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Northwest Atlantic Fisheries Organization (NAFO)

Annual Report 1994

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Preface

This Annual Report for the year 1994 is submitted to the Contracting Parties of NAFO in accordance with the provisions of Article V.4 of the Convention on Future Multilateral Cooperation in the Northwest Atlantic Fisheries. The Report consists of four major Parts that reflect the annual activities of NAFO's constituent bodies -the General Council, the Fisheries Commission, the Scientific Council, and the Secretariat as the summary proceedings and decisions through 1994. Full reports of all of the General Council and Fisheries Commission meetings during the year are published in a separate edition - "Meeting Proceedings of the General Council and Fisheries Commission for 1994", and the proceedings of the Scientific Council are published in the "Scientific Council Reports, 1994". The Annual Report includes a summary of meetings, scientific, statistical, financial and other appropriate information pertaining to the activities of the Organization and fisheries in the Regulatory Area.

L. I. Chepel
Executive Secretary

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Introduction

The Northwest Atlantic Fisheries Organization (NAFO)* operates under provisions of the Convention on Future Multilateral Cooperation in the Northwest Atlantic Fisheries signed in Ottawa, Canada, on 24 October 1978 and entered into force on 1 January 1979. The instruments of accessions to the Convention are deposited with the Government of Canada.

The principal objectives of NAFO set forth by the Convention are to contribute through consultation and cooperation to the optimum utilization, rational management and conservation of the fishery resources of the Convention Area. To carry out its mission NAFO was structured into the following four constituent bodies: the General Council, the Scientific Council, the Fisheries Commission, and the Secretariat. The first three constituent bodies meet at least once annually, while business of NAFO between meetings is coordinated through the Secretariat.

During 1994 NAFO held seven (7) meetings as follows in chronological order: (1) Fisheries Commission (including its subsidiary body STACTIC) in February, Brussels, Belgium; (2) Scientific Council in February, Brussels, Belgium; (3) Standing Committee on International Control in August, NAFO Headquarters, Dartmouth, Canada; (4) Regular Scientific Council Meeting in June, Keddy's Dartmouth Inn, Dartmouth, Canada; (5) 16th Annual Meeting of the Organization including meetings of all constituent bodies, Holiday Inn, Dartmouth, Nova Scotia, Canada on 19-23 September 1994; (6) Scientific Council Symposium on Impact of Anomalous Oceanographic Conditions at the Beginning of the 1990s in the Northwest Atlantic on the Distribution and Behaviour of Marine Life in September, Holiday Inn; (7) Scientific Council Meeting, 18-21 November, NAFO Headquarters, Dartmouth, Canada.

Through the year the Scientific Council considered scientific data and provided the scientific assessment and recommendations to the Contracting Parties on the management of the nineteen (19) fish stocks in the Convention Area. The scientific findings were reported to the Fisheries Commission for the purpose of the management and conservation of fishery resources within the Regulatory Area. In particular, the Scientific Council advised that major groundfish stocks in the Regulatory Area are continuing to decline, which would require considerable effort by the Fisheries Commission to restore the resources.

At the Annual Meeting in September, the Fisheries Commission agreed to restrict fishing in the Regulatory Area - "no directed fishing" - for six (6) fish stocks out of eleven (11) managed by NAFO: Cod in Div. 3NO, American plaice in Div. 3M and 3LNO, Yellowtail flounder in Div. 3LNO, Witch flounder in Div. 3NO and Capelin in Div. 3NO. On a positive side, the Scientific Council for the first time considered regulation of exploration of Greenland halibut in the Regulatory Area recommending TAC for 1995.

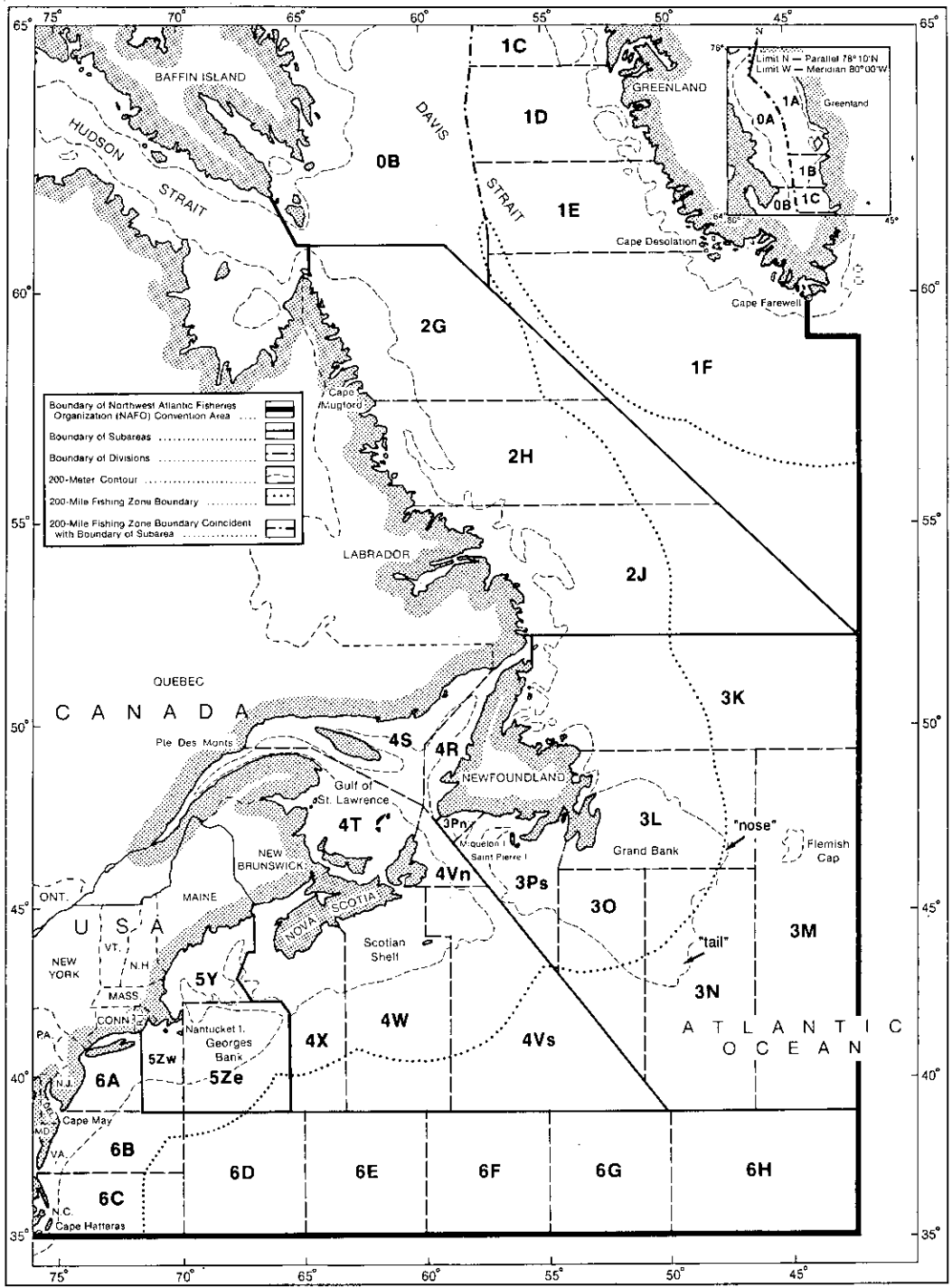
*Note: The predecessor of NAFO was ICNAF through the years 1950-1978 based on the International Convention for the Northwest Atlantic Fisheries.

The following proposals for international measures of control and enforcement within the Regulatory Area became binding measures in December 1994 and were incorporated in the NAFO Conservation and Enforcement Measures: no directed fishery for cod in Div. 3L in 1995; no directed fishery for shrimp in Div. 3LNO in 1995; regulation of shrimp fishery in Div. 3M by minimum mesh size 40mm, maximum spacing between the bars of 22mm, by-catch limit maximum 5%, observer coverage minimum 10%; extension of Pilot Project for NAFO Observer Scheme for 1995.

The General Council and its Standing Committee - STACFAC considered the problem of unregulated fishing activities of non-Contracting Parties in the NAFO Regulatory Area. In 1994 there were up to 24 such vessels from Belize, Cayman Islands, Honduras, Panama, Sierra Leone, St. Vincent and the Grenadines, USA and Venezuela, and the number of vessels has been substantially decreased from 1993 (35-40 vessels) as the result of active diplomatic demarches by NAFO members. However, the non-Contracting Parties activity is continuing to be very harmful for depressed resources. Therefore, the General Council resolved to proceed with diplomatic demarches from NAFO to the Governments of non-Contracting Parties with vessels fishing in the NAFO Regulatory Area. The Resolution 94/1 was adopted calling upon all countries fishing the NAFO Regulatory Area to accede to the FAO Agreement on the High Seas Fishery.

For the first time in the NAFO history, the NAFO Secretariat initiated regular semi-annual publication of a Newsletter, and this first issue "NAFO News-No. 1-1994" has been published and distributed to the Contracting Parties and other International Bodies at the end of 1994. The News very concisely summarized all major activities in 1994.

The Convention Area to which the Convention on Future Multilateral Cooperation in the Northwest Atlantic applies



Structure of the Northwest Atlantic Fisheries Organization (NAFO) in 1994 (as at 16th Annual Meeting, September 1994)

Contracting Parties

Bulgaria, Canada, Cuba, Denmark (in respect of the Faroe Islands and Greenland), Estonia, European Union (EU), Iceland, Japan, Republic of Korea, Latvia, Lithuania, Norway, Poland, Romania, and Russia.

President

E. Lemche (Denmark in respect of the Faroe Islands and Greenland)

Constituent Bodies

General Council	Bulgaria, Canada, Cuba, Denmark (in respect of the Faroe Islands and Greenland), Estonia, EU, Iceland, Japan, Korea, Latvia, Lithuania, Norway, Poland, Romania, and Russia.	*Chairman* - E. Lemche (Denmark in respect of the Faroe Islands and Greenland) *Vice-Chairman* - A. Rodin (Russia)
Scientific Council	Bulgaria, Canada, Cuba, Denmark (in respect of the Faroe Islands and Greenland), Estonia, EU, Iceland, Japan, Korea, Latvia, Lithuania, Norway, Poland, Romania, and Russia.	*Chairman* - H. Lassen (EU) *Vice-Chairman* - W. R. Bowering (Canada)
Fisheries Commission	Bulgaria, Canada, Cuba, Denmark (in respect of the Faroe Islands and Greenland), Estonia, EU, Iceland, Japan, Korea, Latvia, Lithuania, Norway, Poland, and Russia.	*Chairman* - H. Koster (EU) *Vice-Chairman* - P. Gullestad (Norway)

Standing Committees

General Council	Standing Committee on Finance and Administration (STACFAD)	*Chairperson* - J. Quintal-McGrath (Canada) *Vice-Chairman* - E. Penas (EU)
	Standing Committee on Fishing Activities of non-Contracting Parties in the Regulatory Area (STACFAC)	*Chairman* - C. C. Southgate (EU) *Vice-Chairman* - H. Fischer (Denmark in respect of the Faroe Islands and Greenland)

Scientific Council	Standing Committee on Fishery Science (STACFIS)	*Chairman* - W. B. Brodie (Canada)
	Standing Committee on Research Coordination (STACREC)	*Chairman* - C. A. Bishop (Canada)
	Standing Committee on Publications (STACPUB)	*Chairman* - W. R. Bowering (Canada)
	Executive Committee	*Chairman* - H. Lassen (EU)
Fisheries Commission	Standing Committee on International Control (STACTIC)	*Chairman* - D. Brock (Canada)

Secretariat

Executive Secretary	L. I. Chepel
Assistant Executive Secretary	T. Amaratunga
Administrative Assistant	W. H. Champion
Senior Secretary	B. J. Cruikshank
Accounting Officer	F. D. Keating
Desktop Publishing/Documents Clerk	F. E. Perry
Statistical Officer	G. M. Moulton
Graphic Arts/Printing Technician	R. A. Myers
Graphic Arts/Printing Technician	B. T. Crawford
Clerk-Typist	D. C. A. Auby
Statistical Clerk	B. L. Marshall
Statistical Clerk	C. L. Kerr

Headquarters Location

192 Wyse Road, Dartmouth, Nova Scotia, Canada

PART I

(pages 13-40)

Activities of the General Council in 1994

List of Meetings

The following meetings were held under the authority of the General Council in 1993:

- The General Council and it subsidiary bodies (STACFAD and STACFAC) at the 16th Annual Meeting; 19-23 September, Holiday Inn, Dartmouth, Nova Scotia, Canada.

Major Documents of the General Council in 1994

Serial No.	GC Doc. No.	Title
N2436	94/1	Report of the Fourth Meeting of the North Atlantic Marine Mammal Commission (NAMMCO)
N2444	94/2	Correspondence Between NAFO Secretariat and Non-Contracting Parties
N2448	94/3	Administrative Report and Financial Statements for the fiscal year ending 31 December 1994 (as of 31 July 1994)
N2464	94/4	Executive Summary of the Second and Third Sessions of the UN Conference on Straddling Stocks and Highly Migratory Fish Stocks
N2473	94/5	Terms of Reference to the Interim STACFAC Meeting
N2474	94/6	NAFO General Council Resolution 94/1
N2485	94/7	Data on Non-Contracting Parties Activities in the NAFO Regulatory Area
N2493	94/8	Report of the General Council, 16th Annual Meeting, 19-23 September 1994, Dartmouth, N.S., Canada

General Council Meeting

The General Council Meeting including meetings of its subsidiary bodies - Standing Committee on Finance and Administration (STACFAD) and Standing Committee on Fishing Activities of non-Contracting Parties in the Regulatory Area (STACFAC) - was held during the 16th Annual NAFO Meeting on 19-23 September 1994 at the Holiday Inn, Dartmouth, Nova Scotia, Canada. Complete proceedings of this Meeting are presented in GC Doc. 94/8 and in a separate edition of Meeting Proceedings of the General Council and Fisheries Commission for 1994.

Opening Procedures (Agenda items 1-5)

The meeting was opened by the Chairman of the General Council, E. Lemche (Denmark in respect of the Faroe Islands and Greenland) at 1020 hours on 20 September 1994.

Representatives of the following thirteen (13) Contracting Parties were present: Canada, Cuba, Denmark (in respect of the Faroe Islands and Greenland), Estonia, European Union (EU), Iceland, Japan, Republic of Korea (Korea), Latvia, Lithuania, Norway, Poland and Russia (Annex 1), which constitutes the quorum for decision making. Two Contracting Parties, Bulgaria and Romania, were absent. The total number of registered delegates was 150. The United States' observers were admitted to the Meeting.

In the opening address the Chairman welcomed the participants and emphasized on a very important value of NAFO as an international body - cooperation.

The Executive Secretary was designated Rapporteur of the Meeting.

The Provisional Agenda was adopted as presented in Annex 2.

Supervision and Coordination of the Organizational, Administrative and Other Internal Affairs (Agenda items 6-8)

The Meeting noted that the Republic of Korea (Korea) acceded to the NAFO Convention on 21 December 1993 and became the fifteenth (15th) member, Contracting Party, of NAFO; the name of one Contracting Party - European Economic Community (EEC) - has been changed to the European Union.

The meeting considered the Republic of Korea's application for the Fisheries Commission membership transmitted to all Contracting Parties by the NAFO Secretariat (GF/94-461 of 30 August 1994). The unanimous consent was noted for admission of Korea to the Fisheries Commission.

At the meeting of the Heads of Delegations, the Executive Secretary was authorized to go ahead with his proposal for publication of a newsletter - "NAFO News" on a semi-annual basis. Following such publications in 1995, the General Council will further assess/decide on this issue.

The Heads of Delegations at this meeting agreed to extend the contract of the present Executive Secretary, L. I. Chepel, for the next term of four (4) years, 1995-1998.

Coordination of External Relations (Agenda items 9-10)

The meeting noted the letter (GF/94-203 of 11 April 1994) dispatched by the NAFO Secretariat to the UN Headquarters regarding the large-scale pelagic driftnet issue. The letter reaffirms the NAFO position that large-scale pelagic driftnet fishing is not presently practiced in the NAFO Convention Area.

For the item 10, "NAFO Observership at Other International Bodies", the Chairman noted the two papers presented to the Meeting - NAFO GC Doc. 94/1, Report by Norway at the Fourth North Atlantic Marine Mammal Commission (NAMMCO) Meeting and NAFO/GC Doc. 94/4, Report by Denmark at the UN Conference on Straddling Stocks and Highly Migratory Fish Stocks.

The Meeting **agreed** to continue the practice of NAFO representation at the UN Conference by Denmark and at NAMMCO by Norway if there are no other proposals.

Fishing Activity in the Regulatory Area Adverse to the Objectives of the NAFO Convention (Agenda items 11-12)

Under Agenda item 11, Canadian Legislation and its Impact on the NAFO Convention, the Representative of the European Union introduced the item for discussion and proposed that the General Council consider the measures taken by Canada and its implication to NAFO as an international organization responsible for the conservation and management of the stocks in the Convention Area. The Representative of Canada presented the Canadian position with respect of the legislation and informed the Meeting in detail about the actions taken by Canada against NCP fishing vessels in the NAFO Regulatory Area.

After presentations by the Representatives of Contracting Parties to the subject, the Chairman summarized that all delegations had thoroughly discussed and expressed their opinions on the issue placed on the agenda by the European Union delegation. During the following sessions there was no further reintroduction of the subject, therefore, the item was considered closed.

The Chairman of STACFAC, C. C. Southgate (EU), presented to the Meeting a final report including the following highlights:

- The level of Non-Contracting Parties (NCP) fishing in the NAFO Regulatory Area has been still very high through the first half of 1994. Approximately 24 NCP vessels have been sighted, which is, however, less than the period from 1985-1993 (average 30-40 vessels).

- The NAFO diplomatic demarches were delivered to Panama and Honduras through the European Union as coordinator with attendance of other Contracting Parties - Canada, Japan, and Russia, and positive responses have been noted from those countries. However, the vessels deregistered by Panama and Honduras have been registered to Belize, and those are fishing in the NAFO Regulatory Area (NRA). After introduction of the Canadian legislation, all stateless and flag of convenience vessels withdrew from the "nose" and "tail" of the Grand Bank and moved to the Flemish Cap, in the Regulatory Area. They are no longer fishing straddling stocks, however, still continue fishing other NAFO regulated stocks.

STACFAC recommended the following measures to the General Council: to encourage and call upon all Parties fishing in the NAFO Regulatory Area to join the pending FAO Agreement on the high seas fishery; to adopt two NAFO letters from the NAFO President for dispatch to the Governments of NCP States with vessels currently fishing in the Regulatory Area and those without vessels; to call an intersessional STACFAC meeting in 1995 for discussing the outstanding issues.

The General Council adopted a Resolution re fishing in the NAFO Regulatory Area. (Annex 3)

The meeting agreed with the proposals and recommendations of STACFAC.

The Chairman of STACFAC, C. C. Southgate (EU), was re-elected for the next term of two (2) years, 1995-1996, and H. Fischer (Denmark in respect of the Faroe Islands and Greenland) was elected the Vice-Chairman.

Finance (Agenda items 13-15)

Items 13 to 15 were referred to STACFAD for discussion in the Committee and presentation of report to the General Council.

The Chairperson of STACFAD, J. Quintal-McGrath (Canada), presented the Report on 22 September and highlighted the following issues: Auditors Report transmitted to the Contracting Parties in February, 1994 was recommended for adoption; the Pension Society Report in relation to decisions concerning the NAFO Secretariat was adopted by STACFAD. The Report contained cost estimates associated with NAFO's share of the cost of the service of an Administering Agent, auditor and the production of a procedure manual. Those estimates would be around $10,000 and there is not an immediate requirement to put this amount on the budget; the estimated total cost for the Hail System would be around $9,569 Cdn to the end of 1994. The costs would drastically increase if Contracting Parties/Secretariat would dispatch their report from/to individual vessels contrary to the present method of communication between the Secretariat-Contracting Party headquarters. Those would be extra costs and are presently not financed in the NAFO budget.

The major budgetary items of the Report were as follows: the budget for 1995 to be adopted in the amount of $964,000 Cdn.; the Accumulated Surplus Account be maintained at the level of $75,000 Cdn.; the outstanding contributions owing from Romania (1994) and Bulgaria (1993-1994) be deducted from the Accumulated Surplus Account in the amount of $47,896.

To the financial implications of the NAFO Hail System, the Executive Secretary stated that the costs would drastically increase if Contracting Parties would dispatch their reports from/to individual vessels (as it is provisioned in the Conservation and Enforcement Measures). At present no assessment of the pilot project had been made due to incomplete data and unaccomplished on-going task of the project. He noted that this system could be effective and low cost implications if all Contracting Parties agreed on the unified technical means and procedure. Otherwise the only cost effective alternative would be to run the system by telefax transmissions until unanimous approach has been achieved.

The General Council reviewed in detail the Report and adopted the recommendations and the STACFAD report as a whole.

On presentation by the Chairman, the meeting reached the understanding, as a guidance, that Contracting Parties presenting proposals with cost implications to the NAFO budget should accordingly provide cost estimates for this purpose as a preliminary idea for further discussions in the other NAFO bodies and STACFAD.

Closing of the Meeting (Agenda items 16-19)

The General Council agreed to hold the next Annual Meeting at Dartmouth, Nova Scotia (Canada), through 11-15 September 1995. The dates for the 1996 Meeting will be 9-13 September, and for 1997, 15-19 September.

The General Council considered the CWP issue on presentation by the Chairman of the Scientific Council, H. Lassen (EU), and agreed with his recommendation on the subject to subscribe to the Statutes for that statistical FAO body.

The Press Release of the current meeting was presented for approval by the General Council and adopted on Friday, 23 September 1994. (Annex 3)

The General Council extended a very warm farewell to Mr. W. H. (Hartie) Champion, Administrative Assistant, who retires at the end of 1994, for his long-time devoted service to ICNAF-NAFO through 31 years of 1963-1994. The Chairman presented Mr. Champion with memorable picture-gift from the General Council. The Representative of Canada, on behalf of the Canadian Delegation, presented Mr. Champion with their gift. Mr. Champion thanked with great appreciation all Contracting Parties and the NAFO Secretariat.

The Chairman closed the 16th Annual Meeting of NAFO at 1415 hours on 23 September 1994.

The List of Actions and Decisions by the General Council at the 16th Annual Meeting is presented in Annex 4.

Commemoration

Joaquim Carlos Esteves Cardoso
1920-1994

At the opening session, the Chairman of the General Council informed the Meeting that Captain J. C. E. Cardoso, former Executive Secretary of the Northwest Atlantic Fisheries Organization (NAFO), died in hospital in Portugal on 4 July 1994, from a heart attack following surgery. Captain Cardoso had retired and returned to Portugal after a 10-year tenure as Executive Secretary of NAFO from 1 July 1980 to 31 December 1990.

Captain Cardoso began a distinguished Naval career when he enlisted in the Portuguese Naval Academy in Lisbon on 15 September 1939. He completed his course on 1 October 1942 at the top of his class and was decorated with the Medal of Military Merit by the President of the Republic, Marechal Carmona. In his career in the Portuguese Navy he received two further military honours: the Medal for Distinguished Services and the Order of Prince Henry the Navigator.

As Lieutenant Cardoso he commanded a patrol boat in the Azores from 1943 to 1945, before he went to England for further training. He completed a year's training at Devonport Dockyard in England and studied at the Royal Naval College in Greenwich, England, where he graduated in Naval Architecture in 1949. It was during this period that he met the English girl who was to become his wife in 1954.

He then undertook a year of training in two English shipyards, Barrow-in-Furness and Cowes, before returning to Portugal. In 1956, he was promoted to the rank of Commander and the following year to Senior Commander. On 30 September 1964 he was made Captain. He held important positions in the Portuguese Navy, namely in the following capacities: Inspector of Naval Construction; Director of a department of the Merchant Navy; and General Secretary for the Commission of Maritime Transportation and Laws of the Sea.

On his return to Portugal Captain Cardoso also began to work in earnest in the civil areas of the marine sector.

Through his career in the Portuguese Civil Service he progressed rapidly from his early focus on Naval architecture as chief of the Merchant Marine Directorate, to the Director-General of Fisheries Administration in 1974 and Director General of Fisheries (1978) which is the highest Civil Service position.

He held positions such as the Secretary General of the Portuguese International Maritime Law Commission, Secretary General of the Inter-ministerial Tripartite Commission, member of the National Consultative Fisheries Commission and President of the Inter-ministerial Group on Government proposals on legislations and international agreements relative to the EEZ.

In his international career, Captain Cardoso was still in his thirties, when he began as a representative of Portugal in many of the international delegations to key international fora, such as the UN Commission on High Seas, the UN Law of the Sea, Safety of Life at Sea, European Fisheries Conference. Soon he became the head of the Portuguese delegation. His international activities also brought him to the forefront of fisheries activities in the Atlantic. In 1967/68, he became the Portuguese Commissioner to the international bodies managing the Northwest (International Commission for the Northwest Atlantic Fisheries - ICNAF), the North-East (North-East Atlantic Fisheries Commission - NEAFC) and the Southeast (which subsequently became the International Commission for the Southeast Atlantic Fisheries - ICSEAF). By the early-1970s he took key roles in these commissions. At NEAFC he was elected Vice-President in 1972 and President in 1975; at ICNAF he presided over several committees; and at ICSEAF he carried positions of Vice-Presidency at its inception in 1972, in 1975, and again in 1978. His remarkable knowledge and skills were fully recognized by the international community when in 1977 he was elected President of the Drafting Committee which drafted a new Convention on Multilateral Cooperation in the Fisheries of the Northwest Atlantic and also President of the Drafting Committee which drafted a new Convention on Multilateral Cooperation in the Fisheries of the North-East Atlantic.

With the newly drafted Convention for the Northwest Atlantic, ICNAF was replaced by the NAFO on 1 June 1979. Captain Cardoso was the obvious choice to take over the reins of the prestigious and challenging position of the Executive Secretary of NAFO, from Lew Day at his retirement in June 1980. During his tenure as the Chief Executive Officer of NAFO, he continued to contribute in elaborating Rules of Procedure of NAFO and NAFO Conservation and Enforcement Measures for its fisheries.

On 31 December 1990, Captain Cardoso retired from NAFO and from active professional life. Quoting from the telegram of condolences sent by the Japanese representative in NAFO: "Captain Cardoso made an unparalleled contribution to NAFO". Sadly, it was retirement that brought about his lack of enthusiasm and was the main cause for the deterioration of his health. He did not adjust well to inactivity. The contrast with his former life was difficult to bear and a sense of futility finally overtook him.

Those who knew Captain Cardoso well would surely agree that a fitting epitaph would be:

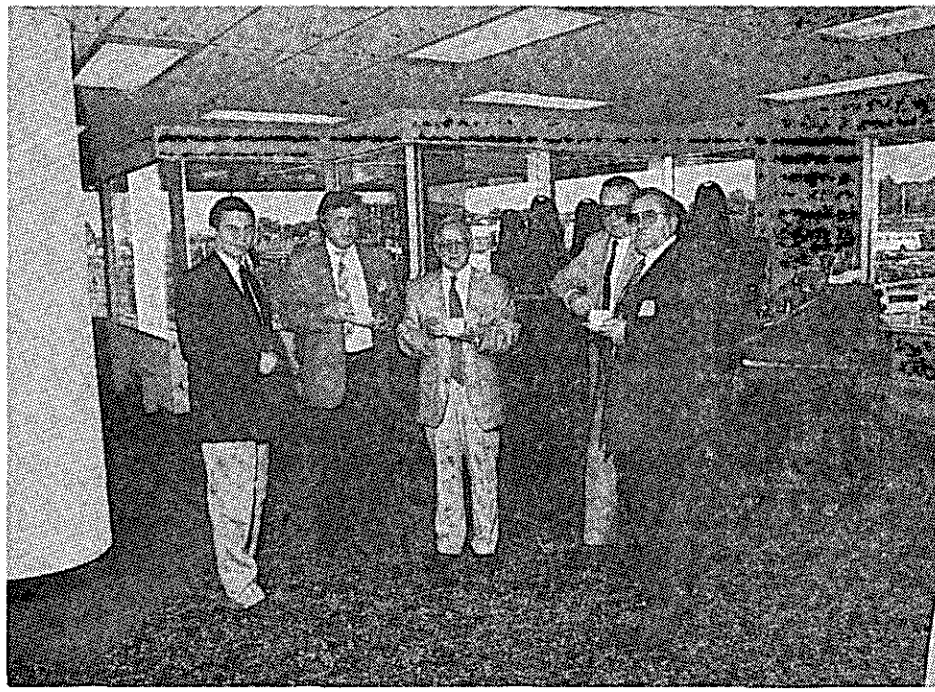
"He worked hard, played hard and lived life to the full."

Captain J. C. E. Cardoso is survived by his wife Diana, two sons, one daughter and six grandchildren.

The General Council commemorated Capt. E. Cardoso with a minute of silence.

16th Annual Meeting of NAFO, September 1994

16th Annual Meeting of NAFO, September 1994



Annex 1. List of Participants

General Council, 16th Annual Meeting

Dartmouth, Nova Scotia, Canada
19-23 September 1994

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Annex 2. Agenda

General Council, 16th Annual Meeting

Dartmouth, Nova Scotia, Canada
19-23 September 1993

I. Opening Procedures

1. Opening by Chairman, E. Lemche (Denmark in respect of the Faroe Islands and Greenland)

2. Appointment of Rapporteur

3. Adoption of Agenda

4. Admission of Observers

5. Publicity

II. Supervision and Coordination of the Organizational, Administrative and Other Internal Affairs

6. Review of Membership

   a) General Council
   b) Fisheries Commission

7. Administrative Report

8. NAFO Newsletter

III. Coordination of External Relations

9. Communication with the United Nations re large-scale pelagic driftnet fishing

10. NAFO Observership at other International Bodies

    a) NAFO Observer at NAMMCO

    b) NAFO Observer at the UN Conference on *Straddling and Highly Migratory Fish Stocks*

IV. Fishing Activities in the Regulatory Area Adverse to the Objectives of the NAFO Convention

11. Canadian legislation and its impact on the NAFO Convention

    a) Framework legislation
    b) Implementation regulation

12. Report of STACFAC at the Annual Meeting

    a) Decision on possible recommendations

V. Finance

13. New Sharing of Contributions Among Contracting Parties

14. Report of STACFAD at the Annual Meeting

15. Adoption of the Budget for 1995

VI. Closing Procedures

16. Time and Place of Next Annual Meeting

17. Other Business

18. Press Release

19. Adjournment

Annex 3. Press Release

1. The Sixteenth Annual Meeting of the Northwest Atlantic Fisheries Organization (NAFO) was held in Dartmouth, Nova Scotia, Canada through 19-23 September 1994, under the chairmanship of E. Lemche (Denmark in respect of the Faroe Islands and Greenland), President of NAFO. All sessions of the constituent bodies of NAFO - the General Council, Scientific Council, Fisheries Commission, and subsidiary bodies, Standing Committees, for finance (STACFAD), for non-Contracting Parties activities (STACFAC), for international control (STACTIC) convened at the Holiday Inn.

2. The Contracting Parties were represented at the Meeting by delegations from: Canada, Cuba, Denmark (in respect of the Faroe Islands and Greenland), Estonia, European Union (EU), Iceland, Japan, Republic of Korea, Latvia, Lithuania, Norway, Poland, and Russia. The General Council extended its welcome to a new member of NAFO, Republic of Korea, which acceded to the NAFO Convention on 21 December 1993. The Republic of Korea was unanimously admitted to become a member of Fisheries Commission on 20 September 1994. Observers were admitted from the United States of America. In total, 150 participants were registered at the meeting.

3. The Annual Meeting was preceded by the following meetings: Special Scientific Council Meeting (NAFO Headquarters, November 1993), Special Meeting of the Fisheries Commission (Brussels, February 1994), Regular Meeting of the Scientific Council (Keddy's Inn, Dartmouth, Canada, June 1994), Special Meeting of the Standing Committee on International Control (NAFO Headquarters, August 1994), Symposium on Impact of Anomalous Oceanographic Conditions at the Beginning of the 1990s in the Northwest Atlantic on the Distribution and Behaviour of Marine Life (NAFO Headquarters, September 1994).

4. The Scientific Council, under the chairmanship of H. Lassen (European Union), considered the state of stocks and scientific basis for the management and conservation of fishery resources in the NAFO Convention Area. The scientific advice was reported to the Fisheries Commission indicating the low level of major groundfish stocks in the Regulatory Area and continuing decline for some of them.

   At the same time, the Scientific Council advised on new fishery for shrimp on the Flemish Cap. The Scientific Council advice for this fishery was to continue regulation of shrimp fishery by sorting grates and mesh size of 40 mm to prevent by-catch of other species and, specifically, redfish and cod.

5. The Fisheries Commission, under the chairmanship of H. Koster (European Union), undertook deliberations on substantial issues pertaining to the management and conservation of the fisheries resources in the Regulatory Area and agreed on conservation measures pursuing the prime objective of conservation and restoration of the fish stocks.

   In particular, the Fisheries Commission agreed to continue for 1995, moratoriums - "no directed fishing" - on six (6) major fish stocks: Cod in Div. 3NO, American plaice in Div. 3M and 3LNO, Yellowtail in Div. 3LNO, Witch in Div. 3NO and Capelin in Div. 3NO. (Quota Table attached).

The Fisheries Commission extended the Pilot Project for Observer Program (established in 1993) for 1995 and recommended increased coverage for Greenland halibut. The shrimp fishery in 3M will be regulated by mesh size of 40 mm, sorting grates with 22mm spacing between bars for escapement of other juvenile species, and mandatory requirements to change the fishing ground if by-catch of regulated groundfish species exceed 5%.

The shrimp fishery in 3LN will be closed. The Fisheries Commission also established catch limitation for Greenland halibut in the Areas 2+3.

6. The Fisheries Commission unanimously agreed with a Canadian proposal that taking into account the available scientific advice, directed fisheries for Cod in Division 3L in the Regulatory Area shall continue to be prohibited in 1995, which is consistent with the current moratorium that is being continued by Canada on the fishery of this stock inside 200 miles.

7. Following the presentation of the Standing Committee on Finance and Administration (STACFAD), by the Chair, J. Quintal-McGrath (Canada), the General Council adopted the Organization's budget and accounts for 1995.

8. The General Council took note of statements by several Contracting Parties regarding the fact that Canada had passed unilateral legislation designed to reduce the problem of fishing in the NAFO Regulatory Area by vessels from Non-Contracting Parties.

9. The General Council adopted the report of the Standing Committee on Fishing Activities of Non-Contracting Parties in the Regulatory Area (STACFAC), presented by the Chairman C. C. Southgate (European Union), and endorsed the recommendations directed to prevent further fishing activities by non-Contracting Parties vessels in the NAFO Regulatory Area. The General Council noted that the number of Non-Contracting Parties fishing vessels in the Regulatory Area has decreased since 1992/93 as the result of comprehensive and persistent activity by NAFO and NAFO members on advice from STACFAC. The General Council unanimously agreed to proceed with diplomatic demarches from NAFO to the Governments of Non-Contracting Parties with vessels fishing in the NAFO Regulatory Area and adopted Resolution GC 94/1 which calls upon all countries fishing in the NAFO Regulatory Area to accede to the FAO Agreement on the High Seas Fishery (attached).

Considering that the threat of unregulated activity by Non-Contracting Parties is still continuing, the General Council decided to call an intersessional STACFAC meeting in Brussels, in 1995 to discuss outstanding issues related to this problem.

10. The following elections took place for the constituent and subsidiary bodies of NAFO:

Chairman of the Standing Committee on Fishing Activities of Non-Contracting Parties in the Regulatory Area (STACFAC)	C. C. Southgate (European Union)

Vice-Chairman of the Standing Committee on Fishing Activities of Non-Contracting Parties the Regulatory Area (STACFAC)	H. Fischer (Denmark in respect of the Faroe Islands and Greenland)
Chairman of the Standing Committee on Fishery Science (STACFIS)	W. B. Brodie (Canada)

General Council
NAFO
Canada
23 September 1994

NAFO Secretariat
Dartmouth, N.S.,

NAFO General Council Resolution 94/1

16th Annual NAFO Meeting
19-23 September 1994

Resolution adopted by the General Council (on Report by the Standing Committee on Fishing Activities of Non-Contracting Parties in the Regulatory Area, STACFAC).

GC 94/1. To the Parties whose vessels have been observed fishing in the NAFO Regulatory Area over the past year.

NAFO calls upon all its Contracting Parties and upon all those Non-Contracting Parties whose vessels have been observed fishing in the NAFO Regulatory Area over the past year to deposit as soon as possible their instruments of acceptance to the United Nations Food and Agriculture Organization's "Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas" and pending the entry into force of that Agreement, to apply its provisions to the area of High Seas known as the NAFO Regulatory Area with immediate effect.

Closing Plenary Session
23 September 1994

QUOTA TABLE. Total allowable catches (TACs) and quotas (metric tons) for 1995 of particular stocks in Subareas 3 and 4 of the NAFO Convention Area. The values listed include quantities to be taken both inside and outside the 200-mile fishing zone, where applicable.

	Cod		Redfish		American plaice		Yellowtail	Witch	Capelin	*G. halibut*	Squid (*Illex*)[2,3]
Contracting Party	Div. 3M	Div. 3NO*	Div. 3M	Div. 3LN	Div. 3M*	Div. 3LNO*	Div. 3LNO*	Div. 3NO*	Div. 3NO*	SA 2+3	SA 3+4
1. Bulgaria	-	N	390	-	N	N	N	N	N		500
2. Canada	85	O	650	5 964	O	O	O	O	O		N.S.[4]
3. Cuba	407		2 275	1 372							2 250
4. Denmark (Faroe Islands and Greenland)	2 461	D	-	-	D	D	D	D	D		-
5. European Union	5 485	I	4 030	476	I	I	I	I	I		N.S.[4]
6. Iceland	-	R	-	-	R	R	R	R	R		-
7. Japan	-	E	520	-	E	E	E	E	E		2 250
8. Korea	-	C	-	-	C	C	C	C	C		2 000
9. Norway	1 018	T	-	-	T	T	T	T	T		-
10. Poland	424	E	-	-	E	E	E	E	E		1 000
11. Estonia		D			D	D	D	D	D		
12. Latvia		F			F	F	F	F	F		
13. Lithuania	1 078[1]	I	18 005[1]	6 104[1]	I	I	I	I	I		5 000[1]
14. Russia		S			S	S	S	S	S		
		H			H	H	H	H	H		
		I			I	I	I	I	I		
		N			N	N	N	N	N		
15. Others	42	G	130	84	G	G	G	G	G		3 000
Total Allowable Catch	11 000	*	26 000	14 000	*	*	*	*	*	27 000[6]	150,000[5]

[1] Quotas to be fished by vessels from Estonia, Latvia, Lithuania and the Russian Federation. The provisions of Part I, Section A.3 of the NAFO Conservation and Enforcement Measures shall apply.

[2] The opening date for the Squid (*Illex*) fishery is 1 July.

[3] Any quota listed for squid may be increased by a transfer from any "coastal state" as defined in Article 1, paragraph 3 of the NAFO Convention, provided that the TAC for squid is not exceeded. Transfers made to Contracting Parties conducting fisheries for squid in the Regulatory Area shall be reported to the Executive Secretary, and the report shall be made as promptly as possible.

[4] Not specified because the allocation to these Contracting Parties are as yet undetermined, although their sum shall not exceed the difference between the total of allocations to other Contracting Parties and the TAC.

[5] The TAC would remain at 150 000 tonnes subject to adjustment where warranted by scientific advice.

[6] Decisions on catch shares to be made at a Special Meeting of the Fisheries Commission. Until these decisions are made, the provisions of Part I, Section A.3 of the NAFO Conservation and Enforcement Measures shall apply. Any catches taken as from 1 January 1995 by a Contracting Party will be deducted from the quota of this Contracting Party to be agreed by the Fisheries Commission at its Special Meeting.

* The provisions of Part I, Section A.4b) of NAFO Conservation and Enforcement Measures shall apply.

Annex 4. List of Decisions and Actions by the General Council (16th Annual Meeting, 19-23 September 1994)

Substantive issue (propositions/motions)	Decision/Action (pp.)
1. A new Contracting Party of NAFO - the Republic of Korea (Korea)	noted: became a member on 21 December 1993 (17)
2. Change of name of a Contracting Party - European Economic Community to the European Union	noted (17)
3. A new member of the Fisheries Commission - Republic of Korea	admitted (17)
4. Publication of a NAFO Newsletter - "NAFO News"	authorized (17)
5. Representation of NAFO in other international bodies at:	adopted (18)
- NAMMCO by Norway	agreed (18)
- UN Conference on the High Seas by Denmark (in respect of the Faroe Islands and Greenland)	agreed (18)
6. Report of STACFAC at the 16th Annual Meeting	adopted (18-19)
- GC Resolution 94/1 on fishing activities of Non-Contracting Parties in the Regulatory Area	adopted
- text of NAFO letters signed by the President to NCPs in the Regulatory Area	agreed
- interim STACFAC meeting in 1995	agreed
- election of STACFAC Chairman - C. C. Southgate (EU) Vice-Chairman - H. Fischer (Denmark)	noted
7. Report of STACFAD at the 16th Annual Meeting	adopted (19)
- Auditors Report	adopted
- Accumulated Surplus Account	$75,000
- Bulgaria's and Romania's uncollectible debt for 1993/94	$47,896 to write-off
8. Budget for 1994	$964,000 Cdn.-adopted (19)
9. All NAFO proposals with impact on the budget should be presented with cost estimates	agreed in principle (20)
10. Meeting dates in 1995-1997	adopted (20)

PART II

(pages 41-79)

Activities of the Fisheries Commission in 1994

List of Meetings

The following meetings were held under the authority of the Fisheries Commission:

- Fisheries Commission and STACTIC (Special Meeting); 14-17 February, Albert Borschette Conference Centre, Brussels, Belgium.

- STACTIC (Special Meeting); 30 August-01 September, NAFO Headquarters, Dartmouth, N.S., Canada

- Fisheries Commission and STACTIC Meetings at the 16th Annual Meeting; 19-23 September, Holiday Inn, Dartmouth, N.S., Canada.

Major Documents of the Fisheries Commission in 1994

Serial No.	FC Doc. No.	Title
N2357	94/1	Conservation and Enforcement Measures
N2358	94/2	Extension of the Pilot Project Observer Scheme and Terms of Reference for STACTIC
N2359	94/3	National Reports on the Pilot Project - NAFO Observer Scheme
N2369	94/4	Report of the Fisheries Commission Special Meeting, 14-17 February 1994, Brussels, Belgium
N2441	94/5	Report of the Standing Committee on International Control (STACTIC) Special Meeting, 30 August-01 September 1994, Dartmouth, N.S., Canada
N2442	94/6	National Reports on the Pilot Project-NAFO Observer Scheme
N2443	94/7	Summary of Status of Proposals and Resolutions of NAFO (as of June 1994)
N2471	94/8	Decisions by the Fisheries Commission on the Conservation and Enforcement Measures in the Regulatory Area
N2472	94/9	Part VI - Pilot Project for a NAFO Observer Scheme
N2489	94/10	Pilot Project for a NAFO Observer Scheme -Recommendations for increased coverage in the Greenland halibut fishery
N2490	94/11	Recommendations for additional scientific survey for Greenland halibut
N2491	94/12	Summary of inspection information for 1993 according to the Fisheries Commission decision (on presentation by STACTIC), FC Doc. 93/18, Part II.2
N2492	94/13	Report of the Fisheries Commission, 16th Annual Meeting, 19-23 September 1994, Dartmouth, N.S., Canada

Fisheries Commission Special Meeting

A Special Meeting of the Fisheries Commission and its subsidiary body, STACTIC, was held during 14-17 February 1994 at the Albert Borschette Conference Centre, Brussels, Belgium.

Opening Procedures (Agenda items 1-5)

The meeting was called to order by the Chairman, H. Koster (EU), on 15 February 1994 at 1145 hr. Representatives from the following members of the Fisheries Commission were present: Canada, Cuba, Denmark (in respect of the Faroe Islands and Greenland), Estonia, the European Union (EU), Iceland, Japan, Lithuania, Norway, Poland and the Russian Federation. (Annex 1)

C. Porro (EU) was appointed Rapporteur.

The provisional agenda as amended by the meeting was adopted. (Annex 2)

Review of the NAFO Observer Scheme Pilot Project (Agenda items 6-11)

The Chairman of STACTIC, D. Brock (Canada), presented the Committee's report of the meeting held on 14 February. The report was accepted by the Commission for further discussions. Costs of observer coverage are presented in Annex 3.

On the basis of all discussions and STACTIC Report, the Commission extended the pilot project observer scheme to December 31, 1994 and decided to conduct a full review of the scheme by STACTIC in advance of the Annual Meeting, 1994.

On item 11 of the agenda, STACTIC Report, the Chairman proposed that STACTIC should meet in advance of the Fisheries Commission to finalize the review in time for discussion by the Fisheries Commission at the Annual General Meeting. The agreement was noted that STACTIC would meet in Canada at the end of August or early September.

Conservation and Enforcement Measures (Agenda items 12-13)

For agenda item 12, Project for Experimental Redfish Fishery with 90 mm Mesh Size, the representative of Russia informed that data available so far confirmed their belief in the effectiveness of a 90 mm mesh for redfish. A report would be available to the Scientific Council in June or September.

The Chairman reminded Contracting Parties that last September references to the one-net rule and the value of the experiment had been made.

The Chairman concluded that the Fisheries Commission could accept the project as amended by the Scientific Council. This would not pre-judge the continuation of a one-net rule. This was adopted by consensus.

On item 13 of the agenda, Minimum Fish Size and Minimum Size of Processed Fish, in response to Denmark, the Chairman of Scientific Council explained most of the information rested with the industry. He hoped to resolve this within a couple of months for consideration in June. He did not envisage national laboratories would have to undertake new studies. The Fisheries Commission referred this item for the STACTIC agenda in September 1994.

Review of Management Measures in 1994 for Fish Stocks Straddling National Fishing Limits - Cod in Divisions 3N and 3O
(Agenda item 14)

The Chairman introduced this item to the meeting recalling discussions on this stock at last year's meeting, when there had been uncertain advice on the new year-class. Since then, Canada had written to propose a moratorium on the basis of new data.

Considering the poor state of stock, Canada was of the opinion that the best management choice was to close this fishery to permit the year-classes to grow to maturity.

After lengthy consultations of the Heads of Delegations, the meeting decided to add a footnote to the 1994 TAC and Quota table to read "considering the advice contained in the Report of the Scientific Council and having regard to the poor state of the stock of cod in Division 3NO no directed fishery shall be carried out under the TAC agreed for this stock in 1994. The provisions of Part I, Section A.4(b) of the NAFO Conservation and Enforcement Measures shall apply" (this is an incidental catch limit - incidental catches of the species concerned may not exceed 1,250 kg or 5%, whichever is greater calculated as the percentage, by weight, for each species of the total catch retained on board).

The proposal was adopted with 8 votes affirmative and 3 abstentions (Denmark, EU and Norway).

Note by the Executive Secretary:

The adopted proposal for management of the cod stock in Div. 3NO had been notified to all Contracting Parties for the purpose of the provisons of paragraph 1 of Article XII of the NAFO Convention through the objection period of 22.02.94 to 23.04.94 (60 days). Pursuant to the provisions of Article XII, the proposal became a measure binding on all Contracting Parties effective 24 April 1994.

Closing Procedures (Agenda items 15-17)

Agenda item 15, Time and Place of Next Meeting, was noted that the next meeting will be in conjunction of the Annual Meeting in September 1994.

The meeting adopted a Press Release. (Annex 4)

There was no other business at the meeting.

The Special Meeting of the Fisheries Commission was adjourned at 1755 hrs on 17 February 1994.

Annex 1. List of Participants

Fisheries Commission Special Meeting

Brussels, Belgium
14-17 February 1994

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Annex 2. Agenda

Fisheries Commission Special Meeting

Brussels, Belgium
14-17 February 1994

I. Opening Procedures

1. Opening by the Chairman, H. Koster (EEC)
2. Appointment of Rapporteur
3. Adoption of Agenda
4. Admission of Observers
5. Publicity

II. Review of the NAFO Observer Scheme Pilot Project

6. Reports by Contracting Parties on the results of Pilot projects
7. Evaluation of any administrative or operational problems of the program
8. Assessments of the effectiveness and the costs of the program
9. Appropriateness of including an Observer Scheme in the NAFO Conservation and Enforcement Measures
10. Decision on proposals for a NAFO Observer Scheme
11. STACTIC Report

III. Conservation and Enforcement Measures

12. Project for experimental redfish fishery with mesh size 90 mm
13. Minimum fish size (witch, redfish, G. halibut) and minimum size of processed fish (witch, redfish, G. halibut, cod, A. plaice, yellowtail)
14. Review of Management Measures in 1994 for Fish Stocks Straddling National Fishing Limits - Cod in Division 3NO

IV. Closing Procedures

15. Time and place of next meeting
16. Other business
17. Adjournment

Annex 3. Costs and Coverage of the Observer Pilot Scheme

CANADA			
Shrimp fishery	450 days x $363.33	=	$163,500
Groundfish fishery	13 days x $363.33	=	$ 4,700
Admin./Deployment		=	$ 24,500
Baltic States vessels*			
Observer days	32 days x $363.33	=	$ 11,600
Admin./Deployment	61 days	=	$ 2,200
RUSSIA			
Observer days (Incl. Admin./Deployment)	32 days x $496	=	$ 15,860
EUROPEAN UNION (EU)			
Observer days	600 days x $262	=	$157,200
Deployment	71 days x $262	=	$ 18,602
DENMARK (IN RESPECT OF FAROE ISLANDS AND GREENLAND)			
Observer days (Incl. training and deployment)	80 days x $395	=	$ 31,607
NORWAY (Est. six months 1994)			
Observer days	65 days x $415.38	=	$ 27,000

*Observer service provided for Baltic States by Canada.

Annex 4. Press Release

1. The special meeting was held in Brussels, Belgium, through 15-17 February 1994 under the chairmanship of H. Koster (European Union). All sessions of the Commission and its Standing Committee on International Control (STACTIC - met on 14 February) were held at the Albert Borschette Conference Centre. The following members of the Fisheries Commission were represented at the meeting: Canada, Cuba, Denmark (in respect of the Faroe Islands and Greenland), Estonia, European Union, Iceland, Japan, Lithuania, Norway, Poland, and Russian Federation. The Republic of Korea was present as observer.

2. The meeting was preceded (13-14 February) by a special meeting of the NAFO Scientific Council under the chairmanship of H. Lassen (European Union), which conducted the assessment and catch options of cod in Div. 3NO for 1994. The Scientific Council findings were reported to the Fisheries Commission.

3. The Fisheries Commission considered the major subject matter of review of the NAFO Observer Scheme Pilot Project, which has been conducted by Contracting Parties during 1993. The national annual reports on the project reflected a positive application of this pilot observer project to monitor conservation measures and collect useful biological data. The meeting decided to extend the Pilot Project to December 31, 1994 and conduct a full review of the program at the Annual Meeting in September 1994.

4. The following proposals for Conservation and Enforcement in the Regulatory Area were reviewed with the decisions that:

   - the experimental redfish fishery with different mesh sizes (90-120-130) will be conducted by the Russian vessels in 1994;

   - minimum fish size (for witch, redfish, G. halibut) and minimum size of processed fish (witch, redfish, G. halibut, cod, A. plaice, yellowtail) shall be considered by the Scientific Council which advice shall be reported back to the Fisheries Commission at the Annual Meeting in September 1994.

5. The Fisheries Commission considered the advice by the Scientific Council on the status of the stock of 3NO cod and agreed that no directed fishery be conducted for this stock in 1994.

NAFO Secretariat

Fisheries Commission
17 February 1994
Brussels, Belgium

Special Meeting of the Standing Committee on International Control (STACTIC)

A Special Meeting of STACTIC was held 30 August - 01 September 1994 at NAFO Headquarters, Dartmouth, Nova Scotia, Canada.

Opening Procedures (Agenda items 1-3)

The meeting was called to order by the Chairman, D. Brock (Canada) on August 30 at 1015 hours. He welcomed all delegates to the STACTIC Special Meeting tasked by the Fisheries Commission at its special meeting in Brussels in February 1994 (FC Doc. 94/4, item 2, p.9). Representatives from the following Contracting Parties were present: Canada, Denmark (in respect of Greenland), the European Union (EU), Japan, Norway, and Russia. (Annex 1)

L. Strowbridge (Canada) was appointed Rapporteur.

The provisional agenda was adopted. (Annex 2)

Reports by Contracting Parties on the Observer Scheme Pilot Project

The Chair recalled the terms of reference from the Fisheries Commission (FC Doc. 94/2) and referred to several Working Papers prepared by Contracting Parties to the meeting asking each delegation to present their reports.

Those reports are summarized in the following Table of Reports on Provisional Costs and Observer Coverage for 1993-1994:

(For those Contracting Parties whose fishing presence exceeded 300 days in the NAFO Regulatory Area)

	Fishery	Canada	Denmark (Faroes/Greenland)	EU	Norway (1994 only)	Russia	Total	%
a)	**Observer days**							
	Cod fishery			264			264	13.6
	Redfish fishery					76	76	3.9
	Mixed flatfish fishery	9		61			70	3.6
	G. halibut fishery			363			363	18.6
	Shrimp fishery	689	80/70	157	169		1165	59.8
	A. halibut fishery	11					11	0.5
	TOTAL	709	80/70	845	169	76	1949	100
b)	No. of apparent infringements	nil	nil	11*/6*	nil	nil	11*/6*	
c)	**Costs of:**							
	per sea day[1]	413.	461.	399.	657.	575.	438.	
	overall[2]	256,220	57,150	310,000	105,209	37,696	766,275	100
	administration	37,000	12,000	27,125	5,880	6,000	88,005	11.5 (to overall)

* 1993/1994

[1] includes overall + administration

[2] excluding administration costs

Assessment of the Effectiveness and Cost of the Scheme

STACTIC concluded that the NAFO pilot project observer scheme, if continued, should complement the current NAFO enforcement program. The degree to which the representatives felt that the pilot project contributed to the enforcement program ranged from limited to significant. Some representatives expressed the view that observer deployments simply confirmed information reported by inspectors while others held the view that masters were deterred from committing apparent infringements by the presence of observers on board.

It was also noted that variations in the implementation of the pilot project (for example, the Canadian program provides for timely follow-up action by inspectors when observers report apparent infringement) may have had an impact on compliance levels.

STACTIC could not reach a conclusion on the effectiveness of the NAFO pilot project observer scheme.

The approximate total cost of the Pilot Project Observer Scheme was $850,000 Cdn., including $88,000 for program administration. A total of approximately 1950 observer sea days were obtained, at a cost of $438 Cdn/day.

Evaluation of Administrative and Operational Problems Associated with the Scheme

Representatives identified several administrative problems, such as difficulty recruiting and training qualified personnel. The deployment of observers under the pilot scheme resulted in a reduction of scientific observers for one Contracting Party.

Representatives also identified operational difficulties and significant costs associated with the deployment of observers. These difficulties and costs resulted from lengthy transit periods to the NAFO Regulatory Area or the scheduling of deployments to fishing vessels at sea. As well, representatives noted that it was sometimes difficult to determine in advance which vessels would be participating in NAFO fisheries.

General discussions followed on options available to reduce deployment costs, however, it was concluded that significant reductions could not be achieved.

Representatives also noted the reluctance of some masters to accept observers and the occasional difficulty obtaining safety certification when one additional individual is deployed on fishing vessels.

Representatives also discussed an optimum deployment period for observers, noting that current deployments of up to 100 days could affect work performance. Any reductions in the deployment period would significantly increase costs.

Recommendations to the Fisheries Commission on the Appropriateness of Including a Scheme in the NAFO Conservation and Enforcement Measures

Discussions developed on this agenda item with references to earlier discussions on the effectiveness of the pilot project.

It was concluded that an observer scheme may be an appropriate means to deal with certain enforcement problems, however, other factors such as cost and alternate enforcement approaches should also be considered. The pilot project should include specific criteria to evaluate the cost-effectiveness of the project.

Recommendations on the Necessary Elements of any Future Program Including Advice on Specific Fisheries to be Targeted

With respect to NAFO observers reporting apparent infringements to enforcement authorities, STACTIC concluded that if the pilot project is continued and if the observer's role is modified, this reporting should be limited to a certain category of apparent infringements deemed to have significant conservation implications.

STACTIC concluded that the Fisheries Commission, based on advice from the Scientific Council on the status of stocks and STACTIC on enforcement issues, should establish appropriate coverage levels for particular fisheries. Some e Contracting Parties indicated a preference to maintaining the current coverage levels while one Contracting Party suggested raising it to 20%.

The meeting adjourned at 1430 on 01 September 1994.

Annex 1. List of Participants

Special Meeting of STACTIC

Dartmouth, Nova Scotia, Canada
30 August-01 September 1994

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Annex 2. Agenda

Special Meeting of STACTIC

Dartmouth, Nova Scotia, Canada
30 August-01 September 1994

1. Opening by the Chairman, D. N. Brock (Canada)
2. Appointment of Rapporteur
3. Adoption of Agenda
4. Reports by Contracting Parties on the Observer Scheme Pilot Project
5. Assessment of the effectiveness and cost of the Scheme
6. Evaluation of administrative and operational problems associated with the Scheme
7. Recommendations to the Fisheries Commission on the appropriateness of including the Scheme in the NAFO Conservation and Enforcement Measures
8. Recommendations on the necessary elements of any future program including advice on specific fisheries to be targeted
9. Adoption of Report
10. Other matters
11. Adjournment

Fisheries Commission Meeting

The Fisheries Commission including meetings of its subsidiary body - Standing Committee on International Control (STACTIC) - was held during the 16th Annual Meeting on 19-23 September 1994 at the Holiday Inn, Dartmouth, Nova Scotia, Canada. Full proceedings of the meeting are presented in FC Doc. 94/13. This Annual Report presents a brief summary of the most substantial decisions at the Fisheries Commission and STACTIC.

Opening Procedures (Agenda items 1-5)

The meeting was called to order by the Chairman, Mr. H. Koster (EU) on 20 September 1994 at 11:15 hours. Representatives from the following Contracting Parties were present: Canada, Cuba, Denmark (in respect of the Faroe Islands and Greenland), Estonia, the European Union (EU), Iceland, Japan, Republic of Korea, Latvia, Lithuania, Norway, Poland, and the Russian Federation. (Annex 1)

Representatives of the United States of America were welcomed to the Meeting as observers.

Mr. R. Steinbock (Canada) was appointed Rapporteur.

The provisional agenda was adopted as presented. (Annex 2)

Administrative (Agenda item 6)

The Republic of Korea was welcomed as a Member of the Fisheries Commission pursuant to the decision of the General Council under provisions of Article XIII of the Convention.

Conservation and Enforcement Measures (Agenda items 7-15)

Item 7, Incorporation of a Catch Reporting System into the Hail System (Canadian proposal in FC Doc 92/3) was referred to STACTIC and the budgetary aspects were referred to STACFAD.

At the closing session, the Commission decided to defer this item to the 17th Annual Meeting.

Item 8, Effort Plans for the Vessels of Contracting Parties operating in the Regulatory Area, was referred to STACTIC and then deferred to the 17th Annual Meeting.

Item 9, Nominal Catches by Contracting Parties Exceeding Quotas, was referred to STACTIC with a request to suggest improvements to the current proposed table. On presentation by STACTIC, the modified table was adopted by the Meeting.

Item 10, NAFO Rules Regarding Incidental Catches, was withdrawn at the request of the Representative of Canada. This item was a Canadian proposal at the 1993 STACTIC meeting and was no longer considered appropriate by Canada.

Item 11, Annual Return of Infringement, Surveillance, Inspection Reports, was referred to STACTIC. At the closing session, the Commission accepted in principle the Canadian proposal on the understanding that the Contracting Parties will do their best in accordance with their legislation to increase "transparency" of disposition of apparent infringements.

Under Item 12, Fishing Vessel Registration, it was agreed by the Meeting to discontinue this presentation.

Regarding Item 13, Review of the NAFO Observer Scheme Pilot Project, the Chairman of STACTIC (D. Brock - Canada) reported the conclusions of the Special Meeting of STACTIC, August 30-September 1, 1994 (FC Doc 94/5). The report was adopted.

As the result of discussions, the Fisheries Commission recommended to ensure 20% observer coverage in the Greenland halibut fishery and agreed with the unchanged extension of the project into 1995. (Annex 3)

The meeting agreed to accept the Canadian proposal providing specific criteria against which the Pilot Project could be evaluated as well as criteria for an intersessional STACTIC meeting to evaluate the effectiveness of the Pilot Project Observer Scheme.

Item 14, Minimum Fish Size (witch, redfish, Greenland halibut) and Minimum Size of Processed Fish (witch, redfish, Greenland halibut, cod, A. plaice, yellowtail flounder) was referred to STACTIC. The Scientific Council could not provide advice to STACTIC on minimum sizes for Greenland halibut and flatfishes since the necessary data had not been made available.

Denmark noted the difficulty in addressing this issue given that some Parties have legislation prohibiting discards. The Fisheries Commission decided to defer this item to the 17th Annual Meeting.

Item 15, Report of STACTIC at the Annual Meeting, was presented by the Chairman of STACTIC (D. Brock - Canada), and the report was adopted by the Commission.

Conservation of Fish Stocks in the Regulatory Area (Agenda items 16 to 20)

The Chairman of the Scientific Council (Mr. H. Lassen - EU), gave a summary of the June 1994 Report of the Scientific Council and the Preliminary Report from the Scientific Council which provided the following management advice for 1995 for fish stocks in the NAFO Regulatory Area (NRA):

- Cod 2J3KL in NRA	no directed fishery
- Cod 3M	no directed fishery
- Cod 3NO	no directed fishery
- Redfish 3M	20 000 tons
- Redfish 3LN	not exceeding 14 000 tons
- American plaice 3M	not exceeding 1 000 tons
- American plaice 3LNO	no directed fishery
- Yellowtail flounder 3LNO	no directed fishery
- Witch flounder 3NO	no directed fishery
- Capelin 3NO	no directed fishery
- Squid (SA 3 and 4)	no advice
- Greenland halibut (2+3)	Reduce effort and catches
- Shrimp 3M	Continue mandatory use of grates in shrimp fishery but bar spacing of less than 28 mm be enforced. (appropriate spacing unknown at present)

This presentation was followed by detailed stock-by-stock discussions.

In the summary sheets of the Scientific Council, the following responses to the questions by the Fisheries Commission were provided:

Cod in Divisions 2J, 3K and 3L:

The average breakdown of biomass by Division was as follows:

Division	Mean relative proportion of Div. 2J and 3KL biomass (%) 1981-1993	1993 Autumn (%)
2J	31	8
3K	33	23
3L	36	69

Survey data indicated that the proportion of total stock biomass occurring in the Regulatory Area was less than 10% in winter, and less than 5% on average in spring and autumn. In recent years there has been an increasing trend in the portion of the biomass in the Regulatory Area.

Mesh Size in the Redfish Fishery:

The Russian mesh size study described in November 1993 (NAFO Sci. Coun. Rep., 1993) had not yet been carried out and there was therefore no information available for consideration by the Council.

Establish Minimum Sizes for Product Corresponding to Minimum Landing Sizes

The Council observed that conversion factors have been established for statistical purposes. These factors vary between countries because of, among other things, different production technologies. These factors have been established for different species and different products, and world-wide compilations have been published by FAO (UN). These factors are average values applicable for raising the total production in a country to the corresponding live fresh weight. Within these average values, there are substantial variations with fish size, seasons, fishing grounds, technology and between individual batches. There are also some variation between years.

Also, an average length-weight relationship can usually be established with great precision for a specific species from a specific area in a season. Here too there is individual variance around the mean relationship.

Consequently, the Council observes that individual back calculated live lengths from a product are subject to considerable uncertainty, and the Council doubts that such relationships could be useful for inspection purposes. For example, even a very small head-off tail-off split product cod may be the result of a particular maladjusted machine.

If these data need to be obtained, it would require a comprehensive survey involving data for each factory vessel, for different seasons and for fish originating from different fishing grounds. Informal contacts with the industry suggests that such detailed data are considered sensitive information, important to the competitiveness of the enterprise and therefore not easily accessible. The Council does not consider that the compilation of this information will be cost effective in establishing a legal tool for the fishing inspectors.

Minim Landing Sizes for Greenland Halibut and Flatfishes

The Council noted it had advised on minimum landing sizes for American plaice (25-28 cm) and yellowtail flounder (25-28 cm) in 1992 (NAFO Sic. Coun. Rep., 1992, p. 71).

It was also noted that available data in laboratories have not yet been analyzed and presented to the Scientific Council. The Council agreed to defer its discussions on this subject to its September 1994 meeting.

Under item 17, "Management and Technical Measures for Fish Stocks in the Regulatory Area", the following measures were adopted for 1995:

Cod 3M

Proposal (by Denmark): TAC of 11 000 tons was adopted by vote with three negative votes (Canada, Cuba, Iceland) and four abstentions (Japan, Korea, Norway, Russia).

Redfish 3M

Proposal (by Russia): TAC of 26 000 tons was adopted by consensus.

American plaice 3M

Proposal (by Canada): No directed fishery for 1995 was adopted by consensus.

Shrimp 3M and 3LNO

Proposal (by Working Group):

- No shrimp fishery in 3LNO for 1995;
- In 3M shrimp, reduce the bar space from 28 to 22 mm;
- In 3M shrimp, reduce the groundfish by-catch ceiling from 10% to 5% which triggers the requirement to move fishing grounds;
- In 3M shrimp, maintain the same level of observer coverage as in 1994 - 10%;
- In 3M shrimp, maintain the same mesh size at 40 mm.

were adopted by consensus. (Annex 3)

Under item 18, "Management and Technical Measures for Fish Stocks Straddling National Fishing Limits", the following measures were adopted:

Cod 3NO

Proposal (by Canada): No directed fishery was adopted by consensus.

Redfish 3LN

Proposal (by EU): TAC of 14 000 tons was adopted by consensus.

American plaice 3LNO

Proposal (by Canada): No directed fishery was adopted by consensus.

Yellowtail flounder 3LNO

Proposal (by Canada): No directed fishery was adopted by consensus.

Witch flounder 3NO

Proposal (by Canada): No directed fisehry was adopted by consensus.

Capelin 3NO

Proposal (by Norway): No directed fishery was adopted by consensus.

Squid *(Illex)* Subareas 3 and 4

Proposal (by Cuba): TAC 150 000 tons was adopted by consensus.

Shrimp 3LNO

Decided under previous item - No shrimp fishery in 3LNO for 1995.

Cod in Div. 3L (in the Regulatory Area)

Proposal (by Canada): No directed fishery was adopted by consensus.

Greenland halibut in Subareas 3 and 4

Proposal (by EU): TAC of 40 000 tons
(by Norway): TAC of 27 000 tons

The Commission agreed on modified proposal - "A catch limitation of 27 000 tons", with the European Union abstention to this proposal.

Quota Table

The Fisheries Commission adopted the Quota Table as attached (Annex 4), in accordance with Schedule 1 of the NAFO Conservation and Enforcement Measures with the exception of four Parties - Estonia, Latvia, Lithuania and Russia, for which a"block quota" was allocated on the same conditions as last year as is noted in footnote 1 thereto.

The Representative of Russia objected to the block quotas and to footnote 1 of the Quota Table. The Representative of Estonia stated that the block quota was harmful and undermined the principle of compliance with the TAC. He requested all Contracting Parties to contribute to a speedy resolution of this issue and called upon the countries sharing the collective quota to stop fishing once the quota has been reached. The Representative of Latvia supported the statements of Russia and Estonia and requested that resolution of the block quotas be added to the agenda of the Special Meeting of the Fisheries Commission. The Representative of Lithuania also supported the need to resolve the block quota question. The Meeting agreed to handle this issue at a Special Meeting of the Fisheries Commission Meeting.

With respect to Greenland halibut in Subareas 2+3, the Meeting agreed that decisions on allocation of quotas to Contracting Parties would be made at a Special Meeting of the Fisheries Commission to be called by the Fisheries Commission before January 1, 1995. The Meeting further agreed that until these decisions are made, the provisions of Part I, Section A.3 of the NAFO Conservation and Enforcement Measures shall apply and that any catches taken as from January 1, 1995 by a Contracting Party would be deducted from the quota of this Contracting Party to be agreed by the Fisheries Commission at its Special Meeting. This was noted in footnote 6 of the Quota Table. With respect to the timing of the Special Meeting, the Chairman announced that "the Fisheries Commission has requested the Chair to call for a Special Meeting of the Fisheries Commission before the first of January 1995. The Chair will undertake all efforts to organize this meeting before this date".

Formulation of Request to the Scientific Council for Scientific Advice on the Management of Fish Stocks in 1995

Following a proposal by the Representative of Canada, it was agreed to submit a request to the Scientific Council (Annex 5) for scientific advice on management in 1996 of certain fish stocks in Subareas 3 and 4. It was noted that the Scientific Council had provided a report on research needed to address the uncertainties about stock structure and status of Greenland halibut (Annex 6).

Transfer of Quotas Between Contracting Parties (item 20)

It was agreed that the NAFO Executive Secretary would prepare a table outlining any transfer of quotas during 1994-1995.

Closing Procedures (items 21 to 23)

It was decided the 17th Annual Meeting will be held on 11-15 September 1995 in the Halifax-Dartmouth area.

There was no other business to discuss at the Meeting.

The Annual Meeting of the Fisheries Commission was adjourned at 1330 hours on 23 September 1994.

The List of Decisions and Actions by the Fisheries Commission at the 16th Annual Meeting is presented in Annex 7.

Annex 1. List of Participants

This list is identical to the List of Participants of the General Council (please see Annex 1, page 25).

Annex 2. Agenda

Fisheries Commission, 16th Annual Meeting

Dartmouth, Nova Scotia, Canada
19-23 September 1994

I. Opening Procedures

1. Opening by the Chairman, H. Koster (EU)
2. Appointment of Rapporteur
3. Adoption of Agenda
4. Admission of Observers
5. Publicity

II. Administrative

6. Review of Commission Membership

III. Conservation and Enforcement Measures

7. Incorporation of a Catch Reporting System into the Hail System
8. Effort Plans for the Vessels of Contracting Parties Operating in the Regulatory Area
9. Nominal Catches by Contracting Parties Exceeding Quotas
10. NAFO Rules Regarding Incidental Catches
11. Annual Return of Infringement, Surveillance, Inspection Reports
12. Fishing Vessel Registration in the Regulatory Area
13. Review of the NAFO Observer Scheme Pilot Project
    - 13.1 Reports by Contracting Parties on the results of pilot projects
    - 13.2 Evaluation of any administrative or operational problems of the program
    - 13.3 Assessments of the effectiveness and the costs of the program
    - 13.4 Appropriateness of including an observer scheme in the NAFO Conservation and Enforcement Measures
    - 13.5 Decision on proposals for a NAFO Observer Scheme
14. Minimum Fish Size (witch, redfish, Greenland halibut) and Minimum Size of Processed Fish (witch, redfish, G. halibut, cod, A. plaice, yellowtail flounder)
15. Report of STACTIC at the Annual Meeting

IV. Conservation of Fish Stocks in the Regulatory Area

16. Summary of Scientific Advice by the Scientific Council

17. Management and Technical Measures for Fish Stocks in the Regulatory Area

    17.1 Cod in Div. 3M
    17.2 Redfish in Div. 3M
    17.3 American plaice in Div. 3M
    17.4 Shrimp in Div. 3M

18. Management and Technical Measures for Fish Stocks Straddling National Fishing Limits

    18.1 Cod in Div. 3NO
    18.2 Redfish in Div. 3LN
    18.3 American plaice in Div. 3LNO
    18.4 Yellowtail flounder in Div. 3LNO
    18.5 Witch flounder in Div. 3NO
    18.6 Capelin in Div. 3NO
    18.7 Squid (*Illex*) in Subareas 3 and 4
    18.8 Shrimp in Div. 3LNO
    18.9 Management and Technical Measures for the following stocks, if available in the Regulatory Area in 1995:

        i) Cod in Div. 3L

    18.10 Greenland halibut

19. Formulation of Request to the Scientific Council for Scientific Advice on the Management of Fish Stocks in 1996

20. Transfer of Quotas Between Contracting Parties

V. Closing Procedures

21. Time and Place of the Next Meeting

22. Other Business

23. Adjournment

Annex 3. Decisions by the Fisheries Commission on the Conservation and Enforcement Measures in the Regulatory Area

I. To amend: Part I - Management, Other Measures, item E
to read: Cod in Div. 3L

Noting differences that have been expressed on the subject of 2J3KL cod by Contracting Parties,

Noting the need to avoid prejudice to the legal position of any Contracting Party on this subject,

Noting the current moratorium that is being applied by Canada to the fishing of this stock,

Noting the available scientific advice,

Directed fisheries for this cod in Division 3L in the Regulatory Area shall not be permitted in 1995.

II. To amend: Part I, - Management, Other Measures, items F & G
to read: Shrimp in Div. 3M and 3LNO

F. Vessels fishing for shrimp in Division 3M in 1995 shall use nets with a minimum mesh size of 40 mm.

Vessels fishing for shrimp in Division 3M in 1995 shall use sorting grids or grates with maximum spacing between the bars of 22 mm.

In the event that total by-catches of all regulated groundfish species in any haul exceed 5 percent by weight, vessels shall immediately change fishing area (minimum of 5 nautical miles) in order to seek to avoid further by-catches of regulated groundfish.

A Contracting Party shall ensure that its vessels fishing shrimp in Division 3M in 1995 are included in its implementation of the pilot project for a NAFO observer scheme, as outlined in Part VI of the Conservation and Enforcement Measures. A Contracting Party shall further deploy observers so as to ensure that a minimum of 10 percent of the Contracting Party's total estimated fishing days on ground for shrimp in Division 3M in 1995 are subject to observation.

G. Due to biological considerations, all Contracting Parties shall ensure that their vessels shall not conduct a directed fishery for shrimp in division 3LNO in 1995.

III. To amend: Part VI-Pilot Project for a NAFO Observer Scheme
to modify: The Pilot Project shall be extended to 31 December 1995 and all dates in Part VI be modified accordingly.

QUOTA TABLE. Total allowable catches (TACs) and quotas (metric tons) for 1995 of particular stocks in Subareas 3 and 4 of the NAFO Convention Area. The values listed include quantities to be taken both inside and outside the 200-mile fishing zone, where applicable.

		Cod		Redfish		A. plaice		Yellowtail	Witch	Capelin	G. halibut	Squid (*Illex*)[2,3]
Contracting Party	Division:	3M	3NO*	3M	3LN	3M*	3LNO*	3LNO*	3NO*	3NO*	SA 2+3	SA 3+4
1. Bulgaria		-	N	390	-	N	N	N	N	N		500
2. Canada		85	O	650	5 964	O	O	O	O	O		N.S.[4]
3. Cuba		407		2 275	1 372							2 250
4. Denmark (Faroe Islands and Greenland)		2 461	D	-	-	D	D	D	D	D		-
5. European Union		5 485	I	4 030	476	I	I	I	I	I		N.S.[4]
6. Iceland		-	R	-	-	R	R	R	R	R		-
7. Japan		-	E	520	-	E	E	E	E	E		2 250
8. Korea		-	C	-	-	C	C	C	C	C		2 000
9. Norway		1 018	T	-	-	T	T	T	T	T		-
10. Poland		424	E	-	-	E	E	E	E	E		1 000
11. Estonia			D			D	D	D	D	D		
12. Latvia			F			F	F	F	F	F		
13. Lithuania	[1]	1 078[1]	I	18 005[1]	6 104[1]	I	I	I	I	I		5 000[1]
14. Russia			S			S	S	S	S	S		
			H			H	H	H	H	H		
			I			I	I	I	I	I		
			N			N	N	N	N	N		
15. Others		42	G	130	84	G	G	G	G	G		3 000
Total Allowable Catch		11 000	*	26 000	14 000	*	*	*	*	*	27 000[6]	150,000[5]

[1] Quotas to be fished by vessels from Estonia, Latvia, Lithuania and the Russian Federation. The provisions of Part I, Section A.3 of the NAFO Conservation and Enforcement Measures shall shall apply.

[2] The opening date for the Squid (*Illex*) fishery is 1 July.

[3] Any quota listed for squid may be increased by a transfer from any "coastal state" as defined in Article 1, paragraph 3 of the NAFO Convention, provided that the TAC for squid is not exceeded. Transfers made to Contracting Parties conducting fisheries for squid in the Regulatory Area shall be reported to the Executive Secretary, and the report shall be made as promptly as possible.

[4] Not specified because the allocation to these Contracting Parties are *as yet undetermined*, although their sum shall not exceed the difference between the total of allocations to other Contracting Parties and the TAC.

[5] The TAC would remain at 150 000 tonnes subject to adjustment where warranted by scientific advice.

[6] Decisions on catch shares to be made at a Special Meeting of the Fisheries Commission. Until these decisions are made, the provisions of Part I, Section A.3 of the NAFO Conservation and Enforcement Measures shall apply. Any catches taken as from 1 January 1995 by a Contracting Party will be deducted from the quota of this Contracting Party to be agreed by the Fisheries Commission at its Special Meeting.

* The provisions of Part I, Section A.4b) of NAFO Conservation and Enforcement Measures shall apply.

Annex 5. Fisheries Commission's Request for Scientific Advice on Management in 1996 of Certain Stocks in Subareas 3 and 4

1. The Fisheries Commission with the concurrence of the Coastal State as regards the stocks below which occur within its jurisdiction, requests that the Scientific Council, at a meeting in advance of the 1995 Annual Meeting, provide advice on the scientific basis for the management of the following fish and invertebrate stocks or groups of stocks in 1996:

   Cod (Div. 3NO; Div. 3M)
   Redfish (Div. 3LN; Div. 3M)
   American plaice (Div. 3LNO; Div. 3M)
   Witch flounder (Div. 3NO)
   Yellowtail flounder (Div. 3LNO)
   Capelin (Div. 3NO)
   Squid (Subareas 3 and 4)
   Shrimp (Div. 3M)
   Greenland halibut (Subareas 2 and 3)

2. The Commission and the Coastal State request the Scientific Council to consider the following options in assessing and projecting future stock levels for those stocks listed above:

   a) For those stocks subject to analytical dynamic-pool type assessments, the status of the stock should be reviewed and management options evaluated in terms of their implications for fishable stock size in both the short and long term. As general reference points the implications of fishing at $F_{0.1}$, F_{1994} and F_{max} in 1996 and subsequent years should be evaluated. The present stock size and spawning stock size should be described in relation to those observed historically and those expected in the longer term under this range of options.

      Opinions of the Scientific council should be expressed in regard to stock size, spawning stock sizes, recruitment prospects, catch rates and TACs implied by these management strategies for 1996 and the long term. Values of F corresponding to the reference points should be given and their accuracy assessed.

   b) For those stocks subject to general production-type assessments, the time series of data should be updated, the status of the stock should be reviewed and management options evaluated in the way described above to the extent possible. In this case, the general reference points should be the level of fishing effort or fishing mortality (F) which is calculated to be required to take the MSY catch in the long term and two-thirds of that effort level.

   c) For those resources of which only general biological and/or catch data are available, no standard criteria on which to base advice can be established. The evidence of stock status should, however, be weighed against a strategy of optimum yield management and maintenance of stock biomass at levels of about two-thirds of the virgin stock.

d) Spawning stock biomass levels that might be considered necessary for maintenance of sustained recruitment should be recommended for each stock. In those cases where present spawning stock size is a matter of scientific concern in relation to the continuing productive potential of the stock, management options should be offered that specifically respond to such concerns.

e) Presentation of the result should include the following:

i) for stocks for which analytical dynamic-pool type assessments are possible:

- a graph of yield and fishing mortality for at least the past 10 years.
- a graph of spawning stock biomass and recruitment levels for at least the past 10 years.
- a graph of catch options for the year 1996 over a range of fishing mortality rates (F) at least from $F_{0.1}$ to F_{max}.
- a graph showing spawning stock biomass at 1.1.1997 corresponding to each catch option.
- graphs showing the yield-per-recruit and spawning stock per-recruit values for a range of fishing mortality.

ii) for stocks for which advice is based on general production models, the relevant graph of production on fishing mortality rate or fishing effort.

In all cases the three reference points, actual F, F_{max} and $F_{0.1}$ should be shown.

3. The Fisheries Commission with the concurrence of the Coastal State requests that the Scientific Council continue to provide information, if available, on the stock separation in Div. 2J+3KL and the proportion of the biomass of the cod stock in Div. 3L in the Regulatory Area and a projection if possible of the proportion likely to be available in the Regulatory Area in future years. Information is also requested on the age composition of that portion of the stock occurring in the Regulatory Area.

4. The Scientific Council is asked to review all data available on the implications of using 90 mm minimum mesh size in mid-water trawls when fishing for redfish in Div. 3LN, in comparison to 130 mm. This should include consideration of fish lost during haulbacks.

5. Noting that the Scientific Council held a Symposium on Seals in the Ecosystem, the Fisheries Commission requests a detailed report on the nature and extent of analyses that were tabled at the Symposium with respect to the interrelation between seals and commercial fish stocks, together with recommendations on research needed to quantify further interactions.

6. Noting the Scientific Council's recommendations for coordinated research on Greenland halibut, the Fisheries Commission and the two Coastal States emphasize the urgency of acquiring information on the distribution and stock status. The Scientific Council is requested to pursue its coordinated efforts and member countries are urged to commit the necessary resources to the research.

Annex 6. Request From Fisheries Commission With Respect to Research Requirements for Greenland Halibut

In response to a request of the Fisheries Commission, the Council reviewed the research requirements considered necessary to significantly enhance knowledge on the biology and assessment of Greenland halibut in NAFO Subareas 2 and 3.

The major requirements are

1) survey coverage of the total stock area to depths of at least 1500 meters

2) data from the commercial fisheries including biological data

At present, part of the distribution area is being surveyed but coverage of deep strata has not been carried out except on an occasional basis. It is recognized that for proposals for expanded surveys to deeper water than usual some vessels currently used do not the capacity to carry out surveys in deeper waters. Therefore, vessels with the necessary capability to fish deep water would be required as a complement.

In reviewing the current survey activity in comparison to the major requirement the Council noted that:

1) There has been no recent stratified random bottom trawl survey in Divisions 2GH.

2) The annual Canadian groundfish surveys conducted in autumn in Divisions 2J+3K and 3LNO extends only to 1000 meters and to 730 m respectively.

3) The only deeper water survey in 3KLMN was a Canadian survey carried out in the winter of 1994. If this is repeated, it should (at least) use the same design, gear and the same or similar vessel as used in 1994. In addition, the survey should be expanded to cover additional area in Divisions 3NO to where the commercial fishery has also expanded in recent years.

4) The annual groundfish survey conducted by the European Union in Division 3M during summer (mainly July) does not extend below 700 meters nor does it include the area of the Flemish Pass.

5) The European Union proposed Greenland halibut survey in the NAFO Regulatory Area using longlines to depths of 2000-2500 meters should be carried out in autumn 1995 in conjunction ,and as a complement, to the Canadian groundfish surveys.

6) There is a need to expand sampling of the commercial fishery for biological data such as length, sex, maturity and age especially from deepwater fixed gear fisheries in Canada's far north where current sampling is very limited.

7) For the purpose of examining migratory patterns especially in the deepwater of 3LMNO, tagging studies should be conducted. As a first initiative, this should be conducted, in part, during the proposed European Union longline survey since longline gear offers an increased chance of survival from tagging.

8) In response to continued requests from the Fisheries Commission regarding minimum landing size for Greenland halibut, some gear selectivity studies using current regulated mesh size would be informative.

In addition to the above proposals, it would be advisable to continue the trawl surveys in Subarea 1 being the longest continuous survey time series on the stock in recent years, and further to supplement this with surveys in Division 0B offshore so as to cover the offshore distribution area.

Besides a thorough collection of biological data including length, sex, maturity, fecundity, diet etc., from the above proposed surveys and expanded surveys, a complete set of appropriate environmental observations should be collected.

Annex 7. List of Decisions and Actions by the Fisheries Commission (16th Annual Meeting; 19-23 September 1994)

Substantive issue (propositions/motions)	Decision/Action (pp.)
1. Incorporation of a Catch Reporting System in the Hail System	Deferred to 17th Annual Meeting (61)
2. Effort Plans for the Vessels of Contracting Parties Operating in the Regulatory Area	Deferred to 17th Annual Meeting (61)
3. Nominal Catches by Contracting Parties Exceeding Quotas	Modified (61)
4. NAFO Rules Regarding Incidental Catches	Withdrawn (61)
5. Annual Return of Infringement, Surveillance, Inspection Reports	Canadian proposal adopted as Revised (61)
6. Fishing Vessel Registration	Agreed to discontinue this presentation (62)
7. NAFO Observer Scheme Pilot Project	Extended to 1995 (62)
8. Minimum Fish Size (Part I.D of the Measures)	Deferred to 17th Annual Meeting (62)
9. Report of the STACTIC Special Meeting (30.08-01.09.94) on the Pilot Project Observer Scheme (FC Doc. 94/5)	Adopted (62)
10. Report of STACTIC at the 16th Annual Meeting (Part II, FC Doc. 94/13)	Adopted (62)
11. TACs/Regulatory Measures for major species for 1995 in the Regulatory Area:	Adopted (62)
Cod in Div. 3M	11,000 tons
Redfish in Div. 3M	26,000 tons
A. plaice in Div. 3M	no directed fishery
Cod in Div. 3NO	no directed fishery
Redfish in Div. 3LN	14,000 tons
A. plaice in Div. 3LNO	no directed fishery
Y. flounder in Div. 3LNO	no directed fishery

Substantive issue (propositions/motions)	Decision/Action (pp.)
Witch flounder in Div. 3NO	no directed fishery
Capelin in Div. 3NO	no directed fishery
Squid in Subareas 3+4	150 000 tons
12. Regulatory Measures for shrimp fishery 3M and 3LNO	Adopted (64)
13. No directed fishery for Cod in Div. 3L of the Regulatory Area in 1995	Adopted (64)
14. Regulatory Measures for Greenland halibut in 2+3: Catch limitation of 27 000 tons	Adopted (65)
15. Schedule I-Quota Table for 1995 for NAFO Conservation and Enforcement Measures (Part V) for international regulation of the fisheries for particular stocks	Adopted (66)
16. Request to the Scientific Council for scientific advice on management of fish stocks in 1996	Adopted (66)

PART III

(pages 81-148)

Activities of the Scientific Council in 1994

List of Meetings

The following meetings were held under the authority of the Scientific Council in 1994:

- Scientific Council Special Meeting; 13-15 February, Albert Borschette Conference Centre, Brussels, Belgium.

- Scientific Council Meeting; 8-22 June, Keddy's Dartmouth Inn, Dartmouth, Nova Scotia, Canada.

- Symposium on "Impact of Anomalous Oceanographic Conditions at the Beginning of the 1990s in the Northwest Atantic on the Distribution and Behaviour of Marine Life"; 15-16 September, NAFO Headquarters, Dartmouth, Nova Scotia, Canada.

- Scientific Council Annual Meeting; 19-23 September, Holiday Inn, Dartmouth, Nova Scotia, Canada.

- Scientific Council Meeting; 18-21 November, NAFO Headquarters, Dartmouth, Nova Scotia, Canada.

Scientific Council Special Meeting

The Scientific Council met at the European Union DG XIV Building, at 99 Rue Joseph II, Brussels, Belgium, on 13 February 1994, and at the Albert Borschette Conference Centre on 14 and 15 February 1994.

Representatives attended from Canada, European Union (Denmark, Germany, Portugal, Spain and United Kingdom), Japan, Republic of Korea and the Russian Federation. The Executive Secretary and Assistant Executive Secretary were in attendance. (Annex 1)

The Chairman of the Scientific Council was H. Lassen (EU) and the Rapporteur, T. Amaratunga, Assistant Executive Secretary.

The Agenda was adopted as presented in Annex 2.

FISHERY SCIENCE

Assessment of the Cod Stock in Divisions 3N and 3O

An analytical assessment was conducted using three Canadian survey indices and one Russian survey index in a formulation of the adaptive framework. Analyses were conducted using two estimates of partial recruitment (PR), domed and flat topped. The resulting interpretations of stock status and stock trends over time were substantially different but STACFIS considered that the analysis and data were not sufficient to determine the most appropriate PR. It was noted, however, that the analysis using the domed PR indicated that the SSB in the mid-1980s was far greater than that during the 1960s. This was considered to be unrealistic.

Recruitment of the 1983 to 1988 year-classes were extremely weak. The 1989 and possibly the 1990 year-classes were, however, above the average of the 1974-88 year-classes. The stock is comprised mainly of young, immature fish. The number of older, mature fish continues to decline. Rebuilding of the spawning stock biomass (SSB) in the short term is dependent on the 1989 and the 1990 year-classes surviving to maturity. It will be another one to two years before the majority of these fish are sexually mature.

Forecast for 1994:

Option Basis	Predicted Catch (1994) (tons)	Predicted SSB (1.1.1995) (tons)
	Domed PR	
$F_{0.1}$ = 0.25	18 871	61 649
F_{max} = 0.40	28 622	55 486
No Fishing	0	72 747
F_{94} = 0.07	6 000	69 878

Option Basis	Predicted Catch (1994) (tons)	Predicted SSB (1.1.1995) (tons)
	Flat-topped PR	
$F_{0.1}$ = 0.20	10 609	37 709
F_{max} = 0.30	15 336	34 663
No Fishing	0	44 644
F_{94} = 0.11	6 000	40 767

Recommendation:

Exploitation rates targeting on younger immature fish remain high. STACFIS therefore reiterated its advice of June 1993 that all necessary steps should be taken to eliminate the catch of small fish from this stock.

The 1989 year-class is estimated to be somewhat stronger than estimated in June 1993. There are indications that the 1990 year-class is also strong. However, high variability in the 1993 Canadian and Russian spring RV survey data, as well as conflicting evidence between spring and autumn surveys, dictate caution in the interpretation of the strength of these year-classes. Therefore STACFIS also reiterated its June 1993 advice that any catch in 1994 should not exceed 6 000 tons. STACFIS emphasizes that this catch level is an upper limit and should not be interpreted as a recommended TAC.

The SSB (biomass) cannot begin to recover unless the 1989 and 1990 year-classes survive to maturity. This will not happen if fisheries on immature ages continue at current high levels. Any harvesting of this stock will reduce the rebuilding potential. Recovery will occur most rapidly in the absence of a fishery.

Annex 1. List of Participants

Scientific Council Meeting

Brussels, Belgium
13-15 February 1994

CANADA

CANADA

Atkinson, D. B.	Northwest Atlantic Fisheries Centre, P. O. Box 5667, St. John's, Newfoundland
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Davis, B.	" " " " " " "
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EUROPEAN UNION

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JAPAN

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RUSSIAN FEDERATION

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Troyanovsky, F. M.	" " "

Annex 2. Agenda

Scientific Council Meeting

Brussels, Belgium
13-15 February 1994

I. Opening (Chairman: H. Lassen)

1. Appointment of Rapporteur
2. Adoption of Agenda
3. Work Plan

II. Fishery Science (STACFIS Chairman: H. P. Cornus)

1. Stock assessment of cod in Div. 3NO

   - assessment and catch options for 1994 of cod in Div. 3NO

2. Other matters

III. Adoption of Report

IV. Adjournment

Scientific Council Meeting

The Scientific Council met at the Keddy's Dartmouth Inn, 9 Braemar Drive, Dartmouth, Nova Scotia, Canada during 8-22 June 1994, to consider the various matters listed in its Agenda.

Representatives attended from Canada, Cuba, Denmark (in respect of the Faroe Islands and Greenland), European Union (Denmark, France, Germany, Portugal and Spain), Japan and Russian Federation, and an observer from United States of America. The Executive Secretary and Assistant Executive Secretary were in attendance. (Annex 1)

The Chairman of the Scientific Council was H. Lassen (EU) and the Rapporteur, T. Amaratunga.

The Agenda was adopted as presented in Annex 2.

FISHERY SCIENCE

General Review and Fishery Trends

Special emphasis was given to Greenland halibut, and Subareas 0-3 was considered a single stock. Noting fishing on one component affects the catch possibilities on other components, it was agreed all components of the Greenland halibut stock should be regulated. This applied particularly to the new fisheries in the Flemish Pass in Div. 3LMN.

The yield taken of the Greenland halibut populations in recent years affects the populations significantly in all Subareas as is seen from declining catch rates and trawlable biomass. The same pattern is seen all throughout the offshore range.

There has been a significant amount of information collected which suggests that Greenland halibut in the northern West Greenland fiords (Div. 1A) do not contribute to the spawning stock in the offshore areas in Davis Strait and that a separate TAC be established for the inshore areas of Div. 1A.

The Council noted that due to non-presentation of STATLANT 21A data by Contracting Parties fishery trends analysis would not be done this year, although this analysis is considered a valuable annual overview of the fisheries in the Northwest Atlantic, Subareas 0-6.

Assessment of Finfish and Invertebrate Stocks

The Council recognized that as a result of the recent closures of several fisheries in the Northwest Atlantic, important data from the fisheries activities will not be available. The assessments of the stocks will consequently be critically dependent on surveys. The importance of these survey data will therefore be increased, particularly for acoustic survey results since they provide absolute estimates of abundance.

The Council agreed on the assessments of 18 stocks in Subareas 0-4 as requested by the Fisheries Commission, and the Coastal States Canada and Denmark (in respect of the Faroe Islands and Greenland), and had advised on catch levels corresponding to reference levels according to the different requests. Management advice, based on the reference levels, could not be provided for several stocks due to insufficient data. Detailed assessments are given in the following summary sheets.

Cod in Divisions 2J, 3K and 3L

Year	1987	1988	1989	1990	1991	1992	1993	1994
TAC	256	266	235	199	190	120[1]	[1]	[1]
Catch	235	269	253	219	150[2]	44[2]	11[2]	
Offshore catch	156	168	151	106	90[2]	32[2]	22[2]	
Fixed gear catch	79	101	103	113	60[2]	12[2]	9[2]	

[1] Moratorium in effect on Canadian fishing since July 1992. Weights in '000 tons
[2] Provisional.

Fishing Mortality: Although stock size and fishing mortality could not be estimated, analysis incorporating the extremely low RV abundance for 1993 suggest that total mortalities in recent years have been very high and most likely in excess of 1.0 for the fully recruited age groups. The continued drastic decline in survey abundance occurred in the virtual absence of an offshore fishery and with a low 'recreational' fishery.

Recruitment: The 1986 and 1987 year-classes were originally estimated to be strong but subsequent analysis suggest a downward revision of the estimates such that they now appear to have been below average. Survey data would suggest that year-classes since that time are weak. Spawning stock biomass remains low, and based on previous analyses strong recruitment is not anticipated.

State of Stock: There is little doubt that the stock has declined substantially with abundance and biomass probably at an all-time low.

Forecast for 1995: Current data suggest further stock declines. No fisheries should be considered until there is evidence of adequate recovery.

Environmental factors: Temperatures recorded at Station 27 during the 1990s been anomalously low when compared with the mean for years since 1946.

Long term prospects: Before the expansion of the fishery in the 1960s catches had generally been in the 200 000 to 300 000 ton range. During the 1960s, good recruitment along with exploitation rates ranging from 25% to 50% saw catches averaging about 580 000 tons. Given the current depressed state of the stock which continues to decline, the low current spawning stock biomass, and the apparent low recruitment levels of recent years, stock recovery in terms of total and spawning stock biomass is not possible in the next 5-7 years. Stock recovery cannot begin until there is production and survival of significant numbers of new recruits.

Special Comment: Total mortality derived from surveys appeared to have declined between 1992 and 1993 presumably because of the fishery closure, but the level of mortality is too high to be explained by a catch of 11 000 tons. Possible reasons for this inconsistency include the following: 1) factors other than fishing are responsible for the observed declines; 2) year effects of the surveys in recent years are hampering calibration of SPA; 3) the 1993 catch has been underestimated. It is not possible to determine which of these or a combination might be correct. It is possible that the recreational fishery in 1993 took fish predominantly originating from supposed inshore stocks. The areas where these fish would occur are not covered during the fall surveys, and no information exists concerning possible trends in inshore 'stock' abundance.

Cod in Division 3M

Year	1987	1988	1989	1990	1991	1992	1993	1994
Recommended TAC	0	0	0	0	0	0	0	0
Agreed TAC	13	0	0	0	13	13	13	11
Reported catches	11	2	1	2	8[1]	6[1]	5[1]	
Non-reported catches		-[2]	39	30	3	5	7	
Total landings	11	2	40	32	11[1]	11[1]	13[1]	

[1] Provisional. Weights in '000 tons
[2] No information available.

Recruitment: The 1990 and 1991 year-classes appear stronger than the other year-classes currently in the population.

State of Stock: Surveys conducted by USSR/Russia since 1971 indicated that biomass and abundance had declined to a minimum in 1987. Both USSR/Russia and EU surveys showed an increase in stock biomass from 1988 to 1989 due to a relatively abundant 1986 year-class, a decrease since then to 1992, and an increase from 1992 to 1993, due to the income of two relatively abundant year-classes, those of 1990 and 1991.

Forecast for 1995: No forecast available.

Cod in Divisions 3N and 3O

Year	1987	1988	1989	1990	1991	1992	1993	1994
Recommended TAC			Same as agreed.					
Agreed TAC	33	40	25	18.6	13.6	13.6	10.2	6[1]
Reported catches	42	43	33	18	17[2]	10.1[2]	9[2]	
Non-reported catches	-	-	-	11	12	2.5	0.7	
Total landings	42	43	33	29	29[2]	12.6[2]	9.7[2]	

[1] No fishing. Weights in '000 tons
[2] Provisional.

Recruitment: The February assessment indicated that the 1989 and 1990 year-classes were above the abundance average of the 1974-88 year-classes. The total abundance estimate from the 1994 spring survey was 6% of that in 1993 and suggests that the spring 1993 estimates may have been optimistic.

State of Stock: The stock is comprised mainly of young, immature fish. The number of older, mature fish continues to decline. Rebuilding of the spawning stock biomass in the short term is dependent on the 1989 and the 1990 year-classes surviving to maturity. It will be another one to two years before the majority of these fish are sexually mature.

Forecast for 1995: No forecast available.

Redfish in Subarea 1

Year	1987	1988	1989	1990	1991	1992	1993	1994
Recommended TAC			No TAC					
Agreed TAC	19	19	19	19	19	19	19	19
Reported catches	1	1	1	0.4	0.3[1]	0.3[1]	0.3[1]	
Total landings	1	1	1	0.4	0.3[1]	0.3[1]	0.3[1]	

[1] Provisional. Weights in '000 tons

State of Stock: Survey estimates indicated a decline of biomass and abundance of the adult stock components of both golden and beaked redfish to an extremely low level.

Forecast for 1995: No projections for $F_{0.1}$, F_{93}, F_{max}.

Recommendations: Directed catches and by-catches of redfish in Subarea 1 be reduced to the lowest possible level.

Redfish in Division 3M

Year	1987	1988	1989	1990	1991	1992	1993	1994
Recommended TAC	20	20	20	<50	43	35	<20	20
Agreed TAC	20	20	20	50	50	43	30	26
Reported catches	44	23	48	67	41[1]	29[1]	21[1]	
Non-reported catches			10	14	7	14	8	
Total landings	44	23	58	81	48[1]	43[1]	29[1]	

[1] Provisional. Weights in '000 tons

State of Stock: Biomass has declined at least from 1988 to 1991-92.

Forecast for 1995: No information available for $F_{0.1}$, F_{93}, F_{max}.

Recommendations: Total catch of redfish in Div. 3M be reduced to 20 000 tons for 1995.

Special Comments: There continues to be a substantial fishery for shrimp in Div. 3M. The Council expressed its concern on the likely negative impact of these fisheries on future recruitment to the redfish fisheries. While full information for 1993 may be made available when the shrimp resources in this Division will be assessed in September, the Council considers that the annual information should be made available in advance of the June meeting when the status of Div. 3M redfish is to be assessed.

Redfish in Divisions 3L and 3N

Year	1987	1988	1989	1990	1991	1992	1993	1994
Recommended TAC	25	25	25	25	14	14	14	14
Agreed TAC	25	25	25	25	14	14	14	14
Reported catches	71	45	32	25	22[1]	15[1]	15[1]	
Non-reported catches	8	8	2	4	4	12	4-9	
Total Landings	79	53	34	29	26[1]	27[1]	19-24[1]	

[1] Provisional. Weights in '000 tons

State of Stock: Available indices exhibit considerable between-year variability but generally indicate a stock at a low level, especially in Div. 3L.

Forecast for 1995: No information available for $F_{0.1}$, F_{93}, F_{max}.

Recommendations: Total catch of redfish in Div. 3LN for 1995 not to exceed 14 000 tons.

Special Comments: Catches by non-Contracting Parties in recent years have ranged from 7 000 tons in 1991 to 24 000 tons in 1987.

Silver Hake in Divisions 4V, 4W and 4X

Year	1987	1988	1989	1990	1991	1992	1993	1994
Recommended TAC	100	161	235	-	100	105	75	51
Agreed TAC	100	120	135	135	100	105	86[1]	30
Reported catches	62	74	91	70	68[2]	32[2]	29[2]	15[3]
Sp. stock biomass	234	195	183	174	166	147	-	-
Recruitment (age 1)[4]	822	787	1168	933	943	798	1200[3]	1100[3]
Mean F (avg ages 3-5)	0.73	0.76	1.52	0.95	1.40	0.55	0.32	

[1] Catches additional to advised $F_{0.1}$ catch were allocated in the knowledge that not all allocations would be utilized fully.

Weights in '000 tons

[2] Provisional.
[3] Estimated.
[4] Numbers in '000 000.

State of Stock: Commercial standardized catch rates have dropped since 1989, but remained stable over 1992-93 at approximately 40% of the 1989 level. Results of July research vessel surveys showed declining numbers and biomass from 1986-92. The 1993 survey showed a moderate increase in numbers and biomass.

Forecast for 1995: Catch in 1994 was assumed at 15 000 tons. Increase in the size of the fished stock after 1993 results from recruitment of the 1992 year-class which will account for 50% of the catch in 1995.

Option Basis	Predicted catch (1995)	Predicted SSB (1.1.1996)
$F_{0.1}$ = 0.70	79 000	
F_{93} =		
F_{max} =		

Recommendations: For silver hake in Div. 4VWX, the catch at a target fishing level of $F_{0.1}$ in 1995 is 79 000 tons.

American Plaice in Division 3M

Year	1987	1988	1989	1990	1991	1992	1993	1994
Recommended TAC	2	2	2	2	2	2	2	1[1]
Agreed TAC	2	2	2	2	2	2	2	
Reported catches	5.6	2.8	3.5	0.8	1.6[2]	0.8[2]	0.3[2]	

[1] No directed fishing allowed.
[2] Provisional.

Weights in '000 tons

State of Stock: Both Russian and EU surveys show that relative abundance and biomass are at the lowest level since 1983. SSB increased in 1993 to the level of 1990-91 due to the recruitment of 1986 year-class, but it is still at a low level.

Forecast for 1995: No information available.

Recommendations: Catch of American plaice in Div. 3M in 1995 should not exceed 1 000 tons.

Special Comments: The recommended 1 000 tons for 1995 corresponds to the expected by-catch in non-directed fisheries.

American Plaice in Divisions 3L, 3N and 3O

Year	1987	1988	1989	1990	1991	1992	1993	1994
Recommended TAC	48	28	30.3	24.9	25.8	25.8	10.5	4.8
Agreed TAC	48	40[1]	30.3	24.9	25.8	25.8	10.5	4.8[2]
Reported catches	55	40.7	41.4	24.4	26[3]	10.6[3]	8.3[3]	
Non-reported catches	0	0.1	2.0	8.1	8	2.0	9.0	
Total catch	55	40.8	43.4	32.5	34[3]	12.6[3]	17.3[3,4]	

[1] Effective TAC was 33 585 tons.
[2] No directed fishing allowed.
[3] Provisional.
[4] Catch may be as high as 19.4 thous. tons.

Weights in '000 tons

State of Stock: The stock is at a level far below the historic average, and has declined very rapidly in recent years. Surveys indicate that SSB has declined by 85% or more since the mid-1980s. Stock size in 1993 is estimated to be at the lowest level ever observed.

Forecast for 1995: No information available.

Recommendations: No fishing on American plaice in Div. 3LNO in 1995.

Witch Flounder in Divisions 3N and 3O

Year	1987	1988	1989	1990	1991	1992	1993	1994
Recommended TAC	5	5	5	5	5	5	5	3
Agreed TAC	5	5	5	5	5	5	5	3
Reported catches	8	7	4	2.7	3.3[1]	4.8[1]	4.2[1]	-
Non-reported catches[2]				1.5	1.5	-	0.3	-
Total landings				4.2	4.8[1]	4.8[1]	4.4	

[1] Provisional. Weights in '000 tons

[2] Data inadequate to estimate misreported catches prior to 1990.

State of Stock: Survey biomass in Div. 3N is at an extremely low level. Biomass in Div. 3O declined slightly during the 1984-90 period with average catches of 2 600 tons but declined more sharply up to 1993. Preliminary estimate for 1994 showed an increase.

Forecast for 1995: No information available for $F_{0.1}$, F_{93}, F_{max}.

Recommendations: No fishing on witch flounder in 1995 in Div. 3N and 3O, to allow rebuilding to former levels.

Yellowtail Flounder in Divisions 3L, 3N and 3O

Year	1987	1988	1989	1990	1991	1992	1993	1994
Recommended TAC	15	15	5	5	7	7	7	7
Agreed TAC	15	15	5	5	7	7	7	7[1]
Reported catches	16.3	16.2	9.1	8.8	11.0[2]	10.7[2]	6.8[2]	
Non-reported catches	0	0.1	1.1	5.1	5.3	0.1	6.8	
Total landings	16.3	16.3	10.2	14.0	16.3[2]	10.8[2]	13.6[2]	

[1] No directed fishing allowed. Weights in '000 tons.

[2] Provisional.

State of Stock: The stock remains stable at a low level. Potential growth of the stock from the 1984-86 year-classes has not occurred, likely because of large catches of juveniles from these cohorts by fisheries in the Regulatory Area, and because the TAC has been exceeded each year since 1984.

Forecast for 1994: No information available for $F_{0.1}$, F_{93}, F_{max}.

Recommendations: To rebuild this stock as fast as possible, no fishing should be permitted on yellowtail flounder in Div. 3LNO in 1995.

Greenland Halibut in Division 0B and Divisions 1BCDEF (for Div. 1A see separate summary sheet)

Year	1987	1988	1989	1990	1991	1992	1993	1994
Recommended TAC[1]	25	25	25	25	25	25	25	25
Reported catches(Div.0B+1B-F)	1	3	1	16	11[2]	13[2]	12[2]	
Non-reported catches						1		
Reported catches (Div. 1A)[3]	8	7	7	8	10[2]	12[2]	12[2]	
Total landings (Div. 0B+1B-F)	1	3	1	16	11[2]	14[2]	12[2]	

[1] Until 1994 TAC set for Subareas 0+1. Weights in '000 tons

[2] Provisional.

[3] Only for information, see Summary Sheet on Greenland halibut in Division 1A.

State of Stock: The survey biomass indices have declined since 1989 and the 1993 estimate for Div. 1BCD is the lowest on record. Abundance estimates also declined in the same period affecting the entire age range except for ages 2 and 3. Catch rates have declined significantly since 1991 in Div. 0B and Div. 1CD.

Forecast for 1995: No information available for $F_{0.1}$, F_{93}, F_{max}.

Recommendations: A separate TAC be established for the inshore areas of Div. 1A. The catch inshore in Div. 1A is expected to be around 12 000 tons in 1995.

Furthermore a separate TAC to be established combined for all of Div. 0B and Div. 1BCDEF.

The effort and catches throughout Subareas 0-3 in 1995 should be reduced compared to recent years.

For Div. 0B and Div. 1BCDEF combined, the TAC for 1995 be set below the offshore catch level of 11-15 000 tons seen in most recent years. This implies a TAC for 1995 be set below 11 000 tons.

Greenland Halibut in Division 1A (new unit, previously included in Subareas 0+1)

Year	1987	1988	1989	1990	1991	1992	1993	1994
Recommended TAC[1]								
Reported catches	8	7	7	8	10[2]	12[2]	12[2]	
Total landings	8	7	7	8	10[2]	12[2]	12[2]	

[1] Until 1994 TAC for Subareas 0+1. Weights in '000 tons
[2] Provisional.

State of Stock: Catch compositions suggest stable stock components in the area. Stable catches since 1991.

Forecast for 1995: No information available for $F_{0.1}$, F_{93}, F_{max}.

Recommendations: A separate TAC be established for the inshore areas of Div. 1A.

Special Comments: There has been a significant amount of information collected which suggests that Greenland halibut in the northern West Greenland fjords (Div. 1A) do not contribute to the spawning stock in the offshore areas in Davis Strait. There is very little fishery offshore in Div. 1A (less than 100 tons) and therefore tagging cannot conclusively test a possible link with Greenland halibut occurring inshore and offshore in Div 1A. There is ongoing research which will allow a re-evaluation after some few years. The catch inshore in Div. 1A is expected to be around 12 000 tons in 1995.

Greenland Halibut in Subarea 2 and Divisions 3K and 3L

Year	1987	1988	1989	1990	1991	1992	1993	1994
Recommended TAC	100	100	100	50	50	50	50	-
TAC[1]	100	100	100	50	50	50	50	25
Reported catches	31	19	19	27	35[2]	52[2]	53[2]	-
Non-reported catches				20	20-40	11	9	
Total landings	31	19	19	47	55-75[2,3]	63[2]	62[2,3]	

[1] *Established by Canada.* Weights in '000 tons
[2] Provisional.
[3] No reliable estimate of total landings.

State of Stock: The survey results in 1991 and 1992 suggest that the year-classes of 1984-86 had declined rapidly to very low numbers in the survey area of Div. 2J+3KL.

Most of the indices of abundance for 1993 indicated a continued decline of older fish throughout Subareas 2 and 3.

Forecast for 1995: No information available for $F_{0.1}$, F_{93}, F_{max}.

Recommendations: The effort and catches throughout Subareas 0-3 in 1995 should be reduced compared to recent years.

Any catch level in Subareas 2-3 above 40 000 tons for 1995 (*status quo* prediction including the catches of non-Contracting Parties) will not be adequate to restrict the fishery. Therefore, a reduction in effort requires a reduction in catch below that figure.

Roundnose Grenadier in Subareas 0 and 1

Year	1987	1988	1989	1990	1991	1992	1993	1994
Recommended TAC	8	8	8	8	8	8	8	8
Agreed TAC	8	8	8	8	8	8	8	
Reported catches	0.38	0.52	0.08	0.24	0.16[1]	0.19[1]	0.1[1]	

[1] Provisional.

Weights in '000 tons

State of Stock: Trawlable biomasses in Div. 1CD estimated from the joint Greenland/Japan surveys have since 1987 fluctuated between 5 900 tons and 45 800 tons. From 1992 to 1993, the estimate decreased from 40 200 tons to 8 200 tons. The surveys did not cover all Divisions and waters deeper than 1 500 m, where roundnose grenadier is known to be distributed. It is, therefore, at present not possible to evaluate the stock.

Forecast for 1995: No information available for $F_{0.1}$, F_{93}, F_{max}.

Recommendations: TAC for Roundnose grenadier in Subareas 0+1 in 1995 to remain at 8 000 tons.

Roundnose Grenadier in Subareas 2 and 3 (with some comments on Roughhead grenadier)

Year	1987	1988	1989	1990	1991	1992	1993	1994
Recommended TAC	11	11	11	11	11	11	11	5
Agreed TAC	11	11	11	11	11	11	11	3
Reported catches[1]	8	6	5	4	5[2,3]	5[2]	10[2]	
Total landings[1]	8	6	5	4	9-14[2,3]	5[2]	10[2]	
Revised landings[4]	7	5	5	1	5-10[3]	3[2]	4[2]	

[1] Original estimates as reported to NAFO.

Weights in '000 tons

[2] Provisional.

[3] No reliable estimate of total landings.

[4] Revised estimates based on data in SCS 94/13 and SCR Doc. 94/29.

State of Stock: Not possible to evaluate precisely. Previous assessments have concluded that the resource has declined in the 'traditional' fishing area inside the Canadian zone, although there was no change in the estimated biomass from surveys in Div. 3K in 1991 and 1994. It is not possible to evaluate the status of the resource in the Regulatory Area.

Forecast for 1995: No forecast.

Recommendations: The current TAC level for roundnose grenadier in Subareas 2 and 3 of 3 000 tons be continued in 1995 as a precautionary measure.

Special Comments: The current TAC for roundnose grenadier in the Canadian zone of SA 2+3 (3 000 tons) is about 15% of the estimated trawlable biomass for Div. 3K alone. If this quota is taken, fishing mortality should not be excessive. In the Regulatory Area, the average catch from 1991 to 1993 represents about 25% of the trawlable biomass for this area. Exploitation has been greater in the Regulatory Area compared to the 'traditional' area in recent years.

Because of efforts by EU-Spain and EU-Portugal it is now possible to determine the proportion of roundnose grenadier and roughhead grenadier in the catches of these countries in the Regulatory Area previously reported as roundnose grenadier. These indicate much lower catches of roundnose grenadier than previously believed. Catches of roughhead grenadier have exceeded those of roundnose since 1990 in the Regulatory Area.

Capelin in Divisions 3N and 3O

Year	1987	1988	1989	1990	1991	1992	1993	1994
Recommended TAC	10	10	28	30	30	30	0	0
Agreed TAC	10	15	28	30	30	30	0	0
Reported catches	1	7	9	25	+[1]	+[1]	0	
Total landings	1	7	9	25	+	+	0	
Sp. stock biomass[2]	273	560	28	-	-	-	130	

[1] Provisional.

Weights in '000 tons

[2] In some years, these were averages of USSR and Canadian acoustic surveys and in other years only Canadian estimates were available. These are estimates of mature biomass.

State of Stock: USSR acoustic survey during 1975-77 indicated mean biomass of 912 000 tons. Mean stock size in 1981-89 was about 303 000 tons. Biomass estimates in 1991 and 1992 were low, but surveys may have been too early. Some signs of improvement in 1993.

Forecast for 1995: No projections.

Recommendations: No directed capelin fishery be allowed during 1995 in Div. 3N and 3O. If results from the Russian survey in 1994 are available for the September 1994 Meeting, the status of the stock should be re-evaluated.

Squid in Subareas 3 and 4

Year	1987	1988	1989	1990	1991	1992	1993	1994
Recommended TAC	150	-	-	-	-	-	-	-
Agreed TAC	150	150	150	150	150	150	150	150
Total landings	2	1	7	11	4[1]	2[1]	3[1]	

[1] Provisional.

Weights in '000 tons

State of Stock: Dependent on one year-class only.

Forecast for 1995: No information available for $F_{0.1}$, F_{93}, F_{max}.

Recommendations: No advice possible.

Special Comments: No advice possible without up-to-date information in relation to assessment on squid, especially for recruitment.

Responses to Questions by the Fisheries Commission

Cod in Divisions 2J, 3K and 3L (SCR Doc. 94/41)

The stock separation issue has been reviewed previously (NAFO Sci. Coun., Rep. 1986) and it was then concluded that it was appropriate to assess cod in Div. 2J, 3K and 3L as a single stock complex. There is currently no additional information to change this conclusion. The general issue of stock definition is being addressed by research using a suite of genetic techniques (nuclear DNA gene probes).

Estimates of the proportion of the cod biomass in Div. 3L in the Regulatory area were updated to include the 1993 research vessel survey data. The results for autumn surveys show biomass in the Regulatory Area (6.0%) to be the highest since 1982. The spring survey series continue to show an increasing trend in the percentage of biomass in the Regulatory Area, with consecutive time series highs of 10.1%, 16.1% and 40.1% in 1991, 1992 and 1993 respectively. The results from the survey series used are as follows:

Season RV survey conducted	Years RV survey conducted	Range of % of Div. 3L biomass occurring in the Regulatory Area (1993 value in brackets)	Average
Winter	1985-86	23.8-26.8	25.3
Spring	1977-93	0.4-40.1 (40.1)	6.8
Autumn	1981-93	0.5-7.7 (6.0)	3.1

Results of the autumn surveys conducted in all three Divisions (2J, 3K, and 3L) by Canada since 1981 to 1992, showed that the proportion of the cod in the Regulatory Area at that time of year was less than 1%, on average, of the total Div. 2J+3KL biomass. This percentage ranged from 0.1% to a high of 1.5%. In 1993 with the stock at an extremely low level the portion in the Regulatory Area was at a high of 5.2%. The average breakdown of biomass by Division was as follows:

Division	Mean relative proportion of Div. 2J and 3KL biomass (%) 1981-1993	1993 Autumn (%)
2J	31	8
3K	33	23
3L	36	69

Age compositions derived from spring and autumn surveys in Div. 3L indicated that for most years there was a higher proportion of younger cod in the Regulatory Area. Estimates for winter surveys showed that age compositions were similar in both areas. Cod age compositions from autumn research vessel surveys for Div. 2J+3KL combined were similar to those which occurred in Div. 3L inside the 200-mile fishing zone.

Mesh Size in the Redfish Fishery

The Russian mesh size study described in November 1993 (NAFO Sci. Coun. Rep., 1993) had not yet been carried out and there was therefore no information available for consideration by the Council.

Establish minimum sizes for product corresponding to minimum landing sizes

The Council finds that such information may be more easily obtained through direct contact with the fishing industry or possibly through the observer program, instead of through the fisheries laboratories, since such data are not usually collected by the fisheries research laboratories. The Council further discussed the possible use of the already established conversion factors.

It is noted that conversion factors relate the product weight to the live fresh weight of the fish, and live fresh weight can be related to the length of the fish through a length-weight relationship.

The Council observed that conversion factors have been established for statistical purposes. These factors vary between countries because of, among other things, different production technologies. These factors have been established for different species and different products, and world-wide compilations have been published by FAO (UN). These factors are average values applicable for raising the total production in a country to the corresponding live fresh weight. Within these average values, there are substantial variations with fish size, seasons, fishing grounds, technology and between individual batches. There are also some variation between years.

Also, an average length-weight relationship can usually be established with great precision for a specific species from a specific area in a season. Here too there is individual variance around the mean relationship.

Consequently, the Council observes that individual back calculated live lengths from a product are subject to considerable uncertainty, and the Council doubts that such relationships could be useful for inspection purposes. For example, even a very small head-off tail-off split product cod may be the result of a particular mal-adjusted machine.

Minimum Landing Sizes for Greenland Halibut and Flatfishes

The Council noted it had advised on minimum landing sizes for American plaice (25-28 cm) and yellowtail flounder (25-28 cm) in 1992 (NAFO Sci. Coun. Rep., 1992, p. 71).

It was also noted that available data in laboratories have not yet been analyzed and presented to the Scientific Council. The Council agreed to defer its discussions on this subject to its September 1994 meeting.

Responses to Requests by Canada and Denmark (Greenland)

With respect to Greenland halibut in Subareas 0 and 1, subject to concurrence of Denmark (Greenland) as regards to Subarea 1, Canada requested the Scientific Council to: provide an overall assessment of the total stock throughout its range and comment on its management.

The Scientific Council is not able to provide an analytical assessment of the total stock but the available information indicates that the stock is overexploited, for further comments see the prognosis section for Greenland halibut in the STACFIS Report, Appendix I, Section 15, particularly point 1, 2, 3, 5 and 6.

The two following recommendations are relevant in this context:

- Separate TACs be maintained for different areas of the distribution of Greenland halibut.
- The effort and catches throughout Subareas 0-3 in 1995 should be reduced compared to recent years.

With respect to Greenland halibut in Subareas 0 and 1, Denmark (on behalf of Greenland) requested that the Scientific Council provide information on:

a) Analysis of the existing information on stock delimitation in Subareas 0, 1, 2 and 3.

b) Allocation of TACs to appropriate Subareas (within Subareas 0 and 1).

c) Allocation of the TAC for Subarea 1 into inshore and offshore areas.

Concerning a) the Council's response is given in the prognosis section for Greenland halibut in the STACFIS Report, Appendix I, Section 15, particularly points 1, 2, 7 and 8.

Concerning b) the Council noted STACFIS updated the available information which may be used in an allocation of the TAC between Subareas 0 and 1. This update confirmed the Council comments of 1993 (NAFO Sci. Coun. Rep., 1993, p. 104).

> "Catch and effort information by month and Divisions were available but these were not necessarily indicative of the stock distribution."
>
> "Based on survey information from Subarea 0 and 1 in 1987, 1988 and 1990 the offshore biomass was distributed approximately 50:50 between these two Subareas". The biomass results are presented below:

Biomass estimates (000' tons) from Greenland/Japanese surveys and USSR(RUS)/DDR(FRG) surveys for the years 1987-1993 in Subareas 0+1.

Year	USSR(RUS)/GDR(FRG) Survey		Greenland/Japan Survey		Total
	0B	1BCD	1ABCD[d]	1BCD	0B+1ABCD
1987	37	56	58[a]	54[a]	95
1988	55	47	57	53	112
1989	79	-	-	63[c]	-
1990	72	88	56[b]	53[b]	128
1991	46	-	79	77	125
1992	38	-	64	62	102
1993	-	-	-	38	-

- no survey
[a] In 1987 the survey did not cover the depth stratum 1 000-1 500 m.
[b] Average values of two surveys.
[c] Estimate only for Div. 1CD.
[d] Div. 1A south of 70°N.

Concerning c) the Council stated in 1993 (NAFO Sci. Coun. Rep., 1993, p. 104):

"No estimate on the inshore biomass in Subarea 1 was available to STACFIS,..".

Also in 1994 no inshore biomass estimates were provided for this component. The Council is therefore unable to provide an answer. However, further information is given in the prognosis section for Greenland halibut in the STACFIS Report, Appendix I, Section 15, points 7, 8 and 10.

Environmental Research

The time scheduled for the Environmental Subcommittee at the beginning of the Council meeting had proven to be successful and the Council agreed that this should be continued. The Council recognized the importance of the contributions made by this Subcommittee and this was reflected in the establishment of the new Standing Committee STACFEN. The new STACFEN, effective as of 1 January 1995, takes on additional tasks, while the Environmental Subcommittee of STACFIS will be discontinued.

Ageing Techniques

The Council noted that in accordance with recent recommendations, information on the agreed manual on the methodology on silver hake ageing would be documented for the September 1994 Meeting. It was noted the additional work on the nucleotide method has been discontinued because it was unsuccessful for technical reasons.

The otolith exchange programmes for American plaice and Greenland halibut were continuing while there was no report on new validation studies.

Gear Selectivity

Investigations on reducing the discard of small shrimp and juvenile fish in the shrimp fishery have been ongoing since 1991 jointly by Denmark, Greenland, Iceland, Faroe Islands, Norway and Sweden. In 1993 a grid device was tested in a commercial shrimp trawl. So far, the device is not adoptable for the fishery due to loss of large shrimps. Additionally, selectivity parameters of a commercial shrimp trawl from Greenland were estimated based on alternate hauls with different cod-end mesh sizes.

The Council noted the ongoing work on prevention of catches of small redfish in the shrimp fisheries in Subarea 1 and noted that the results of this work may be also relevant for other shrimp fisheries.

Relation Between Acoustic Biomass Estimates and Other Methods

Although no studies were presented, the importance of studies of the relationship between acoustic biomass estimates and other methods for biomass estimation were recognized by the Council. However, the problem of comparability of results based on acoustic surveys and results based on surveys using trawl or longline, etc., has not been resolved yet. Therefore, the Council encourages that research be undertaken.

Concerning surveys combining estimates from trawl fishery and estimation from acoustic measurements, the Council endorsed STACFIS point of view and the recommendation that information be provided on bottom trawl and pelagic component, the vertical and horizontal distribution as determined from the trawl-acoustic surveys, and more details on the location or concentration of fish species in combined trawl acoustic surveys.

RESEARCH COORDINATION

Fishery Statistics

The Council reiterated its concern on the delays in receipt of national STATLANT 21B reports for 1991 and 1992. These delays continue to affect assessments and cause delays in the publication of Statistical Bulletin.

The Council decided to pursue the acquisition of data available in reports and working papers of other Standing Committees, namely STACTIC and STACFAC. These data should be distributed to National Representatives and Designated Experts and evaluated annually as to their relevance in the assessment process.

The Council noted that recent volumes of the *NAFO Statistical Bulletins* had been published without data from an important component EU-France (M) and France (SP). The Council agreed with STACREC recommendation to publish but that efforts be made to obtain the EU-France data to complete the database and update the bulletins.

The Council noted there may have been some uncertainties regarding deadlines for submission of STATLANT data as a result of STACREC discussions and recommendations in 1993. The Council clarified that Rule 4.4 remains in effect for the submission of STATLANT data, and the deadlines are 15 May and 30 June for STATLANT 21A and 21B, respectively.

CWP 16th Session

The Council noted that the Assistant Executive Secretary would not attend the July meeting but reconfirmed that attendees (STACREC Chairman, C.A.Bishop; Assistant Executive Secretary, T. Amaratunga, and the representative from Spain, E. de Cardenas) slated to attend the Sixteenth Session of CWP will be recommended to attend that meeting, now scheduled for February 1995 in Madrid, Spain.

Biological Sampling and Surveys

The Council noted the Provisional List of Biological Sampling for 1992 was prepared by the Secretariat (SCS Doc. 94/8). Also available data from 1993 commercial fisheries for stock assessments were tabulated and the national representatives reported their sampling program for the 1993/94 commercial fisheries, at the STACREC meeting.

The Council noted that a document was presented (SCR Doc. 94/43) that outlined changes to the stratification used by Canada for stratified-random groundfish surveys in Subareas 2+3. The changes included major revisions to the existing strata by using new, more accurate charts in Div. 2J and 3K, and minor changes to existing strata in Div. 3O and 3P. In addition to these changes, the stratification scheme was extended to 800 fathoms in Div. 3L, 3M, 3N, 3O and 3P, and strata were created in the shoreward area of Placentia Bay.

PUBLICATIONS

Review of Scientific Publications

The Council noted Journal Vol. 15 containing an invitational paper on "Decapod Crustacean Larvae from Ungava Bay" was published in December 1993, and that Journal Vol. 16 containing miscellaneous papers and Vol. 17, containing papers presented at the November 1990 Canada-USSR Meeting on Capelin were in the final stages of preparation and expected to be completed by mid-1994. As well, the following publications were available in 1994:

Studies No. 19, containing 8 miscellaneous papers and Studies No. 20, containing 7 miscellaneous papers; 8 papers dealing with Northern Cod presented in June 1993 were submitted to the Secretariat to be published in a single issue by the end of 1994; *NAFO Statistical Bulletin*, Vol 40 for 1990 (published in February 1994); *Index of Journal and Studies for 1980-93* (published in February 1994).

The Council noted that there was no significant departures from previous years production and revenue costs. Further the Council was pleased that the ongoing review of the mailing list and a new billing procedure introduced by the Secretariat had resulted in a decrease in number of copies printed and mailed out.

RULES OF PROCEDURE

The Council considered the proposed new Rules of Procedure prepared by the Chairman. Noting the Council had a quorum of 10 Contracting Parties (6 present and 4 proxy votes carried by the Executive Secretary), in accordance with Article X.2 of the Convention, the Council adopted the new Rules of Procedure for STACFEN by a unanimous vote. It was noted that this new Rule 5.1d) for STACFEN was contained in the slate of Rules of Procedure presented in SCS Doc. 94/17.

In its considerations of the reorganization of the Scientific Council, the Chairman in consultation with the Executive Committee proposed changes to the work arrangements of STACFIS and STACREC while no changes were envisaged to STACPUB. It was recognized that new Rules of Procedure were needed to address changes.

At its meeting of 15 June 1994, the Council considered the proposed new Rules of Procedure prepared by the Chairman. Having agreed to the text as presented in SCS Doc. 94/17, Serial No. 2418 (see Annex 1) for Rule 5.1, the Chairman called for a vote in accordance with Article X.2 of the Convention. The new Rule 5.1 of the Rules of Procedure of the Scientific Council were adopted by a unanimous vote. (Annex 3)

COLLABORATION WITH OTHER ORGANIZATIONS

Joint ICES/NAFO Working Group on Harp and Hooded Seals

The Council noted that a request for scientific advice on harp and hooded seals had just been received from Denmark (on behalf of Faroe Islands and Greenland) (see Annex 2). Noting advice would have to be provided by the Council at the Annual Meeting of September 1995, the Scientific Council agreed a request would be forwarded to the ICES/NAFO Working Group on Harp and Hooded Seals to address this request. The Council proposed that this request should be addressed immediately prior to the 7-21 June 1995 Meeting of the Scientific Council. It is hoped the Working Group would schedule its meeting for 5-7 June 1995, in order that some scientists from the Council may attend the meeting.

Sixteenth Session of CWP and Proposed *Ad Hoc* Consultation

The Council noted the Sixteenth Session of the CWP had been postponed to early-1995 in Madrid, Spain, and reconfirmed that representatives of the Scientific Council recommended during the September 1993 Meeting viz. STACREC Chairman, C. A. Bishop (Canada), Assistant Executive Secretary, T. Amaratunga, and the representative from Spain, E. de Cardenas, would attend the Sixteenth Session.

FUTURE SCIENTIFIC COUNCIL SESSIONS AND MEETINGS

a) The following Sessions were scheduled to be held in 1994-1996:

- The Symposium on "Impact of Anomalous Oceanographic Conditions at the Beginning of the 1990s in the Northwest Atlantic on the Distribution and Behaviour of Marine Life" will be on 15 and 16 September 1994, at NAFO Headquarters, Dartmouth, Nova Scotia. It was noted the papers would include a 10-year review of environmental conditions.
- Joint NAFO/ICES Symposium on "The Role of Marine Mammals in the Ecosystem", 6-8 September 1995 at NAFO Headquarters, Dartmouth, Nova Scotia.
- Symposium "What Future for Capture Fisheries in the Northwest Atlantic", 4-6 September 1996, Dartmouth, Nova Scotia, Canada.

b) The Scientific Council Meetings will be held in June, September and November through 1994-1996.

NOMINATION AND ELECTION OF OFFICERS

W. B. Brodie (Canada) was elected the Chairman of STACFIS for the term of two (2) years, 1995-1996.

M. Stein (EU-Germany) was elected the Chairman of a new Standing Committee for Fisheries and Environment (STACFEN) for the term of two (2) years, 1995-1996.

OTHER MATTERS

Space Requirements for June Meetings

The 8-22 June 1994 Meeting of the Scientific Council was, for the first time, held outside of the NAFO Headquarters at Keddy's Dartmouth Inn. The Council considered the space and facilities available were a major improvement compared to those available at NAFO Headquarters. the computer room and extra rooms available for small *ad hoc* meetings were constantly occupied. This permitted the Chairmen to have a better overview of the progress of the work and the scientists better opportunities for individual work and small informal discussions. The Council concluded that the space provided was adequate and necessary for its June meeting. The Council therefore conveys to the General Council that space and facilities of this nature should be considered for future June meetings.

By-catch of Redfish in Shrimp Fisheries

The Council expressed its concern of the likely negative impact on future recruitment to the redfish fisheries from the discards of small redfish in trawl fisheries fro shrimp in Subarea 1 and in Div. 3M. In Subarea 1 a dramatic decline of adult redfish ($\geq$ = 16 cm) to an extremely low level has been observed. The Council therefore stressed that this mortality component be included in the assessment of the redfish stocks. This requires that estimates of the magnitude of these by-catches and biological sampling data be made available.

Documentation of the Work of the Scientific Council

The Council decided to change the documentation of the assessments. It was agreed the assessments results, after they are adopted by STACFIS, will be printed as an SCS document. The STACFIS report will be reduced to report on internal matters of the Committee and printed as an SCS document. Similarly the STACREC, STACFEN and STACPUB reports will be compiled independently as SCS documents. The Scientific Council report will now additionally deal with those matters which are responses to requests from the Fisheries Commission or Contracting Parties, and a compilation similar to the present Scientific Council Reports will be issued as SCS documents for each meeting. The Executive Summary will be discontinued.

Annex 1. List of Participants

Scientific Council Meeting

Dartmouth, Nova Scotia, Canada
8-22 June 1994

CANADA

Representatives:

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Annex 2. Agenda

Scientific Council Meeting

Dartmouth, Nova Scotia, Canada
8-22 June 1994

I. Opening (Chairman: H. Lassen)

1. Appointment of rapporteur
2. Adoption of agenda
3. Attendance of observers
4. Plan of work
5. Report of proxy votes (by Executive Secretary)

II. Fishery Science (STACFIS Chairman: H. P. Cornus)

1. General review of catches and fishing activity in 1993

2. Review of recommendations from 1993 meetings

3. Environmental research (Subcommittee Chairman: M. Stein)

   a) Chairman's report
   b) Invited Lecture (Dr. S. Goddard, Northern Cod Project)
   c) Special Session September 1994
   d) Marine Environmental Data Service (MEDS) Report for 1993
   e) Review of environmental studies in 1993
   f) Overview of environmental conditions in 1993
   g) National representatives
   h) Joint Russian/German data evaluation (ICNAF/NAFO data, status report)
   i) Other matters

4. Stock assessments

   a) Review of assessment methods to be used

   b) Stocks within or partly within the Regulatory Area, as requested by the Fisheries Commission with the concurrence of the Coastal State (Attachment 1) (Shrimp in Div. 3M will be undertaken during the Annual Meeting in September 1994.):

      - Cod (Div. 3NO; Div. 3M)
      - Redfish (Div. 3LN; Div. 3M)
      - American plaice (Div. 3LNO; Div. 3M)
      - Witch flounder (Div. 3NO)
      - Yellowtail flounder (Div. 3LNO)
      - Capelin (Div. 3NO)
      - Squid (Subareas 3 and 4)
      - [Note also Attachment 1, Item 3 concerning cod in Div. 2J+3KL]

c) Stocks within the 200-mile fishery zone in Subareas 2, 3 and 4, as requested by Canada (Attachment 2):

- Greenland halibut (Subarea 2 and Div. 3KL)
- Roundnose grenadier (Subareas 2 and 3)
- Silver hake (Div. 4VWX)
- [Note also Attachment 2, Item 3 concerning cod in Div. 2J+3KL]

d) Stocks within the 200-mile fishery zone in Subarea 1 and at East Greenland as requested by Denmark on behalf of Greenland (Attachment 3) (Northern shrimp in Denmark Strait and off East Greenland will be undertaken during a special meeting in November 1994.):

- Redfish (Subarea 1) (if possible, by species)
- Other finfish and invertebrates (Subarea 1)

e) Stocks overlapping the fishery zones in Subareas 0 and 1, as requested by Canada and by Denmark on behalf of Greenland (Attachments 2 and 3) (Northern shrimp in Subareas 0 and 1 will be undertaken during a special meeting in November 1994):

- Greenland halibut (Subareas 0 and 1)
- Roundnose grenadier (Subareas 0 and 1)

5. Fisheries Commission requests (see Attachment 1 with specific reference to items 4, 5 and 6)

6. Ageing techniques and validation studies

a) Report on methods of ageing silver hake otoliths
b) Reports on the otolith exchanges of American plaice and Greenland halibut
c) Other ageing and validation studies reported

7. Gear and selectivity studies

a) Reports on gear and selectivity studies
b) Proposals for gear and selectivity studies

8. Investigations on the relationship between acoustic biomass estimates and biomass estimates based on other methods

9. Other matters

a) Progress report on the Special Session in 1994; Symposium on "Impact of Anomalous Oceanographic Conditions at the Beginning of the 1990s in the Northwest Atlantic on the Distribution and Behaviour of Marine Life" (co-conveners: E. Buch (Denmark), M. Sinclair (Canada) and M. Stein (EEC-Germany))
b) Progress report on the Special Session in 1995: joint NAFO/ICES Symposium on "The Role of Marine Mammals in the Ecosystem" (co-conveners: J. Sigurjonsson (Iceland) and G. B. Stenson (Canada))

c) Topic for Special Session in 1996.
d) Review of arrangements for conducting stock assessments and documentation of assessments
e) Review of report by the Joint ICES/NAFO working group on harp and hooded seals
f) Other business

III. Research Coordination (STACREC Chairman: C. A. Bishop)

1. Fishery statistics

a) Progress report on Secretariat activities in 1993/94

i) Acquisition of STATLANT 21A for 1993 and of STATLANT reports for recent years
ii) Acquisition of statistical information from other NAFO Standing Committees
iii) Publication of statistical information

b) Deadlines for submission of STATLANT 21A and 21B data

i) Clarification of status of Rule 4.4.

c) Preparation for the CWP 16th Session: review of the logbook and STATLANT 21B forms

i) Report on *Ad hoc* Consultation, La Jolla, California, December 1993
ii) STATLANT data and discrepancies in databases
iii) Proposals for *Ad hoc* Consultations and 16th Session

2. Biological sampling

a) Report on activities in 1993/94
b) Report by National Representatives on sampling conducted
c) Report relative to status of data necessary for assessments (by Designated Experts)
d) Assessment data needs in relation to research in the Regulatory Area

3. Biological surveys

a) Review of survey activities in 1993 (by National Representatives and Designated Experts)
b) Surveys planned for 1994
c) Review of stratification schemes (new stratifications and changes)
d) Coordination of survey (Greenland halibut or other surveys - see Attachment 1)

4. Non-traditional fishery resources in the NAFO Area

   a) Statistics and sampling
   b) Survey data

      i) Species encountered in surveys
      ii) Feasibility of having set-by-set data on non-traditional species

5. Other matters

   a) List of fishing vessels for 1992
   b) Tagging activities
   c) Update of information on conversion factors
   d) Review of SCR and SCS documents not considered by STACFIS
   e) Pilot Observer Program
   f) Other business

IV. Publications (STACPUB Chairman: W. R. Bowering)

1. Review of STACPUB membership

2. Review of scientific publications since June 1993

3. Production costs and revenues for Scientific Council publications

   a) Publication costs and revenues
   b) Microfiche project
   c) Limiting the number of pages printed at the Secretariat

4. Promotion and distribution of scientific publications

   a) Publicity and response regarding the Journal
   b) Invitational papers for the Journal

5. Editorial matters regarding scientific publications

   a) Editorial activities
   b) Progress report of publication on western Atlantic cod
   c) Progress report of publication on West Greenland cod
   d) Progress review of Journal issue of 1993 Special Session
   e) Review of general editorial process
   f) Review of Editorial Board

6. Papers for possible publication

   a) Procedures for STACPUB review
   b) Review of proposals resulting from the 1993 meetings
   c) Review of contributions to the 1994 meetings

7. Publication of 10-year environmental perspective

8. Other matters

V. Rules of Procedure

1. Establishment of a Standing Committee on Environment under the Scientific Council in accordance with Rule 5.4.
2. Restructuring the working arrangements of STACFIS and modification of Rule 5.1.

VI. Collaboration with other Organizations

1. Joint ICES/NAFO Working Group on harp and hooded seals (see also Attachment 2[1])
2. Sixteenth Session of CWP and proposed *Ad hoc* Consultation

VII. Arrangements for Special Sessions

VIII. Future Scientific Council Meetings, 1994 and 1995

1. Annual Meeting in September 1994 (including assessment of Flemish Cap shrimp)
2. Special Meeting in November 1994 (assessment of Northern Shrimp in Subareas 0+1 and off East Greenland)
3. Other Scientific Council Meetings

IX. Nomination and election of STACFIS Chairman

X. Other Matters

XI. Adoption of Reports

1. Committee reports from this meeting (STACFIS, STACREC, STACPUB)
2. Scientific Council Report, June 1994

XII. Adjournment

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[1] A request was received from Denmark (Greenland) during the Scientific Council Meeting on 17 June 1994, and is given in Attachment 4.

Attachment 1. Fisheries Commission's Request for Scientific Advice on Management in 1995 of Certain Stocks in Subareas 3 and 4

1. The Fisheries Commission with the concurrence of the Coastal State as regards the stocks below which occur within its jurisdiction, requests that the Scientific Council, at a meeting in advance of the 1994 Annual Meeting, provide advice on the scientific basis for the management of the following fish and invertebrate stocks or groups of stocks in 1995:

   Cod (Div. 3NO; Div. 3M)
   Redfish (Div. 3LN; Div. 3M)
   American plaice (Div. 3LNO; Div. 3M)
   Witch flounder (Div. 3NO)
   Yellowtail flounder (Div. 3LNO)
   Capelin (Div. 3NO)
   Squid (Subareas 3 and 4)
   Shrimp (Div. 3M)

2. The Commission and the Coastal State request the Scientific Council to consider the following options in assessing and projecting future stock levels for those stocks listed above:

   a) For those stocks subject to analytical dynamic-pool type assessments, the status of the stock should be reviewed and management options evaluated in terms of their implications for fishable stock size in both the short and long term. As general reference points the implications of fishing at $F_{0.1}$, F_{1993} and F_{max} in 1995 and subsequent years should be evaluated. The present stock size and spawning stock size should be described in relation to those observed historically and those expected in the longer term under this range of options.

      Opinions of the Scientific Council should be expressed in regard to stock size, spawning stock sizes, recruitment prospects, catch rates and TACs implied by these management strategies for 1995 and the long term. Values of F corresponding to the reference points should be given and their accuracy assessed.

   b) For those stocks subject to general production-type assessments, the time series of data should be updated, the status of the stock should be reviewed and management options evaluated in the way described above to the extent possible. In this case, the general reference points should be the level of fishing effort or fishing mortality (F) which is calculated to be required to take the MSY catch in the long term and two-thirds of that effort level.

   c) For those resources of which only general biological and/or catch data are available, no standard criteria on which to base advice can be established. The evidence of stock status should, however, be weighed against a strategy of optimum yield management and maintenance of stock biomass at levels of about two-thirds of the virgin stock.

   d) Spawning stock biomass levels that might be considered necessary for maintenance of sustained recruitment should be recommended for each stock. In those cases where present spawning stock size is a matter of scientific concern in relation to the continuing productive potential of the stock, management options should be offered that specifically respond to such concerns.

e) Presentation of the result should include the following:

i) for stocks for which analytical dynamic-pool type assessments are possible:

- a graph of yield and fishing mortality for at least the past 10 years.
- a graph of spawning stock biomass and recruitment levels for at least the past 10 years.
- a graph of catch options for the year 1995 over a range of fishing mortality rates (F) at least from $F_{0.1}$ to F_{max}.
- a graph showing spawning stock biomass at 1.1.1996 corresponding to each catch option.
- graphs showing the yield-per-recruit and spawning stock per-recruit values for a range of fishing mortality.

ii) for stocks for which advice is based on general production models, the relevant graph of production on fishing mortality rate or fishing effort.

In all cases the three reference points, actual F, F_{max} and $F_{0.1}$ should be shown.

3. The Fisheries Commission with the concurrence of the Coastal State requests that the Scientific Council continue to provide information, if available, on the stock separation in Div. 2J+3KL and the proportion of the biomass of the cod stock in Div. 3L in the Regulatory Area and a projection if possible of the proportion likely to be available in the Regulatory Area in future years. Information is also requested on the age composition of that portion of the stock occurring in the Regulatory Area.

4. The Scientific Council is asked to review all data available on the implications of using 90 mm minimum mesh size in mid-water trawls when fishing for redfish in Div. 3LN, in comparison to 130 mm. This should include consideration of fish lost during haulbacks.

5. Noting that the Scientific Council has scheduled a Symposium on Seals in the Ecosystem for September 1995, the Fisheries Commission requests a report in 1994 on the nature and extent of analyses that are expected to be tabled at the Symposium with respect to the interrelation between seals and commercial fish stocks.

6. Noting the Scientific Council's recommendations for coordinated research on Greenland halibut, the Fisheries Commission and the two Coastal States emphasize the urgency of acquiring information on the distribution and stock status. The Scientific Council is requested to pursue its coordinated efforts and member countries are urged to commit the necessary resources to the research.

Attachment 2. Canadian Request for Scientific Advice on Management in 1995 of Certain Stocks in Subareas 0 to 4

1. Canada requests that the Scientific Council, at its meeting in advance of the 1994 Annual Meeting, provide advice on the scientific basis for the management of the following fish and invertebrate stocks in 1995:

   Greenland halibut (Subarea 2 and Div. 3K and 3L)
   Roundnose grenadier (Subareas 2 and 3)
   Silver hake (Div. 4V, 4W and 4X)

   It is also suggested that, subject to the concurrence of Denmark (Greenland), the Scientific Council, prior to the 1994 Annual Meeting of NAFO, provide advice on the scientific basis for management in 1995 of the following stocks:

   Shrimp (Subareas 0 and 1)
   Greenland halibut (Subareas 0 and 1)
   Roundnose grenadier (Subareas 0 and 1)

   The Scientific Council has noted previously there was no biological basis for making two separate assessments for the Greenland halibut throughout Subareas 0-3. The Council is therefore asked, subject to concurrence of Denmark (Greenland) as regards Subarea 1, to provide an overall assessment of the total stock throughout its range and comment on its management, including any expansion of the responses to the questions asked in June 1993.

   With respect to shrimp, it is recognised that the Council may, at its discretion, delay providing advice until later in the year, taking into account data availability, predictive capability, and the logistics of additional meetings.

2. Canada requests the Scientific Council to consider the following options in assessing and projecting future stock levels for those stocks listed above:

   a) For those stocks subject to analytical dynamic-pool type assessments, the status of the stock should be reviewed and implications of continuing to fish at $F_{0.1}$ in 1995 and subsequent years should be evaluated. The present stock size should be described in relation to those observed historically and those to be expected at the $F_{0.1}$ level in both the short and long term. In those cases where present spawning stock size is a matter of scientific concern in relation to the continuing productive potential of the stock, management options should be considered to rebuild the spawning stock. All results should be expressed in terms of stock sizes, catch rates and TACs implied for 1995 and the long term.

   b) For those stocks subject to general production-type assessments, the status of the stock should be reviewed and management options evaluated in the way described above to the extent possible. In this case, the general reference point should be the level of fishing effort (F) which is two-thirds that calculated to be required to take the MSY catch in the long term.

c) For those resources on which only general biological and/or catch data are available, no standard criteria on which to base advice can be established. The evidence on stock status should, however, be weighed against a strategy of optimum yield management and maintenance of stock biomass at levels of about two-thirds that of the virgin stocks.

3. The Scientific Council is requested to review the status of the cod stock in Divisions 2J+3KL and to provide estimates of the current size of the total and spawning biomass, together with a description of recent trends. The Council is asked further to provide estimates of the immediate and long-term outlook for the abundance of this stock, including both total and spawning biomass.

4. With respect to scientific advice on seals, Canada has no specific request at this time. As I noted in my letter to Dr. Chepel dated February 24, 1994, we will have important inputs to the Scientific Council's symposium on "Seals in the Ecosystem" scheduled for September 1995.

B. Rawson
Deputy Minister
Department of Fisheries and Oceans
Ottawa, Canada

Attachment 3. Denmark (Greenland) Request for Scientific Advice on Management of Certain Stocks in 1995

1. Denmark, on behalf of Greenland, requests the Scientific Council of NAFO in advance of the 1994 Annual Meeting, provide advice on the scientific basis for management of the following stocks in Subarea 1 in 1995 and as many years forward as data allow:

   i) Redfish (by species, if possible)
   ii) Any other stock of invertebrates and finfish of commercial interest, for which data allow a status report

   It is also suggested that, subject to the concurrence of Canada, advice be given for the following stocks overlapping Subareas 0 and 1:

   i) Greenland halibut
   ii) Roundnose grenadier
   iii) Northern shrimp (*Pandalus borealis*)

   Further, in cooperation with ICES, the Scientific Council is requested to advise on the scientific basis for management of the following stock in the Denmark Strait and off East Greenland:

   i) Northern shrimp (*Pandalus borealis*)

2. In the analyses on which management advice will be based, the following should be included:

   In its 1993 report, the Scientific Council has noted that the offshore component of Greenland halibut, in Subareas 0 and 1 was distributed equally between these Subareas, and further that the biomass of the inshore component in Subarea 1 was unknown. The Council is therefore asked to provide information on the following questions asked in June 1993.

   a) Analysis of existing information on stock delimitation in Subareas 0, 1, 2 and 3.

   b) Allocation of TACs to appropriate Subareas (within Subareas 0 and 1).

   c) Allocation of the TAC for Subarea 1 into inshore and offshore areas.

   For Northern shrimp in Subareas 0 and 1 the biological and practical implications of combining all areas of stock distribution for stock assessment purposes should be considered. Specifically, the Council is asked to provide a TAC for areas not included in the 1994 advice (i.e. Subarea 1 north of 71°N and Subarea 1 inshore).

3. The Scientific Council should feel free to report on such other invertebrates and finfish stocks in Subarea 1 and on such other scientifically based management options for the above-mentioned Subarea 1 stocks, as it feels applicable.

Henrik Leth
Aalisarnermut Piniarnermut
Nunalerinermullu Pisortaqarfik
Direktoratet for Fangst, Fiskeri og Landbrug

Attachment 4. Scientific Advice on Seals

1. The following request for advice was received on 17 June 1994. This is presented to the Scientific Council with a view to developing terms of reference for a proposed meeting of the ICES/NAFO Working Group.

"Denmark (on behalf of Faroe Islands and Greenland) request advice from the NAFO Scientific Council (eventually via the Joint ICES/NAFO Working Group on Harp and Hooded Seals) on the following issues

Harp and hood seals

- assessment of stock sizes, distribution and pup production of harp and hooded seals in the Northwest Atlantic;
- assessment of sustainable yields at present stock sizes and in the long term under varying options of age composition in the catch;
- advise on catch options in the NAFO area;
- assessment of effects of recent environmental changes or changes in the food supply and possible interaction with other living marine resources in the area.

Einar Lemche
Namminersornerullutik Oqartussat
Gronlands Hjemmestyre
Copenhagen, Denmark"

The Scientific Council advice would be presented to the Fisheries Commission in September 1995. Recognizing the Scientific Council needs to review the Working Group report and prepare its advice, it is hoped the ICES/NAFO Working Group would schedule its meeting for 5-7 June 1995, immediately prior to the Scientific Council meeting.

Annex 3. Rules of Procedure for the Scientific Council

The Council considered the need to change its Rules of Procedures and based on some proposals from representatives, the Chairman in consultation with the Executive Committee drafted the proposed wording for Rule 5.1 a), 5.1 b), 5.1 c) and a new Rule 5.1 d) for a new Standing Committee. After further review, the Council by unanimous vote, adopted the Rules as presented below in accordance with Article X.2 of the Convention. Rule 5.1 c) shall remain unchanged.

The new **Rule 5.1** shall now read as follows:

5.1 There shall be the following standing committees:

a) The **Standing Committee on Fisheries Science (STACFIS)** which shall:

i) assess the status of fish stocks upon the request of the Scientific Council;
ii) assess the effects on fish stocks of fishing strategies and management upon the request of the Scientific Council; and
iii) evaluate new methods for fish stock assessment.

b) The **Standing Committee on Research Coordination (STACREC)** which shall:

i) develop and recommend to the Scientific Council policies and procedures for the collection, compilation, and dissemination of statistical and sampling information on the living resources and fisheries in the Convention Area;
ii) coordinate the compilation and maintenance of statistics and records and their dissemination, including liaison with coastal states in the Convention Area;
iii) coordinate the planning and execution of international cooperative research in co-operation with coastal states in the Convention Area;
iv) encourage and promote cooperation among the Contracting Parties in scientific research designed to fill gaps in knowledge pertaining to fisheries matters identified by the Scientific Council; and
v) review and evaluate data and information and advise the Scientific Council on advances in knowledge of biology relevant to the Convention Area;

c) The **Standing Committee on Publications (STACPUB)** which shall:

i) develop, coordinate and keep under review the publication and editorial policy and procedures of the Scientific Council and make recommendations thereto on these matters; and
ii) be chaired by the Vice-Chairman, and consist of five other members appointed by the Scientific Council.

d) The **Standing Committee on Fisheries and Environment (STACFEN)** which shall:

i) develop and recommend to the Scientific Council policies and procedures for the collection, compilation and dissemination of environmental information from oceanographic investigations;

ii) provide reviews of environmental conditions and advise the Scientific Council on the effects of the environment on fish stocks and fisheries in the Convention Area; and

iii) encourage and promote cooperation among Contracting Parties in scientific research designed to fill the gaps in knowledge pertaining to the effects of the environment on fish stocks and fisheries as identified by the Scientific Council.

Scientific Council Annual Meeting

The Scientific Council met at the Holiday Inn, Dartmouth, Nova Scotia, Canada during 19-23 September 1994. Representatives attended from Canada, Denmark (in respect of the Faroe Islands and Greenland), Estonia, European Union (Denmark, France, Germany, Portugal, Spain and United Kingdom), Iceland, Japan, Republic of Korea and the Russian Federation, and an observer from FAO, of the United Nations. The Executive Secretary and Assistant Executive Secretary were in attendance. (Annex 1)

The Scientific Council Meeting was preceeded by the Symposium on "Impact of Anomalous Oceanogrpahic Conditions at the Beginning of the 1990s in the Northwest Atlantic on the Distribution and Behaviour of Marine Life", which summary of presented at the end of this report.

The Chairman of the Scientific Council was H. Lassen (EU) and the Rapporteur, T. Amaratunga, Assistant Executive Secretary.

The Agenda was adopted as presented in Annex 2.

Brief summary of the Standing Committees' Reports and other matters considered by the Sicentific Council are given below.

FISHERY SCIENCE

Stock Assessments

Shrimp in Division 3M (new fishery in the NAFO Regulatory Area)

The Council considered information from the commercial fishery and research surveys to determine the status of the northern shrimp resource on Flemish Cap (Div. 3M). No significant commercial effort was reported from the area before spring 1993 but, since then, a multinational fishery has developed with removals of shrimp in the order of 30 000 tons in 1993 and 22 000 tons up to the end of August, 1994.

Fishery information from Canada and Denmark/Greenland indicated that the distribution of effort in 1994 differed from that observed in 1993 in that more fishing activity occurred in the western and southwestern areas of the Cap. The Denmark/Greenland data showed that fishing was unproductive in eastern areas and that catch rates were maintained by concentrating effort in areas where densities were highest. The Canadian fishery in March, 1994 produced low catch rates over the preferred grounds fished in 1993. Data from some nations showed that catch rates were substantially lower in 1994 and there was no distinct decline in CPUE over the year, as observed in 1993.

Commercial catch sampling data showed changes in the size/age composition of the catches between the two years. Males were much more prevalent in the catches of several nations in 1994, compared to a clear domination by female ages in 1993. The component of females present in 1994 is believed to be the remains of the strong 1988 year-class which cannot be expected to contribute substantially to the catches much longer.

The EEC/EU groundfish surveys from 1988 to 1994 showed that biomass in 1994 was substantially lower than observed during the 1991 to 1993 period, approaching the levels estimated for 1988 to 1990. The data further showed that decreases were widespread, occurring throughout the survey area in all strata. The proportions of biomass estimated in western and southwestern strata in 1994 were higher than in the previous two years, consistent with the change in the distribution of fishing effort by the commercial fleet. Size/age composition data, over time, revealed the growth and maturation of the strong 1988 year-class.

The Council agreed that shrimp abundance decreased in 1994 and that changes observed in biomass, CPUE, distribution of effort and size composition of the catches were a reflection of the intensive fishery (>50 000 tons) over a 16-month period. The data suggested that the 1988 year-class has been substantially reduced through natural and fishing mortality and that catches in 1995 will be dependent upon younger, male year-classes. None of the strength of these year-classes appear to be as strong as the 1988 year-class.

It is still unclear whether or not a sustainable shrimp fishery is possible on Flemish Cap. If the high abundance of the early-1990s was due almost entirely to one strong year-class, and if occurrences of such year-classes are sporadic, then the concept of sustainability does not apply. Harvesting the 1988 year-class at lower removals over several years (1991-94), with the addition of some annual recruitment, might have been possible. However, this opportunity to test the concept of a sustainable fishery has been lost. Clearly, any fishery cannot be maintained at current effort levels and a reduced annual effort is required to afford some protection for younger animals at lower stock size.

For redfish by-catch in the Flemish Cap shrimp fishery, the Council consdiered that, although it is not possible to quantify the actual removal of redfish as by-catch, it is certain that for 50 000 tons of shrimp taken since May, 1993, several thousand tons of redfish also have been taken. The redfish by-catch will adversely effect the catch possibilities for commercial redfish fisheries 5-6 years hence. A minimal, annual by-catch of 3 000 tons at current sizes corresponds to approximately 100 000 000 fish. If projected, these would correspond to lost future catch opportunities of more than 10 000 tons.

By-catch of redfish will continue to be a problem in 1995. Grates with 28 mm bar spacings eliminate virtually all by-catch of redfish >21 cm. The Council recommended that the mandatory use of grates in shrimp fishing activities on Flemish Cap be continued but that a bar spacing of less than 28 mm be enforced. The appropriate spacing is unknown at present but experiments conducted in 1994 showed that 19 mm spacings significantly reduced the redfish by-catch in Div. 3M. However, the effect of such a spacing on the shrimp catch rates and size composition has not been determined.

Capelin in Divisions 3N and 3O

Preliminary data from the Russian acoustic survey on capelin in Div. 3NO during 14-24 July 1994 were available. Few capelin were seen, however, the survey results were difficult to interpret because the timing of the survey did not coincide with the presence of mature capelin on the Southeast Shoal spawning area. Consequently, the Council had no basis to change its previous advice that no capelin fishing be allowed in Div. 3NO during 1995.

Data Availability for Assessment of Northern Shrimp in November 1994

The Council noted that data would be available for consideration by STACFIS at the 18-21 November 1994 meeting of the Scientific Council. The Council noted the change in dates of this meeting (originally announced as 17-20 November 1994).

Greenland Halibut Fishery with Longline *vs* Trawl in Div. 0B and 1BCDEF

The Council received from Denmark (Greenland) on 22 July 1994 (after the provisional agenda was circulated) a request for additional scientific advice on management of Greenland halibut (see Attachment 4 to Agenda) on options corresponding to different ratios between longlining and trawling. Further to STACFIS discussion on this matter the Council submitted the following response.

The Scientific Council noted that the precision in the current advice did not allow for an attribution of a catch level to specific gears, as stock composition at age was unknown, and as the relative fishing power of the gears needed to be quantified. It was also noted, that the current fishing mortality was thought to be high, and thus the difference in yield-per-recruit for longline and trawl was considered to be small. It was further noted that the yield-per-recruit analysis was very sensitive to slight changes in the parameters. Thus the gear comparison should be treated with caution.

Fisheries Commission Requests

The following responses, to requests for advice and information received by the Council from the Fisheries Commission, were submitted to the Fisheries Commission during the course of this meeting. It is noted that some responses may have been issued directly as FC documents.

Minimum Landing Sizes for Greenland Halibut and Flatfishes

It was established that no selectivity data were available in Canadian and EU laboratories. Some preliminary information was received from Norway during this meeting. It was not possible to clarify the status of data in Russian laboratories. It was agreed that the Secretariat should inquire from the laboratories of Contracting Parties on the availability of mesh selection data appropriate to evaluate minimum landing size for Greenland halibut and witch flounder. Results of this inquiry should be reported to the June 1995 Scientific Council Meeting.

Flemish Cap Cod (Division 3M)

Although there is no direct relationship between spawning stock and recruitment for the Flemish Cap cod, an increase in spawning stock biomass will not only increase the probability of good recruitment, but will also result in an increase in the proportion of larger fish in a larger exploitable biomass that should allow a more stable fishery.

Research Requirements for Greenland Halibut

The major requirements were identified as:

i) Survey coverage of the total stock area to depths of at least 1 500 m.
ii) Data from the commercial fisheries, including biological data.

In addition to the above, it would be advisable to continue the trawl surveys in Subarea 1, being the longest continuous survey time series on the stock in recent years, and further expand this survey or to supplement this with surveys in Div. 0B offshore so as to cover the offshore distribution area.

Besides a thorough collection of biological data including length, sex, maturity, fecundity, diet etc. and expanded surveys, a complete set of appropriate environmental observations should be collected.

Information on the Food Fishery for Cod in Newfoundland and Labrador

In response to the Fisheries Commission request of 20 September 1994, for information on the Canadian food fishery for cod in Newfoundland and Labrador area, the Council submitted the following information.

In 1994, the Minister of Fisheries and Oceans allowed a subsistence food fishery to take place for cod in the waters around Newfoundland and Labrador. This fishery took place over a 4 week period but was open only 2 days a week. Thus the fishery occurred over a period of only 8 days. Participants were restricted to the use of hand lines/baited hook, jiggers or sport fishing gear (rod and reel) only. A limit of 10 fish per day per individual was imposed, with the requirement that all groundfish caught regardless of species or size must be retained and counted against the 10 fish limit.

Preliminary estimates suggest that during the 8 days of this fishery, the total cod catch was in the range of 700-750 tons. This catch was spread amongst 3 different cod stocks, one of them being Div. 2J and 3KL (northern) cod. At present there is no information concerning the proportion of the estimated catch taken from this one stock.

Arrangements for Conducting Stock Assessments and Proposed Future Documentation

Working Procedures for the June 1995 Meeting

The Council noted the useful discussions by STACFIS regarding the procedures, and agreed further discussions would assist the Committee in completing its work effectively.

Updating List of Designated Experts

The Council noted the proposed changes in the Designated Experts, and encouraged early contact with the experts, and to provide them with necessary data for their assessment work.

Guidelines for Designated Experts

The Council noted the guidelines being proposed by STACFIS for the Designated Experts. However, with the changes to the work of the Scientific Council and STACFIS, these may need to be reviewed during the June 1995 Meeting.

Status of Scientific Documents

The Council observed that STACFIS had agreed on some minor amendments to past practice. The Scientific Council would review this topic further during the June 1995 Meeting.

Guidelines for Documentation of Assessments

The Scientific Council noted the decisions made by STACFIS and agreed to discuss these further during the June 1995 Meeting.

EXPERIMENTAL FISHERIES

Faroese Experimental Shrimp Fishery in Divisions 3LN

The Scientific Council noted that it had not received a research plan for prior comments for this program. Since shrimp fishing in Div. 3L was banned in 1994, the Scientific Council found it particularly unfortunate that this had not happened, but recognized the short time available for planning these cruises. The Scientific Council encouraged that future research programs of this nature be discussed prior to their implementation.

In the period 1 January-30 June 1994, two Faroese shrimp vessels conducted exploratory fishing in Div. 3L on the Nose of the Bank. Two observers were onboard gathering biological data including by-catches especially in relation to sorting grates. The scientific design of the investigation is described in SCR Doc. 94/75.

In limited areas the experimental fishing found catch rates comparable to those experienced in Flemish Cap.

The spacial coverage of the survey was limited and no assessment of the occurrence over the Bank and its slopes can be made.

By-catches included cod and redfish. Cod by-catch, given their length distribution, were probably a result of the grate not functioning. Compared with Div. 3M it appeared that the by-catch of redfish is lower.

Age, growth and reproduction was analyzed and was compared with Div. 3M. It was noted there may be growth differences between shrimp on the Bank and on the Flemish Cap.

Russian Experimental Fishing for Redfish with Different Mesh Sizes

The Russian representative informed the Council that the program was underway, the cruise was ongoing and data would be available late-1994 or early-1995. The Russian representative agreed that these data and analyses in the form of an SCR Document would be forwarded to the Secretariat as soon as possible, for an early distribution prior to consideration at the June 1995 Meeting.

RESEARCH COORDINATION

Non-traditional Fishery Resources in the NAFO Area

The Council agreed with the STACREC view that with the decline in the fishery for most of the traditional species, information concerning distribution and abundance of species such as skates and wolffish were becoming more important. The Council endorsed the recommendation that efforts be made to analyze research survey databases held by Contracting parties, and present the results of these analyses during the June 1995 Meeting.

Data from the Pilot Observer Program

The Council agreed that the accessibility to the data collected by the various Contracting Party Pilot Observer Programs should be investigated, and if the data are accessible, they should be made available by the representatives to the Designated Experts prior to June 1995.

Updating Conversion Factors

The Council noted the steps undertaken by FAO to update the conversion factors, and was thankful to R. Grainger, CWP Secretary, for his efforts on this matter.

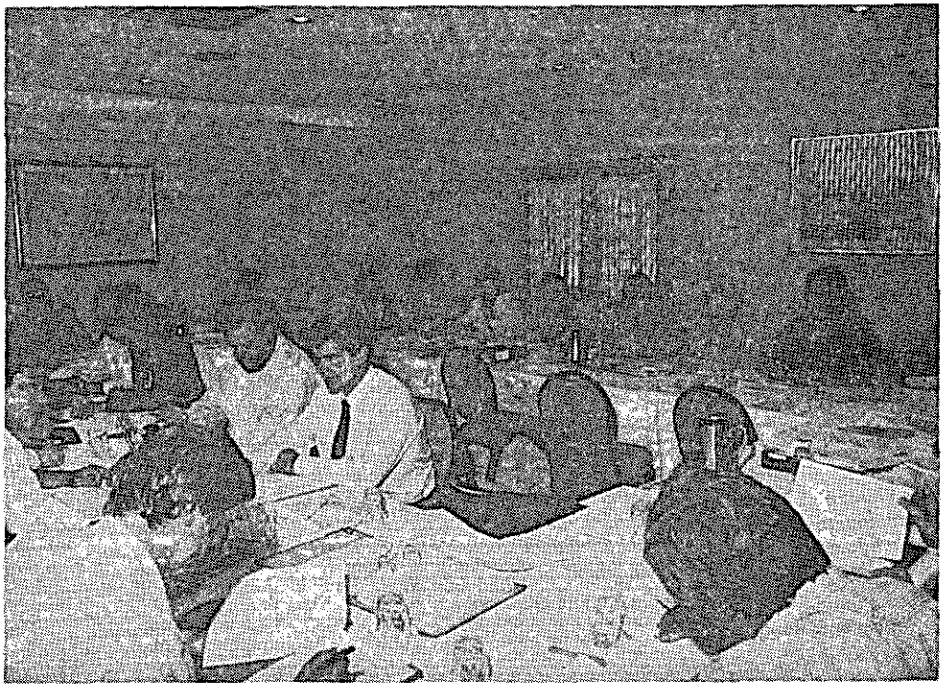
Research Coordination for Greenland Halibut

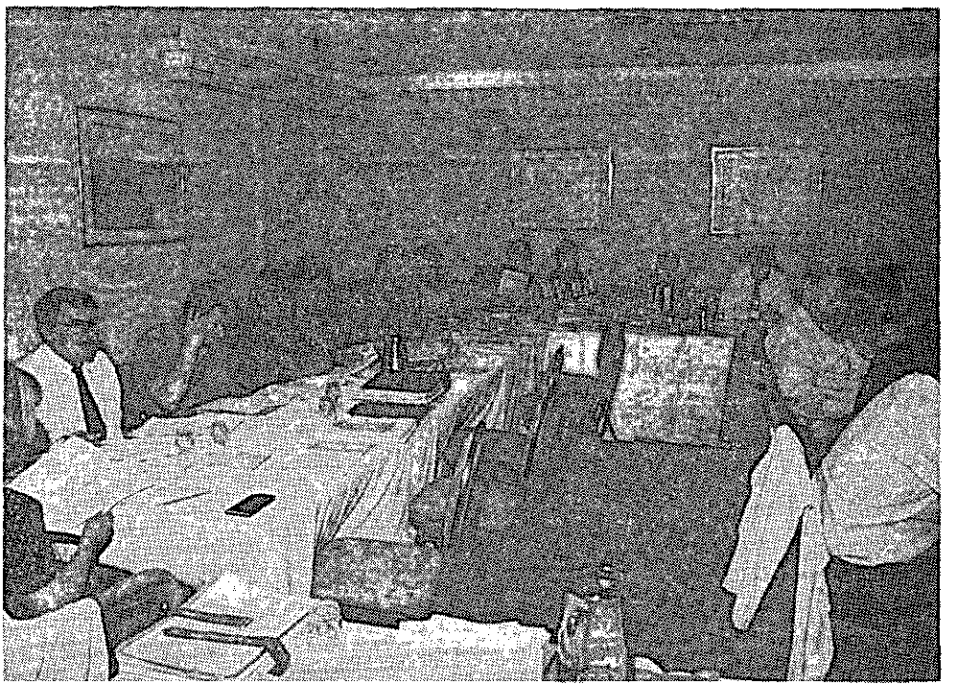
The Council was pleased with STACREC initiatives in coordinating research among Contracting Parties on Greenland halibut. It is noted that in response to a Fisheries Commission request during this meeting, the Council submitted a proposal on research survey requirements for Greenland halibut which was reported in Section II.3.c. above.

Review of Research Documents

The Council noted ten Research Documents which were not relevant to stock assessments and not considered by STACFIS, were reviewed and reported by STACREC.

Scientific Council in Session, September 1994





Annex 1. List of Participants

Scientific Council Meeting

Dartmouth, Nova Scotia, Canada
19-23 September 1994

CANADA

Representatives:

Beckett, J.S.	Fisheries Research Branch, Dept. of Fisheries and Oceans, 200 Kent Street, Ottawa, Ontario
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Bowering, W.R.	" " " " " " "

Advisers/Experts:

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Nakashima, B. S.	" " " " " " "
Parsons, D. G.	" " " " " " "
Stenson, G. B.	" " " " " " "
Veitch, P. J.	" " " " " " "
Showell, M. A.	Marine Fish Division, DFO, BIO, P. O. Box 1006, Dartmouth, Nova Scotia

DENMARK (in respect of Faroes and Greenland)

GREENLAND

Representative:

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Advisors/Experts:

Carlsson, D.M.	Greenland Fisheries Research Institute, Tagensvej 135, 1, DK-2200, Copenhagen N.
Pedersen, S.A.	" " " " " " "
Engelstoft, J.J.	Greenland Fisheries Research Institute, Box 570, 3900 Nuuk, Greenland
Siegstad, H.	" " " " " "

FAROE ISLANDS

Representative:

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Annex 2. Agenda

Scientific Council Meeting

19-23 September 1994
Dartmouth, N.S., Canada

I. Opening (Chairman: H. Lassen)

1. Appointment of rapporteur
2. Adoption of agenda
3. Plan of work

II. Fishery Science (STACFIS Chairman: H. P. Cornus)

1. Review of 1994 recommendations

2. Stock assessments

   a) Shrimp in Division 3M (including availability of Div. 3M redfish data) (see note 1 in Attachment 5)
   b) Capelin in Div. 3N and 3O (subject to availability of Russian data)(see note 2)
   c) Data availability for assessment of northern shrimp in November 1994
   d) Greenland halibut fishery with longline *vs* trawl in Div. 0B and Div. 1BCDEF (see Attachment 4)

3. Fisheries Commission requests

   a) Minimum landing sizes for Greenland halibut and flatfishes (see Attachment 1)
   b) Others

4. Arrangements for conducting stock assessments and proposed future documentation

   a) Adoption of work procedures for the June 1995 STACFIS Meeting
   b) Updating list of Designated Experts
   c) Guidelines for Designated Experts
   d) Status of scientific documents
   e) Guidelines for documentation of assessments

5. Future Special Sessions

   a) Report of 15-16 September 1994 Special Session on "Impact of Anomalous Oceanographic Conditions at the Beginning of the 1990s in the Northwest Atlantic on the Distribution and Behaviour of Marine Life" co-conveners M. Sinclair (Canada) and M. Stein (EU-Germany)

b) Progress report on September 1995 Special Session (see Attachment 1)
c) Progress report on September 1996 Special Session
d) Theme for September 1997 Special Session

6. Other matters

a) Silver hake ageing methodology report (see note 3)
b) Other business

III. Research Coordination (STACREC Chairman: C. A. Bishop)

1. Acquisition of STATLANT 21 Data (see note 4)
2. Publication of statistical information (missing data in Statistical Bulletins)
3. Report of CWP *Ad hoc* Consultation of 11-15 July 1994
4. Non-traditional fishery resources in the NAFO Area
5. Data from the Pilot Observer Program (see note 5)
6. Updating of conversion factors (see note 6)
7. Research coordination for Greenland halibut (see note 7)
8. Review of Research Documents (see note 8)
9. Other matters

IV. Publications (STACPUB Chairman: W. R. Bowering)

1. Review of scientific publications

a) Publications since June 1994 Meeting
b) Proposals for future publications

2. Promotion and distribution of scientific publications

a) Invitational papers
b) Promotion of the Journal

3. Editorial matters

4. Review of papers for possible publication

a) Consideration of publication of papers from September 1994 Special Session
b) Papers presented at this meeting
c) Consideration of papers being presented at November 1994 Shrimp Meeting

5. Other matters

V. Experimental Fisheries

1. Faroese experimental shrimp fishery in Div. 3LN
2. Russian experimental fishing for redfish with different mesh sizes

VI. Rules of Procedure

VII. Structure of Scientific Council and Documentation

1. Adoption of work procedures for June 1995 Scientific Council Meeting (see note 9)
2. Space requirements for June Meeting
3. Hardware and software requirements for June Meeting
4. Documentation and publications of the Scientific Council (see Attachment 2)

VIII. Collaboration with Other Organizations

1. Joint ICES/NAFO Working Group on harp and hooded seals (proposed meeting of 5-7 June 1995) (see Attachment 3 and note 10)
2. Review of proposals at CWP *Ad hoc* Consultations of 11-15 July 1994 on Structure of CWP. (see Note 11)

IX. Review of Future Meeting Arrangements

1. Scientific Council Meeting on northern shrimp 17-20 November 1994
2. June 1995 Meeting of Scientific Council
3. Special Session and Annual Meeting, September 1995
4. June 1996 Meeting of Scientific Council

X. Future Special Sessions

1. Update on Special Session of September 1995 (see Attachment 1)
2. Special Session of September 1996

XI. Other Business

XII. Adoption of Reports

1. Committee Reports of present meeting (STACFIS, STACREC, STACPUB)
2. Report of Scientific Council, September 1994

XIII. Adjournment

Attachment 1. Fisheries Commission Request

Regarding Minimum Fish Size for Witch, Redfish and G. Halibut, the following discussions developed at the 15th Annual Meeting (extracted from the STACTIC Report):

7. Minimum Sizes for Cod, Yellowtail Flounder and American Plaice – Possible Alternatives to Current Measures (item 9 of the Agenda)

   7.1 The Representative of Canada presented a proposal for technical discussions on adding 3 new species to the list – Witch, Redfish and Greenland halibut and three additional columns with their length equivalents.

   7.2 The Chairman indicated the Scientific Council would have to be requested to provide information on round length for the three new species proposed but as indicated by some Contracting Parties it would be difficult for the Scientific Council to provide information on product form. Therefore, it was agreed that a proposal to the Fisheries Commission would be prepared that the Scientific Council be requested to look at the feasibility and desirability of establishing minimum fish size for the three additional species and to advise on the minimum round length for the three new species proposed in the Canadian paper.

The following response is from Scientific Council Report, 8-22 June 1994, Item 6.d (pages 24-25)

d) **Minimum Landing Sizes for Greenland Halibut and Flatfishes**

The Fisheries Commission requested (FC Doc. 93/18) the Scientific Council to: review appropriate minimum landing sizes for Greenland halibut and flatfishes.

The Council noted it had advised on minimum landing sizes for American plaice (25-28 cm) and yellowtail flounder (25-28 cm) in 1992 (NAFO Sci. Coun. Rep., 1992, p. 71).

It was also noted that available data in laboratories have not yet been analyzed and presented to the Scientific Council. The Council agreed to defer its discussions on this subject to its September 1994 meeting.

Fisheries Commission's Request for Scientific Advice on Seals in the Ecosystem

In September 1993 the Fisheries Commission forwarded i.a. the following request to the Scientific Council:

5. Noting that the Scientific Council has scheduled a Symposium on Seals in the Ecosystem for September 1995, the Fisheries Commission requests a report in 1994 on the nature and extent of analyses that are expected to be tabled at the Symposium with respect to the interrelation between seals and commercial fish stocks.

Attachment 2. Proposed Publications Related to the Documentation to the Scientific Council Starting as of 1 January 1995

With regards to the reorganization of the work of the Scientific Council, the following are the publications and the proposed disposition of the documentation related to the Scientific Council, starting as of 1 January 1995.

1. **Journal of Northwest Atlantic Fishery Science** (unchanged, peer reviewed)
   Scientific contributions from individual scientists. Aimed at the general scientific community.

2. **NAFO Scientific Council Studies** (unchanged, limited review)
   Scientific contributions from individual scientists. Aimed at the general scientific community, and more specifically at the fishery scientists working in the Northwest Atlantic.

3. **SCR Documents** (no review)
   Scientific contributions from individual scientists including Preliminary Assessments by Designated Experts.

   Documentation relevant to the topics discussed at the Scientific Council meetings and preliminary data and analyses may be considered later in a more complete form for publication in Studies or in the Journal.

4. **SCS Documents** (no review)
   a) Statistical updates
   b) National research reports
   c) External committee reports (e.g. CWP, harp and hooded seals)
   d) STACFIS accepted assessments
   e) Internal Reports of the Standing Committees (STACFIS, STACREC, STACFEN and STACPUB)
   f) Scientific Council Reports (each meeting)
   g) Other summary documents (survey plans, ...)

   The papers documenting the STACFIS accepted assessment will be issued as SCS Documents and be made available from the Secretariat upon request.

5. **Statistical Bulletin** (edited by the Assistant Executive Secretary) (unchanged)

   Fisheries statistics

6. **Scientific Council Reports** (issued annually) (will contain all Scientific Council Meeting Reports of each year. These will be issued with the usual red cover).

   a) Requests for advice
   b) Scientific Council Reports

      - Records of Scientific Council meetings including lists of SCR and SCS Documents presented, Agenda and list of participants

- Annual overview of the fisheries in the Convention Area
- Annual overview of the environmental conditions in the Convention Area
- Assessment of fish stocks as requested by the Fisheries Commission and by Contracting Parties
- Response to other requests from the Fisheries Commission and Contracting Parties
- Other recommendations

This report is primarily aimed for the Fisheries Commission and Contracting Parties.

The format of the assessments as presented in the Scientific Reports should include:

- Reference to SCS Documents where the accepted assessment can be found
- Reference to SCR Documents drawn upon for the assessment
- Description of the fishery
- Prognosis and management recommendation
- Summary sheet
- Basic graphs:

  i) Catch and TAC *vs* year
  ii) Abundance indices for analytical assessments
  iii) Recruitment and SSB *vs* year
  iv) Fishing mortality *vs* year
  v) Yield and SSB *vs* F for the year of projection
  vi) Any other graphs deemed essential for understanding the management advice

The accepted STACFIS assessment documents (SCS Doc. mentioned in 4.f above) of a given meeting will be compiled in a single set, with a red cover identifying the set of documents as being the accepted assessments. This package will be issued to participants of the Annual Meeting, and to governments according to an appropriate mail list.

7. **Executive Summary**

Discontinued

8. **Working Papers**

Any information which should be disseminated to Scientific Council and its Committees during session, but which is not relevant for use after the meeting is concluded.

9. **Dumm Documents**

Brightens the life of Scientific Council and Committee members.

Attachment 3. Scientific Advice on Seals

1. The following request for advice was received on 17 June 1994. This is presented to the Scientific Council with a view to developing terms of reference for a proposed meeting of the ICES/NAFO Working Group.

"Denmark (on behalf of Faroe Islands and Greenland) request advice from the NAFO Scientific Council (eventually via the Joint ICES/NAFO Working Group on Harp and Hooded Seals) on the following issues:

Harp and hood seals

- assessment of stock sizes, distribution and pup production of harp and hooded seals in the Northwest Atlantic;
- assessment of sustainable yields at present stock sizes and in the long term under varying options of age composition in the catch;
- advise on catch options in the NAFO area;
- assessment of effects of recent environmental changes or changes in the food supply and possible interaction with other living marine resources in the area."

Einar Lemche
Namminersornerullutik Oqartussat
Gronlands Hjemmestyre
Copenhagen, Denmark"

Attachment 4. Denmark (Greenland) Request for Additional Scientific Advice on Management of Greenland Halibut in 1995

The Scientific Council recommends that a TAC for Greenland halibut in Divisions 0B and 1BCDEF be set below 11 000 tons.

Denmark (in respect to Greenland and the Faroe Islands) requests advice from the Scientific Council on a new TAC for this area based on the condition that the TAC will be taken by longlines.

If possible the advice should contain different options corresponding to different ratios between longlining and trawling.

This request is based on the fact that there is a substantial difference in size distribution in the two types of fishery.

Yours sincerely,

Einar Lemche

Attachment 5. Scientific Council

Notes from Report of June 1994 Meeting

Note 1. **By-catch of Redfish in Shrimp Fisheries** (page 32)

The Council expressed its concern of the likely negative impact on future recruitment to the redfish fisheries from the discards of small redfish in trawl fisheries for shrimp in Subarea 1 and in Div. 3M. In Subarea 1 a dramatic decline of adult redfish ($\geq$ = 16 cm) to an extremely low level has been observed. The Council therefore stressed that this mortality component be included in the assessment of the redfish stocks. This requires that estimates of the magnitude of these by-catches and biological sampling data be made available..

It is important that information on by-catches be provided on numbers and sizes of the redfish as well as weight of the by-catch, whether or not sorting mechanisms are employed, because of the size selectivity of these devices.

With respect to the shrimp fishery in Div. 3M, information on by-catches in the shrimp fishery only up to July 1993 was available. The Council stressed that all information for 1993 be made available when the shrimp resources in this Division will be assessed in September 1994. It was also stressed that the annual information should be made available in advance of the June meeting, when the status of Div. 3M redfish is assessed, because of the relevance of this information to the assessment.

Note 2. **Capelin in Divisions 3N and 3O** (page 95)

A Russian survey is planned for June 1994 and if the results of this survey area available during the September 1994 Meeting, STACFIS advised that no capelin fishing be allowed in Div. 3NO during 1995.

Note 3. **Report on Methods of Ageing Silver Hake Otoliths** (pages 98, 99)

In response to the 1991 and 1992 recommendation of the Scientific Council regarding publication of a comprehensive manual on silver hake ageing, STACFIS was informed that the work on the silver hake radio-nucleotide study was unsuccessful because of technical reasons. Consequently, the status of the initially proposed report on ageing techniques must now be reviewed in light of the lack of results from this study, as well as the change in responsibilities for the Canadian research group conducting ageing studies. The results of this review will be reported to STACFIS at its September 1994 Meeting.

Note 4.. **Acquisition of STATLANT 21A and 21B reports for recent years** (page 107)

STACREC was seriously concerned that a major component of NAFO statistics are not available since 1988 from EU-France and recommended that the Scientific Council take steps to obtain these data to complete the database and update statistical bulletins.

Note 5. **Pilot Observer Program** (page 116)

STACREC noted that this information may be quite useful with regards to stock assessments and recommended that the Scientific Council determine if the data from the Pilot Observer Program can be made available for assessment purposes.

Note 6. **Update of Information on Conversion Factors** (page 116)

The Secretariat has since been informed that the information is not yet available. The 1993 report of CWP also indicated that the Working Party had made a similar request to FAO. STACREC recommended that further work on conversion factors would not be required at the Scientific Council level until the status of the FAO report was determined. It also suggested that the Secretariat obtain further information on the progress from FAO.

Note 7. **Coordination of Surveys** (page 115)

Information provided by EU-Spain indicated that they will propose to the EU to conduct a survey (1995) in Div. 3M, 3L, 3N and 3O in depths from 700 to 2 000 m. Greenland with Japan will conduct a survey for Greenland halibut in Subarea 1 during 1994 at depths from 400 to 1 500 m. STACREC recommended that this initiative be discussed and coordinated with other interested countries.

Note 8. **Other Papers** (page 116)

STACREC tabled for review, eight papers not related to stock assessments, which were traditionally considered in STACFIS (SCR Doc. 94/4, 11, 24, 26, 29, 34, 35, and 38). Sufficient time for adequate review was not available at this particular meeting and STACREC deferred the review to the September 1994 Annual Meeting. STACREC hoped that such reviews in future would be done in June to ensure adequate peer-review.

Note 9. **Review of Recommendations From 1993 Meetings** (page 38)

STACFIS noted the value of the early submission of papers, and this encouraged the Committee to extend the requirements stated in June 1993 (NAFO Sci. Coun. Rep., 1993, p. 43) and recommended that Scientific Council Research Documents (SCR Doc.), excluding assessment papers, and Scientific Council Summary Documents (SCS Doc.) particularly the National Research Reports, in future be submitted to the Secretariat 15 days before the beginning of the Scientific Council Meeting.

Note 10. **Joint ICES/NAFO Working Group on Harp and Hooded Seals** (page 30)

At the Council meeting on 17 June 1994, the Chairman announced that a request for scientific advice on harp and hooded seals had just been received from Denmark (on behalf of Faroe Islands and Greenland) (see Annex 2). Noting advice would have to be provided by the Council at the Annual Meeting of September 1995, the Scientific Council agreed a request would be forwarded to the ICES/NAFO

Working Group on Harp and Hooded Seals to address this request. The Council proposed that this request should be addressed immediately prior to the 7-21 June 1995 Meeting of the Scientific Council. It is hoped the Working Group would schedule its meeting for 5-7 June 1995, in order that some scientists from the Council may attend the meeting.

Note 11. **Structure of the CWP** (page 30)

Further to this Scientific Council request, the Chairman of General Council requested the FAO Coordinator (R. Grainger) of the July 1994 Ad hoc Consultation to forward to NAFO, all proposals submitted to that meeting. The Scientific Council deliberations on this matter and any recommendations from the 19-23 September 1994 Meeting will be reviewed by the General Council (see Itemized Memorandum of the General Council Agenda, Item 17 – Other Business).

Symposium on "Impact of Anomalous Oceanographic Conditions at the Beginning of the 1990s in the Northwest Atlantic on the Distribution and Behaviour of Marine Life"

The Symposium on "Impact of Anomalous Oceanographic Conditions at the Beginning of the 1990s in the Northwest Atlantic on the Distribution and Behaviour of Marine Life", with M. Sinclair (Canada) and M. Stein (EU-Germany) as co-conveners, was held at the NAFO Headquarters, Dartmouth, Nova Scotia, Canada during 15-16 September 1994. A total of 31 participants registered for the Symposium, representing 12 countries (Canada, Denmark, Faroe Islands, France, Germany, Greenland, Japan, Portugal, Spain, Russian Federation, United Kingdom and the United States of America).

M. Sinclair introduced the theme of the meeting with an historical account of the shift in the conceptual framework of the fisheries fluctuations problem that occurred during the first decade of ICES research activities. The title of the talk was "Fisheries Fluctuations: the Paradigm Shift of Committee A (1902-14)". At the turn of the century the existing hypothesis accounting for interannual and decadal scale fluctuations was that migration changes at the species level, forced by changing oceanographic conditions (on ocean-basin scales), generated variable abundance at diverse fishing locations along the coast of Europe. The new hypothesis of Hjort (1914), based largely on the work of Committee A of ICES, emphasized the role of year-class variability of geographically restricted stocks as the major cause of fluctuations in catches. In recent years migration changes due to oceanographic variability are considered to be an important component of the "fisheries fluctuations" problem. Thus the speaker proposed that a balance between the "migration thinking" of the 19th century and the "population thinking" of the 20th century will probably be the conceptual framework of the 21st century.

Summary of Contributions and Findings

Four papers (SCR Doc. 94/69-72) were presented on the changes in the environmental conditions of the North Atlantic on a range of time and space scales. On a time scale of a century, it was shown that the cold atmospheric conditions off West Greenland during the past two decades were comparable to those at the turn of the century, and as such were not anomalous. On a shorter time scale (i.e. the past several decades), however, the oceanographic conditions of the 1980s and the early-1990s were shown to be colder than average (relative to the 1961-1990 mean) for most of the Northwest Atlantic from West Greenland to about the eastern Scotian Shelf. In contrast the conditions in the eastern part of the North Atlantic (Iceland to Europe) had been warmer than average during the past decade. The environmental conditions over the western Scotian Shelf, the Gulf of Maine area and the Mid-Atlantic Bight had been average. The changes in environmental conditions, as well as their pattern, were described. The major change had been shifts in the winter wind conditions (the intensity and direction of the northwesterlies) over time, which in turn modified the advection of cold water from the Davis Strait *via* the Labrador Current. The shift in the winter winds (which are generated by the relative air pressure strengths of the Icelandic Low and the Bermuda-Azores High) bring warmer air temperatures over the eastern seaboard of the United States, when the cooler than normal conditions are being generated in the Northwest Atlantic. Thus the southern part of the NAFO area had been experiencing average environmental conditions during the past decade, while the northern part

had been cooler than average. On shorter time scales (within season) it was shown that anomalous advection of Scotian Shelf water across the Northeast Channel can displace Georges Bank water. This occurred in the winter spring of 1992, and may have had an impact on gadoid recruitment processes. The four papers on the oceanographic conditions within the NAFO area provided an excellent framework within which to summarize the degree to which the past several years had been anomalous. In the summary discussion it was concluded that on a time scale of interest to fisheries management (i.e. years to decades) the early-1990s had been very cold for most of the NAFO area.

Four papers (SCR Doc. 94/64, 66, 67 and 73) evaluated trends in spawning stock biomass (SSB), recruitment, survival rate (i.e. recruitment over SSB), and growth of fish as a function of changing environmental conditions and fishing pressure. It was concluded that survival rate had been relatively low during the past decade. Also weight-at-age and growth rates had been low for several cod stocks, but not all. To a certain degree the recent patterns in growth rate changes and weight-at-age follow the broad patterns in changes in environmental conditions. Weights-at-age for Div. 2J+3KL cod, Div. 4T cod, Div. 4VsW cod and annual growth rate for Div. 2J+3KL cod had been declining during the cool period. In contrast growth rates for Icelandic and Arcto-Norwegian cod, and weights-at-age for the Gulf of Maine area cod (Div. 4X and 5Z) had either been stable or high during the respective average and warm periods. It was also noted that fishing mortality had been increasing during the time period of stock declines in many areas. Thus fishing had contributed to the rate of decline of the stocks during a time period which had been poor for fish production over a large part of the NAFO area. There was some evidence that cod recruitment variability off West Greenland was associated with increased advection of warm oceanic waters and that temperature and current strength off Atlantic Canada influenced recruitment for a range of fish species (groundfish and pelagic).

Four papers (SCR Doc. 94/63, 65, 68 and 74) addressed changes in distribution of fish species in response to the cool period of the last several years. There was strong evidence that capelin and Greenland halibut had expanded their distribution to the Scotian Shelf in parallel with the declining temperatures on the eastern shelf. Spawning times of capelin have been 4-6 weeks later since 1991. Capelin have also appeared on Flemish Cap in recent years. American plaice were observed more frequently in deeper water within Div. 3LNO than had been the case prior to the 1990s. Silver hake were shown to be associated with the shelf/slope front off the Scotian Shelf. On short time scales (weeks), silver hake were observed to change their distribution in relation to shifts in the position of the front.

During a general discussion, it was recommended that long-term monitoring of oceanographic properties (including plankton), as well as of fish distributions and abundance be given high priority within the NAFO area to allow interpretation of fish population fluctuations. The Symposium papers will be published in a special publication in 1995.

Annex 1. List of Participants

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Scientific Council Meeting

The Scientific Council met at NAFO Headquarters, Dartmouth, Nova Scotia, Canada, during 18-21 November 1994. Representatives attended from Canada, Denmark (in respect of the Faroe Islands and Greenland) and Iceland. The Chairman, H. Lassen (EU-Denmark) had conveyed his regrets not being able to attend and Vice-Chairman, W. R. Bowering (Canada), had been invited to chair this meeting. The Assistant Executive Secretary was in attendance. (Annex 1)

The Rapporteur was T. Amaratunga, Assistant Executive Secretary.

The Agenda was adopted as presented in Annex 2.

FISHERY SCIENCE

Stock Assessments

Shrimp in Subareas 0 and 1

i) **Advice and Recommendations**

Shrimp in Subarea 1 and adjacent areas of Div. 0A. At its meeting in November 1993 the Scientific Council recommended, based on the similarity in stock composition (i.e. the occurrence of similar modes in length distributions, prominence of the 1985 year-class in all areas, and recruitment of the same year-classes in all areas), that shrimp in Div. 0A and in Subarea 1 both north and south of 71°N and in inshore areas be assessed as a single stock.

Weights in '000 tons

Year	1987	1988	1989	1990	1991	1992	1993	1994
Offshore SA 0+1 (south of 71°N)								
Recommended TAC	36	36	44	50	50	50	50	50
Agreed TAC[2]	40.1	40.1	45.2	45.2	46.2	44.2	40.6[3]	42.3[3]
Actual Landings	46.1	43.4	49.9	58.2	63.1	68.8	68.2	52.4[6]
Offshore SA 1 (north of 71°N)								
Recommended TAC	-	-	-	-	-	-	-	-
Agreed TAC	11.6	11.5	8	6.8[7]	6.8[7]	6.4[7]	8.3[8]	8.3[8]
Actual landings	10.7	6.7	2.5	2.1	1.1	2.6	0.6	0.4[6]
SA 0+1 total (including inshore SA 1)								
Actual landings[4,5]	63.7	60.3	65.7	70.7	75.3	84.9	74.6	66.9[6]

[1] Provisional landings.
[2] Not including catches of vessels <75 GRT.
[3] SA 1 offshore, south of 68°N + Div. 0A.
[4] Includes information in addition to official statistics.
[5] Revised data for 1990-93.
[6] Preliminary statistics available as of November 1994.
[7] Including the area from 69°30'N to 71°N, west of 58°W.
[8] SA 1 offshore, north of 68°N.

State of Stock: Catch-rate indices indicated declining abundance; research survey indices indicated that the stock is stable since 1988.

Forecast for 1995: Not available for $F_{0.1}$, F_{93}, F_{max}.

Recommendations: TAC for 1995 be set at 60 000 tons for Div. 0A and Subarea 1 including areas north of 71°N and inshore areas.

Shrimp in Denmark Strait

Year	1987	1988	1989	1990	1991	1992	1993	1994
Recommended TAC	-	-	10	10	10	8	5	5
Agreed TAC[1]	7.7[2]	8.7[2]	9.0[2]	14.1	14.5	13.0	9.6	9.6
Reported catches	12.2	12.6	10.7	10.3	8.7[3]	7.5[3]	7.8[3]	8.1[3]

[1] On Greenland side of midline only. Weights in '000 tons.
[2] Not including Greenland fishery north of 66°30'N.
[3] Provisional.

State of Stock: Although the indices suggest an increase in abundance, the stock is still considered to be at a much lower level than it was during the first half of the 1980s.

Forecast for 1995: Not available for $F_{0.1}$, F_{93}, F_{max}.

Recommendations: The Scientific Council advised that the TAC of 5 000 tons recommended for 1994 remain for 1995 to allow for continued improvement in stock size. This catch level is intended to also include any catches in the new fishing areas.

OTHER MATTERS

Publication of Papers on Flemish Cap Shrimp

The Council at its meeting in September 1994 recommended that consideration be given to publication of papers dealing with shrimp on Flemish Cap. The Designated Expert, D. G. Parsons (Canada), who was requested to address this matter, informed the Council that he had consulted potential contributors and was in a position to formulate a compilation. The Council agreed to consider a draft of the proposed single publication during its meeting in September 1995.

Annex 1. List of Participants

Scientific Council

18-21 November 1994
Dartmouth, N.S., Canada

CANADA

Representatives:

Powles, H.	Senior Policy Advisor, Invertebrates and Pacific Marine Fish, 200 Kent St., Ottawa, Ontario
Parsons, D. G.	Northwest Atlantic Fisheries Centre, P. O. Box 5667, St. John's, Newfoundland

Advisers/Experts:

Bowering, W. R.	Northwest Atlantic Fisheries Centre, P. O. Box 5667, St. John's, Newfoundland
Brodie, W. B.	" " " " " " "

DENMARK (in respect of Faroe Islands and Greenland)

GREENLAND

Representative:

Nygaard, K. H.	Director, Greenland Fisheries Research Institute, Box 570, 3900 Nuuk, Greenland

Advisors/Experts:

Carlsson, D. M.	Greenland Fisheries Research Inst., Tagensvej 135, 1, DK-2200, Copenhagen N.
Kanneworff, P.	" " " " " " "
Andersen, M.	Greenland Fisheries Research Institute, Box 570, 3900 Nuuk, Greenland
Siegstad, H.	" " " " " " "

ICELAND

Representative:

Skúladóttir, U.	Marine Research Institute, Skulagata 4, P. O. Box 1390, Reykjavik

Annex 2. Agenda

Scientific Council Meeting

18-21 November 1994
Dartmouth, N.S., Canada

I. Opening (Chairman: H. Lassen*)

1. Appointment of rapporteur

2. Adoption of agenda

3. Plan of work

II. Fishery Science (STACFIS Chairman: W. B. Brodie)

1. Stock assessments

-Northern shrimp (Subareas 0 and 1)

-Northern shrimp (in Denmark Strait and off East Greenland)

[Note: For Northern shrimp in Subareas 0 and 1, the assessment and TAC advice should include, if possible, the areas north of 71°N in Subarea 1 as well as the inshore region of Subarea 1.]

2. Other business

III. Other Matters

1. Publication of papers on Flemish Cap Shrimp.

IV. Adoption of Reports

V. Adjournment

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* Due to the unavailability of H. Lassen (EU-Denmark), Vice-Chairman W. R. Bowering (Canada) was invited to chair this meeting.

PART IV

(pages 149-163)

Administrative and Financial Report for the Year Ended 31 December 1994

Administrative Report for the Year Ended 31 December 1994

Meetings and NAFO Secretariat Activities

1. The Scientific Council and its Standing Committee on Fishery Science (STACFIS) met in Brussels, Belgium during 13-15 February 1994.

2. The Fisheries Commission and its Standing Committee on International Control (STACTIC) met in Brussels, Belgium during 14-17 February 1994.

3. The International Fisheries Commission Pension Society held its Annual Meeting in Ann Arbor, Michigan, USA during 17-19 May 1994. The NAFO Secretariat was represented by Mr H. Champion and Mr F. Keating.

4. The Scientific Council and its Standing Committees met at Keddy's Dartmouth Inn during 8-22 June 1994.

5. The Standing Committee on International Control (STACTIC) met at NAFO headquarters during 30 August - 01 September 1994.

6. The Annual Meeting of the Organization including all constituent bodies - the General Council, the Fisheries Commission, the Scientific Council - was held at the Holiday Inn in Dartmouth, Nova Scotia, during 19-23 September 1994.

7. A Special Meeting of the Scientific Council was held at NAFO Headquarters during 18-21 November 1994.

The NAFO Secretariat made all necessary arrangements for the above-mentioned meetings and prepared all documents in accordance with the provisions of the NAFO Convention and Rules of Procedure.

Publications

The publications listed below were prepared and printed in the NAFO Secretariat. An estimated 900,000 pages of printed material was distributed in publications and an additional 600,000 pages of printed material distributed in documents/circular letters before the end of 1994.

a) *NAFO Annual Report* for the year 1993 (144 pages) was distributed in March 1994.

b) *NAFO Meeting Proceedings* for the year 1993 (134 pages) was distributed in February 1994.

c) *NAFO Handbook* (98 pages) was distributed in January 1994.

d) *NAFO Inspection Manual* (110 pages) was distributed in March 1994.

e) *Translation of Questionnaire* (60 pages) was distributed in June 1994.

f) *NAFO Scientific Council Reports* for 1993 (234 pages) was distributed in January 1994.

g) *NAFO Journal of Northwest Atlantic Fishery Science* Volume 15 (170 pages) was distributed in January 1994.

h) *NAFO Journal of Northwest Atlantic Fishery Science* Volume 16 (100 pages) was distributed in July 1994.

i) *NAFO Journal of Northwest Atlantic Fishery Science* Volume 17 (77 pages) was distributed in October 1994.

j) *NAFO Scientific Council Studies* Number 20 (102 pages) was distributed in February 1994.

k) *NAFO Statistical Bulletin* Volume 40 (310 pages) was distributed in February 1994.

l) *NAFO Index of Journal and Studies*, 1980-93 (62 pages) was distributed in February 1994.

Fishery Statistics

The statistical database at the Secretariat which is in an IBM compatible PC system, was updated back to 1960. Many Contracting Party requests for data were conveniently fulfilled and supplied in the form of diskettes.

1. STATLANT 21B Reports for 1991

Outstanding STATLANT 21B data were received December 1994 from all countries or components with the exception of Fra(SP), and *NAFO Statistical Bulletin* Vol. 41 containing 1991 data was published in February, 1995 without these data.

2. STATLANT 21B Reports for 1992

In accordance with Rule 4.4 of the Rules of Procedure of the Scientific Council, the deadline for submission of STATLANT 21B reports for 1992 was 30 June 1993. As of 31 December 1994, data were still outstanding from Fra(M) and USA. The delay in the acquisition of these data has again delayed the timely publication of *NAFO Statistical Bulletin* (Vol. 42) but hopefully this volume will be published mid-1995.

4. STATLANT 21A Reports for 1993

In accordance with Rule 4.4 of the Rules of Procedure of the Scientific Council, the deadline for submission of provisional statistics in STATLANT 21A reports for 1993 was 15 May 1994. Timely submission of these provisional data are necessary for stock assessments carried out by the Scientific Council at the June Meeting. As of 31 December 1994 data were received from all countries except EU-Fra(M) and Fra-SP and the document was printed in December 1994.

5. Monthly Reporting of Provisional Catch Statistics

In accordance with the provisions of the NAFO Conservation and Enforcement Measures (Part I.C.3), the Secretariat prepared and distributed the monthly reporting of the provisional catches of Contracting Parties by the NAFO Circular Letter series. The most recent report was issued in NAFO Circular Letter 95/27 for January 1995.

6. Historical Catches for 1982-92

The Secretariat continued the practice of preparing decadal catch data. The Summary Document (SCS Doc. 94/1, Serial No. N2351) contains an 11-year time series from 1982 to 1992 with updates for 1982-90 and provisional data for 1991 and 1992. More than 70 stocks are currently included in the list (others may be added upon request).

7. Biological Sampling Data

The Secretariat continued the practice of preparing the List of Biological Sampling Data. The Summary Document (SCS Doc. 94/8, Serial No. N2371) contains a provisional list of sampling data for 1992 available at the Secretariat as of 1 June 1994.

8. List of Fishing Vessels, 1992

Data for the triennial *List of Fishing Vessels for 1992* were requested from all countries in January, 1993. As of 31 December 1994, 11 reports have been received with another 11 still outstanding.

Financial Report for the Year Ended 31 December 1994

An audit of the NAFO accounts for the fiscal year 1994 was completed by the firm of Deloitte and Touche, Chartered Accountants.

The auditor's report is as follows:

To the Chairman and Members of the General Council of Northwest Atlantic Fisheries Organization

We have audited the balance sheet of the Northwest Atlantic Fisheries Organization as at December 31, 1994 and the statements of revenue and expenditures, accumulated surplus and changes in financial position for the year then ended. These financial statements are the responsibility of the Organization's management. Our responsibility is to express an opinion on these financial statements based on our audit.

We conducted our audit in accordance with generally accepted auditing standards. These standards require that we plan and perform an audit to obtain reasonable assurance whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation.

As outlined in Note 4 to the financial statements, the Organization has not recorded a liability for enhanced employee termination benefits, as approved as part of the Staff Rules by General Council at its annual meeting in September, 1991. At December 31, 1994, these enhanced benefits amounted to approximately $110,300. Failure to record this amount as a liability in 1994 is not in accordance with the Organization's stated accounting principles. Had the liability been recorded $110,300 would have been reflected as a prior period adjustment. The accumulated surplus at the end of the year would have been reduced by $110,300.

In our opinion, except for the effects of the Organization's failure to record the liability referred to in the preceding paragraph, these financial statements present fairly, in all material respects, the financial position of the Organization as at December 31, 1994 and the results of its operations and the changes in its financial position for the year then ended in accordance with the accounting principles disclosed in the notes to the financial statements.

We further report as required by Rule 7.1 of the Financial Regulations of the Organization, that in our opinion, the financial statements are in accordance with the books and records of the Organization; the financial transactions reflected in the statements have, in all significant respects, been in accordance with the Financial Regulations and the budgetary provisions of the Northwest Atlantic Fisheries Organization; and the monies on deposit and on hand have been verified by certificate received directly from the Organization's depositories or by actual count.

February 9, 1995

Deloitte & Touche
Chartered Accountants

Statement of Revenue and Expenditures
(Year Ended 31 December 1994)

(Expressed in Canadian Dollars)

	Budget 1994	Actual 1994	Actual 1993
Revenue			
Contributions assessed Contracting Parties (Note 5)	$ 744,655	$ 744,655	$ 815,411
Allocation from surplus for operations	223,345	223,345	127,589
Personal income taxes			
Federal	-	98,894	96,057
Provincial	-	44,665	87,394
Interest	-	23,567	16,962
Sales of publications	-	5,691	6,918
	968,000	1,140,817	1,150,331
Expenditures			
Salaries	597,000	590,469	584,344
Vacation pay increase (decrease)	2,000	(11,022)	(3,366)
Superannuation (Note 6)	74,000	77,672	73,419
Additional help	1,000	-	-
Group medical and insurance plan	34,000	36,768	32,408
Termination benefits (Note 4)	31,000	41,548	22,667
Travel	23,000	13,295	5,694
Transportation	1,000	533	772
Communications	53,000	52,580	55,121
Publications	20,000	19,588	20,165
Contractual services	42,000	41,199	41,591
Materials and supplies	30,000	29,452	26,693
Equipment	5,000	4,995	5,060
Meetings	40,000	48,599	27,200
Computer services	15,000	13,961	15,066
External expertise	-	-	2,679
	968,000	959,637	909,513
Excess of revenue over expenditures before provision for uncollectible accounts	-	181,180	240,818
Provision for uncollectible accounts and write-off of contributions	47,895	47,895	17,473
Excess of revenue over expenditures	$(47,895)	$ 133,285	$ 223,345

Statement of Accumulated Surplus
(Year Ended 31 December 1994)

(Expressed in Canadian Dollars)

	1994	1993
Balance, beginning of year	$ 298,346	$ 202,590
Allocations		
To operations	223,345	127,589
	75,001	75,001
Excess of revenue over expenditures	133,285	223,345
Balance, end of year	$ 208,286	$ 298,346

Balance Sheet as at 31 December 1994

(Expressed in Canadian Dollars)

	1994	1993
ASSETS		
Current		
Cash and short-term deposits	$ 334,272	$ 438,783
Contributions receivable (Note 3)	55,821	47,061
Accounts receivable	4,116	3,132
Accrued interest receivable	1,386	1,944
Prepaid expenses	20,726	32,813
	$ 416,321	$ 523,733
LIABILITIES		
Current		
Accounts payable and accrued liabilities	$ 23,056	$ 6,396
Accrued vacation pay payable	8,535	19,558
Overpayment of contributions by Contracting Parties	10	10,468
	31,601	36,422
Provision for employee termination benefits (Note 4)	176,434	188,965
	208,035	225,387
EQUITY		
Accumulated Surplus	208,286	298,346
	$ 416,321	$ 523,733

Statement of Changes in Financial Position
(Year Ended 31 December 1994)

(Expressed in Canadian Dollars)

	1994	1993
Net inflow (outflow) of cash related to the following activities:		
Operating		
Excess of revenue over expenditures	$ 133,285	$ 223,345
Item not affecting cash		
Allocation from surplus	(223,345)	(127,589)
	(90,060)	95,756
Changes in non-cash operating working capital items (Note 9)	(1,920)	25,968
	(91,980)	121,724
Financing		
Increase (decrease) in provision for employee termination benefits	(12,531)	22,667
Net cash inflow (outflow)	(104,511)	144,391
Cash position, beginning of year	438,783	294,392
Cash position, end of year	$ 334,272	$ 438,783

Notes to the Financial Statements

(Year Ended 31 December 1994)

(Expressed in Canadian Dollars)

1. Authority and Objective

The Northwest Atlantic Fisheries Organization was established by the Convention on Future Cooperation in the Northwest Atlantic Fisheries which came into force on January 1, 1979.

The objective of the Organization is to contribute through cooperation and consultation to the conservation, rational management and efficient utilization of the fishery resources in the Convention. For that purpose, it compiles statistics, maintains research programs, establishes management goals, and promotes and co-ordinates international surveillance.

2. Accounting Policies

These financial statements have been prepared in accordance with Canadian generally accepted accounting principles and reflect the following significant accounting policies:

a) **Contributions Assessed Contracting Parties**

Contributions are assessed annually and are recorded as revenue in the year for which billings apply.

b) **Allowance for Uncollectible Accounts**

As approved by the General Council, an allowance for uncollectible accounts is recorded for contributions that are one payment in arrears.

c) **Accumulated Surplus**

The Chairman of the General Council, after consultations with representatives of all members of the General Council, may authorize expenditures from accumulated surplus for unforeseen and extraordinary expenses necessary to the good conduct of the business of the Organization. Such funds may not be in excess of 20% of the annual budget for the current financial year.

d) **Publications**

Costs of publications are charged to expense as incurred.

e) **Office Furniture and Equipment**

Costs of office furniture and equipment are charged to expense when purchased. Leases for equipment, which transfer substantially all of the benefits and risks of ownership to the Organization, are not treated as asset purchases (capital leases). Lease payments are charged in the year paid to the contractual services expenditure categories.

f) **Personal Income Taxes**

Federal

According to an Order in Council (P.C. 1980-132) issued by the Government of Canada, the Organization comes under the jurisdiction of the Convention on the Privileges and Immunities of the United Nations. Article V, Section 18(b) of this Convention exempts officials of the United Nations organizations from taxation on the salaries and emoluments paid to them. However, the Order in Council (Section 3.(3)) does not exempt a Canadian citizen, residing or ordinarily resident in Canada, from liability for any taxes or duties imposed by any law in Canada.

Accordingly, as is customary for international organizations, the Organization credits revenue with an amount equal to the Canadian federal income taxes that would be otherwise assessed on its employees.

Provincial

The Organization deducts provincial income taxes from the salaries of Canadian employees and remits amounts deducted on a regular basis to the Province of Nova Scotia. At the end of each year, the Organization applies to the provincial government for an *ex gratia* grant equal to the amount of provincial personal income taxes paid. Such grants are accrued when ultimate receipt is assured.

g) **Pension Plan**

The Organization has a defined benefit pension plan and current contributions plus the payments for the unfunded portion of the plan are expensed annually.

3. Contributions Receivable

This account reflects assessments due (Canadian Dollars) from Contracting Parties as follows:

	1994	1993
Poland	$ 14,893	$ -
Denmark (in respect of the Faroe Islands and Greenland)	-	921
Cuba	24,589	26,475
Romania	14,893	17,473
Japan	-	98
Lithuania	14,893	-
Bulgaria	14,893	18,109
European Union	1,446	1,458
	85,607	64,534
Less: Allowance for uncollectible assessments	29,786	17,473
	$ 55,821	$ 47,061

4. Provision for Employee Termination Benefits

The Organization provides its staff members with certain entitlements on termination of service based on the employee's position and years of service with the Organization.

At its annual meeting in September, 1991, the General Council approved in the Staff Rules an enhanced employee termination benefit package to be effective January 1, 1992. At December 31, 1994 the additional liability resulting from this enhancement amounted to approximately $110,300, which amount has not been recorded in the accounts of the Organization.

The Organization is funding this liability at the rate of $10,000 per annum as approved by the General Council (16th Annual Meeting, September, 1994).

5. Contributions Assessed Contracting Parties

(Expressed in Canadian Dollars)

	1994	1993
Bulgaria	$ 14,893	$ 18,109
Canada	418,727	436,530
Cuba	24,588	26,475
Denmark (in respect of the Faroe Islands and Greenland)	64,763	72,138
Estonia	14,893	17,473
European Union	51,038	49,568
Iceland	14,893	17,473
Japan	17,978	21,338
Republic of Korea	14,893	-
Latvia	14,893	17,473
Lithuania	14,893	17,473
Norway	17,663	21,583
Poland	14,893	17,620
Romania	14,893	17,473
Russian Federation	30,754	64,685
	$ 744,655	$ 815,411

6. Superannuation

The Organization has a defined benefit pension plan which covers all employees. The last actuarial valuation was performed as at January 1, 1993. At that time, the accrued pension obligation was $1,078,693 while the assets were valued at $976,121, resulting in an unfunded pension liability of $102,572. The estimated amount of unfunded pension liability at December 31, 1994 is $55,503 and is being funded at the rate of $28,783 per year.

7. Operating Lease Obligations

The Organization is committed to lease payments for certain equipment, as follows:

1995	1996	1997	1998	1999
$21,705	$14,790	$4,310	$4,310	$4,310

8. Services Provided Without Charge

Accommodation for the Organization's secretariat in Dartmouth, Nova Scotia is provided without charge by the Canadian Department of Fisheries and Oceans. Accordingly, the related costs, which include, rent, grants-in-lieu of property taxes, heat, electricity and cleaning services, are not reflected in these financial statements.

9. Changes in Non-Cash Operating Working Capital Items

(Expressed in Canadian Dollars)

	1994	1993
Contributions receivable	$ (8,760)	$ 49,412
Accounts receivable	(984)	2,044
Accrued interest receivable	558	(78)
Prepaid expenses	12,087	(24,298)
Accounts payable and accrued liabilities	16,660	1,855
Accrued vacation pay	(11,023)	(3,365)
Overpayment of contributions by Contracting Parties	(10,458)	398
	$ (1,920)	$ 25,968

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