

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



**ANNUAL REPORT**

(formerly Annual Proceedings)

**Vol. 27**  
**for the year**  
**1976/77**

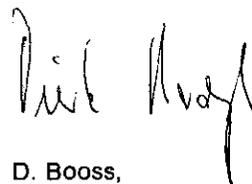
**Dartmouth • Canada**  
**December 1977**

## Letter of Transmittal

The Chairman of the International Commission for the Northwest Atlantic Fisheries presents his compliments to the Governments signatory of the International Convention for the Northwest Atlantic Fisheries signed at Washington under date of 8 February 1949, and to the Commissioners and Observers representing those Governments and has the honour to transmit herewith annual reports of the International Commission for the Northwest Atlantic Fisheries for the year 1976/77.

This is the 27th annual report of proceedings of the Commission and is an authoritative record of its activities and achievements from 1 July 1976 to 30 June 1977. The report contains an account of the activities of the Commission's Secretariat; an account of the Ninth Special Commission Meeting, December 1976; an account of the 27th Annual Meeting, June 1977; and summaries of research carried out in each of the five Convention subareas and on seals in 1976.

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 of the Commission.

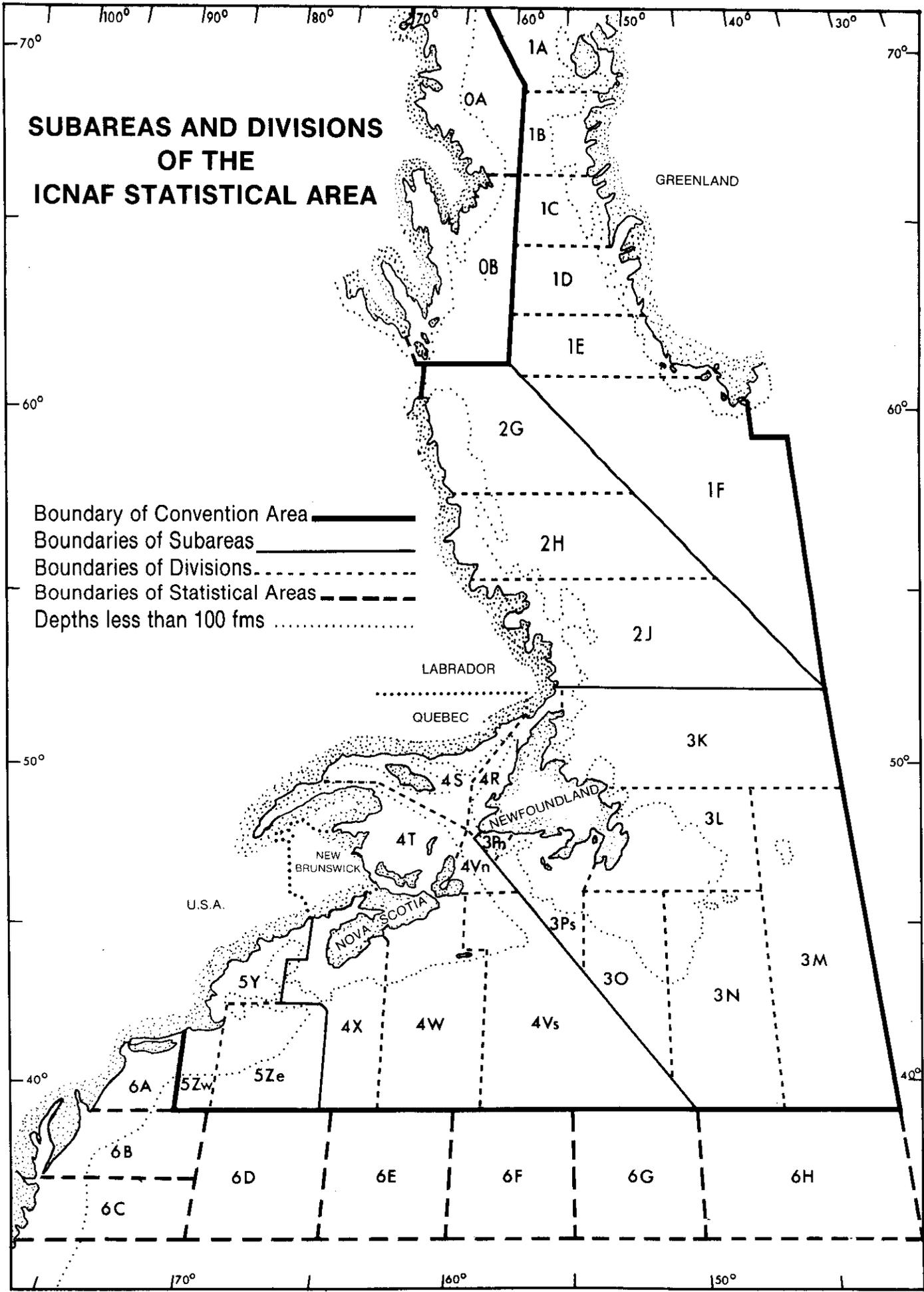


D. Booss,  
Chairman,  
International Commission for the  
Northwest Atlantic Fisheries

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# SUBAREAS AND DIVISIONS OF THE ICNAF STATISTICAL AREA



Boundary of Convention Area **—————**

Boundaries of Subareas **\_\_\_\_\_**

Boundaries of Divisions **- - - - -**

Boundaries of Statistical Areas **- · - · -**

Depths less than 100 fms **.....**

U.S.A.

NEW BRUNSWICK

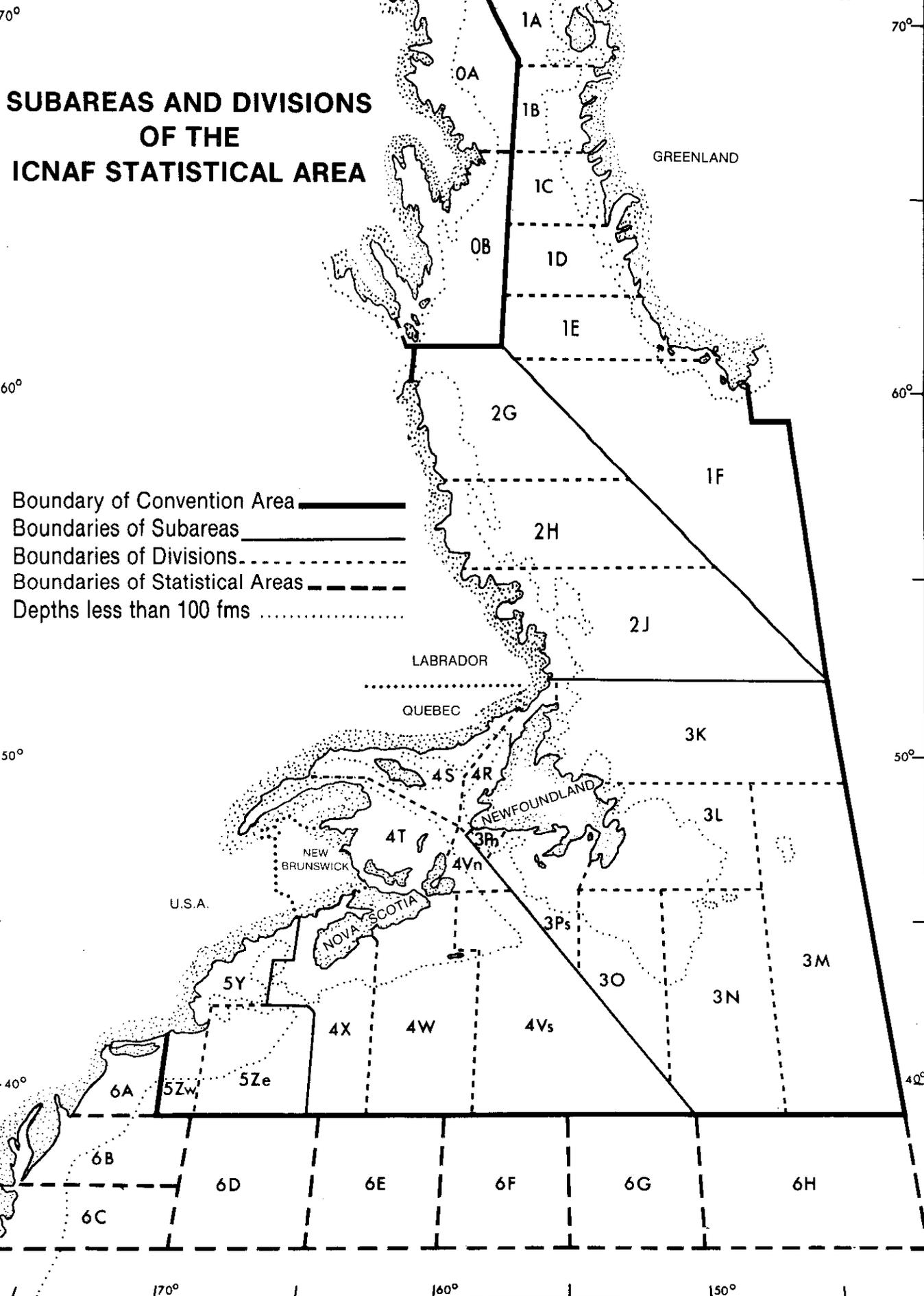
NOVA SCOTIA

LABRADOR

QUEBEC

NEWFOUNDLAND

GREENLAND



## Commission's Organization, 1976/77

### Participating Governments

Bulgaria, Canada, Cuba, Denmark, France, Federal Republic of Germany, German Democratic Republic, Iceland, Italy, Japan, Norway, Poland, Portugal, Romania, Spain, Union of Soviet Socialist Republics, United Kingdom, and United States of America (to 31 December 1976).

#### Chairman of Commission

Mr E. Gillett,  
Dept. of Agriculture  
and Fisheries,  
Chesser House, Gorgie Road,  
Edinburgh EH11 3AW,  
Scotland.  
(to 1 December 1976)

Dr D. Booss,  
Bundesministerium für Ernährung,  
Landwirtschaft und Forsten,  
Rochusstrasse 1,  
5300 Bonn-Duisdorf,  
Federal Republic of Germany.  
(from 1 December 1976)

#### Vice-Chairman of Commission

Dr D. Booss,  
Bundesministerium für Ernährung,  
Landwirtschaft und Forsten,  
Rochusstrasse 1,  
5300 Bonn-Duisdorf,  
Federal Republic of Germany.  
(to 1 December 1976)

### Panels for the Subareas

Subarea	Panel	Member Governments	Chairman
1	1	Denmark, France, Federal Republic of Germany, Norway, Poland, Portugal, Spain, Union of Soviet Socialist Republics, United Kingdom.	Mr V. M. Kamentsev, Ministry of Fisheries, 12 Rozhdestvensky Boulevard, Moscow K-45, USSR.
2	2	Canada, Cuba, France, Federal Republic of Germany, German Democratic Republic, Iceland, Norway, Poland, Portugal, Romania, Spain, Union of Soviet Socialist Republics, United Kingdom.	Mr W. Kalinowski, Fisheries Central Board, Str Odrowaza 1, 70-952 Szczecin, Poland.
3	3	Bulgaria, Canada, Cuba, Denmark, France, Federal Republic of Germany (effective 1 June 1977), German Democratic Republic, Iceland, Italy (effective 1 June 1977), Japan, Norway, Poland, Portugal, Romania, Spain, Union of Soviet Socialist Republics, United Kingdom, United States of America (to 31 December 1976).	Mr R. H. Letaconnoux, Institut Scientifique et Technique des Pêches Maritimes B.P. 1049, 44037 Nantes-CEDEX, France.
4	4	Bulgaria, Canada, Cuba, Denmark, France, Federal Republic of Germany, Japan, Poland, Portugal, Spain, Union of Soviet Socialist Republics, United States of America (to 31 December 1976).	Mr K. Løkkegaard, Ministry of Fisheries, Borgergade 16, 1300 Copenhagen K, Denmark.
5	5	Bulgaria, Canada, Cuba, France, Federal Republic of Germany (to 1 June 1977), German Democratic Republic, Italy (to 1 June 1977), Japan, Poland, Romania, Spain, Union of Soviet Socialist Republics, United States of America (to 31 December 1976).	Dr J. A. Storer, Office of Marine Resources, NOAA, 1010 Executive Boulevard, Rockville, Maryland, USA 20028. (to 31 December 1976)

### Panel for Harp and Hooded Seals

A	Canada, Denmark, Norway.	Mr E. Lemche, Ministry for Greenland, Hausergade 3, DK-1128 Copenhagen K, Denmark.
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## Commission's Organization, 1976/77 (continued)

### Standing Committees

<b>Committees</b>	<b>Members</b>	<b>Chairman</b>
On Finance and Administration	<b>One Nominee</b> from each of the Contracting Governments (Canada, Federal Republic of Germany, Portugal [(effective 31 May 1977), Union of Soviet Socialist Republics, United Kingdom, United States of America (to 31 December 1976)]).	<b>Mr E. B. Young,</b> International Directorate, Fisheries and Marine Service, Department of Fisheries and Environment, 580 Booth Street, Ottawa, Ontario, Canada K1A 0H3.
On Research and Statistics	<b>One Nominee</b> from each Contracting Government who may be assisted by experts and advisers.	<b>Dr M. D. Grosslein,</b> Northeast Fisheries Center, National Marine Fisheries Service, Woods Hole, Massachusetts, USA 02543. (to 31 December 1976)  <b>Mr Sv. Aa. Horsted</b> Grønlands Fiskeriundersøgelse, Jaegersborg Alle 1B, 2920 Charlottenlund, Denmark. and <b>Dr F. Nagasaki,</b> Far Seas Fisheries Research Laboratory, 1000 Orido, Shimizu, Shizuoka, Japan. (from 24 May 1977)
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.	<b>Mr W. G. Gordon,</b> Northeast Region, National Marine Fisheries Service, Gloucester, Massachusetts, USA 01930. (to 31 December 1976)  <b>Mr D. R. Bollivar,</b> Resource Allocation Branch, Fisheries and Marine Service, Department of Fisheries and Environment, 580 Booth Street, Ottawa, Ontario, Canada K1A 0H3 (effective 31 May 1977)

### Headquarters

Dartmouth, Nova Scotia, Canada

Executive Secretary	— Mr L. R. Day	Statistical Clerk (Surveys and Sampling)	— Ms P. A. Cave
Assistant Executive Secretary	— Mr V. M. Hodder	Statistical Clerk (Fishery Statistics)	— Mr F. D. Keating
Administrative Assistant	— Mr W. H. Champion	Clerk-Duplicator Operator	— Mr R. A. Myers
Bio-Statistician	— Mr S. A. Akenhead (SOS 31 August 1976)	Clerk-Duplicator Operator	— Mr B. T. Crawford
	— Mrs V. C. Kerr	Documents and Mailing Clerk	— Mrs F. E. Perry
Senior Secretary	— Mr G. M. Moulton	Clerk Typist	— Mrs P. M. Wadman
Senior Statistical Clerk	— Ms E. R. Cornford	Data Processing Clerk	— Miss G. H. Langille
Finance and Publications Clerk Steno			

# PART 1

## Administrative Report for the Year Ended 30 June 1977

### 1. The Future of ICNAF

At the Annual Meeting of the Commission in June 1976, the delegations of Canada and USA announced their intention to extend jurisdiction over fisheries to 200 miles offshore effective 1 January 1977 and 1 March 1977, respectively. As a consequence, the Commission designated a Group of Experts who met from 5 to 7 October 1976 and formulated suggestions regarding future multilateral cooperation in fisheries in the Northwest Atlantic Ocean (*Com. Doc. 76/XII/64*).

In view of the impending jurisdictional changes and the Commission's procedure which allows Member States to lodge objection to measures agreed by the Commission, Canada and USA, in accordance with Convention Article XVI, served notice on 29 June 1976 and 22 June 1976, respectively, of their intent to withdraw from membership in the Commission on 31 December 1976. Canada revoked her intention on 28 December 1976. The US withdrawal became effective 31 December 1976, thereby reducing to 17 the membership in the Commission.

At its Ninth Special Meeting in December 1976, the Commission, recognizing the pending extension of fisheries jurisdiction to 200 miles offshore, adopted amendments to the Convention which would provide an interim solution pending further consideration of future multilateral cooperation and recommended that action be taken as soon as possible in the first half of 1977 to pursue the development of a framework for such future cooperation, including appropriate institutional arrangements (*Sum. Doc. 77/VI/2*).

At the invitation of the Government of Canada, delegates of the 17 ICNAF Member Countries, the USA, and the European Economic Community participated in a preparatory conference in March 1977 (*Sum. Doc. 77/VI/11*) and discussed in detail a draft Convention which had been prepared by Canada in an effort to suggest a firm basis in treaty law for the continuation of multilateral cooperation in the North Atlantic fisheries within the framework of the new regime of extended coastal state jurisdiction. The Conference agreed that, in conjunction with the Annual Meeting of ICNAF in June 1977, a second preparatory meeting should be held which would give further consideration to the functions, competence and responsibilities of the proposed Fisheries Commission, provisions respecting the financing of the proposed new Organization and arrangements for

a smooth transition from the ICNAF regime to the proposed new multilateral arrangements. The Conference received with favour the invitation of the Government of Canada to host a diplomatic conference in Ottawa from 11 to 21 October 1977 to consider the adoption of a new Convention.

### 2. The Commission's Officers

Chairman of the Commission	— Mr E. Gillett (UK) to December 1976 — Dr D. Booss (Federal Republic of Germany) from December 1976
Vice-Chairman of the Commission	— Mr D. H. Wallace (USA) to June 1976 — Dr D. Booss (Federal Republic of Germany) from June 1976 — Vacant from December 1976
Chairman of Panel 1	— Mr V. M. Kamentsev (USSR)
Chairman of Panel 2	— Mr W. Kalinowski (Poland)
Chairman of Panel 3	— Mr R. H. Letacconnoux (France)
Chairman of Panel 4	— Mr K. Løkkegaard (Denmark)
Chairman of Panel 5	— Dr J. A. Storer (USA) to December 1976 — Vacant from December 1976
Chairman of Panel A (Seals)	— Mr E. Lemche (Denmark)

The Chairman and Vice-Chairman of the Commission hold office for a 2-year period. Dr D. Booss (Federal Republic of Germany) is completing the term of office, 1975-77, of Mr E. Gillett (UK). The office of Vice-Chairman became vacant when Dr D. Booss became Chairman on Mr Gillett's retirement from the Commission. Elections for both Chairman and Vice-Chairman of the Commission for the period 1977-79 will be held at the Annual Meeting, June 1977.

The chairmanship of Panel 5 became vacant with the withdrawal of USA from the Commission on 31 December 1976. Elections for Chairmen of Panels will be held, as required, at the Annual Meeting, June 1977, with the exception of the Chairman of Panel A (Seals) who will complete his 2-year term of office in 1978.

Chairman of the Standing Committee on Research and Statistics (STACRES)	— Dr M. D. Grosslein (USA) to 31 December 1976 — Vacant from 1 January 1977
Chairman of the Standing Committee on Finance and Administration (STACFAD)	— Mr E. B. Young (Canada)
Chairman of the Standing Committee on Regulatory Measures (STACREM)	— Vacant from March 1976

Chairman of the Standing Committee on International Control (STACTIC)

- Mr W. G. Gordon (USA) to 31 December 1976
- Mr D. R. Bollivar (Canada) from 31 May 1977

### 3. Panel Membership for 1976/77

Country	Panel					A	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	1951	—	1969	1974	—	1966	4
France	1953	1953	1953	1953	1974	—	5
Federal Republic of Germany	1957	1960	1977 <sup>a</sup>	1970	—	—	4
German Democratic Republic	—	1974	1974	—	1974	—	3
Iceland	—	1974	1976	—	—	—	2
Italy	—	—	1977 <sup>a</sup>	—	—	—	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	1951	1960	1951	—	—	—	3
USA <sup>b</sup>	—	—	(1952) <sup>b</sup>	(1951) <sup>b</sup>	(1951) <sup>b</sup>	—	(3) <sup>b</sup>
Total	9	13	17	11	10	3	63

<sup>a</sup> Transferred membership from Panel 5 to Panel 3, effective 1 June 1977.

<sup>b</sup> USA withdrew from membership in the Commission, effective 31 December 1976. Panel memberships total 63, effective 1 January 1977.

### 4. The Commission's Secretariat

Executive Secretary	— Mr L. R. Day
Assistant Executive Secretary	— Mr V. M. Hodder
Bio-Statistician	— Mr S. A. Akenhead (SOS 31 August 1976)
Administrative Assistant	— Mr W. H. Champion
Senior Secretary	— Mrs V. C. Kerr
Finance and Publications Clerk	— Ms E. R. Cornford
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
Documents and Mailing Clerk	— Mrs F. E. Perry
Clerk-Typist	— Mrs P. M. Wadman
Statistical Clerk (Fishery Statistics)	— Mr F. D. Keating
Data Processing Clerk	— Miss G. H. Langille

### Activities of the staff

The Executive Secretary participated in a panel on international fisheries management sponsored by the American Fisheries Society (Dearborn, Michigan,

USA, 20 September 1976); participated in meetings of the Group of Experts on the Future of ICNAF (Ottawa, 5–7 October 1976); serviced meetings of Scientific Advisers to Panel A (Seals) and of Panel A (Seals) (Copenhagen, 11–14 October 1976); serviced with Messrs Hodder and Moulton, Ms Kerr and Cornford the Ninth Special Commission Meeting (Tenerife, Canary Islands, 24 November–9 December 1976); discussed proposals from the Ninth Special Commission Meeting with Depositary Government (Washington, D.C., 16 December 1976); discussed, at the invitation of the Canadian Government, drafting items for the preparation of new multilateral arrangements for the Northwest Atlantic fisheries (Ottawa, 4 March 1977); participated in and serviced with Mr Hodder and Ms Cornford the International Preparatory Conference on Future Multilateral Cooperation in the Northwest Atlantic Fisheries (Ottawa, 14–25 March 1977); serviced with the other members of the Secretariat the ICNAF Assessments Subcommittee Meetings (Dartmouth, 19–27 April 1977).

The Assistant Executive Secretary, Mr Hodder, attended the ICES Annual Meeting (Copenhagen, 2–8 October 1976) and participated in meetings of the ICES/ICNAF/IOC Coordinating Group on the North Atlantic (Copenhagen, 2 October 1976).

The Administrative Assistant, Mr Champion, discussed preparations for the 1977 Annual Meeting with Canadian Government officials (Ottawa, 28 March 1977).

### 5. The Commission's Publications

One of the major responsibilities of the Secretariat is publication of the results of the Commission's work. Serial publications for wide distribution to a mailing list of over 1,000 addresses in 56 countries include the *Annual Report*, the *Statistical Bulletin*, the *Special Publications*, the *Selected Papers*, the *Research Bulletin*, and the *List of Fishing Vessels*. In-house publications include the *Meeting Proceedings*, the *Redbook*, the *Sampling Yearbook*, and the *ICNAF Handbook*, and have a limited distribution to participants, both persons and institutions, in the Commission's scientific and management programs. In addition, the Secretariat produces various document series, the *Commissioners Document (Com. Doc.)* series, the *Summary Document (Sum. Doc.)* series, the *Research Document (Res. Doc.)* series, and the Circular Letter (C L) series. To implement the Commission's publishing and printing requirements, the Secretariat operates a well-equipped and modern reproduction facility capable of typing, printing, collating, and distributing

publications and documents quickly, economically, while at the same time maintaining a high quality finished product.

In the year 1976/77 the Secretariat printed and distributed approximately three million pages of print (1.5 million sheets of paper) including the following:

The *Proceedings of the Seventh Special Meeting (September 1975)*, the *Eighth Special Meeting (January 1976)*, and the *26th Annual Meeting (June 1976)* (304 p.) was distributed in October 1976.

The *Annual Report (formerly Annual Proceedings) Vol. 25 for 1974/75* (116 p.), containing the Administrative Report and Financial Statements for the fiscal year ending 30 June 1975, the Reports of the Fifth Special Meeting, November 1974, the Sixth Special Meeting, January 1975, the Joint ICNAF/NEAFC Meeting on Joint International Enforcement, March 1975, the 25th Annual Meeting, June 1975, and the Summaries of Research and Status of Fisheries for Subareas and Seals, 1974, was distributed in July 1976.

The *Annual Report (formerly Annual Proceedings) Vol. 26 for 1975/76* (139 p.), containing the Administrative Report and Financial Statements for the fiscal year ending 30 June 1976, the Reports of the Seventh Special Meeting, September 1975, the Eighth Special Meeting, January 1976, the 26th Annual Meeting, June 1976, and the Summaries of Research and Status of Fisheries for Subareas and Seals, 1975, was distributed in July 1977.

The *Redbook 1976* (219 p.), containing the Reports of the Standing Committee on Research and Statistics (STACRES) for September 1975, January 1976, May-June 1976, and the Reports of the Scientific Advisers to Panels 1-5 for May-June 1976, to Panel A (Seals) for November 1975 and December 1975, was distributed in August 1976.

The *ICNAF International Inspection Scheme - Translations of Questionnaire and Report of Inspection (Revised 1976)* (101 p.) was distributed in September 1976.

The *Research Bulletin of ICNAF No. 12* (138 p.), containing seven scientific contributions, two review papers, and a note, was distributed in October 1976.

The *Statistical Bulletin Vol. 25 for the year 1975* (234 p.), containing tabular summaries of fish and seal catches 1961-75, and eight tables of catch and effort statistics for fish and seals, 1975, was distributed in February 1977.

The *Selected Papers of ICNAF No. 2* (204 p.), containing 12 scientific papers, was distributed in March 1977.

The *Report of the Third Meeting of the ICES/ICNAF/IOC Coordinating Working Group for the North Atlantic, with Representatives of International Marine Research Projects in the North Atlantic, October 1976*, (13 p.) was distributed as ICNAF Sum. Doc. 77/VI/21.

The *Report of Special Meeting of Panel A (Seals) and Scientific Advisers, October 1976*, (15 p.) was distributed as ICNAF Sum. Doc. 76/XII/47.

The *Proceedings of the Ninth Special Commission Meeting, December 1976*, (110 p.) and the *Report of the Standing Committee on Research and Statistics (STACRES), December 1976*, (28 p.) were distributed as ICNAF Sum. Doc. 77/VI/2 and 77/VI/1, respectively.

The preliminary *Report of the Ageing Workshop on Cod, January-February 1977*, (54 p.) was distributed as ICNAF Sum. Doc. 77/VI/12.

The *Report of the Silver Hake Ageing Workshop, March 1977*, (15 p.) was distributed as ICNAF Sum. Doc. 77/VI/13.

The *Report of the First International Preparatory Conference on Future Multilateral Cooperation in the Northwest Atlantic Fisheries, March 1977*, (58 p.) was distributed as ICNAF Com. Doc. 77/VI/11.

The *Report of the Assessments Subcommittee of STACRES, April 1977*, (16 p.) was distributed as ICNAF Sum. Doc. 77/VI/16.

The *ICNAF Fishery Regulations, as at February 1977*, (63 p.) were issued as ICNAF Com. Doc. 77/VI/1.

The *Status of Commission Proposals for Changes in the Convention and for International Regulation of Fisheries under the Convention, as at May 1977*, (28 p.) was issued as ICNAF Com. Doc. 77/VI/7.

The *ICNAF List of Fishing Vessels, 50 GRT and over, 1975*, (32 p.) was issued as ICNAF Sum. Doc. 77/VI/4.

The *ICNAF List of Sampling Data for 1975* (28 p.) was issued as ICNAF Sum. Doc. 77/VI/5.

The Secretariat's program for reprinting out-of-stock ICNAF publications was continued. One hundred copies of each of the following have been made available to meet the future and growing

requests for Commission publications: *Redbook 1972*, Part I; 1970, Part I; 1969, Part II; 1968, Parts I and III; 1967, Part II; 1963, Parts II and III; 1962, Part I; *Sampling Yearbook* Vol. 13, Part I; Vol. 10 and Vol. 4.

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

### a) Catch and effort statistics

Following the adoption by the Commission of Resolution (2) at the 1975 Annual Meeting, the Secretariat in cooperation with the Secretary of the Coordinating Working Party on Atlantic Fisheries Statistics (CWP) modified the STATLANT 21B form to allow for the reporting of detailed catch and effort statistics by 30' x 30' unit areas and twice-monthly time periods. The revised form was approved by STACRES at the 1976 Annual Meeting. Supplies of the new form, with appropriate instructions for its completion, were distributed to Member Countries in early February 1977 for the use of national statistical offices in reporting catch and effort data for the calendar year 1976. Preparatory to instituting the revised STATLANT 21B form, Member Countries were advised by Circular Letter December 1974 of the proposed reporting requirements so that their statistical offices could plan to collect the statistics in the detail recommended. Member Countries were provided with further information on the proposed detailed reporting requirements at the 1975 Annual Meeting (*Sum. Doc. 75/14, 75/21*), and Circular Letter 76/75 issued in December 1976 provided advance notice of the adopted changes in the new form to be used for reporting 1976 data. Since the deadline for submitting the new STATLANT 21B returns is 30 June 1977, it is too early to comment on the extent to which Member Countries have implemented the more detailed reporting procedures for 1976 data.

### b) Statistical Bulletin, Vol. 25 for 1975

Pending the publication of *Statistical Bulletin Vol. 25*, provisional statistics of 1975 nominal catches in the Northwest Atlantic, as derived from STATLANT 21A returns and other advance reports, were compiled in the format of Tables 1, 2, and 3 of *Statistical Bulletin* and circulated in July 1976. Much of the delay from the 30 June deadline for the receipt of detailed catch and effort data and the actual printing of the *Statistical Bulletin* about 6 months later continues to be due to the late submission of STATLANT 21B statistics by a few countries. The arrangement of the tabular material in Vol. 25, issued in January 1977, is essentially the same as that used following the major reorganization of the

tables in Vol. 22. After the publication of Vol. 25, detailed catch and effort statistics for 1975 were received from Ireland and these are given as a supplement to the *Bulletin* in *Sum. Doc. 77/VI/3*.

### c) Advance statistics

Continuing a program, initiated at the request of STACRES early in 1974, requiring 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, the Secretariat made special requests to national scientists to ensure that all biostatistical data relevant to species under catch regulation in 1976 be forwarded to designated scientists and to the Secretariat well in advance of the April 1977 Meeting. As in 1974, 1975, and 1976, the response to requests for sampling data from research institutes was very encouraging, although there still remain major gaps in the availability of data for certain fish stocks. However, the nominal catch statistics, which are usually compiled in national statistical offices, were, with few exceptions, not available until the April 1977 Meeting was in progress and even then, much of the data were not provided in the format required. Consequently, the designated scientists were hampered in performing their pre-meeting assessment tasks, much of which had to be undertaken during the progress of the meeting. This lack of attention to STACRES requirements continues despite the fact that the Commission has persistently urged Member Countries to provide their national statistical offices and their research institutes with the facilities necessary to collect and report promptly to the Secretariat such detailed data as are required to improve the base for the analytical assessment of all stocks subject to conservation measures.

### d) Sampling Yearbook, Vol. 20 for 1975

Following the decision by STACRES to discontinue the publication of detailed sampling data after the issue of *Sampling Yearbook Vol. 17* for the year 1972, subsequent volumes of the Yearbook contain lists of all available length and age data submitted to the Secretariat. In addition, Vol. 19 for 1974 contains a synopsis of the ICNAF Sampling Program outlining the requirements that Member Countries are expected to follow in the collection and submission of sampling data to the Secretariat. Pending the final compilation of sampling data for 1975 for presentation in Vol. 20, the publication of which has been delayed due to the volume of data being prepared for computer processing, a provisional list of 1975 data was issued in *Sum. Doc. 77/VI/5*. Volume 20 will be

ready for distribution in January 1978.

#### e) Computerized sampling data base

In order to facilitate the rapid retrieval of sampling data for distribution to scientists involved in the Commission's work, a considerable amount of time has been spent during the past two years in setting up a computerized retrieval system and in organizing the large volume of data available for 1973-75. Much work of an exploratory nature was undertaken during 1975/76 in preparing the data in a standard format for computer input and experimenting with various methods of retrieval. During the past year, a concerted effort was made to upgrade the data-processing procedures: nearly all of the 1973-75 data have been punched on computer cards and computer programs prepared for data retrieval. Final editing of the 1973-75 data is expected to be completed in about 2 months, following which computer printouts or magnetic tapes of the data can be distributed upon request to scientists or research institutes.

#### f) Data-processing facilities

The installation of a remote job entry terminal in early 1976, providing the Secretariat with direct access to an IBM 370/155 computer and to a CDC 6400 computer, proved to be invaluable to the small Secretariat staff in providing support to STACRES and its Subcommittees and Working Groups, especially during the Mid-term Meetings of the Assessments Subcommittee which have been held at ICNAF Headquarters in April of 1976 and 1977. However, the data-processing capabilities at the Secretariat has been hampered somewhat by the resignation of Mr Akenhead, Biostatistician, in August 1976, to assume a scientific position at the Biological Station, St. John's, Newfoundland.

### 7. The Commission's Special Meetings

The *Group of Experts on the Future of ICNAF* met in Ottawa, 5-7 October 1976, under the chairmanship of Dr A. W. H. Needler (Canada), to examine and formulate suggestions regarding future multilateral cooperation in the field of fisheries in the Northwest Atlantic Ocean and regarding the procedure and timing to be followed in pursuing the matter (*Com. Doc. 76/XII/64*). The Group generally agreed that a single multilateral convention should provide for management of the fisheries outside national fisheries jurisdiction and the coordination of measures taken outside national fisheries jurisdiction with those taken inside national fisheries jurisdiction by the coastal

state(s) concerned. Some experts advocated the establishment of a single commission structure similar to ICNAF, others advocated separate scientific and management bodies. The Group suggested alternate procedures for consideration by the Commission at its Ninth Special Meeting, December 1976. These were negotiation of a new Convention by a meeting of Plenipotentiaries or amend the present ICNAF Convention. The Group suggested that, as an interim measure, Convention Article VIII be amended to require the affirmative vote of the coastal state for recommendations made within national fisheries jurisdiction.

A *Special Meeting of Panel A (Seals)* was convened at Copenhagen on 14 October 1976, under the chairmanship of Mr E. Lemche (Denmark), to consider the report of the Scientific Advisers who met, under the chairmanship of Dr A. W. Mansfield (Canada) on 11 and 12 October 1976 to consider the relationship between seal and fish populations and conservation requirements for harp and hooded seals for 1977 (*Sum. Doc. 76/XII/47*). The Panel agreed to defer a decision on final TACs and allocations and other measures to be taken to the next meeting on 1 December 1976 in conjunction with the Ninth Special Commission Meeting.

The *Ninth Special Commission Meeting* was convened at Puerto de la Cruz, Tenerife, Canary Islands, from 1 to 9 December 1976 (*Sum. Doc. 77/VI/2*). STACRES met from 24 November to 1 December 1976 and provided advice for management on the shrimp stocks in Subarea 1, silver hake stock in Subarea 4, and mackerel stocks in Subareas 3 to 5 and Statistical Area 6 (*Sum. Doc. 77/VI/1*). Based on a review of the fishing patterns and practices of the fleets of various Member Countries by an *ad hoc* working group, the Commission agreed to a regime of open areas and seasons for herring, mackerel, silver and red hakes, and squids with bottom trawl restrictions in certain areas and periods. TACs and allocations were set for 15 stocks of shrimp and cod in Subarea 1, silver hake and flounders in Div. 4VWX, herring in parts of Subareas 4 and 5 and Statistical Area 6, butterfish, river herring, other finfish, and all finfish and squids in Subarea 5 and Statistical Area 6. A meeting of Panel A recommended conservation measures for 1977 for harp and hooded seals. In view of the extension of national fisheries jurisdiction by the coastal states in 1977, the Commission agreed to amendments to the Convention to provide for the continued functioning of the Commission pending further consideration of future multilateral cooperation, and resolved that

action be taken early in 1977 to develop a framework for such future cooperation, including institutional arrangements.

The *Ageing Workshops on Cod and Silver Hake* were convened by Mr R. Wells (Canada) at St. John's, Newfoundland, from 31 January to 5 February 1977 (*Sum. Doc. 77/VI/12*) and by Mr J. J. Hunt (Canada) at St. Andrews, New Brunswick, from 14 to 18 March 1977 (*Sum. Doc. 77/VI/13*), respectively. On the basis of the cod material examined from Div. 2J, 3K and 3L, a set of guidelines for ageing cod from this area will be published.

*Meetings of the Assessments Subcommittee* (*Sum. Doc. 77/VI/16*) of STACRES were convened at Dartmouth, Nova Scotia, from 19 to 27 April 1977 and prepared advice for 1978 at the request of Canada on 18 stocks which lie within or partly within Canada's 200-mile fisheries management zone in Subareas 2 to 4 and three stocks which overlap the Canadian and Danish fisheries zones in Statistical Area 0 and Subarea 1. The scientists also provided advice on the cod stock in Subarea 1 at the request of Denmark and the three stocks which lie completely outside of the 200-mile fishery limit in Div. 3M.

## 8. Status of Commission Proposals (*Com. Doc. 77/VI/7*)

### a) For changes in the Convention (Tabulation I)

The *1973 Protocol Relating to Basic Payment by Contracting Governments* was circulated to Contracting Governments on 21 May 1975. To date, only Canada, Cuba, France, Federal Republic of Germany, German Democratic Republic, and Norway have notified their approval. In accordance with amended Article XVII, this Protocol will take effect for all Contracting Governments 120 days following the date on the notification by the Depositary Government of receipt of written notification of approval of three-quarters (14) of all Contracting Governments, unless objected to within 90 days.

The *1976 Protocol Relating to Continued Functioning of the Commission* was adopted by the Commission on 8 December 1976, forwarded to Depositary Government on 15 December 1976, and circulated to Contracting Governments on 20 December 1976. To date, only Canada, Cuba, Denmark, German Democratic Republic, Iceland, Norway, and USSR have notified their approval.

### b) For international regulation of the fisheries (Tabulation II)

*June 1969 proposal (1)* for regulation of Atlantic salmon fishing on the high seas in the Convention Area became effective for Norway on 31 December 1975, leaving only Denmark and Federal Republic of Germany who have not yet accepted the proposal.

*January 1976 proposals (1)* for amendment to the Scheme of Joint Enforcement, *(2)* for amendment to the management of international quota regulations, *(7)* for herring catch quota in Div. 4VWX, *(8)* for herring size limit and exemption in Subareas 4 and 5, and *(9)* for mackerel size limit and exemption in Subareas 3, 4, and 5, became effective on 26 August 1976, under the normal 6-month waiting procedure.

*June 1976 proposals (1)* for amendment of the Scheme of Joint International Enforcement (helicopter transfer of inspectors), *(2)* for silver hake by mesh size regulation in Subarea 4, *(3)* for by-catch of haddock in Div. 4V and 4W, *(4)* for river herring in Subarea 5 and Statistical Area 6, *(5)* for scallops in Div. 5Z, *(6)* for by-catch of haddock in Subarea 5, *(7)* for quota regulation of the fisheries in Subareas 2, 3, and 4 in 1976, and *(8)* for quota regulation of the fisheries in the Convention Area and Statistical Areas 0 and 6, since no objections were received, became effective 25 December 1976, except for proposal *(5)* for scallops which the Commission agreed by resolution should be implemented not later than 1 September 1976.

*December 1976 proposals (1) to (10)* were adopted by the Commission on 6 December 1976, transmitted to Depositary Government on 15 December 1976, and transmitted to Contracting Governments on 17 December 1976. Proposals were as follows: *(1)* for harp and hooded seal conservation on the "Front" and in the "Gulf" in the Convention Area; *(2)* for mesh size regulation of northern deepwater prawn in Subarea 1; *(3)* for small-mesh bottom-trawl fisheries in Div. 4VWX; *(4)* for area and period restrictions for silver and red hakes in Div. 5Z and Statistical Area 6; *(5)* for herring catch quota, area and period restrictions in Div. 5Z and Statistical Area 6; *(6)* for squid (*Loligo* and *Illex*) area and period restrictions in Div. 5Z and Statistical Area 6; *(7)* for mackerel catch quota, area and period restrictions in Subarea 5 and Statistical Area 6; *(8)* for repeal of fishing gear regulation in Subarea 5 and Statistical Area 6 (proposal *(2)* from September 1975 Special Meeting, effective 1 January 1977); *(9)* for squid (*Loligo* and *Illex*) re-allocation commitment for 1977 in Subarea 5 and Statistical Area 6; and *(10)* for

first- and second-tier catch quota regulations in the Convention Area and Statistical Area 6. Resolution (3), adopted by the June 1976 Annual Meeting, expected Contracting Governments to notify the Executive Secretary by 31 December 1976 that, subject to a similar undertaking by all other Members of the respective Panel or Panels, they would implement such proposals for the entire year 1977 and would not invoke paragraph 7(b) of Article VIII of the Convention as amended. The Executive Secretary was notified before 31 December 1976 of agreement by Bulgaria, Denmark, Federal Republic of Germany, Japan and Norway (except for northern deepwater prawn in Subarea 1); after 31 December 1976 by Canada, France, German Democratic Republic, Iceland, Italy, Portugal, Romania, Spain and UK; notifications were not received from Cuba, Poland, or USSR. Therefore, under the normal 6-month waiting procedure, the proposals, since no objections were received by Depositary Government, became effective 17 June 1977.

## 9. The Commission's Conservation Program

### a) Catch quota reporting

In accordance with a resolution relating to the provision of monthly catch statistics adopted by the Commission on 14 June 1974, the Secretariat has received monthly catch statistics from Member Countries for each of 60 stocks under catch quota limitation as determined for 1976 at the June 1975, the September 1975, and the January 1976 Commission Meetings (*Com. Doc. 76/VI/18*). The reports were collated and distributed to all Member Countries through the ICNAF Circular Letter series within 6 weeks of each month in which the catches were made. Member Countries were informed by cable immediately (1) when, where, and how much the Member Countries without specific quotas intended to fish from the "Others" catch allocations for the various stocks, (2) when catch allocations for "Others" were reached and closure of the fishery required, and (3) when Member Countries with specific quotas advised that their quotas had been reached and their fleets had ceased fishing.

With regard to monthly catch reporting against the catch quotas set for 65 stocks for 1977 at the 1976 Annual and December 1976 Special Commission Meetings (*Com. Doc. 77/VI/1*), the Secretariat has continued to collate and distribute the monthly data as required by the June 1974 resolution.

### b) Effort limitation reporting (*Com. Doc. 76/VI/18*)

With the adoption of fishing effort regulation for 1976 for groundfish in Subareas 2, 3, and 4 by the

Commission at its January 1976 Special Meeting, the Secretariat, in accordance with resolution (2) from the September 1975 Special Meeting, collated and reported within six weeks of the month in which the effort was expended, provisional monthly listings of days fished by vessel tonnage and gear category against national allocations for groundfish species in the five stock areas, Subarea 2 + Div. 3K, Div. 3LNO, Div. 3M, Div. 3P, and Div. 4VWX.

Effort limitation regulations were not adopted for 1977.

## 10. The Commission's Enforcement Program

All Contracting Governments have indicated readiness to have their vessels inspected under the ICNAF Scheme of Joint Enforcement. During 1976 Canada, Cuba, Denmark, France, Federal Republic of Germany, Portugal, and UK applied the Scheme in Statistical Area 6 on a voluntary basis pending domestic legislation.

The status of implementation of the Scheme and changes in inspection officers and vessels were reported by the Secretariat to Contracting Governments regularly throughout 1976 in the ICNAF Circular Letter series. All Contracting Governments, except Denmark and Iceland, designated Flag State authorities to receive immediate notice of and respond to apparent reported infringements under the Scheme. The most recent (1 June 1977) report on status of implementation, inspection officers and vessels, and designated authorities, was distributed as *Com. Doc. 77/VI/8*.

Reports of inspections by ICNAF inspectors were submitted from Canada and USA for the year 1976. Reports from Contracting Governments on national and international inspections, and infringements and their disposition for 1976, were collated and distributed to the 1977 Annual Meeting as *Com. Doc. 77/VI/9*.

In accordance with proposal (1) from the June 1975 Annual Meeting, each Contracting Government was required to submit to the Secretariat notification of the permanent and temporary fisheries research vessels it operates in the Convention Area and Statistical Areas 0 and 6, with pertinent information regarding each vessel's characteristics and program of research. Notifications were received from Canada, Cuba, Federal Republic of Germany, German Democratic Republic, Japan, Poland, USSR, and USA in 1976 (*Com. Doc. 77/VI/10, Appendix I*).

With the adoption by the Commission at the September 1975 Meeting of proposal (3) regarding

national registration of vessels engaged in fishing or in the treatment of sea fish in the Convention Area or Statistical Areas 0 and 6, as a means of improving compliance with the Commission's complex system of quota regulations, the Secretariat received reports of registrations for 1976 from all Member Countries, except Canada (Maritimes and Quebec), Denmark (Faroes), Iceland, and Portugal. The national vessel registration lists for 1976 were distributed to the 1977 Annual Meeting as *Com. Doc. 77/VI/10, Appendix II*.

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

In accordance with Convention Article X, the Secretariat, on behalf of the Commission, has sought to establish and maintain working arrangements with other public international organizations which have related objectives, particularly the Food and Agriculture Organization of the United Nations (FAO), and the International Council for the Exploration of the Sea (ICES), to ensure effective collaboration and coordination with respect to their work and, in the case of ICES, the avoidance of duplication of scientific

investigations.

Repeated efforts have been made to obtain the cooperation of non-member Countries in providing details of their fishing activities in the Convention Area. Israel, the Republic of Korea, Greece, Ireland, and Nigeria have fished in the Area in 1976.

### 12. Financial Statements for the Fiscal Year Ended 30 June 1977

The accounts of the Commission for the year ended 30 June 1977 showed that Can \$368,500 was appropriated by the Commission for ordinary expenditures. This amount included a surplus appropriation of \$6,449 to the Working Capital Fund.

Obligations incurred during the fiscal year totalled Can \$362,051.

In accordance with the Financial Regulations of the Commission, an audit of the Commission's finances was completed on 11 August 1977 by the Office of the Auditor General of Canada. The report of the Auditor General reads, in part, as follows:

## EXHIBIT I

### Statement of Budget Appropriations, Obligations Incurred, and Balances of Appropriations for the year ended 30 June 1977

(Expressed in Canadian dollars)

Purposes of Appropriations	Appropriated by Commission	Obligations Incurred	Surplus or Deficit ( - ) Balances of Appropriations
Personal services:			
Salaries .....	\$ 197,000	\$ 183,957	\$ 13,043
Salary contingencies .....	17,000	20,202	- 3,202
Employee benefits .....	14,500	14,572	- 72
Additional help .....	2,000	10,000	- 8,000
Travel .....	5,500	4,633	867
Transportation .....	1,500	506	994
Communication services .....	20,000	19,714	286
Publications .....	22,000	15,247	6,753
Other contractual services .....	20,000	19,343	657
Materials and supplies .....	9,000	10,297	- 1,297
Equipment .....	5,000	3,611	1,389
Annual and mid-term meetings .....	20,000	33,491	- 13,491
Computer services .....	25,000	26,478	- 1,478
Contingencies .....	10,000	—	10,000
	368,500	362,051	6,449
Surplus Appropriation to Working Capital Fund .....	6,449	—	6,449
	<u>\$ 362,051</u>	<u>\$ 362,051</u>	<u>—</u>

## EXHIBIT II — GENERAL FUND

Statement of Income and Expenditure for the year ended 30 June 1977

(Expressed in Canadian dollars)

	1977	1976
Income (and Source of Funds):		
Members' contributions assessed:		
Bulgaria .....	\$ 14,347	\$ 13,592
Canada .....	23,582	22,307
Cuba .....	18,965	—
Denmark .....	18,965	17,950
France .....	23,582	22,307
Federal Republic of Germany .....	18,965	17,950
German Democratic Republic .....	14,347	13,592
Iceland .....	9,729	9,234
Italy .....	5,112	4,876
Japan .....	14,347	13,592
Norway .....	18,965	17,950
Poland .....	23,582	22,307
Portugal .....	18,965	17,950
Romania .....	14,347	13,592
Spain .....	23,582	22,307
Union of Soviet Socialist Republics .....	23,582	22,307
United Kingdom .....	14,347	13,592
United States of America .....	14,347	13,592
	313,658	278,997
Transferred from Miscellaneous Fund .....	54,842	31,003
Transferred from Working Capital Fund .....	—	14,000
	368,500	324,000
Obligations incurred (Exhibit I) .....	362,051	324,000
Amount available for transfer to Working Capital Fund .....	\$ 6,449	\$ —

## EXHIBIT III

Statement of Assets and Liabilities as at 30 June 1977

(Expressed in Canadian dollars)

	Assets		Liabilities	
	1977	1976	1977	1976
<b>General Fund</b>				
Cash on hand and in bank (Appendix I) .....	\$ —	\$ —	\$ 12,951	\$ 26,136
Accounts receivable .....	677	1,102	21,519	15,704
Due from Member Governments .....	42,577	49,775	8,784	9,037
	\$ 43,254	\$ 50,877	\$ 43,254	\$ 50,877
<b>Working Capital Fund</b>				
Cash on deposit .....	\$ 21,863	\$ 2,158		
Certificates of deposit .....	20,000	20,000		
Accrued interest .....	850	790		
Accounts receivable .....	2,060	4,296	Principal of Fund (Appendix 2) .....	\$ 44,773
	\$ 44,773	\$ 27,244		\$ 27,244
<b>Miscellaneous Fund</b>				
Cash on deposit .....	\$ 40,534	\$ 54,842	Principal of Fund (Appendix 2) .....	\$ 40,534
	\$ 40,534	\$ 54,842		\$ 54,842

## APPENDIX 1

## Statement of Changes in Financial Position for the year ended 30 June 1977

<b>General Fund</b>		
Cash overdraft, 30 June 1976 .....		\$ 26,136
Add: Member Government contributions:		
Assessments 1976/77 .....	313,658	
Transfer from Miscellaneous Fund for 1976/77 appropriations .....	54,842	
Decrease in amounts due from Member Governments .....	7,198	
Decrease in accounts receivable .....	425	
		<u>376,123</u>
		<u>349,987</u>
Deduct: Obligations liquidated:		
Unliquidated 30 June 1976 .....	15,704	
Obligations incurred .....	362,051	
		<u>377,755</u>
Unliquidated 30 June 1977 .....	21,519	
		<u>356,236</u>
Decrease in credit due to Member Governments .....	253	
Transfer to Working Capital Fund .....	6,449	
		<u>362,938</u>
Cash overdraft, 30 June 1977 .....		<u>\$ 12,951</u>

## APPENDIX 2

<b>Working Capital Fund</b>		
Balance, 30 June 1976 .....		\$ 27,244
Add: Bank interest .....	6,376	
Interest on certificates of deposit .....	1,988	
Sales of publications .....	2,716	
Surplus appropriation from General Fund .....	6,449	
		<u>17,529</u>
Balance, 30 June 1977 .....		<u>\$ 44,773</u>
<b>Miscellaneous Fund</b>		
Balance, 30 June 1976 .....		\$ 54,842
Appropriated for 1976-77 obligations .....		<u>54,842</u>
		<u>—</u>
Add: <i>Ex gratia</i> Grant — 1975 provincial income taxes .....	10,338	
Staff assessments 1976-77 .....	30,196	
Balance, 30 June 1977 .....		<u>\$ 40,534</u>

## PART 2

# Report of the Ninth Special Meeting of the International Commission for the Northwest Atlantic Fisheries, Puerto de la Cruz, Tenerife, Canary Islands, 1-9 December 1976

By the Chairman, Dr D. Booss

### 1. Introduction

At its 26th Annual Meeting, the Commission agreed to convene a Ninth Special Meeting in December 1976 to give further consideration to the future of the Commission and its potential role under extended coastal state jurisdiction. It also resolved to give further consideration to (a) conservation measures for shrimp and cod in Subarea 1, for silver hake, flounders (yellowtail, witch, and American plaice) in Subarea 4, for mackerel in Subareas 3, 4, 5, and Statistical Area 6, for herring, other finfish, and all finfish and squids in Subarea 5 and Statistical Area 6, (b) a regulatory regime, including open areas and seasons, and gear restrictions, in Subarea 5 and Statistical Area 6, (c) conservation measures for harp and hooded seals in the Convention Area, and (d) implementation of any decisions for the entire year 1977.

### 2. Time and Place of Meeting

The Ninth Special Meeting was convened at the invitation of the Spanish Government, in the Los Cedros Room of the Hotel Botanico, Tenerife, Canary Islands, from 1 to 9 December 1976 inclusive. With the resignation of the Chairman, Mr E. Gillett (UK), following the 26th Annual Meeting of the Commission, June 1976, the Vice-Chairman, Dr D. Booss, Federal Republic of Germany (FRG), presided as Chairman of the Commission. Commission agenda items were assigned and the provisional report of the Standing Committee on Research and Statistics (STACRES) was heard at the First Plenary Session. Meetings of Panels 1, 4, 5, and A (Seals), and Joint Meetings of Panels 1 to 5 considered the conservation items. The Final Plenary Session received all reports for approval.

### 3. Participants (Appendix I)

Commissioners and Advisers from all Member Countries were present. Observers from the European Economic Community (EEC), the Food and Agriculture Organization of the United Nations (FAO),

the International Commission for the Conservation of Atlantic Tunas (ICCAT), the International Council for the Exploration of the Sea (ICES), and the International Transport Workers' Federation (ITWF) were in attendance.

### 4. Opening Session

The Chairman, Dr D. Booss (FRG), welcomed the meeting participants and introduced the Deputy Minister of the Merchant Marine, Almirante Enrique Amador Franco, who addressed the Meeting, on behalf of the Government of Spain, as follows:

"Ladies and Gentlemen:

"I am deeply honoured to have this chance to welcome you all to my country on the occasion of the 9th Special Meeting of the International Commission for the Northwest Atlantic Fisheries (ICNAF) to be held in Tenerife.

"I shall try to be brief since I consider that between the Annual Meeting in June and this which I now formally open there only lies a parenthesis. No real separation exists between them and my role here must be to take up the challenge to cooperation that was then apparent and try to give it new wings.

"Not many new developments have taken place since June of this year — and when I say this, I am not forgetting the recent statement by the European Economic Community extending its jurisdiction over fisheries in the Atlantic from the 1st of January 1977. And yet this decision which has such momentous consequences for my country and also for many of those here present changes little in the final fabric of extensions of jurisdiction. It is rather a link in the chain of extensions begun by the United States and Canada in the Western Atlantic, and for that reason it does not alter the substance of the question.

"Nevertheless, the Community's decision has

brought about an unprecedented situation in last week's meeting of the NEAFC in London since, for the first time in its long history, it has not been possible to talk of the TACs or of quotas. There was even a delegate to the meeting who commented that, for the first time in his NEAFC experience, he had not been able to open either his mouth or his briefcase. The meeting was finally ended without any positive results, although it has been made abundantly clear by the Community that it is quite ready to negotiate bilaterally with all countries having an interest in the area. My country has behind it a long history of cooperation in the multilateral field, this being especially true in fisheries organizations. And this is so, even if there has been a certain lack of satisfaction on several occasions, notably in last June's Annual Meeting as regards the Spanish cod fishery in the area covered by the Commission. I am sure that, in general terms, the same can be said for all countries here present. I can see that in this forum many of the countries which have something to say and a lot to contribute to fisheries' problems at the present time, have met. That is why it seems to me to be especially important to act as the conscience of all countries present and make a special appeal to the need to reach stable solutions through international cooperation, which are simultaneously valid for non-coastal states and cover adequately the needs expressed by coastal countries. In other words, I appeal to the statemanship and negotiating ability of all delegations here present.

"It has been said many times that ICNAF is the international commission with the greatest tradition and that for that very same reason, it should serve as a model for international cooperation in matters of fisheries. I believe that by again stressing this fact I am not merely uttering empty words but referring to a substantial reality which should count at the present time. Therefore, insofar as we are capable of making cooperation among the different countries participating a reality, we shall allow the model to survive and serve as a standard of conduct capable of influencing other fisheries scenarios.

"For all these reasons, I firmly wish that this special meeting may meet success in its work. I will not dare assert that it may conclude its work: the memory of last week's experience in London is too fresh to warrant any assertions. But my country strongly believes in the usefulness of maintaining a mechanism such as ICNAF, even if this mechanism must be influenced by bilateral relations of all sorts. I would not, in any way, wish that this beautiful setting should witness the

waning of an organization such as ICNAF at the very moment that cooperation among us is most necessary.

"For all the above reasons, I again exhort all here present to exhaust their negotiating capability and, hoping to have expressed with my words the common feeling, I wish all delegations success during their work these next days. Thank you very much."

The Chairman thanked the Deputy Minister for his kind words and expressed confidence in the desire and abilities of the Members of the Commission to continue their good work.

## 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. Requests by Spain for allocation of surplus cod stocks and by Romania for an allocation of cod in Div. 2J and Div. 3KLM of Subareas 2 and 3 to be added to the Agenda were approved by the Plenary. The Agenda was adopted at the First Plenary Session.

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

STACRES met from 24 November to 2 December 1976 and again on 6 December 1976, under the chairmanship of Dr M. D. Grosslein (USA). The Report of STACRES with the reports of three *ad hoc* Working Groups as appendices is published as Part A of the *ICNAF Redbook 1977*. The Report was adopted by the Commission in Plenary Session on 9 December 1976. The major items dealt with by STACRES and its Working Groups are summarized below:

### a) Shrimp (= northern deep-water prawn) in Subarea 1

An *ad hoc* Working Group, convened by Mr E. C. Lopez-Veiga (Spain), considered conservation measures for shrimp (= northern deep-water prawn, *Pandalus borealis*) in Subarea 1 (West Greenland). Five independent estimates of the size of the fishable stock led to the conclusion that 100,000 metric tons was a reasonable minimum estimate of the offshore fishable stock size in 1976 for the whole of the West Greenland area. The Working Group recommended a total allowable catch (TAC) of 40,000 metric tons,

including discards, for 1977 and reiterated its recommendation of June 1976 that a minimum mesh size of 40 mm (stretched nylon) be adopted.

#### **b) Silver hake in Div. 4VWX of Subarea 4**

An *ad hoc* Working Group on Silver Hake, convened by Dr V. C. Anthony (USA), recommended a TAC of 70,000 metric tons for 1977, based on three assessments, as posing no threat to the spawning stock. This TAC with the increased mesh size of 60-mm manila (55-mm synthetic) to be imposed in April 1977 would exceed  $F_{0.1}$ , but the spawning stock would be expected to increase slightly. The full magnitude of the by-catch problem in fishing for silver hake with bottom trawls could not be estimated due to inadequate data. Because a major obstacle to proper assessment of this stock continued to be the lack of agreement on ageing, a workshop was recommended for early March 1977.

#### **c) Mackerel in Subareas 3 to 5 and Statistical Area 6**

An *ad hoc* Working Group, convened by Mr A. T. Pinhorn (Canada), after extensive analysis of new data on the mackerel stock including results from both research vessel surveys and commercial catch data, was unable to reach unanimous agreement on a TAC for 1977. The majority of the Working Group scientists agreed that, based on two options which represent a range of parameters based on the most up-to-date calculated estimates, the TAC in 1977 should be in the range of 105,000–133,000 metric tons. However, USSR and Bulgarian scientists objected to the use of pooled USSR and Polish age-length keys for 1976 and of bottom-trawl research vessel survey data in the assessment by the Working Group, and presented evidence for a TAC of over 183,000 metric tons for 1977.

#### **d) Future research and status of STACRES**

Following an expressed concern by some members of STACRES, because of the uncertainty about the future of coordinated research programs and the role of STACRES itself in view of the extension of fishery jurisdiction by the coastal states and the attendant uncertainties regarding the future of the Commission, STACRES again strongly endorsed the view that there be continued international cooperation in research and that STACRES and its Subcommittees could continue to be an effective forum for the formulation and conduct of research in the Northwest Atlantic.

### **7. Future of the Commission and its Potential Role Under Extended Coastal State Jurisdiction**

The Commission took note of the following

statement made by the Observer from EEC on behalf of the Member Countries of ICNAF who were members of EEC:

"Mr Chairman:

"I have asked for the floor at the start of your meeting in order to make a statement on behalf of the European Economic Community.

"Like a number of other Members of ICNAF, the member states of the Community have announced their intention to move to 200 miles with effect from 1 January 1977. You have all been informed. This means that fishing in the Community zone by third states, as from 1 January 1977, will be governed by agreements between the Community and the third states concerned. Furthermore, those agreements must be negotiated with the Community as such. The member states, in the exercise of their sovereignty, have delegated powers in this respect to the Community.

"It follows from what I have said, Mr Chairman, that the rights of access by third countries to the Community 200-mile fishery zone must be negotiated by bilateral negotiations with the Community. It will, therefore, be necessary to establish framework agreements between the Community and the third countries who wish to have access to Community waters after 1 January 1977. These framework agreements would need to be supplemented by fishing rights, specific quotas, etc. The Community recognizes and accepts the agreements of TACs and quotas for certain species which were reached during the latest meeting of ICNAF in Montreal. The Community hopes that the negotiations between it and you — I mean the interested Member Countries — negotiations which might take place within or in the margins of the ICNAF — if this organization so permits — will make it possible to find interim solutions for the outstanding problems for the coming year concerning mainly the fixing of quotas for a number of species.

"The present session also has on its Agenda the question of the future of ICNAF.

"I wish to take this opportunity not only to thank the officials and services of ICNAF for their past efforts, but to express the hope that these will continue into the future in a format appropriate to future conditions. What its future role will be is a matter which now requires to be negotiated. I am satisfied that it will be an important and useful role and the Community, which will expect to be a Member of ICNAF, will make an important contribution to it.

"It would be our hope, Mr Chairman, that other states would be prepared to discuss with the Community in order to determine what arrangements should be made for the future. The basis can thus be laid for examining the problems regarding fishery conservation and management which have been of concern to all delegations here present for so many years."

The Commission considered the Report of the Group of Experts on the Future of the Commission (*Com. Doc. 76/XII/64*). This Group of designated experts was set up with terms of reference at the June 1976 Annual Meeting (*ICNAF Annu. Rept.*, Vol. 26, 1975/76, p. 91) and met from 5 to 7 October 1976 under the chairmanship of Dr A. W. H. Needler (Canada). The Commission noted that there was general agreement in the Group concerning the need for a multilateral body which would manage the fisheries outside national fisheries jurisdictions and provide scientific advice on fisheries outside national fishery jurisdictions and inside national jurisdictions upon request, and that there should be a single convention and a single secretariat but that there were differences of opinion on the details and means of achieving them. Some advocated separate management and scientific bodies. Others of the Group advocated a single commission structure, similar to the present ICNAF. There was no concerted agreement regarding whether the present ICNAF Convention should be amended or whether a new Convention should be negotiated. In initiating general discussion on the views of the Group, the delegate of Canada expressed the following views regarding future multilateral arrangements:

"Mr Chairman:

"Much has changed since the June 1976 Annual Meeting considered an item on the future of ICNAF. There are now nine Members of the Commission that have explicitly committed themselves to extension of fisheries jurisdiction in 1977 and others may not be far behind. The future of ICNAF is no longer an academic question but a question of hard reality and pressing immediacy. Indeed, this is true in respect to the future of international fisheries cooperation in general. What is done in ICNAF — as in the past — will help to set the pattern for developments elsewhere.

"The future of ICNAF begins now. We must recognize at this Meeting that new arrangements and new structures are needed for international cooperation in respect to the Northwest Atlantic fisheries. If we are to achieve an uninterrupted transition from the old to the new arrangements and structures — as Canada continues to believe

we should — then the first steps in that transition must be taken here.

"Canada's views on the scope and structure of future multilateral cooperation in respect to the Northwest Atlantic fisheries are set out in Appendix IV to the Report of the Group of Experts established at our June Meeting. As to the question of procedure, Canada believes that the new multilateral arrangements should be developed through a conference of plenipotentiaries, to be called as early as possible next year. While it would be useful to hear the views of Commissioners on these matters, we do not consider that it would be appropriate to attempt to decide them at this meeting. The views expressed here, and the Report of the Group of Experts, will have to be considered by Contracting Governments, who will decide on the measures needed to take the matter further. Certainly, the Canadian Government will be proceeding along these lines. Here, however, we should focus on the action to be taken now to ensure an uninterrupted transition to the future multilateral arrangements: to ensure that the Commission can continue to function in 1977 in a manner consistent with the new jurisdictional realities, while work proceeds on the elaboration of long-term approaches.

"Canada has already circulated a proposal for an "interim" amendment to the ICNAF Convention, which is also on the Agenda of this meeting. That proposal would maintain the present role of the Commission in the management of fisheries in the Convention Area beyond 200 miles. In doing so, it would not prejudice the nature and form of new multilateral arrangements in respect to fisheries within coastal state jurisdiction; that is the long-term question we must address next year.

"Canada recognizes that this amendment could not be in effect in early 1977, but it is important to our delegation at least that we begin the necessary procedures here and pursue them as expeditiously as possible in the coming months.

"Mr Chairman, I want to reaffirm here Canada's commitment to give effect to ICNAF regulations in the Canadian 200-mile zone in 1977. The Canadian Minister of Fisheries stated that commitment in Montreal in the following terms:

""For 1977 Canada will determine within its 200-mile zone the conservation measures to be applied, the vessels which will be allowed to fish, and the allocations they will be allowed to take. Vessels fishing within the zone will be fishing

under Canadian permits and will be subject to Canadian enforcement procedures. This does **not** mean that Canada will ignore the results of this meeting in 1977. On the contrary, as an interim measure for 1977 only, Canada is prepared to give effect to those regulations agreed within ICNAF with Canada's concurrence, by adopting and enforcing such regulations under Canadian law. Canada, of course, may also adopt additional regulatory measures for 1977, but these too would take into account decisions within ICNAF and would be consistent with agreements reached here with Canadian concurrence.""

"Canada next year will issue licences to all ICNAF countries to permit them to take their national allocations, adopted with Canada's concurrence for stocks of the Canadian zone. For Canada, this is an important part of the smooth transition to new jurisdictional realities and future multilateral cooperation. We are grateful for the widespread understanding and support given to this approach.

Following expressions of opinion by all delegations and consideration of Canadian proposals for a short-term arrangement for and a long-term approach to future multilateral cooperation in view of pending extension of fishery jurisdictions in 1977, the Commission **adopted** by 16 affirmative votes and 2 abstentions (Japan and Portugal), the following **Proposal for Amendment of Articles I and VI of the International Convention for the Northwest Atlantic Fisheries:**

#### **The Commission**

**Having Considered** the Report of the Group of Experts on the Future of ICNAF,

**Adopts**, as an interim solution, pending further consideration of future multilateral cooperation with regard to the fishery resources of the Northwest Atlantic, the following amendments to the Convention pursuant to Article XVII of the Convention, as amended:

Paragraph 1 of Article I is amended by adding, immediately after the words "except territorial waters", the words "and other waters within national fishery limits".

Article VI of the Convention is amended by adding a new paragraph 4, as follows:

"Notwithstanding the provisions of Article I, the Commission may provide to coastal states parties to the Convention, at their request, advice

on the scientific basis for management of fisheries within national fishery limits."

and the following **Resolution (1) Regarding the Development of a Framework for Future Multilateral Cooperation, Including Appropriate Institutional Arrangements:**

#### **The Commission**

**Noting** recent and impending developments affecting international fisheries in the Northwest Atlantic;

**Having Considered** the Report of the Group of Experts on the Future of the International Commission for the Northwest Atlantic Fisheries;

**Having Adopted** amendments of an interim nature to Articles I and VI of the Convention to provide for the continued functioning of the Commission pending further consideration of future multilateral cooperation with regard to the fishery resources of the Northwest Atlantic;

**Recommends** that action be taken as soon as possible in the first half of 1977 to pursue the development of a framework for such future cooperation, including appropriate institutional arrangements.

### **8. Reports of Panels**

The Reports of Meetings of Panels 1, 4, 5, and A (Seals) and of Joint Meetings of Panels 2 and 3, 3 to 5, and 1 to 5, with proposals and recommendations concerning the conservation of the various stocks of species or species groups in the pertinent Subareas, were adopted by the Commission in Final Plenary Session on 9 December 1976.

**a) Panel A (Seals).** The Panel, under the chairmanship of Mr E. Lemche (Denmark), reviewed the Report of the Special Meeting of the Panel held at Copenhagen, Denmark, on 14 October 1976. The meeting had examined the results of work carried out on the harp and hooded seal stocks by the Scientific Advisers to the Panel at Copenhagen on 11 and 12 October 1976. The Panel, having considered a Canadian proposal based on the results of scientific assessments by the Scientific Advisers and on the decisions of the Copenhagen meeting of the Panel, **recommended**

that the Commission transmit to the Depository Government, for joint action by the Contracting

Governments, proposal (1) for international regulation of the fishery for harp and hooded seals by catch quota, season, and daily hunting times in the "Front" and "Gulf" Areas of the Convention for 1977 (Appendix III).

The Panel recognized the importance and complexity of the relationship between the harp seal and fish populations, e.g. the seal-capelin-cod complex and agreed that further study was necessary.

The Panel **took note** of a US brief requesting that the seal management program take into account scientific, cultural, and recreational values as well as economic utility.

The Panel **agreed** to meet next in the autumn of 1977.

**b) Panel 1.** The Panel, under the chairmanship of Mr A. Volkov (USSR), who acted in the absence of Mr V. M. Kamentsev (USSR), considered STACRES recommendations for shrimp (= northern deep-water prawn) in Subarea 1. The Panel examined a proposal for a minimum mesh size of 40 mm (stretched nylon) for the offshore shrimp fishery to be effective 1 January 1978, and **recommended**

that the Commission transmit to the Depositary Government, for joint action by the Contracting Governments, proposal (2) for international mesh-size regulation of the fishery for northern deep-water prawn in Subarea 1 of the Convention Area (Appendix III).

The Panel considered a STACRES recommendation for a 1977 TAC of 40,000 metric tons, including discards, for shrimp in Subarea 1 and a Danish proposal to set it at a more conservative level of 36,000 metric tons, including discards. Following considerable discussion of the TAC, its proposed breakdown by areas, and national allocation, the Panel, with Norway objecting, **recommended**

that the Commission transmit to the Depositary Government, for joint action by the Contracting Governments, a proposal for international quota regulation of the fishery for northern deep-water prawn in Subarea 1 of the Convention Area in 1977 (see proposal (10) of Appendix III).

The Panel considered the national allocation of the TAC of 31,000 metric tons for cod in Subarea 1 agreed at the 1976 Annual Meeting (*ICNAF Annu. Rept.*, Vol. 26, 1975/76, p. 92) and a Portuguese, Norwegian and Spanish proposal for special

consideration, outside a 2,000-ton allocation for "Others", for gillnetters and longliners, and, by a two-thirds majority, **recommended**

that the Commission transmit to the Depositary Government, for joint action by the Contracting Governments, a proposal for international quota regulation of the fishery for cod in Subarea 1 in 1977 (see proposal (10) of Appendix III).

**c) Panel 4.** The Panel, under the chairmanship of Mr K. Løkkegaard (Denmark), reviewed items deferred from the 1976 Annual Meeting, and considered the national allocations of 70,000 metric tons agreed for silver hake in Div. 4VWX, of 28,000 metric tons for flounders (yellowtail, witch and American plaice) in Div. 4VWX, and of 84,000 metric tons agreed for herring in Div. 4XW(b) of Subarea 4. Following negotiations, the Panel, with FRG and France objecting to the decision for herring in Div. 4XW(b), **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 silver hake and flounders (yellowtail, witch and American plaice) in Div. 4VWX, and herring in Div. 4XW(b) of Subarea 4 of the Convention Area for 1977 (see proposal (10) of Appendix III).

The Panel examined in detail a Canadian proposal for further reduction of the by-catch problem in the silver hake fishery in Div. 4VWX. In addition to the 60-mm minimum mesh-size regulation adopted for silver hake in Subarea 4 by the Commission at the 1976 Annual Meeting (*ICNAF Annu. Rept.*, Vol. 26, 1975/76, p. 93), Canada proposed to limit bottom trawling with small-mesh nets to deeper waters in the summer months when other species would not be concentrated in those areas, to establish a seasonal limit on the silver hake fishery, to conduct research fishing with observers on board to collect data on the effects of mesh-size regulations. Following discussion, the Panel **recommended**

that the Commission transmit to the Depositary Government, for joint action by the Contracting Governments, proposal (3) for international regulation of the small-mesh bottom-trawl fisheries in Div. 4VWX of Subarea 4 of the Convention Area in 1977 (Appendix III).

**d) Panels 3, 4, and 5.** The Panels, under the chairmanship of Dr D. Booss (FRG), recalled that it had not been possible to reach a solution to the question of

mackerel assessment in Subareas 3, 4, 5 and Statistical Area 6 at the 1976 Annual Meeting (*ICNAF Annu. Rept.*, Vol. 26, 1975/76, p. 96) and **noted** that STACRES had used additional 1976 catch data to provide a refined assessment and a range of TAC of 105,000 to 133,000 metric tons. However, a minority report submitted by USSR and Bulgaria gave evidence for a TAC of over 183,000 metric tons for 1977. Following lengthy discussion in which it was pointed out that two TACs one for Subareas 3 and 4 (30,000 metric tons) and another for Subarea 5 and Statistical Area 6 (75,000 metric tons) were needed because of the enforcement problem and because of the new coastal state regime in Subarea 5 and Statistical Area 6, the Panels, with USSR and Bulgaria continuing to support a higher total TAC of 180,000 metric tons and 133,000 metric tons, respectively, **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 mackerel in Subareas 3 and 4, and in Subarea 5 and Statistical Area 6 of the Convention Area for 1977 (see proposal (10) of Appendix III).

**e) Panel 5.** The Panel, under the chairmanship of Dr J. A. Storer (USA), received the Report of the *ad hoc* Working Group on a Subarea 5 Regulatory Regime which had been set up at the 1976 Annual Meeting to further evaluate the efficiency of geographic area control of fisheries in Subarea 5 and Statistical Area 6 and to discuss methods of reducing by-catch and controlling the harvest of directed fisheries. In summarizing the report, the Panel **noted** that the practice of fishery management included a multitude of elements that cover conservation, gear and fishery conflicts, and enforcement. Regulatory measures used to control fisheries operations include area and season and gear specifications. The main issue was to (1) minimize factors adversely affecting conservation, creating fishery conflicts and increasing enforcement problems, and (2) maximize the taking of TACs and the efficiency of fishing operations. By-catch was certainly one of the principal factors which prevented achievement of these objectives. The pro's and con's of permitting fishing for certain species only in specified time-area blocks with specified gear (open "window" concept) as against the closed area concept were discussed. USA and Canada maintained that the "window" concept was the best approach to a necessary further reduction of by-catch and conflicts so as to improve the conduct of the coastal fisheries in Subarea 5 and Statistical Area 6. Other members of the Group considered the "window" concept to be restrictive and impractical.

The Panel examined charts which were prepared by the various delegations to show the distribution of fishing effort for silver hake and red hakes, squid, mackerel and herring. The charts were used by the delegation of USA to apply the "window" concept in the preparation of a package of proposals constituting a regulatory regime for Subarea 5 and Statistical Area 6. Following lengthy discussion, the Panel **recommended**

that the Commission transmit to the Depositary Government, for joint action by the Contracting Governments, proposal (4) for international regulation of the fishery for silver and red hakes in Div. 5Z of Subarea 5 and Statistical Area 6 for 1977, proposal (5) for international regulation of the fishery for herring in Div. 5Z of Subarea 5 and Statistical Area 6 for 1977, proposal (6) for international regulation of the fishery for squid (*Loligo* and *Illex*) in Div. 5Z of Subarea 5 and Statistical Area 6 for 1977, proposal (7) for international regulation of the fishery for mackerel in Subarea 5 and Statistical Area 6 for 1977, proposal (8) for repeal of the fishing gear regulation in force in Subarea 5 and Statistical Area 6, and proposal (9) for re-allocation of the expected unused portion of the squid (*Loligo* and *Illex*) catch quotas in Subarea 5 and Statistical Area 6 for 1977 which might be decided at the 1977 Annual Meeting of the Commission (Appendix III).

In addition, 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 other finfish, river herring, butterfish, and all finfish and squid in Subarea 5 and Statistical Area 6 for 1977 (see proposal (10) of Appendix III).

**f) Panels 1-5.** The Panels, under the chairmanship of Dr D. Booss (FRG), gave further consideration to a Spanish proposal initiated at the 1976 Annual Meeting to change the present method of allocating the cod stocks which were surplus to the needs of the coastal states, on the basis of the species as a whole rather than stock by stock (*ICNAF Annu. Rept.*, Vol. 26 1975/76, p. 96). Arguments presented at a Joint Meeting of Panels 1-5 at the 1976 Annual Meeting for and against the proposed new principle were repeated. A practical example of the application of the 45:45:10 STACREM formula gave results so different from actual allocations for 1977 that they did not provide any solution to the problem. A further, more realistic, Spanish proposal that each Member Country transfer

1% of its cod allocation in Div. 2GH, Div. 2J-3KL, Div. 3NO, to Spain was given detailed consideration. Canada agreed to contribute 1,250 tons from Div. 2GH and 2,250 tons from Div. 2J-3KL toward the solution of the Spanish problem, providing the transfer was made on a bilateral basis without prejudice to the allocations already set for 1977 at the 1976 Annual Meeting and to future cases. As a result, Panels 2 and 3, in joint session with Panels 1, 4, and 5, **recommended** to the Commission, the following **Resolution (2) Relating to the Transfer to Spain of Quota Allocations for the Year 1977 on Certain Cod Stocks in Subareas 2 and 3 of the Convention Area:**

#### **The Commission**

**Having Considered** the request of the Spanish Commissioner for re-allocation of cod stocks in Subareas 2 and 3;

**Desiring** not to jeopardize the decisions taken in respect to these stocks at the 26th Annual Meeting;

**Having Noted** that Member Countries concerned are willing to contribute to a solution of the problems explained by the Spanish Commissioner;

**Agrees** that, in this particular situation, without any prejudice to present and future quota allocations, transfers from the quota allocations for the year 1977 on the cod stocks in Div. 2GH, 2J-3KL, and 3NO from other Member Countries to Spain would be permitted, provided that these transfers will be submitted to the Executive Secretary of ICNAF not later than 24 December 1976;

**Having Noted** that these transfers have already been submitted by the Commissioners of the following Contracting Governments:

Canada	— Div. 2GH	— 1,250 tons
	— Div. 2J-3KL	— 2,250 tons
Cuba	— Div. 2J-3KL	— 18 tons
	— Div. 3NO	— 12 tons
Denmark	— Div. 2J-3KL	— 17 tons
France	— Div. 2J-3KL	— 56 tons
	— Div. 3NO	— 3 tons
FRG	— Div. 2GH	— 116 tons
Norway	— Div. 2J-3KL	— 16 tons
UK	— Div. 2J-3KL	— 13 tons;

**Affirms** that, for the cod stocks mentioned above, the transfers would be communicated to all

Contracting Governments not later than 31 December 1976 by the Executive Secretary of the Commission in respect of all transfers submitted to him, and such transfers would come into effect on 1 January 1977 for all Contracting Governments.

**g) Panels 2 and 3.** The Panels, under the chairmanship of Mr R. H. Letaconnoux (France), considered a Romanian request for an allocation of cod in Div. 2J and 3KLM of Subareas 2 and 3 in order to provide an economically viable Romanian fishery. A proposal to have Romania fulfill her needs for 1,600 tons, in addition to the 400 tons already allocated, from the amounts reserved for "Others" in the Divisions named, was met with objection. Following informal discussion between Romania and Canada which would have extended fishery jurisdiction to 200 miles in 1977, a satisfactory arrangement for accommodating Romanian needs in 1977 was agreed.

## **9. International Quota Regulation**

The Commission **noted** the Panel Reports which contained the TACs and national allocations for 12 stocks recommended by the Panels and adopted by the Commission in Plenary Session for 1977. These TACs and allocations also constituted a proposal for the international quota regulation of the fisheries in the Convention Area and Statistical Area 6 with the June 1974 proposal (14), as amended, providing the management procedures. The Commission **agreed**

to transmit to the Depositary Government, for joint action by the Contracting Governments, proposal (10) for international quota regulation of the fisheries in the Convention Area and Statistical Area 6 (Appendix III).

The Commission **noted** Resolution (3) adopted by the June 1976 Annual Meeting (*ICNAF Annu. Rept.*, Vol. 26, 1975/76, p. 97-98) regarding the early implementation for 1977 of the decisions from the Ninth Special Commission Meeting.

## **10. Other Business**

Observers to the Ninth Special Commission Meeting from the International Transport Workers' Federation (ITWF), from the International Council for the Exploration of the Sea (ICES), and from the Food and Agriculture Organization of the United Nations (FAO) thanked the Commission for the opportunity to attend the meetings and looked forward to future cooperative efforts.

The delegate of UK addressed the Commission on behalf of the ICNAF Member Countries who were members of EEC. The statement is recorded at Appendix IV.

The Commission was advised that the Canadian Government would assist in finding accommodation for the 1977 Annual Meeting, perhaps in the Ottawa area, from 31 May to 10 June 1977 with meetings of STACRES scheduled for the preceding week.

### **11. Adjournment**

The delegate of Spain, speaking of behalf of his Government, thanked the delegates of the Member Countries for their constructive approach to the

Spanish problem. The Chairman of the Commission had warm thanks for the hospitality of the Spanish Government, for the Commission scientists, for the Secretariat and for the delegates for whom the deliberations and decisions had not been easy but had been met with understanding and a cooperative spirit. The delegate of Canada expressed the appreciation of the meeting for the efficient and effective way in which the Chairman conducted the meeting.

There being no other business, the Chairman declared the Ninth Special Meeting of the Commission adjourned at 2010 hrs, 9 December 1976.

A press notice issued by the Commission is at Appendix V.

# PART 2

## Appendix I

### List of Participants

(Head of Delegation in **bold**)

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## PART 2 Appendix II

### Agenda

1. Opening.
2. Adoption of Agenda.
3. Appointment of Rapporteur.
4. Publicity.
5. Further consideration of the future of the Commission and its potential role under extended coastal state jurisdiction (*June 1976 Mtg. Proc. 3*).
6. Further consideration of conservation measures for shrimp in Subarea 1 (*June 1976 Mtg. Proc. 5*).
7. Further consideration of conservation measures for cod in Subarea 1 (*June 1976 Mtg. Proc. 5*).
8. Further consideration of conservation measures for silver hake in Divisions 4VWX of Subarea 4 (*June 1976 Mtg. Proc. 8*).
9. Further consideration of conservation measures for flounders (yellowtail, witch, and American plaice) in Divisions 4VWX of Subarea 4 (*June 1976 Mtg. Proc. 8*).
10. Further consideration of conservation measures for herring in Divisions 4XW(b) of Subarea 4 (*June 1976 Mtg. Proc. 8*).
11. Further consideration of conservation measures for mackerel in Subareas 3, 4, 5, and Statistical Area 6 (*June 1976 Mtg. Proc. 12*).
12. Further consideration of conservation measures for herring in Division 5Z of Subarea 5 and Statistical Area 6 (*June 1976 Mtg. Proc. 9*).
13. Further consideration of conservation measures for other finfish in Subarea 5 and Statistical Area 6 (*June 1976 Mtg. Proc. 9*).
14. Further consideration of conservation measures for all finfish and squids in Subarea 5 and Statistical Area 6 (*June 1976 Mtg. Proc. 9*).
15. Further consideration of a regulatory regime for Subarea 5 and Statistical Area 6 (*June 1976 Mtg. Proc. 9*) [*Com. Doc. 76/XII/50 and 50 (Revised)*].
16. Preliminary discussion of re-allocation of the expected unused portion of the squid (*Loligo*) catch quota in Subarea 5 and Statistical Area 6 for 1977 [*June 1976 Mtg. Proc. 9, paragraph 26 (e)*].
17. Draft Report of Proceedings of the 26th Annual Meeting, June 1976.
18. Report of Panel A (Seals), 14 October 1976 (*Sum. Doc. 76/XII/47*) and 1 December 1976.
19. Report of STACRES, November 1976.
20. Report of STACFAD, December 1976.
21. Reports of Panels 1, 4, 5, and Joint Panels 3, 4, and 5, December 1976.
22. Report of Group of Experts on the Future of ICNAF, October 1976.
23. Consideration of the International Transport Workers' Federation (ITF) Resolution of 22 June 1976 on Fishing Limits (*Com. Doc. 76/XII/62*).
24. Date and Location of Future Meetings.
25. Press Statement.
26. Other Business.
  - (a) Spanish proposal for allocation of surplus cod stocks (*June 1976 Mtg. Proc. 11 and 13; Com. Doc. 76/XI/52 + Addendum; Com. Doc. 76/XII/66*).
  - (b) Romanian request for an allocation of cod in Divisions 2J + 3KLM for 1977 (*Com. Doc. 76/XII/69*).
27. Adjournment.

## PART 2

### Appendix III

# List of Conservation Proposals (1) to (10) from the Ninth Special Commission Meeting, December 1976

### (1) Proposal for International Regulation Respecting the Protection of Seals in the Convention Area

That the International Regulation Respecting the Protection of Seals in the "Gulf"<sup>1</sup> and "Front"<sup>2</sup> Areas of the Convention Area, adopted at the Eighth Special Meeting (January 1976 Meeting Proceedings No. 6, Appendix III) and entered into force on 26 August 1976, be replaced by the following:

"1. That the Contracting Governments take appropriate action to ensure that, for the year 1977 only, the total allowable catch be 170,100 harp seals, *Pagophilus groenlandica*, including a catch of 62,000 for Canada, 35,000 for Norway, and 100 unallocated, an estimate of 63,000 harp seals to be caught by indigenous fishermen of the "Front" and "Gulf" Areas, and an estimate of 10,000 harp seals to be caught by indigenous fishermen at Greenland and the Canadian Arctic.

"2. That the Contracting Governments take appropriate action to ensure that, for the year 1977 only, the total allowable catch in the "Front" Area be 15,100 hooded seals, *Cystophora cristata*, including a quota of 6,000 for Canada, 6,000 for Norway, 100 unallocated, and an aggregate amount of 3,000 to be taken by Canada and Norway after 29 March 1977.

"3. That Contracting Governments take appropriate action for the year 1977 to limit the take of age 1+ harp seals to 5 percent of catches by their large vessels and of breeding female hooded seals to 10 percent of catches by their large vessels.

"4. That the Contracting Governments take appropriate action to ensure that the open season in the "Front" Area for the taking of harp seals shall commence not earlier than 0900 hours GMT on 12 March 1977 and terminate not later than 2400 hours GMT on 24 April 1977, and for the taking of hooded seals shall commence not earlier than 1000 hours GMT on 22 March 1977 and terminate not later than 2400 hours GMT on 24 April 1977.

"5. That Contracting Governments take appropriate action to prohibit the killing of adult (harp) seals in whelping patches in the "Gulf" and "Front" Areas.

"6. That Contracting Governments take appropriate action to prohibit the killing, by vessels in the "Front" Area during the open season each day, of harp seals between the hours of 2400 GMT and 0900 GMT, and of hooded seals between the hours of 2200 GMT and 0900 GMT up to 31 March and between the hours 2400 GMT and 0900 GMT thereafter.

"7. That Contracting Governments take appropriate action to prohibit the killing of whelping hooded seals in Davis Strait from vessels of over 50 gross tons.

"8. That the Proposal for Management of the International Quota Regulations, adopted by the Commission in Plenary Session on 14 June 1974, shall not apply."

<sup>1</sup>All the waters and territories west of a straight line between the lighthouse at Amour Point on the coast of Labrador and the lighthouse on Flowers Island in Flowers Cove, Newfoundland.

<sup>2</sup>All the waters of the Strait of Belle Isle and the Atlantic Ocean east of a straight line between the lighthouse at Amour Point on the east coast of Labrador and the lighthouse on Flowers Island in Flowers Cove, Newfoundland.

**(2) Proposal for International Regulation Respecting the Fishery for Northern Deepwater Prawn (Shrimp) in Subarea 1 of the Convention Area**

"1. That Contracting Governments take appropriate action to prohibit the taking of northern deepwater prawn (shrimp), *Pandalus borealis*, in Subarea 1 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 40 mm or 1-5/8 inches measured by the ICNAF gauge specified below. These mesh sizes relate to synthetic fibre twine netting.

- (a) Mesh sizes are measured by a flat wedge-shaped gauge having a taper of 2 centimeters in 8 centimeters and a thickness of 2.3 millimeters, inserted into the meshes under a pressure or pull of 5 kilograms. The mesh size of a net shall be taken to be the average of the measurements of any series of twenty consecutive meshes, at least ten meshes from the lacings, and when measured in the codend of the net beginning at the after end and running parallel to the long axis.

"2. That Contracting Governments prohibit the use, by persons 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 meshes of the nets, provided that devices may be attached to the upper side of the codend in such a manner that they will not obstruct the meshes of the codend. Any such device, on the basis of scientific evidence, must not obstruct the meshes or reduce significantly the selectivity of the codend.

"3. That the Contracting Governments may permit any canvas netting, or other material to be attached to the underside only of the codend of a net to reduce and prevent damage.

"4. That this regulation will not enter into force for Contracting Governments until 1 January 1978 in order to provide Contracting Governments an additional period to acquire and distribute to their vessels new trawl nets that comply with the above regulation."

### (3) Proposal for the International Regulation of Small-Mesh Bottom-Trawl Fisheries in Divisions 4VWX of Subarea 4 of the Convention Area

"1. That the Contracting Governments take appropriate action to prohibit persons under their jurisdiction from using bottom trawls with a mesh size of less than 130 mm or attaching any protective device to pelagic fishing gear or employing any means which would enable a trawl with a mesh size of less than 130 mm to fish on the bottom in Divisions 4VWX of Subarea 4 of the Convention Area, except when engaging in a directed fishery for redfish and except as provided below.

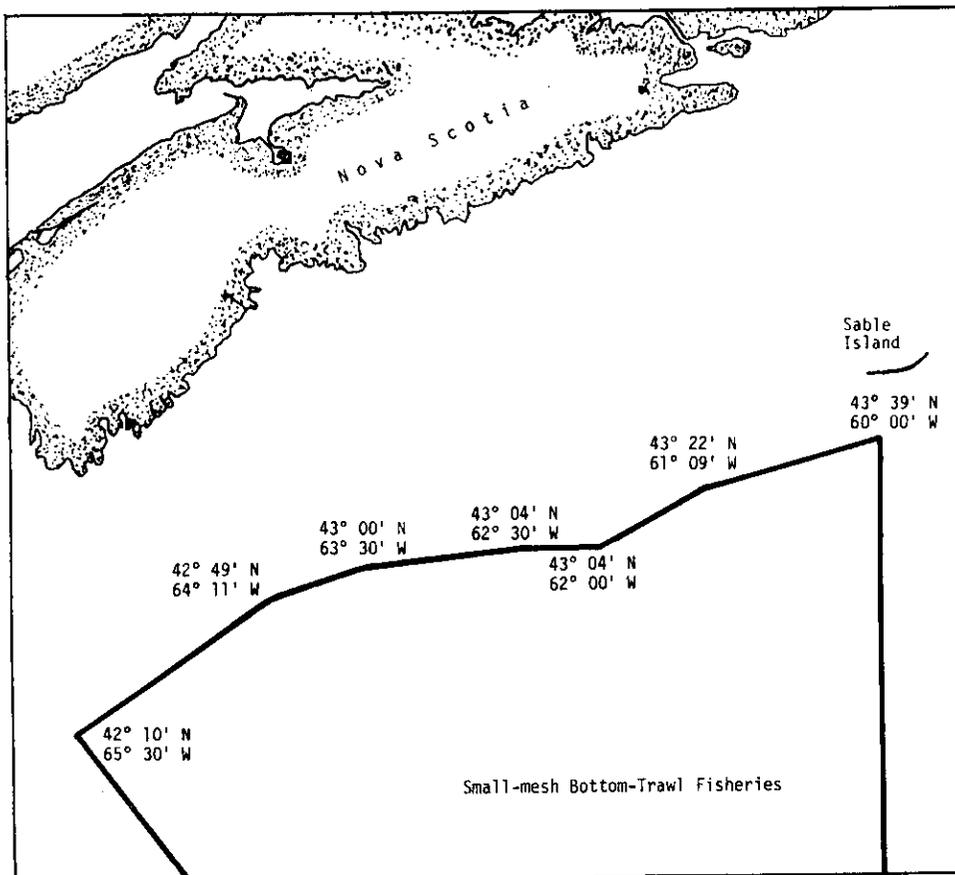
"2. That the Contracting Governments may permit persons under their jurisdiction to fish with bottom trawls of a mesh size of less than 130 mm from 15 April to 15 November in the area south and east of the line bounded by the following coordinates:

42° 10' N, 65° 30' W, with the western boundary of the area being a line extending south and east (140° true) from this coordinate;  
 42° 49' N, 64° 11' W;  
 43° 00' N, 63° 30' W;  
 43° 04' N, 62° 30' W;  
 43° 04' N, 62° 00' W;  
 43° 22' N, 61° 09' W;  
 43° 39' N, 60° 00' W, with the eastern boundary of the area being a line extending due south (180° true) from this coordinate.

"3. That the Contracting Governments having a national allocation of silver hake in Divisions 4VWX of Subarea 4 will be permitted, in accordance with an agreed research program, to have a limited number of vessels using small-mesh bottom trawls fish in any area in Divisions 4VWX, subject to other regulations in effect in the area, in order to determine areas where small-mesh bottom-trawl fisheries may be conducted without taking significant quantities of other regulated species, providing each such vessel has a technical observer on board at all times while the vessel is fishing.

"4. That nothing in this proposal shall affect the trawl mesh-size requirements in force for silver hake in Subarea 4."

Chart illustrating the area affected by Proposal (3) for the International Regulation of Small-Mesh Bottom-Trawl Fisheries in Div. 4VWX of Subarea 4 of the Convention Area.



**(4) Proposal for International Regulation of the Fishery for Silver Hake and Red Hake in Division 5Z of Subarea 5 of the Convention Area and Adjacent Waters to the West and South within Statistical Area 6**

"1. That the Contracting Governments take appropriate action to restrict fishing for hakes (silver hake and red hake) by persons under their jurisdiction fishing in Division 5Z of Subarea 5 of the Convention Area and in adjacent waters to the west and south within Statistical Area 6 to the periods and areas (coordinates connected by straight lines) specified below. Hake Area A is effective 1 January to 31 March; Hake Area B is effective 1 January to 30 April; Hake Area C is effective 1 April to 31 August.

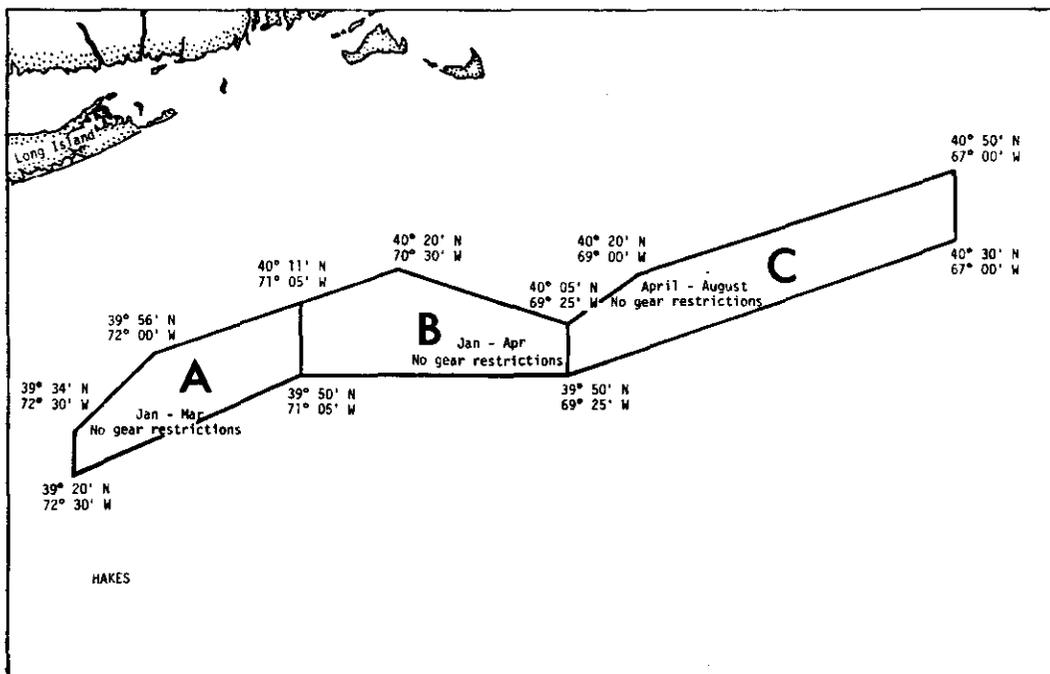
Hake Area A	Hake Area B	Hake Area C
39°20'N, 72°30'W	40°11'N, 71°05'W	40°05'N, 69°25'W
39°34'N, 72°30'W	40°20'N, 70°30'W	40°20'N, 69°00'W
39°56'N, 72°00'W	40°05'N, 69°25'W	40°50'N, 67°00'W
40°11'N, 71°05'W	39°50'N, 69°25'W	40°30'N, 67°00'W
39°50'N, 71°05'W	39°50'N, 71°05'W	39°50'N, 69°25'W

"2. That, to minimize the incidental catch of other species in the fisheries for hakes, Contracting Governments shall permit persons under their jurisdiction to have in possession on board a vessel fishing for hakes (either at sea or at the time of off-loading) species, other than those for which specific national allocations have been approved by the Commission, caught in Division 5Z of Subarea 5 or in the area adjacent to the west and south within Statistical Area 6 to which paragraph 1 above applies, in an aggregate amount not exceeding 5,510 pounds or 2,500 kilograms or 10 percent by weight, of all other fish on board, whichever is greater.

"3. That, to minimize the risk of exceeding the agreed national allocations of hakes, and in order to avoid impairment of fisheries conducted for other species which take hakes incidentally, the Contracting Governments shall limit persons under their jurisdiction fishing for other species to having in their possession on board (either at sea or at the time of off-loading) hakes other than those for which a specific national allocation has been approved by the Commission, caught in Division 5Z of Subarea 5 and in adjacent waters to the west and south within Statistical Area 6 in amounts not exceeding 1 percent by weight of all fish on board. Should it be observed during an inspection that during the first seventy-two hours of fishing after entering the fishery a vessel is taking hakes in amounts greater than that permitted, the inspector shall note this fact on the report of inspection and bring it to the attention of the master. Such observation in itself shall not be considered an infringement.

"4. That the provisions of this proposal shall not apply to vessels of the coastal states."

Chart illustrating Areas A, B, and C affected by Proposal (4) for International Regulation of the Fishery for Silver Hake and Red Hake in Div. 5Z of Subarea 5 of the Convention Area and Adjacent Waters to the West and South within Statistical Area 6.



**(5) Proposal for International Quota Regulation of the Fishery for Herring in Division 5Z of Subarea 5 of the Convention Area and Adjacent Waters to the West and South within Statistical Area 6**

"1. That the Contracting Governments take appropriate action to regulate the catch of herring, *Clupea harengus* L., by persons under their jurisdiction fishing in Division 5Z of Subarea 5 of the Convention Area and in adjacent waters to the west and south within Statistical Area 6 so that the aggregate catch of herring by persons taking such herring shall not exceed 33,000 metric tons in 1977.

"2. That Competent Authorities from each Contracting Government listed below shall limit, in 1977, the catch of herring from Division 5Z of Subarea 5 and adjacent waters to the west and south within Statistical Area 6, taken by persons under their jurisdiction, to the following amounts:

Bulgaria .....	100 metric tons
Canada .....	1,000 metric tons
Cuba .....	700 metric tons
France .....	1,000 metric tons
Federal Republic of Germany .....	4,725 metric tons
German Democratic Republic .....	4,825 metric tons
Poland .....	5,100 metric tons
Romania .....	100 metric tons
USSR .....	3,400 metric tons
USA .....	12,000 metric tons
Others .....	50 metric tons

"3. Each Contracting Government mentioned by name in paragraph 2 above shall take appropriate action to prohibit the taking of herring during 1977 by persons under its jurisdiction fishing for stocks or species in Division 5Z of Subarea 5 of the Convention Area and in adjacent waters to the west and south within Statistical Area 6 on the date which

accumulated reported catch,  
the quantity estimated to be taken before closure could be introduced, and  
the likely incidental catch of herring in all other fisheries,

equal 100 percent of the allowable catch indicated for it in paragraph 2 above.

"4. That the herring fisheries in Division 5Z of Subarea 5 of the Convention Area and in adjacent waters to the west and south within Statistical Area 6 be restricted to the period 15 August to 30 September 1977 and to an area bounded by straight lines joining the following coordinates:

42° 10'N, 69° 00'W  
42° 10'N, 68° 35'W  
41° 30'N, 68° 35'W  
41° 10'N, 69° 00'W

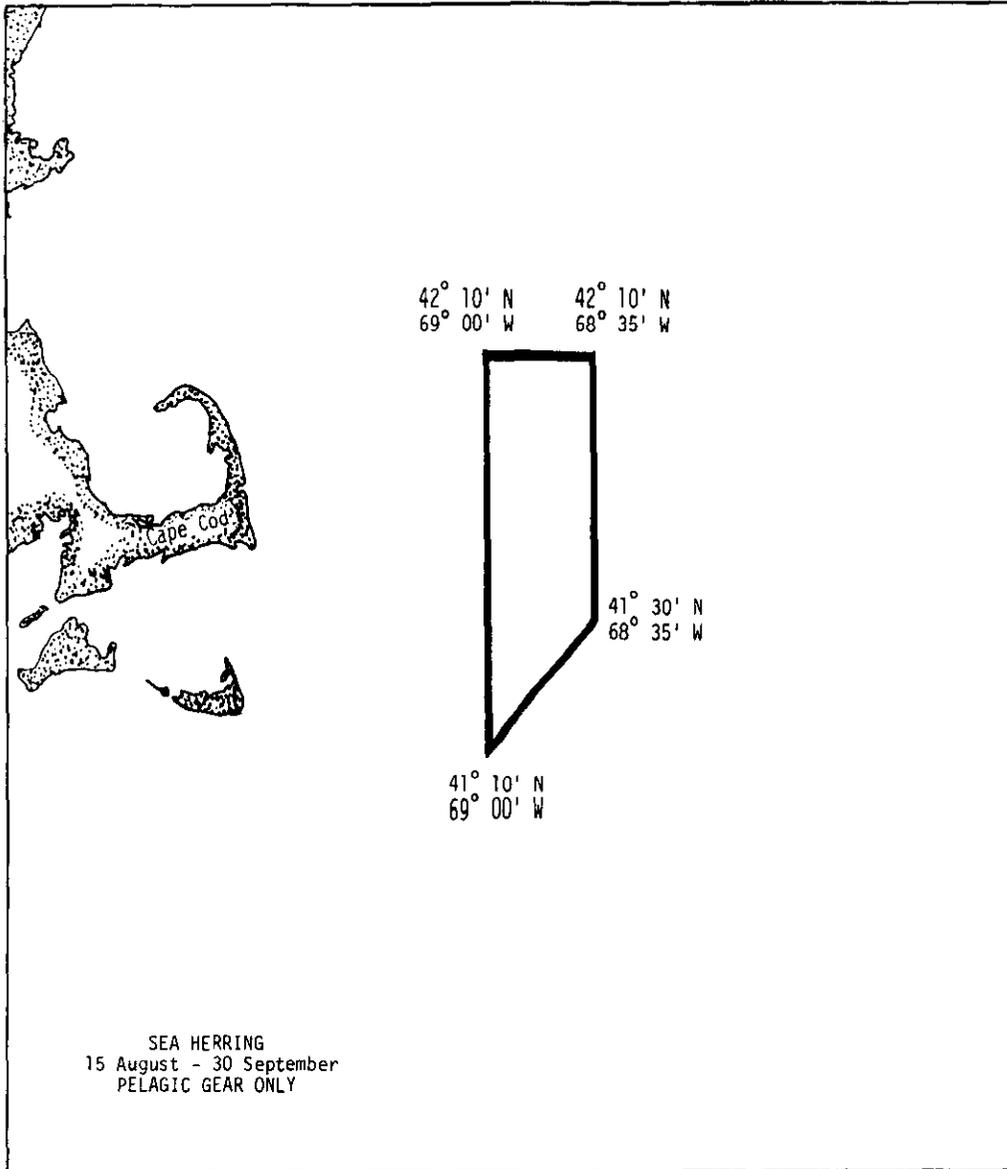
"5. That the Contracting Governments prohibit the taking of herring with fishing gear other than pelagic fishing gear (purse seines or true midwater trawls, using midwater trawl doors incapable of being fished on the bottom), and prohibit the attachment of any protective device to pelagic fishing gear or employing any means which would, in effect, make it possible to fish for demersal species in the area described in paragraph 4 above.

"6. That, to minimize the risk of exceeding the amounts listed in paragraph 2 above, and in order to avoid impairment of fisheries conducted for other species which take herring incidentally, the Contracting Governments shall limit persons under their jurisdiction fishing for other species to having in their possession on board (either at sea or at the time of off-loading) herring other than that for which a national allocation has been approved by the Commission, caught in Division 5Z of Subarea 5 and in adjacent waters to the west and south within Statistical Area 6 in amounts not exceeding 5 percent by weight of all fish on board. Should it be observed during an inspection that during the first seventy-two hours of fishing after entering the fishery a vessel is taking herring in amounts greater than that permitted, the inspector shall note this fact on the report of inspection and bring it to the attention of the master. Such observation in itself shall not be considered an infringement.

"7. That, to minimize the incidental catch in the fisheries for herring, Contracting Governments shall permit persons under their jurisdiction to have on board a vessel fishing for herring (either at sea or at the time of off-loading) species, other than those for which specific national allocations have been approved by the Commission, caught in Division 5Z of Subarea 5 of the Convention Area or in the area adjacent to the west and south in Statistical Area 6 to which paragraph 1 applies, in an aggregate amount not exceeding 1 percent by weight of all other fish on board.

"8. That the provisions of paragraphs 4, 5, 6, and 7 above shall not apply to vessels of the coastal states."

Chart illustrating the area affected by Proposal (5) for International Quota Regulation of the Fishery for Herring in Div. 5Z of Subarea 5 of the Convention Area and Adjacent Waters to the West and South within Statistical Area 6.



**(6) Proposal for International Regulation of the Fishery for Squid (*Loligo* and *Illex*)  
in Division 5Z of Subarea 5 of the Convention Area and Adjacent Waters to the  
West and South within Statistical Area 6**

"1. That the Contracting Governments take appropriate action during calendar year 1977 to restrict fishing for squid (*Loligo* and *Illex*) by persons under their jurisdiction fishing in Division 5Z of Subarea 5 of the Convention Area and in adjacent waters to the west and south within Statistical Area 6 to the periods and within the areas specified below which are bounded by straight lines:

<b>Area A - No gear restriction</b>	<b>Season</b>
37° 00'N, 74° 40'W	January; November-December
35° 30'N, 75° 00'W	
35° 30'N, 74° 30'W	
37° 00'N, 74° 10'W	
<b>Area B - No gear restriction</b>	<b>Season</b>
37° 00'N, 74° 30'W	January-February-March; 15 June-15 September; November-December
37° 00'N, 74° 10'W	
38° 00'N, 73° 20'W	
39° 40'N, 71° 20'W	
39° 40'N, 69° 00'W	
40° 02'N, 69° 00'W	
39° 55'N, 69° 25'W	
40° 04'N, 70° 58'W	
39° 55'N, 71° 20'W	
39° 50'N, 71° 20'W	
39° 20'N, 72° 20'W	
39° 25'N, 72° 25'W	
38° 00'N, 73° 53'W	
<b>Area C - No gear restriction</b>	
37° 00'N, 74° 30'W	January-March; 15 June-15 September; November-December
38° 00'N, 73° 53'W	
39° 25'N, 72° 25'W	
39° 30'N, 72° 30'W	
38° 00'N, 74° 10'W	
37° 00'N, 74° 40'W	
<b>Area D - No gear restriction</b>	<b>Season</b>
39° 20'N, 72° 20'W	January; November-December
39° 50'N, 71° 20'W	
39° 59'N, 71° 20'W	
39° 30'N, 72° 30'W	
<b>Area E - No gear restriction</b>	<b>Season</b>
39° 55'N, 71° 20'W	January-March; November-December
40° 04'N, 70° 58'W	
39° 55'N, 69° 25'W	
40° 02'N, 69° 00'W	
40° 20'N, 69° 00'W	
40° 20'N, 70° 30'W	
39° 59'N, 71° 20'W	
39° 55'N, 71° 20'W	
<b>Area F - No gear restriction</b>	<b>Season</b>
40° 15'N, 69° 00'W	January-February; 15 June-15 September; November-December
39° 40'N, 69° 00'W	
40° 20'N, 67° 00'W	
40° 45'N, 67° 00'W	

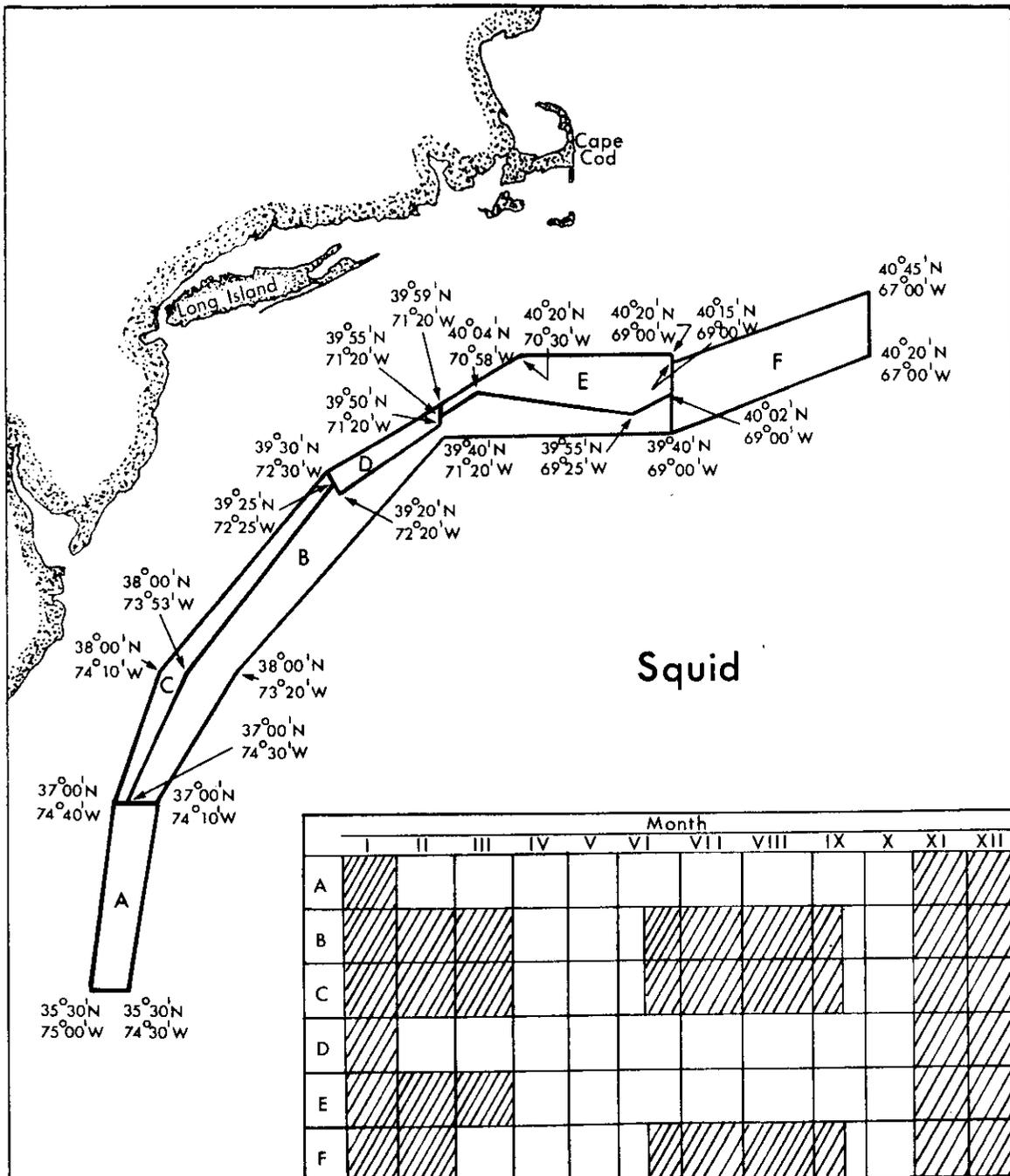
"2. That, to minimize the incidental catch in the fisheries for squid, Contracting Governments shall permit persons under their jurisdiction to have in possession on board a vessel fishing for squid (either at sea or at the time of off-loading) species, other than those for which specific national allocations have been approved by the Commission, caught in Division 5Z of Subarea 5 of the Convention Area or in the area adjacent to the west and south in Statistical Area 6 to which paragraph 1 applies, in an aggregate amount not exceeding 5,510 pounds or 2,500 kilograms or 10 percent by weight, of all other fish on board, whichever is greater.

"3. That, to minimize the risk of exceeding national allocations of squid, and in order to avoid impairment of fisheries conducted for other species which take squid incidentally, the Contracting Governments shall limit persons under their jurisdiction fishing for other

species to having in their possession on board (either at sea or at the time of off-loading) squid, other than that for which a specific national allocation has been approved by the Commission, caught in Division 5Z of Subarea 5 of the Convention Area and in adjacent waters to the west and south within Statistical Area 6 in amounts not exceeding 1 percent by weight of all fish on board. Should it be observed during an inspection that during the first seventy-two hours of fishing after entering the fishery a vessel is taking squid in amounts greater than that permitted, the inspector shall note this fact on the report of inspection and bring it to the attention of the master. Such observation in itself shall not be considered an infringement.

"4. That the provisions of paragraphs 1, 2, and 3 above shall not apply to vessels of the coastal states."

Chart illustrating Areas A, B, C, D, E, and F and seasons affected by Proposal (6) for International Regulation of the Fishery for Squid (*Loligo* and *Illex*) in Div. 5Z of Subarea 5 of the Convention Area and Adjacent Waters to the West and South within Statistical Area 6.



## (7) Proposal for International Quota Regulation of the Fishery for Mackerel in Subarea 5 of the Convention Area and Adjacent Waters to the West and South within Statistical Area 6

"1. That the Contracting Governments take appropriate action to regulate the catch of mackerel, *Scomber scombrus* L., by persons under their jurisdiction fishing in Subarea 5 of the Convention Area and in adjacent waters to the west and south within Statistical Area 6 so that the aggregate catch of mackerel by persons taking such mackerel shall not exceed 75,000 metric tons in 1977.

"2. That Competent Authorities of each Contracting Government listed below shall limit, in 1977, the catch of mackerel from Subarea 5 and adjacent waters to the west and south within Statistical Area 6, taken by persons under their jurisdiction, to the following amounts:

Bulgaria .....	4,000 metric tons
Canada .....	5,000 metric tons
Cuba .....	2,000 metric tons
Federal Republic of Germany .....	1,100 metric tons
German Democratic Republic .....	12,400 metric tons
Italy .....	300 metric tons
Poland .....	20,200 metric tons
Romania .....	1,100 metric tons
USSR .....	22,800 metric tons
USA .....	6,000 metric tons
Others .....	100 metric tons

"3. That the mackerel fisheries in Subarea 5 of the Convention Area and in adjacent waters to the west and south within Statistical Area 6 be restricted to the periods and area bounded by straight lines joining the coordinates specified below:

Area	Season
38° 05'N, 74° 20'W	January and February;
37° 30'N, 73° 45'W	October, November and December
38° 50'N, 72° 20'W	
39° 12'N, 72° 49'W	
39° 40'N, 72° 30'W	
40° 05'N, 71° 38'W	
39° 30'N, 71° 20'W	
40° 20'N, 67° 00'W	
40° 50'N, 67° 00'W	
40° 30'N, 69° 00'W	
40° 30'N, 71° 50'W	
39° 52'N, 72° 42'W	
38° 05'N, 74° 20'W	

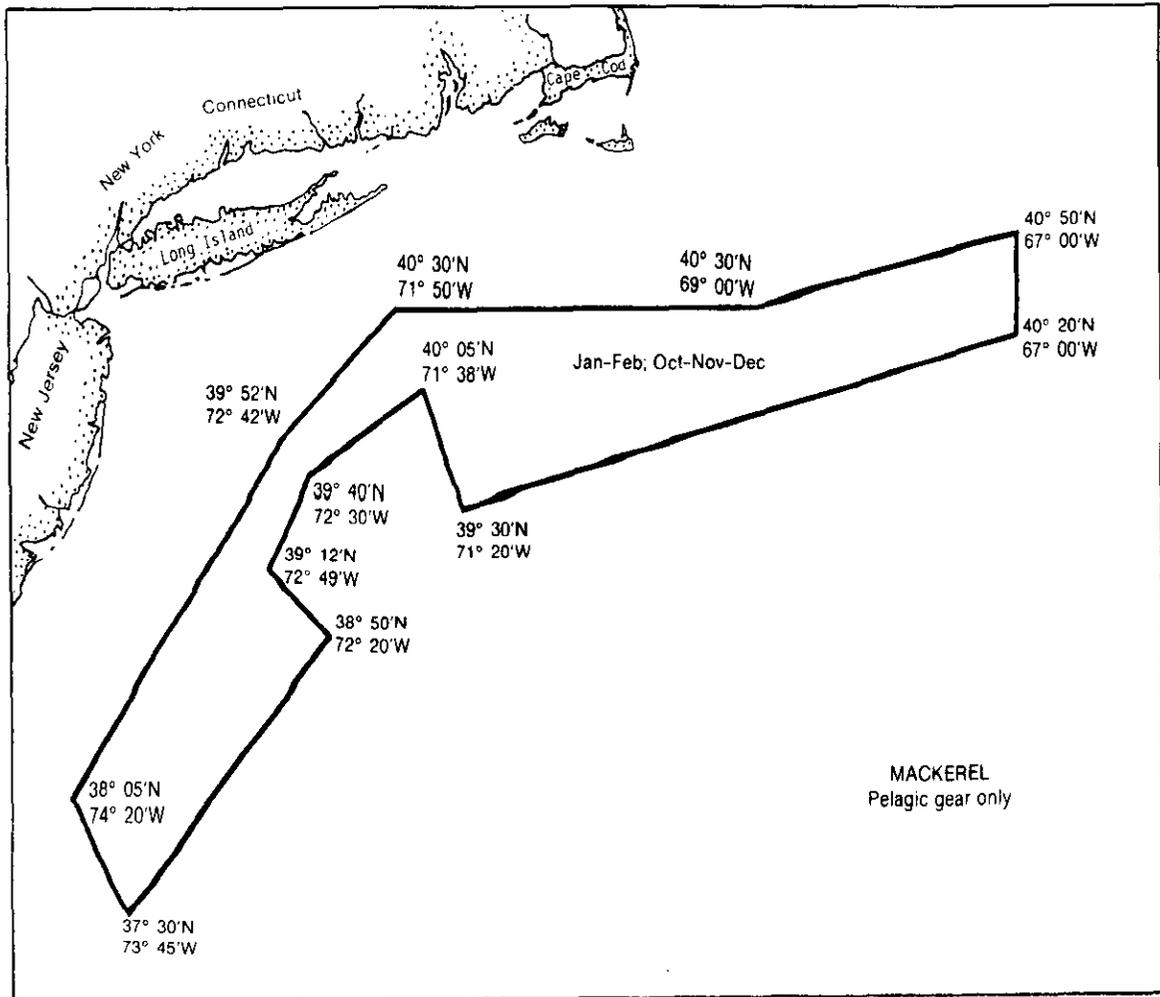
"4. That the Contracting Governments prohibit the taking of mackerel with fishing gear other than pelagic gear (purse seines or true midwater trawls, using midwater trawl doors incapable of being fished on the bottom), and prohibit the attachment of any protective device to pelagic fishing gear or employing any means which would, in effect, make it possible to fish for demersal species in the area described in paragraph 3 above.

"5. That, to minimize the risk of exceeding the amounts listed in paragraph 2 above, and in order to avoid impairment of fisheries conducted for other species which take mackerel incidentally, the Contracting Governments shall limit persons under their jurisdiction fishing for other species to having in their possession on board (either at sea or at the time of off-loading) mackerel, other than that for which specific national allocations have been approved by the Commission, caught in Subarea 5 or in adjacent waters to the west and south within Statistical Area 6 in amounts not exceeding 5 percent by weight of all fish on board. Should it be observed during an inspection that during the first seventy-two hours of fishing after entering the fishery a vessel is taking mackerel in amounts greater than that permitted, the inspector shall note this fact on the report of inspection and bring it to the attention of the master. Such observation in itself shall not be considered an infringement.

"6. That, to minimize the incidental catch in the fisheries for mackerel, Contracting Governments shall permit persons under their jurisdiction to have on board a vessel fishing for mackerel (either at sea or at the time of off-loading) species, other than those for which specific national allocations have been approved by the Commission, caught in Subarea 5 of the Convention Area or in the area adjacent to the west and south within Statistical Area 6 to which paragraph 1 above applies, in an aggregate amount not exceeding 5 percent by weight of all other fish on board.

"7. That the provisions of paragraphs 3, 4, 5, and 6 above shall not apply to vessels of the coastal states."

Chart illustrating the area and periods affected by Proposal (7) for International Quota Regulation of the Fishery for Mackerel in Subarea 5 of the Convention Area and Adjacent Waters to the West and South within Statistical Area 6.



**(8) Proposal for Repeal of Fishing Gear Regulations for Subarea 5 of the Convention Area and In Adjacent Waters to the West and South within Statistical Area 6**

"1. That proposal (2) for international regulation of fishing gear employed in the fisheries in Subarea 5 of the Convention Area and in adjacent waters to the west and south within Statistical Area 6, adopted at the September 1975 Seventh Special Commission Meeting (September 1975 Meeting Proceedings, pages 39-40) and entered into force on 14 April 1976, be repealed effective 1 January 1977."

**(9) Proposal for International Quota Regulation of the Fishery for Squid (*Loligo* and *Illex*) in Subarea 5 of the Convention Area and Adjacent Waters to the West and South within Statistical Area 6**

"That Competent Authorities from each Contracting Government shall limit in 1977 the catch of squid (*Loligo* and *Illex*) taken by persons under their jurisdiction from the stock in Subarea 5 of the Convention Area and adjacent waters to the west and south within Statistical Area 6 to the amount decided for each Contracting Government at the 1977 Annual Meeting by unanimous vote of the Contracting Governments present and voting, and if a decision to revise the catch taken by persons under their jurisdiction is taken, such amounts would become effective for each Contracting Government upon receipt of notification from the Depositary Government of the amounts decided by the Commission."

### (10) Proposal for International Quota Regulation of the Fisheries in the Convention Area and in Statistical Area 6

- That (a) the national quota allocations for 1977 of nine stocks deferred from the 1976 Annual Meeting [Proposal (8)], and
- (b) the national quota allocations for 1977 of the whole group of stocks or species (collectively) in Subarea 5 of the Convention Area and in adjacent waters to the west and south within Statistical Area 6 (excluding menhaden, tunas, billfishes, and large sharks other than dogfish),

shall be in accordance with the following table:

Table — Integral part of Proposal (10) for International Quota Regulation of the Fisheries in the Convention Area and in Statistical Area 6.

Total allowable catch (TAC) and national allocations (in metric tons) for 1977 of particular stocks or species in the Convention Area and in Statistical Area 6.

Species or stock:	Northern Deepwater Prawn (= Shrimp) <sup>1</sup>					Cod	Silver hake	Flounders <sup>5</sup>	Herring	
	1A(N69°30')	1A(S69°30') + 1B(N68°)	1B(S68°) + 1C	1DEF	1				1	4VWX
Bulgaria	—	—	—	—	—	—	950	—	—	100
Canada	—	—	—	—	—	—	14,850	26,000	82,000	1,000
Cuba	—	—	—	—	—	—	8,910	—	—	700
Denmark	4,800 <sup>2</sup>	2,400	22,600 <sup>2</sup>	2,400	29,000	29,000	—	—	—	—
France	—	—	—	—	—	—	—	250	—	1,000
Federal Republic of Germany	—	—	—	—	—	—	—	—	—	4,725
German Democratic Republic	—	—	—	—	—	—	—	—	—	4,825
Iceland	—	—	—	—	—	—	—	—	—	—
Italy	—	—	—	—	—	—	—	—	—	—
Japan	—	—	—	—	—	—	—	—	—	—
Norway	—	—	—	—	—	—	—	—	—	—
Poland	—	—	—	—	—	—	—	—	—	5,100
Portugal	—	—	—	—	—	—	—	—	—	—
Romania	—	—	—	—	—	—	—	—	—	100
Spain	—	—	—	—	—	—	—	—	—	—
USSR	—	—	—	—	—	—	44,950	1,000 <sup>7</sup>	—	3,400
UK	—	—	—	—	—	—	—	—	—	—
USA	—	—	—	—	—	—	100	500	1,000	12,000
Others	1,200 <sup>3</sup>	600	5,400 <sup>3</sup>	600	7,000	2,000	240	250 <sup>7</sup>	1,000 <sup>7</sup>	50
TAC	6,000 <sup>4</sup>	3,000	28,000 <sup>4</sup>	3,000	36,000	31,000	70,000	28,000	84,000	33,000

Table (continued)

Species or stock:	Mackerel		River herring	Butterfish	Other finfish	All finfish <sup>1,2</sup> + squids	
	3+4	5+6 <sup>10</sup>	5+6	5+6 <sup>11</sup>	5+6 <sup>11</sup>	5+6	
Bulgaria	—	4,000	—	—	2,000	6,750	<sup>1</sup> TACs and allocations pertain to offshore fishing grounds in Subarea 1, with specified catch limits in four designated regions of the Subarea. <sup>2</sup> Sum of these catches not to exceed 24,200 tons. <sup>3</sup> Sum of these catches not to exceed 5,800 tons. <sup>4</sup> Sum of these catches not to exceed 30,000 tons. <sup>5</sup> American plaice, witch and yellowtail. <sup>6</sup> Fisheries for adult herring. <sup>7</sup> For by-catch only. <sup>8</sup> (see also Proposal (5) from the Ninth Special Commission Meeting) <sup>9</sup> Includes 300 tons expected to be taken by France in Subdiv. 3Ps outside the Convention Area; remainder for by-catch only. <sup>10</sup> (see also Proposal (7) from the Ninth Special Commission Meeting) <sup>11</sup> All allocations are for by-catch only. <sup>12</sup> Excluding menhaden, tunas, billfishes, and large sharks other than dogfish.
Canada	25,000	5,000	—	100	2,500	23,000	
Cuba	—	2,000	—	—	3,000	14,950	
Denmark	—	—	—	—	—	—	
France	—	—	—	—	200	1,100	
Federal Republic of Germany	—	1,100	—	—	200	6,300	
German Democratic Republic	—	12,400	—	—	3,000	16,850	
Iceland	—	—	—	—	—	—	
Italy	—	300	—	400	900	5,000	
Japan	—	—	—	3,300	7,000	25,000	
Norway	—	—	—	—	—	—	
Poland	—	20,200	—	—	6,200	32,100	
Portugal	—	—	—	—	—	—	
Romania	—	1,100	—	—	200	1,200	
Spain	—	—	—	1,500	3,600	18,450	
USSR	—	22,800	—	—	31,100	141,250	
UK	—	—	—	—	—	—	
USA	—	6,000	9,990	12,500	62,000	228,000	
Others	5,000 <sup>9</sup>	100	10	200	100	50	
TAC	30,000	75,000	10,000	18,000	122,000	520,000	

## **PART 2**

### **Appendix IV**

# **Statement for the European Economic Community**

**By the delegate of UK**

Mr Chairman:

I would like at this concluding state of the proceedings to make a statement on behalf of the Member States of the European Economic Community.

Yesterday, the Commission adopted an interim solution, in the form of amendments to the Convention, and also recommended expedient action for future multilateral cooperation in relation to fisheries in the Northwest Atlantic.

As was said at the beginning of this Special Meeting, the Community is interested in such multilateral cooperation and expects to participate in it. I may add that the Community intends to determine its position on this matter as soon as possible and that it will take its decision in particular in the light of the outcome of the present meeting of the Commission and of subsequent action for the development of the future multilateral cooperation.

Today, Mr Chairman, the Commission has finalized all TACs, quota allocations, and other conservation measures to be applied for the year 1977. As was already announced in our statement at the Annual Meeting in Montreal in June, and elaborated in the statement made at the opening session of the present meeting, these agreements, which meet with the concurrence of Community Member States, will be implemented pursuant to the rules and regulations applicable to waters under the jurisdiction of Community Member States, as from the beginning of 1977.

These rules and regulations under the new regime have not yet been finalized. However, they will be based on existing principle, which means that the new fisheries regime is a common policy reflecting the common interests of all Member States of the Community.

As stated earlier, the acceptance of the ICNAF quotas for 1977 is a temporary solution, which is no substitute for the conclusion of bilateral agreements between the Community and third states, the conditions of which will govern their right to fish accepted quotas in 1977.

I believe, Mr Chairman, that this approach is in line with the approach adopted by other coastal states in the ICNAF Area.

# PART 2

## Appendix V

### Ninth Special Commission Meeting — December 1976

### Press Notice

1. The Ninth Special Meeting of the International Commission for the Northwest Atlantic Fisheries (ICNAF) was held at Puerto de la Cruz, Tenerife, Canary Islands, Spain, during 1–9 December 1976. About 155 representatives attended from all Member Countries as follows: Bulgaria, Canada, Cuba, Denmark, France, Federal Republic of Germany, German Democratic Republic, Iceland, Italy, Japan, Norway, Poland, Portugal, Spain, Union of Soviet Socialist Republics, United Kingdom, and United States of America. Observers were present from the European Economic Community (EEC), Food and Agriculture Organization of the United Nations (FAO), International Council for the Exploration of the Sea (ICES), International Commission for the Conservation of Atlantic Tunas (ICCAT), and International Transport Workers Federation (ITF). With the resignation of the Chairman, Mr E. Gillett (UK), following the June 1976 Annual Meeting, the Vice-Chairman, Dr D. Booss (Federal Republic of Germany) became Chairman of the Commission and presided over the Meeting.

#### Purpose of the Meeting

2. The main purpose of the Meeting was to consider a number of matters deferred from the June 1976 Annual Meeting: (a) establish total allowable catches (TACs) and national quotas for 1977 in respect of cod and shrimp stocks in Subarea 1, mackerel stocks in Subareas 3 to 5 and Statistical Area 6, herring stocks in Subareas 4 and 5 and Statistical Area 6, silver hake and flounder stocks in Subarea 4, and "other finfish" and "all finfish and squids" in Subarea 5 and Statistical Area 6; (b) consider a regulatory regime in Subarea 5 and Statistical Area 6 relating to means of reducing by-catch and controlling catches of protected species; and (c) further consideration of the future of the Commission and its potential role under extended coastal state jurisdiction. In addition, the Commission considered a Spanish proposal for allocation of surplus cod stocks, a Romanian request for an allocation of cod, and a Japanese request for preliminary consideration of the reallocation of any expected unused portion of squid quotas.

#### Scientific and Technical Advice

3. The Commission's Standing Committee on Research and Statistics (STACRES) met during 24 November to 1 December 1976 to review the state of the shrimp stocks in Subarea 1, silver hake stocks in Subarea 4 and mackerel stocks in Subareas 3 to 5 and Statistical Area 6, and submitted a comprehensive report on these subjects. In addition, meetings of the *ad hoc* Working Group on a Subarea 5 Regulatory Regime were held during 30 November to 6 December to review the fishing patterns and practices of the various Member Countries with a view to reducing by-catches by such means as open areas and seasons and gear restrictions.

#### Catch Quotas

4. The Commission agreed to total allowable catches (TACs) for 1977 in respect of several stocks in Subareas 1, 3, 4, 5, and Statistical Area 6, for which decisions were deferred to this Special Meeting (Table 1) and also agreed to the national allocations for 1977 in respect to these stocks (Table 2). The Commission further agreed on TACs and allocations for harp and hooded seals in the northern part of the Convention Area for 1977 (Table 3). The agreed catch levels, combined with new regulations limiting the take of adult harp seals and breeding female hooded seals, allow an increase in the catch of each species compared with the 1976 quotas.

The Commission favourably considered the Spanish request for an additional allocation of cod in Subareas 2 and 3 for 1977, and agreed to the possible reallocation of the 1977 squid quotas at the next Annual Meeting.

#### Management Regime in Subarea 5 and Statistical Area 6

5. The Commission further considered the US proposals from the June 1976 Annual Meeting on a regulatory regime for Subarea 5 and Statistical Area 6 that would reduce by-catches and control the catches of protected species. The Commission agreed to a regime of open areas and seasons in respect of fisheries for herring, mackerel, silver and red hakes, and squids, together with restrictions on the use of bottom trawls in certain areas and periods.

#### Future of the Commission

6. In the light of the decisions taken by the coastal states in the Northwest Atlantic to extend their jurisdiction over fisheries to 200 miles in 1977, the Commission agreed to amendments of the Convention that provide for the continued functioning of the Commission, pending further consideration of future multilateral cooperation with regard to the fishery resources of the Northwest Atlantic, and resolved that action be taken early in 1977 to develop a framework for such future cooperation, including institutional arrangements.

#### Next Annual Meeting

7. The Twenty-Seventh Annual Meeting of the Commission will be held during the latter part of May and early June 1977 in Canada. The Meeting will be preceded by meetings of the Commission's Standing Committee on Research and Statistics.

TABLE 1. Nominal catches for 1973-75 and total allowable catches (TACs) for 1975-77 for several stocks deferred from the 1976 Annual Meeting.

Species	Stock area	Catches (000 tons)			TACs (000 tons)		
		1973	1974	1975	1975	1976	1977
Cod	1	63	48	48	60	45	31
Shrimp	1 (offshore)	5	12	28	—	—	36
Silver hake	4VWX	299	96	116	120	100	70
Flounders <sup>1</sup>	4VWX	28	25	22	32	28	28
Herring	4XW(b) (adults)	91	97	95	90	89	84
	5Z+6	202	150	150	150	60	33
Mackerel	3+4	38	45	36	70	56	30
	5+6	381	295	251	285	254	75
Other finfish <sup>2</sup>	5+6	121	103	95	150 <sup>4</sup>	150 <sup>4</sup>	122
River herring	5+6	17	16	14	—	—	10
Butterfish	5+6	19	13	11	—	—	18
All finfish <sup>3</sup> and squids	5+6	1,159	942	852	850	650	520

<sup>1</sup> American plaice, witch and yellowtail.

<sup>2</sup> Excludes all TAC species and also menhaden, billfishes, tunas, and large sharks other than dogfish.

<sup>3</sup> All finfish except menhaden, billfishes, tunas, and large sharks other than dogfish.

<sup>4</sup> Includes river herring and butterfish.

TABLE 2. Total allowable catches and national allocations for 1977 of particular stocks or species which were deferred from the June 1976 Annual Meeting to this Special Commission Meeting.

Species or stock:	Northern Deepwater Prawn (= Shrimp) <sup>1</sup>					Cod	Silver hake	Flounders <sup>5</sup>	Herring	
	1A(N69°30')	1A(S69°30') + 1B(N68°)	1B(S68°) + 1C	1DEF	1				4VWX	4VWX
Bulgaria	—	—	—	—	—	—	950	—	—	100
Canada	—	—	—	—	—	—	14,850	26,000	82,000	1,000
Cuba	—	—	—	—	—	—	8,910	—	—	700
Denmark	4,800 <sup>2</sup>	2,400	22,600 <sup>2</sup>	2,400	29,000	29,000	—	—	—	—
France	—	—	—	—	—	—	—	250	—	1,000
Federal Republic of Germany	—	—	—	—	—	—	—	—	—	4,725
German Democratic Republic	—	—	—	—	—	—	—	—	—	4,825
Iceland	—	—	—	—	—	—	—	—	—	—
Italy	—	—	—	—	—	—	—	—	—	—
Japan	—	—	—	—	—	—	—	—	—	—
Norway	—	—	—	—	—	—	—	—	—	—
Poland	—	—	—	—	—	—	—	—	—	5,100
Portugal	—	—	—	—	—	—	—	—	—	—
Romania	—	—	—	—	—	—	—	—	—	100
Spain	—	—	—	—	—	—	—	—	—	—
USSR	—	—	—	—	—	—	44,950	1,000 <sup>7</sup>	—	3,400
UK	—	—	—	—	—	—	—	—	—	—
USA	—	—	—	—	—	—	100	500	1,000	12,000
Others	1,200 <sup>3</sup>	600	5,400 <sup>3</sup>	600	7,000	2,000	240	250 <sup>7</sup>	1,000 <sup>7</sup>	50
TAC	6,000 <sup>4</sup>	3,000	28,000 <sup>4</sup>	3,000	36,000	31,000	70,000	28,000	84,000	33,000

TABLE 2 (continued)

Species or stock:	Mackerel		River herring	Butterfish	Other finfish	All finfish <sup>12</sup> + squids	
	3+4	5+6 <sup>10</sup>	5+6	5+6 <sup>11</sup>	5+6 <sup>11</sup>	5+6	
Bulgaria	—	4,000	—	—	2,000	6,750	
Canada	25,000	5,000	—	100	2,500	23,000	<sup>1</sup> TACs and allocations pertain to offshore fishing grounds in Subarea 1, with specified catch limits in four designated regions of the Subarea.
Cuba	—	2,000	—	—	3,000	14,950	<sup>2</sup> Sum of these catches not to exceed 24,200 tons.
Denmark	—	—	—	—	—	—	<sup>3</sup> Sum of these catches not to exceed 5,800 tons.
France	—	—	—	—	200	1,100	<sup>4</sup> Sum of these catches not to exceed 30,000 tons.
Federal Republic of Germany	—	1,100	—	—	200	6,300	<sup>5</sup> American plaice, witch and yellowtail.
German Democratic Republic	—	12,400	—	—	3,000	16,850	<sup>6</sup> Fisheries for adult herring.
Iceland	—	—	—	—	—	—	<sup>7</sup> For by-catch only.
Italy	—	300	—	400	900	5,000	<sup>8</sup> (see also Proposal (5) from the Ninth Special Commission Meeting)
Japan	—	—	—	3,300	7,000	25,000	
Norway	—	—	—	—	—	—	<sup>9</sup> Includes 300 tons expected to be taken by France in Subdiv. 3Ps outside the Convention Area; remainder for by-catch only.
Poland	—	20,200	—	—	6,200	32,100	<sup>10</sup> (see also Proposal (7) from the Ninth Special Commission Meeting)
Portugal	—	—	—	—	—	—	
Romania	—	1,100	—	—	200	1,200	
Spain	—	—	—	1,500	3,600	18,450	
USSR	—	22,800	—	—	31,100	141,250	<sup>11</sup> All allocations are for by-catch only.
UK	—	—	—	—	—	—	<sup>12</sup> Excluding menhaden, tunas, billfishes, and large sharks other than dogfish.
USA	—	6,000	9,990	12,500	62,000	228,000	
Others	5,000 <sup>8</sup>	100	10	200	100	50	
TAC	30,000	75,000	10,000	18,000	122,000	520,000	

TABLE 3. Total allowable catches and national allocations for harp and hooded seals in the Northwest Atlantic.

	Harp seals	Hooded seals
Estimated catch in West Greenland and the Canadian Arctic	10,000	—
Norwegian vessels	35,000	6,000
Canadian vessels and landmen	125,000 <sup>1</sup>	6,000
Unallocated amount to be taken after 29 March by Canada and Norway	—	3,000
Others	100	100
TACs	170,100	15,100

<sup>1</sup> Includes an estimate of 63,000 seals to be caught by small vessels and landmen.



# PART 3

## Report of the 27th Annual Meeting of the International Commission for the Northwest Atlantic Fisheries Ottawa, Canada, 31 May-10 June 1977

### 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 17 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 extension of coastal state jurisdiction in fisheries in the Northwest Atlantic to 200 miles by Canada and the EEC Member States, also Members of ICNAF (Denmark, France, FRG, Italy, and UK), on 1 January 1977 and by USA on 1 March 1977 following the withdrawal of her membership in ICNAF on 1 January 1977, the Commission, at its Ninth Special Meeting, December 1976, adopted interim measures to accommodate the new realities. These measures were in the form of amendments to the Convention and provided, in Article I, for the exclusion from the Convention Area of "other waters within national fishery limits" and, in Article VI, for the addition of a new paragraph whereby "the Commission may provide to coastal states parties to the Convention, at their request, advice on the scientific basis for management of fisheries within national fishery limits."

The Commission also recommended that action be taken early in 1977 to develop long-term arrangements. As a result, at the invitation of the Government of Canada, representatives of ICNAF Member Countries, the USA, and the EEC met in March 1977 and discussed, in detail, a proposed new Convention drafted by Canada as a basis in treaty law for the continuation of multilateral cooperation in Northwest Atlantic fisheries within the framework of the new regime of extended coastal state jurisdiction.

### 2. Time and Place of Meeting

The 27th Annual Meeting of the Commission was convened in the Adam Room of the Chateau Laurier Hotel, Ottawa, Canada, from 31 May to 10 June 1977, under the chairmanship of Dr D. Booss (FRG). The Ninth Special Meeting of the Commission was held from 1 to 9 December 1976 at Tenerife, Canary Islands (Part 2, this volume).

The Scientific Advisers to Panel 1 met, under the chairmanship of Dr A. Schumacher (FRG), on 28 May 1977 at Ottawa, Canada, to provide advice on the conservation of cod, roundnose grenadier, Greenland halibut, and shrimp (= northern deep-water prawn) stocks in Subarea 1 and Statistical Area 0. A joint meeting of the Scientific Advisers to Panels 2, 3, and 4, under the chairmanship of Dr G. H. Winters (Canada), was held on 28 May 1977 at Ottawa, Canada, to provide advice on total allowable catches (TACs) and options for stocks in Subareas 2, 3, and 4.

STACTIC met, under the chairmanship of Mr D. R. Bollivar (Canada), on 8 June 1977 and reviewed the participation in and implementation of the Scheme of Joint International Enforcement, the Annual Returns of Inspections, Infringements and Disposition of Infringements for 1976, the notifications of vessels engaged in fisheries research and the registration of vessels engaged in fishing or the treatment of fish.

STACRES and its Subcommittees met during 24 to 30 May and on 1 June 1977 at Ottawa, Canada, under the chairmanship of Mr Sv. Aa. Horsted (Denmark) and Dr F. Nagasaki (Japan). These meetings were preceded from 19 to 27 April 1977 by a meeting of the

Assessments Subcommittee at Dartmouth, Nova Scotia, under the chairmanship of Mr A. T. Pinhorn (Canada) and from 16 to 19 May 1977 by a meeting of the Flemish Cap Working Group at Murmansk, USSR, under the chairmanship of Mr E. J. Sandeman (Canada). Workshops were held on the ageing of cod at St. John's, Newfoundland, Canada, from 31 January to 5 February 1977, and on the ageing of silver hake at St. Andrews, New Brunswick, Canada, from 14 to 18 March 1977.

From 31 May to 10 June 1977, items from the agenda for the 27th Annual Meeting were deliberated in Plenary Session or assigned to Panels or Standing Committees for study and reporting. Reports and recommendations from meetings of STACRES, STACFAD and STACTIC, and from a meeting of Panels 1 and 3 and joint meetings of Panels 2, 3, and 4, were considered for approval by the Commission in Plenary Session on 9 and 10 June 1977.

### 3. Participants (Appendix I)

Commissioners, their Advisers and Experts were present from the 17 Member Countries of the Commission. Observers attended from EEC, FAO, the International Commission for the Southeast Atlantic Fisheries (ICSEAF), and the USA. The organization and officers of the Commission for the year 1976/77 are recorded on p. 5 and 6 of this volume.

### 4. Opening Session

The Opening Session of the 27th Annual Meeting of the Commission was convened in the Adam Room of the Chateau Laurier Hotel, Ottawa, Canada, at 1020 hrs on 31 May 1977. The Chairman of the Commission, Dr D. Booss (FRG), welcomed the Commissioners, Advisers, Observers, and Guests and introduced Dr A. W. H. Needler, Head of the Canadian delegation, who addressed the meeting on behalf of the Honourable Romeo LeBlanc, Minister of Fisheries for Canada, as follows:

"On behalf of the Minister of Fisheries for Canada, who unfortunately is not able to be here today, I have the honour and pleasure to welcome you here to Ottawa for the 27th Annual Meeting of ICNAF.

"We meet in circumstances different from previous years, as this is the first meeting of the Commission when Extension of Fisheries Jurisdiction is a reality for all the Coastal States bordering the Northwest Atlantic.

"In announcing Canada's intention to extend its fisheries jurisdiction at last year's Annual Meeting, the Minister of Fisheries made clear that 1977 would be a "year of transition", during which TACs and allocations agreed within ICNAF with Canadian concurrence would be adopted by Canada. However, this approach would not be appropriate for 1978, and this means that the format for this ICNAF Meeting will be somewhat different.

"In this new situation you are here in Ottawa attending not only the ICNAF Meeting itself, but also intergovernmental consultations regarding TACs and allocations of certain stocks of the Canadian 200-mile zone. As a result of the jurisdictional changes, many of you will also be involved in the preparatory meeting to develop a new Convention regarding future multilateral cooperation in the Northwest Atlantic fisheries.

"This ICNAF meeting and the associated intergovernmental consultations then will be the first where we will be adopting international regulations for stocks beyond coastal state jurisdiction and embarking on consultations regarding total allowable catches and allocations for stocks of the Canadian 200-mile zone. Canada attaches a great deal of importance to using the occasion of the ICNAF Meeting to hold the related intergovernmental consultations, as this gives us the opportunity to consider the total picture of the fisheries in the Northwest Atlantic. It will be a challenge to us all to test this approach and make it work.

"In these meetings, the Canadian approach will be to establish TACs, on the basis of scientific information, which will permit recovery of severely depleted stocks as rapidly as possible — Such an approach will benefit not only Canadian fishermen but fishermen of other countries fishing in the Canadian zone as well, because the size of future surpluses is directly dependent on the abundance of the stock. However, in establishing the TACs, we will keep in mind the hardships that severe reduction would impose on overseas fishermen and temper our approach accordingly. The Canadian delegation will be setting forth Canadian requirements for these stocks, consistent with as precise an assessment of Canadian harvesting capacity and plans as possible. We are mindful of our obligations to make available the surplus over Canadian requirements to other countries, and we will seek the views of our partners on how such surpluses should be allocated.

"I am pleased to note, however, that even under these changed jurisdictional circumstances the scientific work of ICNAF is continued, with a Flemish Cap Workshop being held in May in Murmansk, and with the Assessments Subcommittee and STACRES continuing to provide advice to the Commission and to the Coastal States.

"I welcome you then not only to the ICNAF Meeting but for all three sets of deliberations. I wish you a success in these discussions and trust that you will have a pleasant stay in Canada's Capital."

The Chairman expressed regret that the Minister was unable to attend the meeting and asked Dr Needler to extend the Commission's thanks to the Minister for his warm welcome and good wishes for success in the forthcoming deliberations.

## 5. Agenda (Appendix II)

In accordance with the Commissions 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 on 31 May 1977.

## 6. Publicity

The Commission **agreed** that a committee consisting of the Chairman of the Commission, the Chairman of STACFAD, and the Executive Secretary should be responsible for the policy on publicity. A press release covering the major items of importance from the meeting is at Appendix IV.

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

STACFAD met on 9 June 1977 under the chairmanship of Mr E. B. Young (Canada) and considered items on its agenda and financial and administrative items assigned from the Plenary Agenda (Items 5-10 and 30). The Report of STACFAD with recommendations was presented to the Final Plenary Session on 9 June 1977.

### a) Panel memberships

Panel memberships were reviewed by STACFAD in accordance with Article IV(2) of the Convention. STACFAD **noted** that the Panels and the Commission

had approved the immediate transfer of memberships by FRG and Italy from Panel 5 to Panel 3. Panel memberships for 1977/78 total 63 and are distributed among the 17 Member Countries as follows:

Member Country	Panel					A 5(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	1951	—	1969	1974	—	1966	4
France	1953	1953	1953	1953	1974	—	5
Fed. Rep. Germany	1957	1960	1977 <sup>a</sup>	1970	—	—	4
German Dem. Rep.	—	1974	1974	—	1974	—	3
Iceland	—	1974	1976	—	—	—	2
Italy	—	—	1977 <sup>a</sup>	—	—	—	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	1951	1960	1951	—	—	—	3
Total	9	13	17	11	10	3	63

<sup>a</sup> Transferred membership from Panel 5 to Panel 3, effective 1 June 1977.

### 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 1976 (*ICNAF Annu. Rept.*, Vol. 26, 1975/76, p. 14-17);
- ii) Administrative and Financial Report for the fiscal year ending 30 June 1977 (estimated from 30 April 1977) (*Com. Doc. 77/VI/6*);
- iii) Budget estimate for the fiscal year ending 30 June 1978 (Appendix I to the 1977 STACFAD agenda);
- iv) Budget forecast for the fiscal year ending 30 June 1979 (Appendix II to the 1977 STACFAD agenda).

### c) Recommendations on finance and administration

The Commission **adopted** the following recommendations:

- i) that the Auditor's Report showing appropriations of Can \$324,000 including a deficit appropriation of \$14,000 from the Working

Capital Fund and obligations incurred of Can \$324,000 for the fiscal year ended 30 June 1976, be adopted;

- ii) that the provisional Administrative Report with the financial statements for the fiscal year ending 30 June 1977 (estimated from 30 April 1977), be adopted;
- iii) that the Commission appropriate a sum of Can \$425,000 from the Contracting Governments and from the Miscellaneous Fund to meet ordinary expenses, and Can \$5,000 from the Working Capital Fund to support a joint Symposium on the Biological Basis for Pelagic Fish Stock Management, Aberdeen, Scotland, July 1978, for the fiscal year ending 30 June 1978, the appropriations to be used for the following purposes:

1.	Personal Services	
	a) Salaries .....	\$235,000
	b) Superannuation .....	7,000
	c) Additional help .....	2,000
	d) Group medical and insurance plans .....	3,000
	e) Contingencies .....	14,000
2.	Travel .....	6,000
3.	Transportation of things .....	1,000
4.	Communications .....	25,000
5.	Publications .....	25,000
6.	Other Contractual Services .....	20,000
7.	Materials and Supplies .....	12,000
8.	Equipment .....	5,000
9.	Annual and Mid-Year Meetings .....	25,000
10.	Computer Services .....	35,000
11.	Contingencies .....	10,000
Total Ordinary Expenditures .....		\$425,000
Appropriation from Working Capital Fund to support joint internationally-sponsored Symposium on Biological Basis for Pelagic Fish Stock Management .....		\$ 5,000

- iv) that the Contracting Governments be billed by the Commission for payments due under the 1977/78 budget, in accordance with Article XI of the Convention, on 15 August 1977;
- v) that the Contracting Governments give consideration at the 1978 Annual Meeting to authorizing appropriations of Can \$470,000 for the ordinary expenditures of the Commission, for the fiscal year ending 30 June 1979, the appropriations to be used for the following purposes:

1.	Personal Services	
	a) Salaries .....	\$260,000
	b) Superannuation .....	7,000
	c) Additional help .....	2,000
	d) Group medical and insurance plans .....	3,000
	e) Contingencies .....	14,000
2.	Travel .....	6,000
3.	Transportation of Things .....	1,500
4.	Communications .....	25,000
5.	Publications .....	25,000
6.	Other Contractual Services .....	22,000
7.	Materials and Supplies .....	12,000
8.	Equipment .....	7,500
9.	Annual and Mid-Year Meetings .....	25,000
10.	Computer Services .....	40,000
11.	Contingencies .....	20,000
Total Ordinary Expenditures .....		\$470,000

- vi) that the Commission accept the kind invitation of the Government of FRG to hold its 28th Annual Meeting in Bonn, FRG, from 30 May to 6 June 1978 inclusive;
- vii) that the Commission hold its 1979 and 1980 Annual Meetings, if necessary, at Commission Headquarters, Dartmouth, Nova Scotia; and
- viii) that the Commission note the re-election of Mr E. B. Young (Canada) as Chairman of STACFAD for the year 1977/78.

## 8. Status of Commission Proposals

The Commission reviewed the status of proposals for changes in the Convention and for international fishery regulations as presented in Section 8 of Part 1 of this volume and in *Com. Doc. 77/VI/7*.

### a) Changes in the Convention

The Commission **noted** with regret that the 1973 Protocol Relating to Basic Payment for Contracting Governments, which in accordance with Convention Article VI(3) required approval by three-quarters (13) of the Contracting Governments, had, to date, only been approved by Canada, Cuba, France, FRG, GDR, and Norway. In addition, the 1976 Protocol Relating to Continued Functioning of the Commission had only been approved by Canada, Cuba, Denmark, GDR, Iceland, Norway, USSR, and UK.

### b) International fishery regulations

The Commission **noted** that the June 1969 proposal (1) from the 19th Annual Commission Meeting (*ICNAF Annu. Rept.*, Vol. 19, 1968/79, p. 28) for the prohibition of fishing for Atlantic salmon in the Convention Area was in effect for all Contracting Governments, except Denmark and FRG.

The Commission **noted** that the June 1976 proposals (1) to (8) from the 26th Annual Commission Meeting (*ICNAF Annu. Rept.*, Vol. 26, 1975/76, p. 105-118) became effective on 25 December 1976 and the December 1976 proposals (1) to (10) from the Ninth Special Commission Meeting (Appendix III of Part 2 of this volume) on 17 June 1977.

The Commission **adopted** the June 1977 proposal (1) from the 27th Annual Commission Meeting (Appendix III of Part 3 of this volume) on 10 June 1977 and transmitted it on 17 June 1977 to the Depository Government who circulated it to Contracting Governments on 24 June 1977.

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

STACRES met under the chairmanship of Mr Sv. Aa. Horsted (Denmark) and Dr F. Nagasaki (Japan), with Mr V. M. Hodder (ICNAF) as Rapporteur, at Ottawa, Canada, during 24 to 30 May and on 7 June 1977. Meetings of the Assessments Subcommittee of STACRES were held at Dartmouth, Canada, from 18 to 27 April 1977 under the chairmanship of Mr A. T. Pinhorn (Canada), and of the Flemish Cap Working Group at Murmansk, USSR, from 16 to 19 May 1977 under the chairmanship of Mr E. J. Sandeman (Canada). Workshops on the ageing of cod and silver hake were held at St. John's, Newfoundland, 31 January-5 February 1977 and at St. Andrews, New Brunswick, Canada, 14 to 18 March 1977, respectively.

The Report of STACRES, with Subcommittee and Working Group reports appended, is published at Part B of *ICNAF Redbook 1977*. The Report was adopted by the Commission in Plenary Session on 9 June 1977. Major items are summarized below:

#### a) Assessments

The Assessments Subcommittee reported

- i) that the total catch of all species in the Convention Area and Statistical Areas 0 and 6 in 1976 was about 3,450,000 metric tons, a decline from 3,800,000 metric tons in 1975. Substantial declines occurred for cod (18%) mainly in Subareas 1 and 3, for redfish (18%) mainly in Subarea 4, for silver hake (24%), for herring in Subareas 4 and 5 (28%), for mackerel (16%), and in the "other fish" category, excluding argentine and capelin (37%). Significant increases occurred in squid (24%), shrimp (19%), and the "other pelagics"

category, excluding herring and mackerel (45%) due to increased menhaden catches in Statistical Area 6. Increased catches were recorded for Statistical Area 0 and declines for Subarea 1 (8%), Subarea 2 (39%), Subarea 4 (15%), and Subarea 5 (18%).

- ii) that assessments were completed (a) for 18 stocks, for which Canada requested advice (*Com. Doc. 77/VI/4*) and which lie within or partly within its 200-mile fisheries management zone in Subareas 2 to 4, (b) for 3 stocks which overlap the Canadian and Danish fisheries zones in Statistical Area 0 and Subarea 1 and for which both coastal states requested advice, (c) for the cod stock in Subarea 1 at the request of Denmark, and (d) for the 3 regulated stocks on Flemish Cap which lie completely outside the Canadian management zone in Div. 3M;
- iii) that increases in total allowable catches (TACs) were advised for 1978 for cod in Div. 3M, redfish in Div. 3O, silver hake in Div. 4VWX, American plaice in Div. 3M, yellowtail flounder in Div. 3LNO, and Greenland halibut in Statistical Area 0 and Subarea 1. A decrease was advised for American plaice in Subarea 2 and Div. 3K, TAC options were given for cod in Subarea 1, in Div. 2J-3KL, in Div. 3NO, and for American plaice in Div. 3LNO. No TAC was advised for shrimp in Subarea 1. The TACs for the other stocks remained as for 1977;
- iv) that the international herring tagging program had tagged about 23,000 herring in Subdiv. 5Ze near the boundary line with Subdiv. 5Zw during the first half of May 1977.

#### b) Statistics and sampling

The Statistics and Sampling Subcommittee reported

- i) that the late reporting of statistical data continued to affect the timely compilation of statistical reports for use by the Subcommittees and Working Groups;
- ii) that, with recent implementation of coastal state jurisdiction and its catch and effort requirements for assessments and management purposes, and the possibility of duplication, countries **not** be required to report catch and effort by 30' x 30' unit areas

and twice-monthly periods for 1976 and 1977 data;

- iii) that the Secretariat would circulate guidelines for improved statistics on discards; and
- iv) that countries make every effort to improve on their collection and reporting of sampling data.

### c) Biological surveys

The Biological Surveys Subcommittee reported

- i) that drafts of most of the sections of the Manual for Groundfish Surveys had been received and were under review; and
- ii) that a systematic review of the precision of survey results to date would be undertaken in advance of the 1978 Annual Meeting of STACRES.

### d) Environmental studies

The Environmental Subcommittee reported

- i) that, following an appraisal by a Working Group at Murmansk, USSR, during 16 to 19 May 1977 under the chairmanship of Dr K. G. Konstantinov (USSR), a coordinated international research project would be launched to study the factors determining year-class success for Flemish Cap (Div. 3M) groundfish, particularly cod and redfish, with Mr R. Wells (Canada) as Task Force Leader of a planning group of national representatives;
- ii) that a form for providing an inventory of oceanographic station data would be adopted, completed by each country and submitted to the Canadian Marine Environmental Data Service (MEDS), Ottawa, Canada; and
- iii) that the standard oceanographic stations adopted for the Northwest Atlantic will be published for wide distribution in one of the ICNAF publications.

### e) Ageing techniques

The Workshop on Ageing of Silver Hake reported

- i) that a further workshop would be convened by Mr J. J. Hunt (Canada) during the first quarter of 1978; and

- ii) that a set of guidelines for cod otolith interpretation would be developed under the leadership of Mr R. Wells (Canada), with other interested experts, for review at the 1978 Annual Meeting.

### f) Other matters

STACRES recommended

- i) that the Commission co-sponsor the Symposium on the Biological Basis of Pelagic Fish Stock Management with Dr D. Iles (Canada) representing the Commission on the planning group;
- ii) STACRES noted that the extension of jurisdiction by the coastal states, the withdrawal of USA from the Commission, and proposed amendments to the Convention seem to have resulted in reducing the amount of general scientific information presented in research documents to the 1977 meetings by about one-half. STACRES pointed out that, since no fish stocks are completely biologically isolated from other stocks or organisms in the water, there is a need for good scientific coverage of all aspects of the marine life, its environment and exploitation by man in order to ensure the maintenance and improvement of the scientific basis for fisheries management in the Northwest Atlantic;
- iii) STACRES expressed appreciation to Mr Sv. Aa. Horsted (Denmark) and Dr F. Nagasaki (Japan) for agreeing to preside over the STACRES meetings in place of Dr M. D. Grosslein (USA) who resigned as Chairman of STACRES on the withdrawal of USA from the Commission on 31 December 1976; and
- iv) STACRES welcomed the incoming Chairman, Dr A. W. May (Canada).

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

STACTIC met under the chairmanship of Mr D. R. Bollivar (Canada) on 8 June 1977 to review the status of the implementation of the Scheme of Joint International Enforcement and the Annual Returns of Inspections, Infringements and Disposition of Infringements for 1976. The Report of STACTIC was presented for adoption at the Commission's Final Plenary Session on 9 June 1977. Major items are

summarized as follows:

STACTIC reported

- i) that all Member Countries were ready to be inspected but that Denmark, Iceland, Italy, Portugal, and Romania had not yet indicated their readiness to carry out inspections at sea under the Scheme;
- ii) that Romania was withdrawing her reservation to the Scheme;
- iii) that Canada expects to begin the transfer of inspectors by helicopter hoist within 6 months and that all countries should ensure that vessel masters were fully knowledgeable about the procedures under the Scheme;
- iv) that a working group consisting of membership from Canada, Cuba, Denmark, France, FRG, GDR, Norway, and Portugal meet before the 1978 Annual Meeting to consider proposals for improvements which would make the Scheme more applicable by the proposed new Northwest Atlantic fisheries organization; and
- v) that, in agreement with the recommendation of STACRES, the report on trawl material and mesh size sampling be discontinued.

## 11. Future of the Commission and its Potential Role under Extended Coastal State Jurisdiction

### a) Arrangements for establishing 1978 quotas

The Commission, in Plenary Session, gave careful consideration to the short-term arrangements necessary to set TACs and allocations for regulated stocks of species in the Northwest Atlantic for 1978 in the light of the extension of jurisdiction over fisheries to 200 miles by the coastal states, Canada, Denmark, France, and USA. The Commission **agreed** that catch quotas for 1978 for the three stocks completely outside the Canadian national fishery limits (ICNAF Div. 3M = Flemish Cap) would be set by the Commission on the recommendation of Panel 3. For those stocks overlapping and those completely inside the Canadian fishery limits, the Commission **noted** that Canada, proceeding as if the December 1976 amendments to Articles I and VI were in effect, had requested and received advice from STACRES on management for about 19 of these stocks. The Commission accepted a Canadian proposal to consider the TACs and allocations for these stocks at informal inter-governmental consultations convened by Canada

during the period of the ICNAF Annual Meeting and to have the results of the consultations referred to a joint meeting of Panels 2, 3, and 4 for information in the case of the results for those stocks completely inside and for recommendation for adoption by the Commission for those stocks overlapping in order to avoid any possible legal difficulties over the conflict of Canadian domestic and ICNAF laws. The Commission further **agreed** that conservation measures for stocks of common concern in Subarea 1 and Statistical Area 0 would be considered in bilateral negotiations between Canada and Denmark, thus eliminating the need for a meeting of Panel 1.

### b) Arrangements for implementing 1978 quotas

The Commission, in further consideration of the need for arrangements for 1978, **took note** of the following statement by the Observer from EEC:

"Mr Chairman:

"The delegation of the European Economic Community would like to make a statement, outlining the Community's approach to the work of this meeting in the light of its common fisheries policy.

"As the spokesman for the Community pointed out at the Special Meeting of the Commission in December 1976, the Member States of the European Economic Community have delegated to the Community powers in respect of external relations in fisheries matters.

"In exercising these competences the Community wishes to take an active part in multilateral cooperation for the conservation of fishery resources in waters outside the 200-mile zones.

"The Community intends in this context to participate in regional fishery organizations, acting as a single coastal state.

"It follows that the present situation in which the Community as such is not a Contracting Party to ICNAF is unsatisfactory and the Community, therefore, wishes that the successor organization to ICNAF becomes a reality as soon as possible.

"However, we realize that the new Convention cannot enter into force from 1 January 1978 and that it is, therefore, desirable that transitional arrangements be adopted. Such arrangements should take into account the existence of the common fisheries policy of the Community.

"If the problems of transition are to be solved by

the establishment now of quotas, within the framework of ICNAF, for the entire year 1978, the Community is prepared to accept this solution on the condition that, where applicable, one single quota is set for the Community.

"The Community would reserve the right to determine the allocation of this overall quota between its Member States."

Following considerable discussion of the EEC's request for a global quota for 1978 consisting of the combined quotas for EEC Member States who were also Members of ICNAF [Denmark (except the Faroe Islands), France, FRG, Italy, and UK], a Working Group on Quota Implementation, consisting of representation from Canada, Portugal, USSR, and the EEC Observer group, reported reaching a reluctant consensus to group the five EEC Member States together in the table of catch quotas for 1978 (see Appendix III) with an asterisk after each one and a footnote to the asterisk reading as follows:

"The allocation among these Contracting Governments of the sum of the quantities attributed to them in this table may be changed by them, subject to notification to the Commission not later than 1 October 1977, and, where applicable, subject to the concurrence of the coastal state in respect of the area in which it exercises national fisheries jurisdiction, without prejudice to the exercise of its licensing authority. The quantities attributed to Denmark in respect of cod in Divisions 2J, 3K, and 3L, and Division 3M are not included in the aforementioned sum and are not subject to change."

The Commission further **agreed** that proposal (14) from the June 1974 Annual Meeting, as amended at the June 1975 and January 1976 Meetings of the Commission, for management of international quota regulation (*Com. Doc. 77/VI/1*, p. 11-13) would apply to all Subarea 2, 3, and 4 stocks for which 1978 catch quotas were recommended in Panels 2, 3, and 4.

### **c) Arrangements for transition to proposed new multilateral organization**

The Commission reviewed the reports of preparatory conferences on future multilateral cooperation in the Northwest Atlantic fisheries held in March 1977 (*Com. Doc. 77/VI/11*) and in June 1977 (*Com. Doc. 77/VI/14*). In considering the arrangements necessary for a smooth transition from ICNAF to the proposed new multilateral organization, the Commission **agreed** with the Preparatory

Conference's working groups on transitional arrangements that no action need be taken by ICNAF with regard to the transfer of ICNAF assets and the financial discharge of its obligations prior to its termination until the new multilateral convention was adopted.

In further consideration of transitional arrangements, the Commission **agreed** that the following draft of a Resolution, prepared by the Working Group on Transitional Arrangements, to amend the Convention, should be considered for adoption, pursuant to Article XVII of the Convention, at a Special Commission Meeting to be held following the meeting of a Diplomatic Conference on Future Multilateral Cooperation in the Northwest Atlantic Fisheries in Ottawa in October of 1977:

#### **The Commission**

**Noting** the results of the recently concluded (Diplomatic Conference on Future Multilateral Cooperation in the Northwest Atlantic Fisheries, held in Ottawa, October — to October —);

**Desirous** of effecting an orderly transition from ICNAF to the proposed (NAFCO);

**Adopts** the following amendment to the International Convention for the Northwest Atlantic Fisheries pursuant to Article XVII of that Convention, as amended:

"Article XVIII is renumbered Article XIX, and a new Article XVIII is inserted to read as follows:

#### Article XVIII

1. This Convention shall terminate 31 December of the year the (name of NAFCO Convention) entered into force.
2. Following the entry into force of the (name of NAFCO Convention), the Commission shall not adopt any proposal under Article VIII."

## **12. Reports of Panels**

As agreed by the Commission in Plenary Session, the joint meeting of Panels 2, 3, and 4 presented a report, with proposals on conservation measures for the 19 stocks in Subareas 2, 3, and 4 (all stocks in *Com. Doc. 77/VI/4*, except silver hake and squid) which had been discussed in the Informal Intergovernmental

Consultations convened by Canada on 4 and 5 June 1977. A meeting of Panel 3 presented a report, with proposals on conservation measures for the three stocks outside the Canadian national fishery limit in Div. 3M (Flemish Cap). The Reports with recommendations were adopted by the Commission in Final Plenary Session on 9 and 10 June 1977. Spain and Portugal recorded reservations to the TAC and allocations for the cod stock in Div. 2J-3KL. Spain voted against and Portugal abstained from voting on the TAC and allocations for the cod stock in Div. 3NO.

**a) Panels 2, 3, and 4.** The Panels, under the chairmanship of Mr R. H. Letaconnoux (France), reviewed a table of TACs and national allocations for the 19 stocks inside and overlapping the 200-mile line for which Canada had requested advice for management and which had resulted from Informal Intergovernmental Consultations convened by Canada on 2, 3, and 7 June. The Panels **noted** that further projections of catch and biomass had been provided by STACRES on request to the Informal Intergovernmental Consultations in order that agreement could be reached on the TAC and national allocation for the cod stock in Div. 2J-3KL. The STACRES Report containing the further projections (*ICNAF Redbook 1977*, Part B, p. 37-40) was **unanimously agreed** by the Panels. The Panels **took note** that those TACs and allocations adopted by the Panels, with Canadian concurrence, would be adopted in Canadian regulations and that Canada would assure the countries involved of an opportunity to fish for those allocations by providing licensing and access where required within her fishery limits. After considerable discussion, proposals for reconsideration of the TAC of 135,000 metric tons for the cod stocks in Div. 2J-3KL and 15,000 metric tons in Div. 3NO were declared unacceptable to Canada. In view of the Canadian declaration, and of the December 1976 amendments to the Convention, as well as the extension of fisheries jurisdiction by Canada to 200 miles, Panels 2, 3, and 4, in joint session, with Portugal and Spain recording their reservations to the TAC and its allocation for the cod stock in Div. 2J-3KL and with Portugal abstaining and Spain voting against the TAC and its allocation for the cod stock 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 Div. 2GH, in Div. 2J-3KL, and in Div. 3NO; for redfish in Subarea 2 and Div. 3K, in Div. 3LN, and in Div. 3O; for American plaice in Subarea 2 and Div. 3K, and in Div. 3LNO; for witch in Div. 2J-3KL, and in Div. 3NO; for yellowtail in Div. 3LNO; for Greenland

halibut in Subarea 2 and Div. 3KL; for roundnose grenadier in Subareas 2 and 3; for capelin in Subarea 2 and Div. 3K, and in Div. 3LNOPs (Div. 3L, 3NO, and Subdiv. 3Ps); and for argentine in Div. 4VWX for 1978 (see proposal (1) in Appendix III).

**b) Panel 3.** The Panel, under the chairmanship of Mr R. H. Letaconnoux (France) **agreed** to accept immediate transfer of Panel membership from Panel 5 to Panel 3 by FRG and Italy. The Panel accepted the recommendations of STACRES for TACs for 1978 for cod, redfish and American plaice stocks which were entirely outside Canadian extended fishery jurisdiction in Div. 3M (Flemish Cap). The Panel **unanimously 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 Div. 3M of Subarea 3 for 1978 (see proposal (1) in Appendix III).

### 13. International Quota Regulation

The Commission **noted** that the reports of the joint meetings of Panels 2, 3, and 4 and a meeting of Panel 3 recommended TACs and national allocations for 1978 in respect of a combined total of 22 stocks which would, if combined in a single table, comprise a proposal for international quota regulation of the fisheries in Subareas 2, 3, and 4 of the Convention Area. Therefore, the Commission, taking into account the decision of the Commission to group the five EEC Member States in the proposed table of quotas (see Section 11 above), **agreed**

to transmit to the Depositary Government, for joint action by the Contracting Governments, proposal (1) for international quota regulation of the fisheries in Subareas 2, 3, and 4 of the Convention Area for 1978 (Appendix III).

### 14. Other Business

The Commission **agreed** to the need for a STACRES meeting to be held in November or December of 1977 which would provide advice to the Commission on the scientific basis for management of the shrimp stocks in Subarea 1 and Statistical Area 0 and of the seal fisheries within national fishery limits in Subareas 1, 2, 3, and 4 and Statistical Area 0 for 1978.

The Commission accepted the kind invitation of

the Government of FRG to hold the 1978 Annual Commission Meeting in Bonn, FRG, from 30 May to 6 June 1978, the period to include Informal Inter-governmental Consultations convened by Canada and to be preceded by meetings of STACRES and its Sub-committees and STACTIC beginning 18 May 1978.

The Commission **noted** that the suggestions made to the Second Preparatory Conference on Future Multilateral Cooperation in the Northwest Atlantic Fisheries, held 6, 7, and 10 June 1977, would be considered in detail at a Diplomatic Conference convened by Canada, in Ottawa, 11-21 October 1977, to accept a new Convention which would replace the International Convention for the Northwest Atlantic Fisheries.

#### **15. Election of Chairman and Vice-Chairman**

The Commission **agreed** unanimously that Dr D. Booss (FRG) serve as Chairman and Mr S. Ohkuchi (Japan) as Vice-Chairman of the Commission for the

period 1977/78 and 1978/79.

#### **16. Acknowledgements and Adjournment**

The delegate of Canada expressed Canada's gratitude for the parts played by all participants in the continued international cooperation in accepting more restrictive measures which would seem to have resulted in signs of a good effect, e.g. STACRES projections for the cod stock in Div. 2J-3KL. He noted that ICNAF has been an effective, imaginative, innovative body and hoped these attributes would continue under the new multilateral arrangements under discussion.

The Chairman of the Commission thanked all for their contribution to the successful conclusion of a very difficult meeting.

There being no other business, the 27th Annual Meeting of the Commission was declared adjourned at 1040 hrs, 10 June 1977.

# PART 3

## Appendix I

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(Head of Delegation in **bold**)

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## PART 3

### Appendix II

### Agenda

1. Opening.
2. Agenda.
3. Publicity.
4. Approval of draft report of Proceedings of Ninth Special Commission Meeting (*Sum. Doc. 77/VI/2*).
5. Panel Memberships (*Com. Doc. 77/VI/5*).
6. Administrative Report (*Com. Doc. 77/VI/6*).
7. Auditor's Report, 1975/76.
8. Financial Statement, 1976/77.
9. Budget Estimate, 1977/78 (*Appendix I to STACFAD Agenda*).
10. Budget Forecast, 1978/79 (*Appendix II to STACFAD Agenda*).
11. Status of proposals adopted by the Commission (*Com. Doc. 77/VI/7*)
  - (a) for changes in the Convention;
  - (b) for regulation of fisheries.
12. Annual Returns of Infringements (*Com. Doc. 77/VI/9*).
13. Scheme of Joint International Enforcement (*Com. Doc. 77/VI/8*).
14. Research vessel notification and fishing vessel registration (*Com. Doc. 77/VI/10*).
15. Discussion of the future of the Commission and its potential role under extended coastal state jurisdiction (*Com. Doc. 77/VI/11*).
16. Conservation of cod stocks in Subareas 1, 2, and 3.
17. Conservation of redfish stocks in Subareas 2 and 3.
18. Conservation of silver hake stocks in Subarea 4.
19. Conservation of American plaice stocks in Subareas 2 and 3.
20. Conservation of witch flounder stocks in Subareas 2 and 3.
21. Conservation of yellowtail flounder stocks in Subarea 3.
22. Conservation of Greenland halibut stocks in Statistical Area 0 and Subareas 1, 2, and 3.
23. Conservation of roundnose grenadier stocks in Statistical Area 0 and Subareas 1, 2, and 3.
24. Conservation of argentine stock in Subarea 4.
25. Conservation of capelin stocks in Subareas 2 and 3.
26. Conservation of squid (*Illex*) stock in Subareas 3 and 4.
27. Conservation of northern deepwater prawn in Subarea 1.
28. Conservation of Atlantic salmon in the Convention Area.
29. Report of Standing Committee on Research and Statistics (STACRES).
30. Report of Standing Committee on Finance and Administration (STACFAD).
31. Report of Standing Committee on International Control (STACTIC).
32. Reports of Panels 1 and 3, and other Panels, if necessary.
33. Election of Chairman and Vice-Chairman for 1977/78 and 1978/79.
34. Date and location of 1978, 1979, and 1980 Annual Meetings.
35. Press Statement.
36. Other Business.
37. Adjournment.

# PART 3

## Appendix III

### Conservation Proposal (1) from the Annual Meeting, June 1977

#### (1) Proposal for International Quota Regulation of the Fisheries in Subareas 2, 3, and 4 of the Convention Area

That the total allowable catch and national quota allocations for 1978 of particular stocks or species in Subareas 2, 3, and 4 of the Convention Area shall be in accordance with the following table:

Table — Integral part of Proposal (1) for International Quota Regulation of the Fisheries in Subareas 2, 3, and 4 of the Convention Area.

Species or stock:	Cod				Redfish				American plaice			Yellowtail
	2GH	2J+3KL	3M	3NO	2+3K	3M	3LN	3O	2+3K	3M	3LNO	3LNO
Bulgaria	—	—	—	—	—	—	—	—	—	—	—	—
Canada	3,000	100,000	2,100	4,000	25,000	4,400	8,000	15,000	5,500	500	44,800	14,200
Cuba	—	700	1,900	625	270	1,400	1,150	310	—	—	—	—
German Democratic Republic	900	1,950	—	—	450	—	425	—	—	—	—	—
Iceland	—	—	—	—	—	—	—	—	—	—	—	—
Japan	—	—	—	—	—	—	—	—	—	—	—	—
Norway	800	630	1,330	—	—	—	—	—	—	—	—	—
Poland	4,000	2,890	1,460	—	710	—	—	—	—	—	—	—
Portugal	2,900	8,210	10,000	810	450	500	425	—	—	500	—	—
Romania	400	—	—	—	—	—	—	—	—	—	—	—
Spain	450	6,330	2,090	5,730	—	—	—	—	—	—	—	—
USSR	2,300	7,350	4,940	3,180	2,690	9,200	5,900	4,630	450	2,000	1,000	—
Denmark <sup>1</sup>	—	660	6,840	—	—	—	—	—	—	—	—	—
France <sup>1</sup>	(450)	(2,190)	(6,650)	(155)	—	—	—	—	—	—	(700)	(300)
Federal Republic of Germany <sup>1</sup>	(3,600)	(3,120)	(500)	—	—	—	—	—	—	—	—	—
Italy <sup>1</sup>	—	—	—	—	—	—	—	—	—	—	—	—
UK <sup>1</sup>	(700)	(520)	(2,090)	—	—	—	—	—	—	—	—	—
Others	500	450	100	500	430	500	100	60	50	1,000	500	500
TACs	20,000	135,000	40,000	15,000	30,000	16,000	16,000	20,000	6,000	4,000	47,000	15,000

Table (continued)

Species or stock:	Witch		Greenland halibut	Roundnose grenadier	Capelin					Argentina
	2J+3KL	3NO	2+3KL	2+3	2+3K	3LNOPs	3L	3NO	3Ps	4VWX
Bulgaria	—	—	—	—	—	—	—	—	—	—
Canada	9,000	7,000	15,000	2,000	15,000	70,000	23,760 <sup>3</sup>	37,240	9,000 <sup>3</sup>	2,000
Cuba	—	—	—	—	—	—	—	—	—	1,820
German Democratic Republic	300	—	1,850	4,250	—	—	—	—	—	—
Iceland	—	—	—	—	—	—	—	—	—	—
Japan	—	—	—	—	—	—	—	—	—	4,030
Norway	—	—	—	—	—	45,910	4,920 <sup>3</sup>	40,990	—	—
Poland	3,500	—	5,290	—	—	—	—	—	—	—
Portugal	—	—	—	—	—	—	—	—	—	—
Romania	—	—	—	—	—	—	—	—	—	—
Spain	—	—	—	—	—	—	—	—	—	—
USSR	3,700	2,900	5,650	24,750	197,500	68,820	19,680 <sup>3</sup>	49,140	—	12,060
Denmark <sup>1</sup>	—	—	—	—	—	—	—	—	—	—
France <sup>1</sup>	—	—	—	—	—	—	—	—	—	—
Federal Republic of Germany <sup>1</sup>	—	—	—	—	—	—	—	—	—	—
Italy <sup>1</sup>	—	—	—	—	—	—	—	—	—	—
UK <sup>1</sup>	—	—	—	—	—	—	—	—	—	—
Others	500	100	2,210	4,000	10,000 <sup>2</sup>	15,270	1,640 <sup>3</sup>	13,630	—	90
TACs	17,000	10,000	30,000	35,000	300,000	200,000	50,000	141,000	9,000	20,000

<sup>1</sup> The allocation among these Contracting Governments of the sum of the quantities attributed to them in this table (in parentheses) may be changed by them subject to notification to the Commission not later than 1 October 1977, and, where applicable, subject to the concurrence of the coastal state in respect of the area in which it exercises national fisheries jurisdiction, without prejudice to the exercise of its licensing authority. The quantities attributed to Denmark in respect of cod in Div. 2J, 3K, and 3L, and Div. 3M are not included in the aforementioned sum and are not subject to change.

<sup>2</sup> Countries without specific allocations may each take up to 10,000 tons from this stock.

<sup>3</sup> Any part of this allocation not taken may be added to the allocation in Div. 3NO.

# PART 3

## Appendix IV

### Annual Meeting — June 1977

### Press Notice

1. The 27th Annual Meeting of the International Commission for the Northwest Atlantic Fisheries (ICNAF), under the chairmanship of Dr D. Booss, Federal Republic of Germany, was held in Ottawa, Canada, during 31 May-10 June 1977. About 140 representatives attended from all 17 Member Countries: Bulgaria, Canada, Cuba, Denmark, France, Federal Republic of Germany, German Democratic Republic, Iceland, Italy, Japan, Norway, Poland, Portugal, Romania, Spain, Union of Soviet Socialist Republics, and United Kingdom. Observers were present from the European Economic Community (EEC), the Food and Agriculture Organization of the United Nations (FAO), the International Commission for the Southeast Atlantic Fisheries (ICSEAF), and the United States of America.

#### Purpose of the Meeting

2. An important item for discussion was the future of the Commission and its potential role under extended jurisdiction to 200 miles by the coastal states, including arrangements for transition from ICNAF to a new multilateral organization. In addition, conservation measures for a number of stocks in ICNAF Subareas 2, 3, and 4 were discussed. Some of these stocks lying within or partly within the 200-mile fisheries zone of Canada were considered in informal intergovernmental consultations convened and chaired by Canada.

#### Scientific Advice

3. The Commission's Standing Committee on Research and Statistics (STACRES) met at the Commission's Headquarters in Dartmouth, Nova Scotia, Canada, during 19-27 April 1977 and again at Ottawa, Canada, during 24 May-7 June, and submitted comprehensive advice on conservation of specified stocks in Subareas 1 to 4. Advice was provided for consideration by Canada and Denmark on four stocks in the northern part of the ICNAF Area (Statistical Area 0 and Subarea 1) which lie within the 200-mile fisheries zone of these countries; at the request of Canada, advice was provided on 18 stocks which lie completely within or overlapping the 200-mile fisheries zone in Subareas 2, 3, and 4; and similar advice was provided to the Commission on three stocks which lie completely outside the 200-mile fisheries zone of the coastal states. As was done in the preceding year, the advice was presented on the basis of a management objective whereby options for the total allowable catches (TACs) were advised at catch levels somewhat lower than those associated with the maximum sustainable yield.

#### Catch Quotas

4. The Commission agreed to total allowable catches and national allocations for 1978 in respect of three stocks (cod, redfish, and American plaice in Division 3M), which lie completely outside the Canadian 200-mile fisheries zone. The Commission also considered 19 other stocks which occur completely within the Canadian 200-mile zone or which overlap the 200-mile zone. These were stocks for which scientific advice of the Commission had been requested by Canada. With the concurrence of the coastal state, consensus was reached on total allowable catches for these stocks and on the division of these catches among Member Countries. Specific information on recent catches, total allowable catches, and the national quotas is given in Tables 1 and 2.

#### Enforcement of Fishery Regulations

5. The Commission's Standing Committee on International Control (STACTIC) reviewed the present procedures of international control of fishing activities. It was noted that present ICNAF procedures apply to fishing outside the 200-mile fisheries zone of coastal states, and that fishing inside the 200-mile zone was subject to coastal state regulations and enforcement.

#### Election of Chairman and Vice-Chairman

6. Dr D. Booss, Federal Republic of Germany, who has acted as Chairman of the Commission since the resignation of Mr E. Gillett, United Kingdom, in December 1976, was elected Chairman for 1977/78 and 1978/79. Mr S. Ohkuchi, Commissioner of Japan to ICNAF, was elected Vice-Chairman of the Commission for 1977/78 and 1978/79.

#### Special Commission Meeting

7. The Tenth Special Meeting of the Commission will be held at Ottawa, Canada, in October 1977, in association with the Conference of Plenipotentiaries, to consider and adopt new multilateral arrangements for future multilateral cooperation in the Northwest Atlantic fisheries.

#### 1978 Annual Meeting

8. At the kind invitation of Dr D. Booss, on behalf of the Government of the Federal Republic of Germany, the Commission agreed to hold its 1978 Annual Meeting in Bonn, Federal Republic of Germany, during 30 May-6 June 1978. This Meeting will be preceded by associated meetings of the Commission's Standing Committees on Research and Statistics (STACRES) and on International Control (STACTIC).

TABLE 1. Nominal catches (1974-76) and total allowable catches (TACs) (1976-78) for stocks for which conservation measures were considered at the 1977 Annual Meeting for Subareas 2, 3, and 4.

Species	Stock area	Catches (000 tons)			TACs (000 tons) <sup>2</sup>		
		1974	1975	1976 <sup>1</sup>	1976	1977	1978
Cod	2GH	4	7	6	20	20	20
	2J+3KL	373	288	214	300	160	135
	3M	25	22	22	40	25	40
	3NO	73	44	24	43	30	15
Redfish	2+3K	30	26	27	30	30	30
	3M	35	16	17	16	16	16
	3LN	22	18	21	20	16	16
	3O	13	15	15	16	16	20
American plaice	2+3K	6	6	6	8	8	6
	3M	2	2	1	2	2	4
	3LNO	46	43	51	47	47	47
Witch flounder	2J+3KL	16	12	11	17	17	17
	3NO	8	6	6	10	10	10
Yellowtail	3LNO	24	23	8	9	12	15
Greenland halibut	2+3KL	27	29	24	30	30	30
Roundnose grenadier	2+3	28	27	21	32	35	35
Argentine	4VWX	17	15	7	25	20	20
Capelin	2+3K	127	199	216	237 <sup>+3</sup>	212.5 <sup>+3</sup>	212.5 <sup>3</sup>
	3L	58	34	34	45	50 <sup>4</sup>	50 <sup>4</sup>
	3NO	101	132	110	126	141	141
	3Ps	2	2	+	9 <sup>4</sup>	9 <sup>4</sup>	9 <sup>4</sup>

<sup>1</sup> Provisional statistics compiled for 1977 Annual Meeting.

<sup>2</sup> TACs include quantities estimated to be taken both inside and outside the 200-mile fisheries zone, where applicable.

<sup>3</sup> In addition, countries without specific allocations may each take up to 10,000 tons.

<sup>4</sup> Any portion of national allocations not taken may be added to allocations in Div. 3NO.

TABLE 2. Total allowable catches (TACs) and national allocations for 1978 of particular stocks in Subareas 2, 3, and 4 of the Convention Area. (The values listed include quantities to be taken both inside and outside the 200-mile fisheries zone, where applicable.)

Species or stock:	Cod				Redfish				American plaice			Yellowtail
	2GH	2J+3KL	3M	3NO	2+3K	3M	3LN	3O	2+3K	3M	3LNO	3LNO
Bulgaria	—	—	—	—	—	—	—	—	—	—	—	—
Canada	3,000	100,000	2,100	4,000	25,000	4,400	8,000	15,000	5,500	500	44,800	14,200
Cuba	—	700	1,900	625	270	1,400	1,150	310	—	—	—	—
German Democratic Republic	900	1,950	—	—	450	—	425	—	—	—	—	—
Iceland	—	—	—	—	—	—	—	—	—	—	—	—
Japan	—	—	—	—	—	—	—	—	—	—	—	—
Norway	800	630	1,330	—	—	—	—	—	—	—	—	—
Poland	4,000	2,890	1,460	—	710	—	—	—	—	—	—	—
Portugal	2,900	8,210	10,000	810	450	500	425	—	—	500	—	—
Romania	400	—	—	—	—	—	—	—	—	—	—	—
Spain	450	6,330	2,090	5,730	—	—	—	—	—	—	—	—
USSR	2,300	7,350	4,940	3,180	2,690	9,200	5,900	4,630	450	2,000	1,000	—
Denmark <sup>1</sup>	—	660	6,840	—	—	—	—	—	—	—	—	—
France <sup>1</sup>	(450)	(2,190)	(6,650)	(155)	—	—	—	—	—	—	(700)	(300)
Federal Republic of Germany <sup>1</sup>	(3,600)	(3,120)	(500)	—	—	—	—	—	—	—	—	—
Italy <sup>1</sup>	—	—	—	—	—	—	—	—	—	—	—	—
UK <sup>1</sup>	(700)	(520)	(2,090)	—	—	—	—	—	—	—	—	—
Others	500	450	100	500	430	500	100	60	50	1,000	500	500
TACs	20,000	135,000	40,000	15,000	30,000	16,000	16,000	20,000	6,000	4,000	47,000	15,000

TABLE 2 (continued)

Species or stock:	Witch		Greenland halibut	Roundnose grenadier	Capelin					Argentine
	2J+3KL	3NO	2+3KL	2+3	2+3K	3LNOPs	3L	3NO	3Ps	4VWX
Bulgaria	—	—	—	—	—	—	—	—	—	—
Canada	9,000	7,000	15,000	2,000	15,000	70,000	23,760 <sup>3</sup>	37,240	9,000 <sup>3</sup>	2,000
Cuba	—	—	—	—	—	—	—	—	—	1,820
German Democratic Republic	300	—	1,850	4,250	—	—	—	—	—	—
Iceland	—	—	—	—	—	—	—	—	—	—
Japan	—	—	—	—	—	—	—	—	—	4,030
Norway	—	—	—	—	—	45,910	4,920 <sup>3</sup>	40,990	—	—
Poland	3,500	—	5,290	—	—	—	—	—	—	—
Portugal	—	—	—	—	—	—	—	—	—	—
Romania	—	—	—	—	—	—	—	—	—	—
Spain	—	—	—	—	—	—	—	—	—	—
USSR	3,700	2,900	5,650	24,750	197,500	68,820	19,680 <sup>3</sup>	49,140	—	12,060
Denmark <sup>1</sup>	—	—	—	—	—	—	—	—	—	—
France <sup>1</sup>	—	—	—	—	—	—	—	—	—	—
Federal Republic of Germany <sup>1</sup>	—	—	—	—	—	—	—	—	—	—
Italy <sup>1</sup>	—	—	—	—	—	—	—	—	—	—
UK <sup>1</sup>	—	—	—	—	—	—	—	—	—	—
Others	500	100	2,210	4,000	10,000 <sup>2</sup>	15,270	1,640 <sup>3</sup>	13,630	—	90
TACs	17,000	10,000	30,000	35,000	300,000	200,000	50,000	141,000	9,000	20,000

<sup>1</sup> The allocation among these Contracting Governments of the sum of the quantities attributed to them in this table (in parentheses) may be changed by them subject to notification to the Commission not later than 1 October 1977, and, where applicable, subject to the concurrence of the coastal state in respect of the area in which it exercises national fisheries jurisdiction, without prejudice to the exercise of its licensing authority. The quantities attributed to Denmark in respect of cod in Div. 2J, 3K, and 3L, and Div. 3M are not included in the aforementioned sum and are not subject to change.

<sup>2</sup> Countries without specific allocations may each take up to 10,000 tons from this stock.

<sup>3</sup> Any part of this allocation not taken may be added to the allocation in Div. 3NO.



## PART 4

# Summaries of Research and Status of Fisheries for Subareas, Statistical Areas and Seals, 1976

The total nominal catch of all species, including finfishes, invertebrates and seaweeds, from the Northwest Atlantic (Subareas 1 to 5 and Statistical Areas 0 and 6) was over 3,459,000 metric tons in 1976 compared to over 3,862,000 metric tons in 1975.

The following summaries are based on data for 1976 presented in national reports and other pertinent documents considered by the Commission's scientists at meetings of STACRES and Scientific Advisers to the Panels held in 1977. Details other than those presented below for each Subarea and Statistical Area will be found in ICNAF *Redbook* 1977 for research and in ICNAF *Statistical Bulletin* Vol. 26 for 1976 for catch statistics.

The Chairmen of the Scientific Advisers to the Panels were:

for Statistical Area 0 and—	Ø. Ulltang (Norway);
Subarea 1	
for Subarea 2	— E. C. Lopez-Veiga (Spain);
for Subarea 3	— B. B. Parrish (UK);
for Subarea 4	— G. H. Winters (Canada);
for Subarea 5 and Statistical Area 6	— R. G. Halliday (Canada);
for Seals	— A. W. Mansfield (Canada).

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

Reports of research in 1976 were submitted by Canada, Denmark, Federal Republic of Germany (FRG), German Democratic Republic (GDR), Norway and USSR.

#### 1. Status of Fisheries

In Subarea 1 and Statistical Area 0 total nominal catches (in metric tons) by country and major species for 1976 and 1975 were as follows:

Country	1975	1976
Denmark	61,008	62,453
France	—	803
FRG	15,903	14,367
GDR	242	341
Japan	—	148
Norway	12,440	14,999
Portugal	5,017	3,004
Spain	11,666	9,407
USSR	37,966	34,003
UK	233	188
<b>Total</b>	<b>144,475</b>	<b>139,713</b>

Major Species	1975	1976
Cod	48,219	33,286
Redfish	8,655	13,824
Greenland halibut	24,948	15,788
Other flounders	2,728	2,640
Greenland cod	4,659	4,746
Roundnose grenadier	4,953	8,503
Wolffishes	6,378	6,105
Other fish	6,045	4,755
Shrimp	37,890	50,066
<b>Total</b>	<b>144,475</b>	<b>139,713</b>
Statistical Area 0	2,116	8,059
Subarea 1	142,359	131,654
<b>Total</b>	<b>144,475</b>	<b>139,713</b>

#### 2. Work Carried Out

**a) Canada:** Samples for length, weight, sex, scales, blood and gonads from Atlantic salmon at West Greenland from Danish R/V *Adolf Jensen*, August 1976.

**b) Denmark:** Standard hydrographic and plankton

sections occupied off West Greenland. Sampling benthic fauna in proposed oil drilling sites. Sampling the marine environment at the lead and zinc mine in March and September. Ice observations. Sampling eggs, larvae, pre-recruit and recruited cod. Sampling salmon from R/V *Adolf Jensen*. Collection of biological data on shrimp, capelin, queen crab, redfish, Greenland halibut, American plaice, and Greenland cod. Studies on shrimp density (by bottom photography) and diurnal variation of catch rate. Tagged 6,000 shrimp in Disko Bay and 196 offshore in Div. 1B.

- c) **FRG:** Hydrographic measurements during groundfish survey by R/V *Walther Herwig*, November-December 1976, in Div. 1C-1F, and off southeast Greenland.
- d) **GDR:** Samples of roundnose grenadier and Greenland halibut for length and age in Div. 1C by R/V *Ernst Haeckel* in January and by commercial vessels in November.
- e) **Norway:** Sampling shrimp fishery for size composition, discards, and by-catch.
- f) **USSR:** Sampling of commercial catches of Greenland halibut and roundnose grenadier off Baffin Island and in area of Div. 1B for length and age composition, sex and maturity, and stomach content. Echo-sounder and trawl surveys to estimate shrimp abundance. Hydrographic measurements.

### 3. Hydrography

Whereas 1975 showed some warming of the cold water situation which has prevailed generally since 1968, the 1976 temperatures were again rather low due to a severe winter. March temperatures in the shallows over Fylla Bank caused ice to form (ice formed here in February of 1975). Temperatures were below those for 1975 in June through July in the Fylla Bank area, whereas on the northern banks (Store Hellefiske and Lille Hellefiske) July temperatures were about the same as in 1975. In the deeper waters to the west of Fylla Bank, the water was colder than in 1975. In the last quarter of the year, warmer waters of the Irminger Current occurred in the deeper water west of the Banks and by the end of the year, temperatures were about a degree higher here and in Fylla Bank region than in 1975.

### 4. Plankton

On the Fylla Bank section, the mean volume of plankton per 30-minute haul throughout 1976 was about half that in 1975 and for the 1961-68 period.

### 5. Cod

- a) **Eggs and larvae:** Denmark reported fewer cod larvae in 1976 (0.7 per 30-min tow) compared to 1975 (3 per tow). The low number in 1976 may be caused by the lower temperatures and may also be due to the depleted spawning stock. Prospects for a successful 1976 year-class would, therefore, seem to be poor.
- b) **Young fish:** Age-groups 2 and 1 (1974 and 1975 year-classes) were very scarce in Danish pre-recruit cod surveys. However, the 1975 year-class may still be expected to be better than the 1974 year-class because of the unsatisfactory gear used to sample the age-group 1 sizes. Age-group 3 (1973 year-class) were rather abundant at Godthaab and off Frederikshaab and were recruiting to the commercial fishery in the last half of 1976. FRG reported 80% of the cod in survey catches in Div. 1C-1F belonged to the 1973 year-class.
- c) **Commercial stock:** The hitherto important 1968 year-class is still the major contributor to the spawning. However, the critical condition of the cod stock in Subarea 1 is distinctly reflected by the age composition of the commercial catches. Immature 3-year-old cod of the 1973 year-class occupied 58% of the commercial catches in the first half of 1976 and increased to 88% in the autumn of 1976. Individuals of the 1973 year-class were so small that they contributed only 25% by weight of the total Greenland catch. The year-class is likely to provide the major part of the catch in 1977 and 1978. Off East Greenland, cod catches were predominantly of the 1972 year-class (38%), the 1971 year-class (22%), and the 1970 year-class (20%).

### 6. Roundnose Grenadier

The USSR fishery off Baffin Island in Statistical Area 0 consisted mainly of grenadier when water temperatures were higher than normal and Greenland halibut when lower. In Statistical Area 0, as in other

areas of the Northwest Atlantic, males were much more abundant than females and all appeared to be immature. Stomachs contained mainly shrimp and a small bathypelagic crustacean, *Themisto*. Off West Greenland in Subarea 1, catches were greatest on the southern slopes of the Greenland-Canadian Ridge. Mean length of fish was greater (59 cm for males and 61 cm for females) compared to the Statistical Area 0 fish (54 cm for males and 55.5 cm for females). Stomachs contained mainly bathypelagic invertebrates with some luminous anchovy.

### 7. Greenland Halibut

USSR fishing off Baffin Island took individuals 50-70 cm in length. Females were larger (67.5 cm) than males (57 cm), with males somewhat more abundant. Stomachs contained mainly luminous anchovy, cephalopods, redfish and *Paralepis*. In Subarea 1, the USSR fishery took place on the northern slope of the

Greenland-Canadian Ridge in Div. 1B.

### 8. Shrimp (= deepwater prawn)

The shrimp (*Pandalus borealis*) fishery has continued to increase and has reached an annual catch greater than that of cod in Subarea 1. The international fishery is concentrated mainly off Store Hellefiske Bank in Div. 1B with greatest catches from May to August. Studies show that female shrimp enter the commercial fishery before any spawning occurs. Underwater observations conducted by USSR show the density of shrimp concentrations in the near-bottom 10-m layer higher in daytime than at night. Pelagic trawl catches contained 92.5% individuals changing from male to female (transitional individuals) with only 7.5% females, whereas bottom trawl catches contained 42% transitionals and 58% females. Present uncertainty about the assessment of the shrimp stocks has led to a very high priority being placed on shrimp studies in 1977 by countries taking part in the fishery.

## Subarea 2

Reports on research in 1976 were submitted by Canada, Denmark, FRG, GDR, Poland, and USSR.

### 1. Status of Fisheries

In Subarea 2 total nominal catches (in metric tons) by country and major species for 1976 and 1975 were as follows:

Country/Major Species	1975	1976
Bulgaria	1,394	—
Canada	4,846	8,815
Denmark	688	292
France	1,088	697
FRG	24,624	11,019
GDR	18,124	11,325
Japan	—	19
Norway	247	1,375
Poland	34,159	17,060
Portugal	11,309	760
Spain	1,089	18
USSR	188,464	123,274
UK	130	—
<b>Total</b>	<b>286,162</b>	<b>174,654</b>
Cod	88,947	40,565
Redfish	14,546	16,107
Greenland halibut	12,033	9,076
Other flounders	3,046	2,390
Roundnose grenadier	11,779	6,682
Capelin	144,859	94,599
Other species	10,952	5,235
<b>Total</b>	<b>286,162</b>	<b>174,654</b>

### 2. Work Carried Out

- a) **Canada:** Hydrographic observations over the Labrador Shelf in August. Monitoring coastal fisheries. Sampling offshore fisheries for cod, redfish, capelin, and flatfishes. Autumn groundfish survey in Div. 2J and 3K, 23 October-13 November with FRG R/V *Walther Herwig*, including hydrographic observations. Sampling of Atlantic salmon for seasonal sizes and age patterns. Biological and stock studies of Arctic char in northern Labrador.
- b) **France:** Biostatistical collections on cod by R/V *Cryos* early 1976. Hydrographic observations in Div. 2J in January.
- c) **FRG:** Late autumn groundfish surveys in Div. 2J and 3K with hydrographic observations, in company with Canadian research personnel, from R/V *Walther Herwig*, 23 October-13 November. Sampled cod, redfish, American plaice, witch flounder, and Greenland halibut for length and age.
- d) **GDR:** Biological studies of cod, redfish, roundnose grenadier, and Greenland halibut from R/V *Ernst Haeckel* and commercial trawlers. Hydrographic observations were also made.
- e) **Norway:** Research on harp and hooded seals in the commercial fishery in the "Front" Area.

- f) **Poland:** Length measurements were made from commercial catches of redfish in Div. 2J in February.
- g) **USSR:** Hydrographic observations across Hamilton Inlet Bank in November. Commercial catches of cod, redfish, roundnose grenadier, and Greenland halibut were sampled for length and age composition.

### 3. Hydrography

Surface temperatures over the Labrador Shelf in early August were similar to those of 1975 and the 1951-71 average. The volume of cold water less than 0°C was greater especially inside Hamilton Inlet Bank. Temperatures at intermediate depths were slightly lower than average. In the deeper slope water, temperatures were below average and lower than any previously encountered, including the unusually cold year of 1972. This suggests that the Irminger component of the West Greenland Current was apparently weak or colder.

### 4. Cod

The Labrador coastal fishery continued to improve (28% above the 1975 catch levels) based on the presence of the 1972 year-class. Offshore catches were predominantly from the 1967 and 1968 year-classes (37%). However, the major portion (52%) of the catch consisted of young cod well represented by the 1972 year-class. The 1969, 1970 and 1971 year-classes were very poorly represented. (Note: These were very strong year-classes in the Northeast Atlantic.)

### 5. Redfish

The recruitment to the commercial fishery of the 1963-66 year-classes improved the redfish fishery in southern Labrador.

### 6. Capelin

Survey and commercial sampling data indicated that the autumn fishery in 1976 in Div. 2J and 3K consisted mainly of the relatively strong 1973 year-class. This year-class should be evident in the 1978 spawning biomass. Priorities for conducting autumn surveys to estimate the strength of incoming year-classes were included in the research program for 1977. The collection of data on the influence of the capelin fishery on major predators of capelin was considered important.

### 7. Roundnose Grenadier

USSR data show that the productive fishery for roundnose grenadier off north Labrador in Div. 2G conducted by large trawlers using both bottom and midwater trawls has had no appreciable effect on the stock size. Lengths of grenadiers in the GDR fishery in Div. 2H in October and November ranged from 42 to 78 cm (1968-1958 year-classes).

### 8. Greenland Halibut

Greenland halibut sampled in the GDR fishery in Div. 2H ranged in length from 50 to 74 cm (1972-1956 year-classes). This size range has persisted from previous years of the fishery.

## Subarea 3

Reports on research in 1976 were submitted by Canada, France, FRG, GDR, Norway, Poland, Portugal, USSR, UK, and USA.

### 1. Status of Fisheries

In Subarea 3 total nominal catches (in metric tons) by country and major species for 1976 and 1975 were as follows:

Country/Major Species	1975	1976
Bulgaria	—	1,340
Canada	195,035	276,583
Denmark	5,260	3,604
France	11,785	12,804
FRG	12,082	16,340
GDR	12,166	6,829
Iceland	15,814	8,853
Japan	3,040	5,368
Norway	39,183	27,354
Poland	26,159	33,156
Portugal	68,545	57,627
Spain	73,190	33,035
USSR	362,392	329,110
UK	1,771	252
USA	43	231
Ireland	245	386
<b>Total</b>	<b>826,710</b>	<b>812,872</b>
Cod	313,675	271,731
Redfish	88,514	81,884
American plaice	53,792	64,381
Witch flounder	18,686	17,938
Yellowtail flounder	23,227	10,481
Greenland halibut	16,911	15,659
Other flounders	768	1,114
Roundnose grenadier	15,646	13,911
Herring	23,507	29,414
Mackerel	4,169	5,276
Capelin	221,112	265,801
Other fish	39,951	19,872
Squid	3,764	11,257
Other invertebrates	2,988	4,153
<b>Total</b>	<b>826,710</b>	<b>812,872</b>

### 2. Work Carried Out

a) **Canada:** Hydrographic sections occupied from off Labrador to the Grand Banks, excepting its central and southern parts. Monitoring coastal and offshore cod fisheries. Collection of data for improvement of the data base and various parameters used in updating stock assessments for cod, haddock, redfish, flatfishes (American plaice, Greenland halibut, witch and yellowtail flounders). Studies of morphometric and meristic characters as well as fecundity, age at maturity,

and growth of capelin. Assessment of herring biomass levels and potential yield along eastern Newfoundland. Mackerel sampling for length and age composition. Tagging of Atlantic salmon near Port-aux-Basques and in Fortune Bay, along with biological studies. Sampling the squid fishery.

- b) **France:** Hydrographic studies. Sampling by R/V *Cryos* for biological data from cod, redfish, and American plaice.
- c) **FRG:** Autumn groundfish survey in Div. 2J and 3K by R/V *Walther Herwig*, 23 October–13 November, including hydrographic observations. Sampling cod, redfish, American plaice, witch flounder, and Greenland halibut catches for length and age composition.
- d) **GDR:** Bottom and surface temperature observations and samples of cod, redfish, roundnose grenadier, and Greenland halibut, from R/V *Ernst Haeckel* for length and age composition.
- e) **Norway:** Sampling capelin catch for length and age composition. Tagging capelin for information on distribution and size of the spawning stock on the Southeast Shoal of the Grand Bank.
- f) **Poland:** Studies on biology of cod, redfish, Greenland halibut, and witch flounder.
- g) **Portugal:** Studies on biology of cod in Div. 3L (September) and in Div. 3M (August–October).
- h) **USSR:** R/V's *Persey III* and *Odissey*. Hydrographic investigations at standard sections. Zooplankton and benthos surveys. Young cod count. Groundfish survey. Selectivity of the bottom trawl codends for cod and redfish.
- i) **UK:** Survey with the Continuous Plankton Recorder (CPR).
- j) **USA:** Hydrographic cruises by US Coast Guard in late spring and early summer, including development of two current meter arrays.

### 3. Environmental Studies

Surface temperatures in the area of the northern Grand Bank to Flemish Cap were above those of 1975 but similar to the 1951–71 average. The volume of cold Labrador Current water which usually forms an unbroken core from the Avalon Channel to the eastern

Grand Bank was divided into an inshore and offshore stream with bottom and lower layer temperatures on the western slope and on top of the Grand Bank well above the 1951-71 average and as high as any previously observed during the period. In the deep water adjacent to the seaward slope of Flemish Cap, temperatures were slightly below average but very similar to the lowest of the 1951-71 period.

A coordinated international research project, including oceanographic and biological investigations, was launched on the factors determining year-class success for Flemish Cap cod and redfish.

#### 4. Plankton

As in previous years, copepods prevailed with *Calanus finmarchicus* dominating. In May, the cold-water crustaceans, *Calanus hyperboreus*, *Calanus glacialis*, *Metridia longa*, *Oikopleura labradoriensis* were more abundant than usual on Flemish Cap. Biological spring began later in 1976 than in the period 1970-74. *Calanus finmarchicus* spawned on Flemish Cap in mid-May and on the northeastern slope of Grand Bank in late May-early June.

Benthic studies have shown that over the last 10-year period there have been changes in both the distribution and biocenosis of bottom animals.

#### 5. Cod

USSR survey data indicated that the Labrador-Newfoundland (Div. 2J and 3KL) stock was at a relatively low level in 1976, due to a series of poor year-classes (especially those of 1970 and 1971), but that the biomass should improve substantially in 1977 and 1978 with the recruitment of the much stronger 1972 and 1973 year-classes. The 1973 year-class was dominant in the commercial catches in 1976 and being much stronger than year-classes of adjacent years will with the 1972 year-class comprise the bulk of the catches in 1977. Studies showed that the relationship between the inshore and offshore cod fisheries in Div. 2J, 3K, and 3L is one of competition between components of the fishery. Evidence indicates that the cod stock in the Flemish Cap area has improved with the entry of an exceptionally strong 1973 year-class into the fishery. Relatively better incoming 1973 and 1974 year-classes should improve the present low stock level in the Grand Bank area.

Progress was made in developing a set of guidelines for the interpretation of ages of cod from

otoliths as an aid to reducing subjective errors.

#### 6. Redfish

Commercial bottom trawl sampling data and midwater trawl samples showed a broad range of length and age-groups for this stock in the Labrador-eastern Newfoundland (Subarea 2 and Div. 3K) area. Research vessel data confirm this with the 1960-64 year-classes dominant. In the Flemish Cap area (Div. 3M), data indicated that the 1963 year-class made up a relatively high proportion of catches during 1973-76. Both research and commercial sampling data indicate that the 1972 year-class is better than average. Evidence from the catches, catch rates, and length composition data for 1976 suggest no significant change in the state of the stock in the northern and eastern parts of the Grand Bank from 1975 to 1976. In the southwestern Grand Bank area, catch rate had increased significantly, indicating an increase in abundance or availability, while length composition data from commercial catches in 1976 indicate a high proportion of newly-recruited fish.

#### 7. Flatfish

As in previous years, main emphasis was on the improvement of the data base and the various parameters used in updating stock assessments. The *American plaice* stocks were shown to be in a relatively stable condition. Studies on *Greenland halibut* indicate that most of the mature fish in the Labrador-Newfoundland area (Subarea 2 and Div. 3K and 3L) are concentrated in deep water to the north of Div. 3K and that a considerable part of the fishery has, therefore, been directed at immature fish in shallower depths. *Witch flounder* are taken mainly as by-catch in fishing for other species. However, the fishery is of considerable importance to Canadian gillnet fishermen and a Canadian otter trawl fishery in the offshore part of the Labrador-Newfoundland area is developing. Abundance indices from both the Canadian and USSR surveys and from catch-per-unit-effort of Canadian trawlers indicate that the yellowtail flounder stock in the Grand Bank area has at least stabilized and may, in fact, have increased in abundance.

#### 8. Roundnose Grenadier

The fishery, conducted in the most recent years, has had no noticeable effect on the length and age composition of this stock.

## 9. Capelin

From survey and commercial sampling data, the 1973 year-class was identified as relatively strong in the offshore spawning in Div. 3N and inshore spawning

in Div. 3L and 3P as well as in the autumn fishery in Div. 2J and 3K. A lower spawning biomass in Div. 3N in 1976 compared with 1975 was probably due to the slow growth and lower maturation rate of the 1973 year-class rather than to the capelin fishery.

## Subarea 4

Reports on research in 1976 were submitted by Canada, Cuba, France, GDR, Japan, and USA.

### 1. Status of Fisheries

In Subarea 4 total nominal catches (in metric tons) by country and major species for 1976 and 1975 were as follows:

Country/Major Species	1975	1976
Bulgaria	1,976	4,187
Canada	571,758	530,719
Cuba	3,439	17,823
Denmark	3,542	7,762
France	24,587	21,443
FRG	2,377	1,423
GDR	17	—
Italy	—	1,355
Japan	1,037	3,312
Norway	695	45
Poland	275	814
Portugal	14,887	11,227
Romania	—	15
Spain	21,153	14,327
USSR	264,298	160,637
USA	9,887	7,054
Ireland	152	2,925
<b>Total</b>	<b>920,080</b>	<b>785,068</b>
Cod	154,077	148,952
Haddock	20,259	18,915
Redfish	93,413	56,442
Silver hake	116,394	97,184
Pollock	25,180	24,239
American plaice	21,924	25,412
Witch flounder	11,644	12,617
Other flounders	12,568	10,535
American angler	18,267	3,425
Herring	241,220	198,703
Mackerel	32,089	27,789
Argentine	14,694	7,010
Skates	11,347	9,345
Other fish	57,846	38,722
Squids	13,951	30,510
Scallops	4,547	13,379
Lobster	16,299	14,586
Other invertebrates	14,359	16,509
Seaweeds	40,002	30,794
<b>Total</b>	<b>920,080</b>	<b>785,068</b>

### 2. Work Carried Out

- a) **Canada:** Seasonal physical oceanographic surveys, including T-S and current measurements were carried out in the Gulf of St. Lawrence (Div. 4RST) and T-S measurements made along the Halifax section (Div. 4X). Temperature and salinity data were collected on a variety of research cruises throughout the Subarea. Field studies of levels, behavior and dynamics of heavy metals in the Saguenay Fiord (Div. 4S) and in the sediments of the St. Lawrence estuary and Gulf of St. Lawrence have been completed.

Studies were continued into the impact of Arrow Bunker C oil residues on the biota of Chedabucto Bay (Div. 4W) including field sampling and measurement of chlorophyll and redox potentials in oiled sediments.

Measurements were made of sedimentation, bottom sediment organic content and plant pigment concentrations along transects normal to shore in Div. 4T.

Zooplankton distributions in the St. Lawrence estuary and on the Scotian Shelf were studied, using an instrumented net and acoustics system. Quantitative studies of zooplankton samples from survey cruises were continued to investigate persistence, distribution and movement of selected local stocks of plankton in the Bay of Fundy. A long-term program was also initiated to investigate distribution and recruitment of fish eggs and larvae in relation to environment on the Scotian Shelf (Div. 4VWX).

Annual groundfish research survey cruises were completed on the Scotian Shelf (Div. 4VWX) in July-August and in the southern Gulf of St. Lawrence (Div. 4T) in September. A survey of the haddock stocks in the southwest part of the Scotian Shelf (Div. 4WX) was carried out in February. Annual larval herring surveys were completed in the Bay of Fundy and off southwest

Nova Scotia in April and November. Monitoring and biological sampling of commercial landings continued.

A midwater trawl survey for juvenile herring was carried out in the Gaspé-St. Lawrence River estuary area (Div. 4ST) in August–September and in October–November. A total of 38,000 herring was tagged and released at the Magdalen Islands and Gaspé-Chaleur Bay area of Div. 4T in 1976. Other pelagic fish studies included a midwater trawl survey for mackerel in November–December on the Scotian Shelf and continuation of an experimental bluefin tuna otolith sampling program for age determination.

Measurements of target strengths of fish in various aspects in an acoustic beam were made to determine the relationship between target strength, fish length and fish aspect for cod. Work has been completed on effects of trawl noise on cod and development work was continued on the bottom-referencing underwater towed instruments vehicle (BRUTIV).

- b) **Cuba:** Oceanographic studies were carried out in July–August on the Nova Scotia Shelf. Length measurements of cod, haddock, American plaice, silver hake, argentine and squid were carried out in Subdiv. 4Vs, Div. 4W and 4X. A hydroacoustic survey on the Scotian Shelf was conducted by the R/V *Isla de la Juventua* during July–August.
- c) **France:** Hydrographic data and biological data on cod, herring, redfish and American plaice were collected in 1976; 1,500 cod were tagged and released in Div. 4R. Meristic studies were continued as part of a herring stock discrimination program.
- d) **GDR:** The R/V *Ernst Haeckel* participated in a joint herring survey program in Div. 4X in March.
- e) **Japan:** Research vessel surveys for *Illex* were carried out on the Scotian Shelf (Div. 4X) in 1976 and squid samples were collected for growth studies.
- f) **USA:** Bottom offshore trawl surveys were conducted on the Scotian Shelf by the *Albatross II* and the *Delaware II* during the spring and autumn of 1976.

### 3. Hydrographic and Plankton Studies

Correlation analyses indicate that the outflow from the Gulf of St. Lawrence influences sea

temperatures on the North American coast as far south as Boston and that in the Gulf of Maine (Div. 4X, 5Z, 5Y) 50% of variation of fish catch can be assigned to environmental influences.

Studies of pelagic fish eggs and larvae in Georges Bay (Div. 4T) show that the average size of the eggs and of the food of the larvae decrease as the season advances from spring to summer.

### 4. Cod

An analysis of Div. 4VsW cod indicates that the stock complex is suffering a severe reduction in recruitment levels which do not appear to be related to the size of the adult stock. Silver hake predation and by-catches of young cod in small mesh gears such as those used in the silver hake fishery have been hypothesized as possible causes of the decline.

Examination of historical data on the southern Gulf of St. Lawrence cod stock enabled a relationship for density-dependent growth rate to be determined for all weights from 1950 to 1976. In addition, length at first maturity has declined since 1959 and is well correlated with growth during the first year of life.

Results of egg and larval surveys in the southern Gulf of St. Lawrence (Div. 4T) indicate that the average catch per unit of eggs per individual mature fish was a power function of the average growth rate of the mature stock. The number of larvae was predictable from the initial number of eggs but the death rates of eggs and larvae were not found to be linear or quadratic functions of initial numbers.

### 5. Haddock

The southwest Nova Scotia stock (Div. 4X) continues to show signs of recovery whereas the Sable Island (Div. 4V-W) stock remains at a low level of abundance. Research cruises indicate that day trawl catches of haddock were greater than night catches with greater movement of juveniles than of adults off the bottom at night. This may be correlated with the effect of gas bladder disease on the buoyancy of commercially-sized fish.

### 6. Pollock

Derivation of growth and mortality rates for pollock from the Scotian Shelf–Georges Bank area allowed derivation of  $F_{max} = 0.4$  and  $F_{0.1} = 0.24$  for the present mean selection age of 3.5 years. Fishing mortality has been above these levels since 1973 and

earlier estimates of average long-term potential yield appear to have been over-estimated.

### **7. Redfish**

Monitoring of research vessel catch size compositions and catch rates for Scotian Shelf (Div. 4VWX) redfish indicate that stock abundance continues to decline and indications of improved recruitment observed in 1974 surveys was not confirmed by those of 1975.

A preliminary evaluation of the effect of a by-catch of young redfish in shrimp fisheries in the Gulf of St. Lawrence indicates that the shrimp fishery may have a serious effect upon the survival of young redfish.

### **8. Silver Hake**

Differences in the interpretation and examination of the otoliths of silver hake by the scientists of the different laboratories were identified as the main sources of the differing ages reported. Workshops made progress in attempts to reconcile these differences. The USSR reported that 50% of the catch consisted of young fish of 26 to 31 cm in length.

### **9. Herring**

Tag recoveries from 1974 taggings in the Bay of

Fundy and Southwest Nova Scotia (Div. 4X) indicate substantial movement between Div. 4Wa and Div. 4X-Wb.

Analysis of relative abundance levels of spring- and autumn-spawning herring in both the southern (Div. 4T) and northern (Div. 4RS) Gulf of St. Lawrence indicates a shift in predominance to spring-spawners in recent years which is a return to conditions existing in the 1950's.

### **10. Mackerel**

A density-dependent relationship was found between year-class size and the size of 0-group mackerel in the Div. 4X fishery. Examination of back-calculated mean lengths at age 1 indicated significant variation between year-classes, suggesting a density-dependent growth mechanism.

### **11. Tuna**

Twenty-eight bluefin tuna were tagged and released. Two bluefins were recaptured in the Gulf of St. Lawrence (Div. 4RST) from fish tagged in Div. 4X and one released in St. Margaret's Bay (Div. 4X) in 1975 was recaptured in the same general area in 1976.

## Subarea 5 and Statistical Area 6

Reports on research in 1976 were submitted by France, FRG, GDR, Japan, Poland, USSR, and USA.

### 1. Status of Fisheries

In Subarea 5 and Statistical Area 6 total nominal catches (in metric tons) by country and major species for 1976 and 1975 were as follows:

Country/Major Species	Subarea 5		Statistical Area 6	
	1975	1976	1975	1976
Bulgaria	15,854	531	8,837	14,060
Canada	75,786	88,934	358	837
Cuba	4,056	10,558	—	1,490
Denmark	60	17	—	—
France	2,978	1,220	385	—
FRG	25,202	14,224	—	1
GDR	58,129	11,787	24,508	36,890
Italy	565	67	3,837	6,246
Japan	7,055	10,378	13,785	6,898
Poland	70,799	50,521	56,255	23,937
Romania	1,803	2,204	—	4,179
Spain	7,331	5,750	7,322	9,525
USSR	268,087	159,781	45,720	45,876
USA	253,688	290,272	726,683	747,063
Ireland	854	806	4,774	3,059
Total	792,247	647,050	892,464	900,061
Cod	33,368	29,676	650	438
Haddock	6,683	6,280	—	2
Redfish	10,572	10,696	1	78
Silver hake	86,949	69,273	26,971	12,524
Red hake	17,787	20,568	10,890	8,235
Pollock	13,866	13,379	5	3
Yellowtail flounder	18,988	16,910	636	254
Other flounders	17,227	17,792	9,419	9,827
Herring	177,733	92,925	5,204	901
Mackerel	167,111	102,374	83,868	106,294
Butterfish	4,441	9,230	6,606	2,578
Menhaden	26,550	40,466	173,178	257,449
Alewife	5,007	1,811	9,553	6,444
Dogfishes	16,308	12,891	2,053	1,590
Other fish	39,752	23,317	40,914	41,074
Squids	17,649	24,043	34,038	26,177
Scallops	80,352	104,220	24,724	45,575
Clams	28,696	28,592	249,482	162,259
Other molluscs	2,837	4,137	179,096	177,825
Crustaceans	18,588	15,987	35,172	29,371
Others	1,783	2,483	4	163
Total	792,247	647,050	892,464	900,061

### 2. Work Carried Out

- a) **France:** R/V *Cryos*, squid and groundfish research, oceanography.
- b) **FRG:** R/V *Anton Dohrn*, juvenile and larval herring surveys, oceanography, and plankton research.

c) **GDR:** R/V *Ernst Haeckel*, herring and mackerel survey, oceanographic research.

d) **Japan:** Exploratory fishing for *Illex* by jigging, *Illex* and butterflyfish growth studies, *Loligo* abundance studies.

e) **Poland:** R/V *Wieczno*, larval herring, groundfish, squid, oceanographic and phytoplankton surveys, hydroacoustics research, and blue shark tagging.

f) **USSR:** Oceanographic, hydrochemical, zooplankton, ichthyoplankton, squid, and fish feeding research.

g) **USA:** Oceanographic, plankton, larval and juvenile fish, benthic, gear and selectivity, and species biological studies; bottom trawl surveys.

### 3. Oceanography, Plankton and Environmental Studies

Analysis of dynamic topography seasonal types of the geostrophic current fields on the New England Shelf for intra-year variations revealed 10 typical situations characterized by quasistationary gyres. The change of circulation types during a one year period occurs in a closed cycle. Analysis of 1975 hydrochemical studies on Georges Bank revealed that nitrate content was at a very low level.

October 1976 collections of zooplankton with small mesh nets indicated that the seston biomass was highest on the northern part of Georges Bank. The distribution of copepod eggs and larvae, which predominated in the zooplankton, coincided with the maximum concentrations of herring larvae which utilize them as food. Results of 1975 herring larval surveys (USSR) indicated that the distribution of larvae was similar to previous years but abundance was much lower than in 1974 and, for the first time, more larvae were found in the Nantucket Shoals than on northern Georges Bank. These same surveys showed the abundance of both silver and red hake larvae to be substantially greater than in 1974. The production of Atlantic herring larvae in 1976 was the lowest observed since monitoring began in 1971. An inverse relationship between mortality and growth has been demonstrated, possibly regulated by food supply.

Study of the effects of oil on Atlantic cod embryos showed that 0.1–0.5 ppm of No. 6 oil caused significant mortalities. Special surveys conducted during the summer to assess the effect of a large anoxic water mass on the marine resources off the New Jersey coast

indicated significant finfish distributional changes and surf clam mortality. Well defined changes in benthic community structure have been identified as associated with coastal dumping, and build-up of heavy metals has been noted in sediments and biota which are affected by point source of discharge and ocean dumping. No impact has been demonstrated to date as a result of off-the-shelf disposal of industrial wastes. A massive fish kill off the New Jersey coast in the summer of 1976 was attributed to oxygen depletion which resulted from a plankton bloom.

#### 4. Silver Hake

An ageing workshop with representation from USA, USSR and Canada evaluated ageing problems and resolved a number of differences in interpretation. Feeding analysis indicates that the number of euphausiids eaten increases with depth inhabited and that the intensity of feeding and volume of food increases with body size. (These feeding results also apply to red hake.)

#### 5. Butterfish

An analysis of the age, growth and maturity of butterfish indicates that maximum length is about 23 cm and life-span about three years. Maturity is attained at age 2, the spawning season lasting from April or May to August.

#### 6. Herring

A negative correlation was found between pre-spawning (August) sea temperatures and date of peak spawning (in September) for Georges Bank herring in the period 1963-73.

Between 11 July 1976 and 8 March 1977, 24,000 Atlantic herring were tagged along the Maine coast of which 6.3% were recovered by 20 April 1977. Recoveries indicate that there are three coastal regions that have more or less indigenous populations within them during summer and autumn with few fish tagged in one region recovered in another. However, considerable numbers were recovered in Massachusetts Bay during winter. Laboratory experiments indicated that 2-year-old herring can be tagged with less than 10% initial mortality. A small

scale seeding experiment in a Maine cannery gave 80% recovery.

#### 7. Mackerel

The US recreational catch of mackerel was estimated to be 5,000 metric tons in 1976, comparable to that estimated for 1960, but considerably below the 1970 estimate of 32,000 metric tons. The decline in catches in the 1970's occurred despite increased angling effort.

Laboratory measurements of mackerel swimming speeds indicated that, while the fish swam continuously, they swam faster by day than by night. Average cruising speeds recorded were well below the average trawling speed of a fishing vessel, but mackerel have the capability to swim at burst speeds high enough to avoid capture for a limited time.

No relationship was found between bottom temperature and mackerel catches in US spring bottom trawl surveys conducted in the period 1968-76. Mackerel catches at 10 stations on Georges Bank in 1976 were not significantly correlated with research vessel velocity but a highly significant relationship with temperature was observed.

An ichthyoplankton survey conducted in May 1975 gave a minimum estimate of mackerel spawning stock size within the Mid-Atlantic Bight of 392 million fish. Surface water temperature and offshore wind stress in Statistical Area 6 were compared with mackerel year-class strength. Mean temperature for April-June was negatively correlated with recruitment. While no consistent relationship could be demonstrated between offshore wind stress and recruitment, poor recruitment corresponded with high wind stress in 1961 and 1963.

#### 8. Squids

October-December 1976 research vessel survey of *Loligo* and *Illex* in Subdiv. 5Zw and Statistical Area 6 gave minimum biomass estimates of 74,000 metric tons of *Loligo* and 95,000 metric tons of *Illex*. Age and growth studies gave results consistent with earlier hypotheses. Analysis of stomach contents of 425 *Illex* and *Loligo* collected in 1974 and 1975 indicate that they are primarily plankton eaters but also feed on fish, squids and crustaceans.

## Seals

Reports on research in 1976 and preliminary catch statistics for 1977 were received from Canada, Denmark, and Norway.

### 1. Status of Fisheries

#### a) Harp Seals

In 1976, the total harvest from the "Gulf" and "Front" Areas was 165,002 animals, well over the agreed total allowable catch (TAC) of 127,000. The excess was due to an under-estimate of the possible catch in the indigenous, non-mobile fisheries of the "Front" and "Gulf".

In 1977, the TAC for the "Front" and "Gulf" was set at 170,100 including allocations of 62,000 for Canada, 35,000 for Norway, 100 unallocated, an estimate of 63,000 to be taken by indigenous, non-mobile fisheries in the "Gulf" and on the "Front", and an estimate of 10,000 to be taken by indigenous fishermen at Greenland and in the Canadian Arctic.

Preliminary figures for the 1977 harp seal catch are as follows:

	Pups and beaters	Immatures and adults	Total
Canadian landsmen and small vessels	34,676	23,955	58,631
Canadian vessels	58,442	1,133	60,075
Norwegian vessels	34,719	905	35,624
Indigenous Greenland and Canadian Arctic fishermen	—	—	10,000
Total harp seal catch	128,337	25,993	164,330

#### b) Hooded Seals

In 1976, the total harvest from the "Front" Area was 12,385 animals against a TAC of 15,100.

In 1977, the TAC for the "Front" Area was again set at 15,100 animals, including 6,000 for Canada, 6,000 for Norway, 100 unallocated, and an aggregate of 3,000 to be taken by Canada and Norway after 29 March 1977.

Preliminary figures for the 1977 hooded seal catch are as follows:

	Pups	Immatures and adults	Total
Canadian landsmen and small vessels	941	199	1,140 <sup>a</sup>
Canadian vessels	3,675	1,165	4,840
Norwegian vessels	4,292	1,757	6,049
Total hooded seal catch	8,908	3,121	12,029

<sup>a</sup> Excluding 79 pups and 4 adults taken by Canadian landsmen in the "Gulf" Area.

### 2. Work Carried Out

#### a) Harp Seal

Canada carried out studies in 1976 in relation to estimating the selectivity in the shooting kill of moulting seals, age at sexual maturity, and age composition of seals in the shore-based fisheries. A planned aerial census of "Front" and "Gulf" herds by the University of Guelph, using ultraviolet photography, was partially completed with Norway attempting the ground control. The relationship between seal and fish populations was given preliminary study. Recoveries from tagging and branding continue to show crossover of juvenile seals from the "Gulf" to "Front" Areas.

Norwegian field operations on the "Front" charted seal concentrations in relation to ice edges.

Greenlanders' catch of harp seals was sampled for biological information. Danish catch and effort composition data on harp seals in Northwest Greenland, 1972-75, indicated an inverse correlation between the catch of pups in the "Gulf" and "Front" Areas and subsequent catch of beaters and bedlamers in Northwest Greenland in the following summer.

#### b) Hooded Seals

Canada completed an aerial survey of breeding seals in Davis Strait. Results of tagging and branding studies and estimates of production and yield were reported. Norway collected an age sample from 1,752 hooded seals in the "Front" Area. The captures of tagged seals confirm the assumed connection between moulting hooded seals in Denmark Strait and breeding seals at Newfoundland. Danish studies suggest that hooded seals have become more readily available in the last decade, especially in South Greenland.