honour the ICNAF requirement and are reporting to the Secretariat provisional monthly catch statistics for 1979.

## 10. The Commission's Enforcement Program

Again in 1978 only Canada has forwarded the Commission's program of enforcement at sea outside the 200-mile zone of coastal state jurisdictions. Canadian surveillance by ships and aircraft and inspections at sea from ships resulted in a total of 61 vessel inspections in 1978 (58 in 1977) in the Commission's regulatory area (Div. 3M, and portions of Div. 3N and 3O of Subarea 3). Two vessels were cited for fishing in Div. 3M with small mesh trawl netting, one in Div. 3O for violating the quota closure, while five countries failed to submit to the Secretariat a list of vessels registered to fish in Div. 3M in 1978 (see Table 3 of *Com. Doc. 79/VI/17*). Details of vessels sighted and inspected by country are found in Table 4 of *Com. Doc. 79/VI/17*.

## 11. Cooperation with Other International Organizations and with Non-Member Countries

In accordance with Convention Article X, the Secretariat has cooperated closely with other public and international organizations with related objectives.

The statistical program of the Coordinating Working Party on Atlantic Fishery Statistics (CWP) has continued to develop valuable common usage procedures in Atlantic fisheries in correspondence among the member organizations, the Food and Agriculture Organization of the United Nations (FAO) Department of Fisheries, the International Council for the Exploration of the Sea (ICES), the International Commission for the Conservation of Atlantic Tunas (ICCAT), the International Commission for the Southeast Atlantic Fisheries (ICSEAF), and the EEC Statistical Office.

The Commission collaborated with ICES and FAO in the preparation of the Symposium on the Biological Basis for Pelagic Fish Stock Management, Aberdeen July 1978, and is contributing financially to the printing by ICES of the proceedings and papers. In addition, as its contribution to the Second Symposium on the Early Life History of Fish, Woods Hole, April 1979, the Commission will print the proceedings and papers as a volume for the ICES publication series, *Rapports et*

## Procès-Verbaux des Réunions.

With the coming into force of the Convention on Future Multilateral Cooperation in the Northwest Atlantic Fisheries on 1 January 1979, and the Inaugural Meeting of NAFO, the Executive Secretary and staff of the Secretariat of ICNAF have been appointed to hold similar offices in NAFO and have since provided extensive administrative services.

In accordance with Article XIII of the Convention, the Commission, following a resolution adopted at its 1978 Annual Meeting, informed the Governments of the non-member countries of ICNAF, Venezuela and Panama, whose vessels were fishing in the ICNAF regulatory area, of the importance of ensuring that fisheries in the area concerned be conducted in conformity with the Commission's management regime to avoid affecting adversely the Commission's operations and objectives (see *ICNAF Circular Letter 78/55* dated 15 August 1978)

## 12. Financial Matters

The Commission's accounts for the fiscal year ended 30 June 1978 were audited by the Office of the Auditor General of Canada. Copies of the Auditor General's report were distributed to Heads of Delegations of Member Governments on 26 February 1979. The financial statements and transactions were certified to be in accordance with the books, records, rules and regulations of the Commission.

## 13. Financial Statements for the Fiscal Year Ended 30 June 1979

The accounts of the Commission for the year ended 30 June 1979 showed that Can \$454,300 was appropriated by the Commission for ordinary expenses. However, an adjustment on withdrawal of the EEC member countries from the Commission on 31 December 1978 reduced the appropriations by Can \$52,472. The addition of an administrative fee assessed NAFO for the period 1 January 1979 to 30 June 1979 increased the appropriations to Can \$438,955, including a surplus of Can \$33,618 which was transferred to the Working Capital Fund.

In accordance with the Financial Regulations of the commission, an audit of the Commission's finances was completed on 23 August 1979 by the Office of the Auditor General of Canada.

The report of the Auditor General reads as follows:

The Chairman and Members,  
International Commission for the  
Northwest Atlantic Fisheries.

I have examined the balance sheet of the International Commission for the Northwest Atlantic Fisheries as at 30 June 1979, and the statements of receipts and expenditures — General Fund, budget appropriations, expenditures and balances of appropriations — General Fund, changes in financial position — General Fund, statement of principal — Working Capital Fund and statement of principal — Miscellaneous Fund for the year then ended. My examination was made in accordance with generally accepted auditing standards, and accordingly included such tests and other procedures as I considered necessary in the circumstances.

In my opinion, these financial statements present fairly the financial position of the Commission as at 30 June 1979, and the results of its operations and changes in its financial position for the year then ended in accordance with the accounting policies set out in Note 3 applied, after giving retroactive effect to the change in accounting policy as described in Note 4, on a basis consistent with that of the preceding year.

In compliance with the requirements of Financial Regulation 8.2, I certify that, in my opinion, the financial statements are in accord with the books and records of the Commission; the financial transactions reflected in the statements have been in accordance with the rules and regulations, the budgetary provisions, and other applicable directives; and the monies on deposit and on hand have been verified by certificate received direct from the Commission's depositories or by actual count.

Ottawa, Ontario  
23 August 1979

Auditor General of Canada  
(Signed J. J. Macdonnell)

**Balance Sheet as at 30 June 1979**  
(Expressed in Canadian dollars)

<b>Assets</b>		<b>Liabilities</b>			
	<u>1979</u>	<u>1978</u>		<u>1979</u>	<u>1978</u>
<b>General Fund</b>					
Cash .....	\$ 89,023	\$ 73,510	Accounts payable and accrued liabilities .....	\$ 12,167	\$ 16,190
Accounts receivable .....	1,779	3,120	Contribution overpayments by member governments .....	9,708	10,114
Contributions receivable from member governments .....	51,182	74,377	Amount owing to Working Capital Fund .....	103,945	84,446
Amount receivable from NAFO .....	37,127	—	Amount owing to Miscellaneous Fund .....	53,291	40,257
	<u>\$ 179,111</u>	<u>\$ 151,007</u>		<u>\$ 179,111</u>	<u>\$ 151,007</u>
<b>Working Capital Fund</b>					
Certificates of deposit .....	\$ 20,000	\$ 20,000	Accrued vacation pay (Note 4) .....	\$ 18,799	\$ 18,799
Accounts receivable .....	258	817	Provision for employee termination benefits .....	42,458	38,000
Accrued interest receivable .....	1,886	972	Principal of fund (Note 6) .....	64,832	49,436
Amount receivable from General Fund .....	103,945	84,446			
	<u>\$ 126,089</u>	<u>\$ 106,235</u>		<u>\$ 126,089</u>	<u>\$ 106,235</u>
<b>Miscellaneous Fund</b>					
Amount receivable from General Fund .....	\$ 53,291	\$ 40,257	Principal of fund .....	\$ 53,291	\$ 40,257

The accompanying notes are an integral part of the financial statements.

Certified correct

Executive Secretary,  
(Signed L. R. Day)

**Statement of Receipts and Expenditures — General Fund for the year ended 30 June 1979**

(Expressed in Canadian dollars)

	<u>1979</u>	<u>1978</u>
<b>Receipts</b>		
Members' contributions (Note 7) .....	\$ 335,571	\$ 384,466
Administrative fee assessed NAFO (Note 1) .....	37,127	—
Transfer from Miscellaneous Fund .....	66,257	40,534
Transfer from Working Capital Fund .....	—	5,000
	<u>438,955</u>	<u>430,000</u>
<b>Expenditures</b>		
(See attached Statement of Budget Appropriations, Expenditures, and Balances of Appropriations—General Fund	<u>405,337</u>	<u>378,197</u>
Excess of Receipts over Expenditures for the year (transferred to Working Capital Fund) .....	<u>\$ 33,618</u>	<u>\$ 51,803</u>

The accompanying notes are an integral part of the financial statements.

## Statement of Budget Appropriations, Expenditures and Balances of Appropriations — General Fund for the year ended 30 June 1979

(Expressed in Canadian dollars)

	1979			1978		
	Budget Appropriations	Expenditures	Balances of Appropriations	Budget Appropriations	Expenditures	Balances of Appropriations
Personal services:						
Salaries .....	\$ 250,000	\$ 237,647	\$ 12,353	\$ 235,000	\$ 217,973	\$ 17,027
Salary contingencies .....	16,000	5,082	10,918	14,000	8,000	6,000
Employee benefits .....	23,800	17,963	5,837	10,000	19,821	(9,821)
Additional help .....	2,000	785	1,215	2,000	7,721	(5,721)
Travel .....	4,000	4,163	(163)	6,000	4,119	1,881
Transportation .....	1,500	464	1,036	1,000	460	540
Communication services .....	25,000	18,435	6,565	25,000	16,411	8,589
Publications .....	12,000	8,437	3,563	25,000	10,383	14,617
Other contractual services .....	26,000	26,340	(340)	20,000	23,439	(3,439)
Material and supplies .....	14,000	12,601	1,399	12,000	11,587	413
Equipment .....	5,000	4,834	166	5,000	4,576	424
Annual and mid-term meetings .....	25,000	36,643	(11,643)	25,000	22,927	2,073
Computer services .....	40,000	31,943	8,057	35,000	25,780	9,220
Contingencies .....	10,000	—	10,000	10,000	—	10,000
	454,300	405,337	48,963	425,000	373,197	51,803
Deduct:						
Adjustment on withdrawal of EEC member countries from the Commission (Note 7) ..	(52,472)	—	(52,472)	—	—	—
Add:						
Administrative fee assessed NAFO (Note 1)	37,127	—	37,127	—	—	—
	438,955	405,337	33,618	425,000	373,197	51,803
Balance of appropriations transferred to Working Capital Fund .....	33,618	—	33,618	51,803	—	51,803
	405,337	405,337	—	373,197	373,197	—
Appropriated from Working Capital Fund for publication of Pelagic Fish Symposium Report .....	—	—	—	5,000	5,000	—
	\$ 405,337	\$ 405,337	\$ —	\$ 378,197	\$ 378,197	\$ —

The accompanying notes are an integral part of the financial statements.

## Statement of Changes in Financial Position — General Fund for the year ended 30 June 1979

(Expressed in Canadian dollars)

	<u>1979</u>	<u>1978</u>
Source of cash		
Members' contributions (Note 7) .....	\$ 335,571	\$ 384,466
Administrative fee assessed NAFO (Note 1) .....	37,127	—
Transfer from Working Capital Fund .....	—	5,000
Transfer from Miscellaneous Fund .....	66,257	40,534
Decrease in accounts receivable .....	1,341	—
Decrease in contributions receivable from member governments .....	23,195	—
Increase in contribution overpayments by member governments .....	—	1,330
Increase in amount owing to Working Capital Fund .....	19,499	62,583
Increase in amount owing to Miscellaneous Fund .....	13,034	—
	<u>496,024</u>	<u>493,913</u>
Use of cash		
Expenditures .....	405,337	378,197
Increase in accounts receivable .....	—	2,443
Increase in contributions receivable from member governments .....	—	31,800
Increase in amount receivable from NAFO (Note 1) .....	37,127	—
Decrease in accounts payable .....	4,023	5,329
Decrease in contribution overpayments by member governments .....	406	—
Decrease in amount owing to Miscellaneous Fund .....	—	277
Balance of appropriations transferred to Working Capital Fund .....	33,618	51,803
	<u>480,511</u>	<u>469,849</u>
Increase in cash .....	15,513	24,064
Cash — beginning of the year .....	<u>73,510</u>	<u>49,446</u>
Cash — end of the year .....	<u>\$ 89,023</u>	<u>\$ 73,510</u>

The accompanying notes are an integral part of the financial statements.

**Statement of Principal — Working Capital Fund for the year ended 30 June 1979**

(Expressed in Canadian dollars)

	<u>1979</u>	<u>1978</u>
Principal of Fund — beginning of the year		
As previously reported .....	\$ 68,235	\$ 14,473
Provision for employee vacation pay benefits relating to prior years (Note 4) .....	18,799	18,799
As restated .....	<u>49,436</u>	<u>(4,326)</u>
Add:		
Revenue:		
Bank interest .....	6,868	5,835
Interest on certificates of deposit .....	1,700	1,911
Sales of publications .....	<u>1,302</u>	<u>1,888</u>
	9,870	9,634
Unexpended balances of prior years' appropriations .....	2,366	5,025
Balance of appropriations transferred from General Fund .....	<u>33,618</u>	<u>51,803</u>
	<u>45,854</u>	<u>66,462</u>
Deduct:		
Transfer to Miscellaneous Fund (Note 6) .....	26,000	—
Transfer to General Fund for Symposium on Pelagic Fish .....	—	5,000
Provision for employee termination benefits — current year .....	<u>4,458</u>	<u>7,700</u>
	30,458	12,700
	<u>15,396</u>	<u>53,762</u>
Principal of Fund — end of the year .....	<u>\$ 64,832</u>	<u>\$ 49,436</u>

The accompanying notes are an integral part of the financial statements.

**Statement of Principal — Miscellaneous Fund for the year ended 30 June 1979**

(Expressed in Canadian dollars)

	<u>1979</u>	<u>1978</u>
Principal of Fund — beginning of the year .....	\$ 40,257	\$ 40,534
Transfer from Working Capital Fund (Note 6) .....	26,000	—
	66,257	40,534
Transfer to General Fund .....	<u>(66,257)</u>	<u>(40,534)</u>
Additions to Fund (Note 5)		
Grant from Province of Nova Scotia .....	17,243	11,989
Levy in lieu of Canadian personal income tax .....	<u>36,048</u>	<u>28,268</u>
Principal of Fund — end of the year .....	<u>\$ 53,291</u>	<u>\$ 40,257</u>

The accompanying notes are an integral part of the financial statements.

## **Notes to the Financial Statements 30 June 1979**

### **1. Objectives and Operations of the Commission**

The International Commission for the Northwest Atlantic Fisheries (ICNAF) was established under a convention signed by eleven countries in 1949.

The objective of ICNAF is the investigation, protection and conservation of the fisheries of the Northwest Atlantic Ocean. At present, ICNAF is comprised of 12 member governments that finance operations on the basis of each country's fishing activity in the Northwest Atlantic.

With the declaration of 200-mile offshore zones by the coastal states, ICNAF's regulatory responsibilities are now restricted to areas lying outside those zones.

Recognizing the changing status of the Northwest Atlantic fisheries ICNAF presented at its annual meeting in June 1977 a suggested timetable by which a new Convention establishing the Northwest Atlantic Fisheries Organization (NAFO) would come into effect on 1 January 1979. This event occurred on schedule and accordingly ICNAF's operations will cease on December 31, 1979.

During the initial transition period, 1 January to 30 June 1979, ICNAF paid all expenses of NAFO and assessed the new Organization an administrative fee to effect recovery. At the conclusion of the transition period all personnel services, assets, liabilities and inventory will be transferred to NAFO on 1 January 1980.

The objective of NAFO is to establish a firm basis in treaty law for the continuation of multilateral co-operation in Northwest Atlantic fisheries within a framework that is specifically tailored to the new regime of extended coastal state jurisdiction.

### **2. Purpose of Funds**

The Commission operates three separate funds:

- a General Fund to record member country contributions and operating expenditures;
- a Working Capital Fund to record sales of publications, bank interest, refunds of prior period expenditures, balances of appropriations remaining in the General Fund at year-end, and the initial levy of \$1,000 paid by new contracting countries;
- a Miscellaneous Fund to record initial annual payments from new contracting governments and any other monies received for which the disposition is not specified above.

### **3. Significant Accounting Policies**

#### **Inventories**

In order to meet possible future needs of scientists, the Commission prints more copies of each of its publications than are currently required by member governments. The cost of these extra copies are charged as current expenses.

#### **Fixed assets**

Office furniture and equipment are expensed when purchased.

### **4. Change in Accounting Policy**

During the year, ICNAF adopted the policy of recording in the accounts of the Working Capital Fund, the portion of employees' vacation leave which was earned but not taken as at 30 June. This change in accounting policy has

been applied retroactively and the previous year's financial statements have been restated.

The total liability for accrued vacation pay as at 30 June 1979 amounted to \$18,799 and is applicable to years prior to 1 July 1977. Accordingly, this amount has been applied to reduce the Principal of the Working Capital Fund as at 30 June 1978, which was previously reported as \$14,473.

## 5. Personal Income Taxes

### Federal

According to an Order in Council (P.C. 1967-2313) issued by the Government of Canada, the Commission comes under the jurisdiction of the Convention on the Privileges and Immunities of the United Nations. Article V, Section 18(b) of this Convention exempts officials of United Nations organizations from federal taxation on the salaries and emoluments paid to them by the United Nations. Accordingly, ICNAF deducts and credits to the Miscellaneous Fund an amount equal to the Canadian federal income tax that would be assessed on staff remuneration.

### Provincial

ICNAF deducts provincial income taxes from the salaries of its employees and remits amounts deducted on a regular basis to government authorities. At the end of each calendar year ICNAF applies to the Province of Nova Scotia for an *ex gratia* grant equal to the amount of provincial personal income taxes paid by its employees. Such grants are recorded in the Miscellaneous Fund as they are received.

The grant from the Province of Nova Scotia of \$17,243 relates to the taxation calendar year 1977. The Province of Nova Scotia has informed ICNAF that this grant will not be continued in the future.

## 6. Transfers of Principal — Working Capital Fund

Under authority of Financial Regulation 4.7 appropriations of funds deemed to be in excess of the needs of the Working Capital Fund can be transferred to the Miscellaneous Fund. ICNAF at its annual meeting on 6 June 1978 authorized the transfer of \$26,000 from the Working Capital Fund to the Miscellaneous Fund for each of the fiscal years 1978/79 and 1979/80. At its annual meeting on 5 June 1979 ICNAF rescinded authority for the 1979/80 transfer.

### Member' Contributions Assessed

	1979	1978
Bulgaria .....	\$ 18,587	\$ 18,411
Canada .....	30,598	30,324
Cuba .....	24,592	24,368
Denmark .....	24,592	24,368
France .....	30,598	30,324
Federal Republic of Germany .....	24,592	24,368
German Democratic Republic .....	18,587	18,411
Iceland .....	12,582	12,454
Italy .....	6,576	6,497
Japan .....	18,587	18,411
Norway .....	24,592	24,368
Poland .....	30,598	30,324
Portugal .....	24,592	24,368
Romania .....	18,587	18,411
Spain .....	30,598	30,324
Union of Soviet Socialist Republics .....	30,598	30,324
United Kingdom .....	18,587	18,411
	<hr/>	<hr/>
	\$ 388,043	\$ 384,466
	<hr/>	<hr/>
Deduct: Adjustment on withdrawal of EEC countries from ICNAF effective 31 December 1978 .....	52,472	—
	<hr/>	<hr/>
	\$ 335,571	\$ 384,466
	<hr/>	<hr/>

### **8. Services Provided Without Charge**

Occupancy expenses, which include rent, heat, taxes and electricity related to the Commission's premises in Dartmouth, Nova Scotia aggregated \$43,606 for the year ended 30 June 1979 (1978 — \$43,791). These amounts are paid directly by the Canadian Department of Public Works and accordingly are not reflected in the Commission's accounts.



## PART 2

# Report of the Tenth Special Meeting of the International Commission for the Northwest Atlantic Fisheries, Montreal, Canada, 7-9 March 1979

### 1. Introduction

The Commission, at its 28th Annual Meeting, agreed that, following a special meeting of the Standing Committee on Research and Statistics (STACRES) in early February 1979 to provide scientific advice for management of the capelin stock in Divisions 3LNO of Subarea 3 and of the squid (*Illex*) stocks in Subareas 3 and 4, a Tenth Special Commission Meeting should be convened at the invitation of Canada to recommend management measures for these stocks for 1979. The Commission also resolved to consider arrangements for the transition from ICNAF to the new Northwest Atlantic Fisheries Organization (NAFO) which came into effect on 1 January 1979, and to consider proposals for improvements to the ICNAF Joint International Enforcement Scheme.

### 2. Time and Place of Meeting

The Tenth Special Meeting was convened at the invitation of the Canadian Government to coincide with the Inaugural Meeting of NAFO, in the Mackenzie Room of the Queen Elizabeth Hotel, Montreal, Canada, from 7 to 9 March 1979 inclusive. Mr S. Ohkuchi (Japan) presided as Chairman of the Commission.

### 3. Participants (Appendix I)

Commissioners and Advisers participated from the Member Countries: Bulgaria, Canada, Cuba, German Democratic Republic (GDR), Iceland, Japan, Norway, Poland, Portugal, Romania, Spain, and the Union of Soviet Socialist Republics (USSR). Observers were present from the European Economic Community (EEC), the Faroe Islands, the Food and Agriculture Organization of the United Nations (FAO) and the United States of America (USA).

### 4. Opening Session

The Chairman, Mr S. Ohkuchi (Japan), welcomed the meeting participants and addressed the meeting as follows:

"Commissioners, Ladies, and Gentlemen:

"Most probably this year will be the last year for ICNAF which has been playing a very leading role since 1950, in the conservation and management of the Northwest Atlantic fishery resources, and I have been honoured to attend ICNAF meetings as Commissioner since 1971. This Commission, to which I feel, and I am quite sure that all of us feel, so attached, will cease to function before long. Let us make this meeting most fruitful to keep alive the good and old tradition of friendship and cooperation of ICNAF to be passed on with pride to the NAFO meeting scheduled to be held just after this meeting.

"Now let us get down to business."

### 5. Agenda (Appendix II)

In accordance with Commission requirements, a provisional Agenda for the Special Commission Meeting was transmitted to all Contracting Governments, Commissioners, and organizations with observer status, not less than 60 days in advance of the Meeting. The Agenda was adopted at the First Plenary Session.

Agenda items were assigned, the report of the Special Meeting of STACRES on Seals and Shrimps, held at Bergen, Norway from 13 to 17 November 1978, which had been requested by Canada and the EEC, was adopted, and the report of the Special Meeting of STACRES on Capelin and Squid held at Tokyo, Japan, from 14 to 21 February 1979, was presented and assigned for consideration at Informal Intergovernmental Consultations and Joint Meetings of Panels 3 and 4. The Standing Committee on International Control (STACTIC) reported improvements to the Scheme of Joint International Enforcement. All reports and proposals were received for approval at the Final Plenary Session.

The Chairman announced that the Inaugural Meeting of NAFO would be convened to consider agenda items provided by the Depositary Government

for NAFO (Government of Canada) on 8 March 1979.

## 6. Report of the Standing Committee on Finance and Administration (STACFAD)

The Standing Committee on Finance and Administration (STACFAD) met on 7 March under the chairmanship of Miss Diana Pethick (Canada) and considered the financial and administrative items relating to the termination of ICNAF assigned from the Plenary agenda (Items 4, 5, and 6). The Report of STACFAD with recommendations was presented to the Final Plenary Session on 9 March 1979.

a) The Commission **adopted** the following **Resolution on Transitional Arrangements from ICNAF to NAFO**:

### The Commission

**Noting** the coming into force of NAFO and the need to give consideration to the termination of ICNAF as part of an orderly transition to management by the successor organization,

### Resolves

- (1) that Contracting Governments be called upon to serve, on or before 30 June 1979, notice of withdrawal from the Convention effective 31 December 1979, in accordance with Convention Article XVI; and
- (2) that Contracting Governments agree that, if requested by NAFO, the Executive Secretary of ICNAF be authorized to receive into its accounts all contributions in respect of NAFO, and to pay any expenses of NAFO until 31 December 1979.

b) The Commission **noted** the need for financial arrangements necessary in ICNAF for an orderly transition from ICNAF to NAFO and **agreed**

that ICNAF establish a budget for the period 1 July 1979 to 31 December 1979.

c) The Commission **noted** that the withdrawal of Denmark from ICNAF on 31 December 1978 and the receipt of Denmark's contribution to ICNAF for 1 July 1978 to 30 June 1979 left a credit of one-half of Denmark's contribution. The Commission **agreed to recommend** to the Government of Denmark

that one-half of Denmark's contribution to ICNAF for the fiscal year 1978/79 (Cdn \$12,296.16) be credited to the NAFO accounts for application against the annual contribution which would be

required from the Faroe Islands on her becoming a member of NAFO.

## 7. Report of the Standing Committee on International Control (STACTIC)

STACTIC met under the chairmanship of Captain A. S. Gaspar (Portugal) on 7 March to consider the report of a working group set up at the 1978 Annual Meeting to continue examination of the provisions of the Scheme of Joint International Enforcement as it relates to the extension of coastal state jurisdiction. The Working Group, under the chairmanship of Mr L. G. Riche (Canada), examined proposals for improvement to the Scheme from Norway, Canada, and EEC.

### a) Improvements to the Scheme of Joint International Enforcement

The Commission, on the recommendation of STACTIC, **agreed**

that the Commission transmit to the Depositary Government, for joint action by the Contracting Governments, proposal (1) for amendments to paragraphs 4 and 5 of the Scheme of Joint International Enforcement (Appendix III) and proposal (2) regarding actions to be taken by the Executive Secretary following information on Member Countries reaching their catch quotas (Appendix III).

The Commission noted an EEC proposal regarding the wording of the text to precede the signature of the master on the inspection report and **agreed** to defer the proposal for further discussion at a STACTIC Working Group Meeting in June 1979.

### b) Proposal for an International Observer Program

The Commission, on the recommendation of STACTIC, **agreed**

that STACRES consider further steps which might be desirable to implement the scientific observer scheme as adopted at the 1975 Annual Meeting and that the STACRES report on this subject be discussed further in a joint meeting of STACRES and STACTIC at the time of the 1979 Annual Meeting.

## 8. Report of Panels

The Report of Joint Meetings of Panels 3 and 4, with proposals developed at the Informal Intergovernmental Consultations convened by Canada and concurred in by the Panels for regulation

in 1979 of the stocks of capelin in Divisions 3LNO and squid (*Illex*) in Subareas 3 and 4 which overlapped the Canadian fishing limits in Subarea 3, was **adopted** by the Commission in Final Plenary Session on 9 March 1979.

**a) Joint Panels 3 and 4**

The Panels, under the chairmanship of Dr J. A. Varea (Cuba), reviewed the quota proposals as agreed for capelin in Divisions 3LNO and for squid (*Illex*) in Subareas 3 and 4 in the Informal Intergovernmental Consultations and discussed three Canadian proposals relating to the further regulation of the squid fishery in Subareas 3 and 4. The Panels, in joint session, **agreed to recommend**

that the Commission transmit to the Depository Government, for joint action by the Contracting Governments, proposals for international regulation of the fisheries for capelin in Divisions 3LNO, and for squid (*Illex*) in Subareas 3 and 4 for 1979 (see proposal (3) in Appendix III).

Also, the Panels, in joint session, **agreed to recommend**

that the matter of a minimum mesh size for squid (*Illex*) outside the Canadian fishing zone in Subareas 3 and 4 be deferred until the 1979 Annual Meeting, with the understanding that Canada will introduce in 1979, a minimum mesh size of 60 mm for bottom trawls fishing for squid (*Illex*) within the Canadian fishing zone in Subareas 3 and 4.

### **9. International Conservation Measures**

The Commission reviewed the report of joint meetings of Panels 3 and 4 with its recommendations and **noted** that the TACs and national allocations for 1979 in respect of the two stocks which would, if

combined in a single table, comprise a proposal for international regulation of the fisheries in Subareas 3 and 4 of the Convention Area, with the June 1974 proposal (4), as amended, provided the management procedures. The Commission, therefore, **agreed**

to transmit to the Depository Government, for joint action by the Contracting Governments, proposal (3) for international regulation of the fisheries in Subareas 3 and 4 of the Convention Area for 1979 (Appendix III)

### **10. Changes to the Statistical Boundary between Subarea 1 and Statistical Area 0**

The Commission examined a proposal by Canada for changes to the statistical boundary between Subarea 1 and Statistical Area 0. At the request of Canada, the Commission **agreed** to refer the item to the Scientific Council of NAFO for consideration and report to the General Council of NAFO.

### **11. Other Business**

The Commission, at the request of STACRES, requested all Member Countries to make a special effort to provide adequate and timely statistics to the Secretariat in order that the stock assessments and subsequent advice for management would be as accurate and up-to-date as possible.

### **12. Adjournment**

The Chairman, Mr S. Ohkuchi (Japan), thanked the delegates and the Secretariat for their contributions and declared the Tenth Special Meeting of the Commission adjourned at 1326 hrs. 9 March 1979, to reconvene at the 29th Annual Meeting of the Commission on 30 May-6 June 1979, at the Lord Nelson Hotel, Halifax, Canada.

# PART 2

## Appendix I

### List of Participants

(Head of Delegation **in bold**)

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## **PART 2**

### **Appendix II**

### **Agenda**

1. Opening
2. Agenda
3. Publicity
4. Review of present status of ICNAF and NAFO
5. Arrangements re termination of ICNAF
6. Financial arrangements
7. Conservation of fish stocks lying partly inside and partly outside national fishing limits in Subareas 3 and 4 (*Sum. Doc. 79/III/5*)
  - a) Capelin in Div. 3LNO of Subarea 3 (*1978 Annu. Mtg. Proc. 7*)
  - b) Squid in Subareas 3 and 4 (*1978 Ann. Mtg. Proc. 7*)
8. Consideration of proposals for improvements to the ICNAF Joint International Enforcement Scheme (*1978 Annu. Mtg. Proc. 7*)
9. Report of Special STACRES Meeting on Seals and Shrimp, Bergen, Norway, 14-17 November 1978 (*Sum. Doc. 79/VI/1*)
10. Report of Special STACRES Meeting on Capelin and Squid, Tokyo, Japan 14-21 February 1979 (*Sum. Doc. 79/VI/5*)
11. Report of Meeting of STACFAD
12. Report of Joint Meeting of Panels 3 and 4
13. Report of Meeting of STACTIC
14. Other Business
  - a) Canadian request for changes in statistical reporting areas for Baffin Bay and the Davis Strait (*Com. Doc. 79/III/5*)
15. Date and Location of Future Meetings
16. Press Statement
17. Adjournment

## PART 2

### Appendix III

# List of Proposals (1) to (3) from the Tenth Special Commission Meeting, March 1979

### **(1) Proposal for Amendment of the Scheme of Joint International Enforcement of the Fishery Regulations in the Convention Area and in Statistical Areas 0 and 6, adopted by the International Commission for the Northwest Atlantic Fisheries in Plenary Session on 9 March 1979**

That, pursuant to paragraph 3 of Article VIII of the Convention, paragraphs 4 and 5 of the Scheme of Joint International Enforcement, adopted at the Twenty-Fourth Annual Meeting (Annual Report Vol. 24, 1973/74, p. 87-88), the Eighth Special Meeting (Annual Report Vol. 26, 1975/76, p. 61), and the Twenty-Sixth Annual Meeting (Annual Report Vol. 26, 1975/76, p. 105), be replaced by the following:

- "4. (i) Inspection and control under this Scheme shall apply to the following types of vessels in relation to the following operations only when they are carried out in that part of the Convention Area and of Statistical Areas 0 and 6<sup>1</sup> to which this Scheme applies:
- a) fishing vessels which are or have been engaged during their present voyage in fishing operations;
  - b) vessels equipped for processing fish on board which are or have been engaged during their present voyage in fish transferring operations; and
  - c) transport vessels which are actually engaged in fish transferring operations.
- (ii) The master of a vessel to which inspection and control apply shall facilitate boarding when given the appropriate signal in the International Code of Signals by a vessel or a helicopter carrying an inspector. The vessel to be boarded shall not be required to stop or manoeuvre when fishing, shooting, or hauling. The master shall nonetheless provide:
- a) a boarding ladder constructed and used as described in Annex C to this Scheme; or
  - b) such assistance to boardings from helicopters as specified in Annex A to this Scheme.
- In either case, the master shall observe the ordinary practice of good seamanship to enable an inspection party to board as soon as practicable. With respect to personnel helicopter hoist transfers, in certain circumstances such as those cited in paragraph 7 of Annex A, a boarding, using the helicopter hoist transfer procedure, will not be attempted.
- (iii) The procedures established for personnel helicopter hoist transfers are not intended to place a higher duty of care upon the master of a fishing vessel than would otherwise be the case under International Law.
- (iv) An inspection party will consist of one inspector in charge of making the inspection who may be accompanied by additional inspectors appointed under this Scheme and not more than two witnesses. The word "inspector" hereafter refers only to the inspector in charge unless it is clear that all inspectors appointed under this Scheme and included in the inspection party are referred to.
- (v) The master shall enable the inspector to examine and photograph catch, nets, or other gear and any relevant documents as the inspector deems necessary to verify the observance of the Commission's regulations in force in relation to the flag state<sup>2</sup> of the vessel concerned.
- (vi) The vessel in charge of a pair trawling operation shall be required to identify itself by flying a pennant or flag on the approach of an inspector.
- (vii) Flag states<sup>2</sup> shall be required to inform the Executive Secretary when an inspection vessel of that state<sup>2</sup> is operating in the Convention Area<sup>1</sup>.
- "5. (i) Inspections shall be made so that the vessel suffers the minimum interference and inconvenience. The inspector shall limit his inquiries to the ascertainment of the facts in relation to the observance of the Commission's regulations in force in relation to the flag state<sup>2</sup> of the vessel concerned. In making his examination, the inspector may ask the master for any assistance he may require. He shall draw up a report of the inspection on a form approved by the Commission. The inspector shall sign the report in the presence of the master who shall be entitled to add or have added to the report any observations which he may think suitable. The master must sign such observations, and he must sign the report without prejudice to future proceedings. A copy of the report shall be given to the master of the vessel and the

<sup>1</sup>In the Northwest Atlantic Fisheries Organization = Regulatory Area

<sup>2</sup>In the Northwest Atlantic Fisheries Organization = Contracting Party or Parties

original shall be transmitted, within 30 days whenever possible, to the appropriate authority of the flag state<sup>2</sup> of the inspected vessel. A copy shall be forwarded to the Commission.

- (ii) Inspectors shall have authority to inspect all fishing gear on or near the working deck and readily available for use, and the catch on and below decks. Fishing gear shall be inspected in accordance with the regulations in force for the Subarea in which the inspection takes place. The number of undersized meshes and the width of each mesh in the nets examined shall be entered in the inspector's report together with the average width of the meshes examined.
- (iii) The inspector shall have authority, subject to any limitations by the Commission, to carry out such examination and measurement of the catch as he deems necessary to establish whether the Commission's regulations are being complied with.
- (iv) Where an apparent infringement of the regulations is observed, the inspector shall examine the bridge log, fishing log, or other pertinent documents which contain information relevant to the apparent infringement. The inspector shall enter a notation in the fishing logbook or other relevant document stating the date, location, and type of apparent infringement observed and shall sign such notations. The inspector may make a true copy of any relevant entry in such a document, and shall require the master of the vessel to certify in writing on each page of the copy that it is true copy of such entry. The inspector shall have full opportunity to document evidence of the apparent infringement with photographs of the relevant fishing vessel, gear, catch, and logs or other documents, in which case copies of the photographs shall be attached to the copy of the report to the flag state<sup>2</sup>.
- (v) Where an inspecting officer observes an apparent infringement of the regulations prohibiting:
  - a) fishing in a closed area or with gear prohibited in a specific area;
  - b) fishing for stocks or species in a region after the date on which the Contracting Governments<sup>2</sup> having jurisdiction over the inspected vessel has notified the Executive Secretary that persons under its jurisdiction will cease a directed fishery for those stocks or species;
  - c) fishing in an "Others" quota without prior notification to the ICNAF<sup>3</sup> Secretariat, or more than 10 days after the "Others" quota for that stock or species has been taken and Contracting Governments<sup>2</sup> have been so informed by the Executive Secretary; or
  - d) fishing without proper flag state<sup>2</sup> registration documents for the area where the vessel is found fishing;

the inspector shall, with a view toward facilitating flag state<sup>2</sup> action on the apparent infringement, immediately attempt to communicate with an inspector of the inspected vessel's flag state<sup>2</sup> known to be in the vicinity, or the authority of the inspected vessel's flag state<sup>2</sup> designated in accordance with paragraph 1 above. The master of the inspected vessel shall arrange for messages to be sent and received by using his radio equipment and operator for this purpose. At the request of the inspector, a master shall cease all fishing which appears to the inspector to be in contravention of regulations cited above. During this time, the inspector shall complete the inspection and, if he is unable to communicate with an inspector or designated authority of the flag state<sup>2</sup> within a reasonable period of time, he shall leave the inspected vessel and communicate as soon as possible with an inspector or designated authority of the flag state<sup>2</sup>. However, if he succeeds in establishing communications while on board the inspected vessel, and provided that the inspector or designated authority of the flag state<sup>2</sup> agrees, the inspector may remain aboard the inspected vessel. So long as the inspector remains aboard, the master may not resume fishing until the inspector is reasonably satisfied either with the action taken by the vessel's master, or as a result of his communication with an inspector or designated authority of the flag state<sup>2</sup>, that the vessel will not repeat the apparent infringement for which it has been cited.

- (vi) The inspector may request that the master remove any part of the fishing gear which appears to the inspector to have been used in contravention of the Commission's regulations in force in relation to the flag state<sup>2</sup> of the vessel concerned. An identification mark approved by the Commission shall be affixed to any part of the fishing gear which appears to the inspector to have been so used, whether removed or not, and the inspector shall record these facts on his report. The mark shall be so affixed as to ensure that this part of the gear will be preserved with the mark attached, and it shall be so preserved until it has been viewed by an inspector or designated authority of the inspected vessel's flag state<sup>2</sup> who shall determine the subsequent disposition of the gear.
- (vii) The inspector may photograph the fishing gear in such a way that the identification mark and measurements of the fishing gear are visible, in which case the subjects photographed should be listed in the report and copies of the photographs should be attached to the copy of the report to the flag state<sup>2</sup>.

**NOTE:** Attached is Annex C which forms an integral part of this proposal.

<sup>2</sup>In the Northwest Atlantic Fisheries Organization = Contracting Party or Parties

<sup>3</sup>In the Northwest Atlantic Fisheries Organization = Northwest Atlantic Fisheries Organization

**Annex C. Integral part of the ICNAF<sup>3</sup> Scheme of Joint International Enforcement to describe the boarding ladder and its use by vessels to which inspection and control apply.**

**Boarding Ladders**

Fishing vessels with an overall length greater than 30 m (100 feet) and support vessels subject to inspection under the Scheme of Joint International Enforcement shall comply with the following requirements.

- I. The boarding ladders shall be efficient for the purpose of enabling inspectors to embark and disembark at sea safely. The boarding ladders are to be kept clean and in good order.
- II. The ladder shall be secured in a position so that it is clear from any possible discharges from the ship, that each step rests firmly against the ship's side, that it is clear so far as practicable of the finer lines of the ship and that the inspector can gain safe and convenient access to the ship.
- III. The steps of the boarding ladder shall be:
  - a) of hardwood or other material of equivalent properties, made in one piece free of knots, having an efficient non-slip surface; the four lowest steps may be made of rubber of sufficient strength and stiffness or of other suitable material of equivalent characteristics;
  - b) not less than 480 mm (19 inches) long, 115 mm (4-1/2 inches) wide, and 25 mm (1 inch) in depth, excluding any non-slip device; and
  - c) equally spaced not less than 300 mm (12 inches) nor more than 380 mm (15 inches) apart and may be secured in a manner that they will remain horizontal.
- IV. No boarding ladder shall have more than two replacement steps which are secured in position by a method different from that used in the original construction of the ladder and any steps so secured shall be replaced, as soon as reasonably practicable, by steps secured in position by the method used in the original construction of the ladder.
- V. The side ropes of the ladder shall consist of two uncovered manila or equivalent ropes not less than 60 mm (2-1/2 inches) in circumference on each size; each rope shall be continuous with no joints below the top step; two man ropes properly secured to the ship and not less than 65 mm (2-1/2 inches) in circumference and a safety line shall be kept at hand ready for use if required.
- VI. Battens made of hardwood, or other material of equivalent properties, in one piece and not less than 1.80 m (5 feet 10 inches) long, shall be provided at such intervals as will prevent the boarding ladder from twisting. The lowest batten shall be on the fifth step from the bottom of the ladder and the interval between any batten and the next shall not exceed 9 steps.
- VII. Means shall be provided to ensure safe and convenient passage onto or into and off the ship between the head of the pilot ladder or of any accommodation ladder or other appliance provided. Where such passage is by means of a gateway in the rails or bulwark, adequate handholds shall be provided. Where such passage is by means of a bulwark ladder, such ladder shall be securely attached to the bulwark rail or platform and two handhold stanchions shall be fitted at the point of boarding or leaving the ship not less than 0.70 m (2 feet 3 inches) nor more than 0.80 m (2 feet 7 inches) apart. Each stanchion shall be rigidly secured to the ship's structure at or near its base and also at a higher point, shall be not less than 40 mm (1-1/2 inches) in diameter and shall extend not less than 1.20 m (3 feet 11 inches) above the stop of the bulwark.
- VIII. Lighting shall be provided at night such that both the boarding ladder overside and also the position where the inspector boards the ship shall be adequately lit. A lifebuoy equipped with a self-igniting light shall be kept at hand ready for use. A heaving line shall be kept at hand ready for use if required.
- IX. Means shall be provided to enable the boarding ladder to be used on either side of the ship.
- X. The rigging of the ladder and the embarkation and disembarkation of an inspector shall be supervised by a responsible officer of the ship.
- XI. Where on any ship constructional features such as rubbing bands would prevent the implementation of any of these provisions, special arrangements shall be made to the satisfaction of the Commission to ensure that persons are able to embark and disembark safely.

<sup>3</sup>In the Northwest Atlantic Fisheries Organization = Northwest Atlantic Fisheries Organization

**(2) Proposal Relating to Actions to be Taken by the Executive Secretary Following Information on Member Countries Reaching their Catch Quotas, adopted by the International Commission for the Northwest Atlantic Fisheries in Plenary Session on 9 March 1979**

"When information satisfactory to the Executive Secretary indicates that there are reasonable grounds for believing that the national<sup>1</sup> quota of a Contracting Government<sup>2</sup> has been taken in a fishery which lies beyond the areas in which coastal states exercise fisheries jurisdiction, or in a fishery that takes place on a stock which occurs both inside a coastal state's fisheries jurisdiction and in the area beyond the coastal state's fisheries jurisdiction, he shall immediately inform the authorities of that Contracting Government<sup>2</sup>. If, within 15 days, no action is taken by that Contracting Government<sup>2</sup>, nor satisfactory information given that the national<sup>1</sup> quota has not been taken, the Executive Secretary shall so report to the Commission."

<sup>1</sup>In the Northwest Atlantic Fisheries Organization, delete "national".

<sup>2</sup>In the Northwest Atlantic Fisheries Organization = Contracting Party or Parties

**(3) Proposal for International Regulation of the Fisheries in Subareas 3 and 4 of the Convention Area, adopted by the International Commission for the Northwest Atlantic Fisheries in Plenary Session on 9 March 1979**

That the Contracting Governments conduct their fisheries outside areas under national fisheries jurisdiction in such a manner that catches shall not exceed the total allowable catch for each stock and the quotas for each stock set out in the attached Table.

Table — Integral Part of Proposal (3) for the International Regulation of the Fisheries in Subareas 3 and 4 of the Convention Area, adopted by the International Commission for the Northwest Atlantic Fisheries in Plenary Session on 9 March 1979. Total allowable catches and quotas (metric tons) for 1979 of particular stocks or species in Subareas 3 and 4 of the Convention Area.

Country	CAPELIN	SQUID ( <i>Illex</i> )
	Div. 3LNO	Subareas 3 + 4 <sup>b,c</sup>
Bulgaria	—	1,000
Canada <sup>d</sup>	10,000 <sup>a</sup>	86,500
Cuba <sup>d</sup>	—	4,500
Japan	—	4,500
Poland	—	2,000
Portugal	—	1,000
Romania <sup>d</sup>	—	1,000
Spain	—	4,500
USSR <sup>d</sup>	—	10,000
Reserved for the Members of NAFO which are non-Members of ICNAF:	—	5,000
EEC	—	—
Total	10,000	120,000

<sup>a</sup>Reserved for the Canadian inshore fishery in Div. 3L.

<sup>b</sup>A minimum of 10% of each quota must be taken in Subarea 3.

<sup>c</sup>The opening date for the squid (*Illex*) fishery is 1 July.

<sup>d</sup>The amount(s) allocated to this country includes the amount(s) allocated for quota regulation of the same stock in the proposal adopted by the Fisheries Commission of NAFO on 9 March 1979.

## **PART 2**

### **Appendix IV**

# **Tenth Special Commission Meeting — March 1979**

## **Press Notice**

1. The Tenth Special Meeting of the International Commission for the Northwest Atlantic Fisheries (ICNAF) was held in Montreal, Canada, 7-9 March 1979. Representatives from Bulgaria, Canada, Cuba, German Democratic Republic, Iceland, Japan, Norway, Poland, Portugal, Romania, Spain, and the USSR attended the meeting as participants together with Observers from the European Economic Community (EEC), the Food and Agriculture Organization of the United Nations (FAO), Denmark (Faroe Islands), and the USA.

#### **Scientific Advice**

2. The Commission's Standing Committee on Research and Statistics (STACRES), which met at Tokyo, Japan in February 1979, provided advice on the conservation of the capelin stocks in Subareas 2 and 3 and the squid (*Illex*) stock in Subareas 3 and 4 for 1979.

#### **Conservation Measures**

3. The Commission agreed to Total Allowable Catches (TAC) and national allocations for 1979 in respect of the capelin stocks in ICNAF Divisions 3LNO and the squid stock in Subareas 3 and 4. The Commission agreed to a TAC of 10,000 metric tons of capelin, all of which was allocated to Canada for inshore fishing. The Commission also agreed to a TAC of 120,000 metric tons of squid, which was allocated as follows: Bulgaria (1,000), Canada (86,500), Cuba (4,500), EEC (5,000), Japan (4,500), Poland (2,000), Portugal (1,000), Romania (1,000), Spain (4,500), and USSR (10,000).

#### **Enforcement of Fishery Regulations**

4. The Commission's Standing Committee on International Control (STACTIC) reviewed present procedures for international control of fishing activities outside the 200-mile fisheries zones of coastal states and proposed a number of improvements which were agreed to by the Commission.

#### **Transitional Arrangements**

5. The Commission, noting that organizational arrangements had been initiated for the Northwest Atlantic Fisheries Organization (NAFO), agreed to administrative arrangements for the smooth transition during 1979 from ICNAF to its successor organization.

#### **Future Meeting**

6. The 29th Annual Meeting of ICNAF will be held concurrently with the First Annual Meeting of NAFO during 30 May-9 June 1979 in Halifax, Nova Scotia, Canada.

20 March 1979

Office of the Secretariat  
Dartmouth, Nova Scotia, Canada

## PART 3

# Report of the 29th Annual Meeting of the International Commission for the Northwest Atlantic Fisheries, Halifax, Canada, 30 May-6 June 1979

### 1. Introduction

Under the terms of a Convention signed in 1949, 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, and on economic and technical considerations, measures to achieve the optimum utilization of the stocks of those species of fish which support international fisheries in the Convention Area are recommended to the 12 Contracting 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 East and South Newfoundland; Subarea 4, the Gulf of St. Lawrence and Nova Scotia banks; and Subarea 5, the Gulf of Maine). The sixth panel has jurisdiction respecting harp and hooded seals in the Convention Area.

The Commission has Standing Committees on Research and Statistics (STACRES), on Finance and Administration (STACFAD), on Regulatory Measures (STACREM), and on International Control (STACTIC).

With the deposit of instruments of ratification by seven signatories: Canada, Cuba, the European Economic Community (EEC), the German Democratic Republic (GDR), Iceland, Norway, and the Union of Soviet Socialist Republics (USSR), the Convention on Future Multilateral Cooperation in the Northwest Atlantic Fisheries, done at Ottawa, Canada, on 24 October 1978, came into force on 1 January 1979. The Government of Canada convened the Inaugural Meeting of the Northwest Atlantic Fisheries Organization (NAFO) in Montreal, Canada, 8-9 March 1979, to coincide with the Tenth Special Meeting of ICNAF held in Montreal, Canada, 5-9 March 1979. In view of the coming into effect of NAFO and the need to terminate ICNAF, Contracting Governments were asked to withdraw from ICNAF effective 31 December 1979. A budget for the period 1 July 1979 to 31 December 1979 was to be established by ICNAF which

was authorized to receive into its accounts all contributions in respect of NAFO and to pay any expenses of NAFO until 31 December 1979 when all assets and liabilities of ICNAF would be assumed by NAFO effective 1 January 1980.

### 2. Time and Place of Meeting

The 29th Annual Meeting of the Commission was convened in the Lord Nelson Hotel, Halifax, Canada, from 30 May to 6 June 1979, under the chairmanship of Mr S. Ohkuchi (Japan). The Tenth Special Meeting of the Commission was held at the Queen Elizabeth Hotel, Montreal, Canada, from 7 to 9 March 1979, under the chairmanship of Mr S. Ohkuchi (Japan) (Part 2, this volume).

Special meetings of STACRES were held at Bergen, Norway, from 13 to 17 November 1978, under the chairmanship of Dr G. H. Winters (Canada) to provide advice, at the request of Canada, for management in 1979 of the harp and hooded seal stocks and, at the request of Canada and the EEC, to assess the status of the shrimp stocks in Subarea 1 and Statistical Area 0 (*ICNAF Redbook 1979, Part A*), and at Tokyo, Japan, from 14 to 21 February 1979, under the chairmanship of Dr G. H. Winters (Canada), to provide advice on the scientific basis for the management in 1979 of the capelin stocks in Subareas 2 and 3 and the squid (*Illex*) stock in Subareas 3 and 4 (*ICNAF Redbook 1979, Part B*). The Assessments Subcommittee of STACRES met under the chairmanship of Dr G. H. Winters (Canada) at St. John's, Newfoundland, from 28 March to 9 April 1979, and prepared scientific advice for the management in 1980 for Canada and the EEC of three stocks overlapping their 200-mile fishing limits, for the EEC of two stocks inside her 200-mile fishing limits, for Canada of seven stocks inside her 200-mile fishing limits, for Canada and the Commission of seven stocks overlapping the Canadian 200-mile fishing limits, and for the Commission of three stocks outside the Canadian 200-mile fishing limits.

The Annual Meeting of STACRES and its Subcommittees was convened at Dartmouth, Canada,

under the chairmanship of Dr R. G. Halliday (Canada) from 22 to 26 May 1979.

Items from the Commission's agenda were considered in Plenary Session or assigned for study and reporting to STACRES, STACFAD, STACTIC, and Panel 3. Their reports and recommendations were taken for approval by the Commission in Plenary Session on 5 and 6 June 1979.

### 3. Participants (Appendix I)

Commissioners, their Advisers and Experts, were present from the 12 Member Countries of the Commission. Observers were present from EEC, the Food and Agriculture Organization of the United Nations (FAO), the International Commission for the Southeast Atlantic Fisheries (ICSEAF), the International Council for the Exploration of the Sea (ICES), and the USA.

### 4. Opening Session

The 29th Annual Meeting was called to order by the Chairman, Mr S. Ohkuchi (Japan), in the Regency Ballroom of the Lord Nelson Hotel in Halifax, Canada, at 1020 hrs on 30 May 1979. The Chairman, after welcoming the delegates and observers, addressed the meeting as follows:

"I'd like to say a few words at the beginning of this Plenary Meeting.

"This conference is the last session of ICNAF which comes to an end by the end of this year.

"ICNAF has done really excellent and brilliant work since 1951, not only for the management of the resources of the Northwest Atlantic but also as a model of various international organizations in other parts of the world.

"It is said that the last one is the most important.

"I should like to do my best as Chairman, and ask all of you to make an utmost effort to make this important meeting most fruitful and successful."

The meeting participants stood in a moment of silence in memory of US Ambassador Donald L. McKernan, for years a highly respected adviser to the USA delegation to ICNAF, who died on a US Trade Mission to China on 8 May 1979.

### 5. Agenda (Appendix II)

In accordance with Rules of Procedure 4.2(b), a provisional agenda for the Annual Meeting was

transmitted to all Contracting Governments and Commissioners not less than 60 days in advance of the Meeting. The Agenda was adopted at the First Plenary Session.

### 6. Publicity

In accordance with past practice, the Commission appointed the Chairman and Vice-Chairman of the Commission, the Chairmen of STACRES and STACFAD, and the Executive Secretary to a committee on policy regarding publicity. A press release covering the major items of importance is at Appendix IV.

### 7. Report of the Standing Committee on Finance and Administration (STACFAD)

STACFAD met on 1 and 5 June 1979, under the chairmanship of Miss Diana Pethick (Canada), and considered items on its agenda and financial and administrative items assigned from the Plenary agenda (Items 7, 8, 9, and 10). The Report of STACFAD with recommendations was presented to the Final Plenary Session on 5 June 1979.

#### a) Panel memberships

STACFAD reviewed the Panel memberships, in accordance with the requirements of Article IV(2) of the Convention. During the 1978/79 year, of the 17 Member Countries of the Commission, five which were also Member States of the EEC withdrew from the Commission on 31 December 1978. As a consequence,

Country	Panel					A (Seals)	Total
	1	2	3	4	5		
Bulgaria	—	—	1974	1975	1973	—	3
Canada	—	1952	1951	1951	1951	1966	5
Cuba	—	1976	1976	1976	1976	—	4
Denmark <sup>a</sup>	1951	—	1969	1974	—	1966	4
France <sup>a</sup>	1953	1953	1953	1953	1974	—	5
Fed. Rep. Germany <sup>a</sup>	1957	1960	1977	1970	—	—	4
German Dem. Rep.	—	1974	1974	—	1974	—	3
Iceland	—	1974	1976	—	—	—	2
Italy <sup>a</sup>	—	—	1977	—	—	—	1
Japan	—	—	1971	1971	1971	—	3
Norway	1952	1970	1968	—	—	1966	4
Poland	1962	1962	1962	1968	1968	—	5
Portugal	1953	1953	1953	1953	—	—	4
Romania	—	1970	1970	—	1967	—	3
Spain	1952	1954	1952	1952	1972	—	5
USSR	1958	1958	1958	1962	1962	—	5
UK <sup>a</sup>	1951	1960	1951	—	—	—	3
Total to 31 December 1978	9	13	17	11	10	3	63
Total from 1 January 1979	5	10	12	8	9	2	46

<sup>a</sup>Withdrew from ICNAF effective 31 December 1978

Panel memberships decreased from 63 to 46 and are distributed among the 12 remaining Member Countries of the Commission.

#### b) Reports by the Secretariat

The following reports on administrative and financial matters were presented by the Executive Secretary:

- i) Auditor's Report for the fiscal year ended 30 June 1978 (*ICNAF Annu. Rept., Vol. 28, 1977/78*, p. 14-21);
- ii) Administrative and Financial Report for the fiscal year ending 30 June 1979 (see Part 1, this volume); and
- iii) Budget Estimate for the fiscal period 1 July 1979 to 31 December 1979 (Appendix I to the 1979 STACFAD agenda).

#### c) Recommendations

The Commission adopted the following recommendations:

- i) that the Auditor's Report, showing receipts of Can \$430,000 and expenditures of Can \$378,197 for the fiscal year ending 30 June 1978, be adopted;
- ii) that the provisional Administrative Report, with the financial statements for the fiscal year ending 30 June 1979 (estimated from 30 April 1979), be adopted;
- iii) that the Commission appropriate a sum of Can \$236,900 from the Contracting Governments, from the Miscellaneous Fund, and from NAFO, as administrative fees on behalf of the EEC and the Faroe Islands, to meet ordinary expenses for the period 1 July to 31 December 1979, the appropriations to be used for the following purposes:

1.	Personal Services	
	a) Salaries .....	\$ 126,500
	b) Superannuation.....	14,000
	c) Additional help .....	500
	d) Group medical and insurance plans.....	1,900
	e) Contingencies .....	6,000
2.	Travel .....	2,000
3.	Transportation of Things .....	500
4.	Communications .....	12,500
5.	Publications .....	16,000
6.	Other Contractual Services .....	23,000
7.	Materials and Supplies .....	7,000
8.	Equipment .....	2,000
9.	Computer Services .....	20,000
10.	Contingencies .....	5,000
Total Ordinary Expenditures .....		\$ 236,900

- iv) that the Contracting Governments of ICNAF and the Contracting Parties of NAFO be billed by the Commission for payments due under the 1 July-31 December 1979 budget, on 15 August 1979;
- v) that the Executive Secretary of ICNAF be appointed Executive Secretary of NAFO with effect from 9 March 1979 on the understanding that he will continue to act as Executive Secretary to ICNAF at least until 31 December 1979;
- vi) that the staff of the ICNAF Secretariat be appointed staff of the NAFO Secretariat on the understanding that the staff will continue to act as the staff of the ICNAF Secretariat at least until 31 December 1979;
- vii) that all assets of ICNAF be transferred to NAFO, and the financial obligations of ICNAF be assumed by NAFO, effective 31 December 1979;
- viii) that the Commission note the re-election of Miss Diana Pethick (Canada) as Chairman of STACFAD for the balance of 1979.

### 8. Status of Commission Proposals

The Commission **noted** (see Section 8 of Part 1 of this volume and *Com. Doc. 79/VI/12*) that the 1973 Protocol Relating to Basic Payments by Contracting Governments and the 1976 Protocol Relating to Continued Functioning of the Commission had not come into effect.

The **June 1978 proposals** (1) regarding catch quota regulation for eight stocks in Subarea 3 in 1979 became effective for all Contracting Governments on 13 January 1979. The **March 1979 proposals** (1) for amendment of the Scheme of Joint International Enforcement, (2) for Executive Secretary actions following information on Member Countries reaching their catch quotas, and (3) for catch quota regulations for stocks of capelin in Divisions 3LNO and squid (*Illex*) in Subareas 3 and 4 in 1979 would, under the normal 6-month waiting procedure, become effective on 5 October 1979.

### 9. Report of the Standing Committee on Research and Statistics (STACRES)

STACRES met in special session at Bergen, Norway, during 13-17 November 1978, under the chairmanship of Dr G. H. Winters (Canada), and provided advice to the coastal states concerned on the

scientific basis for management in 1979 of the seal stocks in Subareas 2 to 4 and the shrimp stocks in Statistical Area 0 and Subarea 1. The need for standardization of reporting procedures for sampling data was also considered and new requirements recommended. Details of the advice provided are given in Part A of *ICNAF Redbook 1979*.

STACRES met again in special session at Tokyo, Japan, during 14-21 February 1979, under the chairmanship of Dr G. H. Winters, and provided advice to the coastal state concerned on the scientific basis for management in 1979 of the capelin stocks in Subareas 2 and 3 and the squid (*Illex*) stocks in Subareas 3 and 4. Details of the advice provided are given in Part B of *ICNAF Redbook 1979*.

At the request of STACRES, the Assessments Subcommittee met at St. John's, Newfoundland, Canada, during 28 March-9 April 1979, under the chairmanship of Dr G. H. Winters, to review the state of and provide scientific advice for management in 1980 of certain stocks of cod, redfish, silver hake, American plaice, witch flounder, yellowtail flounder, Greenland halibut, roundnose grenadier, and argentine in Statistical Area 0 and Subareas 1-4, to examine proposals for changing the mesh size for redfish in Div. 3M and the implementation of a uniform mesh size for the silver hake and squid fisheries in Subarea 4, and to evaluate the accuracy of commercial fishery abundance indices (see *ICNAF Redbook 1979, Part C, Appendix I*).

The Annual Meeting of STACRES, chaired by Dr R. G. Halliday (Canada), together with meetings of its Subcommittees on Biological Surveys (chaired by Dr W. G. Doubleday, Canada), Statistics and Sampling (chaired by Dr J. Messtorff, Federal Republic of Germany), and Environmental Studies (chaired by Mr E. J. Sandeman, Canada), were held at Dartmouth, Nova Scotia, Canada, during 22-26 May 1979 prior to the 29th Annual Meeting of the Commission. The meetings were held jointly with the Scientific Council of NAFO which adopted the STACRES Report and recommendations in order to maintain continuity in the transition of scientific matters to NAFO. The reports of the STACRES meetings were adopted by the Commission in Plenary Session on 5 June 1979 and are published in *ICNAF Redbook 1979, Part C*.

Brief summaries of significant items covered in these reports are as follows:

#### a) Assessments

- i) STACRES noted that the total nominal catch of all species in the Northwest Atlantic was 2,868,000 tonnes in 1978, a decline from 2,999,000 tonnes in 1977 and from 3,460,000 tonnes in 1976. Significant **declines** from 1977

to 1978 occurred for redfish (18%), silver hake (24%), witch flounder (19%), mackerel (64%), and capelin (59%), which were nearly offset by **increases** for haddock (54%), pollock (15%), Greenland halibut (18%), roundnose grenadier (45%), and various invertebrate species (10%), mainly clams, oysters, and scallops.

- ii) For **harp seals**, the available evidence indicated that the population is continuing to increase from its low level of one million animals in 1972, with replacement yield estimated at 200,000 in 1979. The large degree of mixing of immature seals in the Front and Gulf herds indicates that the catch should be divided between the two areas in proportion to the estimated herd sizes to avoid the risk of temporary depletion of one herd. The **hooded seal** population appears to have remained stable or possibly to have increased in recent years, but the evidence for the latter is insufficient to warrant an increase in the TAC for 1979 from the present level of 15,000 animals.
- iii) For **shrimp** in Statistical Area 0 and Subarea 1, catch rates and biomass estimates indicated a decline in stock size from 1976 to 1978, with consequent advice that the 1979 TAC for the offshore grounds in Subarea 1 and the adjacent grounds of Statistical Area 0 should be reduced by 20-32% below the 1978 TAC of 40,000 tonnes (i.e. 27,200-32,000 tonnes for 1979). No attempt was made to estimate a TAC for the remainder of Statistical Area 0.
- iv) For the **capelin** stocks in Subareas 2 and 3, the TACs advised for 1979 were 75,000 tonnes in Subarea 2 + Div. 3K and 16,000 tonnes for Div. 3L, with no commercial fishery in Div. 3NO to protect the spawning stock in Div. 3N during its migration through Div. 3O.
- v) For the **squid (*Illex*)** fishery in Subareas 3 and 4, the overall TAC advised for 1979 was 120,000 tonnes with 50,000 tonnes for Subarea 3 and 70,000 tonnes for Subarea 4, and the opening date of the fishery to be 1 July 1979.
- vi) With respect to the management in 1980 of the 19 stocks reviewed at the April Meeting of the Assessments Subcommittee, STACRES advised (a) **no change in TACs** for cod in Div. 2GH (20,000 tonnes), redfish in Div. 3M (20,000), American plaice in Div. 3M (2,000) and Div. 3LNO (47,000), witch flounder in Div. 2J+3KL (17,000) and Div. 3NO (7,000), yellowtail flounder in Div. 3LNO (18,000), Greenland halibut in Statistical Area 0 + Subarea 1 (25,000), roundnose grenadier in

Statistical Area 0 + Subarea 1 (8,000), and argentine in Div. 4VWX (20,000); (b) **increases in TACs** for redfish in Div. 3LN (25,000 tonnes) and Greenland halibut in Subarea 2 + Div. 3KL (35,000); (c) **decreases in the TACs** for roundnose grenadier in Subareas 2 and 3 (30,000 tonnes) and for the cod stocks in Div. 3M and Div. 3NO, the latter being as low as possible to allow for stock rebuilding; (d) the **reassessment** of the silver hake stock in Div. 4VWX following the completion of the 1979 fishery to provide a more specific TAC for 1980; (e) **various management options** for the cod stocks in Subarea 1 and Div. 2J+3K; and (f) that the **MSY level** for redfish in Subarea 1 is about 10,000 tonnes.

- vii) To allow more time for the compilation of complete statistical data and the pre-meeting distribution of relevant documentation, STACRES **agreed** that future stock assessments should be carried out in May or early June, while noting that mid-term meetings would still be necessary for short-lived species and for stocks in a depressed state.

#### b) Statistics and sampling

- i) STACRES was informed that the 10th Session of the Coordinating Working Party on Atlantic Fishery Statistics (CWP) will meet at Madrid, Spain, during 22-29 July 1980, hosted jointly by ICSEAF and the International Commission for the Conservation of Atlantic Tunas (ICCAT), and **noted** that NAFO participation will consist of the Assistant Executive Secretary, the Chairman of NAOF's Standing Committee on Research Coordination and a representative from Canada.
- ii) The CWP Secretary reported (a) that the list of 3-alpha species identifiers had been expanded to cover the FAO world list of commercial species items to serve the needs of both national and intergovernmental agencies for publication and other purposes, and (b) that considerable progress had been made in updating the lists of national weight conversion factors, previously published in *FAO Fish. Bull. No. 25 (1971)*.
- iii) STACRES expressed concern that the incomplete acquisition of fishery statistics by the specified deadlines has continued to hamper the work of the Assessments Subcommittee and has significantly delayed the publication of data for 1977 and 1978, and all countries were urged to recognize their national obligations to expeditiously provide the required data.

- iv) Two new sampling forms, requiring more detailed sampling data than previously, were adopted for use in the reporting of commercial length frequencies and age-length keys for the major species taken both within and outside the 200-mile fishery zones of coastal states.
- v) An *ad hoc* Working Group on the Scientific Observer Program, consisting of representatives from Canada, Cuba, Spain, USSR, and USA, was established to consider the requirements for data collection and report directly to the Scientific Council of NAFO.
- vi) Scientists were requested to provide all available length and age sampling data for Greenland halibut in Statistical Area 0 and Subareas 1-3 so that a proper assessment of the stocks can be carried out, and to undertake studies in 1979 on the most suitable partial length measurement for grenadiers.

#### c) Biological surveys

- i) Continued progress on the development of a groundfish survey manual was noted, with the adoption of a survey stratification scheme for Subarea 1 and a 5-digit stratum numbering system for surveys to facilitate the exchange of data. The editor of the manual agreed to circulate a revised draft prior to the 1980 Annual Meeting. It was also **agreed** that a feasibility study should be undertaken with a view to developing a common coding system for species taken in research vessel surveys.
- ii) STACRES **noted** that there was a significant increase in research vessel survey activity from 1977 to 1978 with a further increase anticipated for 1979.

#### d) Environmental studies

- i) STACRES **noted** that considerable progress had been made during 1978 in achieving input of current oceanographic data to the Marine Environmental Data Service (MEDS) in Ottawa, Canada, but that large gaps still existed in the historical data series. It was **agreed** that MEDS should liaise directly with the USSR representative with a view to acquiring the missing USSR data.
- ii) The *ad hoc* Working Group on the Flemish Cap Project was requested to undertake an in-depth examination of 1978 and 1979 data and to assemble detailed plans for a well-coordinated survey program for 1980, based on the general strategies developed at meetings in 1977 and 1978.

- iii) The Task Force on the Larval Herring Program, with a scientist from the Northeast Fisheries Center, Woods Hole, USA, as convener, was requested to meet and undertake an analysis of the 10-year series of biological and environmental data from the Georges Bank-Gulf of Maine area with the goal of presenting the results and recommendations for future work to the 1980 Annual Meeting of the Scientific Council of NAFO.

**e) Gear and selectivity studies**

- i) STACRES advised that there should be no reduction in the minimum mesh size for the redfish fishery in Div. 3M, due to uncertainty about the effects of decreased mesh sizes on the redfish and cod stocks in the area.
- ii) Regarding a proposed uniform mesh size for the silver hake and squid (*Illex*) fisheries in Subarea 4, STACRES **agreed** that the data required for providing sound scientific advice could best be obtained by the implementation of an experimental program in 1980, involving the use of 90-mm mesh codends by a portion of each of the national fleets participating in the silver hake-squid fishery on the Scotian Shelf.

**f) Ageing techniques**

- i) STACRES **noted** that the guidelines for the ageing of silver hake had been completed by Mr J. Hunt (Canada) and submitted for publication in the *ICNAF Research Bulletin*, and suggested that any existing disagreement in interpretation of age should be discussed by scientists of the national laboratories on a bilateral basis.
- ii) With respect to the proposed guidelines for cod otolith interpretation STACRES **agreed** that the guidelines based largely on photographic examples of otolith interpretation should be prepared by Mr R. Wells (Canada) and submitted to the Secretariat for publication.
- iii) Due to the lack of agreement on ageing and the consequent inability to carry out analytical assessments of the redfish stocks, STACRES recommended that redfish age validation studies be conducted as soon as possible and the results presented at the 1980 Annual Meeting.

- g)** STACRES **agreed** that the current ICNAF editorial policy and practices would be maintained for pending issues of the *Research Bulletin* and *Selected Papers* based on contributions on hand and those selected from the ICNAF Research

Documents presented to the last meeting of STACRES or its Subcommittees. Subsequently, policy on scientific publications would be set by the Scientific Council of NAFO.

**10. Report of the Standing Committee on International Control (STACTIC)**

- a) STACTIC met under the chairmanship of Capt A. S. Gaspar (Portugal) on 4 June 1979 to consider proposals for improvements to the Scheme of Joint International Enforcement. STACTIC considered an EEC proposal to require vessel masters to sign the inspection officer's report to confirm that a copy had been delivered to him and **recommended**

that the Commission transmit to the Depositary Government, for joint action by the Contracting Governments, proposal (2) regarding amendment to paragraph 5(i) of the Scheme of Joint International Enforcement (Appendix III).

- b) STACTIC considered the report of a Joint Meeting of STACRES and STACTIC on a Scientific Observer Program. The meeting was held under the chairmanship of Dr R. G. Halliday (Canada) at the request of the Tenth Special Meeting of the Commission in March 1979. STACTIC **recommended**

that the legal aspects of implementing an international observer program should be considered by the General Council of NAFO (see *1979 Meeting Proceedings of NAFO*, p. 60), and that the practical aspects relating to standards of data collection by the observers should be considered by the Scientific Council of NAFO (see Section 9(2)).

- c) STACTIC considered a Canadian proposal for reporting fish on board vessels entering the Convention Area outside national fisheries jurisdiction. After lengthy discussion, Canada agreed to redraft the proposal for consideration by the Fisheries Commission of NAFO (see *1979 Meeting Proceedings of NAFO*, p. 89-90).

- d) STACTIC drew the attention of the delegates from the Member Countries to the necessity for prompt reporting of monthly catches, for registration of vessels prior to fishing in the Convention Area outside national fisheries jurisdiction, and for prompt reporting of the disposition of any infringements.

**11. Report of Panels**

Conservation measures for 1980 for those fish stocks in Subarea 3 lying outside and those lying partly

inside and partly outside national fishing limits were considered in accordance with the arrangements for establishing and implementing the quotas adopted at the 1978 Annual Meeting (see *ICNAF Annu. Rept., Vol. 28, 1977/78*, p. 30-31).

The Report of Meetings of Panel 3, including proposals recommended by the Panel for regulatory measures for 1980 for the stocks outside national fishing limits in Subarea 3 and those recommended by the Informal Intergovernmental Consultations convened by Canada, and concurred in by the Panel, for the stocks overlapping the national fishing limits in Subarea 3, were **adopted** by the Commission in Final Plenary Session on 5 June 1979. Spain advised that an objection would be lodged to the proposal for cod in Div. 3NO.

#### a) Panel 3

The Panel, under the chairmanship of Capt A. S. Gaspar (Portugal), reviewed the advice of STACRES regarding the cod, redfish, and American plaice stocks in Div. 3M (Flemish Cap) which were outside national fishing limits. The cod stock in Div. 3M was, in the view of the majority of the scientists, extremely depressed and warranted a drastic reduction of the TAC from the 40,000 tonnes adopted for 1979. The American plaice and redfish stock in Div. 3M had remained relatively stable through 1979. Following various proposals, the Panel **recommended**

that the Commission transmit to the Depositary Government, for joint action by the Contracting Governments, proposals for international quota regulation of the fisheries for cod, redfish, and American plaice in Division 3M of Subarea 3 for 1980 (see proposal (3) in Appendix III).

The Panel, in reviewing the recommendations of the Informal Intergovernmental Consultations for the seven stocks overlapping the national fishing limit, **agreed** that setting TACs for 1980 for the capelin stock in Div. 3LNO and for squid (*Illex*) stock in Subareas 3 and 4 should be deferred until after a special meeting of the scientists late in 1979 or early in 1980. The Panel **agreed** that the TACs for 1980 for American plaice in Div. 3LNO, yellowtail flounder in Div. 3LNO, and witch in Div. 3NO could remain at the 1979 levels, the TAC for redfish in Div. 3LN could be increased substantially, and the TAC for cod in Div. 3NO should be held as low as possible, pending a review of the scientific assessment early in 1980. The Panel, with Spain objecting to the decision on cod in Div. 3NO, **recommended**

that the Commission transmit to the Depositary Government, for joint action by the Contracting Governments, proposals for international quota

regulation of the fisheries for cod in Divisions 3NO, for redfish in Divisions 3LN, for American plaice in Divisions 3LNO, for yellowtail flounder in Divisions 3LNO, and for witch in Divisions 3NO for 1980 (see proposal (3) in Appendix III).

The Panel considered a Canadian proposal for a minimum mesh size of 60 mm for trawl nets of any material used in the squid (*Illex*) fishery in Subarea 3 beyond national fishing limits. The Panel, noting that Canada would be applying the 60-mm minimum mesh size beginning 1 January 1980 inside national fishing limits and that it would be appropriate to establish a similar regulation in 1980 outside national fishing limits where only limited fishing for squid occurred, **recommended**

that the Commission transmit to the Depositary Government, for joint action by the Contracting Governments, proposal (1) for regulation, beginning 1 January 1980, by minimum mesh size of codends of the squid (*Illex*) fishery beyond national fisheries jurisdiction in Subarea 3 of the Convention Area (Appendix III).

## 12. International Quota Regulation

The Commission received the report of the meetings of Panel 3 with recommended TACs and national quotas for 1980 for a total of eight stocks which would, if combined in a single table, comprise a proposal for international quota regulation of the fisheries in Subarea 3 of the Convention Area. Accordingly, the Commission, having due regard to the arrangements adopted at the 1979 Annual Meeting for establishing and implementing the 1979 quotas (see *ICNAF Annu. Rept., Vol. 28, 1977/78*, p. 30-32), **agreed**

to transmit to the Depositary Government, for joint action by the Contracting Governments, proposal (3) for international quota regulation of the fisheries in Subarea 3 of the Convention Area for 1980 (Appendix III).

## 13. Fishing Activity by Non-Member Countries

The Commission viewed with concern the details presented by Canada of the operation of fishing vessels flying the flags of Mexico, Panama, and Venezuela in the Convention Area outside national fishing limits. Since the stocks there are being fully utilized by the vessels of the ICNAF Member Countries, fishing by these non-Member Countries is posing a serious threat to the stocks and the conservation regime established by ICNAF for this area. The

Commission **noted** that letters had been sent in 1978 by the Chairman to non-Member Governments fishing in the Convention Area outside national fishing limits, in accordance with a Resolution relating to the operations of non-Member Countries in the ICNAF Area beyond national fisheries jurisdiction (see *ICNAF Annu. Rept. Vol. 28, 1977/78*, p. 33). The letters had not been acknowledged. The Commission, following suggestions from Canada and Portugal, **agreed to adopt** the following **Resolution Relating to Vessels of Non-Member Countries Operating in the ICNAF Area beyond National Fisheries Jurisdiction**:

**The Commission**

**Noting** that, in 1978 and 1979, vessels flying the flags of Panama, Venezuela, and Mexico have fished in the Convention Area outside national fisheries jurisdiction.

**Noting** that Panama, Venezuela, and Mexico are not Members of ICNAF or NAFO, and that the vessels in question have operated outside the conservation regime established by ICNAF,

**Noting** that the fish stocks of the ICNAF Convention Area are, at present, being fully utilized by Members of ICNAF and NAFO,

**Noting**, in consequence, that fishing by states which are not Members of ICNAF represents a serious threat to conservation in the ICNAF Convention Area,

**Noting** that the vessels in question have links with Members of ICNAF or NAFO, and, in particular, that at least some of these vessels are owned either wholly or in part by fishing interests in Member countries, and that at least some of the catch of these vessels is landed in Member Countries,

**Resolves:**

1. that all Members of ICNAF be called upon to take all practicable steps to prevent arrangements between their nationals and vessels flying the flags of non-Member States where such arrangements involve fishing by such vessels in the ICNAF Convention Area beyond national fisheries jurisdiction;
2. that Mexico, Panama, and Venezuela be informed by the Chairman of the Commission of the difficulties created by fishing vessels flying their flags with regard to the conservation of the stocks of the Convention

Area beyond national fisheries jurisdiction.

**14. Conduct of Fisheries during Transition from ICNAF to NAFO**

The Commission, **noting** the need for assuring that fisheries in the Northwest Atlantic in the area beyond national fisheries jurisdiction are conducted in accordance with internationally-agreed management measures during the transition from ICNAF to NAFO, **agreed to adopt** the following **Resolution Relating to the Conduct of Fisheries during the Transition from the International Commission for the Northwest Atlantic Fisheries (ICNAF) to the Northwest Atlantic Fisheries Organization (NAFO)**:

**The Commission,**

**Noting** the resolution passed at its Tenth Special Meeting, 5-9 March 1979, calling on all Member States to withdraw from the ICNAF Convention effective 31 December 1979,

**Having Regard** to the possibility that some Members of ICNAF who have not yet joined NAFO may not have done so by the time of the 1980 fishing season,

**Recognizing** the importance of assuring that fisheries of the Northwest Atlantic in the area beyond national fisheries jurisdiction are conducted in accordance with internationally-agreed management measures,

**Resolves:**

1. that all states which are, at present, Members of ICNAF, and which are not parties to either the ICNAF or the NAFO Conventions at the time their relevant fisheries take place in 1980, be called upon to take steps to ensure that in 1980 their fisheries in the Northwest Atlantic in the area beyond national fisheries jurisdiction are conducted in accordance with the measures agreed by ICNAF at its current meeting, unless subsequently changed by international agreement, and
2. that all states which are, at present, Members of ICNAF, and which are not parties to either the ICNAF or the NAFO Conventions at the time their relevant fisheries take place in 1980, be called upon to continue, in 1980, to participate in the Scheme of Joint International Enforcement which has applied under ICNAF.

## 15. Adjournment

The Chairman of the Commission, Mr S. Ohkuchi (Japan), reminded the delegates that this was the last meeting of ICNAF. The **delegate of Canada**, Dr A. W. H. Needler, reviewed the history and successes of ICNAF; the **delegate of Portugal**, Capt J. C. E. Cardoso, recalled the magnificent pioneer work of ICNAF and its people; the **delegate of GDR**, Dr W. Ranke, acknowledged the new regime created by extension of jurisdiction by coastal states to 200 miles and the role of the new fisheries organization; and the **Observer from the USA**, Mr D. H. Wallace, spoke of the US involvement in the scientific and management programs of ICNAF since its inception and the contributions ICNAF has made to the problems of the management of fish stocks.

The Chairman of the Commission said:

"In closing this ICNAF Meeting which must be the last one in the very long history of 30 years, I should like to say a few words on this memorable moment as your Chairman, a position which I feel highly honoured to occupy.

"As I stated at the initial Plenary Session, during its long history, ICNAF has achieved very brilliant and distinguished successes in fulfilling its objectives.

Over the past two years, in the field of fisheries, we have experienced an entirely different fisheries management regime in every part of the world.

"In the theatre of the Northwest Atlantic, a music interlude is now being played between Act I and Act II. Many people in the world are now looking forward to enjoying Act II after the very long and impressive Act I.

"The curtain will be rising soon.

"Whether the next Act will be successful and enjoyable as the previous one is the responsibility of all of us.

"I am very grateful to all of you, and particularly to the Executive Secretary and his staff, for your cooperation and patience. At the same time, I would like to express my profound gratitude to the Executive Secretary, Mr Lew Day, for his very thoughtful assistance without which I might not have been able to accomplish my duties.

"Thank you very much.

"I declare this last meeting of ICNAF adjourned."

The Twenty-Ninth and last Annual Meeting of ICNAF was adjourned at 1120 hrs, 6 June 1979.

# PART 3

## Appendix I

### List of Participants

(Head of Delegation **in bold**)

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# PART 3

## Appendix II

### Agenda

#### Procedures

1. Opening by Chairman, Mr S. Ohkuchi (Japan)
2. Agenda
3. Publicity

#### Future of ICNAF

4. Review of status of ICNAF and NAFO
5. Report of 10th Special Commission Meeting, March 1979 (*ICNAF Sum. Doc. 79/VI/8*)
6. Report of Inaugural Meeting of NAFO, March 1979 (*NAFO Circular Letter 79/1*)
7. Re Transfer of Personnel Services, Assets and Liabilities, and Inventory to NAFO

#### Administration and Finance

8. Auditor's Report, 1977/78
9. Administrative Report with Financial Statements for 1978/79 (*ICNAF Com. Doc. 79/VI/11*)
10. Budget Estimate, 1 July-31 December 1979 (Appendix I to STACFAD Agenda)

#### Commission Proposals (*ICNAF Com. Doc. 79/VI/12*)

11. Re changes in the Convention
12. Re regulation of fisheries

#### International Control

13. Annual Return of Infringements, 1978 (*ICNAF Com. Doc. 79/VI/13*)
14. Fishing Vessel Registration, 1979 (*ICNAF Com. Doc. 79/VI/4*)
15. Scheme of Joint International Enforcement (*ICNAF Com. Doc. 79/VI/9*)

#### Conservation

16. Conservation of fish stocks outside national fishing limits in Subarea 3
  - a) Cod in Div. 3M
  - b) Redfish in Div. 3M
  - c) American plaice in Div. 3M
17. Conservation of fish stocks lying partly inside and partly outside national fishing limits in Subarea 3
  - a) Cod in Div. 3NO
  - b) Redfish in Div. 3LN
  - c) American plaice in Div. 3LNO
  - d) Witch in Div. 3NO
  - e) Yellowtail flounder in Div. 3LNO
  - f) Capelin in Div. 3LNO
  - g) Squid (*Illex*) in Subarea 3 and 4

#### Reports

18. Report of Standing Committee on Research and Statistics (STACRES) (*ICNAF Sum. Doc. 79/VI/11*)
19. Report of Standing Committee on Finance and Administration (STACFAD)
20. Report of Standing Committee on International Control (STACTIC)
21. Report of Panel(s) 3 and 4

#### Other Meetings

22. Date and location of future meetings
23. Press Statement
24. Other Business
25. Adjournment

**PART 3**  
**Appendix III**  
**List of Proposals (1) to (3) from the**  
**Annual Meeting, June 1979**

**(1) Proposal for International Mesh Size Regulation of the Fishery for Squid (*Illex*) outside Areas under National Fisheries Jurisdiction in Subarea 3 of the Convention Area, adopted by the International Commission for the Northwest Atlantic Fisheries in Plenary Session on 5 June 1979**

That, with effect from 1 January 1980:

1. Contracting Governments take appropriate action to prohibit the taking of squid, *Illex illecebrosus*, outside areas under national fisheries jurisdiction in Subarea 3 of the Convention Area by persons under their jurisdiction with trawl nets having in any part of the net, meshes of dimensions of less than 60 millimeters or 2-3/8 inches as measured by the ICNAF gauge. These mesh sizes relate to netting when measured wet after use irrespective of material, or the equivalent thereof when measured dry before use.
2. Contracting Governments prohibit the use, by any person to whom this proposal would apply, of any means or device, other than those described in paragraph 3, which would obstruct the meshes of the nets or which would otherwise, in effect, diminish the size of the nets, provided that strengthening ropes may be attached to the codend in such a manner that they will not obstruct the meshes of the codend.
3. Contracting Governments permit any canvas, netting, or other material to be attached to the underside of the codend of a net to reduce and prevent damage.

**(2) Proposal for Amendment of the Scheme of Joint International Enforcement of the Fishery Regulations in the Convention Area and in Statistical Areas 0 and 6, adopted by the International Commission for the Northwest Atlantic Fisheries in Plenary Session on 5 June 1979**

That pursuant to paragraph 3 of Article VIII of the Convention, the sixth sentence of paragraph 5 (i) of the Scheme of Joint International Enforcement, proposed for adoption on 9 March 1979 at the Tenth Special Commission Meeting (March 1979 Meeting Proceedings No. 2, Appendix II), be substituted by the following:

"The master must sign such observations and he must also sign the report. The latter signature shall be preceded by the following text which shall be printed in the report:

"I, the undersigned, master of the vessel ..... hereby confirm that a copy of the report has been delivered to me on this date. My signature does not constitute acceptance of any part of the contents of the report

Date:

Signature: ""

**(3) Proposal for International Quota Regulation of the Fisheries in Subarea 3 of the Convention Area, adopted by the International Commission for the Northwest Atlantic Fisheries in Plenary Session on 5 June 1979**

That Contracting Parties conduct their fisheries outside areas under national fisheries jurisdiction in such a manner that catches shall not exceed the total allowable catch for each stock and the national quotas for each stock set out in the attached Table, except that, in the case of the cod stock in Divisions 3N and 3O, the following shall apply:

- i) the Contracting Parties shall take appropriate action to prohibit persons under their jurisdiction from conducting directed fisheries for cod in Divisions 3N and 3O in 1980;
- ii) any vessels of a Contracting Party which conducts fishing operations, pursuant to the national quota of that Contracting Party set out in the attached Table, may retain any incidental catch of cod in Divisions 3N and 3O provided that the amount of cod caught and retained in Divisions 3N and 3O does not exceed the greater of 2,500 kg and 10% of the total weight on the vessel of all species caught in Divisions 3N and 3O.

TABLE —Integral Part of Proposal (3) for the International Quota Regulation of the Fisheries in Subarea 3 of the Convention Area, adopted by the International Commission for the Northwest Atlantic Fisheries in Plenary Session on 5 June 1979. Total allowable catches and quotas (metric tons) for 1980 of particular stocks or species in Subarea 3 of the Convention Area.

Country	COD		REDFISH		AMERICAN PLAICE		YELLOWTAIL	WITCH	CAPELIN	SQUID (Illex)		
	3M <sup>a</sup>	3NO	3M	3LN	3M	3LNO	3LNO	3NO	3LNO	3 + 4		
Canada <sup>b</sup>	100	NO DIRECTED FISHERY	5,500	12,900	250	46,200	17,500	4,900	DEFERRED	DEFERRED		
Cuba <sup>b</sup>	480		1,550	1,600	—	—	—	—				
GDR <sup>b</sup>	—		—	600	—	—	—	—				
Norway <sup>b</sup>	500		—	—	—	—	—	—				
Poland	500		—	—	—	—	—	—				
Portugal <sup>b</sup>	2,590		600	600	250	—	—	—				
Spain	560		—	—	—	—	—	—				
USSR <sup>b</sup>	1,270		10,350	9,200	1,000	—	—	2,030				
Others <sup>b</sup>	100		2,000	100	500	100	100	70				
Reserved for Members of NAFO which are non-Members of ICNAF:												
EEC	2,405		—	—	—	700	400	—				
Faroe Islands (Denmark)	1,775		—	—	—	—	—	—				
<b>Total</b>	<b>10,280</b>	<b>0</b>	<b>20,000</b>	<b>25,000</b>	<b>2,000</b>	<b>47,000</b>	<b>18,000</b>	<b>7,000</b>				

<sup>a</sup>Allowable catch of cod in Div. 3M by Contracting Parties are for the period 1 January–30 April 1980 only.

<sup>b</sup>The amount(s) allocated to this Party and to "Others" include(s) the amount(s) allocated for quota regulation of the same stock in the proposal adopted by the Fisheries Commission of NAFO on 7 June 1979.

# PART 3

## Appendix IV

### ICNAF/NAFO Annual Meetings — May/June 1979

#### Press Notice

1. Parties to International Fisheries Agreements covering the Northwest Atlantic Ocean concluded historic meetings in Halifax, Nova Scotia, on 7 June 1979.
2. The International Commission for the Northwest Atlantic Fisheries (ICNAF), which has been in existence since 1951, held its final meeting. Termination of ICNAF was also the occasion for the first annual meeting of its replacement body, the Northwest Atlantic Fisheries Organization (NAFO). The Organization has three, independent bodies, a General Council, a Scientific Council, and a Fisheries Commission, and will, it is expected, provide a forum for international cooperation in fisheries management in the Northwest Atlantic beginning 1 January 1980.
3. The following Parties attended as Members of ICNAF: Bulgaria, Canada, Cuba, the German Democratic Republic (GDR), Iceland, Japan, Norway, Poland, Portugal, Romania, Spain, and the Union of Soviet Socialist Republics (USSR). Parties attending as Members of NAFO were: Bulgaria, Canada, Cuba, the European Economic Community (EEC), Faroe Islands (Denmark), the GDR, Iceland, Norway, Portugal, Romania, and the USSR. Observers were welcomed from the Food and Agriculture Organization of the United Nations (FAO), the International Commission for the Southeast Atlantic Fisheries (ICSEAF), the International Council for the Exploration of the Sea (ICES), and the Government of the United States of America (USA).

4. Officers were elected for 2-year terms as follows:

<b>for NAFO:</b>	Dr A. W. May, Assistant Deputy Minister, Atlantic Fisheries (Canada)	— President of the Organization and Chairman of the General Council
	Dr V. K. Zilanov (USSR)	— Vice-Chairman of the General Council
	Mr R. H. Letacounoux (EEC)	— Chairman of the Scientific Council
	Dr R. G. Halliday (Canada)	— Vice-Chairman of the Scientific Council
	Capt J. C. E. Cardoso (Portugal)	— Chairman of the Fisheries Commission
	Mr J. Farnell (EEC)	— Vice-Chairman of the Fisheries Commission
<b>for ICNAF:</b>	Mr S. Ohkuchi (Japan)	— Chairman of the Commission
	Dr W. Ranke (GDR)	— Vice-Chairman of the Commission

Important institutional arrangements were agreed concerning the transition from ICNAF to NAFO.

5. As an item of major importance, the combined ICNAF/NAFO meeting considered management measures for 1980 for three stocks of cod, redfish, and American plaice which are entirely outside the Canadian 200-mile fishing zone in Division 3M (Flemish Cap), and seven stocks of cod, redfish, American plaice, yellowtail flounder, witch flounder, capelin, and squid (*Illex* species), which overlap the 200-mile fishing limit in Divisions 3L, 3N, and 3O (stocks of the Grand Banks) (see Table 1). Mid-term meetings of the Scientific Council of NAFO will be required to review the scientific advice to be given to the Fisheries Commission of NAFO at a special meeting early in 1980 for further management decisions, if necessary.
6. Other decisions of NAFO and ICNAF included:
  - a) adoption by the Fisheries Commission of NAFO of a minimum mesh size of 60 millimeters for trawl nets fishing for squid (*Illex*) outside the Canadian fishing limit;
  - b) agreement in the General Council of NAFO on required changes in the boundary between Subarea 0 and 1 to be effective on 1 January 1980, as a result of the extension of fishing limits by Canada and the EEC in respect of Denmark (Greenland);
  - c) agreement to initiate an international scientific observer scheme for vessels fishing outside the 200-mile fishing zone, in order to provide better scientific and statistical information on the fisheries;
  - d) adoption by the Fisheries Commission of NAFO of procedures requiring vessels entering the Convention Area to have a record of previous catches of each species recorded in their fishing logs;
  - e) agreement on actions to be taken by NAFO and ICNAF, in view of recent substantial fishing operations by vessels of non-Members of NAFO or ICNAF in the area outside the Canadian 200-mile fishing limit; and
  - f) adoption of amendments to the Scheme of Joint International Enforcement by the Fisheries Commission of NAFO for application by NAFO.

7. The Northwest Atlantic Fisheries Organization will hold its Annual Meeting in September 1980, in St. John's, Newfoundland, Canada.

19 June 1979

Office of the Secretariat of ICNAF and NAFO  
Dartmouth, Nova Scotia, Canada

TABLE 1. Total allowable catches and national quotas (metric tons) for 1980 of particular stocks in Subarea 3 of the Convention Area. (The values listed include quantities to be taken both inside and outside the 200-mile fisheries zone, where applicable.)

Country	COD		REDFISH		AMERICAN PLAICE		YELLOWTAIL	WITCH	CAPELIN	SQUID (Illex)
	3M <sup>a</sup>	3NO <sup>b</sup>	3M	3LN	3M	3LNO	3LNO	3NO	3LNO	3 + 4
Bulgaria	—	—	—	—	—	—	—	—	—	—
Canada	100	—	5,500	12,900	250	46,200	17,500	4,900	—	—
Cuba	480	—	1,550	1,600	—	—	—	—	—	—
EEC	2,405	—	—	—	—	700	400	—	—	—
Faroe Islands (Denmark)	1,775	—	—	—	—	—	—	—	—	—
GDR	—	—	—	600	—	—	—	—	—	—
Iceland	—	—	—	—	—	—	—	—	—	—
Japan	—	—	—	—	—	—	—	—	—	—
Norway	500	—	—	—	—	—	—	—	—	—
Poland	500	—	—	—	—	—	—	—	—	—
Portugal	2,590	—	600	600	250	—	—	—	—	—
Romania	—	—	—	—	—	—	—	—	—	—
Spain	560	—	—	—	—	—	—	—	—	—
USSR	1,270	—	10,350	9,200	1,000	—	—	2,030	—	—
Others	100	—	2,000	100	500	100	100	70	—	—
Total	10,280	0 <sup>b</sup>	20,000	25,000	2,000	47,000	18,000	7,000	—	—

<sup>a</sup>Allowable catch of cod in Div. 3M by Contracting Parties are for the period 1 January–30 April 1980 only.

<sup>b</sup>The incidental catch of cod in fisheries for other species must not exceed the greater of 2,500 kg and 10% of the total weight on board the vessel of all species caught in Div. 3N and 3O.



## PART 4

# Summaries of Research and Status of Fisheries for Subareas, Statistical Areas and Seals, 1978

The total nominal catch in 1978 of all species, including finfishes, invertebrates, and seaweeds, from the Northwest Atlantic (Subareas 1 to 5 and Statistical Areas 0 and 6) was over 2,868,000 tonnes, compared to over 2,999,000 tonnes in 1977 and over 3,459,000 tonnes in 1976.

The following summaries are based on data for 1978 presented in national reports and other pertinent documentation considered by the Commission scientists at meetings of the Standing Committee on Research and Statistics (STACRES) in 1978/79. Further details for each Subarea and Statistical Area will be found in *ICNAF Redbook 1979* on research and in *ICNAF Statistical Bulletin* Vol. 28 for 1978 for catch statistics.

Summaries were initiated by the following:

for Statistical Area 0, Subarea 1 and East Greenland	— Sv. Aa. Horsted (Denmark);
for Subarea 2	— A. T. Pinhorn (Canada);
for Subarea 3	— A. T. Pinhorn (Canada);
for Subarea 4	— J. S. Scott (Canada);
for Subarea 5 and Statistical Area 6	— J. A. Gibson (USA);
for Seals	— D. E. Sergeant (Canada)

### Subarea 1, Statistical Area 0 and East Greenland

Reports on research in 1978 were submitted by Canada, Denmark, Federal Republic of Germany (FRG) and German Democratic Republic (GDR) while France reported results from a survey carried out in September–October 1977 and not previously reported. Norway had a scientific observer aboard a commercial shrimp trawler in July–August.

#### 1. Status of Fisheries

In Subarea 1 and Statistical Area 0, total nominal catches (tonnes) by country and major species or species groups for 1977 and 1978 were as follows:

Country	Statistical Area 0		Subarea 1	
	1977	1978	1977	1978
Denmark	1,237	636	83,897	78,316
France	—	21	924	809
FRG	—	—	48,281	39,669
GDR	289	—	349	—
Norway	150	162	9,467	9,258
Portugal	—	—	1,052	—
USSR	3,810	—	5,783	—
<b>Total</b>	<b>5,484</b>	<b>819</b>	<b>149,753</b>	<b>128,052</b>

Major Species	Statistical Area 0		Subarea 1	
	1977	1978	1977	1978
Cod	—	—	37,996	38,531
Redfish	169	1	30,911	8,053
Greenland halibut	4,137	696	8,512	10,957
Other flounders	—	—	4,083	6,240
Greenland cod	—	—	5,922	4,432
Roundnose grenadier	721	—	2,214	5,839
Wolffishes	—	—	6,259	6,212
Other fish	—	—	12,213	13,441
Shrimp	457	122	41,643	34,347
<b>Total</b>	<b>5,484</b>	<b>819</b>	<b>149,753</b>	<b>128,052</b>

#### 2. Work Carried Out

- a) **Canada:** A stratified trawl survey in August to assess shrimp biomass in Statistical Area 0 and Subarea 1. A cruise by research vessel to West Greenland (Subarea 1) in August to fish and sample salmon.
- b) **Denmark:** Standard hydrographic and plankton sections occupied off West Greenland. Monitoring studies of heavy metal pollution at the lead-zinc mine in Umanakfiord (Div. 1A). Studies of

microbial degradation of oil (sediment and water samples from Div. 1D). Sampling eggs, larvae, pre-recruit and recruited cod. Collection of biological data on shrimp, queen crab, salmon, capelin, sandeel, lumpsucker, Greenland cod, redfish, wolffishes, American plaice, halibut and Greenland halibut. Tagging cod, Greenland cod, spotted wolffish and Greenland halibut. Surveys for shrimp (trawl and underwater photography) and groundfish (trawl). Experimental fishing for sandeel by three Danish North Sea cutters in May–September (Div. 1A–1D). Sampling harp and hooded seals, and minke whales (14 specimens).

- c) **France:** Results from a shrimp and groundfish survey by the R/V *Cryos* in September–October 1977, not previously reported, were submitted in various research documents.
- d) **FRG:** Standard hydrographic section Fylla Bank occupied in connection with a groundfish survey by R/V *Anton Dohrn* in Div. 1C–1F in December. Sampling of cod and redfish from commercial landings
- e) **GDR:** A groundfish survey by R/V *Ernst Haeckel* in Statistical Area 0 occupied 35 stations.
- f) **Norway:** A scientific observer was aboard a commercial shrimp trawler operating in Div. 1B in July–August. Samples of shrimp and of by-catches of redfish and Greenland halibut were collected

### 3. Hydrography

The relatively high temperatures observed in the upper layer west of Fylla Bank during the latter part of 1977 were also observed in January 1978, but thereafter the temperatures seem to have been lower than those observed in 1977. In July, the mean temperature of the upper 500 m just west of Fylla Bank was 0.21°C higher than the mean for the warm period of 1950–66 but decreased to normal levels by the end of the year. The two occupations of the Fylla Bank section in December (by Denmark and FRG) showed rather striking differences. For example, the depth and thickness of the >5°C water was markedly different. The two occupations illustrated that the mean temperature in the upper 500 m could vary as much within-month as is usually reported for the year-to-year variations.

### 4. Plankton

The plankton on the standard oceanographic sections in Davis Strait was extraordinarily poor in

1978, both in volume and in quality, a considerable part of the volume being medusae and ctenophores, although not as pronounced as in 1977

### 5. Cod

- a) **Eggs and larvae:** The number of cod larvae found in the plankton samples was the lowest observed (mean 0.3 per 30-min haul) in the many years when these surveys have been made, i.e., since 1950. The relatively low temperatures may account for part of the explanation for the low number, but it is also observed that the spawning stock was at a very low level by 1978.
- b) **Young fish:** Age-group 1 (the 1977 year-class) was not yet recruited to the fishery. However, it was observed in the FRG survey in December, especially in Div. 1E. Temperatures were rather favourable in 1977, so there may be reason for some optimism as to the size of the year-class. The 1976 year-class seems to have a rather limited size and has been observed mainly in Div. 1E during the FRG survey. The 1975 year-class (3-year-old fish in 1978) did, to some extent, recruit to the fishery in 1978 and occurred rather commonly in Danish research catches and in hauls during the FRG survey. It seems to have a rather northern distribution. The year-class is predicted to be the main substitute for the hitherto important 1973 year-class.
- c) **Commercial stock:** The 1973 year-class, which was the predominant one in the fishery in 1977, continued to be by far the major one also in the landings in 1978, accounting for about 80% by number. The faster-growing individuals of the year-class seem to have matured in 1978, forming part of the spawning shoals. After the great contribution which the year-class has made to the 1977 and 1978 landings, it is likely to be relatively less important in the following years and to be substituted by the 1975 year-class.

### 6. Shrimp (= northern deepwater prawn)

The major part of the offshore commercial fishery again took place in Div. 1B, and surveys confirm that this Division and the neighbouring parts of Div. 1A and Statistical Area 0 is where the highest levels of offshore abundance occur. Seasonal northward shift of the fishery and likely also shrimp concentrations, as evidenced in 1976 and 1977, occurred again in 1978.

Surveys using trawl and bottom photography to estimate the biomass as well as the commercial catch and effort data indicated a decrease in overall shrimp

biomass of about 20% from 1977 to 1978. More small shrimp than previously found were observed on the bottom photographs, possibly indicating relatively good recruitment prospects.

Estimates of by-catches vary considerably by time and area, but some data indicate that the major by-catch, which is small redfish, may be roughly equal to one-half the shrimp catch.

## 7. Experimental Fishing for Sandeel

Three Danish North Sea cuters were engaged in experimental fishing for sandeel in the period late May-

mid September, covering the offshore area between Fiskenaes Bank and Disko Bank (Div. 1D-1A). A number of samples were taken. The best catches were obtained by pair-trawling with midwater trawl. Although some hauls resulted in good catches (25-30 tonnes per haul with a single haul of 50 tonnes), the general impression was that shoals were too scattered and that too much time had to be spent searching for shoals. Furthermore, if shoals were found, these were not big or stable enough to support fishing for more than a very short time. The results were not encouraging, as seen from a commercial point of view, but 1978 may have been an odd year and a full evaluation of fishing possibilities would require further experiments.

## Subarea 2

Reports on research in 1978 were submitted by Canada, France [Saint-Pierre and Miquelon (SP&M)], FRG, GDR, Poland, Portugal, Romania and USSR.

### 1. Status of Fisheries

Country/ Major Species	Nominal Catches (tonnes)	
	1977	1978
Bulgaria	2,892	—
Canada	9,910	25,931
Cuba	3,156	28
Denmark	371	3,018
France	912	260
FRG	15,366	9,396
GDR	4,953	5,443
Japan	569	90
Norway	1,750	557
Poland	15,729	4,848
Portugal	4,379	3,160
Romania	1,346	589
Spain	473	576
USSR	127,756	24,471
UK	1,425	298
<b>Total</b>	<b>190,987</b>	<b>78,665</b>
Cod	47,290	33,724
Redfish	7,378	12,387
Greenland halibut	11,539	6,829
Other flounders	2,708	866
Roundnose grenadier	3,328	5,437
Capelin	108,842	10,914
Other finfish	6,772	3,562
Invertebrates	3,130	4,946
<b>Total</b>	<b>190,987</b>	<b>78,665</b>

### 2. Work Carried Out

a) **Canada:** A program, initiated in 1977, to study the Labrador Current. Hydrographic observations on

the Labrador Shelf in August. Monitoring coastal fisheries, sampling offshore fisheries for cod, redfish, flatfish, capelin, grenadiers, shrimp, and skate. Four research vessel cruises in Div. 2G, 2H, and 2J which included also, in some cases, Div. 3K. Research cruises in collaboration with GDR collecting additional data on Greenland halibut and grenadiers. An acoustic survey of capelin in Div. 2J-3K in October. Research cruise to the Labrador Sea in September to conduct research on salmon. Sampling of salmon and Arctic char from the Labrador commercial fishery. Research cruise to northern fjords in August to tag Arctic char and collect samples. Monitoring of the Labrador shrimp fishery. Research vessel survey of shrimp in September-October. Functional morphology and energetic studies on whales to provide realistic energy budgets for baleen whales and to verify samples of euphausiids by nets and detected by sonar. Energetic studies on seals.

b) **France (SP&M):** Hydrographic observations and biological sampling of cod and redfish and a survey by R/V *Cryos*.

c) **FRG:** Late autumn groundfish survey in Div. 2J with hydrographic observations from R/V *Anton Dohrn*, late November. Sampled cod from the commercial fishery in first quarter of 1978.

d) **GDR:** Hydrographic observations during the random groundfish survey during September and October in Subareas 2 and 3 by R/V *Ernst Haeckel* on three ICNAF standard sections. Sampling of commercial fishery for cod, Greenland halibut, roundnose grenadier, redfish, and capelin. Groundfish survey by R/V *Ernst Haeckel*, especially for Greenland halibut and roundnose grenadier in Div. 2G and 3K.

- e) **Poland:** Biological sampling of commercial catches of cod and Greenland halibut.
- f) **Portugal:** Biological sampling of commercial catch of cod.
- g) **Romania:** Biological sampling of commercial catch of capelin.
- h) **USSR:** Hydrologic survey across Hamilton Inlet in November. Biological samples of cod, grenadier, and capelin. Biomass surveys of capelin. Tagging of cod, Greenland halibut, American plaice, and witch.

### 3. Environmental Studies

In Div. 2J, surface temperatures ranged from  $-1.0^{\circ}$  to  $-1.5^{\circ}\text{C}$  in January–February. Cold water extended down to a mean depth of 70 m, reaching sometimes 100 m. After a slight thermal gradient at 150–200 m, bottom temperatures varied from  $3.5^{\circ}$  to  $5.0^{\circ}\text{C}$ . In winter, spring and summer positive anomalies of water temperatures occurred in the main branch of the Labrador Current. Maximum positive anomalies were registered in the 50–100 m and 50–200 m. This occurred because of southern winds in 1978. The coastal branch of the Labrador Current was normal and could be traced down to 180–230 m. Particularly low temperatures of this branch were marked very close to the shore. Surface temperatures over the Labrador Shelf in August were similar to those in 1977. The volume of cold water in the Labrador Current was less than in 1977, and temperatures were higher. Bottom and lower layer temperatures extending from Hawke Channel over Hamilton Inlet Bank to the eastern slope were higher than in 1977 and generally higher than in the previous 10–12 year period. Surface temperatures in the September–October period ranged from a low of  $0.4^{\circ}\text{C}$  in Div. 2G to a high of  $4.7^{\circ}\text{C}$  in Div. 2J. Bottom temperatures ranged from a low of  $0.3^{\circ}\text{C}$  in Div. 2J to a high of  $4.3^{\circ}\text{C}$  in Div. 2G. In autumn, all layers of the Labrador Current were cold.

### 4. Cod

Catches in the Canadian Labrador coastal fishery were over 70% higher than the 1977 catches. The Canadian offshore catch from the Div. 2J–3KL cod stock increased by a factor of three over 1977. Canadian research cruises to the area included one in Div. 2GH and three others covering Div. 2J–3KL. Lengths and volumes of whole fish and various organs were obtained from approximately 1,250 fish from Div. 2J–3KL and 170 from Div. 2GH during three cruises. A total of 2,050 stomachs was also collected from Div. 2J–3KL and a further 350 from Div. 2GH on three cruises. About 4,500 cod were tagged by Canada on Belle Isle

Bank during February–March. Samples taken during a cruise by R/V *Cryos* indicated that the 1973 year-class was most abundant, followed by the 1974 and 1975 year-classes. Most of the fish examined were immature and a great majority of empty stomachs occurred among 100 stomachs examined related to the absence of capelin in the catches. Samples from FRG commercial catches indicated that, except for the recruitment of the 1974 year-class to the fishery, there was no significant change in age composition. Although the 1973 year-class clearly predominated, followed by the 1972 year-class, older cod were still fairly well represented. Samples from GDR catches also indicated a dominant 1973 year-class and an increase in the population of older age-groups compared to 1977. The 1973 year-class also dominated Polish and USSR catches.

### 5. Redfish

Redfish in the range of 23–24 cm for males and females were predominant in the catches during a Canadian research cruise to Div. 2GH, aimed at determining the feasibility of using the random-stratified method of assessing redfish abundance in the area and a Canadian random-stratified cruise in Div. 2J–3KL. The incidence of *Sphyrion lumpi* in the area was investigated and stock discrimination studies were also conducted. Samples of redfish caught during a French (SP&M) cruise to the area showed modal length 23 cm. GDR age samples showed a predominance of the 1970 and 1971 year-classes in Div. 2GH. Older year-classes were found in Div. 2J (1965, 1968) and Div. 3K (1964, 1965). In research cruise catches by USSR, redfish of sizes 22–25 cm predominated in the catches.

### 6. Capelin

The capelin stock in Div. 2J–3K in 1978 was considerably smaller than in 1977, as indicated from analysis of Canadian acoustic data and from an adapted cohort analysis for capelin. USSR acoustic surveys also indicated reduced abundance in 1978 due to poor 1974–75 year-classes. GDR samples of capelin showed a length range of 15–21 cm for females and 13.5–22 cm for males, with a male to female ratio of 20:80. The 1975 year-class predominated. Mean lengths of 17.1 cm for females and 16.8 cm for males were found in Romanian samples taken in August and 16.5 cm for males and 15.5 for females taken in September. Females were 3 and 4 years old and males were 2 and 3 years old.

### 7. Roundnose Grenadier

The general production model was used to assist

in setting the TAC level. Canadian studies continued in the areas of ageing and determination of a reliable anal fin length to total length ratio. GDR samples indicated that the 1963 and 1964 year-classes predominated in Div. 2GHJ, but the 1967-70 year-classes were the major ones in Div. 3K. USSR investigations suggested that size and sex composition of grenadiers in all parts of the Northwest Atlantic Ocean were practically constant and concluded that grenadier resources were, therefore, not subject to large fluctuations.

### **8. Greenland Halibut**

Canadian studies indicated a very strong 1974 year-class which should recruit to the fishery in large numbers in 1979. The 1970-73 year-classes were also strong. GDR studies indicated that the length and age composition showed a distinct decrease from north to south. The 1970, 1971, and 1972 year-classes predominated in Div. 2GH, whereas in Div. 2J younger year-classes prevailed (1974, 1975). Younger year-classes (1972-76) also were the major ones in Div. 3K. In Polish samples from Div. 2J, the average length of males was 48.6 cm and of females, 51.6 cm.

### **9. Salmon**

The estimated North American proportions of salmon caught in the Labrador Sea in September were 61% from discriminant function analysis of scale characters. A total of 1,518 salmon were sampled at Nain, Labrador, for pectoral length, scales and gutted weight (head off) and 1,535 salmon were sampled from the southern Labrador fishery as well.

### **10. Char**

Quantitative information on mortality and

exploitation rates was derived from size and age compositions of char in various areas of the fishery. During a research vessel trip to northern Labrador fjords in August, 1,081 char were caught from five areas of which 300 were tagged and 781 frozen whole as specimens for size, age, and sex compositions and meristic and morphometric analyses.

### **11. Shrimp**

Trends in catch per unit effort suggest seasonal variation in shrimp abundance. During a random-stratified survey in September-October, shrimp were found to be distributed over a wider area than in November 1977.

### **12. Euphausiids**

Minimal concentrations of euphausiids required for economical feeding of whales were greater than mean densities estimated from catch and sonar detection by two orders of magnitude and reflect a high degree of clumping.

### **13. Whales**

Morphological studies provide an energetic explanation for body size lines in the Northwest Atlantic which, in turn, may be useful in stock differentiation.

### **14. Seals**

Studies of seal energetics are ongoing with respect to density-dependent changes in energy requirements for populations.

## Subarea 3

Reports on research in 1978 were submitted by Canada, Cuba, France (SP&M), FRG, GDR, Poland, Portugal, Romania, and USSR.

### 1. Status of Fisheries

Country/ Major Species	Nominal Catches (tonnes)	
	1977	1978
Bulgaria	578	127
Canada	335,726	365,533
Cuba	8,116	6,477
Denmark	7,069	8,745
France	17,980	16,685
FRG	9,929	1,826
GDR	4,693	4,737
Iceland	3,394	360
Italy	109	—
Japan	4,518	4,207
Norway	22,648	7,264
Poland	10,686	11,509
Portugal	28,483	19,052
Romania	1,622	2,339
Spain	31,668	17,839
USSR	135,083	106,896
UK	2,975	712
USA	122	64
Ireland	2,879	911
Total	628,278	575,283
Cod	213,521	191,665
Redfish	74,957	67,727
American plaice	57,816	58,458
Witch flounder	16,737	11,004
Yellowtail flounder	12,014	16,612
Greenland halibut	20,719	32,494
Other flounders	1,452	994
Roundnose grenadier	12,058	15,265
Herring	29,718	28,067
Mackerel	7,865	13,672
Capelin	118,191	73,962
Other finfish	25,096	14,603
Squid	32,748	41,369
Other invertebrates	5,386	9,391
Total	628,278	575,283

### 2. Work Carried Out

a) **Canada:** Hydrographic stations occupied from off Labrador to the Grand Banks including the Flemish Cap. Monitoring coastal and offshore cod fisheries. Biomass surveys in the area to determine levels of abundance of various groundfish stocks. Collection of data for improvement of the data base and various parameters used in updating stock assessment for cod, redfish, flatfish (American plaice, Greenland halibut, witch and yellowtail flounders). Meristic and morphometric study of cod, collection of cod stomachs. Diel

study of vertical movement of redfish. Collection of samples of redfish to estimate incidence of infection by *Sphyrion lumpi* and for stock discrimination. Survey of capelin larvae in Div. 3L in January. Acoustic survey in Div. 3LNO in June. Studies on stock discrimination and general biology. Tagging of adult Atlantic salmon along the south coast and the northern coast of Newfoundland. Sampling of the Newfoundland commercial salmon fishery. Blood and gonad samples of salmon collected. Random-stratified survey on Grand Banks and commercial sampling of squid as well as monitoring of CPUE, effort and hydrographical parameters. Tagging of squid in Conception Bay. Validation of ageing study.

b) **Cuba:** Hydrographic survey of Grand Bank. Acoustic survey for capelin in Div. 3LNO. Biological studies on capelin and squid.

c) **France (SP&M):** Hydrographic studies in Div. 3KLNO and Subdiv. 3Pn and 3Ps. Four surveys covering Div. 3KL in January–February, Div. 3MNO in September–October, Subdiv. 3Pn in February, and Subdiv. 3Ps in March and October. Biological samples collected on each of these cruises. Commercial sampling of France (SP&M) catches.

d) **FRG:** Biological sampling of cod in Div. 3K in first quarter.

e) **GDR:** Hydrographic observations in Div. 3K. Biological sampling of commercial catches in Div. 3K. Groundfish survey by R/V *Ernst Haeckel*, especially for Greenland halibut and roundnose grenadier in Div. 3K on which biological samples were taken.

f) **Poland:** Biological sampling of commercial catches of cod, Greenland halibut, witch and capelin.

g) **Portugal:** Biological sampling of commercial catches of cod in Div. 3KLM during first, second and fourth quarters to obtain information on length composition, growth, and maturity.

h) **Romania:** Biological sampling of commercial catches of roundnose grenadier and capelin.

i) **USSR:** Hydrographic investigations at standard sections. Juvenile fish survey. Groundfish biomass surveys. Biological investigations on various groundfish species. Assessment of capelin stock biomass and abundance in Div. 3KL. Tagging of bottom fish.

### 3. Environmental Studies

In Div. 3K in January-February, surface temperatures were around 0°C, whereas the deeper water temperatures were similar to those in Div. 2J. In September and October, surface temperatures ranged from 2.6° to 5.3°C, whereas bottom temperatures were 1.2° to 5.6°C. At the same time of year in Div. 3L, surface temperatures were also around 0°C with no thermal gradient and bottom temperatures ranged from 2.0° to 3.0°C at 200-300 m. In the Grand Bank-Flemish Cap area, surface temperatures in summer, especially in the inshore area, were higher than in 1977. The volume of cold water below 0°C in summer, which usually forms an unbroken core from the Avalon Channel to the eastern slope of the Grand Bank, was divided into an inshore and offshore stream with bottom and lower layer temperatures on the western slope and top of Grand Bank well above those of 1977. In the deep water adjacent to the seaward slope of the Flemish Cap, temperatures were slightly higher than in the previous year. Except for the 20-30-m water column (where temperatures were lower than in 1977), temperatures from surface to bottom over the central and southern Grand Bank were generally higher than the previous year. Sections of temperature, salinity, and oxygen were run from Cape Farewell to Flemish Cap and from Flemish Cap to St. John's in the first half of April 1978. On the southern and southeastern parts of the Grand Bank in September to October, the thermal structures in the surface (12.5° to 22.3°C) were extremely complex due to the mixing of cold and warm water masses. In Subdiv. 3Pn in February, bottom temperatures ranged from 5° to 6°C. On St. Pierre Bank, the surface layer (30-50 m deep) ranged from -1.0°C in winter to 9.0°C in autumn. The intermediate cold layer (around 0°C) and the bottom slope water (5° to 8°C) were relatively stable and separated by a strong thermic gradient. Temperature anomalies in the area of the northern slope of Grand Bank and Flemish Cap were close to average. However, in the layers 200-500 m, temperatures anomalies of mixed Atlantic water were 0.37° to 0.91°C in Div. 3N and from 0.20° to 0.27°C in Div. 2J and 3L.

### 4. Cod

Monitoring of the coastal and offshore fisheries was continued in 1978. In general, catches showed considerable improvement over 1977 with the exception of those for Subdiv. 3Ps where there was some decline.

Data obtained from Canadian cruises in Div. 3NO and Subdiv. 3Ps indicated little improvement in 1978 in these stocks which were previously in a depressed condition. Canadian research cruises to Flemish Cap confirmed the presence of a strong 1973 year-class.

In Div. 3K, the 1973 and 1974 year-classes were most abundant in France (SP&M) research catches, but 1972 and 1975 were also relatively well represented. In Div. 3L, the 1973 and 1974 year-classes were also most abundant. In Subdiv. 3Pn, the 1973 year-class was most abundant, followed by the 1972 and 1974 year-classes. In Subdiv. 3Ps, the 1974 year-class was most abundant, followed by the 1973, 1972, 1975, and 1971 year-classes. Portuguese commercial samples from Div. 3LM indicated a predominance of the 1972 year-class with a large proportion (95%) of the fish being immature. USSR commercial samples from the Div. 2J+3KL stock indicated a predominance of the 1973 year-class, the same year-class which showed as strong in the young fish surveys in previous years. In Div. 3N, the 1974 year-class predominated, while in Flemish Cap the 1973 year-class was strongest. On Flemish Cap, the 1973 year-class had reached maturity.

### 5. Redfish

Diel study of the vertical movement of redfish in the water column indicated that the variability associated with diel movement is insignificant compared to the variability in size of catches made within periods of light or periods of darkness. In Div. 3K, the mean length of redfish in French (SP&M) research cruises was 29.6 cm and, in Div. 3L, mean length was 24.2 cm. In Subdiv. 3Pn, mean length was 20.5 cm and in Subdiv. 3Ps, mean length was 20.2 cm and in Subdiv. 3Ps, mean length was 20.2 cm in February and 24.1 cm in October. Age determination from GDR samples showed a predominance of the 1970 and 1971 year-classes in Div. 2GH, but older year-classes were found in Div. 2J (1955, 1968) and Div. 3K (1964, 1965). USSR investigations indicated that males 35 cm long and females 36-37 cm long predominated in the catches in Flemish Cap. However, fish 20-23 cm in length showed a distinct peak in the catches, indicating good recruitment of the 1970, 1971, and 1972 year-classes. The number of redfish in this area was the highest of the past eight years, but the biomass had not increased because of the size of these redfish. In Div. 3NO, redfish numbers and biomass were also high. In 1977, redfish were concentrated mostly on the southeast slope of the Grand Bank (Div. 3O), but in 1978 they were concentrated on the southern slope (Div. 3N), this difference being partly attributed to the growth of the redfish in this area, the fish migrating eastward as they get larger.

### 6. Flatfish

Improvement of the data base leading to a refinement of the parameters necessary for stock assessment and a better understanding of the biology

of the different flatfish species has continued to be a primary objective. Preliminary data from random-stratified surveys by Canada indicate an increase in the abundance of plaice and yellowtail and Greenland halibut. For plaice and Greenland halibut, the increase was especially noticeable in the recruiting age-groups. USSR surveys also indicated an abundance of juvenile plaice in Div. 3L. Plaice stocks in Subarea 2 + Div. 3K and Subdiv. 3Ps were being exploited at the  $F_{0.1}$  level. For the Div. 3LNO stock, there was evidence of increased abundance from research vessel surveys. The TAC for Div. 3M was reduced based on research vessel data. The yellowtail stock analysis showed increased abundance. Assessment of witch stocks in Div. 2J+3KL and in Subdiv. 3Ps indicated no change in the stock size; however, a new assessment for Div. 3NO which indicated a reduction in stock size. Assessment of the Greenland halibut stock in Subarea 2 + Div. 3KL indicated that recruitment levels appear to be improving. The distribution of Greenland halibut is closely related to depth with large fish located in deeper water

### 7. Capelin

A Canadian survey in Div. 3L in January for capelin larvae was unsuccessful because of bad weather. An acoustic survey in Div. 3LNO in June was attempted but an abundance estimate could not be calculated because no concentrations were located. The biomass of capelin in the early years of the Div. 3NO fishery as estimated from a sequential capelin abundance model was relatively constant but has declined in recent years. Samples were collected by Cuba to calculate a conversion factor from thawed length to fresh length. The 1975 year-class predominated in samples collected by GDR and male to female sex ratio was 20:80. The 1973 year-class predominated in samples by Poland in January, whereas the 1974 year-class

predominated in June. Romanian samples indicated that the 1974 and 1975 year-classes predominated for females and the 1975 and 1976 year-classes for males. USSR studies indicated that in spring and summer commercial concentrations of capelin were formed only in Div. 3L. Only insignificant numbers of fish migrated to the spawning area of the Southern Shoal of Grand Bank which was connected with a reduction of the mature part of the stock as well as with abnormally high water temperatures. In pre-spawning concentrations in Div. 3L in May, fish of the 1973-75 year-classes prevailed.

### 8. Salmon

Of 19 salmon recaptured from 97 tagged along the south coast of Newfoundland in May, 8 were caught in commercial fisheries and 11 were angled in rivers in the Maritimes and Quebec. Of 11 recaptures from 35 tagged in the Fogo-Twillingate area of the northeast coast of Newfoundland, 7 were caught in the local commercial fishery and 4 were angled. Samples of 783 were collected and when analyzed and compared with historical values provide a means of detecting any changes in biological characteristics. Samples collected when analyzed for plasma vitellogenin will provide information on the percentages of maturing salmon caught in the commercial fishery.

### 9. Squid

Biomass estimates of squid from St. Pierre Bank (Subdiv. 3Ps) in autumn 1977 indicated a minimum estimate of 48,000 tonnes. Three modes were observed in the length distributions (11-15 cm, 22.7 cm and 26.5 cm for males; 11-15 cm, 21.0 cm and 22.0 cm for females).

## Subarea 4

Reports on research in 1978 were submitted by Canada, Cuba, France, FRG, Japan, Romania, and USSR.

### 1. Status of Fisheries

Country/ Major Species	Nominal Catches (tonnes)	
	1977	1978
Bulgaria	3,860	1,580
Canada	543,750	626,409
Cuba	5,429	6,621
Denmark	290	101
France	19,978	21,658
FRG	10,110	1,359
GDR	—	351
Italy	2,429	1,264
Japan	5,292	25,901
Poland	8,667	1,769
Portugal	—	582
Romania	1,312	981
Spain	3,006	3,497
USSR	59,160	61,550
USA	5,999	3,969
Ireland	—	49
<b>Total</b>	<b>669,282</b>	<b>757,641</b>
Cod	129,364	164,188
Haddock	24,649	32,714
Redfish	33,685	29,685
Silver hake	37,095	48,167
Pollock	22,201	23,058
American plaice	20,422	19,131
Witch flounder	5,470	6,801
Greenland halibut	4,176	6,766
Other flounders	7,890	7,568
White hake	7,581	8,844
Herring	199,320	217,327
Mackerel	14,900	12,227
Alewife	7,744	7,626
Other fish	24,820	33,827
Squid	50,726	52,967
Scallops	8,292	7,460
Lobster	16,197	17,256
Crabs	9,953	14,119
Shrimp	5,323	6,740
Other invertebrates	4,821	5,862
Seaweeds	34,653	35,308
<b>Total</b>	<b>669,282</b>	<b>757,641</b>

### 2. Work Carried Out

- a) **Canada:** Physical oceanographic studies of Browns Bank-Cape Sable area (Div. 4X) in relation to lobster research. Completion of surficial geology mapping of Bay of Fundy, Scotian Shelf and eastern Gulf of Maine (Div. 4VWX). Ichthyoplankton studies on the Scotian Shelf (Div. 4VWX) and St. Georges Bay (Div. 4T). Larval herring surveys in Bay of Fundy (Div. 4X) and Georges Bank (Div. 5Z). Zooplankton and phytoplankton studies in St. Georges Bay (Div. 4T) and central Scotian Shelf (Div. 4W), and nutrient studies in Bedford Basin (Div. 4X). Biological sampling of commercial landings of all major species. Research vessel inventory of groundfish stocks in all areas. At-sea observations of catches and by-catches on foreign vessels. Stock assessments and yield predictions for all major finfish stocks. Study of parasites and disease in cod, yellowtail flounders and redfish. Juvenile herring surveys in Bay of Fundy (Div. 4X). Tagging of cod on Middle Bank (Div. 4W); herring in Bay of Fundy, southwest Nova Scotia (Div. 4X), Chedabucto Bay (Div. 4W) and off Prince Edward Island (Div. 4T); pollock in Chedabucto Bay (Div. 4W); bluefin tuna in St. Margaret's Bay (Div. 4X). Study of length, age, meristics, morphometrics and other physiological parameters of bluefin tuna. Study of small redfish by-catch in shrimp fishery. Trawl mesh selection studies for *Illex* in cooperation with Japan. Continued development of bottom-referencing underwater towed instrument vehicle. Determination of relationships between acoustic target strength, fish length and aspect on herring.
- b) **Cuba:** Oceanographic survey of the Scotian Shelf (Div. 4VWX). Comparative trawling experiments between commercial and research vessels. Measurement of biological parameters of squid.
- c) **France:** Oceanographic survey in Div. 4R with study of length, weight, age, sex and maturity of cod and length, weight and sex of redfish.
- d) **FRG:** Young herring survey in February-April and a spawning herring survey in September-October were mainly in Subareas 5 and 6 but with some stations in Div. 4X. Studies of age and maturity of herring, length of mackerel, cod, haddock, pollock and silver hake, and ages of cod and haddock.
- e) **Japan:** Trawl mesh selection studies for *Illex* in cooperation with Canada. Estimation of *Illex* biomass on the Scotian Shelf (Div. 4VWX).
- f) **Romania:** Sampling of commercial catches of *Illex* in Div. 4W for length, weight, sex and age, and of the mackerel by-catch for length, weight, sex, maturity and age.
- g) **USSR:** Oceanographic, zooplankton and ichthyoplankton surveys in August-September on

the Scotian Shelf (Div. 4VWX). Larval feeding studies, fingerling survey and fecundity study of silver hake. Parasitological studies on wolffish and flatfishes.

### 3. Hydrographic, Environmental and Plankton Studies

A program of surficial geological mapping has been completed in the Bay of Fundy, eastern Gulf of Maine and the Scotian Shelf (Div. 4VWX). The maps and reports describe the sediment type at the seabed and provide additional information on roughness of the seabed which may be useful to those engaged in fishery operations and studies of fish and benthos distribution.

The Scotian Shelf Ichthyoplankton Program (SSIP) was continued for its second year and elaborated. Standard gear and tows have been decided upon and arrangements for identification and counting of eggs finalized.

Correlations between inter-year seasonal variations in heat content of the Scotian Shelf (Div. 4VWX) and local temperatures indices indicate that the latter may be used to reflect variations in heat content throughout the whole area. Mean water temperatures in 1978 (8.45°C) were lower than in 1977 (8.63°C). Surface temperatures were higher and bottom temperatures and salinities lower than in 1977, and sea surface temperatures were cooler than the long-term average.

### 4. Cod and Haddock

Canadian cod catches in the northern Gulf of St. Lawrence (Div. 4RS) improved considerably over those of 1977. The greatest increase was in the gillnet fishery in which fish averaged 65 cm in length compared with 48 cm in the trap fishery. The annual spring survey of spawning haddock populations in the Emerald-Browns Bank area (Div. 4WX) showed an increase in the spawning population subsequent to closure of the spring fishery. Cod and haddock were important by-catches in the USSR silver hake fishery, 60% of the USSR by-catch being taken there, including 71% (268 tonnes) of the haddock by-catch. Length frequency analysis indicates that 48% of the latter are 1-year-olds ( $732 \times 10^3$  individuals).

### 5. Silver Hake

Catch rates in 1978 improved over those of 1977; for Cuba the indices increased from 638 to 1,100 and for the USSR from 1,770 to 2,270.

The small-mesh gear line appears to be adequately located with respect to the fishery but 1978 was anomalous with best catches outside the line (landward). Substantial by-catches of cod, haddock (largely 1-year-old) and pollock are associated with the USSR silver hake fishery. Estimation of allowable catches for 1980 range from about 40,000 tonnes to 100,000–105,000 tonnes. Results of a number of ageing workshops were summarized and comprehensive guidelines provided for determining age and associated growth parameters. Estimates of fecundity were made. Distribution of eggs, larvae, and juveniles show aggregation of eggs and larvae in rising and falling water masses west of Sable Island with spawning in August. With cooling water temperatures, fry moved from shoals to near-bottom layers of the Nova Scotian Trough at lengths of 2–7 cm in October. Abundance index was calculated at 135 specimens per square mile.

### 6. Squid (*Illex*)

Continuing expansion of the Subarea 3–5 *Illex* fisheries was reflected in the number and range of research studies carried out in relation to the Subarea 4 squid stock. Estimates of abundance, based on the areal expansion method, varied considerably, especially between research and commercially-based operations, ranging up to 434,000 tonnes. Distribution of the squid, indicated by concentration of fishing effort, showed an easterly movement from Div. 4W early in the season (July) to the Div. 4W–4V boundary and to deeper water late in the season (September–October). Feeding, growth, and maturation studies showed rapid growth throughout most of the season with a falling off of growth and cessation of feeding on approach of maturity late in the season. Growth to maturity, spawning and larval survival were studied in captivity and provide further evidence of one-year growth to maturity, indicating that the fishery depends upon a single year-class. Late-season growth may be limited by inadequate food supply, resulting from the rapid increase in biomass through the season and a change from a predominantly invertebrate to a predominantly fish diet with size. Exploitation by the fishery, and conservation of forage fish, should increase late-season growth. Estimates of relative abundance (research cruise date) show 1978 was a relatively poor year with biomass only 20% of that of 1977 and continuing the decline since 1976, but catch rates contradict this assessment as Cuba increased from 548 in 1977 to 2,150 in 1978 and the USSR from 568 to 2,270. Tagging experiments showed that squid tagging is feasible but mortality, both direct and indirect, is high and may affect the growth of tagged squid.

The fishery was 1–2 weeks late in starting, probably because of slower than usual warming up of

the shelf waters.

## 7. Saury

The general biology including distribution, abundance, maturation and migration is described and an estimated potential catch of 340,000 to 380,000

tonnes is suggested for the Northwest Atlantic.

## 8. Spiny Dogfish

General biology and distribution of dogfish were described and a total biomass of 1,000,000 tonnes estimated for the Northwest Atlantic.

# Subarea 5 and Statistical Area 6

Reports of research in 1978 were submitted by Canada, FRG, Poland, Romania and USA. Spain performed work in 1978 although it did not submit a report. The USSR also performed work in 1978 although it did not mention it in its report.

## 1. Status of Fisheries

Country/ Major Species	Nominal Catches (tonnes)			
	Subarea 5		Stat. Area 6	
	1977	1978	1977	1978
Bulgaria	1,598	11	3,417	—
Canada	123,417	128,293	254	564
Cuba	1,255	—	326	—
Denmark	3	—	—	—
GDR	782	—	7,283	—
Italy	1,191	—	4,213	5,212
Japan	2,903	2,745	12,074	4,377
Poland	270	—	19,825	—
Romania	—	107	1,152	116
Spain	972	1,028	13,289	12,884
USSR	63,672	14,508	38,518	3,781
USA	319,667	378,593	737,972	775,692
Ireland	386	—	325	—
South Korea	884	—	—	—
<b>Total</b>	<b>517,000</b>	<b>525,285</b>	<b>838,648</b>	<b>802,626</b>
Cod	39,565	48,029	334	264
Haddock	14,165	27,518	1	—
Redfish	13,223	14,084	1	—
Silver hake	63,279	27,027	13,689	11,458
Red hake	7,111	5,245	1,522	1,423
Pollock	16,239	22,289	34	16
Yellowtail flounder	16,092	11,122	537	424
Winter flounder	9,522	11,042	1,086	1,368
Summer flounder	2,040	2,028	6,896	6,438
Other flounders	12,055	15,400	2,461	2,692
Herring	52,199	50,920	612	189
Mackerel	5,410	1,195	49,631	780
Menhaden	15,833	43,455	272,939	219,979
Alewife	1,758	1,336	4,586	4,120
Other fish	32,091	30,026	49,762	47,863
Squids	7,462	4,116	35,445	20,314
Scallops	156,424	152,902	50,524	73,031
Clams	30,307	29,990	169,079	207,035
Oysters	69	242	145,210	170,421
Crabs	1,869	2,014	31,357	30,798
Lobster	11,347	14,783	1,007	1,114
Others (+ Seaweeds)	8,940	10,522	1,935	2,899
<b>Total</b>	<b>517,000</b>	<b>525,285</b>	<b>838,648</b>	<b>802,626</b>

## 2. Work Carried Out

- a) **Canada:** One research vessel, *Dawson*, and one chartered fishing vessel, *Lady Hammond*, participated in larva Atlantic herring patch studies on Georges Bank and Nantucket Shoals. The annual spawning haddock survey was conducted on Georges Bank. The research vessel *Prince* surveyed sea scallops on Georges Bank.
- b) **FRG:** The *Anton Dohrn* conducted larval Atlantic herring patch studies on Georges Bank and Nantucket Shoals; a juvenile Atlantic herring survey in the Gulf of Maine, Georges Bank, and Southern New England-Middle Atlantic waters; and a spawning Atlantic herring survey in the same waters noted last.
- c) **Poland:** The *Wieczno* was involved with research cruises for an Atlantic herring survey; larval Atlantic herring patch studies on Georges Bank and Nantucket Shoals; longlining surveys for shark, tuna, and billfish biology in Georges Bank and Southern New England-Middle Atlantic waters; and electronic tagging and tracking of swordfish in Georges Bank and Southern New England-Middle Atlantic waters.
- d) **Romania:** Length frequencies were determined from catches of Atlantic herring, Atlantic mackerel, silver hake, butterfish, *Illex* squid, and *Loligo* squid. Age samples were collected from the above finfish.
- e) **Spain:** The *Pescapuerta Segundo* conducted a trawl testing and squid survey.
- f) **USSR:** The research vessels, *Aliot*, *Argus*, and *Belogorsk*, were involved with pelagic fish and squid surveys, juvenile silver and red hake surveys, pelagic fish and squid food habits surveys, spawning silver and red hake surveys, phytoplankton/zooplankton/ichthyoplankton surveys, hydroacoustical research surveys, hydrographic surveys, and marine bird feeding ecology surveys.

These cruise activities ranged throughout the area from the Scotian Shelf to Cape Hatteras.

- g) **USA:** US vessels conducting fisheries research were the *Albatross IV*, *Delaware II*, *Atlantis II*, and seven charter/volunteer fishing vessels. Cruise activities were involved with bottom trawl surveys, Atlantic herring surveys, Atlantic mackerel surveys, shark longlining surveys, fish food habits studies, bottom trawl mensuration, phytoplankton/zooplankton/ichthyoplankton surveys, larval Atlantic herring surveys, larval Atlantic herring patch studies, sea scallop surveys, ocean quahog/surf clam surveys, ocean quahog mark-and-recapture studies, hydrographic surveys, current meter deployment and retrieval, marine environmental quality surveys, oceanic dumpsite studies, and environmental damage assessment studies.

Commercial landings statistics were collected at 17 major ports. At 14 of these ports, biological samples (lengths, weights, age samples) were collected from (in order of dominance) Atlantic herring, surf clams, haddock, Atlantic cod, ocean quahogs, sea scallops, redfish, yellowtail flounder, industrial landings, winter flounder, summer flounder, silver hake, pollock, American plaice, butterfish, scup, witch flounder, *Loligo* squid, windowpane, Atlantic mackerel, American lobsters, Atlantic menhaden, tilefish, and *Illex* squid.

Fishery biologists boarded commercial fishing vessels for 23 sea sampling trips. Day-trip and offshore vessels operated in (in order of dominance) the Gulf of Maine, Georges Bank, Browns Bank, and Southern New England waters. Information on species, lengths, weights, and discards was collected.

In the first full year of operation, the foreign fishery observer program had 138 deployments of its 16 observers covering 88% of all foreign fishing vessels in Subarea 5 and Statistical Area 6. Out of 10,376 fishing days by foreign vessels from (in order of dominance) Spain, USSR, Japan, Mexico, Italy, Romania, and Bulgaria, the observers had 454 days of biological sampling plus tagging of about 400 sharks and sightings of about 1,300 marine mammals.

### 3. Hydrographic Studies

Temperature, salinity, and dissolved oxygen profiles were collected seven times, and continuous surface temperature, surface salinity, and sub-surface (10 m) temperature records were collected monthly from the Scotian Shelf to Cape Hatteras.

Current meters moored in the Northeast Channel showed high-velocity, intermittent inflow to the Gulf of Maine coupled to storms and seasonal influences. Infrared satellite imagery documented the existence and fate of warm-core eddies originating from cutoff Gulf Stream meanders.

### 4. Plankton Studies

Seven surveys from ichthyoplankton, zooplankton, and phytoplankton were conducted from Cape Sable to Cape Hatteras. Sand lance again dominated the winter ichthyoplankton community with its center of distribution in Southern New England waters and with less spawning success than in the previous year. Continuous plankton records were again taken monthly throughout the above area.

The eighth consecutive year of larval Atlantic herring surveys was conducted on Georges Bank. A special study on Georges Bank and Nantucket Shoals mapped larval herring and associated zooplankton patches to relate their spatial and temporal distribution to physical oceanographic processes. An important finding was a chaetognath patch on the northeast peak of Georges Bank that stayed in the same area for several weeks even though a strong southwest drift prevailed.

### 5. Benthic Studies

Benthic work concentrated on sea scallops, surf clams, ocean quahogs, American lobsters, northern shrimp, and deepsea red crabs. A report was prepared summarizing the distribution and abundance of 227 bivalve mollusks off the US East Coast.

### 6. Environmental Studies

Environmental work included baseline surveys and pollutant-effects and pollutant-sources studies. Baseline physiological, biochemical, and bacteriological conditions of bivalve mollusks, crustaceans, and finfishes were documented at 27 "clean" and "polluted" stations in the Northwest Atlantic as part of the Ocean Pulse Program. Pollutant effects of petroleum hydrocarbons and polychlorinated biphenyls, and pollutant sources at deepwater dumpsites and electric-generation power plants, were also studied.

### 7. Biological Studies

Assessments were prepared on Atlantic cod

(Georges Bank and Gulf of Maine stocks), haddock, redfish, silver hake (Gulf of Maine, Georges Bank, and Southern New England-Middle Atlantic stocks), red hake (Georges Bank and Southern New England-Middle Atlantic stocks), pollock, yellowtail flounder (west of 69°W and east of 69°W stocks), summer flounder, flatfishes other than yellowtail and summer flounders, Atlantic herring (Maine juvenile, Gulf of Maine adult, and Georges Bank adult fisheries), Atlantic mackerel, river herring (alewives and blueback herring), scup, weakfish, butterfish, bluefish, white hake, other finfish, squid, total finfish and squid, American lobster, northern shrimp, deepsea red crab, surf clams, ocean quahogs, and sea scallops.

- a) **Atlantic cod:** The RNA-DNA ratio in laboratory-reared larvae was related to food availability and growth rate to develop an index of larval condition.
- b) **Yellowtail flounder:** For the first time, the estimated production of eggs and larvae was used to estimate the actual size of the spawning stock in the Gulf of Maine, in Georges Bank, and in Southern New England-Middle Atlantic waters.
- c) **Winter flounder:** Physiology and biochemistry of winter flounder were studied by: (1) monitoring growth and mortality of laboratory-reared larvae after placement in an *in situ* environmental chamber; (2) developing a stochastic dynamic model of larval growth and mortality in laboratory-reared fish to determine the role of starvation as a regulatory mechanism in larval survival; and (3) relating the RNA-DNA ratio in laboratory-reared larvae to food availability and growth rate to develop an index of larval condition.
- d) **Silver hake:** To differentiate better the stocks of silver hake, extensive anatomical and morphometric measurements were performed upon the species. In the course of studies of food and feeding habits, it was determined that, if the silver hake population was not harvested, it could potentially consume 20% of the remaining fish biomass each year.
- e) **Atlantic herring:** Research focused on (1) the occurrence of eggs in the sediment and in the stomachs of co-occurring predatory organisms in the Gulf of Maine; (2) the relationship between spawning stock size, larval production, and recruitment; (3) the role of ecological factors in larval survival on Georges Bank; and (4) tagging 10,000 juveniles along the Maine Coast and 10,000 adults in the Gulf of Maine from mid-September to mid-October. Only 5% of the adult were ripe, the rest were spent. Within 1 week after tagging, 24 and 2% of the ripe and spent fish, respectively, had been captured.
- f) **Atlantic mackerel:** Estimates of spawning stock size in the Gulf of Maine, on Georges Bank, and in Southern New England-Middle Atlantic waters were derived from the total production of eggs and larvae, and compared favourably with estimates derived from cohort analysis of research and commercial data.
- g) **Atlantic menhaden:** Researchers identified an infectious agent which may be the cause of the central nervous system lesions associated with the mass mortalities of this species.
- h) **Sharks:** A comprehensive worldwide study was conducted of the Scyliorhinidae (cat shark family) — the largest family of sharks. Also, 2,000 volunteering anglers tagged 4,000 specimens representing 30 species, including 214 recaptured fish composing 25 species which had been at liberty for up to 6 years and had moved as much as 3,000 miles. Information was collected on movements, food habits, growth rates, reproduction, and physiology.
- i) **Tunas and billfishes:** A field guide to the tunas and billfishes taken by longliners in Subarea 5, Statistical Area 6, and waters further to the south was compiled.
- j) **Fourbeard rockling:** Because fourbeard rockling larvae can be confused with some hake larvae, the geographic variability in such larvae was studied as an aid in proper identification in future sampling.

## 8. Gear and Selectivity Studies

Trawl work included: (1) comparing 100–110 mm versus 130–140 mm mesh codends for selectivity of Atlantic cod, haddock, pollock, yellowtail flounder, winter flounder, and American plaice; (2) developing a small-beam trawl for juvenile fish sampling and flatfish-selective fishing (double rigged beam trawls have been shown to have a larger sweep than other comparable trawls); and (3) noting otter trawl damage to American lobsters.

Dredge work included: (1) developing a surf clam-ocean quahog hydraulic sampling dredge with an electric submersible pump; (2) developing a hard clam hydraulic sampling dredge; and (3) testing and evaluating dredges for harvesting conchs.

Lobster trap work focused on escape vent and time-release mechanism effectiveness, and on ghost fishing mortality.

## Seals

Reports on research in 1978 and provisional catch statistics were received from Canada, Denmark, and Norway. At the request of Canada, concurred in by EEC on behalf of Denmark (Greenland) and Norway, STACRES reviewed the status of the harp and hooded seal populations in the Northwest Atlantic at a meeting in November 1978. The scientific advice provided by STACRES was used as a basis for intergovernmental decisions regarding the conservation measures to be applied in the 1979 harp and hooded seal fishery.

### 1. Status of Fisheries

#### a) Harp Seals

In 1978, the total harvest from the Gulf of St. Lawrence, "Front" and Greenland areas of the Northwest Atlantic was 165,005 animals.

In 1979, the TAC was again set at 180,000 harp seals including 10,000 for the indigenous people of Greenland, the Canadian Arctic, and Labrador. Canada's share of the catch was increased from 135,000 in 1978 to 150,000 in 1979, while Norway's share was reduced from 35,000 to 20,000.

Preliminary catch figures for 1979, compared with catches reported for 1976, 1977, and 1978 are as follows:

Year	TAC	Greenland	Front		Gulf	Total
			Canada	Norway	Canada	
1976	127,000	4,904	99,629	45,483	19,490	169,906
1977	170,000	6,257	100,766	35,624	18,753	161,400
1978	180,000	7,622 <sup>a</sup>	89,684	16,254	49,405	165,005
1979	180,000	—	94,220	20,288	46,033	—

<sup>a</sup>Provisional figure.

#### b) Hooded Seals

In 1978, the harvest from the "Front" and

Greenland areas was 12,994 against the TAC of 15,100 (excluding Greenland).

In 1979, the TAC remained at the 1978 level of 15,000. Canada and Norway were allocated 6,000 each to 26 March when the remaining 3,000 were allocated to either country. Total catch in 1979 was limited to 5% (7.5% in 1978) adult female hooded seals.

Preliminary figures for the 1979 hooded seal catch, compared with catches reported for 1976, 1977, and 1978, were as follows:

Year	TAC <sup>a</sup>	Greenland	Front		Total
			Canada	Norway	
1976	15,100	3,316	3,794	8,518	15,701
1977	15,100	3,170	6,036	6,049	15,255
1978	15,100	2,771 <sup>b</sup>	3,908	6,315	12,994
1979	15,000	—	6,819	8,306	—

<sup>a</sup>Excluding Greenland; <sup>b</sup>Provisional figure.

### 2. Work Carried Out

#### a) Harp Seals

Canada reported the results of 1978 studies relating to age sampling, reproductive rates, and the relations between "Gulf" and "Front" herds from the distribution of pelage types and from studies of genetical variability. A study of density dependence in fecundity and juvenile mortality led to new estimates of maximum sustainable yield of the Northwest Atlantic population.

#### b) Hooded Seals

Canada reported on recaptures of hooded seals marked in 1972-78. Canada and Norway presented new calculations of mortality and productivity of hooded seals at Newfoundland.

## PART 5

# Administrative and Financial Report for the period 1 July – to 31 December 1979

Throughout the period 1 July–31 December 1979, the Executive Secretary and staff of the Secretariat provided extensive administrative services to both ICNAF and NAFO.

In accordance with a resolution adopted by ICNAF at its Special Meeting in March 1979, Member Countries withdrew from ICNAF, thus terminating the operation of ICNAF on 31 December 1979.

The ICNAF accounts for the period 1 July–31 December 1979 were audited by the Office of the Auditor General of Canada. The accounts showed that

Can \$236,900 was appropriated by ICNAF for ordinary expenses of ICNAF and NAFO. The appropriations consisted of contributions from the Member Governments of ICNAF and of an administrative fee assessed NAFO. An excess of receipts over expenditures for the period of Can \$30,680 was transferred to the Working Capital Fund.

The report of the Auditor General, including a Statement of Liquidation which details the transfer of assets and liabilities from ICNAF to NAFO as at 1 January 1980, reads as follows:

The Chairman and Members  
International Commission for the  
Northwest Atlantic Fisheries

I have examined the balance sheet of the International Commission for the Northwest Atlantic Fisheries as at 31 December 1979, and the statement of receipts and expenditures — General Fund, budget appropriations, expenditures and balances of appropriations — General Fund, changes in financial position — General Fund, statement of principal — Working Capital Fund and statement of principal — Miscellaneous Fund for the 6 months then ended. My examination was made in accordance with generally accepted auditing standards, and accordingly included such tests and other procedures as I considered necessary in the circumstances.

In my opinion, these financial statements present fairly the financial position of the Commission as at 31 December 1979 and the results of its operations and changes in its financial position for the six months then ended in accordance with the accounting policies set out in Note 3 to the financial statements applied on a basis consistent with that of the preceding year.

In compliance with the requirements of Financial Regulation 8.2, I certify that, in my opinion, the financial statements are in accord with the books and records of the Commission; the financial transactions reflected in the statements have been accordance with the rules and regulations, the budgetary provisions, and other applicable directives; and the monies on deposit and on hand have been verified by certificate received directly from the Commission's depositories or by actual count.

Ottawa, Ontario  
21 April 1980

Auditor General of Canada  
(Signed J. J. Macdonell)

**Balance Sheet as at 31 December 1979**  
**(Expressed in Canadian dollars)**  
**Immediately prior to dissolution**

Assets			Liabilities
<b>General Fund</b>			
Cash .....	\$ 97,786	Accounts payable and accrued liabilities .....	\$ 22,585
Contributions receivable from member governments .....	77,779	Contribution overpayments by member governments .....	1,474
Prepaid expenses .....	8,455	Current portion — employee termination benefits ...	16,200
		Current portion — accrued vacation pay .....	6,400
		Amount owing to Working Capital Fund .....	118,491
		Amount owing to Miscellaneous Fund .....	18,870
	\$ 184,020		\$ 184,020
<b>Working Capital Fund</b>			
Certificates of deposit .....	\$ 20,000	Provision for employee termination benefits .....	\$ 31,300
Accounts receivable .....	1,115	Accrued vacation pay .....	9,100
Accrued interest .....	2,495	Principal of fund .....	101,701
Amount receivable from General Fund .....	118,491		
	\$ 142,101		\$ 142,101
<b>Miscellaneous Fund</b>			
Amount receivable from General Fund .....	\$ 18,870	Principal of fund .....	\$ 18,870

The accompanying notes are an integral part of the financial statements.

Approved:

Executive Secretary  
(Signed L. R. Day)

**Statement of Receipts and Expenditures — General Fund for the 6 months ended 31 December 1979**

**(Expressed in Canadian dollars)**

Receipts

Members' contributions (Note 5) .....	\$ 143,246
Administrative fee assessed NAFO .....	40,363
Transfer from Miscellaneous Fund .....	53,291
	236,900

Expenditures

(See attached Statement of Budget Appropriations, Expenditures and Balances of Appropriations — General Fund) .....	206,220
Excess of Receipts over Expenditures for the period (transferred to Working Capital Fund) .....	\$ 30,680

The accompanying notes are an integral part of the financial statements.

**Statement of Budget Appropriations, Expenditures and Balances of Appropriations — General Fund for the 6 months ended 31 December 1979**

(Expressed in Canadian dollars)

	<b>Budget Appropriations</b>	<b>Expenditures</b>	<b>Balances of Appropriations</b>
Personal services:			
Salaries .....	\$ 126,500	\$ 126,415	\$ 85
Salary contingencies .....	6,000	1,889	4,111
Employee benefits .....	15,900	9,245	6,655
Additional help .....	500	1,131	(631)
Travel .....	2,000	1,605	395
Transportation .....	500	386	114
Communication services .....	12,500	10,220	2,280
Publications .....	16,000	16,450	(450)
Other contractual services .....	23,000	13,701	9,299
Material and supplies .....	7,000	8,276	(1,276)
Equipment .....	2,000	523	1,477
Computer services .....	20,000	16,379	3,621
Contingencies .....	5,000	—	5,000
	<hr/>	<hr/>	<hr/>
	236,900	206,220	30,680
Balance of appropriations transferred to Working Capital Fund .....	30,680	—	30,680
Expenditures for the period .....	<hr/>	<hr/>	<hr/>
	\$ 206,220	\$ 206,220	\$ —

The accompanying notes are an integral part of the financial statements.

**Statement of Changes in Financial Position — General Fund for the 6 months ended 31 December 1979**

(Expressed in Canadian dollars)

Source of cash

Members' contributions (Note 5) .....	\$ 143,246
Administrative fee assessed NAFO .....	40,363
Transfer from Miscellaneous Fund .....	53,291
Decrease in accounts receivable .....	1,779
Decrease in amount receivable from NAFO .....	37,127
Increase in accounts payable .....	10,418
Increase in current portion — employee termination benefits .....	16,200
Increase in current portion — accrued vacation pay .....	6,400
Increase in amount owing to Working Capital Fund .....	14,546
	<hr/>
	323,370

Use of cash

Expenditures .....	206,220
Increase in prepaid expenses .....	8,455
Increase in contributions receivable from member governments .....	26,597
Decrease in contribution overpayments by member governments .....	8,234
Decrease in amount owing to Miscellaneous Fund .....	34,421
Balance of appropriations transferred to Working Capital Fund .....	30,680
	<hr/>
	314,607

Increase in cash .....	8,763
Cash — beginning of the period .....	89,023
	<hr/>
Cash — end of the period .....	\$ 97,786

The accompanying notes are an integral part of the financial statements.

**Statement of Principal — Working Capital Fund for the 6 months ended 31 December 1979**

**(Expressed in Canadian dollars)**

Principal of Fund — beginning of the period .....	\$ 64,831
Add:	
Revenue:	
Bank interest .....	4,689
Interest on certificates of deposit .....	857
Sales of publications .....	2,080
	<u>7,626</u>
Unexpended balances of prior years' appropriations .....	307
Balance of appropriations transferred from General Fund .....	30,680
Provision for employee vacation pay benefits — current period .....	3,299
	<u>41,912</u>
Deduct:	
Provision for employee termination benefits — current period .....	5,042
	<u>36,870</u>
Principal of Fund — end of the period .....	<u>\$ 101,701</u>

The accompanying notes are an integral part of the financial statements.

**Statement of Principal — Miscellaneous Fund for the 6 months ended 31 December 1979**

**(Expressed in Canadian dollars)**

Principal of Fund — beginning of the period .....	\$ 53,291
Transfer to General Fund .....	(53,291)
	<u>—</u>
Additions to Fund (Note 4)	
Levy in lieu of Canadian personal income tax .....	18,870
	<u>18,870</u>
Principal of Fund — end of the period .....	<u>\$ 18,870</u>

The accompanying notes are an integral part of the financial statements.

## Notes to the Financial Statements 31 December 1979

### 1. Termination of Operations of the Commission

The International Commission for the Northwest Atlantic Fisheries (ICNAF) was established under a convention signed by eleven countries in 1949.

The objective of ICNAF has been the investigation, protection and conservation of the fisheries of the Northwest Atlantic Ocean.

However, with the declaration of 200-mile offshore zones by the coastal states, ICNAF's regulatory responsibilities were restricted to areas lying outside those zones. Recognizing this changing status of the Northwest Atlantic fisheries, the Northwest Atlantic Fisheries Organization (NAFO) was established by a new Convention and came into effect on 1 January 1979. In a resolution adopted by the members of ICNAF, the Commission's operations ceased on 31 December 1979 and the assets, liabilities and secretariat of the Commission were transferred to NAFO effective 1 January 1980.

Accordingly, these financial statements represent the final financial position of ICNAF as at 31 December 1979 immediately prior to the transfer of its assets and liabilities to NAFO. The Statement of Liquidation, which details the transfer of assets and liabilities from ICNAF to NAFO, is included as a Schedule of these financial statements.

### 2. Purpose of Funds

The Commission operates three separate funds:

- a General Fund to record member country contributions and operating expenditures;
- a Working Capital Fund to record sales of publications, bank interest, refunds of prior period expenditures, balances of appropriations remaining in the General Fund at year-end, and the initial levy of \$1,000 paid by new contracting countries;
- a Miscellaneous Fund to record initial annual payments from new contracting governments and any other monies received for which the disposition is not specified above.

### 3. Significant Accounting Policies

#### Inventories

In order to meet possible future needs of scientists, the Commission prints more copies of each of its publications than are currently required by member governments. The costs of these extra copies are charged as current expenses.

#### Fixed assets

Office furniture and equipment are expensed when purchased.

#### Prepaid expenses

During the period, the Commission adopted the policy of recording prepaid expenses in the accounts of the General Fund. Previously prepaids had not been recorded as their amount was immaterial.

All other receipts and expenditures are recorded on an accrual basis.

#### 4. Federal Income Taxes

According to an Order in Council (P.C. 1967-2313) issued by the Government of Canada, the Commission comes under the jurisdiction of the Convention on the Privileges and Immunities of the United Nations. Article V, Section 18 (b) of this Convention exempts officials of United Nations organizations from federal taxation on the salaries and emoluments paid to them by the United Nations. Accordingly, ICNAF deducts and credits to the Miscellaneous Fund an amount equal to the Canadian federal income tax that would be assessed on staff remuneration.

#### 5. Members' Contributions Assessed

Bulgaria .....	\$ 9,470
Canada .....	15,391
Cuba .....	12,431
German Democratic Republic .....	9,470
Iceland .....	6,509
Japan .....	9,470
Norway .....	12,431
Poland .....	15,391
Portugal .....	12,431
Romania .....	9,470
Spain .....	15,391
Union of Soviet Socialist Republics .....	15,391
	\$ 143,246

#### 6. Services Provided Without Charge

Occupancy expenses, which include rent, heat, taxes and electricity related to the Commission's premises in Dartmouth, Nova Scotia aggregated \$21,803 for the 6 months ended 31 December 1979. These amounts are paid directly by the Canadian Department of Public Works and accordingly are not reflected in the Commission's accounts.

## Statement of Liquidation as at 1 January 1980

(Expressed in Canadian dollars)

Principal of funds immediately prior to liquidation:

General Fund .....	—
Working Capital Fund .....	101,701
Miscellaneous Fund .....	18,870
	<u>120,571</u>
 Add:	
Liabilities assumed by NAFO (Note 1) .....	87,059
	<u>207,630</u>
 Less:	
Assets transferred to NAFO (Note 2) .....	207,630
	<u>207,630</u>
Balance in liquidation account as at 1 January 1980 .....	<u>\$ —</u>

## (1) Liabilities include

Current liabilities:	
Accounts payable and accrued liabilities .....	\$ 22,585
Contribution overpayments by member governments .....	1,474
Current portion-employee termination benefits .....	16,200
Current portion-accrued vacation pay .....	6,400
	<u>46,659</u>
Long-term liabilities:	
Provision for employee termination benefits .....	31,300
Accrued vacation pay .....	9,100
	<u>40,400</u>
	<u>\$ 87,059</u>

## (2) Assets include

Cash .....	\$ 97,786
Certificates of deposit .....	20,000
Contributions receivable from member governments .....	77,779
Miscellaneous accounts receivable .....	3,610
Prepaid expenses .....	8,455
	<u>\$ 207,630</u>

