

Northwest Atlantic
Fisheries Organization
(NAFO)



Annual Report
1997

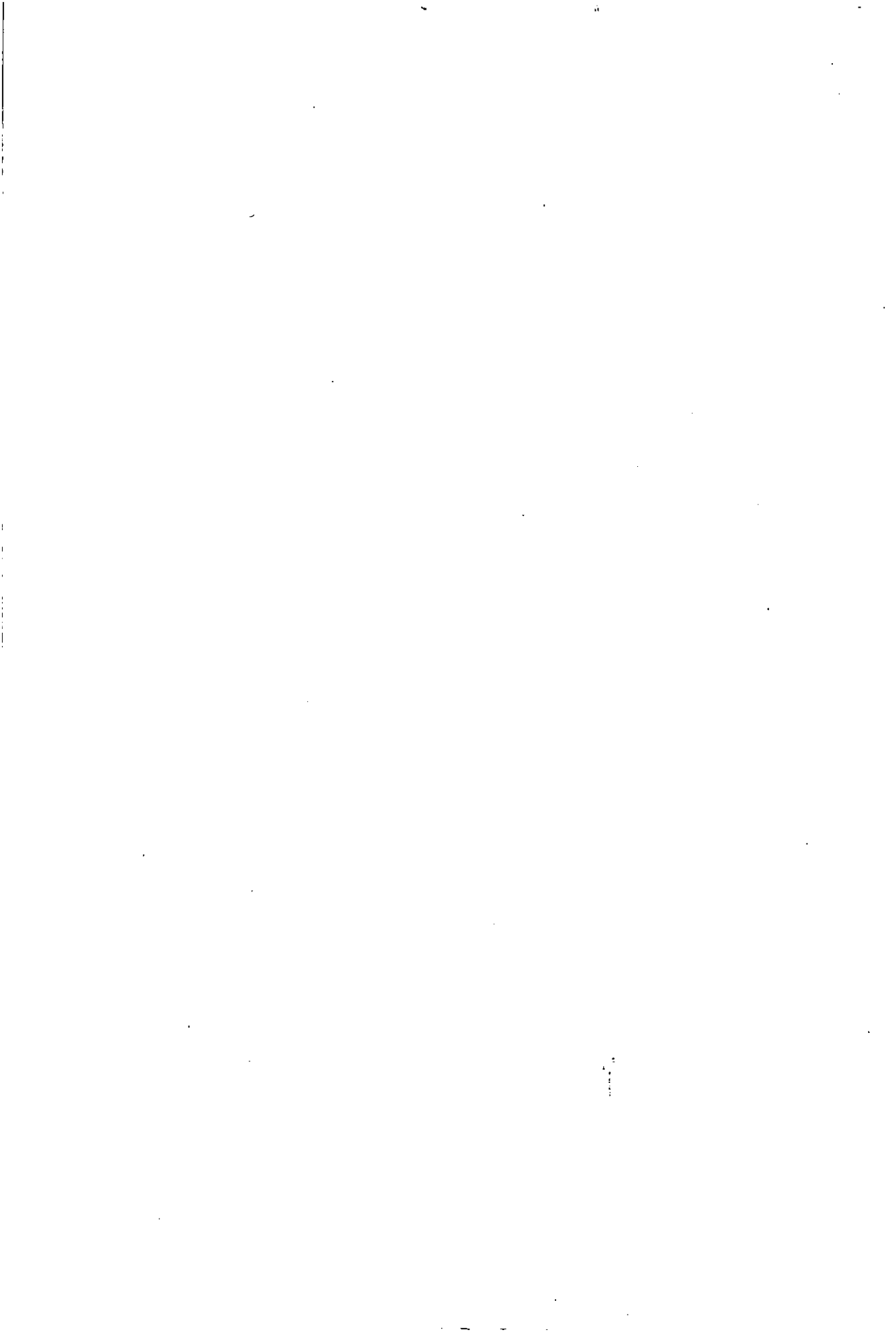
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Preface

This Annual Report for the year 1997 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 1997. Full reports of the General Council and Fisheries Commission meetings held during the year are published in a separate edition - "Meeting Proceedings of the General Council and Fisheries Commission for 1997", and the proceedings of the Scientific Council are published in the "Scientific Council Reports, 1997". 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. Canada is the country-depositary for the Convention.

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 NAFO business between meetings would be coordinated through the Secretariat.

The following NAFO meetings were held during 1997: (1) Standing Committee on Fishing Activity of Non-Contracting Parties in the Regulatory Area (STACFAC) Meeting (Dartmouth, Canada, February); (2) STACTIC Working Group on Satellite Tracking Meeting (Dartmouth, Canada, April); (3) Working Group on Dispute Settlement Procedures (DSP) Meeting (Dartmouth, Canada, April); (4) Standing Committee on Fishing Activity of Non-Contracting Parties in the Regulatory Area (STACFAC) Meeting (Brussels, May); (5) Regular Scientific Council Meeting (Keddy's Inn, Dartmouth, Canada, June); (6) Standing Committee on International Control (STACTIC) Meeting (Copenhagen, June); (7) Scientific Council Symposium on "What Future for Capture Fisheries - A Shift in Paradigm: Visioning Sustainable Harvests from the Northwest Atlantic in the Twenty-first Century" (St. John's, Canada, September); (8) 19th Annual Meeting of the Organization including meetings of all constituent bodies in September, Hotel Newfoundland, St. John's, Canada; (9) STACTIC Working Group on Satellite Tracking Meeting (Dartmouth, Canada, October); (10) Scientific Council Meeting in November, NAFO Headquarters, Dartmouth, Canada.

The Scientific Council reviewed and assessed the state of twenty-five (25) fish stocks in the NAFO Regulatory and Convention Areas. The scientific advice and recommendations for the management, conservation and utilization of the fishery resources were forwarded to the Fisheries Commission with the special emphasis that: all cod stocks remaining at low abundance should be under moratoria in 1998, as well as the flatfish stocks of 3LNO American plaice and Witch flounder in 3L. Yellowtail flounder in Div. 3LNO, which was under moratorium from 1995 to 1997, was recommended to open for fishing with a TAC in 1998 of 4,000 tons, to be fished under especially strict controls to prevent by-catches of other vulnerable stocks.

The Greenland halibut stock was assessed with above average recruitment and a cautious approach was proposed to assist an encouraging continuing recovery.

The Scientific Council adopted an Action Plan to develop a precautionary approach to management of NAFO stocks. This Action Plan was endorsed by the Fisheries Commission.

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

The Fisheries Commission considered the Scientific Council recommendations and agreed on joint international measures and actions for the conservation and utilization of the fishery resources in the Regulatory Area. The Commission agreed on the continuation (from 1995) of the moratoria in 1998 on the following stocks: Cod in Divisions 3L and 3NO, Redfish in Div. 3LN, American plaice in Divisions 3M and 3LNO, Witch flounder in Div. 3NO and 3L and Capelin in Div. 3NO. Fishery was reopened on Yellowtail flounder in Div. 3LNO.

New conservation and enforcement measures were agreed: To continue the effort allocation Scheme in the 3M shrimp fishery; and, to extend the Pilot Project Observer and Satellite Tracking System for 1998.

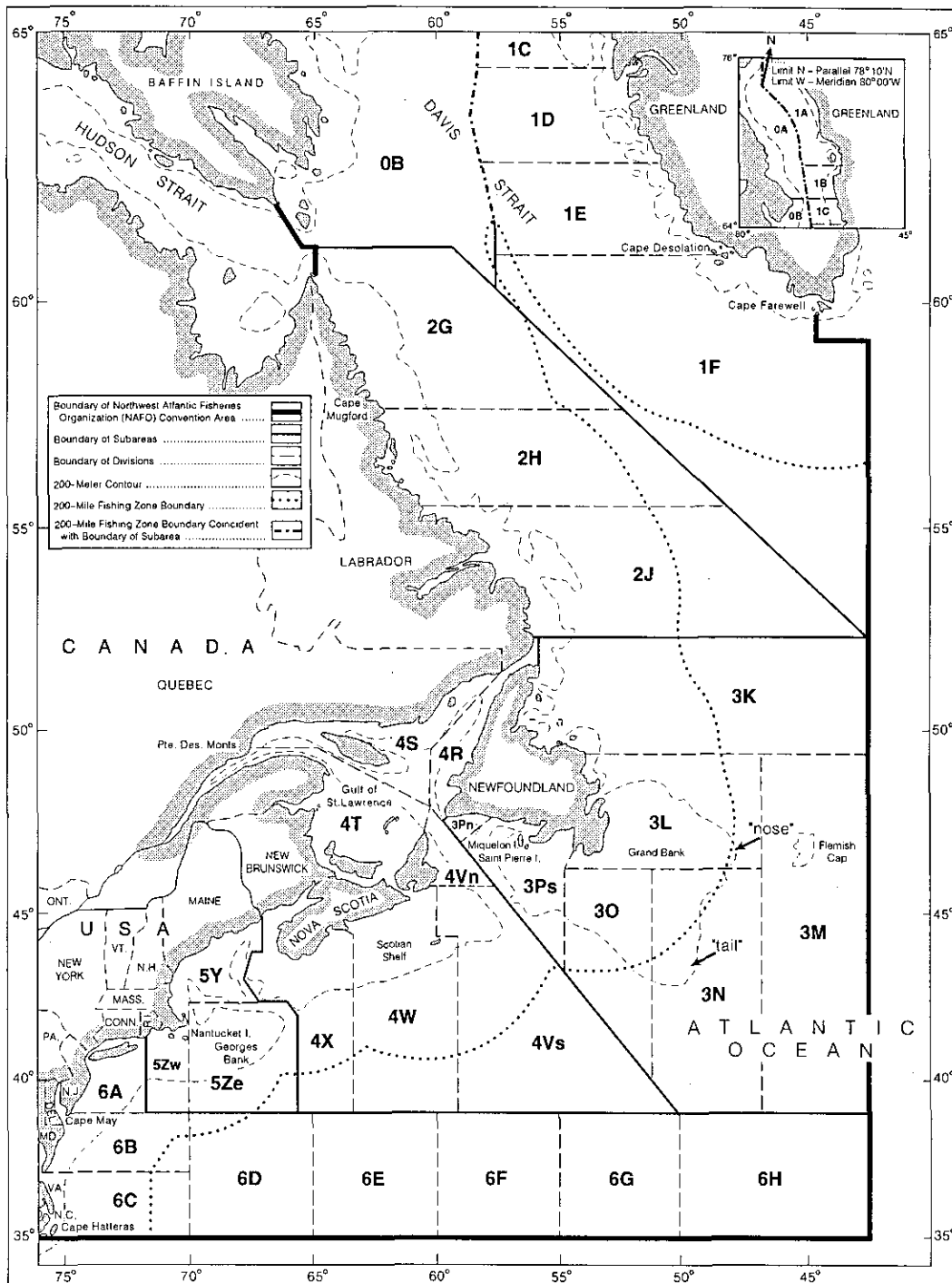
The General Council deliberated several outstanding issues regarding internal and external NAFO policy and resolved to continue discussions in Working Groups through the year for improving transparency in NAFO proceedings and decisions and for dispute settlement procedures.

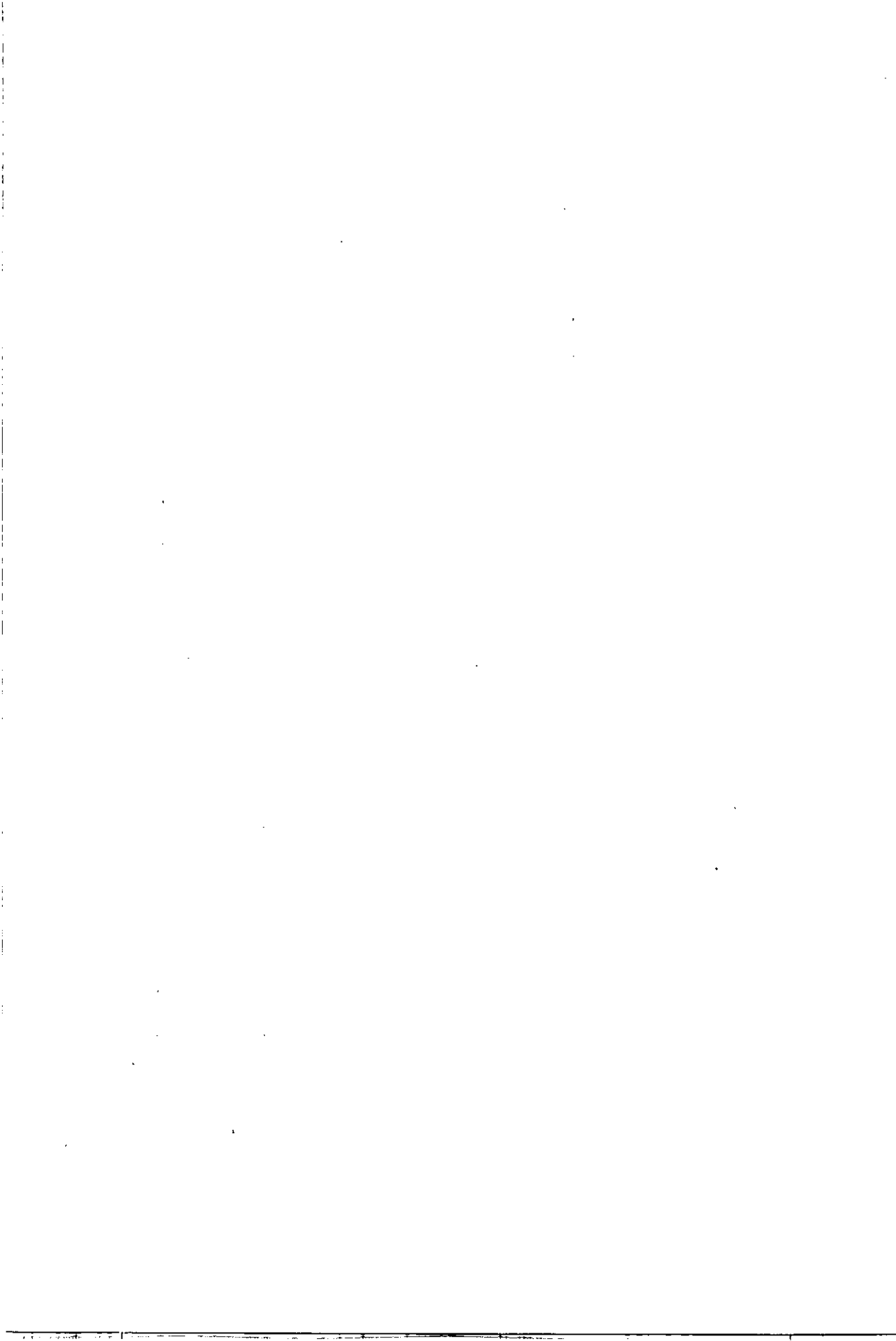
With regards to non-Contracting Party fishing activity in the NAFO Regulatory Area, the General Council adopted the "Scheme to Promote Compliance by Non-Contracting Party Vessels with the Conservation and Enforcement Measures Established by NAFO". The Scheme would be directed at Non-Contracting Party vessels engaged in fishing activities in the NAFO Regulatory Area. The Scheme presumes that a Non-Contracting Party vessel which has been sighted engaging in fishing activities in the NAFO Regulatory Area is undermining the NAFO Conservation and Enforcement Measures. If such sighted vessels enter the ports of Contracting Parties, they must be inspected. No landings or transshipments will be permitted in Contracting Party ports unless such vessels can establish that certain species on board were not caught in the NAFO Regulatory Area, and for certain other species that the vessel applied the NAFO Conservation and Enforcement Measures. Contracting Parties must report the results of inspections to NAFO and all Contracting Parties.

The President of NAFO, A. Rodin (Russia), signed diplomatic demarches to the flag-States whose vessels fished in the NAFO Regulatory Area in 1996-1997, namely Belize, Honduras, Panama and Sierra Leone.

To improve control of the fisheries by the Contracting Parties, the General Council resolved to prohibit any charter vessel arrangements until a comprehensive set of rules is developed by NAFO.

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 1997
(as at 19th Annual Meeting, September 1997)**

Contracting Parties

Bulgaria, Canada, Cuba, Denmark (in respect of the Faroe Islands and Greenland), Estonia, European Union (EU), France (in respect of St. Pierre et Miquelon), Iceland, Japan, Republic of Korea, Latvia, Lithuania, Norway, Poland, Romania, Russia and United States of America (USA).

President

A. Rodin (Russia)

Constituent Bodies

General Council	Bulgaria, Canada, Cuba, Denmark (in respect of the Faroe Islands and Greenland), Estonia, EU, France (in respect of St. Pierre et Miquelon), Iceland, Japan, Korea, Latvia, Lithuania, Norway, Poland, Romania, Russia and USA.	<i>Chairman</i> - A. Rodin (Russia) <i>Vice-Chairman</i> - R. Dominguez (Cuba)
Scientific Council	Bulgaria, Canada, Cuba, Denmark (in respect of the Faroe Islands and Greenland), Estonia, EU, France (in respect of St. Pierre et Miquelon), Iceland, Japan, Korea, Latvia, Lithuania, Norway, Poland, Romania, Russia and USA.	<i>Chairman</i> - W. R. Bowering (Canada) <i>Vice-Chairman</i> - H. P. Cornus (EU)
Fisheries Commission	Canada, Cuba, Denmark (in respect of the Faroe Islands and Greenland), Estonia, EU, France (in respect of St. Pierre et Miquelon), Iceland, Japan, Korea, Latvia, Lithuania, Norway, Poland, Russia and USA.	<i>Chairman</i> - H. Koster (EU) <i>Vice-Chairman</i> - P. Gullestad (Norway)

Standing Committees

General Council	Standing Committee on Finance and Administration (STACFAD)	<i>Chairperson</i> - J. Quintal-McGrath (Canada) <i>Vice-Chairman</i> - G. F. Kingston (EU)
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General Council (cont'd)	Standing Committee on Fishing Activity of non-Contracting Parties in the Regulatory Area (STACFAC)	<i>Chairman</i> - J. P. Plé (USA) <i>Vice-Chairman</i> - B. Buch (Denmark in Respect of Faroe Islands and Greenland)
Scientific Council	Standing Committee on Fishery Science (STACFIS) Standing Committee on Research Coordination (STACREC) Standing Committee on Publications (STACPUB) Standing Committee on Fisheries Environment (STACFEN) Executive Committee	<i>Chairman</i> - W. B. Brodie (Canada) <i>Chairman</i> - D. Power (Canada) <i>Chairman</i> - H. P. Cornus (EU) <i>Chairman</i> - M. Stein (EU) <i>Chairman</i> - W. R. Bowering (Canada)
Fisheries Commission	Standing Committee on International Control (STACTIC)	<i>Chairman</i> - D. Bevan (Canada)

Secretariat

Executive Secretary	L. I. Chepel
Assistant Executive Secretary	T. Amaratunga
Administrative Assistant	F. D. Keating
Senior Secretary	B. J. Cruikshank
Accounting Officer	S. M. Goodick
Desktop Publishing/Documents Clerk	F. E. Perry
Statistical/Conservation Measures Officer	G. M. Moulton
Graphic Arts/Printing Technician	R. A. Myers
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Word Processing Secretary	D. C. A. Auby
Statistical/Library Documents Clerk	B. L. Marshall
Statistical/Reception Clerk	C. L. Kerr

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PART I

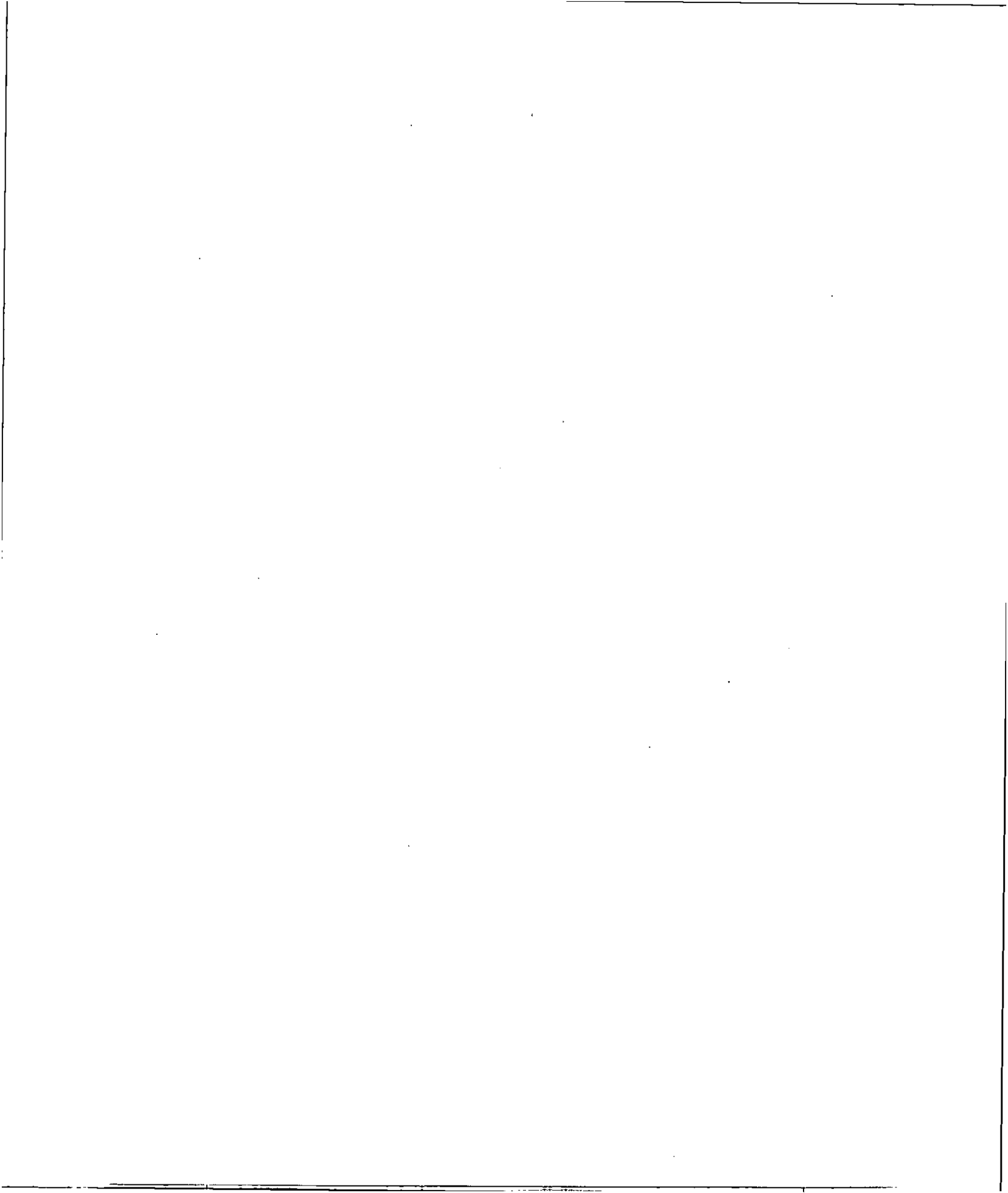
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Activities of the General Council in 1997

List of Meetings

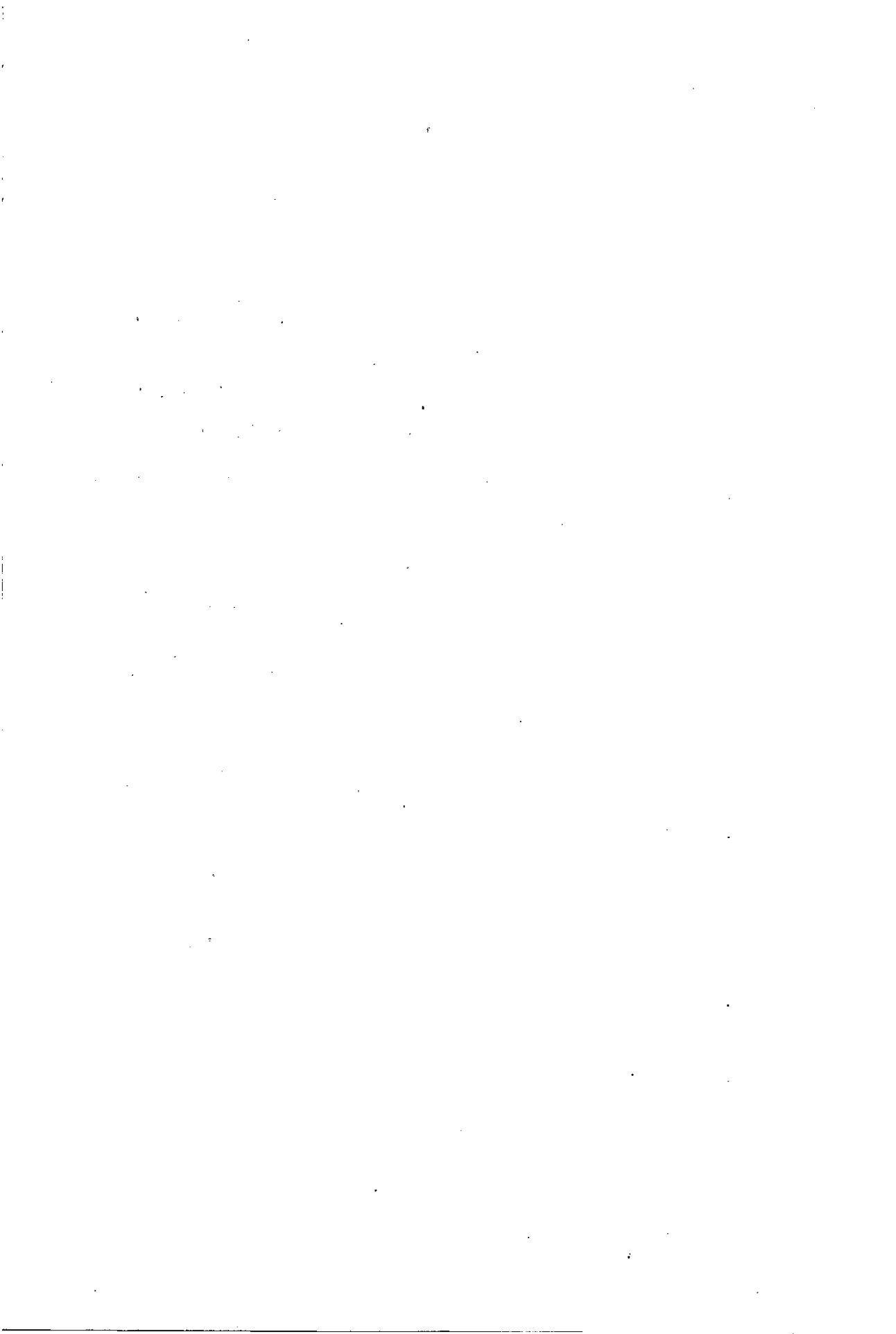
The following meetings were held under the authority of the General Council:

- The Standing Committee on Fishing Activity of Non-Contracting Parties in the Regulatory Area (STACFAC); Dartmouth, N.S., Canada, 4-7 February.
- The Working Group on Dispute Settlement Procedures (DSP); Dartmouth, N.S., Canada, 14-16 April.
- The Standing Committee on Fishing Activity of Non-Contracting Parties in the Regulatory Area (STACFAC); Brussels, Belgium, 15-16 May.
- The General Council and its subsidiary bodies (STACFAD and STACFAC); 19th Annual Meeting, St. John's, Newfoundland, Canada, 15-19 September.



Major Documents of the General Council in 1997

Serial No.	GC Doc. No.	Title
N2822	97/1	Report of the Standing Committee on Fishing Activity of Non-Contracting Parties in the Regulatory Area (STACFAC), 4-7 February 1997, Dartmouth, N.S., Canada
N2922	97/2	Report of the Standing Committee on Fishing Activity of Non-Contracting Parties in the Regulatory Area (STACFAC), 15-16 May 1997, Brussels, Belgium
N2921	97/3	Report of the Working Group on Dispute Settlement Procedures (DSP), 14-16 April 1997, Dartmouth, N.S., Canada
N2923	97/4	Administrative Report and Financial Statements for the fiscal year ending 31 December 1997 (as of 31 July 1997)
N2924	97/5	Report of the Seventh Meeting of the North Atlantic Marine Mammal Commission (NAMMCO)
N2950	97/6	Scheme to Promote Compliance by Non-Contracting Party Vessels with the Conservation and Enforcement Measures Established by NAFO
N2952	97/7	Resolution 97/1 Relating to the Non-Participation of Bulgaria and Romania in NAFO
N2973	97/8	Data on Non-Contracting Parties Activities in the NAFO Regulatory Area (1996-1997)
N2974	97/9	Report of the General Council, 19th Annual Meeting, 15-19 September 1997, St. John's, Newfoundland, Canada



Meeting of STACFAC

This intersessional meeting was held in accordance with the decision by the General Council (GC Doc. 96/9, Part I, items 4.2 and 4.4) to call a STACFAC Meeting in February 1997. Complete proceedings of this Meeting are presented in GC Doc. 97/1 and in a summary of Meeting Proceedings of the General Council and Fisheries Commission for 1997.

Opening Procedures (items 1-3 of the Agenda)

The Meeting was called to order by the Chairman, Dr. J.-P. Plé (USA), who welcomed the delegates to this Meeting. Delegates from the following Contracting Parties were present: Canada, European Union, France, Iceland, Japan, Norway and the USA. (Annex 1)

In his opening remarks, the Chairman stressed the importance of finding a resolution to the problem of the fishing activities of Non-Contracting Parties (NCPs) in the NAFO Regulatory Area (NRA). Mr. Fred Kingston (EU) was appointed rapporteur.

The Agenda was adopted as presented in Annex 2.

Activities of Non-Contracting Party (NCP) Vessels in the NAFO Regulatory Area (NRA) and Diplomatic Contacts with Non-Contracting Parties (items 4-7)

The papers indicated that seven NCP vessels had fished in the NRA during 1996 with catches estimated at 5700 tons, of which 900 tons were cod, 4725 tons were redfish and 75 tons were flatfish. One vessel, the DANICA, registered in Honduras, had done most of the fishing, catching about 4150 tons of redfish.

It was noted that there was a decrease in the number of NCP fishing vessels over the same period the previous year (1995) and considerably less than compared with the late 1980's and early 1990's. Contracting Parties considered that this reduction can be attributed to factors such as the poor state of the stocks, certain success of various diplomatic demarches and recent developments, including the UN Agreement for the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks.

The meeting noted that at the request of NAFO, the United States was requested to deliver the demarches to Belize and Sierra Leone, on behalf of NAFO, and that Canada was requested to deliver the demarches to Panama and Honduras, on behalf of NAFO. There has not been responses from the noted Non-Contracting Parties.

Discussion on the openness of NAFO (item 8)

Discussions took place to link the consideration given to a State joining NAFO with that State's record of fishing activities in the NRA as a Non-Contracting Party with recognition that STACFAC does not have the authority to address issues associated with new membership, which should be discussed by the General Council.

STACFAC therefore recommended, that the General Council should examine what consideration should be given to any Non-Contracting Party fishing activities in the NRA by a State which seeks to join NAFO.

Discussion of a scheme to deal with fishing vessels from Non-Contracting Parties fishing in the NRA and Report to the General Council (items 9-11)

There were a number of outstanding questions as follows discussed by the meeting:

- Relevant legal basis to support a NAFO scheme to deal with NCP fishing in the NRA;
- Application of measures - at a State or vessel;
- Criteria and procedures to be used to designate a vessel flying the flag from a NCP as "non-cooperative";
- Measures which should be incorporated in the scheme;
- Denial of landings and fish (catch, species) to be affected (fish inside and outside the NRA);
- Port closures and restrictions;
- "Black list" of "non-cooperative vessels" be established (how and when are such vessels added to the list, and how are they removed from the list);
- Distinguish between cooperative NCP and non-cooperative NCP vessels in the Scheme;
- To deal with vessels engaged in transshipment which receive fish caught by a "non-cooperative" NCP fishing vessel;
- Scope of the measures (represent minimum standards or common rules).

On the basis of the previous discussion, the Chairman prepared and circulated a Draft of General Principles to be reflected in any scheme to deal with NCP fishing activities in the NRA. The delegates agreed that any scheme can be reviewed and revised.

STACFAC recommended to the General Council to develop a scheme to deal with Non-Contracting Party fishing activities in the NAFO Regulatory Area.

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L. I. Chepel, Executive Secretary

B. J. Cruikshank, Senior Secretary

Annex 2. Agenda

1. Opening by the Chairman, J. -P. Plé (USA)
2. Appointment of Rapporteur
3. Adoption of Agenda
4. Review of 1996 final information on activities of non-Contracting Party (NCP) vessels in the NAFO Regulatory Area (NRA)
5. Review of 1996 final information on landings and transshipments of fish caught in the NRA by non-Contracting Parties
6. Review of information on imports by Contracting Parties of groundfish species regulated by NAFO from non-Contracting Parties whose vessels have fished in the NRA
7. Reports by Contracting Parties on diplomatic contacts with non-Contracting Party Governments concerning fishing by their vessels in the NRA
8. Discussion on the openness of NAFO
9. Discussion on the specific elements of a scheme to deal with fishing vessels from non-Contracting Parties fishing in the NRA
 - a) What are the relevant legal basis to support a NAFO scheme to deal with NCP fishing in the NRA
 - b) Should measures be directed at a State or vessel
 - c) What criteria and procedures should be used to designate a vessel flying the flag from a NCP as "non-cooperative":
 - sightings in the NRA
 - diplomatic demarches
 - courtesy boardings
 - port State inspection
 - d) What measures should be incorporated in the scheme
 - port closures
 - denial of landings in the ports of NAFO Contracting Parties
 - trade measures
 - e) If denial of landings adopted, what fish would be affected, how should the scheme deal with fish caught outside of the NRA
 - f) If port closures adopted, with the exception of cases of force majeure, how restrictive would such closures be

- g) Should a "black list" of "non-cooperative vessels" be established. If yes, how and when are such vessels added to the list, and how are they removed from the list
 - h) Should the measures under the scheme distinguish between cooperative NCP and non-cooperative NCP vessels, if yes how
 - i) How should the scheme deal with vessels engaged in transshipment which receive fish caught by a "non-cooperative" NCP fishing vessel while fishing in the NRA
 - j) Should the measures represent minimum standards or a common rule
 - k) In the event the measures under the scheme prove ineffective in deterring NCP fishing in the NRA, what subsequent measures can be taken
- 10. Preparation and distribution for comment/revision a Chairman's Provisional Draft NAFO Scheme to Deal with NCP Fishing in the NRA
 - 11. Report and Recommendations to the General Council
 - 12. Other Matters
 - 13. Adjournment

Working Group on Dispute Settlement Procedures (DSP)

This intersessional meeting was held in accordance with the decision by the General Council (GC Doc. 96/8, Part I, item 4.6xxv) to convene a meeting of the Working Group in early 1997. The complete proceedings of this Group are presented in GC Doc. 97/3 and in the NAFO Meeting Proceedings, 1997.

Opening Procedures (items 1-4 of the Agenda)

The Meeting was opened by the Executive Secretary, L. I. Chepel, who welcomed all delegates. The following Contracting Parties were represented at the Meeting: Canada, Denmark (in respect of Faroe Islands and Greenland), European Union, France (in respect of St. Pierre et Miquelon), Iceland, Japan, Latvia, Lithuania, Norway and the United States of America (Annex 1). Mr. Dag Mjaaland (Norway) was elected Chairman and Mr. Fred Kingston (EU) was appointed Rapporteur.

The Agenda was adopted as presented in Annex 2.

Examination of the desirability and, as appropriate, of the development of DSP (item 5)

The Working Group had an extensive and wide-ranging discussion on these matters.

Concerning the issue of whether NAFO DSP were desirable, delegates either declared that such procedures were desirable or were prepared to keep the issue open for future consideration. On this basis, without prejudice to any such final decision in this regard, the Working Group agreed to proceed with an examination of possible elements on the development of DSPs.

Review of proposals on DSP and relevant international instruments (items 6-7)

The Working Group reviewed two presentations from Canada and the European Union. The Canadian proposal was to introduce a Protocol on the Settlement of Disputes under NAFO Convention, and the EU proposal was to incorporate a Dispute Settlement Mechanism by an amendment to the NAFO Convention based on the existing DSP set out in Part XV of UNCLOS.

To the Canadian proposal, issues raised included its compatibility with the systems established under the UN Agreement and UNCLOS; the extent to which an objecting Party has to justify its objection (e.g. filing a management plan with its objection); the competence of the Panel; burden of proof; whether there ought to be an arms-length relationship between Panellists and NAFO Contracting Parties; qualifications of Panellists; costs; time lines (approximately 3 months); and the consequences on the original NAFO decision if an objection is upheld or partially upheld.

Examining the EU paper, points raised included:

- the use of the NAFO objection procedure would not itself constitute a dispute under this proposal, but rather, for example, any subsequent failure to adopt the necessary conservation measures;
- Article 30(5) of the UN Agreement could be used as the substantive law to be applied;

- reference was made only to UNCLOS because the UN Agreement does not cover discrete stocks;
- a decision of an *ad hoc* expert panel could be applied as a provisional measure. Such a decision could be rendered within a tight time-frame; and
- the issue of the competency of any panel established needs to be addressed.

The Working Group examined in detail various instruments to determine whether a DSP should be and could be established either by a Protocol or an amendment to the NAFO Convention. These instruments included: the NAFO Convention; the UN Agreement, in particular Articles 10(k), 27-32 and 44 thereof; UNCLOS, in particular Part XV thereof; and the 1969 Vienna Convention on the Law of Treaties, in particular Article 41 thereof.

The Working Group on Dispute Settlement Procedures recommended that, on the basis of the discussion at this meeting, the General Council should examine the issue of a possible NAFO DSP at the next NAFO Annual Meeting.

Annex 1. List of Participants

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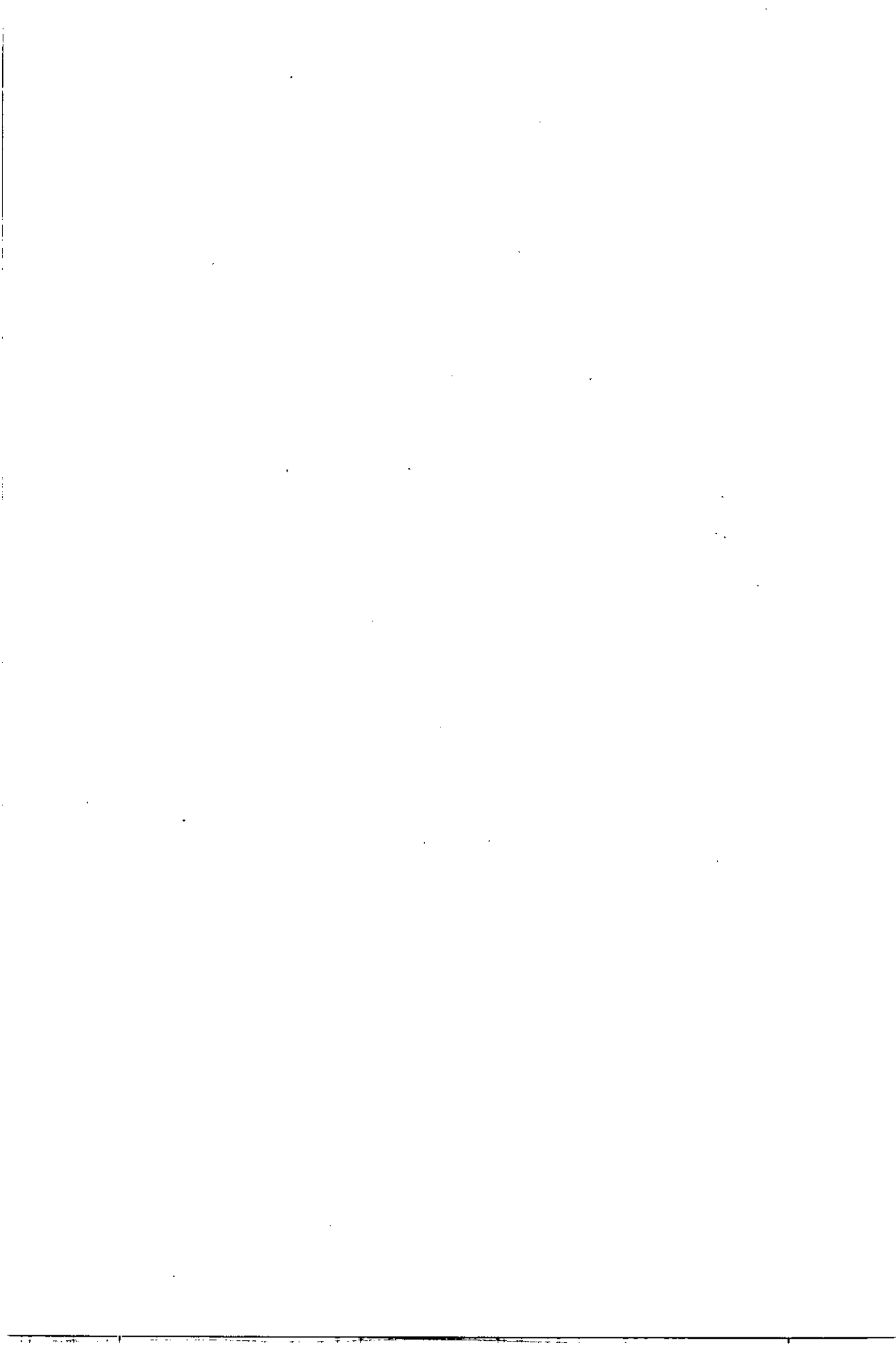
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L. I. Chepel, Executive Secretary
T. Amaratunga, Assistant Executive Secretary
B. J. Cruikshank, Senior Secretary

Annex 2. Agenda

1. Opening by the Executive Secretary, L. Chepel
2. Election of the Chairman
3. Appointment of the Rapporteur
4. Adoption of the Agenda
5. Examination of the desirability and, as appropriate, of the development of DSP
6. Review of papers and proposals on DSP
7. Review of relevant instruments, including the UN Agreement on Straddling and Highly Migratory Fish Stocks, UNCLOS
8. Report to the General Council
9. Other matters
10. Adjournment



Meeting of STACFAC

This intersessional meeting was held in accordance with the decision by the General Council (GC Doc. 97/1, item 12) to call a STACFAC Meeting in May 1997. Complete proceedings of this Meeting can be found in GC Doc. 97/2 and in the Meeting Proceedings, 1997.

Opening Procedures (items 1-3 of the Agenda)

The Meeting was called to order by the Chairman, J.-P. Plé (USA). Delegates from the following Contracting Parties were present: Canada, Denmark (in respect of Faroe Islands and Greenland), European Union, France (in respect of St. Pierre et Miquelon), Iceland, Japan, Norway and the USA (Annex 1). L. Chepel, Executive Secretary, was appointed Rapporteur.

The Agenda was adopted. (Annex 2)

Developing a scheme to deal with non-Contracting Parties fishing in the NAFO Regulatory Area (NRA) (item 4)

The Chairman highlighted the major findings and ideas developed during the first intersessional STACFAC Meeting in Halifax, February 1997 as follows:

The scheme would: (1) target specific vessels; (2) presume that an NCP vessel, which is sighted engaged in fishing activities in the NRA, is fishing in a manner that undermines NAFO conservation and management measures; (3) incorporate a notification procedure such that once a NAFO party sights a NCP vessel engaged in fishing activities in the NRA, that information is shared with the NAFO Secretariat, other NAFO Parties and the flag-State of the NCP vessel; (4) require NAFO Contracting Parties to prohibit landings and transshipments of fish in their ports from NCP vessels (although it was unresolved what evidence is necessary to trigger this provision); (5) be communicated to all States which are NCPs; and (6) undergo annual review, at which time other measures, if necessary, would be considered.

The Meeting further discussed a number of issues in detail and agreed to review new drafts of Chairman's and STACFAC Working Papers forwarded to the General Council.

The Delegations stressed that the transshipment issue is a very complicated and important one, which could open a "loophole" in NAFO actions if it was not resolved properly. Some thought that transshipments between CP vessels and NCP vessels should be prevented by Contracting Parties and agreed that this item was a relevant matter for STACTIC and Fisheries Commission, who deal with Contracting Parties' regulations. Other delegates believed that STACFAC had authority to prescribe measures on CPs with regard to the scheme. It was suggested to call a joint meeting of STACFAC and STACTIC.

Annex 1. List of Participants

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B. J. Cruikshank, Senior Secretary

Annex 2. Agenda

1. Opening by the Chairman, J.-P. Plé (USA)
2. Appointment of Rapporteur
3. Adoption of Agenda
4. Continue work toward developing a scheme to deal with Non-Contracting Parties fishing in the NAFO Regulatory Area
5. Report and Recommendations to the General Council
6. Other matters
7. Adjournment

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 Activity of Non-Contracting Parties in the Regulatory Area (STACFAC) – was held during the 19th Annual Meeting of NAFO in St. John's, Newfoundland, Canada, 15-19 September 1997. Complete proceedings of this Meeting can be found in GC Doc. 97/9 and in a separate edition of Meeting Proceedings of the General Council and Fisheries Commission for 1997.

Opening Procedures (items 1-5 of the Agenda)

The meeting was opened by the Chairman of the General Council, A. V. Rodin (Russia) at 1020 on 16 September 1997.

Representatives of the following fifteen (15) Contracting Parties were present: Canada, Cuba, Denmark (in respect of the Faroe Islands and Greenland), Estonia, European Union, France (in respect of St. Pierre et Miquelon), Iceland, Japan, Korea, Latvia, Lithuania, Norway, Poland, Russia and the United States of America (Annex 1).

The meeting appointed the Executive Secretary as Rapporteur.

The Chairman welcomed the Delegates and briefly summarized the objectives and goals of the Organization at the current meeting and in the near future. Especially, he pointed out the issue of scientific research activities in the NAFO Convention Area, which is very important to the whole NAFO activity as this activity and NAFO decisions are based on the scientific advice by the Scientific Council. To his opinion, the Scientific Council of NAFO has a high level of respect worldwide, and the most important task for NAFO is to develop comprehensive scientific studies of correlations between stocks and environmental conditions, which would indicate the stocks dynamic and their recovery.

The Provisional Agenda was adopted (Annex 2).

The Representative of Canada made an opening statement and cordially welcomed all delegates to Canada and the historical city of St. John's during the continuing special celebration of the 500th year of discovery of North America by John Cabot (24 June 1497). He emphasized on Canada's objective for sustainable fisheries in the Northwest Atlantic and appealed to all Contracting Parties to follow the NAFO Convention objective and share the responsibility to conserve the resources in the NAFO Convention and Regulatory Area.

The Representative of the European Union in his opening statement stressed that NAFO's continued challenge was effective conservation through co-operation of all NAFO Members. Furthermore, he emphasized increasingly important environmental requirements and, in this context, the need to bring about an equilibrium which takes due consideration of the fisheries sector and its interests.

The Representative of the United States addressed the Meeting emphasizing the objectives of the Organization with regard to the important issues of the control of non-Contracting Parties (in the NAFO Regulatory Area) and noting benefits of increasing the openness and transparency of NAFO deliberations. He urged the Contracting Parties to support the efforts by the Scientific Council on precautionary approach to fisheries management.

The Representative of the Republic of Korea introduced its opening statement noting Korea's international efforts to establish responsible fishing regimes. He expressed concerns about the decline of fish stocks in the NAFO Regulatory Area in spite of the NAFO efforts for conservation and management, and questioned the current quota allocation system.

The Representative of France (in respect of St. Pierre et Miquelon) in his opening statement brought the attention of the Meeting to the historical connection of the French islands of St. Pierre and Miquelon with fishing and sea for the last five centuries. He stated that France will play an active role in NAFO activities and will be committed towards NAFO objectives and rules developed collectively within the Organization pursuant to international law.

The Representative of Iceland briefly introduced the position of his country to joining the other nations towards the way of constructive management decisions based on scientific advice. He stressed that the NAFO aim must be sustainable utilization in both biological and economical sense.

The Representative of Denmark (in respect of the Faroe Islands and Greenland, further will be noted as F & G) presented its opening statement noting the 500 years of John Cabot's landfall and deep history of the North America discovery by the Vikings. He emphasized on traditional participation by the Faroe Islands in Flemish Cap fishery and pledged to continue full cooperation with NAFO in effective conservation and management measures in the NAFO Regulatory Area.

Supervision and Coordination of the Organizational, Administrative and Other Internal Affairs (items 6-10)

Under item 6 of the Agenda, "Review of Membership", the Chairman ruled that no changes are recorded to the membership of the General Council - 17 Contracting Parties, and the Fisheries Commission - 15 Contracting Parties. The Chairman informed that two Contracting Parties (Bulgaria and Romania) have not been participating in the NAFO business and have not paid their contribution dues for many years: Romania from 1983 and Bulgaria, from 1992, and their debts to NAFO have accrued, respectively, to \$233,019.10 Cdn and \$81,278.43 Cdn.

Under item 7, the Chairman introduced his draft proposal for the amendment of the Rules of Procedure and explained that this would be a first step to develop a legal mechanism at the General Council level for this purpose (bearing in mind the two Contracting Parties - Bulgaria and Romania).

The Representative of Canada supported the principal intent of the proposal and brought the attention of the meeting to the legal implications of the proposal, which should be carefully examined consistently with the provisions of the NAFO Convention, which does not provide for exclusions from NAFO. At the closing session, the Resolution was adopted by the General Council. (Annex 3).

Under item 8, "Transparency in the NAFO decision-making process (participation of inter-governmental and non-governmental organizations), the Chairman briefly summarized the status of this issue, which was discussed during the 1996 Annual Meeting and referred to the current meeting, and he opened the floor for discussion.

The Chairman summarized the discussions with emphasis that regardless of the existing transparency of NAFO, new steps should be undertaken in line with the UN Agreement on Straddling Fish Stocks and Highly Migratory Fish Stocks of 1995 (hereafter referred to as the "UN Agreement") as this Agreement was signed by the Contracting Parties. He proposed to call the Working Group under the chairmanship of Dr. D. Swanson (USA) with the task to review some documents already prepared during this year and then continue its work intersessionally, if required, to prepare a set of documents

for the 20th Annual Meeting. He stressed that NAFO shall prepare its own set of rules, and the invited observers shall follow these rules.

A working group on transparency issue was established and its Report was presented by the Chairman, D. Swanson (USA), at the closing session of the General Council.

The General Council asked the USA delegation to prepare discussion paper to the next W.G. meeting and decided to call intersessional Working Group meeting in May 1998 (in USA).

The Administrative Report was adopted by the General Council.

Under item 10, "Election of Chairman and Vice-Chairman", the General Council referred the item to the closing session, which re-elected A. V. Rodin (Russia) as the Chairman for the next term of two years, 1998-1999 and R. Dominguez (Cuba) as the Vice-Chairman, for the same term.

Coordination of External Relations (items 11-12)

Under item 11, "Communication with the United Nations (Resolutions 51/35 and 51/36)", the meeting endorsed the UN Resolutions and noted the Executive Secretary's communication to the UN on this subject.

To the item 12, "NAFO Observership at NAMMCO", the Meeting noted the Report by Norway (GC Doc. 97/5). There were no further comments on this report.

Fishing Activities in the Regulatory Area Adverse to the Objectives of the NAFO Convention (items 13-16)

Under item 13, "Consideration of Non-Contracting Parties activities in the NAFO Regulatory Area and agreement on the task of STACFAC at the current meeting", the Chairman of STACFAC briefed the General Council on two (2) intersessional STACFAC Meetings (February and May 1997) and especially emphasized on advance work towards developing a "NAFO Scheme to Promote Compliance by Non-Contracting Party Vessels with the Conservation and Enforcement Measures Established by NAFO" (GC Doc. 97/1 and 97/2).

The STACFAC Chairman, Jean-Pierre Plé (USA), emphasized the following basic information and recommendations from the current meeting to the General Council:

- There was a decrease of Non-Contracting Party vessels in the NRA in 1997 (by preliminary information) with estimated total catch of 1000 tons (550t cod, 400t redfish, 50t flounder) by four (4) vessels registered in Sierra Leone.
- The NAFO diplomatic demarches have been delivered by Canada to the Governments of Honduras and Panama, and by USA, to the Governments of Belize and Sierra Leone. No replies have been received to-date from those countries.
- STACFAC recommended the following actions and measures to the General Council:
 - a demarche, in the form of a letter signed by the President of NAFO, be made to the flag-States from which NCP vessels fished in the NRA in 1997, namely Sierra Leone, in an effort to discourage vessels from that country from fishing in the NRA;

demarches, in the form of letters signed by the President of NAFO, be made to the flag-States from which NCP vessels fished in the NRA in 1996, namely Belize, Honduras and Panama, in an effort to discourage vessels from these countries from resuming fishing in the NRA;

to adopt the Scheme attached (Annex 4).

The General Council adopted the STACFAC Report and its recommendations.

Item 15, Report of the Working Group on Dispute Settlement Procedures (DSP)", was presented by the Chairman of the Working Group, Dr. D. Mjaaland (Norway). He summarized main findings of the Working Group (April 1997, GC Doc. 97/3) noting that the Working Group has fulfilled its mandate according to the task from the General Council. He underlined the main positions discussed at the W.G. meeting based on two ideas: one, by Canada, to incorporate a Protocol to the NAFO Convention targeted to use of the objection procedure, and the second, by the European Union, proposing to apply, by way of an amendment of the NAFO Convention, the procedures available under Part XV of UNCLOS.

As the result of the discussions, the General Council agreed to continue intersessionally the DSP deliberations in a Working Group. The Working Group will meet at the NAFO Headquarters in April (17th week), Dartmouth, N.S., Canada. Mr. Stein Owe from Norway was elected Chairman of the Working Group.

Under item 16 "Consideration of the use by Contracting Parties in the Regulatory Area of non-flag state vessel charters to fish national shares", the Representative of Canada raised a concern on a chartering of Contracting Party vessels to fish their quotas which occurred for the first time during this year in the NAFO Regulatory Area.

The ensuing discussions brought active responses from the Representatives of the European Union, USA, Estonia, Norway, Denmark (F & G), Iceland, France and Japan supporting in principle the Canadian position. There was a general understanding that the charterer should be responsible for the vessel re NAFO Conservation and Enforcement Measures, and concrete procedures should be developed by NAFO.

The Chairman of the General Council summarized the discussions that the Working Group on chartering will meet some time during 1998 and asked the meeting to consider the nomination of a Chairman of the Working Group. There were no further comments on this issue.

At the closing session, the General Council decided to call the Working Group in Brussels, Belgium during 4-6 March 1998 and nominated Mr. H. Koster (EU) the Chairman of the Working Group. (Note: This meeting will run concurrently with the Fisheries Commission working group on NAFO quota allocation practices.)

The Council unanimously ruled that no charter arrangements shall be made by Contracting Parties until the accomplishment of the Working Group task and its endorsement by the General Council.

Finance (items 17-18)

The Chairperson of STACFAD, J. Quintal-McGrath (Canada), reported the following information and recommendations to the General Council:

- Auditors Report transmitted to the Contracting Parties in March 1997 and Administrative Report (GC Doc. 97/4) at the current meeting were recommended for adoption;
- The participation of the NAFO Secretariat in the Pension Society was approved by STACFAD and this was recommended for approval by the General Council;
- The main budgetary items of the STACFAD Report were agreed as follows:
 - the budget for 1998 to be adopted in the amount of \$1,047,000 Cdn;
 - the Accumulated Surplus Account be maintained at a level of not less than \$75,000 Cdn;
 - the outstanding contributions owing from Bulgaria (1997) and Romania (1997) be deducted from the Accumulated Surplus Account in the amount of \$31,469.43 Cdn.
- STACFAD elected F. Kingston, of the European Union, for the position of Chairperson and J. McGruder, of the United States, for the position of Vice-Chairperson.

The STACFAD Report was adopted as a whole by the General Council.

Closing Procedures (items 19-22)

The place of the next Annual Meeting will be in Lisbon, Portugal, during 14-18 September 1998.

The Press Release was prepared by the Executive Secretary and distributed to all Contracting Parties (Annex 5).

The 19th Annual Meeting of NAFO was adjourned at 1300 hrs on 19 September 1997.

The list of actions and decisions by the General Council at the 19th Annual Meeting is presented in Annex 6.

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Annex 2. Agenda

I. Opening Procedure

1. Opening by Chairman, A. V. Rodin (Russia)
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. Amendment of the Rules of Procedure for the General Council
8. Transparency in the NAFO decision-making process (participation of inter-governmental and non-governmental organizations)
9. Administrative Report
10. Election of Chairman and Vice-Chairman

III. Coordination of External Relations

11. Communication with the United Nations (Resolutions 51/35 and 51/36)
12. NAFO Observership at NAMMCO

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

13. Consideration of Non-Contracting Parties activities in the NAFO Regulatory Area and agreement on the task of STACFAC at the current meeting
14. Report of STACFAC at the Annual Meeting and decisions on actions
15. Report of the Working Group on Dispute Settlement Procedures (DSP)
16. Consideration of the use by Contracting Parties in the Regulatory Area of non-flag State vessel charters to fish national shares

V. Finance

17. Report of STACFAD at the Annual Meeting
18. Adoption of the Budget and STACFAD recommendations for 1998

VI. Closing Procedure

19. Time and Place of Next Annual Meeting
20. Other Business
21. Press Release
22. Adjournment

**Annex 3. Report by STACFAD to the General Council Regarding
Item 7 of the General Council Agenda
(GC Working Paper 97/8)**

The General Council asked STACFAD to review the proposal for an Amendment to the Rules of Procedure of the General Council to deal with the issue of membership. It also asked STACFAD to consider the need for demarches to Bulgaria and Romania concerning their status in NAFO.

The proposed Amendment to the Rules of Procedure was as follows:

“New Rule 1.3: The General Council may decide on membership pursuant to the provisions of paragraph 9, Article XVI of the NAFO Convention and subject to Rule 3.2g of the Rules of Procedure for the General Council and Rule 4.7 of the Financial Regulations.

Amend Rule 3.2g to read: (underlined) To arrange for the appointment of the members of subsidiary bodies as required and to rule on the membership of Constituent bodies subject to the following provision: a Contracting Party which has not paid its contributions at least for five (5) consecutive years and has not participated in NAFO business during that period that Contracting Party shall cease to be a NAFO member on 31 December of the fifth year of the said period.”

In addressing the proposed Amendment, STACFAD discussed the standard practice under international law relating to expulsion of member states from international organizations. Expulsion clauses are uncommon. The NAFO Convention does not contain an expulsion clause. The sanction for non-payment by Contracting Parties is established by NAFO Article XVI.9, coupled with Rule 2.2 of the Rules of Procedure, which is the loss of voting rights and exclusion from the quorum. In the absence of an expressed constitutional power to expel, the general rule of international law is that a member cannot be expelled. STACFAD was of the view that the proposal to amend the Rules of Procedure would be unconstitutional in that it by-passes the amendment provisions of the Convention.

The option of amending the Convention was considered to be impractical by several delegates. Two other courses of action were considered to meet the objective of dealing with Bulgaria and Romania.

Recommendation 1:

That the General Council adopt the following Resolution:

Resolution Relating to the Non-participation of Bulgaria and Romania in NAFO.

The General Council

Recalling that the NAFO Convention provides that the object of the Organization shall be to contribute through consultation and co-operation to the optimum utilization, rational management and conservation of the fishery resources of the NAFO Convention Area;

Noting its concern about the long-standing non-participation of Bulgaria and Romania in NAFO, particularly the non-payment of their respective contributions;

Considering that such long-standing non-participation in NAFO and non-payment of their respective contributions disrupt the normal functioning of the Organization; and

Recalling that the Chairman of the General Council and the Executive Secretary have, on numerous occasions, written to Bulgaria and Romania expressing the Organization's concerns and asking for indications as to their intent concerning future participation in NAFO, with no response,

resolves that:

- 1) Each Contracting Party, and in particular the NAFO Convention depository state, shall communicate through the appropriate diplomatic channels with Bulgaria and Romania;
 - (a) to convey the concerns over their non-participation in NAFO and the non-payment of their contributions to NAFO; and
 - (b) to urge them either to meet their obligations under the Convention or to exercise their rights under Article XXIV thereof, the latter in effect resulting in the suspension of the debt accumulated from the non-payment of contributions.
- 2) Each Contracting Party shall report to the General Council, at its next annual meeting, on the results of its diplomatic communications effected pursuant to paragraph 1 above.

Recommendation 2:

That the General Council, pursuant to Articles III and XVI of the Convention, approve the following course of action for the 1999 and subsequent billing years:

The contributions due from each Contracting Party will be established in accordance with Article XVI.3, with requests for payment to be sent to Bulgaria and Romania accordingly. A separate calculation of contributions due will also be established based on the exclusion of Bulgaria and Romania, with consequent requests for payment to be sent to all remaining Contracting Parties. However, this procedure will be reviewed on an annual basis and could be changed based on the status of Bulgaria and/or Romania.

STACFAD considers that the practical effect of this action is that each Contracting Party's contribution under Article XVI.3(b) will be equally increased. The increased cost could be offset by the accumulated surplus.

Annex 4. Scheme to Promote Compliance by Non-Contracting Party Vessels with the Conservation and Enforcement Measures Established by NAFO

The General Council of the Northwest Atlantic Fisheries Organization (NAFO) resolves to adopt at its Nineteenth Annual Meeting a:

Scheme to Promote Compliance by Non-Contracting Party Vessels with the Conservation and Enforcement Measures Established by NAFO

In implementing this Scheme, the Contracting Parties acknowledge the rights, duties and obligations of States whose vessels fish on the high seas as expressed in the Convention on Future Multilateral Cooperation in the Northwest Atlantic Fisheries, the 1982 United Nations Convention on the Law of the Sea, the Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks, the FAO Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas and general principles of international law, particularly the duty to have due regard to established fisheries.

1. The purpose of the Scheme is to ensure the effectiveness of the Conservation and Enforcement Measures established by the organization.
2. The term "fishing activities" means fishing, fish processing operations, the transshipment of fish or fish products, and any other activity in preparation for or related to fishing in the NAFO Regulatory Area. The term "NAFO inspector" means an inspector of the fishery control services of the Contracting Parties assigned to the NAFO Scheme of Joint International Inspection and Surveillance.
3. Upon adoption of the Scheme, the NAFO Secretariat will give due publicity to the Scheme and to the NAFO Conservation and Enforcement Measures.
4. The measures contained in the Scheme are directed at Non-Contracting Party vessels engaged in fishing activities in the NAFO Regulatory Area.
5. A Non-Contracting Party vessel which has been sighted engaging in fishing activities in the NAFO Regulatory Area is presumed to be undermining the effectiveness of NAFO Conservation and Enforcement Measures. In the case of any transshipment activities involving a sighted Non-Contracting Party vessel, inside or outside the NAFO Regulatory Area, the presumption of undermining NAFO Conservation and Enforcement Measures applies to any other Non-Contracting Party vessel which has engaged in such activities with that vessel.
6. Information regarding such sightings shall be transmitted to the NAFO Secretariat. The NAFO Secretariat will then transmit this information to all NAFO Contracting Parties within one business day of receiving this information, and to the flag-State of the sighted vessel as soon as possible.
7. The NAFO Contracting Party which sighted the Non-Contracting Party vessel will attempt to inform such a vessel that it has been sighted engaging in fishing activities and is accordingly presumed to be undermining the NAFO Conservation and Enforcement Measures, and that this information will be distributed to all NAFO Contracting Parties and to the flag-State of the vessel.

8. In the event that any Non-Contracting Party vessel, which has been sighted and reported as engaged in fishing activities in the NAFO Regulatory Area, consents to be boarded by NAFO inspectors, the findings of the NAFO inspectors shall be transmitted to the NAFO Secretariat. The NAFO Secretariat will transmit this information to all NAFO Contracting Parties within one business day of receiving this information, and to the flag-State of the boarded vessel as soon as possible. The Non-Contracting Party vessel which is boarded shall be provided with a copy of the findings of the NAFO inspectors.

9. When a Non-Contracting Party vessel referred to in paragraph 5 enters a port of any NAFO Contracting Party, it shall be inspected by authorized Contracting Party officials knowledgeable in the NAFO Conservation and Enforcement Measures and this Scheme, and shall not land or transship any fish until this inspection has taken place. Such inspections shall include the vessel's documents, log books, fishing gear, catch on board and any other matter relating to the vessel's activities in the NAFO Regulatory Area.

10. Landings and transshipments of all fish from a Non-Contracting Party vessel, which has been inspected pursuant to paragraph 9, shall be prohibited in all Contracting Party ports, if such inspection reveals that the vessel has onboard:

(i). species listed in Annex A, unless the vessel establishes that the fish were caught outside the NAFO Regulatory Area; or

(ii). other species listed in Annex B, unless the vessel establishes that it has applied the NAFO Conservation and Enforcement Measures.

11. Contracting Parties shall ensure that their vessels do not receive transshipments of fish from a Non-Contracting Party vessel which has been sighted and reported as having engaged in fishing activities in the NAFO Regulatory Area.

12. Information on the results of all inspections of Non-Contracting Party vessels conducted in the ports of Contracting Parties, and any subsequent action, shall be transmitted immediately through the NAFO Secretariat to all Contracting Parties and as soon as possible to the relevant flag-State(s).

13. Each Contracting Party shall report to the Executive Secretary by 1 March each year for the previous calendar year:

(i). the number of inspections of Non-Contracting Party vessels it conducted under the Scheme in its ports, the names of the vessels inspected and their respective flag-State, the dates and ports where the inspection was conducted, and the results of such inspections; and

(ii). where fish are landed or transhipped following an inspection pursuant to the Scheme, the report shall also include the evidence presented pursuant to paragraph 10 (i) and (ii).

14. The Executive Secretary shall prepare a report by 1 April each year, for the previous calendar year, based on the periodic reports made by Contracting Parties as called for in this Scheme.

15. Nothing in this Scheme affects the exercise by NAFO Contracting Parties of their sovereignty over the ports in their territory in accordance with international law.

16. The Standing Committee on Fishing Activities of Non-Contracting Parties in the NAFO Regulatory Area (STACFAC) shall review annually the information compiled, actions taken under this scheme and the operation of the Scheme, and where necessary, recommend to the General Council new measures to enhance the observance of NAFO Conservation and Enforcement Measures by Non-Contracting Parties and new procedures to enhance the implementation of the Scheme by Contracting Parties.

Annex A

Common English Name	Scientific Name
1. Atlantic cod	(<i>Gadus morhua</i>)
2. Atlantic redfishes	(<i>Sebastes</i> sp.)
3. American plaice	(<i>Hippoglossoides platessoides</i>)
4. Yellowtail flounder	(<i>Limanda ferruginea</i>)
5. Witch flounder	(<i>Glyptocephalus cynoglossus</i>)
6. Capelin	(<i>Mallotus villosus</i>)
7. Greenland halibut	(<i>Reinhardtius hippoglossoides</i>)
8. Short-finned squid (<i>Illex</i>)	(<i>Illex illecebrosus</i>)
9. Shrimps	(<i>Pandalus</i> sp.)

Annex B

Common English Name	Scientific Name
1. Haddock	(<i>Melanogrammus aeglefinus</i>)
2. Silver hake	(<i>Merluccius bilinearis</i>)
3. Red hake	(<i>Urophycis chuss</i>)
4. Pollock	(<i>Pollachius virens</i>)
5. Roundnose grenadier	(<i>Macrourus rupestris</i>)
6. Atlantic herring	(<i>Clupea harengus</i>)
7. Atlantic mackerel	(<i>Scomber scombrus</i>)
8. Atlantic butterfish	(<i>Peprilus triacanthus</i>)
9. River herring (alewife)	(<i>Alosa pseudoharengus</i>)
10. Atlantic argentine	(<i>Argentina silus</i>)
11. Long-finned squid (<i>Loligo</i>)	(<i>Loligo pealei</i>)
12. Wolffishes (NS)	(<i>Anarhichas</i> sp.)
13. Skates (NS)	(<i>Raja</i> sp.)

Annex 5. Press Release

1. The Nineteenth Annual Meeting of the Northwest Atlantic Fisheries Organization (NAFO) was held in St. John's, Newfoundland, Canada during 15-19 September 1997, under the chairmanship of Alexander Rodin (Russia), President of NAFO. The NAFO constituent bodies - General Council, Fisheries Commission and Scientific Council convened their sessions at the Hotel Newfoundland.
2. There was the attendance of 200 participants from fifteen Contracting Parties - Canada, Cuba, Denmark (in respect of Faroe Islands and Greenland), Estonia, European Union, France (in respect of St. Pierre et Miquelon), Iceland, Japan, Republic of Korea, Latvia, Lithuania, Norway, Poland, Russia and United States of America.
3. During the year 1997, before the Annual Meeting, the following NAFO meetings had been organized: Standing Committee on Fishing Activity of non-Contracting Parties in the Regulatory Area, STACFAC, (NAFO Headquarters, February 1997); STACTIC Working Group on Satellite Tracking (NAFO Headquarters, April 1997); General Council Working Group on Dispute Settlement Procedures (NAFO Headquarters, April 1997); Standing Committee STACFAC (Brussels, Belgium, May 1997); Standing Committee STACTIC (Copenhagen, Denmark, June 1997); Regular Scientific Council Meeting (Dartmouth, Canada, June 1997); Scientific Council Symposium on Capture Fisheries (St. John's, Newfoundland, September 1997). The reports and documents from the above-noted meetings were utilized for the preparation and discussions at the Annual Meeting.
4. The Scientific Council, under the chairmanship of W. R. Bowering (Canada), reviewed and assessed the state of 25 fish stocks in the NAFO Regulatory and Convention Areas. The scientific advice and recommendations for the management, conservation and utilization of the fishery resources were forwarded to the Fisheries Commission with the special emphasis that: all cod stocks remaining at low abundance should be under moratoria in 1998, as well as the flatfish stocks of 3LNO American plaice and Witch flounder in 3L. Yellowtail flounder in Div. 3LNO, which was under moratorium from 1995 to 1997, was recommended to open for fishing with a TAC in 1998 of 4000 tons, to be fished under especially strict controls to prevent by-catches of other vulnerable stocks.

The redfish stock in Flemish Cap (3M) was stable with indication of some increase in deep waters. Other redfishes were considered to be of low biomass level and a precautionary approach was recommended, with no directed fishery.

The Greenland halibut stock was assessed with above average recruitment and a cautious approach was proposed to assist an encouraging continuing recovery.

The Scientific Council adopted an Action Plan to develop a precautionary approach to management of NAFO stocks. This Action Plan was endorsed by the Fisheries Commission.

5. The Fisheries Commission, under the chairmanship of H. Koster (EU), considered the Scientific Council recommendations and agreed on joint international measures and actions for the conservation and utilization of the fishery resources in the Regulatory Area.

The Commission agreed on the continuation (from 1995) of the moratoria in 1998 on the following stocks: Cod in Divisions 3L and 3NO, Redfish in Div. 3LN, American plaice in Divisions 3M and 3LNO, Witch in Div. 3NO and 3L and Capelin in 3NO. Fishery was reopened on Yellowtail flounder in Div. 3LNO. The Quota Table for 1998 was adopted (see attached).

New conservation and enforcement measures were agreed as follows:

- Concerning shrimp fishery on Flemish Cap in Division 3M, there was agreement that the existing effort allocation Scheme in the shrimp fishery is to continue, and the fishing days should not be transferable between Contracting Parties. There will be no directed shrimp fishery in 3LNO.
 - to extend the Pilot Project for Observer and Satellite Tracking System for 1998; at the 20th Annual Meeting, the Fisheries Commission will decide on permanent improvements to the NAFO Conservation and Enforcement Measures. The NAFO Secretariat will be equipped with updated hardware and software to handle the satellite tracking information.
6. The General Council, under the chairmanship of A. Rodin (Russia), deliberated several outstanding issues regarding internal and external NAFO policy and resolved the following:
- For improving transparency in NAFO proceedings and decisions, the agreement was to continue the work in a Working Group to develop recommendations to the General Council.
 - On dispute settlement procedures, the Council agreed that the Working Group should continue its work and report to the next Annual Meeting, 1998.
 - With regards to non-Contracting Party fishing activity in the NAFO Regulatory Area, the General Council adopted the "Scheme to Promote Compliance by Non-Contracting Party Vessels with the Conservation and Enforcement Measures Established by NAFO". The Scheme would be directed at Non-Contracting Party vessels engaged in fishing activities in the NAFO Regulatory Area. The Scheme presumes that a Non-Contracting Party vessel which has been sighted engaging in fishing activities in the NAFO Regulatory Area is undermining the NAFO Conservation and Enforcement Measures. If such sighted vessels enter the ports of Contracting Parties, they must be inspected. No landings or transshipments will be permitted in Contracting Party ports unless such vessels can establish that certain species on board were not caught in the NAFO Regulatory Area, and for certain other species that the vessel applied the NAFO Conservation and Enforcement Measures. Contracting Parties must report the results of inspections to NAFO and all Contracting Parties.
 - The President of NAFO, A. Rodin (Russia), signed diplomatic demarches to the flag-States whose vessels fished in the NAFO Regulatory Area in 1996-1997, namely Belize, Honduras, Panama and Sierra Leone.

- To improve control of the fisheries by the Contracting Parties, the General Council resolved to prohibit any charter vessel arrangements until a comprehensive set of rules is developed by NAFO.
7. This was an election year and the following NAFO officers took their offices for the two year period 1998-1999:
- | | |
|--|-------------------------|
| Chairman of the General Council | - A. Rodin (Russia) |
| Vice-Chairman of the General Council | - R. Dominguez (Cuba) |
| Chairman of the Fisheries Commission | - P. Gullestad (Norway) |
| Vice-Chairman of the Fisheries Commission | - D. Swanson (USA) |
| Chairman of the Scientific Council | - H.-P. Cornus (EU) |
| Vice-Chairman of the Scientific Council | - W. B. Brodie (Canada) |
| Chairman of the Standing Committee on Finance and Administration (STACFAD) | - G. F. Kingston (EU) |
| Vice-Chairman of STACFAD | - J. L. McGruder (USA) |
| Chairman of the Standing Committee on International Control (STACTIC) | - D. Bevan (Canada) |
| Chairman of the Standing Committee on Fishery Science (STACFIS) | - R. Mayo (USA) |
| Chairman of the Standing Committee on Research Coordination (STACREC) | - V. Shibanov (Russia) |

NAFO General Council
19 September 1997

NAFO Secretariat
St. John's, Newfoundland

QUOTA TABLE. Total allowable catches (TACs) and quotas (metric tons) for 1998 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.

Contracting Party	Cod		Redfish		American plaice		Yellowtail		Witch		Capelin		Greenland halibut		Squid (Illex) ^{2,3}	
	Div. 3M	Div. 3NO*	Div. 3M	Div. 3LN*	Div. 3M*	Div. 3LNO*	Div. 3LNO	Div. 3NO*	Div. 3NO*	Div. 3NO*	Div. 3LMO	Div. 3LMO	Subareas 3+4	Subareas 3+4		
1. Canada	16	0	650	0	0	0	3900 ⁸	0	0	0	3 000	-	N.S. ⁴	2 250		
2. Cuba	74	-	2 275	0	-	-	-	-	-	-	-	-	-	-		
3. Denmark (Faroe Islands and Greenland)	447	-	90	-	-	-	-	-	-	-	-	-	-	-		
4. European Union	997	0	4 030	0	0	0	80 ⁸	-	-	0	11 070	-	N.S. ⁴	-		
5. France (St. Pierre and Miquelon)	-	-	90	-	-	-	-	-	-	-	-	-	2 000	-		
6. Iceland	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
7. Japan	-	-	520	-	-	-	-	-	-	0	2 050	-	2 250	-		
8. Korea	-	-	90	-	-	-	-	-	-	-	-	-	2 000	-		
9. Norway	185	-	-	-	-	-	-	-	-	0	-	-	-	-		
10. Poland	77	-	-	-	-	-	-	-	-	0	-	-	1 000	-		
11. Estonia	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
12. Latvia	196 ¹	0	18 005 ¹	0	0	-	-	0	0	-	-	-	5 000 ¹	-		
13. Lithuania	-	-	-	-	-	-	-	-	-	-	2 550	-	-	-		
14. Russia	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
15. United States of America	8	0	160	0	0	0	20 ⁸	0	-	-	-	-	2 000	3 500		
16. Others	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Total Allowable Catch	2 000	*	20 000 ⁷	*	*	*	4 000 ⁹	*	*	*	20 000	*	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 Of which no more than 40% (532 t) may be fished before 1 May 1998 and no more than 80% (1064 t) may be fished before 1 October 1998.

⁷ Each Contracting Party shall notify the Executive Secretary bi-weekly of catches taken by its vessels from this stock. The Executive Secretary shall notify without delay all Contracting Parties of the date on which, for this stock, accumulated reported catch taken by vessels of the Contracting Parties is estimated to equal 100 percent of the TAC for that stock. At that date each Contracting Party, to which a quota has been allocated or which vessels are engaged in fishing under the "Others" quota, shall prohibit fishing by its vessels for that stock.

⁸ Contracting Parties shall inform the NAFO Executive Secretary before 1 December 1997 of the measures to be taken to meet the advice of the NAFO Scientific Council.

⁹ The provisions of Part I, Section A.4b) of NAFO Conservation and Enforcement Measures shall apply (FC Doc. 96/1).

* No directed fishing - The provisions of Part I, Section A.4b) of NAFO Conservation and Enforcement Measures shall apply.

**Annex 6. List of Decisions and Actions by
the General Council
(19th Annual Meeting, 15-19 September 1997)**

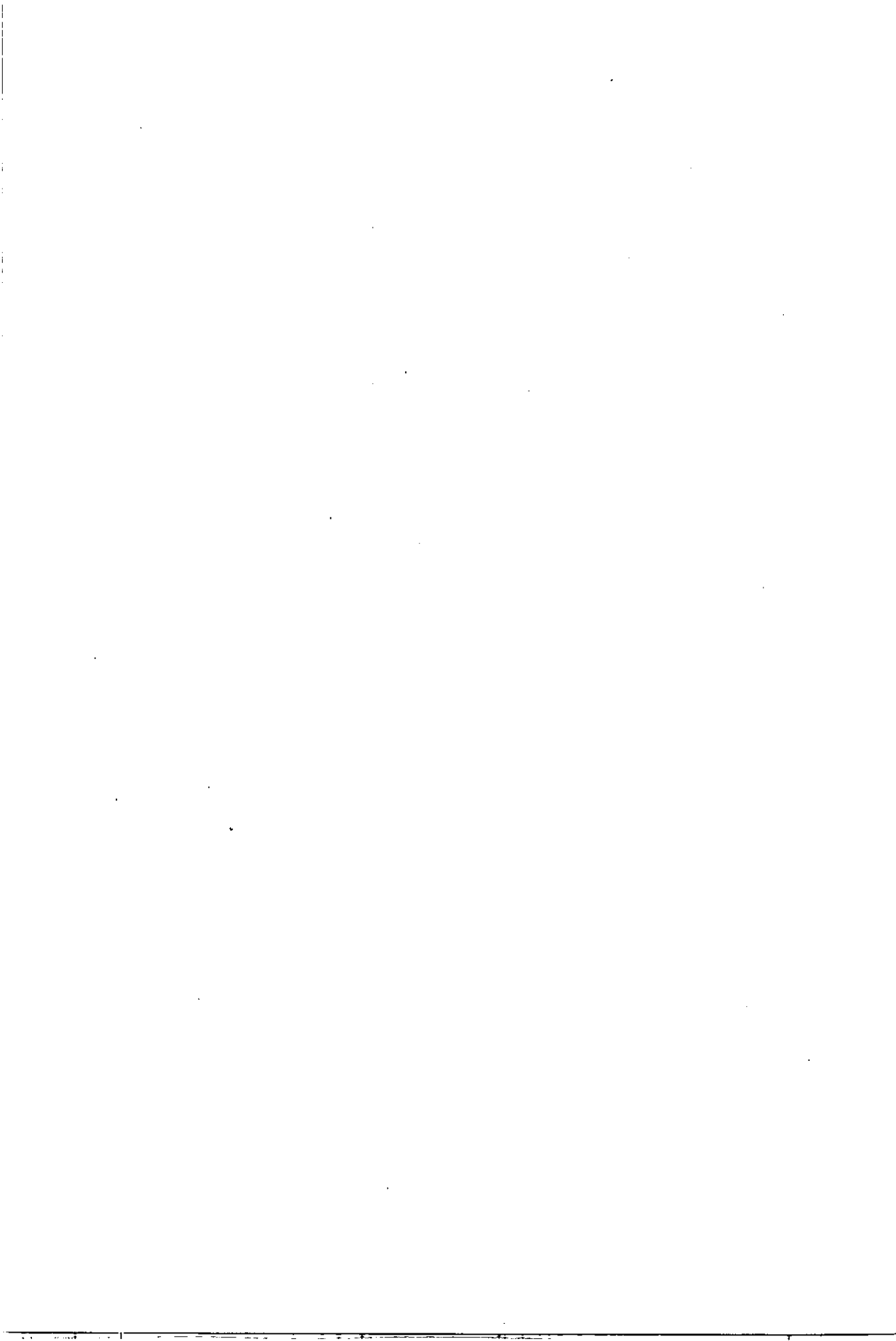
Substantive issue (propositions/motions)	Decision/Action (GC Doc. 97/9, Part I; item)
1. Participation in NAFO by two Contracting Parties – Bulgaria and Romania	Item 2.3; Resolution 97/1; Annex 6, Part II. All Contracting Parties shall contact the Bulgarian and Romanian authorities and report back at the 20 th Annual Meeting, 1998.
2. Transparency in the NAFO decision-making process (Participation of Inter-governmental and Non-Governmental Organizations)	Agreed to call intersessional W.G. meeting in USA, May 1998, Chairman, Mr. D. Swanson (USA); item 2.7
3. Election of Chairman and Vice-Chairman	Reelected A. Rodin, Russia, Chairman for next two years 1998-1999, and R. Dominguez, Cuba, Vice-Chairman for 1998-1999; item 2.9
4. UN Resolutions 51/35 and 51/36 December 1996 re the UN Agreement on straddling and highly migratory fish stocks; and on large-scale pelagic driftnet fishing	Endorsed; item 3.1
5. Report of STACFAC to the Meeting: -New diplomatic demarches to Belize, Honduras, Panama, Sierra Leone -Scheme to Promote Compliance by Non-CPs with NAFO Measures (GC Doc. 97/6)	Adopted; item 4.3 Agreed; item 4.2c) Adopted; item 4.2c)
6. Dispute Settlement Procedures (DSP) in NAFO Proceedings	Agreed to continue the DSP deliberations intersessionally in a Working Group, which shall meet in April 1998, Dartmouth, N.S., Canada; Chairman Mr. Stein Owe (Norway); item 4.11
7. Chartering the non-flag State vessels to fish national quota shares	Agreed to consider this issue in a W.G. to be called in Brussels, March 98; the Chairman H. Koster (EU). (Note: this W.G. will coincide with the STACTIC W.G. on quota allocation practices); item 4.14 Agreed that no charter arrangements shall be made by Contracting Parties until the accomplishment of the Working Group task and its endorsement by the General Council.
8. Report of STACFAD to the Meeting: - Auditors Report - Accumulated Surplus Account	Adopted; item 5 Adopted Agreed to maintain on the level not less than \$75,000 Cdn
- Bulgaria's and Romania's collectible debt for 1997	Agreed: \$31,469.43 Cdn to write-off from the Accumulated Surplus Account

9. Budget for 1997
- incl. special amount for satellite tracking

Adopted; \$1,077,00 Cdn
- \$35,000 Cdn

10. Annual NAFO Meetings, 1998-2000

Agreed on time and place of the Annual
Meetings; item 6.1 and Part II, item 12



PART II

(pages 61-115)

Activities of the Fisheries Commission in 1997

List of Meetings

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

- STACTIC Working Group on Satellite Tracking; Dartmouth, N.S., Canada, 2-5 April.
- Standing Committee on International Control (STACTIC); Copenhagen, Denmark, 24-26 June.
- The Fisheries Commission and its subsidiary body (STACTIC); 19th Annual Meeting, St. John's, Newfoundland, Canada, 15-19 September.
- STACTIC Working Group on Satellite Tracking; Dartmouth, N.S., Canada, 28-30 October.



Major Documents of the Fisheries Commission in 1997

Serial No.	FC Doc. No.	Title
N2821	97/1	Conservation and Enforcement Measures (Supplement to NAFO/FC Doc 96/1)
N2832	97/2	Report of the STACTIC Working Group on Satellite Tracking, 2-4 April 1997, Dartmouth, N.S., Canada
N2919	97/3	Report of the Standing Committee on International Control (STACTIC), 24-26 June 1997, Copenhagen, Denmark
N2920	97/4	Status of Proposals and Resolutions of NAFO (as of July 1997)
N2925	97/5	Summary of Inspection Information for 1996
N2926	97/6	Summary of Undisposed Apparent Infringements for 1993-1994-1995-1996
N2944	97/7	No Directed Fishery for Witch in Division 3L in the Regulatory Area
N2945	97/8	Management Measures for Shrimp in Div. 3M in 1998
N2946	97/9	3LNO Shrimp
N2947	97/10	3L Cod
N2948	97/11	Pilot Project for Observers and Satellite Tracking
N2951	97/12	Inspector's/Trainee's Document of Identity
N2967	97/13	Fisheries Commission's Request for Scientific Advice on Management in 1999 of Certain Stocks in Sub-areas 3 and 4

N2968	97/14	Report of the 19th Annual Meeting, 15-19 September 1997, St. John's, Newfoundland, Canada
N2969	97/15	Report of the STACTIC Working Group on Satellite Tracking, 28-30 October 1997, Dartmouth, N.S., Canada
N2970	97/16	Formats for the Electronic Transmission of NAFO Hails from Contracting Parties to the NAFO Secretariat
N2971	97/17	Standardized File Format for Satellite Tracking Reports at the NAFO Secretariat

STACTIC Working Group on Satellite Tracking

This intersessional meeting was held in accordance with the decision by the Fisheries Commission during 2-4 April 1997 at the NAFO Headquarters, Dartmouth, N.S., Canada. Complete proceedings of this Meeting can be found in FC Doc. 97/2 and in the Meeting Proceedings, 1997.

Opening of the Meeting (items 1-3 of the Agenda)

The Chairman, David Bevan (Canada), opened the meeting and welcomed all delegates (Annex 1). Tony Blanchard (Canada) was appointed Rapporteur.

The agenda was adopted as attached (Annex 2).

Discussions (items 4-7)

The national reports by Contracting Parties were presented from Norway, Iceland, Canada, Russia, European Union, Denmark (Greenland) and USA.

The Executive Secretary presented the NAFO Secretariat's report to the Meeting, Working Paper 97/2 (Annex 2). He emphasized that the most important component would be to combine the Satellite Tracking systems with the hail system making it less expensive and more manageable.

The detailed costs were described in the national working papers. It was noted that there were a variety of costs ranging from \$3,500 US to \$12,000 US for an Inmarsat-C system. There was general agreement that costs were dropping significantly and the specific costs were unknown until a specific competitive tender was called.

Recommendation of hardware and software which should be installed at the NAFO Secretariat and, as appropriate, standardization of the report format

There was considerable discussion on the mandate of the Working Group. It was noted that the Fisheries Commission had mandated this Working Group to deal with the infrastructure at the NAFO Secretariat. It was further noted that according to the current NAFO Conservation and Enforcement Measures, the NAFO Secretariat is involved only in the receipt and transmission of hail reports. It was also noted that information pertaining to the geographical disposition of the fleet through satellite tracking positional information should be dealt with through direct bilateral cooperation between Contracting Parties, pursuant to Part VI section B.1.e of the NAFO Conservation and Enforcement Measures.

A number of Contracting Parties noted that technology exists that if acquired could make it possible to transmit data between fishing vessels and the NAFO Secretariat and have the Secretariat retransmit to Contracting Parties with an inspection presence in the NRA. These Contracting Parties further noted that standardized formats may be the least expensive approach to achieve this. However, technically, standardized formats are not required. Another Contracting Party noted that the Secretariat could be equipped with an appropriate system to recognize and interpret different formats.

While no consensus was reached on recommendations to take forward to the Fisheries Commission, several Contracting Parties might be willing to enter into arrangements with the NAFO Secretariat to electronically transmit hail information. Due to the limited mandate noted above there was no consensus on what new equipment and software should be provided to the NAFO Secretariat to accommodate this. The EU delegation stressed, however, that at present the European Union is the only Contracting Party to make available hail reports in a computer readable form on the basis of an agreed file format since 1994. The Working Group however wishes to bring to the attention of the Fisheries Commission that it is technically possible and relatively inexpensive to transmit in near real time any relevant information to the NAFO Secretariat and Contracting Parties with inspection vessels in the Convention Area.

The Working Group recommended that the Fisheries Commission define the information needs and its distribution so that detailed proposals on equipment and software requirements and their associated costs can be developed by STACTIC.

The Report was reviewed by Representatives of the Fisheries Commission during 08 April - 07 May 1997. Having presented and incorporated some editorial corrections, the Report was adopted by the Fisheries Commission.

Annex 1. List of Participants

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T. Amaratunga, Assistant Executive Secretary
G. Moulton, Statistical Officer
B. Cruikshank, Senior Secretary

Annex 2. Agenda

1. Opening of the Meeting by the Chairman, D. Bevan (Canada)
2. Appointment of Rapporteur
3. Adoption of Agenda
4. Report by delegates on their national programs and implementation of the NAFO Satellite Tracking Program during 1996
5. Costs associated with implementation of satellite tracking by Contracting Parties
6. Recommendation of hardware and software which should be installed at the NAFO Secretariat and, as appropriate, standardization of the report format.
7. Costs associated with implementation of satellite tracking by the NAFO Secretariat
8. Recommendations to the Fisheries Commission and General Council (finance)
9. Other business
10. Adjournment

Annex 3. Management and Administration of the Satellite Tracking Information at the NAFO Headquarters

1. Provisions (Part VI.B.1, Conservation and Enforcement Measures)

Each Contracting Party shall...transmit to the Executive Secretary, on a real time basis, messages of movement between NAFO divisions (as per the requirements of the Hail System outlined in Part III.E of these Measures) for its vessels equipped with satellite devices. The Executive Secretary shall, in turn, transmit such information to Contracting Parties with an inspection vessel or aircraft in the Convention Area.

2. Management, 1996

a) As per the requirements of the Hail System, the NAFO Secretariat is equipped with the following hard/software:

- PC 386, 8 megs of RAM; 125 megs of hard drive
- SVGA monitor, Dos 5.0; windows 3.1 and PROMCOM+
- X-25 connection, 2400 baud
- Data base of MS ACCESS 7.0

This technology has enabled the Secretariat to communicate hail messages between the Secretariat-Ottawa-Brussels on a regular basis.

b) The satellite tracking messages were transmitted to the NAFO Secretariat only from one (1) Contracting Party - Norway. During 1996 there were 283 satellite reports received at the Secretariat. The reports were, in turn, transmitted by fax to two (2) Contracting Parties with inspection presence - Canada and the European Union.

The satellite tracking hails were filed in a separate file but unlike hail reports not computerized due to very different protocol-format.

3. Provisional costs of future satellite tracking programs at the Secretariat

The provisional costs could be projected from the information of the FC Doc. 95/24, first Working Group meeting on this issue.

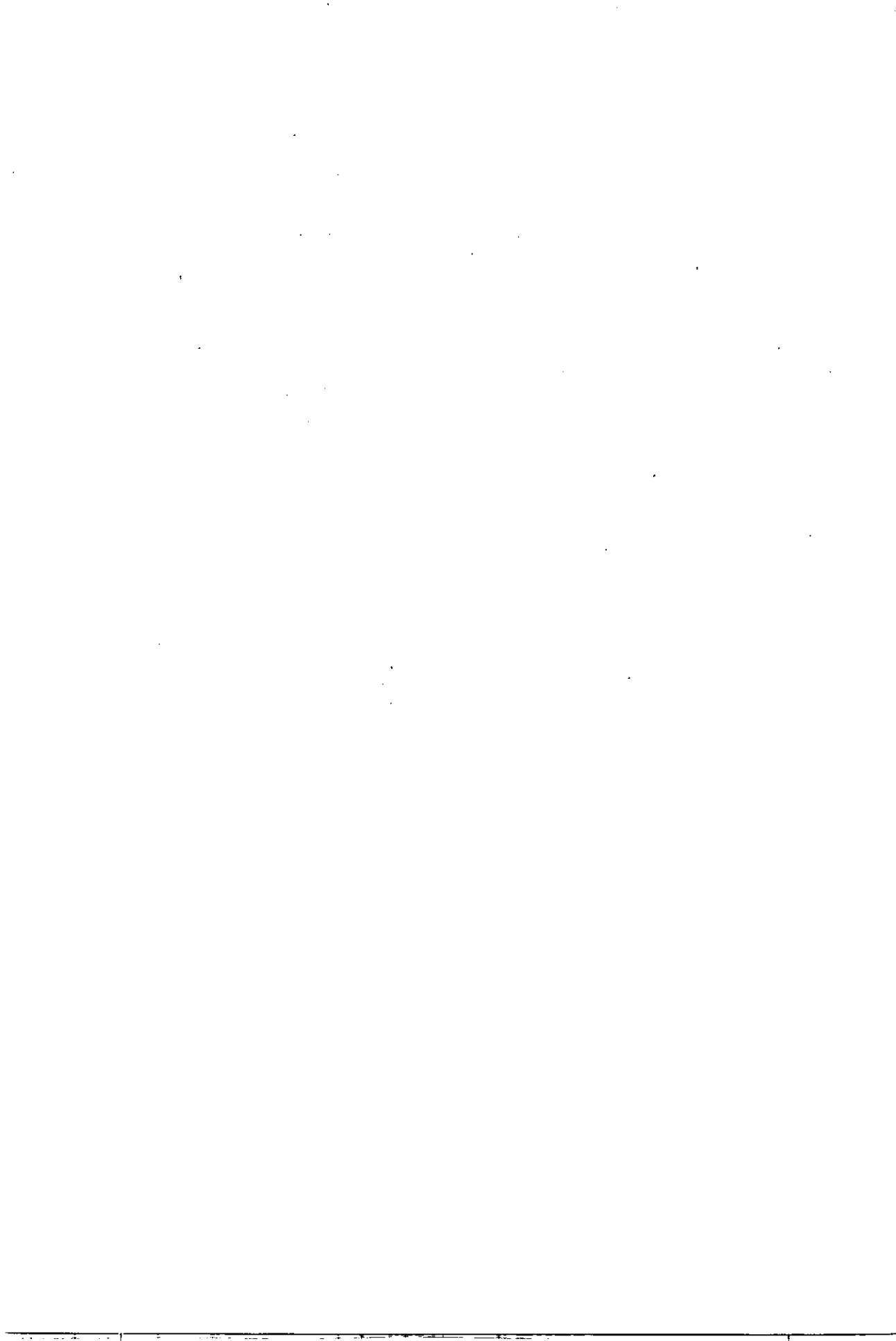
- The basic annual cost for hard/software would be at the level:

INMARSAT	20,000 USD
EUTELSAT	13,000 USD
ARGOS	10,000 USD

- Service charges would be in the range of 4000-5000 USD.
- Labour costs (upgrade and train one specialist) would be in the range of 3,000-4,000 USD.

4. Conclusion

- There is no provision/decision or agreement made at NAFO for the purpose of management and administration of the Satellite Tracking Program;
- There are several systems available (and extensively used by some Contracting Parties in their waters and elsewhere) which could be deployed for the NAFO Area based on the major idea/principle of compatibility (modulated to the standard protocol-format).
- Consideration should be given to the possibility of unified NAFO system which could combine the hail reports and satellite tracking messages in one harmonious system. In this case, the existing NAFO technology of X-25 connection would be most helpful.



STACTIC Meeting

This intersessional meeting was held during 24-26 June 1997 in Copenhagen, Denmark, in accordance with the decision by the Fisheries Commission (FC Doc. 96/13, Part I, item 4.37). Complete proceedings of this Meeting can be found in FC Doc. 97/3 and in the Meeting Proceedings, 1997.

Opening Procedures (items 1-3 of the Agenda)

The Chairman, D. Bevan (Canada) opened the meeting at 1000 on 24 June 1997. Representatives from the following Contracting Parties were present: Canada, Denmark (in respect of the Faroe Islands and Greenland, Estonia, the European Union (EU), France (in respect of St. Pierre et Miquelon), Iceland, Japan, Latvia, Norway and the United States of America (Annex 1).

Paul Steele (Canada) was appointed Rapporteur.

The agenda was adopted as attached (Annex 2).

Review of Implementation of Conservation and Enforcement Measures (item 4)

Hail System

The Executive Secretary reported on the implementation of the hail system (Annex 3). He indicated that the operation of the system had greatly improved. The Executive Secretary recommended that the computerized hail report system be utilized by all Contracting Parties. This would require Contracting Parties to centralize all hail reports in their headquarters and transmit the reports to the NAFO Secretariat database.

The meeting discussed issues of standardized format, hail catch reporting, the term of "fishing day" and confidentiality of hail information. All these questions were addressed to further discussions in the Fisheries Commission.

Submission of catch statistics

The Executive Secretary reported on the current situation with regard to the submission of catch statistics. He noted that several overdue reports, from various Contracting Parties, are still outstanding. He also advised that the NAFO Scientific Council has expressed concern regarding the overdue reports. The Executive Secretary emphasized the importance of timely submission of catch statistics.

It was agreed that each Contracting Party will ensure that their respective Heads of Delegation are advised of the problem.

Operation of surveillance and inspection; and (d) Reports with respect to the pilot project on observers and satellite tracking

The Executive Secretary presented a report on the activities of the NAFO Secretariat with regard to surveillance and inspection operations and communication between the Secretariat and all involved parties.

The Executive Secretary noted that there are concerns regarding the delays in submitting reports about the disposition of apparent infringements. He reminded Contracting Parties that the due dates for submission of these reports to the NAFO Secretariat are February 1 and September 1 each year.

There was considerable discussion on presentation of surveillance and inspection reports from Canada and the European Union. The methodology of the objectivity of distribution of inspections among the vessels in the Regulatory area was, as well, discussed on presentation by the Executive Secretary.

Representatives from Norway, Denmark, Canada, Latvia, the United States, Japan, Estonia, the European Union and Iceland presented reports respecting the implementation of the Pilot Projects in 1996 and 1997.

During the discussions it was revealed that in many instances the costs associated with implementation of the systems are paid by government funds of the respective flag states, or even other states in some cases, and that such costs are not reimbursed by the respective fishing industries.

Establish criteria for review of the pilot project

The Chairman referred Contracting Party representatives to Part VI.C.1 of the Conservation and Enforcement Measures, which describes some of the criteria to be considered in evaluating the Pilot Project (i.e. cost/benefit in terms of compliance and the volume of data received for fisheries management). He then requested comments from Contracting Party representatives regarding other criteria which could be considered.

A small working group was then established to develop a written proposal for an evaluation framework.

The Chairman presented the draft evaluation framework to the delegates. After some discussion, the amended evaluation framework (Working Paper 97/20) was prepared. It was agreed that the evaluation criteria would be forwarded to the Fisheries Commission for their consideration (Annex 3).

STACTIC agreed that, in anticipation of a favourable review of the criteria by the Fisheries Commission, Contracting Parties would proceed with their evaluations with a view to submitting individual reports in anticipation of the September annual meeting. The Fisheries Commission will also be asked to provide direction on the issue of whether the Pilot Project would be evaluated on a multi-species or a species by species basis.

Other issues

The Executive Secretary presented a proposal for modification of the NAFO Inspector/Trainees document of identity (Annex 16-Working Paper 97/5). Following a short discussion, the proposed document, with a minor amendment, was approved and recommended to the Fisheries Commission for adoption.

The meeting was adjourned at 1300 on 26 June 1997.

Annex 1. List of Participants

CANADA

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L. I. Chepel, Executive Secretary

B. Cruikshank, Senior Secretary

M. Hansen, Greenland Home Rule (Denmark Office)

Annex 2. Agenda

1. Opening by the Chairman (D. Bevan, Canada)
2. Appointment of Rapporteur
3. Adoption of Agenda
4. Review of implementation of Conservation and Enforcement Measures with particular attention:
 - a) hail system
 - b) submission of catch statistics
 - c) operation of surveillance and inspection
 - d) review reports from the Contracting Parties with respect to the pilot project on observers and satellite tracking
 - e) establish criteria for review of the pilot project
 - f) other issues
5. Adjournment

Annex 3. Report by NAFO Secretariat on Implementation of Conservation and Enforcement Measures

a) Hail System

Pursuant to the provisions of Part III.E.2,3 of the NAFO Conservation and Enforcement Measures, the NAFO Secretariat performed the following functions:

- received hails via telex or fax from Contracting Parties and verified all hail reports and their sequential numbering;
- compiled reports from different Contracting Parties/vessels and transmitted via telex or fax the hails received to Contracting Parties with an inspection presence in the Regulatory Area;
- developed the NAFO database for communication purposes, which includes the following hard/software:
 - PC 386, 8 megs of RAM; 125 megs of hard drive
 - SVGA monitor, Dos 5.0; windowns 3.1 and PROMCOM+
 - X-25 connection, 2400 baud
 - Data base of MS ACCESS 7.0

This technology has enabled the Secretariat to communicate hail messages between the Secretariat-Ottawa-Brussels, the Contracting Parties with inspection presence, on a regular basis via the X.25 standard ASC II files.

Costs and volume of hail reports 1994-1997 has been the following:

	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u> (5 months)
Transmissions* (from NAFO)	525	786	808	184
Costs of transmissions (\$Cdn)	5774.00	7113.80	6639.00	1600.00

*Note: Each transmission from NAFO Secretariat consists of several compiled reports of Contracting Parties forwarded to the NAFO Secretariat during one day; time of transmission of the compiled report approximately 1600 Halifax time; this method saves substantial costs of transmission.

Comments:

The computerized hail report system as described above is suitable for the purpose and herewith recommended for incorporation by all Contracting Parties. This system would secure low costs, low labour and effective operativeness of all communication (format in Annex 1).

The introduction of the system to its full and effective operation would require all Contracting Parties to centralize all hail reports in their headquarters and transmit the reports to the NAFO Secretariat database.

b) Submission of catch statistics

According to Rule 4.4 of the Rules of Procedure for the Scientific Council, the statistical information should be furnished to the Scientific Council in advance of meetings and with respect of STATLANT 21A and 21B not later than on 15 May and 30 June, respectively.

The current status of this matter is presented in the table below.

<u>Contracting Party</u> <u>(Country)</u>	<u>Outstanding Statistics</u>	
	<u>STATLANT 21A</u> <u>Outstanding years</u>	<u>STATLANT 21B</u> <u>Outstanding years</u>
Cuba	1994 and 1995	1994 and 1995
Estonia	1995	1995
Faroe Islands	1995	1993, 1994 and 1995
Iceland	-	1995
Korea	1994	1994
Lithuania	1994 and 1995	1994 and 1995
USA	1994 and 1995	1993, 1994 and 1995

c) Operation of surveillance and inspection

Under the provisions of Part IV of the NAFO Conservation and Enforcement Measures, the NAFO Secretariat maintained its communication with all involved/interested parties on the major issues:

- notification of vessels/aircraft/inspectors to Contracting Parties for the Scheme of Joint International Inspection;
- notification of all fishing vessels of Contracting Parties for fishing in the NAFO Regulatory Area;
- receipt of copy of inspection reports and information on apparent infringements and their communication to appropriate authorities of Contracting Parties as required (Part IV.9.10);
- receipt of copy of surveillance reports (Part IV.11(iii));
- compilation of all inspection/surveillance reports and their dispositions at the NAFO Secretariat;

- list apparent infringements in the report(s) to the Contracting Parties until their disposition by the Flag State (FC Doc 96/3, Revised; FC Doc. 96/12).

The following Contracting Parties are listed with **undisposed apparent infringements**:

<u>Year</u>	<u>Contracting Party</u>	<u>Number of Vessels</u>
1993	European Union	8
	Iceland	2
	Lithuania	2
1994	Estonia	3
	European Union	11
	Iceland	8
	Lithuania	2
1995	Denmark (Faroe Islands)	5
	European Union	4
	Iceland	3

Apparent Infringements of 1996 (should be reported on
1 September 1996 for January-June 1996)

There were no reports presented to the NAFO Secretariat in 1996 according to Part IV.17a of the Conservation and Enforcement Measures.

The report on the objectivity in the realization and distribution of inspections between Contracting Parties (Part IV.2(iii)) is presented in the table below.

Realization and distribution of inspections (Part IV.2(iii)) between the Contracting Parties in 1996:

Contracting Parties (Countries)	No. of vessels in the NAFO Regulatory Area (NRA)	Inspections / Apparent infringements		Ratio 2,3 to 1; %		Total and Average	
		Reported by:					
	1	Canada*	EU**	Canada	EU	Inspections 2+3	ratio 6 to 1, %
		2	3	4	5	6	7
Canada	8	1/-	4/2	12/0	50/25	5/2	62/25
Denmark (DFG)	15	28/4	8/2	186/26	53/13	36/6	240/40
Estonia	6	13/-	-	233/0	0	13/-	216/0
EU	47	119/4	53/3	253/8	112/6	172/7	365/15
Iceland	39	41/3	16/13	105/10	41/33	57/16	146/41
Japan	2	10/-	1/-	500/0	50/0	11/-	550/0
Latvia	4	5/-	3/1	125/0	75/25	8/1	200/25
Lithuania	6	16/-	2/1	266/0	33/16	18/1	300/16
Norway	15	22/1	7/-	146/6	46/0	29/1	193/6
Russia	21	24/-	4/-	114/0	19/0	28/0	133/0
Total	164	279/12	98/22	170/7	60/13	377/34	230/21

* The data for Canada is provisional taken from inspection reports available at the NAFO Secretariat.

** The data for EU is taken from official EU information on inspections and apparent infringements.

Objectivity in distribution of inspections:

The data of the table above (column 7) indicate that the most frequently inspected vessels were for Japan (550%), the European Union (365%), Lithuania (300%) and Denmark (Faroe Islands 240%) and their average inspection ratio (number of inspections to the number of vessels) was above average (230%) ratio. The less frequent inspections were applicable to the vessels from Canada (62%), Cuba (100%), Russia (133%), Iceland (146%), Norway (195%), Latvia (200%) and Estonia (216%), and their average inspection ratio was below average ratio.

Comments on performance of the Measures:

There were/are several shortcomings re inspections addressed to Contracting Parties from the NAFO Secretariat (please see GF/96-505 of 11 Oct 96 and GF/97-159, 27 Mar 97) and those, in summary, are as follows:

- Re part IV.15 (Conservation and Enforcement Measures), provisional plans for participation in the scheme, the information from Contracting Parties would be required at the NAFO Secretariat by 1 November each year for next year.
- Re Part IV.16, information on inspections and apparent infringements, the reports from Contracting Parties would be required at the NAFO Secretariat by 01 March each year for the previous calendar year.
- Re Part IV.17a, disposition of apparent infringements, the information from Contracting Parties would be required by 01 February each year for the previous year.

These regulations and requirements have at all times been in arrears regarding the above-noted dates of presentation.

c) Pilot project on observers and satellite tracking

The NAFO Secretariat was performing its duties pursuant to the provisions of Part VI.A3.d and B1.d:

- The observer reports were sent/accumulated at the Secretariat and then circulated to the requesting Contracting Parties, mostly to Canada and the European Union.
- The satellite tracking messages were transmitted to the NAFO Secretariat only from one (1) Contracting Party - Norway. During 1996 there were 283 satellite reports received at the Secretariat. The reports were, in turn, transmitted by fax to two (2) Contracting Parties with inspection presence - Canada and the European Union. The satellite tracking hails were filed in a separate file but unlike hail reports not computerized due to very different protocol-format.

The Working Group on satellite tracking met at the Secretariat on 2-4 April 1997 and developed the following recommendations to STACTIC and Fisheries Commission:

- according to the current NAFO Conservation and Enforcement Measures, the NAFO Secretariat is involved only in the receipt and transmission of hail reports;
- information pertaining to the geographical disposition of the fleet through satellite tracking positional information should be dealt with through direct bilateral cooperation between Contracting Parties, pursuant to Part VI Section B.1.e of the NAFO Conservation and Enforcement Measures;
- technology exists that, if acquired, could make it possible to transmit data between fishing vessels and the NAFO Secretariat and have the Secretariat retransmit to Contracting Parties with an inspection presence in the NRA and standardized formats may be the least expensive approach to achieve this;

- several Contracting Parties might be willing to enter into arrangements with the NAFO Secretariat to electronically transmit hail information;
- no consensus was reached on what new equipment and software should be provided to the NAFO Secretariat to accommodate this.

To follow-up the Working Group recommendations, the NAFO Secretariat has continued its communication with the appropriate authorities of Contracting Parties in charge of the satellite tracking with the following results:

- O. A. Davidsen from Norway requested our X.25 address to see if they would be able to send satellite tracking data directly to our computer. (They attempted to do this but were unsuccessful).
- J. P. Verborgh from the EU indicated that they were going to set-up a new mailbox in Brussels for us to retrieve information on satellite tracking. (They will inform when this is ready for testing).
- T. Blanchard informed that Canada will try to set-up a system where we can receive their hails using the X.25, similar to the process being used by the EU.

The provisional costs for incorporation of the satellite tracking system at the NAFO Secretariat could be estimated from the information of the FC Doc. 95/24, first Working Group meeting on this issue.

- The basic annual cost for hard/software would be at the level:

INMARSAT	20,000 USD
EUTELSAT	13,000 USD
ARGOS	10,000 USD
- Service charges would be in the range of 4000-5000 USD.
- Labour costs (upgrade and train one specialist) would be in the range of 3000-4000 USD.

Annex 15. Evaluation Criteria Framework
(STACTIC Working Paper 97/20-2nd Rev.)

EVALUATION CRITERIA FRAMEWORK

	PILOT PROJECT COMPLIANCE MEASURES				CONTROL	
	Satellite tracking		Observer scheme		Traditional means of control (*)	
MANAGEMENT MEASURES	Relevance	Efficacy/ Efficiency	Relevance	Efficacy/ Efficiency	Relevance	Efficacy/ Efficiency
Fishing location	yes		yes		yes	
Fishing activities:						
N° of operation	yes		yes		yes	
Time in the area	yes		yes		yes	
Fishing time	yes		yes		yes	
Gear used	no		yes		yes	
Catches retained on board						
By species	no		yes		yes	
By live weight	no		yes		yes	
Discards						
Juveniles	no		yes		partial	
By-catches	no		yes		partial	
High-grading	no		yes		partial	
Processing						
By species	no		yes		yes	
By presentation	no		yes		yes	
By production weight	no		yes		yes	
Landing/transhipment						
Port/Location	yes		partial		yes	
Quantities landed or retained on board	no		no		yes	

(*) Traditional means: fishing and processing logbook, landing/transhipment declaration, sightings and inspections at sea (either by vessel or aircraft), hail-system and communication of catches, single mesh size, inspection ashore, etc.

INDICATORS OF RESULTS	
COMPLIANCE** BEFORE PILOT PROJECT IMPLEMENTATION	COMPLIANCE** AFTER PILOT PROJECT IMPLEMENTATION
% OF OBSERVER REPORTS NOT INDICATING A CHANGE IN COMPLIANCE BY MASTER	% OF OBSERVER REPORTS INDICATING A CHANGE IN THE COMPLIANCE BY THE MASTER

COSTS***		
Observer cost/sea day	Satellite Tracking capital costs and operating costs	Comparison cost of traditional enforcement measures

BENEFITS
Analysis of the efficiency in terms of cost/benefit, the latter being expressed in terms of compliance with the Conservation and Enforcement Measures and volume of data received for fisheries management and scientific stock assessment.

**Compliance

When conducting the evaluation for indicators of results, with respect to compliance, any perceived improvement in compliance levels should take account of a number of factors, such as:

- the reduction in fishing effort (vessel fishing days) and the trend towards targeting non-quota species,
- variations in catch rates of quota species caught whether or not in a directed fishery or as bycatches and quota catch prohibitions,
- the variation in the range of conservation measures applying to the different fleets operating in NAFO,
- the variety of derogations under NAFO rules and unique non discard prohibitions, etc.

The contribution of the different components of the Project to any apparent changes in compliance should also be considered.

***Costs

- When conducting the evaluation with respect to costs, full costs should be calculated including all overheads. Total observer costs are to be incorporated into the estimation of observer sea day cost. With respect to satellite tracking, capital costs are to be calculated separately from operating costs. Alternative means of control should be calculated as a comparison to the costs of this pilot project (ship time etc.). Calculations of costs are to be converted to Canadian dollars for comparison purposes.



Fisheries Commission Meeting

The Fisheries Commission Meeting including meetings of its subsidiary body – Standing Committee on International Control (STACTIC) – was held during the 19th Annual Meeting on 15-19 September 1997 in St. John's, Newfoundland, Canada. Full proceedings of the meeting are presented in FC Doc. 97/14 and in a separate edition of Meeting Proceedings of the General Council and Fisheries Commission. This Annual Report presents a brief summary of the most substantial discussions at the Fisheries Commission and STACTIC.

Opening Procedures (items 1-5 of the Agenda)

The meeting was called to order by the Chairman, Mr. H. Koster (EU) on 16 September 1997 at 15:00 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), France (in respect of St. Pierre et Miquelon), Iceland, Japan, the Republic of Korea, Latvia, Lithuania, Norway, Poland, Russia, and the United States of America (Annex 1).

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

The provisional Agenda was adopted (Annex 2).

Administrative (items 6-8)

It was agreed that item 7 of the FC Agenda, Transparency of NAFO decision-making process (participation of inter-governmental and non-governmental organizations), was covered during the previous session of General Council which referred the matter to the Working Group on Transparency, and needed no further discussion by the Fisheries Commission.

With respect to item 8 of the Agenda, "Election of Chairman and Vice-Chairman", the Fisheries Commission elected P. Gullestad (Norway) and D. Swanson (USA) Vice-Chairman for the next term of two years, 1998-1999. The Fisheries Commission thanked the outgoing Chairman, H. Koster (EU) for his efficient and able management of the Fisheries Commission business during two (2) consecutive terms, 1993-1997.

Conservation and Enforcement Measures (items 9-16)

With respect to item 9 of the FC Agenda, Consideration of Improved Planning and Control of Research Vessels in the Regulatory Area, the Representative of Canada reiterated his concerns and agreed to withdraw the Canadian proposal that had remained on the table from the 1996 meeting noting that Canada reserves the right to pursue this issue if the problem continued.

For item 10 of the FC Agenda, Consideration of a permanent scheme for observers and satellite tracking (in the NAFO Regulatory Area), the Chair summarized the discussions from the Heads of Delegation meeting and stated that: this is a crucial issue for the Organization and that a decision on adoption of permanent observer and satellite coverage should be made as soon as possible; Contracting Parties had implemented the Pilot Project on observers; observers had collected scientific data from more than 25,000 trawls in the NAFO Regulatory Area but much of this data was not being used. The meeting agreed that STACTIC will meet intersessionally to determine how best the protocol to collect scientific data can be implemented.

The Fisheries Commission adopted the Canadian proposal for one year extension of the Pilot Project to 31 December 1998. Several delegations indicated that the scope of the scheme should be reviewed with respect to the period after 1 January 1999.

On STACTIC activities during the current year, the Chairman of STACTIC, Mr. D. Bevan (Canada), reported that the May 1997 Working Group had reviewed various satellite systems, the capability of the NAFO Secretariat to receive and transmit this information and the opportunity to improve the current infrastructure, and the STACTIC meeting June 24-26 reviewed the Conservation and Enforcement Measures, in particular the hail system, the provision of reports on the pilot observer and satellite project and developed evaluation criteria for the pilot project. STACTIC noted improvements in the hail system.

On STACTIC Annual Meeting, the Chairman of STACTIC reported the conclusions and recommendations of STACTIC to the following items of the agenda:

- Review of Annual Return of Infringements: it was noted that there were still significant information gaps dating back to 1993. While the Conservation and Enforcement Measures are very specific about the type of information that Contracting Parties are required to provide, several Contracting Parties had not submitted the required information. All Contracting Parties were asked to review their apparent infringements and provide written updates to the Executive Secretary as soon as possible.

The meeting agreed to hold a STACTIC Working Group intersessional meeting of technical experts as recommended by STACTIC to seek ways of implementing an automated satellite tracking system to allow the Secretariat to receive and transmit data to Contracting Parties' inspection vessels in the NRA.

The Fisheries Commission adopted the STACTIC report and its recommendations and agreed to keep on its agenda the issue of equitable distribution of inspections in the Regulatory area and the issues of discards and consideration of measures to prohibit at-sea transshipment activities between Contracting Party and Non-Contracting Party vessels.

For item 13 of the FC Agenda, Implementation of the Precautionary Approach to NAFO-managed stocks, the Chairman of the Scientific Council, Mr. W. R. Bowering (Canada) stated that pursuant to a request from the Fisheries Commission at the 1996 Annual Meeting, the Scientific Council reviewed the science implications of the UN Agreement on the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks - Article 6 (Application of the Precautionary Approach) and Annex II (Guidelines for Application of precautionary reference points in conservation and management of straddling fish stocks and highly migratory fish stocks).

The Scientific Council at its June 1997 meeting recognized the need to apply the precautionary approach in providing scientific advice as described in the above provisions and proposed a provisional framework for its implementation. It recommended a Scientific Council Workshop in March 1998 to develop a program to determine meaningful precautionary reference points for biomass and fishing mortality and an "Action Plan for the Development of a Framework on the Precautionary Approach" for stocks in the NAFO Regulatory Area.

The Fisheries Commission endorsed the Scientific Council Action Plan. It was recognized that it was also necessary for fisheries managers to study the implications of the precautionary approach to fisheries management decisions. It was agreed to hold a Fisheries Commission STACTIC Working Group with the participation of NAFO scientists in the spring of 1998 on this subject.

With respect to item 14 of the FC Agenda, Increase of Inspection Presence in the NAFO Regulatory Area, the Chairman noted that this item, a carryover from the June 1995 Special Meeting of the Fisheries Commission, concerned the increased deployment of inspection vessels by Contracting Parties, in addition to Canada and the EU, in the NAFO Regulatory Area. He expressed the view that the Scheme of Joint International Inspection and Surveillance is not effective without inspections taking place in the Regulatory Area and that a greater deployment of inspection vessels needs to be considered. It was agreed to keep this item on the agenda for future discussion.

For item 15 of the FC Agenda, NAFO Allocation Practice, the Chairman referred to the United States Position Statement on NAFO Quotas (FC Working Paper 97/4) and the proposal by the U.S. delegation in FC Working Paper 97/14 - Terms of Reference for the Working Group on the Allocation of Fishing Rights to Contracting Parties of NAFO and Chartering. The Representative of the USA proposed that the Working Group meet before March 1, 1998 under the Chairmanship of Mr. H. Koster (EU). The proposal was supported by the meeting.

With respect to item 16 of the FC Agenda, Review of NAFO Rules Regarding Discards, it was agreed that STACTIC would continue to address this issue at future meetings.

Conservation of Fish Stocks in the Regulatory Area (items 17-21)

The Chairman of the Scientific Council, Mr. W.R. Bowering (Canada) gave a summary of SCS Doc. 97/14, "Report of Scientific Council, 4-19 June 1997" which provided scientific advice for the management of stocks in the NAFO Regulatory Area for 1997. He summarized this advice stock by stock as set out below.

Shrimp 3M	catches at the lowest possible level
Cod 3M	no directed fishery + lowest possible bycatch
Cod 3NO	no directed fishery + lowest possible bycatch
Redfish 3LN	no directed fishery + lowest possible bycatch
Redfish 3M	catches not to exceed 20,000t
American plaice 3LNO	no directed fishery + lowest possible bycatch
American plaice 3M	no directed fishery + lowest possible bycatch
Witch flounder 3NO	no directed fishery + lowest possible bycatch
Yellowtail flounder 3LNO	stock capable of sustaining limited directed fishery, catch of 4,000t would not be detrimental.
Greenland halibut 3LMNO	Catch should not exceed current TAC of 20,000t until it is clear that spawning biomass is increasing at that level.
Capelin 3NO	no advice possible
Squid SA 3&4	no advice possible

The presentation was followed by clarification from the Chairman of the Scientific Council of several on-going questions:

On the stock separation of cod in Div. 2J3KL and the proportion of biomass of the cod stock in the Regulatory Area, the Scientific Council concluded that it was appropriate to assess 3L cod as a unit of the 2J3KL stock complex. Results of the autumn surveys conducted in all three Divisions (2J, 3K and 3L) by Canada from 1981 to 1996, showed that the proportion of the cod stock in the Regulatory Area at that time of year was less than 1%, on average, of the total Div. 2J+3KL biomass.

With respect to 2J3KL witch flounder, surveys indicated that the stock had declined by about 95% compared to the 1981-84 average when the stock was stable. The stock was under moratorium inside the Canadian zone since 1994.

To the ongoing request on the Greenland halibut stock components, surveys indicated that about 17% of the surveyed biomass was located in Div. 2GH, about 65% in Div. 2J+3K, and about 18% in Div. 3LMNO. About two-thirds of the estimated biomass was comprised of fish smaller than 36 cm, and the proportion of small fish in the biomass varied by Division.

The presentation was followed by further questions and requests for clarification by Contracting Parties.

More information on the Scientific Council advice to the Fisheries Commission can be found in Part III of this Annual Report.

Under items 18 and 19 of the Agenda, Management and Technical Measures for Fish Stocks in the Regulatory Area and Straddling National Fishing Limits, a consensus was reached in several meetings of Heads of Delegations regarding the TAC(s) and the measures as follows:

Cod 3M	2,000t
Redfish 3M	20,000t (However the quotas to Contracting Parties will remain at the same level as in 1997 totalling 26,000t. Each Contracting Party shall notify the Executive Secretary bi-weekly of catches taken by its vessels from this stock. The Executive Secretary shall notify without delay all Contracting Parties of the date on which, for this stock, accumulated reported catch taken by vessels of the Contracting Parties is estimated to equal 100 per cent of the TAC for that stock. At that date each Contracting Party, to which a quota has been allocated or which vessels are engaged in fishing under the "Others" quota, shall prohibit fishing by its vessels for that stock.)
American plaice 3M	no directed fishery
Shrimp 3M	effort limitation (with amendments in NAFO FC Working Paper 97/11)
Cod 3NO	no directed fishery
Redfish 3LN	no directed fishery
American plaice 3LNO	no directed fishery
Yellowtail flounder 3LNO	4,000t (The provisions of Part I, Section A.4b) of the NAFO Conservation and Enforcement Measures shall apply. FC Doc. 97/1)
Witch flounder 3NO	no directed fishery
Capelin 3NO	no directed fishery
Squid (Illex) (SA 3&4)	150,000t (The TAC would remain at 150,000t subject to adjustment where warranted by scientific advice.)
Shrimp 3LNO	no directed fishery (as per FC Working Paper 97/13)
Greenland halibut 3LMNO	20,000t
Cod 2J3KL in NRA	No directed fishery (with measures as outlined in NAFO FC Doc. 96/10 being applied when a decision is taken to allow the resumption of fishing for 2J3KL cod in the NRA.)
Witch 2J3KL in NRA	no directed fishing (as per FC Working Paper 97/10)

The Fisheries Commission adopted the Quota Table for 1998 (Annex 3).

Regarding item 20 of the FC Agenda, Formulation of Request to the Scientific Council for Scientific advice on the management of fish stocks in 1999, NAFO/FC Working Paper 97/18 was adopted which also incorporates language relating to the precautionary approach (Annex 4).

Regarding FC Agenda item 21, Transfers of Quotas between Contracting Parties, the Representative of Denmark (in respect of the Faroe Islands and Greenland) recalled his remarks dealing with the transfer of quotas between Contracting Parties (page 196, item 4.20 of the 1995 Meeting Proceedings) asking that this issue be kept on the FC agenda for the next meeting.

Closing Procedures (items 22-24)

Regarding FC Agenda item 22, it was agreed that the Fisheries Commission Annual Meeting in 1998 would take place in Lisbon, Portugal from 14-18 September.

Item 23, Other Business: a notional timetable was proposed for intersessional working group meetings. It was agreed that the Executive Secretary would specify dates for these working group meetings and seek concurrence of the Contracting Parties by mail.

Item 24, Adjournment; the Annual Meeting of the Fisheries Commission was adjourned at 12:30pm on 19 September 1997.

The list of actions and decisions by the Fisheries Commission at the 19th Annual Meeting is presented in Annex 5.

Annex 1. List of Participants

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Representative

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Annex 2. Agenda

I. Opening Procedure

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
7. Transparency of NAFO decision-making process (participation of inter-governmental and non-governmental organizations)
8. Election of Chairman and Vice-Chairman

III. Conservation and Enforcement Measures

9. Consideration on Improved Planning and Control of Research Vessels in the Regulatory Area
10. Consideration on the establishment of a permanent scheme for observers and satellite tracking (in the NAFO Regulatory Area)
11. Report of STACTIC on its activities during the current year (W.G. on Satellite Tracking and Review of the Conservation and Enforcement Measures)
 - a) Hail System
12. Report of STACTIC at the Annual Meeting
13. Implementation of precautionary approach to NAFO-managed stocks
14. Increase of inspection presence in the NAFO Regulatory Area
15. NAFO Quota Allocation Practice
16. Review of NAFO Rules regarding Discards

IV. Conservation of Fish Stocks in the Regulatory Area

17. Summary of Scientific Advice by the Scientific Council

- 18. Management and Technical Measures for Fish Stocks in the Regulatory Area
 - 18.1 Cod in Div. 3M
 - 18.2 Redfish in Div. 3M
 - 18.3 American plaice in Div. 3M
 - 18.4 Shrimp in Div. 3M

- 19. Management and Technical Measures for Fish Stocks Straddling National Fishing Limits
 - 19.1 Cod in Div. 3NO
 - 19.2 Redfish in Div. 3LN
 - 19.3 American plaice in Div. 3LNO
 - 19.4 Yellowtail flounder in Div. 3LNO
 - 19.5 Witch flounder in Div. 3NO
 - 19.6 Capelin in Div. 3NO
 - 19.7 Squid (*Illex*) in Subareas 3 and 4
 - 19.8 Shrimp in Div. 3LNO
 - 19.9 Greenland halibut in Div. 3LMNO
 - 19.10 If available in the Regulatory Area in 1998:
 - i) Cod in Div. 2J3KL
 - ii) Witch flounder in Div. 2J3KL

- 20. Formulation of Request to the Scientific Council for:
 - a) Scientific advice on the management of fish stocks in 1999

- 21. Transfer of Quotas Between Contracting Parties

V. Closing Procedure

- 22. Time and Place of the Next Meeting
- 23. Other Business
- 24. Adjournment

Annex 3. Quota Table

QUOTA TABLE. Total allowable catches (TACs) and quotas (metric tons) for 1998 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.

Contracting Party	Cod		Redfish		American plaice		Yellowtail		Witch		Capelin		Greenland halibut		Squid (Illex) ²	
	Div. 3M	Div. 3NO*	Div. 3M	Div. 3LN*	Div. 3M*	Div. 3LNO*	Div. 3LNO*	Div. 3LNO*	Div. 3NO*	Div. 3NO*	Div. 3NO*	Div. 3NO*	Div. 3LMNO	Subareas 3+4	Subareas 3+4	Subareas 3+4
1. Canada	16	0	650	0	0	0	3900 ³	0	0	0	0	0	3 000	N.S. ⁴		
2. Cuba	74	-	2 275	0	-	-	-	-	-	-	-	0	-	2 250		
3. Denmark (Faroe Islands and Greenland)	447	-	90	-	-	-	-	-	-	-	-	-	-	-		
4. European Union	997	0	4 030	0	0	0	80 ⁵	-	-	-	0	0	11 070	N.S. ⁴		
5. France (St. Pierre and Miquelon)	-	-	90	-	-	-	-	-	-	-	-	-	-	2 000		
6. Iceland	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
7. Japan	-	-	520	-	-	-	-	-	-	-	0	0	2 050	2 250		
8. Korea	-	-	90	-	-	-	-	-	-	-	-	-	-	2 000		
9. Norway	185	-	-	-	-	-	-	-	-	-	0	0	-	-		
10. Poland	77	-	-	-	-	-	-	-	-	-	0	0	-	1 000		
11. Estonia	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
12. Latvia	196 ¹	0	18 005 ¹	0	0	0	-	-	0	0	0	0	-	5 000 ¹		
13. Lithuania	-	-	-	-	-	-	-	-	-	-	-	-	2 550	-		
14. Russia	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
15. United States of America	-	-	90	-	-	-	-	-	-	-	-	-	-	2 000		
16. Others	8	0	160	0	0	0	20 ⁶	0	0	0	0	0	1 330 ⁶	3 500		
Total Allowable Catch	2 000	0	20 000 ⁷	0	0	0	4 000 ⁸	0	0	0	0	0	20 000	150 000 ⁹		

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 Of which no more than 40% (532 t) may be fished before 1 May 1998 and no more than 80% (1064 t) may be fished before 1 October 1998.

⁷ Each Contracting Party shall notify the Executive Secretary bi-weekly of catches taken by its vessels from this stock. The Executive Secretary shall notify without delay all Contracting Parties of the date on which, for this stock, accumulated reported catch taken by vessels of the Contracting Parties is estimated to equal 100 percent of the TAC for that stock. At that date each Contracting Party, to which a quota has been allocated or which vessels are engaged in fishing under the "Others" quota, shall prohibit fishing by its vessels for that stock.

⁸ Contracting Parties shall inform the NAFO Executive Secretary before 1 December 1997 of the measures to be taken to meet the advice of the NAFO Scientific Council.

⁹ The provisions of Part I, Section A.4b) of NAFO Conservation and Enforcement Measures shall apply (FC Doc. 96/1).

• No directed fishing - The provisions of Part I, Section A.4b) of NAFO Conservation and Enforcement Measures shall apply.

Annex 4. Fisheries Commission's Request for Scientific Advice on Management in 1999 of Certain Stocks in Sub-areas 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 1998 Annual Meeting, provide advice on the scientific basis for the management of the following fish and invertebrate stocks or groups of stocks in 1999:

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 (Sub-areas 3 and 4)
 Shrimp (Div. 3M)
 Greenland halibut (Sub-areas 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-type assessments, the status of the stocks 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_{1997} and F_{max} in 1999 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 1999 and the long term. Values of F corresponding to the reference points should be given. Uncertainties in the assessment should be evaluated.

- 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 on the stock should be evaluated in the context of management requirements for the long-term sustainability.
- 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 results should include the following:

- I. For stocks for which analytical-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 1999 over a range of fishing mortality rates (F) at least from $F_{0.1}$ to F_{max}
 - A graph showing spawning stock biomass at the beginning of 1999 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, $F_{0.1}$ and F_{max} should be shown.

3. *In 1996, the Fisheries Commission requested that the Scientific Council comment on Article 6 and Annex II of the Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks. Noting the progress made by the Scientific Council on the development of a framework for implementation of the Precautionary approach, the Fisheries Commission requests that the Scientific Council provide in their June 1998 report the following information for the 1998 Annual Meeting of the Fisheries Commission for all stocks under the responsibility of the Fisheries Commission (i.e. cod in 3M and 3NO, American plaice in 3M and 3LNO, yellowtail flounder in 3LNO, witch flounder in 3NO, redfish in 3M and 3LN, Greenland halibut in SA 2+3, capelin in 3NO, shrimp in 3M and squid in SA 3+4):*
 - a) the limit and target precautionary reference points described in Annex II indicating areas of uncertainty;
 - b) information including medium term consideration and associated risk or probabilities which will assist the Commission to develop the management strategies described in paragraphs 4 and 5 of Annex II in the Agreement;
 - c) information on the research and monitoring required to evaluate and refine the reference points described in paragraphs 1 and 3 in the Agreement Annex II; these research requirements should be set out in order of priority considered appropriate by the Scientific Council; and,
 - d) any other aspect of Article 6 and Annex II of the Agreement which the Scientific Council considers useful for implementation of the Agreement's provisions regarding the precautionary approach to capture fisheries.

4. The Fisheries Commission requests that the Scientific Council develop criteria to be evaluated during any consideration of possible fisheries reopenings.

5. 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. Information is also requested on the age composition of that portion of the stock occurring in the Regulatory Area.

6. The Fisheries Commission with the concurrence of the Coastal State requests that the Scientific Council review available information, including any Canadian assessment documentation *on the stock status, and provide advice on catch levels* for the 2J3KL witch

flounder resource. Any information pertaining to the relative distribution of the resource within the stock area, as well as changes in this distribution over time should also be provided.

7. *The Fisheries Commission requests that the Scientific Council undertake a review of the historical and current status of Illex squid in Subareas 3 and 4, and in Subareas 5 and 6, and to describe the major aspects of the biology and population dynamics of the species in these regions. The Council is further requested to describe the Illex fisheries in these regions and review the basis for considering Illex in SA 3, 4, 5 and 6 as a unit stock.*
8. *The Fisheries Commission requests that the Scientific Council provide information on the shrimp stock in 3LNO with regards to catches in recent years, bycatches of groundfish in such fisheries, abundance indices and the distribution of the stock. The Scientific Council is also requested to provide information on annual yield potential for this stock.*
9. *The Fisheries Commission requests the Scientific Council to evaluate the impact, in terms of changes in spawning biomass per recruit and yield per recruit, as well as the implication on effort in the short term and long term resulting from the use of a mesh size of 155mm versus 130mm for the 2+3 Greenland halibut stock in the NAFO Regulatory Area.*

**Annex 5. List of Decisions and Actions by
the Fisheries Commission
(19th Annual Meeting, 15-19 September 1997)**

Substantive issue (propositions/motions)	Decision/Action (FC Doc. 97/14, Part I; item)
1. Transparency in the FC decision-making process (Participation of Intergovernmental and Non-Governmental Organizations)	Noted that the issue was covered by the General Council; item 2.2
2. Election of Chairman and Vice-Chairman	Elected Mr P. Gullestad, Norway, Chairman and Mr D. Swanson, USA, Vice-Chairman for two years, 1998-1999; item 2.3
3. NAFO Conservation and Enforcement Measures (on presentation by STACTIC):	
- Improved planning and control of research vessels in the Regulatory Area	Discussed and withdrawn from the table; item 3.1
- Scheme for observers and satellite tracking; FC Doc. 97/11	Adopted for one year extension of the Pilot Project; item 3.2. (Noted: indication by Contracting Parties to review the scope of the scheme after 01 January 1999); item 3.2
- Implementation of automated satellite tracking system at the NAFO Secretariat	Agreed to call an intersessional W.G. meeting at the NAFO Headquarters (in Oct 1997); item 3.5
- STACTIC Report at the Meeting	Adopted; item 3.8
4. Implementation of Precautionary Approach to NAFO-managed stocks	Endorsed the Scientific Council Action Plan (SCS Doc. 97/14, pp. 36-37) and agreed to hold STACTIC W.G. Meeting in Spring 1998 (May 12-14, Copenhagen, Denmark)
5. Increase of inspection presence in the RA	Agreed to keep this item on the agenda for further discussion; item 3.10
6. NAFO Allocation (of fish quotas) Practice	Agreed that a Working Group meet intersessionally to continue discussion; Chairman H. Koster, EU; item 3.11 (W.G. to meet in Brussels, 4-6 March 1998) Note: This W.G. will consider as well the issue of chartering vessels as per GC report
7. NAFO rules regarding discards	Agreed to continue to address this issue at STACTIC meeting in future; item 3.12
8. TACs and Regulatory Measures for major stocks in the Regulatory Area for 1998	Discussed/Adopted; item 4.25
- Cod 2J3KL in RA; FC Doc. 97/10	no directed fishery
- Cod 3M	2,000 tons
- Redfish 3M	20,000 tons; notification bi-weekly catches to the Executive Secretary
- American plaice 3M	no directed fishery
- Cod 3NO	no directed fishery
- Redfish 3LN	no directed fishery

- | | |
|---|--|
| - American plaice 3LNO | no directed fishery |
| - Yellowtail flounder 3LNO | 4,000 tons; provisions of Part I.A.4b apply |
| - Witch flounder 3NO | no directed fishery |
| - Witch 2J3KL in the RA; FC Doc. 97/7 | no directed fishery |
| - Capelin 3NO | no directed fishery |
| - Squid (<i>Illex</i>) 3+4 | 150,000 tons; subject to scientific advice |
| - Greenland halibut 3LMNO | 20,000 tons |
| - Shrimp 3M; FC Doc. 97/8 | effort limitation |
| - Shrimp 3LNO; FC Doc. 97/9 | no directed fishery |
| 9. Schedule 1 – Quota Table, 1998; NAFO
Conservation and Enforcement Measures | Adopted; item 4.26 |
| 10. Greenland halibut quota increase | Adopted; on the basis of the available scientific
advice: item 4.28 |
| 11. Request to the Scientific Council for
Scientific Advice on management of fish
stocks in 1999; FC Doc. 97/13 | Adopted; item 4.33 |
| 12. Transfer of quotas between Contracting
Parties | Referred to the Annual Meeting 1998; item 4.34 |
-

STACTIC Working Group on Satellite Tracking

This intersessional meeting was held in accordance with the decision by the Fisheries Commission (FC Doc. 97/14, Part I, item 3.5) during 28-30 October 1997 at the NAFO Headquarters, Dartmouth, N.S., Canada. Complete proceedings of the Meeting can be found in FC Doc. 97/15 and in the Meeting Proceedings, 1997.

Opening Procedures (items 1-3 of the Agenda)

The Executive Secretary opened the Meeting and welcomed the Delegations from Canada, Estonia, European Union, Iceland, Japan, Norway, Russia and United States of America (Annex 1). He informed that the Chairman of the Working Group, D. Bevan (Canada), could not attend the Meeting and proposed to elect a Chairman.

O. A. Davidsen, delegate from Norway was elected to Chair the Working Group. Tony Blanchard (Canada) was appointed Rapporteur.

The agenda was adopted as attached in Annex 2.

Consideration of a hail system that can operate using satellite technology and establish the need for formats and data exchange protocols (item 4)

The Executive Secretary stated that there had been no changes to the hail system with respect to automation since the April meeting, and that no system was in place to receive satellite data at the NAFO Secretariat. The Executive Secretary also stated that in the future there may be many inspection vessels in the NRA, and there should be agreement on an automatic communication system to be used to communicate hails to Contracting Parties with an inspection presence. The Secretary added that there should be a connection between the hail system and satellite tracking as outlined in Part VI of the Conservation and Enforcement Measures.

It was noted that there are two systems;

- Hail system that uses satellites or not;
- Vessel Monitoring System

There was a discussion concerning the formats for messages. It was **agreed** that things should be kept simple and standard formats should be used when forwarding messages to the Executive Secretary. To map the reporting requirements into a possible standardized format, the Working Group took the North Atlantic Fisheries Ministers Conference (NAFMC) recommendations of May 1997 as their point of reference.

Consideration of hardware and software which should be installed at the NAFO Secretariat (item 5)

The Working Group agreed that there are a variety of options for message transfer, each with a different degree of security. When choosing the methods of communication, Contracting Parties should keep in mind the level of security required. Currently, the Secretariat sends and receives hails from the EU via X-25 and kermi, and sends hails to Canada via E-mail. The Working Group is confident that the automatic message handling is possible and can be achieved at the Secretariat.

The Working Group identified the X-25 protocol as one possible medium to transfer data between Contracting Parties and the Secretariat.

Consideration of a standardized format for satellite tracking reports at the Secretariat (item 6)

A group developed standard report formats (Annex 3), and the delegate from the EU stated that this file format could be used as the standard for the remainder of the pilot project. Such a format offers flexibility for additional data elements to be represented also.

There was some discussion as to the need of return messages for hails sent to the Secretariat. It was agreed that there should be an option of error messages including: message unreadable, inconsistent data, and sequence error.

Review of appropriateness of the available data bases with respect to vessel positions and hails with a view to improving the data base and its appropriate distribution (item 7)

The Executive Secretary stated that there is no guidance from the Conservation and Enforcement Measures for data management other than the requirement for the distribution of hails to Contracting Parties with an inspection vessel. All hail data are kept in a data base (ACCESS) at the Secretariat.

The Working Group was satisfied with the present approach of the relational data base by the Secretariat. However, the working group encourages the Secretariat to look into the matter of having a consultant establish interfaces with a Spread Sheet such as Excel, in the event of future information requirements from the Secretariat. It should also be noted that the Secretariat does not have authority from any specific regulation or provision to make analysis of any data.

Costs associated with the implementation of satellite tracking/hails by the NAFO Secretariat (item 8)

The Working Group noted that funds totalling \$35,000 Cdn were allocated for the purposes of satellite tracking technology. The Working Group felt that the budget allocated to the task is adequate for the 1998 period, although there may be some limits. The working group also noted that although the allocated funds are sufficient for 1998, it should be recognized that a permanent budget allotment will be required if a permanent system is adopted.

In view of the limited funding, and the temporary nature of the pilot project, the working group recommended that where practical, the Secretariat lease rather than purchase equipment.

Recommendations to the Fisheries Commission and General Council (finance) (item 9)

Standard satellite tracking reports should be utilized during the 1998 trial period based on recommended formats (Annex 3). It was the view of the majority of the working group that a contracted outside service provider would be the best option to handle the communication aspect (between Contracting Parties and Secretariat) of the satellite tracking pilot project. It was noted that the possibility exists that a contracted service provider to handle the communication aspect can be located wherever found appropriate. The data received at the Secretariat will be processed and distributed by the Secretariat.

It was recommended that Hail messages sent from Contracting Parties to the NAFO Secretariat conform with the attached annex (Annex 4) entitled "Example of Formats Which Would Allow for the Electronic Transmission of NAFO Hails from Contracting Parties to the NAFO Secretariat."

Canada has agreed to assist the Secretariat with any informatics problem and there was a general consensus that the Secretariat could call upon any Contracting Party with relevant experience for assistance.

Other business (item 10)

A presentation was made by a Canadian information technology firm "Satlantic" on vessel detection with synthetic aperture radar.

Adjournment (item 11)

The meeting was adjourned at 1630 hrs on 30 October 1997.

Annex 1. List of Participants

CANADA

Head of Delegation

B. Coughlan, Dept. of Fisheries and Oceans, 200 Kent Street, Ottawa, Ontario K1A 0E6

Advisers

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R. Cosh, Dept. of Fisheries and Oceans, 200 Kent Street, Ottawa, Ontario K1A 0E6

DENMARK (in respect of Faroe Islands and Greenland)

Head of Delegation

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Adviser

D. Weihe, Vaktar-og Bjargingartaenastan, Yviri Vid Strond 6, Torshavn, Faroe Islands

ESTONIA

Head of Delegation

A. Sirk, Fisheries Department of the Ministry of Environment, Kopli 76, Tallinn EE-0004

EUROPEAN UNION (EU)

Head of Delegation

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Adviser

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ICELAND

Head of Delegation

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JAPAN

Head of Delegation

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NORWAY

Head of Delegation

O. A. Davidsen, Fiskeridirektoratet, P.O. Box 185, N-5002 Bergen

RUSSIA**Head of Delegation**

V. Mishkin, General Director, "Complex Systems", 5, Kominterna str., P. O. Box 183038, Murmansk

Advisers

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E. N. Samoilova, PINRO, 6 Knipovich str., Murmansk

B. M. Shatochine, "Complex Systems", 5, Kominterna str., P. O. Box 183038, Murmansk

UNITED STATES OF AMERICA**Head of Delegation**

K. Rodrigues, Senior Fishery Policy Analyst, National Marine Fisheries Service, U.S. Dept. of Commerce, 1 Blackburn Dr.,
Gloucester, MA 01938

Adviser

M. McSherry, National Marine Fisheries Service, Northeast Regional Law Enforcement Office, 166 Water St., Woods Hole,
MA 02543

SECRETARIAT

L. I. Chepel, Executive Secretary

T. Amaratunga, Assistant Executive Secretary

G. Moulton, Statistical Officer

B. Cruikshank, Senior Secretary

Annex 2. Agenda

1. Opening of the Meeting by the Chairman, O. A. Davidsen (Norway)
2. Appointment of Rapporteur
3. Adoption of Agenda
4. Consideration of a hail system that can operate using satellite technology and establish the need for formats and data exchange protocols
5. Consideration of hardware and software which should be installed at the NAFO Secretariat
6. Consideration of standardized format for satellite tracking reports at the NAFO Secretariat
7. Review of the appropriateness of the available data bases with respect to vessel positions and hails with a view to improving the data base and its appropriate distribution
8. Costs associated with implementation of satellite tracking/hails by the NAFO Secretariat
9. Recommendations to the Fisheries Commission and General Council (finance)
10. Other business
11. Adjournment

Annex 3. Standardized File Format for Satellite Tracking Reports at the NAFO Secretariat

Definition of mandatory data elements

Data Element	Field Code	Maximum Width	Mandatory/Optional	Definition/Remarks
Start of Record	SR		M	
From	FR	3	M	Alpha-3 ISO country code
Addressee	AD	4	M	XNW
Sequence Number	SQ	4	M	
Name	NA	40	M	Vessel detail
International radio call sign	RC	8	M	Vessel detail
External identification	XR	14	M	Vessel detail
Flag State	FS	3	M	Alpha-3 ISO country code
Date	DA	8	M	YYYYMMDD
Time	TI	4	M	HHMM
Latitude	LA	5	M	NDDMM
Longitude	LO	6	M	WDDDDMM
Type of Message	TM	3	M	ENT/EXI/MOV
NAFO Division*	DI	2	M	NAFO division in which the vessel has entered
End Record	ER		M	

*to be left blank if the report is an "exit"

Definition of optional data elements

Data Element	Field Code	Maximum Width	Mandatory/Optional	Definition/Remarks
Name of the Master	MA	30	O	
Target Species	DS	3	O	FAO codes; allowance for multiple main species

Note: Character set: ISO 8859.1. A data transmission is structured in the following manner: - a double slash ("/") and a field code indicate the start of a data element; - a slash ("/") separates the field code and the data. Optional data elements have to be inserted between "Start of record" and "End of record".

Example of messages based on the standardized file format

```
//SR//FR//NOR//AD//XNS//SQ345//RC//FLN//XR//VI-5943//NA//VESSEL NAME//
FS/RUS//DA//YYMMDD//TI//0400//TM//MOV//DI//3M//LA//N472//LO//W04640//ER//
Optional elements: //MA//MASTERS NAME//DS//DIRECTED SPECIES//
```

NAFO Regulations: PART III.E. AND VI.B. OF THE CONSERVATION AND ENFORCEMENT MEASURES APPLIES

**Annex 4. Example of Formats Which Would Allow for the Electronic
Transmission of NAFO Hails from Contracting Parties
to the NAFO Secretariat**

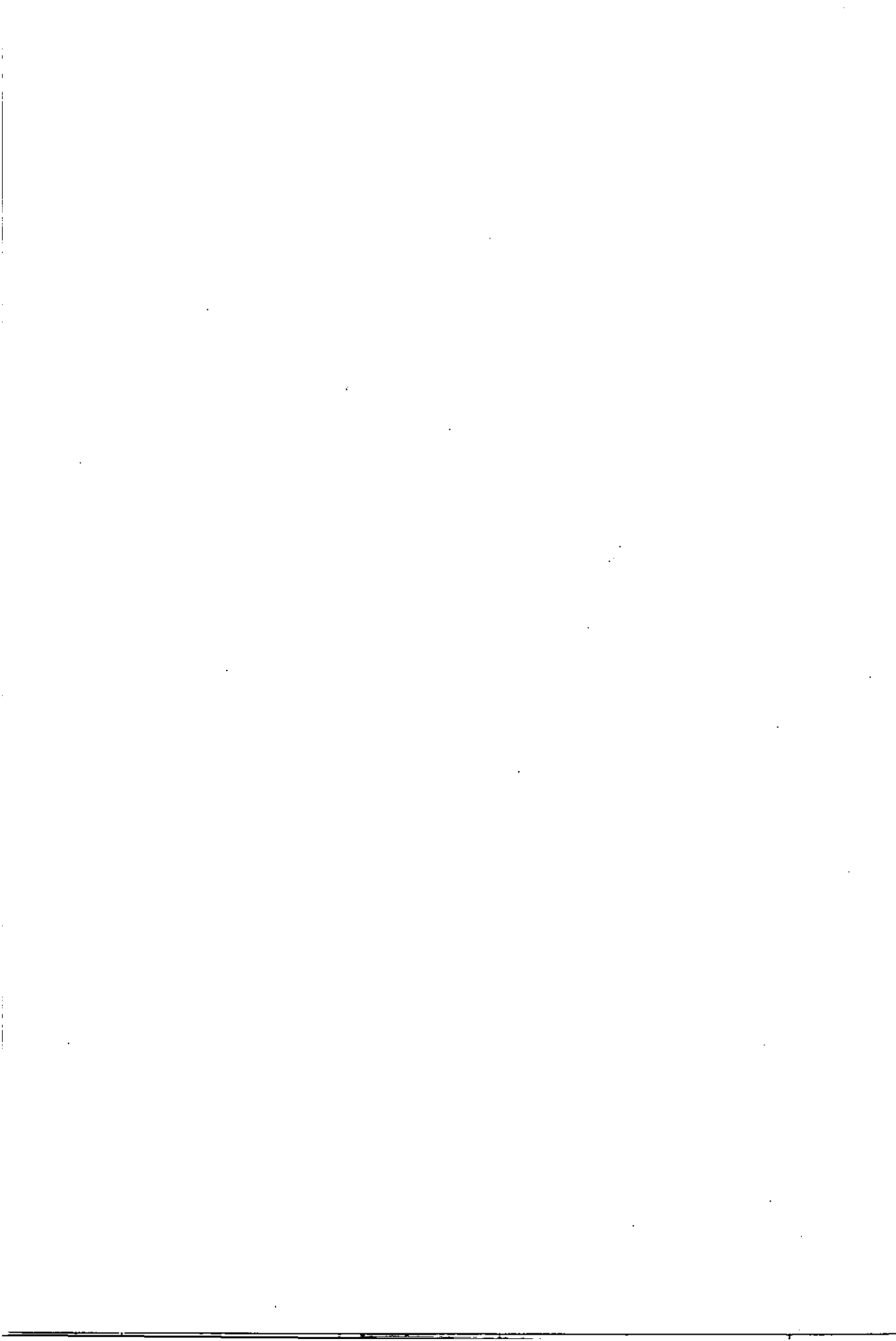
NOTES

- a) The formats herein conform with the requirements for the NAFO Hails System as set out in FC Document 97/1 Part III Annex I Hail System Message Format.
- b) The formats consist of variable length delimited records, and are based on systems currently in use in the EU, Iceland and Norway.
- c) The variable length record is preferred over a fixed length record as some Contracting Parties collect more information from their vessels than is required by NAFO, and are forwarding the entire record to NAFO. The format is conducive to extraction of the required data fields by the receiving parties.
- d) The following convention is used in this paper: //FIELD NAME/field value//, where the field name is shown in uppercase, followed by the character "/", followed by the field value in lowercase. Fields are separated by "//".
- e) Each record begins with the string //SR// to indicate the Start of the Record.
- f) Each record ends with the string //ER// to indicate the End of the Record.
- g) Character fields (CHAR) shall conform with the ISO 8859.1 character set standard.
- h) Country codes used for addressee (AD) and sender (FR) shall conform with the ISO 3166 (1993) standard. E/F 7.3 states that user-assigned country codes shall start with the character "X", therefore it is proposed that the code XNS be used to designate the NAFO Secretariat, the addressee for hail messages.

NAFO HAILS SYSTEM - NAFO FC Document 97/1 Part III Annex I Hail System Message Format

1.1 ENTRY/MOVE/TRANZONAL/EXIT/TRANSHIPMENT
(as per Part III.E of the NAFO Conservation and Enforcement Measures)

//SR			Start Record
//FR/from	(ISO-3)		
//AD/addressee	XNS		
//SQ/sequence number	NUM(4)		
//NA/name of vessel	CHAR(40)		
//RC/call sign	CHAR(8)		
//XR/external identification letters and numbers	CHAR(14)		
//DA/date	CHAR(8)	YYYYMMDD	
//TI/time	NUM(4)	HHMM UTC	
//LA/latitude	CHAR(5)	NDDMM	
//LO/longitude	CHAR(6)	WDDDMM	
//TM/indication of the message code	CHAR(3)	ENT	
//DI/NAFO Division into which the vessel is about to enter.	CHAR(2)		
//HO/total round weight of fish by species (3 alpha codes) on board in kilograms rounded to the nearest 100 kilograms. Allow several pairs of fields, consisting of species + weight, with each field separated by a space. e.g. //HO/species weight species weight species weight//			
	SPECIES	CHAR(3)	FAO Codes
	WEIGHT	NUM(7)	
//MA/name of the Master	CHAR(30)		
//DS/directed species (target species)	CHAR(3)	FAO Codes	
Allow several species to be entered, with the values separated by spaces, e.g. //DS/species species species//			
//ER//	-		End Record



PART III

(pages 117-176)

Activities of the Scientific Council in 1997

List of Meetings

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

- Scientific Council; Keddy's Dartmouth Inn, Dartmouth, Nova Scotia, Canada, 4-19 June.
- Symposium "What Future for Capture Fisheries - A Shift in Paradigm: Visioning Sustainable Harvests from the Northwest Atlantic in Twenty-first Century", Memorial University of Newfoundland, St. John's, Newfoundland, Canada, 10-12 September.
- Scientific Council Annual Meeting; Hotel Newfoundland, St. John's, Newfoundland, Canada, 15-19 September.
- Scientific Council; NAFO Headquarters, Dartmouth, Nova Scotia, Canada, 14-17 November.



Scientific Council Meeting

The Scientific Council met at the Keddy's Dartmouth Inn, 9 Braemar Drive, Dartmouth, Nova Scotia, Canada during 4-19 June 1997, to consider the various matters listed in its Agenda (SCS Doc. 96/19).

Representatives attended from Canada, Denmark (in respect of the Faroe Islands and Greenland), European Union (France, Germany, Portugal, Spain and United Kingdom), Japan, Russian Federation and the United States of America (Annex 1).

The Assistant Executive Secretary, T. Amaratunga, was appointed rapporteur.

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

In introducing the plan of work, the Chairman described the approach being taken by the Council, as in the 1996 meetings, will be such that STACFIS will conduct the assessments and provide the Designated Experts guidance on developing advice. The Council will address the tasks of developing prognoses on those assessments, and providing advice and recommendations. Accordingly, the STACFIS report will contain the assessment results and that report will be presented for consideration by the Council.

FISHERIES AND ENVIRONMENT

Data given by Dr. Johanne Fischer of Memorial University from groundfish scientific surveys on the continental shelf of northeast Newfoundland (Div. 2J and 3KL) indicate the relationship between abundance of fish species at individual stations, bottom temperature, and depth in the period 1978 to 1993. This period was one of declining sea temperatures and heavy fishing pressure over the Newfoundland Shelf. Environmental stress (described as decrease in abundance and/or average size of fish) during this time appeared to influence shape and width of the realized niche space. Preliminary results indicate that an examination of shift in niche space might serve not only as an additional indicator for environmental stress but also help in predicting fish distribution over large areas.

High interannual variability has been common in Greenland air temperatures, thus the return to above normal temperatures for the first time in almost a decade should not necessarily be taken as the beginning of a long-term warming trend. Sea temperatures on Fylla Bank showed significant warming with the deviation from the mean for the 0-200 m layer being almost +1.6K and the second highest value since the record began in the early-1960s. This warming is believed to be associated not only with the increase in air temperatures but also with increased advection of warm water by the Irminger Current into the Labrador Sea region along the West Greenland slope. The air temperature and sea ice trends are related to the North Atlantic Oscillation (NAO) Index.

Temperatures at Station 27 were warmer than average in January continuing the conditions observed in 1996 but the waters cooled through and into the spring. Salinities were fresher than normal during the late winter and early spring. Ocean temperatures on the Grand Bank and along the east coast of Newfoundland were generally below normal (up to 1K) in the upper 100 m of the water column. On the Bonavista Line, the Cold Intermediate Layer (CIL) contained temperatures below -1.5°C, but the CIL area was near normal. In general, meteorological and ice conditions during late autumn of 1996 and early 1997 resulted in a continuation of moderate oceanographic conditions during early 1997.

Monthly monitoring of surface and bottom temperatures on a transect across the Middle Atlantic Bight revealed the lowest values in the 21 year record. The annual average anomaly was -1.9K at the surface and -0.8K near bottom. Surface salinities along this same transect were also at a minimum (1.17 psu below the 1978-92 mean). Near-surface temperatures across the Gulf of Maine transect were also cooler than normal by 1.1K but in contrast the near-bottom water was 0.2K above normal.

Changes in the demersal fish assemblages off Greenland and their relationship with changes in near-bottom temperatures were explored based upon groundfish surveys during 1982-96. The near average or warmer near-bottom temperatures (using stratum means) did not indicate any unfavourable environmental conditions for fish growth and reproduction during the 1990s.

Environmental Conditions in 1996

The overview presentation reported that annual air temperatures were above normal in 1996 in the Labrador Sea region and at their highest level in over a decade. At the southern boundary of NAFO, air temperatures were slightly colder than normal.

The atmospheric circulation pattern weakened resulting in the anomaly of the NAO index being negative. The annual decrease in the NAO index was the largest in the over 100-year record.

As observed in the later months of 1995, above normal temperatures were observed throughout most of the water column at Station 27 during 1996. Temperatures were the warmest in over a decade.

The volume extent of the CIL water off Newfoundland during the summer was below the long-term mean and was near its lowest value. There was, however, a slight increase compared to 1995. A below normal amount of CIL water was observed everywhere from southern Labrador to the Grand Bank. The CIL waters in the Gulf of St. Lawrence remained cold and their horizontal extent over the bottom of the Magdalen Shallows continued to be relatively large. Some moderation was observed as temperatures rose slightly and the area of ocean bottom covered by temperatures <0 and $<1^{\circ}\text{C}$ declined.

Cold waters were observed near-bottom and at intermediate waters over the northeastern Scotian Shelf and off southwestern Nova Scotia continuing a trend that began in the mid- to late-1980s. There was evidence of slight warming relative to past years.

FISHERY SCIENCE

General Review of Catches and Fishery Trends

The Council again expressed its serious concerns with non-availability of STATLANT 21A data for the assessment work. These concerns and the statements made by STACREC will be conveyed to the Fisheries Commission and its Standing Committee on International Control (STACTIC) during its meeting of 24-26 June 1997 in Copenhagen. The Council once again regretted that the general review of fishery trends could not be adequately completed at this meeting, and the usual long-term summary by Division will be omitted from this report.

Note (by the NAFO Secretariat): The general fishery trend in 1996-1997 has been a drastic decrease of the number of fishing vessels and their catches in the NAFO Regulatory Area. As the result, all TAC(s) in the NAFO Area have been utilized in the range of 2-72% or on average 29% only. This is clearly demonstrated in the table below:

(from NAFO monthly reports)
1997

Contracting Party	Cod 3M		Redfish 3M		Redfish 3LN		G. halibut 3LMNO	
	Quota	Catch	Quota	Catch	Quota	Catch	Quota	Catch
1. Bulgaria	-	-	-	-	-	-	-	-
2. Canada	47	0	650	0	4 686	1	3 000	1 186
3. Cuba	222		2 275		1 078		-	
4. Denmark (Faroe Islands and Greenland)	1 342	0	90	0	-	0	-	0
5. European Union	2 992	1 670	4 030	334	374	171	11 070	11 055
6. France (St. Pierre et Miquelon)	-		90		-		-	
7. Iceland	-	0	-	0	-	0	-	0
8. Japan	-	0	520	211	-	68	2 050	1 857
9. Korea	-		90		-		-	
10. Norway	555	0	-	0	-	0	-	0
11. Poland	231	0	-	0	-	0	-	0
12. Estonia		0		0		0		0
13. Latvia	588 ¹	0	18 005 ¹	0	4 796 ¹	0	-	0
14. Lithuania		0		0		0	-	0
15. Russia		0		0		0	2 550	375
16. United States of America	-		90		-		-	
15. Others	23		160		66		1 330	
TAC and Catch	6 000	1 670	26 000	545	11 000	1 618	20 000	14 473
% of utilization of TAC		28		2		2		72

¹"Black quota"

The data from the above table indicate that all stocks of the Regulatory Area have not been overfished in 1997. The stocks recommended for moratoria, "no directed fishery", (Cod, A. plaice, Yellowtail, Witch, Capelin) were taken in small quantities of by-catch in the amount of 100-200t per year. The similar trend of fishing/catches should be noted for 1996.

Assessment of Finfish Stocks and Squid

The Council agreed on the assessments of 19 (18 finfish and 1 squid) 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 summary sheets on pages 122-134.

Cod in Divisions 2J, 3K and 3L

In the 1996 assessment of the stock, STACFIS determined that the stock continued to remain at an extremely low level. The 1996 status of the Div. 2J and 3KL cod stock is updated based on an additional year of data from the research vessel bottom trawl survey, sentinel survey, inshore acoustic surveys and prerecruit surveys.

Prior to the 1960s the Div. 2J+3KL cod stock supported fisheries catching from 200 000 to 300 000 tons annually. During the 1960s good recruitment along with high exploitation rates resulted in catches averaging about 580 000 tons. However, the stock was in a period of decline from the 1960s until the mid-1970s. Reduced exploitation and some improved recruitment after that time allowed the stock to increase until the mid-1980s, when catches were about 230 000 tons. With the subsequent stock decline, catches decreased and in 1992 only 41 000 tons were landed as a result of closure of the fishery in mid-1992. A Canadian food and subsistence fishery was permitted in 1993 and part of 1994 but not in 1995. A limited fishery for scientific purposes (Sentinel Survey) caught 163 tons in 1995 and 397 tons in 1996.

Recent catches and TACs ('000 tons) are as follows:

Year	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Fixed gear catch	74	80	102	103	117	61	12	9 ¹	1.3 ¹	0.3 ^{1,2}	1.7 ¹
Offshore catch	193	160	167	151	103	111 ²	29 ^{2,3}	2 ^{1,2}	0.5 ^{1,2}	0 ¹	0 ¹
Total Catch	267	240	269	254	220	172	41	11 ¹	1.4 ¹	0.3 ¹	1.7 ¹
TAC	266	256	266	235	199	190	120 ⁴	0 ⁴	0 ⁴	0 ⁴	0 ⁴

¹ Provisional.

² Includes reported landings and Canadian surveillance estimates.

³ Fishery closed by EU in June 1992.

⁴ Moratorium on Canadian fishing became effective in July 1992.

Sentinel survey and seal consumption: A Sentinel Survey was conducted by fisher at 66 inshore sites in Div. 2J and 3KL in summer-autumn 1996. Catch rates were higher in all Divisions in 1996 over 1995. This increase in catch rate was made up primarily of fish greater than 50 cm rather than an increase in the catch rate of small fish, suggesting that in 1996 the remaining fish in the population were more densely aggregated in the inshore area, rather than any significant increase in recruitment.

Consumption of fish by seals in the stock area has been increasing in recent years. The total estimate for Div. 2J+3KL in 1996 is 2.5 million tons. This is estimated to comprise 108 323 tons of cod <40 cm in length and 1 427 tons of cod >40 cm, excluding consumption by hooded seals.

Summary: The research vessel survey continues to show an extremely low abundance of cod throughout the survey area. Sentinel catch rates were higher in 1996 than 1995 but showed spatial differences in both years, being very low in Div. 2J, variable in Div. 3K and generally higher in 3L. The 1990 year-class has been noticeable in several data sets in the inshore over the last 5 years. However, this year-class has been rare offshore. An acoustic survey in Trinity Bay (Div. 3L) in 1996 suggests that the aggregation of fish is much smaller than it was in 1995. The prerecruit indices indicate that all year-classes after 1994 are very low. Initial indications are that the 1996 year-class may be exceptionally weak. There is no indication to suggest that the Div. 2J+3KL cod stock has begun to recover. Instead it is possible, based on estimates of recent recruitment, that the biomass may continue to decline. Based on the seal consumption study, it is possible that seal consumption may impede the recovery.

Cod in Division 3M

Fishery and Catches: Catches exceeded the TACs from 1988 to 1994, however were below the TAC in 1995 and 1996. Large numbers of small fish were caught by the trawl fishery in the most recent years. By-catches were estimated to be low in the shrimp fishery since 1993.

	Catch ¹ (^{000 tons)}	TAC (^{000 tons)}	
		Recommended	Agreed
1994	30	0	11
1995	10	0	11
1996	3	0	11
1997		0	6

¹ Provisional.

State of the Stock: The total stock biomass in 1996 is the lowest on record. Recruitment at age 3 was poor in 1995 and 1996 and it is also expected to be poor in both 1997 and 1998. The decrease in the age-at-maturity of the stock is interpreted as a reaction of the population to the decline of the stock.

Recommendations: No directed fishery for cod in Div. 3M in 1998. Also, by-catch of cod in fisheries directed to other species on Flemish Cap must be kept at the lowest possible level.

Special Comments: The opportunistic recruitment based fishery for cod in Div. 3M has been the main cause of the present stock status. Catch being less than the TAC in 1995 and 1996 and the substantial reduction of the fleet currently fishing in Div. 3M are signs of depletion of the stock. Scientific Council did not determine if the low level of by-catch in the shrimp fishery only reflects the current low levels of the recruitment of cod stock.

Cod in Divisions 3N and 3O

Background: This stock occupies the southern part of the Grand Bank of Newfoundland. Cod are found over the shallower parts of the Bank in summer, particularly in the Southeast Shoal area (Div. 3N) and on the slopes of the Bank in winter as cooling occurs.

Fishery and Catches: There has been no directed fishery since mid-1994.

	Catch ¹ (^{000 tons)}	TAC (^{000 tons)}	
		Recommended	Agreed
1994 ²	2.7	6.0	6.0
1995	0.2	0.0	0.0
1996	0.2	0.0	0.0
1997	-	0.0	0.0

¹ Provisional.

² No directed fishery after mid-year.

State of the Stock: The stock was at an all time low in 1996 with weak representation from all year-classes.

Recommendation: There should be no directed fishing for cod in Div. 3N and 3O in 1998. By-catches of cod in fisheries targeting other species should be kept at the lowest possible level.

Redfish in Subarea 1

Recent and historical catch figures do not include the weight of substantial numbers of small redfish discarded by the trawl fisheries directed to shrimp.

Recent catches ('000 tons) are as follows:

Year	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Catch	5	1	1	1	0.4	0.3	0.3	0.8 ¹	1 ¹	1 ¹	0.9 ¹

¹ Provisional.

Assessment Results: In view of dramatic declines in survey abundance and biomass indices of golden and deep sea redfish (≥ 17 cm) to an extremely low level along with significant reduction in fish sizes, it is concluded that the stocks of golden and deep sea redfish in Subarea 1 remain severely depleted and there are no signs of any recovery although pre-recruits (< 17 cm) were found to be very abundant as indicated in the surveys. Considering the substantial numbers of redfish caught as by-catch in the shrimp fishery, concern must be expressed about the continuous recruitment failure.

Redfish in Divisions 3L and 3N

Background: There are two species of redfish, *Sebastes mentella* and *Sebastes fasciatus* which occur in Div. 3LN and are managed together. These are very similar in appearance and are reported collectively as redfish in statistics. The relationship to adjacent NAFO Divisions, in particular Div. 3O, is unclear and further investigations are necessary to clarify the integrity of the Div. 3LN management unit.

Fishery and Catches: The 1996 catch was about 500 tons, the lowest historically. This was only the third consecutive year since 1985 that the TAC was not exceeded. The reduction was primarily due to reduced effort. A portion of the catches, in some years substantial, have been taken by non-Contracting Parties from 1987 to 1994. These countries have not fished in Div. 3LN since 1994.

	Catch ¹ ('000 tons)	TAC ('000 tons)	
		Recommended	Agreed
1994	6	14	14
1995	2	14	14
1996	0.5	11	14
1997		11	11

¹ Provisional.

State of the Stock: Based on the available data, the stock appears to be at a very low level.

Recommendation: No directed fishing and by-catches be kept at the current low level. Recognizing that there was unanimous agreement on all other aspects of this assessment report, the Council noted the scientists of the Russian delegation did not agree with this recommendation.

Special Comments: At present, the relationship between redfish in Div. 3LN and 3O remains unresolved. If such a relationship exists, unregulated fishing in the Regulatory Area of Div. 3O could seriously impact the resource in Div. 3LN including its rate of recovery.

Redfish in Division 3M

Background: There are three species of redfish which are commercially fished on Flemish Cap: deep water redfish (*Sebastes mentella*), golden redfish (*Sebastes marinus*) and Acadian redfish (*Sebastes fasciatus*). The term beaked redfish is used for *S. mentella* and *S. fasciatus* combined. All redfish species are reported combined in the commercial fishery.

Fishery and Catches: Directed fishing on redfish in Div. 3M in 1996 was mainly conducted by non-Contracting Parties (Korean crewed), EU-Portugal and Japan. From 1987 to 1992 (excluding 1988) annual catches were greater than 40 000 tons. Catches have since declined to 5 800 tons in 1996.

	Catch ¹ (‘000 tons)	TAC (‘000 tons)	
		Recommended	Agreed
1993	29	20	30
1994	11	20	26
1995	13	20	26
1996	6	20	26

¹ Provisional.

State of the Stock: Since 1991, biomass and abundance estimates from the EU survey suggests stability for the golden and Acadian redfish, and a continuous increase of the deep sea redfish stock since 1993.

Recommendation: The level of catches in the period 1975 to 1985, when stable conditions were observed, was about 20 000 tons. Scientific Council recommends that total catches of redfish in Div. 3M not be allowed to exceed 20 000 tons in 1998 and by-catch of juvenile redfish in the shrimp fishery should be kept at the lowest possible level.

Special Comments: Catch the recommended TAC of 20 000 tons would result in a significant increase in fishing effort targeted on redfish. Scientific Council is not able to evaluate the effect of such a development. The survey trawable biomass now consist mainly of immature fish. It would not be prudent to allow an increase in the exploitation of these young redfish as they will not reach maturity for another few years.

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

Background: Historically, American plaice in Div. 3LNO has comprised the largest flatfish fishery in the Northwest Atlantic.

Fishery and Catches: In most years the majority of the catch has been taken by offshore otter trawlers. There was no directed fishing in 1994 and there has been a moratorium from 1995 to 1997.

	Catch ¹ (^{000 tons)}	TAC (^{000 tons)}	
		Recommended	Agreed
1994	7	4.8 ²	4.8 ²
1995	0.6	0	0
1996	0.9	0	0
1997		0	0

¹ Provisional.

² No directed fishery.

State of the Stock: Canadian spring and autumn surveys showed a large decline in biomass since the mid-1980s. Spanish surveys in the Regulatory Area of Div. 3NO showed a large decline in biomass from 1996 to 1997. Total mortality remains high and the stock is composed mainly of fish that are less than 6 years old. The stock is at a low level.

Recommendation: No fishing on American plaice in Div. 3LNO in 1998.

American Plaice in Division 3M

Background: The stock occurs mainly at depths shallower than 400 m on Flemish Cap.

Fishery and Catches: Catches are taken mainly by otter trawl, primarily a by-catch fishery of the Contracting Parties since 1992. About half of the catch was taken by non-Contracting Parties in 1996.

	Catch ¹ (^{000 tons)}	TAC (^{000 tons)}	
		Recommended	Agreed
1994	0.7	1	1
1995	1.3	1	1
1996	0.3	0	0
1997	-	0	0

¹ Provisional.

State of the Stock: The stock appears to be at a very low level. It is anticipated that SSB will not increase in the near future because of recent poor recruitment.

Recommendation: There should be no directed fishery on this stock in 1998. By-catch should be kept at the lowest possible level.

Witch Flounder in Divisions 3N and 3O

Background: The stock mainly occurs in Div. 3O along the deeper slopes of the Grand Bank. It has been fished mainly in winter- and spring-time on spawning concentrations.

Fishery and Catches: Catches exceeded the TAC by large margins during the mid-1980s, but since then have been near the level of the TAC. The catches in 1994 and 1995 were 1 100 tons and 300 tons, respectively, including unreported catches. Estimated catch in 1996 was about 300 tons.

	Catch ¹ (‘000 tons)	TAC (‘000 tons)	
		Recommended	Agreed
1994	1.1	3	3 ²
1995	0.3	0	0
1996	0.3	0	0
1997	-	0	0

¹ Provisional.

² No directed fishing allowed.

State of the Stock: Stock appears to remain at a low level although there may have been some slight improvement between 1996 and 1997.

Recommendation: No fishing on witch flounder in 1998 in Div. 3N and 3O to allow for stock rebuilding. By-catches be kept at the lowest possible level.

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

Background: The stock is mainly concentrated on the southern Grand Bank and is recruited from the Southeast Shoal area nursery ground, where the juvenile and adult components overlap in their distribution.

Fishery and Catches: There was a moratorium on directed fishing from 1994 onward and small catches were taken as by-catch in other fisheries. Prior to the moratorium TACs had been exceeded each year from 1984 to 1993.

	Catch ¹ (‘000 tons)	TAC (‘000 tons)	
		Recommended	Agreed
1994	2	7	7 ²
1995	0.1	0	0 ²
1996	0.3	0	0 ²
1997	-	0	0 ²

¹ Provisional.

² No directed fishery.

State of the Stock: Based on 6 additional surveys since the 1996 assessment, the current view is that the stock size has increased since 1994 although the level of this increase could not be quantified. The stock is perceived to be lower than the levels of the 1980s.

Recommendation: The stock should be able to sustain a limited fishery in 1998, and the TAC for 1998 not exceed 4 000 tons. This fishery should be carefully monitored and sampled and should take place only after the peak spawning period of June-July in 1998 to allow the full spawning potential of the stock to be realized. Because the stock size in Div. 3L is low, the fishery should be confined to the main component of the stock in Div. 3NO.

Greenland Halibut in Subarea 0 + Divisions 1B-1F

The annual catches in Subarea 0 + Div. 1B-1F, were in the period 1984-88 below 2 600 tons. From 1989 to 1990 catches increased from 2 200 tons to 15 500 tons and then decreased.

Recent TACs and catches ('000 tons) are as follows:

Year	1987	1988	1989	1990	1991	1992	1993 ¹	1994 ¹	1995 ¹	1996 ¹	1997
Recommended TAC ²	25	25	25	25	25	25	25	25	11	11	11
SA 0	+	1	1	15	8	12	7	4	5	6	
Div. 1BCDEF	1	2	1	1	2	5	4	6	6	5	
Total	1	3	2	16	10	18	11 ³	10 ⁴	11 ⁵	10 ⁶	

¹ Provisional.

² In the period 1986-1994 the TAC included Div. 1A.

³ Including 739 tons non-reported.

⁴ Including 780 tons non-reported.

⁵ Including 3 308 tons non-reported.

⁶ Including 3 153 tons non-reported.

Assessment: Although data for 1996 are very limited they do not indicate changes in the stock compared to 1995, i.e. the decline in the stock observed until 1994 seems to have stopped and the stock has apparently stabilized at a lower level compared to the late-1980s and early-1990s.

Research Recommendations: Although Greenland will initiate a new trawl survey series during 1997 including Div. 1C and 1D, the lack of conversion factors between the new vessel and the previous vessel which conducted the surveys during 1987-95 will preclude any linkage between the two. As a result, it will take a few years before any trends in stock size can be established with some confidence using the new time series. In addition, with no survey data for div. 0B anticipated in the foreseeable future, a more complete evaluation of the status of this stock will remain difficult. Therefore STACFIS recommended that a survey covering both SA0 and SA1 should be conducted in order to allow for a more complete evaluation of the stock status. The question of whether the Cumberland Sound Greenland halibut stock contributes to the Subareas 0+1 stocks needs to be resolved. STACFIS recommended that the tagging program in Cumberland Sound should be continued in 1998 to ascertain whether adult Greenland halibut fish move into Davis Strait should be continued. The degree of spawning activity should be examined at the same time.

Greenland Halibut in Division 1A

The main fishing grounds for Greenland halibut in Div. 1A are located inshore. The inshore catches in Div. 1A were around 7 000 tons in the late-1980s, but have increased steadily since then and have reached a level around 17 000 tons in recent years. The total nominal catch in 1996 was 17 267 tons. Catches were rather evenly distributed over the year but with a tendency toward higher catches around August.

Catches ('000 tons) in Div. 1A are as follows:

Year	1988	1989	1990	1991	1992	1993 ¹	1994 ¹	1995 ¹	1996 ¹
Disko Bay ²	2.7	2.8	3.8	5.4	6.6	5.4	5.2	7.4	7.8
Uummannaq	2.9	2.9	2.8	3.0	3.1	3.9	4.0	7.2	4.6
Upernavik	0.8	1.3	1.2	1.5	2.2	3.8	4.8	3.3	4.8
Offshore	-	-	-	-	-	+	+	+	-
Unknown ³	0.6	0.6	0.5	+	0.1	-	-	-	-
Total	7.0	7.5	8.3	9.9	11.9	13.1	14.0	17.9	17.3
Officially reported	7.0	7.5	7.5	9.2	11.9	-	-	-	-

¹ Provisional.

² Formerly named Ilulissat.

³ Catches from unknown areas within Div. 1A.

Assessment Results: The recent level of fishing mortality could not be estimated. The stock in all three areas consist of a large number of age groups, and the age structure of the stock does not show signs of collapse. For Disko Bay, survey results since 1993 do not indicate any major changes in total abundance or catch composition and the stock still seems to be growth overfished. For Uummannaq, survey results since 1993 suggest a minor increase in total abundance and catch composition also showed a minor increase in mean length. For Upernavik, survey results in 1994 and 1995 suggest a decrease in total abundance and a decreased mean length in stock composition.

The inshore stock is exclusively dependent on recruitment from the offshore nursery grounds and the spawning stock in Davis Strait. Only sporadic spawning occurs in the fjords, hence the stock is not self-sustainable. The fish remain in the fjords, and do not contribute back to the offshore spawning stock. It is unclear yet what impact the commercial shrimp fishery have on the survival of the small Greenland halibut. The connection between the offshore and inshore stocks implies that recruitment failure in the offshore spawning stock due to high fishing mortality, will have severe implications for the recruitment to the inshore stocks.

Greenland Halibut in Subarea 2 and Divisions 3KLMNO

Background: The Greenland halibut stock in Subarea 2 and Div. 3KLMNO is considered to be part of a biological stock complex which includes Subareas 0 and 1.

Fishery and Catches: Catches increased sharply in 1990 due to a developing fishery in the Regulatory Area in Div. 3LMN and continued at high levels during 1991-94. The catch was only 15 000 tons in 1995, and 19 000 tons in 1996 as a result of lower TACs under new management measures introduced by the Fisheries Commission. This catch is 75% lower than the average of the previous 5 years. Canadian catches in 1992-96 were at the lowest levels since the fishery began in the 1960s.

Catches show best estimates, and range of possible estimates in brackets.

	Catch ¹ (‘000 tons)	TAC (‘000 tons)	
		Recommended	Agreed ²
1993	(42-62)	50	50
1994	(48-53)	-	25
1995	15	<40	27
1996	19	-	27
1997	-	-	27

¹ Provisional.

² Established autonomously by Canada in 1993-94 and NAFO Fisheries Commission in 1995-1997.

State of the Stock: Available stock indicators in the current assessment (survey results and catch rates in commercial fisheries) suggest a significant decline in fishable stock size from the late-1980s up to 1995, particularly among the older age groups (10+). Most indices showed some improvement in 1996, primarily due to above average recruitment for all year-classes from 1990 to 1995. However, fishable biomass remains low.

Recommendation: The Council is unable to advise on a specific level of TAC for 1998. However, the TAC should not exceed the current level until it is clear that the fishable stock is increasing at that catch level. With the substantial reduction in *F* experienced in 1995-96 and anticipated in 1997, combined with improved recruitment prospects, this stock should continue to show signs of recovery over the next several years. The Council reiterates its concern that the catches taken from this stock consist mainly of young, immature fish of ages several years less than that at which sexual maturity is achieved, thereby increasing the risk of over exploitation. It is noted also that such exploitation results in foregoing much potential yield. The Council again recommends that measures be considered to reduce, as much as possible, the exploitation of juvenile Greenland halibut.

Roundnose Grenadier in Subareas 0 and 1

A total catch of 127 tons was reported for 1996 compared to 306 tons for 1995.

Recent catches and TACs ('000) are as follows:

Year	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
TAC	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	0
Catch	0.52	0.08	0.29	0.19	0.12	0.14 ¹	0.12 ¹	0.31 ¹	0.13 ^{1,3}	

¹ Provisional.

² Includes 24 tons roughhead grenadier from Div. 1A misreported as roundnose grenadier.

³ Includes 30 tons roughhead grenadier from Div. 1A misreported as roundnose grenadier.

Assessment Results: No surveys were conducted in 1996, but biomass has been at a very low level in recent years in Div. 1CD where most of the biomass is usually found.

Roundnose and Roughhead Grenadiers in Subareas 2 and 3

Nominal catches, as reported to NAFO, and TACs ('000) for roundnose grenadier in the recent period are as follows:

Year	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
TAC	11	11	11	11	11	11	11	3	3	3	0
Catch ²	8	6	5	4	8-14 ¹	8	4 ³	4 ³	4 ³	3 ³	

¹ Includes estimates of misreported catches which could not be determined precisely.

² Original as reported to NAFO.

³ Provisional.

Catches of roughhead grenadiers in the Regulatory Area ('000 tons) have been estimated to be:

Year	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Catch	1	1	0.3	3	4	5	6	5	3	4	

Assessment Results: There has been very limited commercial data since the cessation of fishing within the Canadian zone in 1993. The 1996 Canadian survey is not directly comparable to other Canadian survey data from 1994 to 1995 (for Div. 3LMN) because a different gear was used. The 1996 survey is difficult to judge on its own as a point estimate but suggests that abundance were highest in Div. 2H and 3K. The 1996 survey by Japan is not comparable to the 1996 survey by Canada because different gears were used. STACFIS notes that all considered surveys do not cover the whole distribution of the roundnose grenadier by depth.

State of the Stock: Due to the limited amount of information, the status of the stock cannot be determined. The 1996 estimate of survey biomass is the only point available and STACFIS cannot determine the status of the stock compared with the historical period when a directed fishery occurred.

Special Comments on Roughhead Grenadier: Roughhead grenadier have being taken in the order of 4 000 tons to 6 000 tons since 1991 as by-catch primarily in the Div. 3LMNO Greenland halibut fishery. The length composition of the by-catch in the EU-Portugal fishery suggest the dominant size range throughout Div. 3LMN area was between 10 cm and 20 cm pre-anal fin length. It has been reported that grenadier are a long lived species and caution is warranted about the impact of the by-catch levels in the Greenland halibut fishery.

Capelin in Divisions 3N and 3O

Background: Spawning occurs in the area of the southeast shoal in Div. 3N.

Fishery and Catches: The fishery was closed during 1979-86 and again since 1993.

	Catch ¹ (‘000 tons)	TAC (‘000 tons)	
		Recommended	Agreed
1994	+	0	0
1995	-	0	0
1996	-	0	0
1997	-	0	0

¹ Provisional.

Data: No recent data available.

Assessment: No assessment was possible without up-to-date information particularly on recruitment.

Recommendation: No advice possible.

Squid in Subareas 3 and 4

Background: This stock extends to Subarea 6 and further south.

Fishery and Catches: Catches were taken mainly in Subarea 3 in 1996.

	Catch ¹ (‘000 tons)	TAC (‘000 tons)	
		Recommended	Agreed
1994	6.0	-	150
1995	1.0	-	150
1996	8.8	-	150

¹ Provisional.

Data: No recent data available.

Assessment: No assessment was possible without up-to-date information particularly on recruitment.

Recommendation: No advice possible.

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

The fishery historically was conducted primarily by large Cuban and Russian Federation otter trawlers using small-meshed bottom trawls. Before 1977 the fishery was not restricted by season or area. However, since 1977 the fishery has been subjected to various seasonal, area, and gear restrictions. Since 1990, allocations have been made to Canadian companies which have entered into developmental arrangements with Cuban and Russian Federation fishing companies to harvest silver hake. A commercial fishery for silver hake with Canadian vessels fishing in Emerald and LaHave Basins has been conducted since 1995. Catches by this fleet increased greatly in 1996 to 3 500 tons compared to 300 tons in 1995. Nominal catches since 1970 ranged from a maximum of 300 000 tons in 1973 to a minimum of 8 000 in 1994. Since 1977 catches for this stock have been below the TAC as a result of allocations being made to parties which did not participate in the fishery, and allocations which were made late in the season when commercially viable catch rates could not be achieved. These trends continued in 1996, with 26 000 tons being harvested from a TAC of 60 000 tons.

Recent catches and TACs ('000) are as follows:

Year	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
TAC	100	120	135	135	100	105	86 ¹	30	60	60	50
Catch	62	74	91	69	68	32	29 ²	8 ²	17 ²	26 ²	

¹ Projected catch at $F_{0.1}$ was 75 000 tons; 11 000 additional tons were allocated by Canada in the knowledge that not all allocations would be fully harvested.

² Provisional.

The 1996 non-Canadian fishery commenced in March, and finished in August. As was the case in 1994 and 1995, regulatory measures intended to minimize by-catches of cod, haddock, and pollock were implemented. These include repositioning of the Small Mesh Gear Line (SMGL) to restrict fishing to water deeper than 190 m, and use of a separator grate in codends was mandatory. These measures were effective in reducing by-catches.

Prognosis: The 1996 year-class will make a significant contribution to the catch in 1998 at age 2. Mean weights-at-age for projection were taken as the average of the three most recent years (1994-96), while the partial recruitment pattern was an average of the five most recent years (1992-96). Based on the input parameters discussed, the estimated catch at $F_{0.1}$ in 1998 is 65 000 tons. Of this estimate, 21 000 tons (32%) are accounted for by the 1996 year-class, the estimated size of which is of very low reliability.

Other Finfish in Subarea 1

Catches of Greenland cod, American plaice, Atlantic and spotted wolffishes, starry skate, lumpsucker, Atlantic halibut and sharks are taken by offshore trawl fisheries directed to shrimp, cod, redfish and Greenland halibut, by longliners operating both inshore and offshore and by pound net and gillnet fisheries in inshore areas only. In 1996, reported catches of other finfishes amounted to 3 376 tons representing a decrease of 9%, compared to the 1995 catch (3 711 tons). Most recent catches of other finfishes were dominated by Greenland cod (63%) and the category of non-specified finfish (18%).

The catch figures do not include the weight of substantial numbers of small fish discarded by the trawl fisheries directed to shrimp.

Nominal reported catches (tons) are as follows:

Species	1993	1994	1995	1996
Greenland cod	1 896	1 854	2 526	2 117
Wolffishes	157	100	51	47
Atlantic halibut	43	38	23	34
Lumpsucker	246	607	447	425
Sharks	10	34	46	135
Non-specified finfish	411	643	618	609

Assessment Results: In view of dramatic declines in survey abundance and biomass indices to extremely low levels, together with significant reduction in fish sizes, STACFIS concluded that the demersal stocks of American plaice, Atlantic and spotted wolffish and starry skates are severely depleted. The status of the demersal fish assemblage has remained at that low level since 1990 and there are no signs of any recovery. In view of by-catches of juvenile finfish in substantial numbers taken by the shrimp fishery concern must be expressed about the continuing recruitment failure.

Research Recommendations: STACFIS recommended that the finfish by-catch taken by the shrimp fishery in Subarea 1 should be assessed based on the Greenland bottom trawl survey results reflecting the catch composition of a commercial shrimp trawl on the shrimp fishing grounds and that the results should be presented at the June Meeting in 1998 on a species by species, as well as a length disaggregated basis.

Responses to Special Requests for Management Advice by the Fisheries Commission

Stock Separation of Cod in Div. 2J+3KL and Proportion of Biomass of the Cod Stock in the Regulatory Area

The results from autumn surveys showed biomass in 1994 in the Regulatory Area (9.7%) to be the highest in the time series. In the autumn of 1996 the estimate was 0.2% the lowest in the time series. The 1996 spring survey estimate was 2.4%, down from the 1994 estimate of 63%, the highest in the time series. The results from the survey series used are as follows:

Season RV survey conducted	Years RV survey conducted	Range of proportions of Div. 3L biomass occurring in the Regulatory Area (1996 value in brackets)	Average proportion (%)
Winter	1985-86	23.8-26.8	25.3
Spring	1977-96	0.4-63.1 (2.4)	10.7
Autumn	1981-96	0.2-9.7 (0.2)	3.2

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.

The average breakdown of biomass by Division was as follows:

Division	Mean relative proportion of Div. 2J and 3KL biomass (%)	1996 Autumn (%)
2J	29	17
3K	33	25
3L	38	58

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 combined for Div. 2J+3KL were similar to those which occurred in Div. 3L inside the 200-mile fishing zone.

American Plaice:

The Council was asked to conduct an analysis of the time series of juvenile abundance and other relevant biological data of American plaice in Div. 3LNO and Div. 3M, with a view to assessing the possibility to reopen the fishery.

American Plaice in Divisions 3LNO

Most indices suggest that the stock is at a low level. There has been no good recruitment since 1987 and total mortality is high. The population is made up mainly of fish less than 6 years of age. Based on the information reviewed there is no indication of stock improvement and therefore no basis for reopening the fishery.

American Plaice in Division 3M

Although only 300 tons were caught during 1996, SSB and total biomass estimated from surveys continued to decline due to the very weak year-classes recruited to the stock since 1993. In 1996, Scientific Council advised there should be no directed fishery, and by-catch be kept at the lowest possible level. Based on the information reviewed, there is no indication of stock improvement and therefore no basis for reopening of the fishery.

Cod in Division 3M

All indices suggest that the stock is at an extremely low level and that all year-classes of 1992-95 are weak. The Council therefore advises that cod in Div. 3M should be closed to fishing in order to protect the remaining spawning stock and allow for rebuilding.

Witch Flounder in Divisions 2J and 3KL

Based on the data examined here, the Scientific Council advises that from a biological perspective this stock should be treated as a single unit throughout the entire range of Div. 2J and 3KL and managed accordingly. The Scientific Council noted that this stock has been under moratorium in the Canadian zone since 1994 but has been unregulated in the NAFO Regulatory Area.

Greenland Halibut in Subarea 2 and Divisions 3KLMNO

The Council was asked to assess possible changes in yield and spawning stock biomass of Greenland halibut in Subarea 2 and Div. 3KLMNO based on the assumption of a dome-shaped exploitation pattern and a different age of maturity and mortality rates for males and females, for the following scenarios: a) the current situation, and b) a minimum landing size of 60 cm.

In 1995 the Scientific Council analyzed the effect on yield and SSB of banning fishing before Greenland Halibut reached 60 cm while maintaining the present level of effort. The result suggested that the potential long term yield would increase three times and the SSB would be in the order 6-7 times higher.

The calculation assumed constant natural mortality by age, a *status quo* fishing mortality level derived from catch curves for sexes combined and a flat topped selection by age as well as the same growth by sexes.

The Scientific Council agreed that a dome shaped partial recruitment pattern in the trawl fishery and differences in mortality by sexes are the most likely scenario for Greenland halibut.

If the 60 cm minimum landing size is implemented and the mesh size is not changed, a high level of discards would occur in the fishery. Even with a change to the 205 mm mesh size, more than 50% of the catches would have to be discarded if the exploitation pattern was dome shaped and the natural mortality was different by sexes. However, the 60 cm length does not correspond to the length of 25% retention (L_{25}) of the 205 mm mesh size but corresponds to the length of 50% retention (L_{50}).

Ongoing request on Greenland halibut stock component

In the past several years, the Fisheries Commission has asked for advice on the split of the TAC for Greenland halibut within the stock area into components for Subarea 2 + Div. 3K, and Div. 3LMNO. Prior responses to these requests indicated that until survey coverage was extended throughout the stock area, estimates of proportional distribution of biomass would not be available. In 1996, the Canadian autumn groundfish survey covered almost all of the stock range, although coverage in deepwater areas of Div. 2G and Div. 3O was minimal. This survey indicated that about 17% of the surveyed biomass was located in Div. 2GH, about 65% in Div. 2J+3K, and about 18% in Div. 3LMNO. About two-thirds of the estimated biomass was comprised of fish smaller than 36 cm, and the proportion of small fish in the biomass varied by Division.

Precautionary Measures and Criteria for Reopening Fisheries

Comment on Article 6 [Application of the Precautionary Approach] and Annex II [Guidelines for Application of Precautionary Reference Points in Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks] of the Agreement for the Implementation of the Provisions of the United Nations Convention of UNCLOS III.

Endorsement of the Precautionary Approach by the Scientific Council

After reviewing the development, evolution and application of the precautionary approach in fisheries management, the Scientific Council endorsed the precautionary approach as described in Article 6 and Annex II of the UN Agreement of the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks. In addition, the Council intends to use the practical guidance given in FAO 1995.

The Council recognizes that implementation of the precautionary approach will be a challenging and ongoing process. To address this challenge in a rigorous and objective fashion, the Council has initiated development of a framework and action plan, and arranged for a Scientific Council Workshop on the Precautionary Approach to Fisheries Management. This Workshop, to be chaired by the Chairman of the Scientific Council, will meet during 17-27 March 1998 in Dartmouth, Nova Scotia, to discuss further this issue.

The Scientific Council, recognizing the need to apply the precautionary approach in providing scientific advice, proposes the following provisional framework. This framework prescribes the requisite actions to be taken for controlling fishing mortality in relation to various levels of spawning stock biomass and pre-determined, stock-specific reference points. The Scientific Council framework defines three reference points for biomass and three reference points for fishing mortality, viz:

Biomass Reference Points

- B_{lim} The level of spawning stock biomass that the stock should not be allowed to fall below.
- B_{buf} A level of spawning stock biomass, above B_{lim} , that acts as a buffer to ensure that there is a high probability that B_{lim} is not reached. The more uncertain the estimate of B_{lim} is, the higher the value of B_{buf} and the greater the distance between B_{lim} and B_{buf} . When B_{buf} is reached, immediate action is required to ensure stock rebuilding.
- B_{tr} The target recovery level. In accord with Annex II of the UN Agreement of the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks, for overfished stocks this is the total stock biomass level which would produce maximum sustainable yield (MSY).

Fishing Mortality Reference Points

- F_{lim} The rate of fishing mortality that should not be exceeded. In accord with Annex II of the UN Agreement of the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks, this level can be no higher than the fishing mortality rate which generates MSY.
- F_{buf} A fishing mortality rate below F_{lim} that acts as a buffer to ensure that there is a high probability that F_{lim} is not reached. As such, on average, F_{buf} should not be exceeded. The more uncertain the estimate of F_{lim} is, the lower the value of F_{buf} , and the greater the distance between F_{lim} and F_{buf} .
- F_{target} The target fishing mortality depending on management objectives. This is a level below or equal to F_{buf} .

The general, overall objectives of the precautionary approach to management may then be summarized as follows:

1. Ensure that spawning stock biomass (SSB) is well above the buffer level (B_{buf}) [which by definition is above the biomass limit reference point (B_{lim})];
2. Maintain fishing mortality such that, on average, it does not exceed F_{buf} , and which will allow the stock to increase towards B_{tr} and ultimately be maintained at B_{tr} level.

The Scientific Council recommended an Action Plan for the Development of a Framework on the Precautionary Approach. (Note: This Plan was endorsed by the Fisheries Commission in September 1997).

Ageing Techniques and Validation Studies

At the 83rd Statutory Meeting of ICES in 1995 it was decided to conduct a joint ICES/NAFO Workshop on Greenland halibut age reading. Co-Chairman K. Nedreaas (Norway) presented to STACFIS the report of this Workshop which was held in Reykjavik, Iceland during 26-29 November 1996, with participants from Canada, Greenland, Iceland, Norway, Portugal, Russia and Spain.

The goals of the Workshop to evaluate and establish a protocol and exchange programs for the handling of otoliths and the age determination of Greenland halibut using otoliths were achieved at the Workshop.

Report on Comparative Trawl Surveys

Six species were targeted for study: Atlantic cod, American plaice, Greenland halibut, witch flounder, yellowtail flounder, and beaked redfish. The trial was conducted in the same manner as the *Gadus Atlantic - Teleost* study in 1995. During February and March, 1996, a total of 180 successful paired tows was completed, spread over three trips by each vessel, in a number of areas and depths around Newfoundland, mainly in Div. 3NOP.

Converted estimates of biomass and abundance will be presented to STACFIS during the assessments of relevant stocks in June 1998. Where previous Engel surveys were dominated by small fish, converted estimates (in Campelen catch equivalents) will show higher values for total abundance. Any estimates of abundance and biomass calculated with the converted data should use the swept-area value for the Campelen trawl, and not the Engel trawl, as the conversion factors were not adjusted for swept area.

Report on Seal Consumption

STACFIS received a report of prey consumption by seals in the Northwest Atlantic. STACFIS noted that the estimates derived in this study assumed that the diet composition remained stable from 1990-97. Over this period there have been large changes in the population sizes of fish that occur in the diet of seals. It might be expected that prey selection by seals would change given these large changes in prey population size over time. This could mean that proportion of some fish species in the diet is over estimated for recent years. It was also noted that given that the diet reconstruction is based on hard parts in the stomach, the percentage of invertebrates might be underestimated. However, given differing energy values associated with different prey species, and the possible influences of these differences on daily gross intake, it is not possible to speculate on how these potential differences in diet composition might affect the annual consumption estimates of the various species. Finally, STACFIS noted that it is unclear how to incorporate these estimates of seal consumption into its estimates of natural mortality.

A paper titled "Prey Consumption by harp seals (*Phoca groenlandica*), grey seals (*Halichoerus grypus*), harbour seals (*Phoca vitulina*) and hooded seals (*Cystophora cristata*) in the Northwest Atlantic" was reviewed. Noting seal predation may be one of several factors inhibiting the recovery of fish stocks, this paper estimated fish consumption by seals in Atlantic Canada.

The Northwest Atlantic harp seal is the most abundant species with an estimated 4.9 million animals in 1996, followed by hooded seals (598,000), grey seals (184,000) and harbour seals (29,100).

It was evident that seals consume large quantities of fish in eastern Canadian waters. The majority of this consumption consisted of species such as capelin, Arctic cod, sandlance and Atlantic cod. Little is known about factors affecting prey selection by seals. Recent diet information indicates that different species of seals may prey on different components of a prey population. For example in the case of Northern Gulf cod, harp seals appeared to consume primarily fish ranging from 10

to 20 cm in length, grey seals appeared to prefer fish around 15-30 cm, while hooded seals preferred fish 25-35 cm in length. Thus it appears that in the northern Gulf, harp seals would be feeding largely on 1-2 year old cod, grey seals would consume 2-3 year old cod, whereas hooded seals would be consuming 2-4 year old cod.

RESEARCH COORDINATION

Fisheries Statistics

Recognizing that under Rule 4.4 of the Rules of Procedure of the Scientific Council, the deadline dates for submission of STATLANT data for the preceding year are 15 May for 21A data and 30 June for 21B data, the Council stressed that timely submission of STATLANT data is of paramount importance to the Scientific Council, since they are used extensively during its June Meetings for stock assessments and other scientific evaluations. Noting the STACREC tabulations of data not received, the Council endorsed the STACREC recommendation and agreed to submit the text of STACREC report regarding this matter to the Fisheries Commission.

The Council endorsed the STACREC recommendation for the establishment and operation of a website at the Secretariat for dissemination of statistical information. While agreeing with STACREC on the general structure and logistics for the website, the Council considered it should provide a cost effective tool for the dissemination of Scientific Council information.

The Scientific Council endorsed the STACREC and CWP recommendation that reconciliation exercises of data for the Northeast and Northwest Atlantic be undertaken at a CWP intersessional meeting in mid-1998.

Biological Sampling

The Council noted that the Provisional List of Biological Sampling for 1996 was prepared by the Secretariat. Data from commercial fisheries pertinent to stock assessments were also tabulated, and National Representatives reported their sampling programs for the 1996 commercial fisheries to STACREC.

The Council noted that the sampling data report submissions *lag behind by one year*. The Council accordingly endorsed the STACREC recommendation to ensure that, starting in 1998, data for the year proceeding will be available in time for the June 1998 Meeting of the Council.

Biological Surveys

The Council noted an inventory of biological surveys was compiled, and a more detailed account of the survey data available for 1996 relative to their stocks, was tabled by National Representatives and Designated Experts.

The Council noted an inventory of biological surveys planned for 1997 and early-1998, as submitted by National Representatives and Designated Experts, was compiled by the Secretariat.

Non-traditional Fishery Resources in the NAFO Area

The Council noted there was no documentation at this meeting and accordingly endorsed the STACREC recommendation that distribution and abundance for non-traditional species be presented to the Council as soon as possible.

Development of Protocol for Scientific Data Collection by Pilot Observer Program

The Council noted under STACREC discussions of data availability from the NAFO Pilot Observer Program that not all data were available at the Secretariat. The Council considered that such data would be extremely valuable for the work of the Council and the Council recommended that the issue of scientific data availability from the Pilot Observer Program be raised with the Fisheries Commission.

The Council proposed that the protocol be conveyed to the Fisheries Commission and its Standing Committee on International Control (STACTIC).

Conversion Factors

The Council noted the international interest in the need for increased transparency in the factors used to convert differing fish presentations and fish products to live weight equivalent.

The Council endorsed the view of STACREC that the use of accurate and appropriate conversion factors is essential for the compilation of catch statistics and that a better knowledge of the factors in use is paramount. It was noted that whereas harmonization of factors for relatively unprocessed products might be feasible, other applications of this procedure should be approached with caution because differing national practices in processing fishery products could give rise to justifiably different factors.

PUBLICATIONS

Three Journal volumes, Volume 19 containing papers presented at the 1993 Symposium on "Gear Selectivity/Technical Interactions in Mixed Species Fisheries", Volume 20 Special Issue by R.G. Halliday and A.T. Pinhorn titled "North Atlantic Fishery Management Systems: A Comparison of Management Methods and Resource Trends", and Volume 21 containing miscellaneous papers, were published since June 1996. The NAFO/ICES 1995 Symposium papers on "The Role of Marine Mammals in the Ecosystem", is expected to be completed by mid-1998.

Studies Nos. 24-30 were completed by the Secretariat since the June 1996 Meeting.

The Council took note of the significant delays in publishing the NAFO Statistical Bulletin Volume 43, 44 and 45, due to lack of data from some countries/components. The Council conveyed the serious concerns of this delay to the Fisheries Commission.

The Council endorsed the Secretariat review process of the distribution list for scientific publications, and also agreed with the STACPUB initiative to limit the superfluous distribution of NAFO documents in consultation with National Representatives.

The Council supported STACPUB views to reduce the accumulated stocks of extra copies of the Journal or Studies that are printed, noting that by offering these to Universities and public institutions may contribute to publicizing NAFO scientific work and improving the profile of the Journal and Studies.

The Council agreed with STACPUB that thirty copies of free reprints to authors is an adequate amount, irrespective of the number of authors. The Council considered that this decrease will represent a substantial saving in number of printed pages and costs of mailing them.

NAFO Website

The Council endorsed the recommendation to establish and manage a website at the Secretariat. Considering the potential for cost savings in printing and circulation of scientific information, the Council agreed steps should be taken as soon as possible by obtaining expertise from outside while also developing expertise in-house.

FUTURE SCIENTIFIC COUNCIL SESSIONS AND MEETINGS

Special Sessions 1998-1999:

- Symposium on "Variations in Maturation, Growth, Condition and Spawning Stock Biomass Production in Groundfish" to be held in Lisbon, Portugal during 9-11 September 1998, in conjunction with the NAFO 20th Annual Meeting.
- Symposium on "Pandalid Shrimp Fisheries - Science and Management at the Millenium" to be held in conjunction with the NAFO 21st Annual Meeting, 8-10 September 1999 (venue to be announced). Co-sponsored by NAFO, the International Council for the Exploration of the Sea (ICES) and the North Pacific Marine Science Organization (PICES).

Scientific Council Meetings:

- "Workshop on the Precautionary Approach to Fisheries Management", 17-27 March 1998, NAFO Headquarters, Dartmouth, N.S., Canada.
- Regular Scientific Council Meeting, 3-18 June 1998, Keddys Inn, Dartmouth, N.S., Canada.
- Scientific Council Annual Meeting, 14-18 September 1998, Lisbon, Portugal.

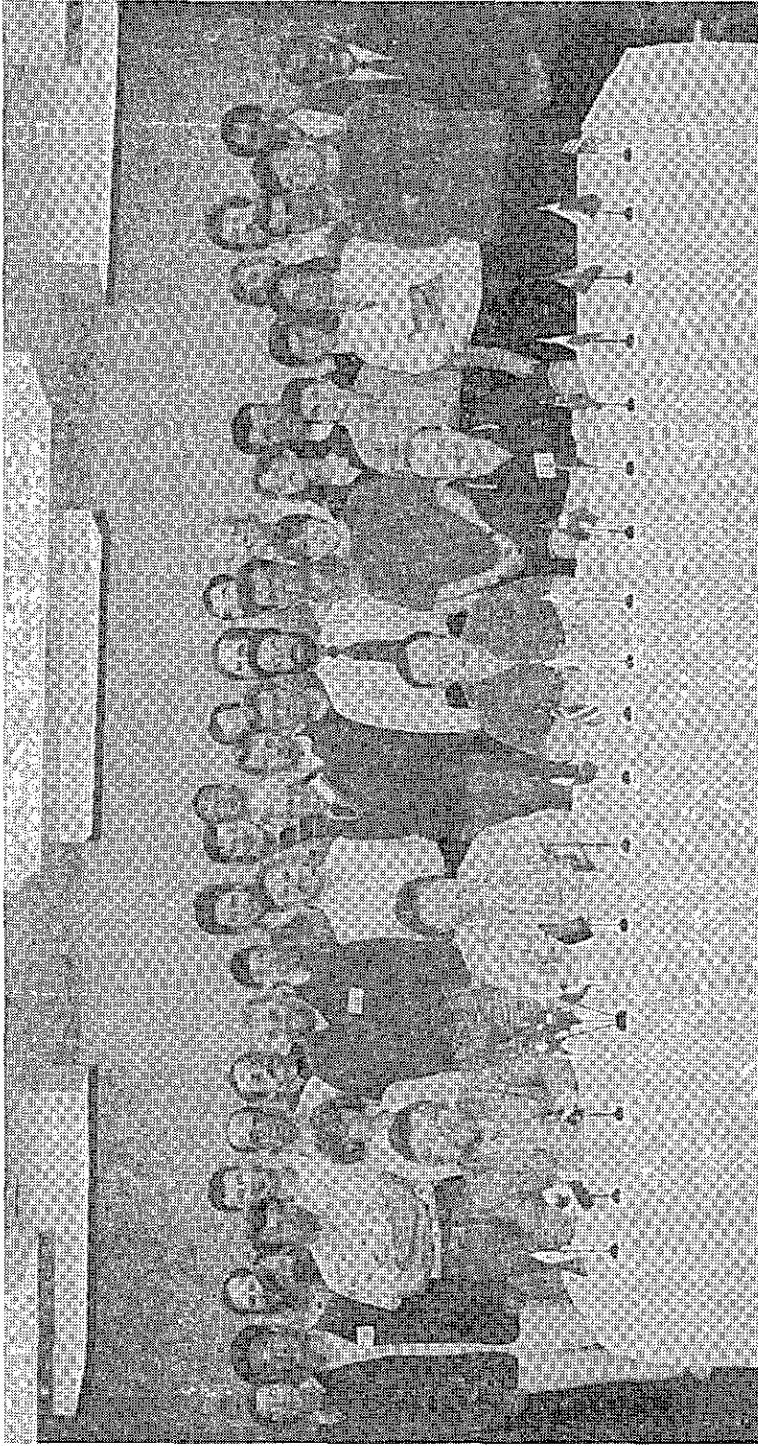
NOMINATION AND ELECTION OF OFFICERS

- For the office of Chairman of Scientific Council, the current Vice-Chairman H. P. Cornus (EU-Germany) was nominated by the Committee, and the Council elected him by unanimous consent.
- For the office of Vice-Chairman of Scientific Council and Chairman of STACPUB, the Committee nominated W. B. Brodie (Canada), and the Council elected him by unanimous consent.

- For the office of Chairman of STACFIS, the Committee nominated R. Mayo (USA) and the Council elected him by unanimous consent. Recognizing that the Chairman of STACFIS at this meeting (H. P. Cornus) undertook the task only for this meeting, the Council agreed the new Chairman (R. Mayo) would undertake the STACFIS Chairmanship of the 7-19 September 1997 Meeting, in advance of his term.

- For the office of Chairman of STACREC, the Committee nominated V. Shibanov (Russian Federation), and the Council elected him by unanimous consent.

Scientific Council Meeting (June 1997)



Back: M.L. Godinho, J. Mori, K.F. Drinkwater, M. Sissenwine, R. Alpoim, A. Avila de Melo, V.N. Shibanov, T. Dougherty-Poupore, H.-J. Rätz, D. Cross, O. Jørgensen, K.H. Nedreaas, W.B. Brodie, A. Vazquez, E.F. Murphy, L. Motos, J. Casey, G.G. Thompson, J. Fischer, C. Simonsen, V. Borisov, E.B. Colbourne, S.J. Walsh, A. Vaskov, E. Valdes, T. Amaratunga.
Front: J.C. Máhe, S. Junquera, E. de Cardenas, D. Rivard, V.A. Rikhter, F.M. Serchuk, M. Tréble, M.J. Morgan, H. Siegstad, D. Stansbury
Seated: M. Stein, H.P. Cornus, W.R. Bowering, D. Power.

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Annex 2. Agenda

- I. Opening (Chairman: W. R. Bowering)
 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. Fisheries and Environment (STACFEN Chairman: M. Stein)
 1. Opening
 2. Chairman's introduction; report of activities
 3. Invited lecture (Dr. J. Fischer, Memorial University of Newfoundland)
 4. Review of environmental conditions:
 - a) Marine Environmental Data Service (MEDS) Report for 1996
 - b) Review of environmental studies in 1996
 - i) Results from physical oceanographic studies
 - ii) Results from interdisciplinary studies
 - c) Overview of environmental conditions in 1996
 5. Formulation of recommendations based on environmental conditions in 1996
 6. National representatives
 7. Russian/German data evaluation (ICNAF/NAFO data, status report)
 8. Other matters

- III. Fishery Science (STACFIS Acting Chairman: H. P. Cornus)
 1. Opening
 2. General review
 - a) General review of catches and fishing activity
 3. Stock assessments
 - a) Stocks within or partly within the Regulatory Area, as requested by the Fisheries Commission with the concurrence of the Coastal State (Annex 1)(Shrimp in Div. 3M will be undertaken later in the year):
 - Cod (Div. 3NO; Div. 3M) (see also Annex 1, item 7)
 - Redfish (Div. 3LN; Div. 3M)
 - American plaice (Div. 3LNO; Div. 3M) (see also Annex 1, item 6)
 - Witch flounder (Div. 3NO)
 - Yellowtail flounder (Div. 3LNO)
 - Capelin (Div. 3NO)
 - Squid (Subareas 3 and 4)
 - Greenland halibut (Subareas 2 and 3) (see also Annex 1, item 9)
 - [Note also Annex 1, item 3 concerning cod in Div. 2J+3KL]
 - [Note also Annex 1, item 8 concerning witch flounder in Div. 2J+3KL]

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

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

c) Stocks within the 200-mile fishery zone in Subarea 1 and at East Greenland as requested by Denmark on behalf of Greenland (Annex 3) (Northern shrimp in Denmark Strait and off East Greenland will be undertaken during a special meeting in November 1997.):

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

d) Stocks overlapping the fishery zones in Subareas 0 and 1, as requested by Canada and by Denmark on behalf of Greenland (Annexes 2 and 3) (Northern shrimp in Subareas 0 and 1 will be undertaken during a special meeting in November 1997):

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

4. Ageing techniques and validation studies

a) Joint NAFO/ICES workshop on ageing of Greenland halibut, to be held in Reykjavik, Iceland, 26-29 November 1996

5. Other matters

a) Report on Comparative Trawl Surveys

IV. Research Coordination (STACREC Chairman: D. Power)

1. Opening

2. Fishery statistics

a) Progress report on Secretariat activities in 1996/97

- i) Acquisition of STATLANT 21A and 21B reports for recent years
- ii) Publication of statistical information
- iii) Considerations on internet site for statistical data

b) Report of the CWP 17th Session, March 1997

3. Biological sampling

a) Report on activities in 1996/97

b) Report by National Representatives on commercial sampling conducted

c) Report on data availability for stock assessments (by Designated Experts)

4. Biological surveys
 - a) Review of survey activities in 1996 (by National Representatives and Designated Experts)
 - b) Surveys planned for 1997 and early-1998
 5. Non-traditional fishery resources in the NAFO Area
 - a) Distribution data from surveys
 6. Review of SCR and SCS Documents
 7. Other matters
 - a) Tagging activities
 - b) Development of protocol for scientific data collection by Pilot Observer Program
 - c) Conversion factors
 - d) Description of fishing effort
 - e) Other business
- V. Publications (STACPUB Acting Chairman: M. Stein)
1. Opening
 2. Review of STACPUB membership
 3. Review of scientific publications since June 1996
 4. Production costs and revenues for Scientific Council publications
 - a) Review of costs and revenues
 - b) Proposal for publication of 1997 Symposium proceedings
 5. Promotion and distribution of scientific publications
 - a) Invitational papers
 - b) Distribution of Abstracts from Research Documents
 - c) New initiatives for publications
 - d) NAFO Website
 6. Editorial matters regarding scientific publications
 - a) Review of Editorial Board
 - b) Progress report of publication on Shrimp in Div. 3M
 - c) Considerations for publishing Symposium proceedings
 - d) Progress review of publication of 1995 Symposium
 - e) Publication of 1996 Special Session Workbook
 7. Papers for possible publication
 - a) Review of SCR Doc formats
 - b) Procedures for STACPUB review
 - c) Review of proposals resulting from the 1996 Meetings
 - d) Review of contributions to the 1997 Meeting
 8. Other matters

VI. Arrangements for Special Sessions

1. Progress report on the Special Session in 1997 (Convenor: H. Lassen)
2. Progress on Special Session in 1998 (Convenors: E. Aro, J. Burnett, J. Morgan)
3. Proposals for Special Session in 1999

VII. Future Scientific Council Meetings, 1997 and 1998

1. Annual Meeting in September 1997 (including assessment of Div. 3M shrimp)
2. Special Meeting in November 1997 (assessment of Northern Shrimp in Subareas 0+1 and off East Greenland)
3. Scientific Council Meeting, June 1998
4. Scientific Council Meeting and Symposium, September 1998

VIII. Nomination and Election of Officers

1. Chairman and Vice-Chairman of Scientific Council and Chairmen of STACFIS, STACREC and STACPUB

IX. Management Advice and Responses to Special Requests

1. Fisheries Commission (Annex 1)
 - a) Advice for TACs for 1998, and other management measures
 - b) Precautionary measures and criteria for reopening fisheries
2. Coastal States (Annexes 2 and 3)
 - a) Advice for TACs for 1998, and other management measures
 - b) Special requests for management advice on fish and invertebrate stocks (note item 3, Annex 3)

X. Other Matters

XI. Adoption of Reports and Recommendations

1. STACFIS
2. STACFEN
3. STACREC
4. STACPUB

XII. Adoption of Scientific Council Report

XIII. Adjournment

ANNEX 1. FISHERIES COMMISSION'S REQUEST FOR SCIENTIFIC ADVICE ON MANAGEMENT IN 1998 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 1997 Annual Meeting, provide advice on the scientific basis for the management of the following fish and invertebrate stocks or groups of stocks in 1998:

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 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_{1996} and F_{max} in 1998 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 1998 and the long term. Values of F corresponding to the reference points should be given. Uncertainty in the assessment should be evaluated.

- 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 on the stock should be evaluated in the context of management requirements for the long-term sustainability.
 - 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 results should include the following:
- i) for stocks for which analytical 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 1998 over a range of fishing mortality rates (F) at least from $F_{0.1}$ to F_{max} .
 - a graph showing spawning stock biomass at 1/1/1999 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. Information is also requested on the age composition of that portion of the stock occurring in the Regulatory Area.
4. The Fisheries Commission requests that the Scientific Council comment on Article 6 and Annex II of the Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks; and provide the following information for the 1997 Annual Meeting of the Fisheries Commission, a report that includes for all stocks under the responsibility of the Fisheries Commission (i.e. cod in 3M and 3NO, American plaice in 3M and 3LNO, yellowtail flounder in 3LNO, witch flounder in 3NO, redfish in 3M and 3LN, Greenland halibut in SA 2+ 3, capelin in 3NO, shrimp in 3M and squid in SA 3+4):
 - a) recommendation for the limit and target precautionary reference points described in Annex II indicating areas of uncertainty;
 - b) information including medium term consideration and associated risk or probabilities which will assist the Commission to develop the management strategies described in paragraphs 4 and 5 of Annex II in the Agreement;
 - c) information on the research and monitoring required to evaluate and refine the reference points described in paragraphs 1 and 3 in the Agreement Annex II; these research requirements should be set out in order of priority considered appropriate by the Scientific Council; and,
 - d) any other aspect of Article 6 and Annex II of the Agreement which the Scientific Council considers useful for the implementation of the Agreement's provisions regarding the precautionary approach to capture fisheries.
5. The Fisheries Commission requests that the Scientific Council develop criteria to be evaluated during any consideration of possible fisheries reopenings.

6. The Fisheries Commission requests that, in 1997, the Scientific Council carry out a thorough analysis of the time series of juvenile abundance and other relevant biological data of American plaice in 3LNO and 3M, with a view to assessing the possibility to reopen the fishery.
7. The Fisheries Commission requests that, in 1997, the Scientific Council will carry out a thorough analysis of all the relevant biological data of cod in Div. 3M with a view to the possible closure of this fishery.
8. The Fisheries Commission requests that Scientific Council review available information, including any Canadian assessment documentation, and provide advice on the status of the 2J3KL witch flounder resource. Any information pertaining to the relative distribution of the resource within the stock area, as well as changes in this distribution over time should also be provided.
9. The Scientific Council is requested to assess possible changes in yield and spawning stock biomass of Greenland halibut in Subarea 2 and Div. 3KLMNO based on the assumption of a dome-shaped exploitation pattern and a different age of maturity and mortality rates for males and females, for the following scenarios:
 - a) the current situation, and
 - b) a minimum landing size of 60 cm.

**ANNEX 2. CANADIAN REQUEST FOR SCIENTIFIC ADVICE ON MANAGEMENT
IN 1998 OF CERTAIN STOCKS IN SUBAREAS 0 TO 4**

1. Canada requests that the Scientific Council, at its meeting in advance of the 1997 Annual Meeting, provide advice on the scientific basis for the management of the following fish stocks in 1998:

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 1997 Annual Meeting of NAFO, provide advice on the scientific basis for management in 1998 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, but has advised that separate TACs be maintained for different areas of the distribution of Greenland halibut. The Council is asked therefore, subject to the concurrence of Denmark (Greenland) as regards Subarea 1, to provide an overall assessment of status and trends in the total stock throughout its range and comment on its management in Subareas 0+1 for 1998. In particular, the Council is asked to advise on appropriate TAC levels separately for SA 0+1, for SA 2 + Division 3K and for Divisions 3LMNO, and to make recommendations on the distribution of fishing effort within each of these three geographic areas. The Council is asked also to provide information on present harvest patterns in terms of yield per recruit and on distributional variation of the resource in recent years.

With respect to shrimp, it is recognized 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 fishing at $F_{0.1}$ in 1998 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 1998 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 stock.

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 stock outlook for the abundance of this stock, including both total and spawning biomass.

William A. Rowat
Deputy Minister
Department of Fisheries and Oceans
Ottawa, Canada

**ANNEX 3. DENMARK (GREENLAND) REQUEST FOR SCIENTIFIC ADVICE ON
MANAGEMENT OF CERTAIN STOCKS IN 1998**

1. Denmark, on behalf of Greenland, request the Scientific Council of NAFO in advance of the 1997 Annual Meeting, provide advice on the scientific basis for management of the following stocks in Subarea 1 in 1998 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
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. Further in its 1995 report, the Scientific Council noted that the biomass of the inshore component in Subarea 1 was unknown. The Council is therefore asked to provide further information on following topics.

- a) Allocation of TACs to appropriate Subareas (Subareas 0 and 1).
 - b) Allocation of TAC for Subarea 1 inshore areas.
3. Denmark, on behalf of Greenland, further requests that the Scientific Council of NAFO before December 1997, provide advice on the scientific basis for management of the Northern shrimp (*Pandalus borealis*) in Subareas 0 and 1 in 1998 and as many years forward as data allow. The advice should be in accordance with a strategy of maintaining the shrimp stock at the level of recent years.

Further, in cooperation with ICES, the Council is requested to advise on the scientific basis for management of the Northern shrimp (*Pandalus borealis*) in the Denmark Strait and adjacent areas east of southern Greenland.

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

Jørn Birk Olsen, Director
On behalf of
Ministry for Fisheries, Hunting & Agriculture
Aslisarnermut, Piniarnermut, Nunalerinermullu

Pisortaqarfik

Direktoratet for Fangst, Fiskeri og Landbrug

**REPORT OF SYMPOSIUM ON "WHAT FUTURE FOR CAPTURE FISHERIES"
A Shift in Paradigm: Visioning Sustainable Harvests from the
Northwest Atlantic in the Twenty-first Century**

The Symposium on "What Future for Capture Fisheries", with H. Lassen (EU-Denmark) as convener, was held during 10-12 September 1997 at the Marine Institute of the Memorial University of Newfoundland, St. John's, Newfoundland, Canada. There were 112 participants from Belgium, Canada, Denmark, Faroe Islands, Germany, Greenland, Italy, Iceland, Japan, Norway, Portugal, Republic of Korea, Russia Federation, Spain, United Kingdom and United States of America.

Introduction

The Symposium considered the historic and present state of fisheries from several angles with a view to what is in store for the future. There was *general concern for the state of the stocks*, as has been reported in many other fora, and a recognition that the fisheries management policies need to be changed. The expectation was that exploitation pressure and fleet capacity will decline in response both to the internal restraints in the fishing sector and the external political pressures, for example those exerted by environmentalist groups. There was, however, a general optimistic expectation that the fishing industry will be able to adapt to these changed conditions and that an economically viable fishing sector will continue into the future. The exploitation pressure should be within sustainable limits.

The Symposium was structured into three key-note presentations and five theme sessions followed by a concluding discussion.

Reviewing the history of the Northwest Atlantic fishery, a number of historical crises were identified but these seemed to be local compared to the situation of today. The history also revealed the diversification strategy (from cod to other species) used in the fisheries to live through these crises. The question was raised whether the present fisheries discussions and organization of the co-ordination of research was adequate to deal with the present problems.

The session on management approaches discussed the trends in international co-operation in fisheries - monitoring, surveillance and control, and their future implementation, particularly in the light of the introduction of the precautionary approach in the management decisions to come. The meeting noted that the NAFO enforcement and inspection measures being applied in the Regulatory Area were faced with problems similar to those being experienced elsewhere in the world and that there was a particular need to enlarge the scientific basis for management decisions with economic and social studies. Noting that NAFO enforcement had been improved in recent years, attention was drawn to the insufficient scientific data being provided for stock assessment purposes. It was stated that cost-effective ways would have to be found to improve the scientific database and ensure wider member-country participation in the NAFO enforcement and inspection scheme. Solving both of these problems would be easier through continued international cooperation.

The session on future fisheries research, identified a number of trends particularly in future technologies including improved survey methods and their precision, improved genetic technology leading to a detailed understanding of stock structure and integrating environmental signals in the assessment procedure. It was recognized that environmental and climate changes have obvious impacts on the productivity of the fish stocks. The availability of long-term time series of environmental data could possibly be used directly in stating expected good and bad recruitment periods.

The session on sustainable livelihood for the coastal community recognized that the communities have a definite need for obtaining better control as the basis for their livelihood and that this need can only be met through organizational changes both outside and inside the management systems. In reviewing the potentials of increased aquaculture production, it was recognized that these were limited and would not present a threat to the capture fisheries but rather a supplement or opportunity to the coastal communities.

The session of the future for capture fisheries took a look into the future from different angles. It was shown that the world demand for fish products is increasing while the future fish supplies are uncertain - estimates were presented ranging from about 74 to 114 million tons from capture fisheries. It was stated that the increased demand for fish will be most for high value products. This increased demand will lead to increased prices and this may lead to a point where fish could be expected to become a luxury item. Starting from a market oriented point of view, it was clear that the increased demand for high value products and the shortage of fish supplies would be met by food technological improvements making better use of the fish, and using more of the fish for high value products than is the case today.

A view to the future fisheries for the next 25 years was presented. It was pointed out that the Biodiversity Treaty was being overlooked although it was likely to have a major impact on the development of the political climate. It was suggested that the UN conference in the year 2010 would once more revisit the use of the sea bed resources, and a trend indicator may be the number of marine nature reserves which had already become an integral part of fisheries management. Finally, the Symposium was told about the class of highly efficient small vessels which had been developed with very selective gears and, how this had allowed new species to be part of the human food.

It was also suggested that the future management systems need to be reviewed in the light of the need for the fishing communities to ensure their livelihoods. There could be a need for economic efficiency in the industry and political pressure to attain sustainable exploitation. A review showed the possibilities for use of co-management in fisheries. It also emphasized the need for more transparency in the decision process.

Conclusion

At the concluding discussions there were a number of comments which essentially impressed the need for a reduction in the present exploitation pressure to ensure viable fish stocks for the future. It was realized that the picture included many trends, several of which were conflicting and that several future scenarios could be constructed. Particularly the possibilities of using right based fisheries management systems were raised. It was recognised that this had, to date, met with opposition from the industry.

The Convener concluded the Symposium by suggesting a number of trends which could be elements of the future fisheries:

- Reduced exploitation pressure,
- More transparency in all elements of the management process including the stock assessments,
- Increased supplements in fish supply from aquaculture,
- Improved fish capture technology leading to more selective gears and possibly to pre-catch estimation of species and size composition,

Taking climate fluctuation into account in the assessments of stocks,
Much more efficient vessels (large vessel with large ranges, small highly efficient vessels),
A need for a fisheries management science allowing predictions of fleet reactions to
restrictions and to biological changes.

The proceedings of the Symposium will be published by the NAFO Secretariat in a book form in
1998.

Scientific Council Annual Meeting

The Scientific Council met at the Hotel Newfoundland, Cavendish Square, St. John's, Newfoundland, Canada, during 7-19 September 1997. Representatives attended from Canada, Denmark (in respect of Faroe Islands and Greenland), European Union (France, Germany, Portugal and Spain), Iceland, Japan, Norway, Russian Federation and the United States of America (Annex 1).

The Assistant Executive Secretary was appointed rapporteur.

The agenda was adopted.

Brief summaries of the Standing Committee Reports and other matters considered by the Scientific Council are given below.

FISHERY SCIENCE

Assessment of Shrimp in Division 3M

Background: The fishery for shrimp on Flemish Cap began in April, 1993, although occurrence of shrimp in the area has been known for many years.

Fishery and Catches: This multi-national fishery produced provisional catches as follows:

Year	Catch (tons)
1993	28 000
1994	24 000
1995	33 000
1996	51 000
1997 (to August)	17 000

The estimate of catch to the end of 1997 is proposed about 25 000 tons.

The proportion of males in the catches increased such that they dominated the catches since 1994.

The fishery was unregulated in 1993. Sorting grates and a related by-catch regulation were introduced in 1994. Effort regulations were implemented in 1996 and continued in 1997.

State of the Stock: The 1988 year-class no longer contributes to the fishery which, in 1995, was largely dependent on the 1993 year-class. The continuation of a fishery which targets male shrimp as young as age 2 is undesirable because the harvest of males reduces future spawning potential. Data from both the fishery and research surveys in 1996 and 1997 showed that the 1993 year-class was much stronger than was evident in the 1995 assessment. Further, the 1994 year-class was stronger than expected in the 1996 assessment. The decline in catch rates of female shrimp from 1993 to 1997 is consistent with the results of the EU survey covering the same period. Both sources are considered representative of the trend in the spawning stock biomass.

Recommendations: Despite the strength of the 1993 year-class and the appearance of the 1994 year-class in late-1996 and 1997, concerns first expressed in 1995 for the continued decline of the spawning stock are still valid. Therefore, any fishing permitted in 1998 will likely be directed at what remains of the 1993 year-class and additional recruitment of the 1994 year-class. No projections of the remaining biomass for these year-classes in 1998 or recruitment of the 1995 year-class are available. A significant reduction in fishing intensity is necessary to arrest the apparent continued decline in the female component of the stock and to conserve males. Therefore, if a fishery is permitted in 1998, catches should be kept at the lowest possible level. Catches at the level projected for 1997 (less than half the 1996 catch) might not be low enough to halt the observed decline in the stock.

Special Comments: The substantial decrease in effort (and catch) between 1996 and 1997 is largely due to the Icelandic self-imposed quota of 6 800 tons in 1997 and possibly due to economic factors (low catch rates, small size of shrimp and low prices) for all fleets.

Redfish by-catches, which were high in 1993 and 1994, were reported to be very low in 1995, 1996 and 1997. It is not clear, however, if the reduction was due entirely to changes in bar spacing of sorting grates or to a reduction in redfish abundance.

In the absence of a time-series of directed research trawl surveys for shrimp, assessing the recruitment and predicting the exploitable stock is not possible.

Non-traditional Resources

The Council noted that the Committee reviewed information on non-traditional resources and endorsed the STACFIS recommendation that the data regarding non-traditional species derived from research vessel surveys should be examined, and that analyses be undertaken to evaluate trends in biomass and distribution of these species, and that these results be reported at the June 1998 Meeting of the Scientific Council.

Special Requests from Concurrent General Council and Fisheries Commission Meetings

Special Request from General Council

"Is it possible to catch any non-regulated species in the NAFO Regulatory Area without by-catch of regulated species? If the answer to this question is yes, the Scientific Council is asked to identify such fisheries."

The Scientific Council advised that, in general, it would normally not be possible to conduct a directed fishery for non-regulated species in the NAFO Regulatory Area without a by-catch of some regulated species. The amount of by-catch will depend on species, abundance, gear and season of the fishery. The Scientific Council was not in a position to evaluate a more detailed reply.

Special Request from Fisheries Commission

On Compatibility and Applicability of Discard/Retention Rules, a question was *"whether or not the Scientific Council currently takes discards into account when developing scientific advice?"*

The Scientific Council noted that in the past, our ability to deal with all sources of fishing mortality was limited due to incomplete data. However, the situation has improved in recent years, and any advised TAC includes both retained and discarded fish.

RESEARCH COORDINATION

Fisheries Statistics

The Council **recommended** that each Contracting Party select a representative at the Scientific Council who will ensure their respective national statistical agencies are notified to submit STATLANT data as outlined in the Rules of Procedure, and that the Secretariat be informed of this choice. The USA STATLANT 21B data for 1993 had recently been submitted, but data from the Faroe Islands were still not available. As this was the only remaining outstanding submission for 1993, the Council agreed that in the event the Faroe Islands data cannot be obtained in the near future, the Secretariat proceed with the publication of the 1993 Statistical Bulletin.

Establishment of NAFO Internet Website

The Council was pleased that a preliminary NAFO website has been established by the Secretariat. The Council agreed that financial and technical support for these developments and their associated upkeep could be considerable, and, accordingly endorsed the STACREC recommendation that the Secretariat prepare a report for the June 1998 Meeting outlining further development of the website, including any anticipated resource requirements for development and maintenance of the web site.

Shrimp Survey

The Council agreed that the following proposal be forwarded to the Fisheries Commission as it relates to logistics, coordination and standardization for shrimp in Div. 3M:

- (i) The survey should be carried out with the joint effort of shrimp biologists.
- (ii) The survey would require 10-12 fishing days, preferably in July, and conduct 60 daytime stations that would cover a depth range from 150-600 m using a Campelen 1800 trawl with a 13 mm liner.

CWP Intersessional Report

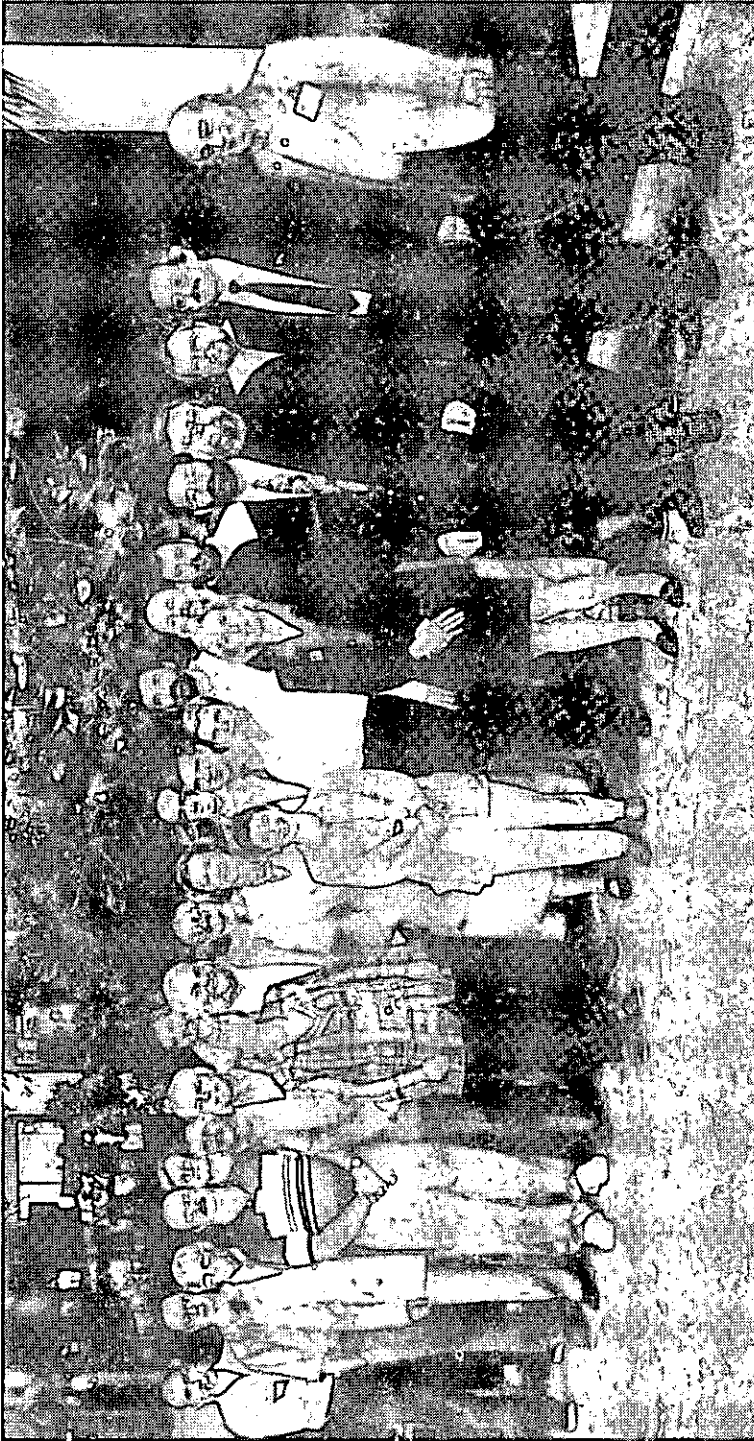
The Council noted there had been progress on planning an intersessional meeting for early-1998 related to reconciling NAFO Statistical data with those of other international agencies and, accordingly, endorsed the recommendation that the Assistant Executive Secretary attend this CWP Intersessional meeting to address all issues of interagency harmonization of data, and that the results be made available at the June 1998 Meeting of the Scientific Council.

PUBLICATIONS

Promotion and Distribution of Scientific Publications

- The Council noted STACPUB discussion on invitational papers, and encouraged this approach for the promotion of the Journal.
- The Council was pleased at the quality of the new NAFO website and the short time-frame in which it was achieved and welcomed the steps being taken by STACPUB to develop the present (preliminary) NAFO website to suit the Scientific Council requirements.
- The Council endorsed the STACPUB recommendation that poster displays should be set up during the Annual Meetings as a method of providing current scientific information to the delegates.

Scientific Council Meeting, September 1997



(From left to right): D.G. Parsons, W.R. Bowering, V.A. Rikhter, D. Power, D.M. Carlsson, D. Rivard, D. Briand, U. Skúladóttir, H.P. Cornus, E. de Cardenas, D.B. Atkinson, M.L. Godinho, S. Junquera, A. Avila de Melo, A. Vazquez, M.J. Morgan, L. Motos, C.M. Jones, M.A. Showell, W.B. Brodie, F.M. Serchuk, M. Stein, A. Nicolajsen, V.N. Shibanov, R. K. Mayo.

Annex 1. List of Participants

CANADA

Representatives:

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Power, D.	" " " " " " "
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DENMARK

GREENLAND

Representative:

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Advisers/Experts:

Carlsson, D.M.	Greenland Institute of Natural Resources, P. O. Box 570, DK-3900 Nuuk
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FAROE ISLANDS

Representative:

Nicolajsen, A.	Fiskorannsóknarstovan, Fisheries Laboratory, Noatun, Postboks 3051, FR-110 Torshavn
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EUROPEAN UNION (EU)

Representative:

Hagström, H.	European Commission, DG XIV, Unit C-1, Rue de la Loi 200, B-1049 Brussels, Belgium
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Annex 2. Agenda

- I. Opening (Chairman: W. R. Bowering)
 1. Appointment of rapporteur
 2. Adoption of agenda
 3. Attendance of observers
 4. Plan of work

- II. Fishery Science (STACFIS Chairman: R. Mayo)
 1. Opening
 2. Matters related to stock assessments
 - a) Assessment of shrimp in Division 3M (see Notes 1 and 2)
 3. Arrangements for conducting stock assessments in 1998
 - a) Update list of Designated Experts
 4. Other matters
 - a) Review of SCR and SCS Documents (see also Note 2)
 - b) Non-traditional Resources
 - c) Other business

- III. Research Coordination (STACREC Chairman: D. Power)
 1. Opening
 2. Fisheries statistics
 - a) Progress report on Secretariat activities in 1997
 - i) Acquisition of STATLANT 21 data
 - ii) Publication of statistical information
 - b) Update on the establishment of NAFO Internet Website
 - c) Definitions of fishing effort
 3. Review of SCR and SCS Documents.
 4. Other matters

- IV. Publications (STACPUB Chairman: H.-P. Cornus)
 1. Opening
 2. Review of scientific publications
 - a) Status of papers from September 1997 Symposium
 - b) Status of publication on Div. 3M shrimp
 - c) Other publications

3. Promotion and distribution of scientific publications
 - a) Invitational papers
 - b) Considerations of ASFA Abstracts
 - c) NAFO Website status report
 - d) Possibilities of using new technologies for publications and distribution
 4. Review of papers for possible publication
 - a) Papers presented at the September 1997 Meeting
 - b) Papers not considered at the June 1997 Meeting
 5. Other matters
- V. Management Advice and Responses to Special Requests
1. Shrimp in Division 3M
 2. Special requests from concurrent Fisheries Commission meeting
- VI. Review of Future Meeting Arrangements
1. Scientific Council Meeting on northern shrimp 14-18 November 1997
 2. Workshop on Precautionary Measures, 17-27 March 1998
 3. June 1998 Meeting of Scientific Council
 4. Special Session and Annual Meeting, September 1998
- VII. Future Special Sessions
1. Progress report on Symposium of September 1998
 2. Progress report on Symposium in 1999
- VIII. Other Matters
1. Update on Precautionary Approach
 2. Other business
- IX. Adoption of Reports
1. Consideration of report from the Symposium of 10-12 September 1997
 2. Committee Reports of present meeting (STACFIS, STACREC, STACPUB)
 3. Report of Scientific Council, 7-19 September 1997
- X. Adjournment

- NOTE 1.** At its meeting of 4-19 June 1997, STACFIS noted that the method of presentation of redfish by-catch information from the shrimp fishery (in Div. 3M) continues to be variable, and recommended that *in future the estimated numbers caught as well as tables showing their size distribution be presented*. This will enable STACFIS to better evaluate possible impacts on a regulator basis.
- NOTE 2.** At its meeting of 4-19 June 1997, STACFIS deferred considerations of SCR Doc. 97/2 titled "Northern shrimp in Russian catches from Flemish Cap Bank (Div. 3M) in 1995-1996", and SCR Doc. 97/32 titled "Evaluations of offshore closed areas as a fisheries management tool, with emphasis on two case studies".

Scientific Council Meeting

The Scientific Council met at the new NAFO Headquarters, 2 Morris Drive, Dartmouth, Nova Scotia, Canada, during 14-17 November 1997. Representatives attended from Canada, Denmark (in respect of Faroe Islands and Greenland), European Union, Iceland and United States of America (Annex 1).

T. Amaratunga was appointed Rapporteur.

The Agenda modified accordingly was adopted (Annex 2).

Summary reports of the assessments and other matters considered by the Scientific Council are given below.

FISHERY SCIENCE

The Council noted that matters referred to STACFIS relating to assessments of Shrimp in Subareas 0 and 1 and Shrimp in Denmark Strait were addressed. The summary reports are given below.

Shrimp in Subareas 0 and 1

Background: A small scale inshore fishery began in SA 1 during the 1930s. Since 1969 an offshore fishery has developed and the shrimp fishery is now the most important in Davis Strait.

Fishery and Catches: The fishery is conducted mainly by Greenland and Canada. Recent catches from the stock are as follows:

Year	Catch ('000 tons)			TAC ('000 tons)
	Inshore	Offshore	Total	Recommended
1990	13.6	55.7	69.4	50.0 ¹
1991	16.3	59.6	75.9	50.0 ¹
1992	20.6	66.2	86.8	50.0 ¹
1993	17.8	57.8	75.6	40.0 ¹
1994	18.1	58.5	76.6	50.0 ¹
1995 ²	16.4	54.3	70.7	60.0
1996 ²	17.4	51.9	69.2	60.0
1997 ² (to Oct)	9.8	46.2	56.1	60.0

¹ Only offshore.

² Provisional.

State of the Stock: The combined inputs to the assessment indicated a decrease in stock biomass and in abundance of large shrimp. Recruitment to the female group in 1998 is forecasted to be low. Year-classes 1991 to 1993 that were estimated from the 1996 survey and fishery to be at or above average are now estimated to be only average or below average. The fishery in 1998 will therefore depend on reduced abundance of females and larger males from these year-classes.

Recommendations: TACs advised for 1997 and recent years has been 60 000 tons. The catches have consistently exceeded this level. In the current assessment, serious concerns about the status of the stock has been expressed. Recent catches were observed to coincide with a decrease in stock biomass. In an attempt to halt the biomass decline and protect future recruitment, the Council recommended that 1998 catches be no higher than 55 000 tons and that the TAC be reduced to this level.

Special Comments: Unless stock status improves, further reduction in removals and TACs will be required in the future.

Shrimp in Denmark Strait

Background: The fishery for shrimp started in areas north of 65°N in Denmark Strait in 1978. The fishery started exploiting new areas south of 65°N after 1992.

Fishery and Catches: This soon became a multi-national fishery with recent catches and TACs as follows:

Year	Catch (¹ 000 tons)	TAC (¹ 000 tons) Recommended
1992	7.5	8
1993	7.6	5
1994	9.8	5
1995 ¹	9.5	5
1996 ¹	9.6	5
1997 ¹ (to 1 Nov)	8.3	5

¹ Provisional.

Effort has declined substantially since the late-1980s.

State of the Stock: The changes in fishing pattern, very low levels of commercial sampling and lack of a 1997 survey made assessment of the stock difficult. Catch rates in both northern and southern areas show no trend since 1994. The information available provides no basis to conclude any recent change in the stock status.

Recommendations: Because of uncertainties on stock status, the Council is unable to advise any change to the TAC from the 1997 value of 5,000 tons.

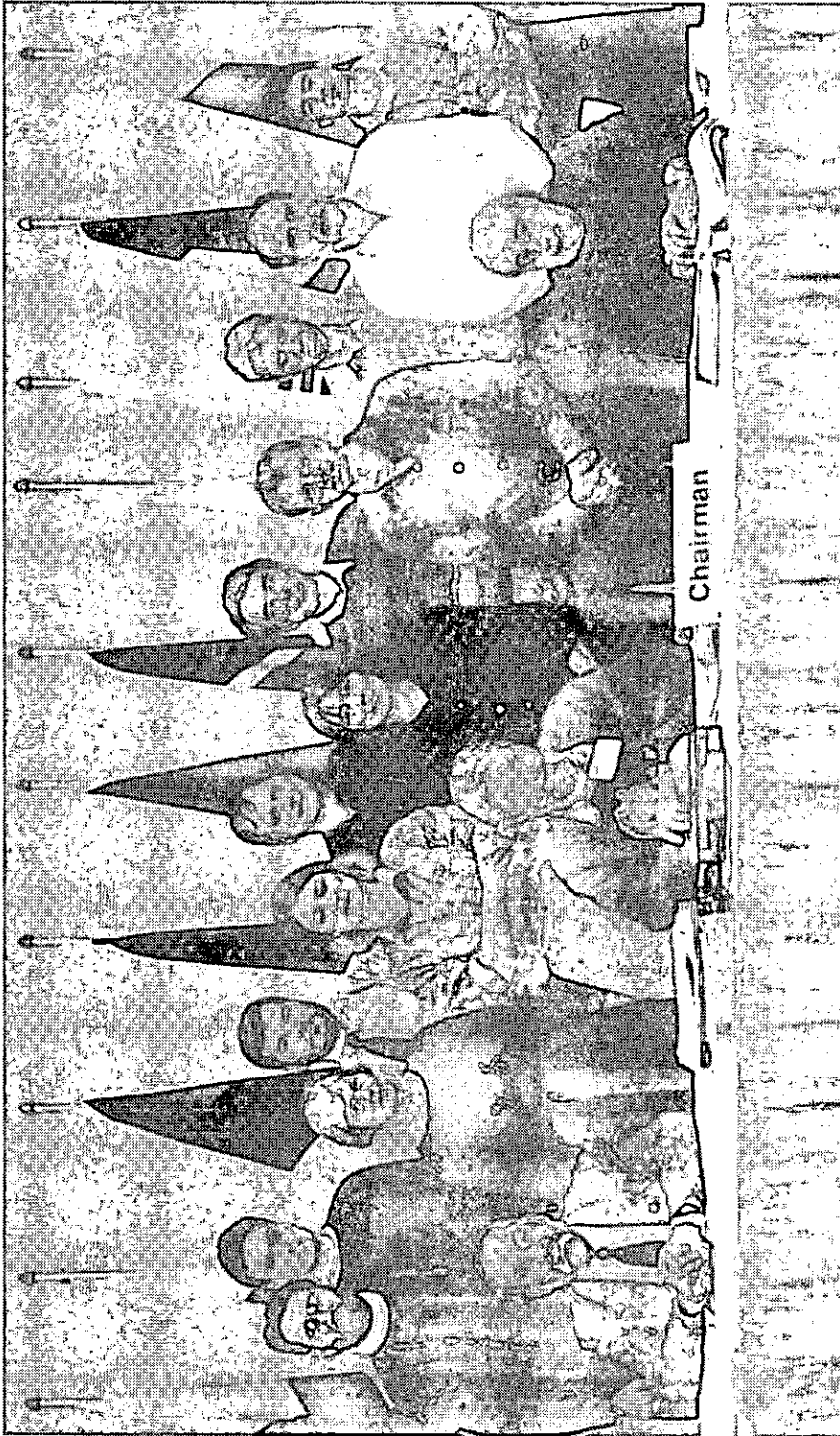
Special Comment: The Council noted that this level was first advised in 1992 when the stock was considered to be confined to the northern area. An improved database and a better understanding of stock structure is required before a change in TAC can be advised.

Other Shrimp Assessments

Gulf of Maine: Survey indices of abundance and total commercial landings characterized by intensive port sampling were modeled with a modified DeLury analysis to estimate stock abundance and fishing mortality rates (F) from 1985 to 1997. Estimates of biomass and F were independently estimated using a non-equilibrium surplus production model. Biological reference points were estimated using a model of yield and egg production per recruit. The assessment indicated that the total stock biomass is currently below-average, and the fishing mortality rate (F) is high. Abundance of recruited shrimp at the end of the 1997 season was the lowest since the early-1980s. Fishing mortalities at this level were associated with a collapse of the Gulf of Maine stock in the 1970s. This surplus production model was applied to shrimp stocks in Denmark Strait on a preliminary basis, and further work is ongoing.

Scotian Shelf: The offshore trawl fishery began to develop toward its potential in the early-1990s when the introduction of the Nordmore grate eliminated the groundfish by-catch problem. The TAC was increased gradually to the current 3600 ton level, but the stock is still believed to be underexploited. Stock biomass is at an all time high, probably due to low temperatures and predation pressure in recent years. An inshore component to this stock was discovered recently and is currently exploited by a small (500 tons) but developing trap fishery that takes large animals (mainly transitionals and females) very close to shore (depth 100 m) from late-summer to early-spring, off Canso, Nova Scotia. These shrimp leave the inshore during spring and early-summer when water temperatures decrease to $<1^{\circ}\text{C}$.

Scientific Council Meeting, November 1997



Standing: F.M. Serchuk, O. Folmer, U. Skuladottir, S.X. Cadrin, H. Siegstad, P.A. Koeller, L. Savard, H. Powles, D.M. Carlsson,
C. Hvingel, D.G. Parsons, J. Lambert
Seated: T. Amaratunga, H.P. Cornus, R.K. Mayo

Annex 1: List of Participants

CANADA

Representatives:

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 Savard, L. Inst. Maurice Lamontagne, DFO, C.P. 1000, Mont-Joli, Quebec G5H 3Z4

DENMARK (in respect of Faroe Islands and Greenland)

GREENLAND

Representative:

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 Hvingel, C. " " " " "

EUROPEAN UNION (EU)

Adviser/Expert:

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ICELAND

Representative:

Skúladóttir, U. Marine Research Institute, Skulagata 4, P. O. Box 1390, 121-Reykjavik

UNITED STATES OF AMERICA (USA)

Advisers/Experts:

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 Mayo, R.K. US Dept. of Commerce, NOAA/NMFS, NEFSC, 166 Water St., Woods Hole, MA 02543
 Serchuk, F.M. National Marine Fisheries Service, NEFSC, 166 Water St., Woods Hole, MA 02543

Annex 2. Agenda

- I. Opening (Chairman: H.-P. Cornus)
 1. Appointment of rapporteur
 2. Adoption of agenda
 3. Plan of work

- II. Fishery Science (STACFIS Chairman: R. Mayo)
 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
 - Information on other shrimp stocks

- III. Precautionary Approach for Northern Shrimp Stocks

- IV. Formulation of Advice
 1. Northern shrimp (Subareas 0 and 1)
 2. Northern shrimp (Denmark Strait and off East Greenland)

- V. Other Matters
 1. Progress report of 1999 Symposium on shrimp
 2. Timing of November Shrimp Meeting

- VI. Adoption of Reports

- VII. Adjournment

PART IV

(pages 177-192)

**Administrative and Financial Report
for the Year Ended 31 December 1997**



Administrative Report for the Year Ended 31 December 1997

Meetings and NAFO Secretariat Activities

1. The Standing Committee on Fishing Activities of Non-Contracting Parties in the Regulatory Area (STACFAC), Dartmouth, N.S., Canada, 4-7 February 1997.
2. The STACTIC Working Group on Satellite Tracking, Dartmouth, N.S., Canada, 2-4 April 1997.
3. The Working Group on Dispute Settlement Procedures (DSP), Dartmouth, N.S., Canada, 14-16 April 1997.
4. The Standing Committee on Fishing Activities of Non-Contracting Parties in the Regulatory Area (STACFAC), Brussels, Belgium, 15-16 May 1997.
5. The International Fisheries Commission Pension Society Annual Meeting, Victoria, B.C., Canada, 22-23 May 1997. The NAFO Secretariat was represented by Mr. F. D. Keating and Mr. S. M. Goodick.
6. The Standing Committee on International Control (STACTIC), Copenhagen, Denmark, 24-26 June 1997.
7. The Scientific Council and its Standing Committees, Keddy's Dartmouth Inn, 5-19 June 1997.
8. The Annual Meeting of the Organization including all constituent bodies - the General Council, the Fisheries Commission, the Scientific Council, St. John's, Newfoundland, Canada, 15-19 September 1997.
9. The STACTIC Working Group on Satellite Tracking, Dartmouth, N.S., Canada, 28-30 October 1997.
10. The Scientific Council, NAFO Headquarters, Dartmouth, N.S., Canada, 15-18 November 1997.

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 are prepared and printed at the NAFO Secretariat. It has been estimated that 1.5 million pages have been circulated from the NAFO Secretariat as printing matter in the form of documents, circular letters and publications during 1997. The basic publications were the following:

- a) *NAFO Annual Report* for the year 1996 (152 pages) was distributed in March 1997.

- b) *NAFO Meeting Proceedings* for the year 1996 (157 pages) was distributed in February 1997.
- c) *NAFO Scientific Council Reports* for 1996 (226 pages) was distributed in January 1997.
- d) *NAFO Journal of Northwest Atlantic Fishery Science* Volume 21 (83 pages) was distributed in April 1997.
- e) *NAFO Scientific Council Studies* Number 26 (129 pages) was distributed in December 1996.
- f) *NAFO Scientific Council Studies* Number 27 (81 pages) was distributed in December 1996.
- g) *NAFO Scientific Council Studies* Number 28 (105 pages) was distributed in December 1996.
- h) *NAFO Scientific Council Studies* Number 29 (125 pages) was distributed in May 1997.
- i) *NAFO Scientific Council Studies* Number 30 (117 pages) was distributed in December 1997.
- j) *NAFO Statistical Bulletin*, Vol. 43, Fishery Statistics for 1993 (329 pages) was issued in December 1997.
- k) *NAFO Newsletter "NAFO News"* No. 5 for July-December 1996 issued in January 1997 and No. 6 for January-June 1997 was issued in July 1997.

Fishery Statistics

The NAFO statistical database is at the NAFO Secretariat and available in computer diskette form or hard copies to the Contracting Parties.

The data reports for the preceding year of fishing, STATLANT 21A reports (preliminary annual catches in the NAFO Convention Area by species and divisions), due 15 May have not been received from: for 1994 - USA; for 1995 - USA; for 1996 - Denmark, Poland, Korea and USA.

The data reports for the preceding year of fishing, STATLANT 21B reports (final annual catches in the NAFO Convention Area by species, month, effort), due 30 June have not been received from: for 1989 EU-France (M); for 1994 - USA; for 1995 - Denmark (Faroes) and USA; for 1996 - Canada (N), Denmark (Faroes), Greenland, Denmark, Poland, Spain, Great Britain, USA, Korea and questions with Norway and Russia.

Financial Report for the Year Ended 31 December 1997

An audit of the NAFO accounts for the fiscal year 1997 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, 1997 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, 1997, these enhanced benefits amounted to approximately \$80,300. Failure to record this amount as a liability in 1997 is not in accordance with the Organization's stated accounting principles. Had the liability been recorded \$80,300 would have been reflected as a prior period adjustment and the accumulated surplus at the end of the year would have been reduced by \$80,300.

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, 1997 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 6, 1998

Deloitte & Touche
Chartered Accountants

Statement of Revenue and Expenditures
(Year Ended 31 December 1997)

(Expressed in Canadian Dollars)

	Budget 1997	Actual 1997	Actual 1996
Revenue			
Contributions assessed Contracting			
Parties (Note 5)	\$ 867,968	\$ 867,968	\$ 855,011
Allocation from surplus for operations	138,532	138,532	140,989
Personal income taxes			
Federal	-	104,830	101,819
Provincial	-	46,059	43,234
Interest	-	14,654	19,917
Sales of publications	-	8,484	6,716
	<u>1,006,500</u>	<u>1,180,527</u>	<u>1,167,686</u>
Expenditures			
Salaries	614,500	620,077	591,827
Vacation pay increase (decrease)	1,000	(1,854)	(5,648)
Superannuation (Note 6)	86,200	76,994	83,367
Additional help	500	-	697
Group medical and insurance plan	42,000	42,666	40,027
Termination benefits (Note 4)	32,000	26,259	29,799
Travel	11,300	12,022	23,366
Transportation	1,000	915	669
Communications	67,000	54,630	55,906
Publications	26,000	25,140	23,779
Contractual services	38,000	33,812	44,271
Materials and supplies	32,000	32,470	27,447
Equipment	5,000	4,943	2,063
Meetings	35,000	58,501	68,059
Computer services	15,000	17,892	12,091
	<u>1,006,500</u>	<u>986,467</u>	<u>997,720</u>
Excess of revenue over expenditures before provision for uncollectible accounts	-	194,060	169,966
Provision for uncollectible accounts and write-off of contributions	<u>30,634</u>	<u>30,634</u>	<u>31,434</u>
Excess of revenue over expenditures	<u>\$ (30,634)</u>	<u>\$ 163,426</u>	<u>\$ 138,532</u>

Statement of Accumulated Surplus
(Year Ended 31 December 1997)

(Expressed in Canadian Dollars)

	1997	1996
Balance, beginning of year	\$ 213,532	\$ 215,989
Allocations		
To operations	<u>138,532</u>	<u>140,989</u>
	75,000	75,000
Excess of revenue over expenditures	<u>163,426</u>	<u>138,532</u>
Balance, end of year	<u>\$ 238,426</u>	<u>\$ 213,532</u>

Balance Sheet as at 31 December 1997

(Expressed in Canadian Dollars)

	1997	1996
ASSETS		
Current		
Cash and short-term deposits	\$ 220,898	\$ 373,051
Contributions receivable (Note 3)	28,681	21,948
Accounts receivable	6,389	3,045
Accrued interest receivable	4,741	567
Grant receivable-Province of Nova Scotia	-	43,234
Prepaid expenses	<u>18,822</u>	<u>22,112</u>
	279,531	463,957
Investments segregated for employee termination benefits	<u>240,727</u>	<u>-</u>
	<u>\$ 520,258</u>	<u>\$ 463,957</u>
LIABILITIES		
Current		
Accounts payable and accrued liabilities	\$ 17,345	\$ 6,233
Accrued vacation pay payable	7,887	9,741
Overpayment of contributions by Contracting Parties	<u>-</u>	<u>4,110</u>
	25,232	20,084
Provision for employee termination benefits (Note 4)	<u>256,600</u>	<u>230,341</u>
	<u>281,832</u>	<u>250,425</u>
EQUITY		
Accumulated Surplus	<u>238,426</u>	<u>213,532</u>
	<u>\$ 520,258</u>	<u>\$ 463,957</u>

Statement of Changes in Financial Position
(Year Ended 31 December 1997)

(Expressed in Canadian Dollars)

	1997	1996
Net inflow (outflow) of cash related to the following activities:		
Operating		
Excess of revenue over expenditures	\$ 163,426	\$ 138,532
Item not affecting cash		
Allocation from surplus	<u>(138,532)</u>	<u>(140,989)</u>
	24,894	(2,457)
Changes in non-cash operating working capital items (Note 9)	<u>37,421</u>	<u>(27,534)</u>
	<u>62,315</u>	<u>(29,991)</u>
Investing		
Increase in investments segregated for employee termination benefits	<u>(240,727)</u>	-
Financing		
Increase in provision for employee termination benefits	<u>26,259</u>	<u>29,799</u>
Net cash outflow	(152,153)	(192)
Cash position, beginning of year	<u>373,051</u>	<u>373,243</u>
Cash position, end of year	<u>\$ 220,898</u>	<u>\$ 373,051</u>

Notes to the Financial Statements

(Year Ended 31 December 1997)

(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:

	1997	1996
Bulgaria	\$ 15,317	\$ 15,717
Cuba	15,576	16,896
France (in respect of St. Pierre et Miquelon)	-	5,052
Lithuania	13,105	-
Romania	<u>15,317</u>	<u>15,717</u>
	59,315	53,382
Less: Allowance for uncollectible assessments	<u>30,634</u>	<u>31,434</u>
	<u>\$ 28,681</u>	<u>\$ 21,948</u>

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, 1997, the additional liability resulting from this enhancement amounted to approximately \$80,300, 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 (18th Annual Meeting, September, 1996).

5. Contributions Assessed Contracting Parties

(Expressed in Canadian Dollars)

	1997	1996
Bulgaria	\$ 15,317	\$ 15,717
Canada	347,358	380,301
Cuba	15,890	17,154
Denmark (in respect of the Faroe Islands and Greenland)	98,594	79,819
Estonia	16,098	19,313
European Union	62,448	52,555
France (in respect of St. Pierre et Miquelon)	15,382	5,052
Iceland	16,984	16,850
Japan	17,556	18,891
Republic of Korea	15,317	15,717
Latvia	15,630	20,181
Lithuania	15,942	17,762
Norway	23,337	22,699
Poland	15,317	15,717
Romania	15,317	15,717
Russian Federation	21,566	24,394
United States of America	<u>139,915</u>	<u>117,172</u>
	<u>\$ 867,968</u>	<u>\$ 855,011</u>

6. Superannuation

The Organization has a defined benefit pension plan which covers all employees. The last actuarial valuation was performed as at January 1, 1996. At that time, the accrued pension obligation was \$1,570,000 while the assets were valued at \$1,487,000, resulting in an unfunded pension liability of \$83,000. The estimated accrued pension obligation and value of the assets at December 31, 1997 are \$1,839,194 and \$1,802,394 respectively, resulting in an unfunded pension liability of \$36,800. The unfunded pension liability is being funded at the rate of \$28,500 per year.

7. Operating Lease Obligations

The Organization is committed to lease payments for certain equipment, as follows:

<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>
\$15,640	\$15,530	\$5,320	\$2,450	\$ -

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)

	1997	1996
Contributions receivable	\$ (6,733)	\$ 23,929
Accounts receivable	(3,344)	899
Accrued interest receivable	(4,174)	553
Accrued <i>ex gratia</i> grant receivable	43,234	(43,234)
Prepaid expenses	3,290	3,047
Accounts payable and accrued liabilities	11,112	(2,667)
Accrued vacation pay	(1,854)	(5,647)
Overpayment of contributions by Contracting Parties	(4,110)	(4,414)
	\$ 37,421	\$ (27,534)



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