REPORT OF THE

NINTH ANNUAL MEETING

OF THE COUNCIL

9-12 JUNE 1992

WASHINGTON DC, USA

PRESIDENT:	MR ALLEN E PETERSON (USA)
VICE-PRESIDENT:	MR SVEIN AAGE MEHLI (NORWAY)
SECRETARY:	DR MALCOLM WINDSOR

CNL(92)55

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REPORT OF THE NINTH ANNUAL MEETING OF THE COUNCIL OF THE NORTH ATLANTIC SALMON CONSERVATION ORGANIZATION 9-12 JUNE 1992, DEPARTMENT OF STATE, WASHINGTON DC, USA

1. OPENING SESSION

1.1 The President, Mr Allen E Peterson Jnr, opened the meeting and introduced Ambassador Richard Smith, who made a welcoming address (Annex 1).

1.2 The representatives of Canada, Denmark (in respect of the Faroe Islands and Greenland), the European Economic Community, Finland, Iceland, Norway, the Russian Federation, Sweden and the United States of America made opening statements (Annex 2).

1.3 The President joined Ambassador Smith in welcoming delegates to Washington DC and made an opening statement on the work of the Organization (Annex 3).

1.4 The President expressed appreciation to the Members for their statements, and closed the Opening Session.

1.5 A list of participants is given in Annex 4.

2. ADOPTION OF THE AGENDA

2.1 The Council adopted its agenda, CNL(92)44, (Annex 5).

3. ELECTION OF OFFICERS

3.1 The Council, on a proposal by the representative of the United States seconded by the representative of Iceland, elected Mr Børre Pettersen (Norway) to be its President.

3.2 The Council, on a proposal by the representative of Denmark (in respect of the Faroe Islands and Greenland) seconded by the representative of Finland, elected Mr David Meerburg (Canada) to be its Vice-President.

4. SECRETARY'S REPORT

4.1 The Secretary made a report to the Council, CNL(92)6, on the status of ratifications of and accessions to the Convention and membership of the regional Commissions. During the year the Depositary had been informed that the Russian Federation had taken over the obligations under the Convention of the former Union of Soviet Socialist Republics.

4.2 In this report the Secretary also referred to the Headquarters property at 11 Rutland Square, the Headquarters Agreement and external relations, possible topics for Special Sessions and projects being carried out by the Secretariat. He also reported on the

Audited Accounts for 1991, CNL(92)7, and receipt of contributions for 1992, CNL(92)8.

4.3 The Secretary also reported to the Council on applications for non-government observer status. Since the Eighth Annual Meeting four new applications for non-government observer status had been received from:

The American Fisheries Society, USA
The Ulster Angling Federation Limited, Northern Ireland
The Salmon Net Fishing Association of Scotland, Scotland
The Norwegian Farmers Union, Norway

These organizations had accepted the conditions laid down by the Council and had been granted observer status.

4.4 At its Eighth Annual Meeting the Council had considered the possibility of holding a Dialogue Meeting with ICES on salmon management and agreed that the Secretary should consult with ICES on this matter. The Council considered a provisional programme for this meeting which had been prepared by the Secretary and agreed that the meeting should be a Special Session of the Council and be held over a period of one and a half days prior to the Tenth Annual Meeting in Edinburgh in 1993. The meeting would provide an opportunity for dialogue between the Scientists, Administrators and Managers and the commercial and recreational fishermen. There was general support for the Dialogue Meeting. The General Secretary of ICES indicated that ICES intends to hold a planning session for the meeting in September with a further meeting in the Spring. The Council supported the idea of the joint meeting and requested the Secretary to consult with the General Secretary of ICES regarding the detailed arrangements for the meeting and to report back to the Council before the Tenth Annual Meeting.

5. REPORT OF THE FINANCE AND ADMINISTRATION COMMITTEE

5.1 The Chairman of the Finance and Administration Committee presented the report of the Committee, CNL(92)10.

5.2 The Council, upon the recommendation of the Committee, took the following decisions:

(a) to appoint Coopers and Lybrand of Edinburgh as auditors;
(b) to increase the level of the Working Capital Fund to £50,000 and to modify Financial Rule 6.3 by deleting reference to 40,000 pounds sterling and inserting 50,000 pounds sterling, CNL(92)48, (Annex 6);
(c) to establish a Stabilisation Fund and to modify Financial Rules 6.2 and 6.4, CNL(92)49 (Annex 7);
(d) to accept the audited 1991 annual financial statement, CNL(92)7;
(e) to adopt a budget for 1993 and to note a forecast budget for 1994, CNL(92)50 (Annex 8).

5.3 The Council thanked the Chairman of the Finance and Administration Committee, Mr Arni Isaksson, for his work and that of the Committee.

6. SCIENTIFIC RESEARCH

Report to NASCO from the ACFM of ICES

6.1 The representative of ICES presented the report of the ICES Advisory Committee on Fishery Management (ACFM) to the Council, CNL(92)12, (Annex 9).

Request to ICES for Scientific Advice for 1993

6.2 In the light of the problems experienced by the Council and the Commissions in effectively formulating their questions on scientific advice the President proposed that a Standing Scientific Committee be established with a mandate including the next Annual Meeting. This would consist of two representatives appointed by each Commission who would represent the Commission and not their respective Parties, and would be chaired by the Assistant Secretary. The Council agreed to this proposal. Upon a proposal by the Standing Scientific Committee the Council adopted a decision to request scientific advice from ICES, CNL(92)51, (Annex 10).

7. IMPLEMENTATION OF THE CONVENTION

Returns under Articles 14 and 15 of the Convention

7.1 The Secretary presented a report on the returns made under Articles 14 and 15 of the Convention, CNL(92)13, (Annex 11).

Laws, Regulations and Programmes

7.2 The Secretary presented a progress report on the Laws, Regulations and Programmes database, CNL(92)14.

Return of Catch Statistics

7.3 The Secretary introduced a statistical paper presenting the official catch returns by the Parties for 1991 and historical data by Party, CNL(92)15, (Annex 12).

Analysis of Catch Statistics

7.4 At its Seventh Annual Meeting the Council had agreed that the establishment of a minimum standard for catch statistics was desirable. At the Eighth Annual Meeting further consideration was given to the questions of comparability of catch statistics, the problems of assessing unreported catches and methods of reducing the level of unreported catches. The Council had agreed that the Secretary should address the issues of comparability and unreported catches. The Secretary introduced a paper, CNL(92)17, (Annex 13) including a document which would form a draft minimum standard and a basis for these consultations. There was support for this draft standard and the need to incorporate a section on fishing effort was agreed. The Secretary was

requested to amend the document accordingly and to proceed with consultations with the Parties.

7.5 The Secretary introduced a paper on carcass tagging, CNL(92)18, (Annex 14). This paper described the pros and cons of carcass tagging which had been introduced in Canada, the State of Maine (USA), France and Spain. While carcass tagging is effective and is simple in concept the considerable quantities of farmed salmon and expanded international trade could create difficulties but, if these could be overcome, the technique would appear to offer a simple and effective method of controlling illegal fishing, and of improving the quality of catch statistics. The representative of Canada confirmed the great deterrent value of tagging to illegal fishing and referred to a current review of tagging methods in aquaculture facilities. It was agreed that developments concerning tagging techniques should be kept under review by the Council since these may provide a cheap method of tagging large quantities of farmed salmon.

8. FISHING FOR SALMON IN INTERNATIONAL WATERS BY NON-CONTRACTING PARTIES

Report of the London Meeting

8.1 At its Seventh Annual Meeting the Council had adopted a Resolution calling for action through diplomatic channels to ensure that fishing for salmon in international waters by non-contracting Parties was ended. In view of continuing reports of activity during 1991, the Council had agreed to hold a Special Meeting in London to consider ways in which to assess the nature and extent of such fishing activities and possible remedial actions. A report of this meeting, CNL(92)19, (Annex 15) together with a report of activities since the meeting, CNL(92)20, (Annex 16) were considered.

Draft Protocol for Non-Contracting Parties

8.2 At the Special Meeting a draft Protocol, tabled by the US and Canada, was discussed. In the light of these discussions the US offered to prepare a simpler revised draft Protocol which would be circulated to the Parties, so that a drafting session could be held prior to the Ninth Annual Meeting. This meeting was held on 8-9 April 1992 in Washington DC and a report of the meeting was considered by the Council, CNL(92)33, (Annex 17). This report included a draft Protocol and Resolution agreed at the meeting. The representative of the US proposed that the draft Protocol for States not party to the Convention for the Conservation of Salmon in the North Atlantic Ocean and an accompanying draft Resolution be adopted.

8.3 The representative of Norway stated that though Norway would support the Protocol she would have preferred the inclusion of another provision. Norway had worked actively to establish a viable instrument to end the fishery in international waters, including provisions concerning inspection of vessels in the Parties' national waters, and had suggested the following addition:

"If there are reasonable grounds to believe that a vessel registered in the territory of a party to the Protocol is engaging in activity contrary to the provisions of this Protocol, that party shall not object to inspection of the vessel by a Party to the

Convention, provided that the inspection takes place within the fishing jurisdiction limits of the Party to the Convention. The inspecting Party shall provide to the North Atlantic Salmon Conservation Organization and to the Flag State of the vessel information concerning the inspection".

The representative of Norway hoped that the Council would return to this matter next year.

8.4 The representative of Canada said that he agreed with the concerns of Norway and indicated that there would be a need to consider how to deal with these concerns. He would wish to see this item on the agenda for the 1993 meeting.

8.5 The Council voted unanimously to adopt the Resolution on the Adoption of a Protocol for States not party to the Convention for the Conservation of Salmon in the North Atlantic Ocean, CNL(92)52, (Annex 18). The Protocol, CNL(92)53, is contained in Annex 19.

Draft Resolution "Fishing for Salmon on the High Seas"

8.6 The representative of the EEC tabled a draft resolution on "Fishing for Salmon on the High Seas". The representative of Norway, referring to the wording of the draft resolution discouraging nationals from engaging in any activity contrary to the Convention, suggested that there could be difficulty in asking non-contracting Parties to sign the Protocol if the contracting Parties themselves had regulations which were less severe. The representatives of Sweden and Norway noted the burdens placed upon the Secretariat by the Resolution. The representative of Sweden noted that the Resolution did not put further obligations on the Parties than those contained in the Convention.

8.7 The Council adopted the Resolution on Fishing for Salmon on the High Seas, CNL(92)54 (Annex 20).

8.8 The Council then requested that, in accordance with the Resolution, the Secretary should transmit copies of the Protocol to the governments of Panama and Poland bringing to their attention the activities of their vessels.

Other Actions

8.9 The Secretary referred to other recommendations arising from the London meeting including the possibility that there could be increased cooperation on surveillance and the use of other surveillance techniques such as monitoring of radio traffic and satellite technology. The idea that the NASCO Secretariat could, using its database, prepare model regulations for use by non-contracting Parties had been put forward. He said that these issues could be reviewed at a later annual meeting.

9. SALMON TAGGING

Repository of Tag Release Data

9.1 The Secretary presented a summary of tag release data, CNL(92)22, (Annex 21) from the information submitted by ICES.

NASCO Tag Return Incentive Scheme and its Future

9.2 The Secretary reported on the NASCO Tag Return Incentive Scheme, CNL(92)23, (Annex 22) during the third year of its four year trial period. The Scheme had been well publicised prior to the 1991 fishing seasons and may already have had some effects on reporting rates. A total of 1,764 tags had been entered into the 1992 draw. The scheme was working well in that there were 43% more tags returned than the level prior to its existence in spite of the reduced catch levels. The scheme had also resulted in a good deal of favourable publicity for the Organization and its work and had reinforced the importance of returning scientific tags.

9.3 The President advised the Council that the draw for the Tag Return Incentive Scheme was made by the Auditor at NASCO Headquarters on 27 May. He announced that the winner of the $2500 Grand Prize was Mr Onslow Wells of Jacques Fontaine, Newfoundland. The Council offered its congratulations to the winner.

9.4 The Council considered the future of the scheme which had been funded on a trial basis for the first four years by the United States and it was agreed to accept a US offer to fund the scheme for a further year.

10. DATABASE OF SALMON RIVERS FLOWING INTO THE NASCO CONVENTION AREA

10.1 The Secretary presented a progress report, CNL(92)24, (Annex 23) on the establishment of a database of salmon rivers flowing into the Convention area. Information had been received from some of the Parties. This database would provide an audit of salmon rivers flowing into the Convention area at the end of the 20th century. The President encouraged the Parties to provide the relevant information to the Secretary as soon as possible so that work on this important initiative may commence.

11. GUIDELINES TO MINIMISE THE THREATS TO WILD SALMON STOCKS FROM SALMON AQUACULTURE

11.1 At its Eighth Annual Meeting the Council had adopted "Guidelines to Minimise the Threats to Wild Salmon Stocks from Salmon Aquaculture" for use by the Parties on a voluntary basis. These had been printed as a separate NASCO document and distributed to interested individuals and organizations. The Secretary presented a report, CNL(92)25, (Annex 24) indicating that there had been a great deal of interest in the document which has been widely circulated both within North Atlantic countries and to those dealing with Pacific salmon and non-anadromous salmonids. This approach to conservation had had a very good reception world-wide. Favourable

comments had been received both from those concerned with the wild stocks and from the salmon farming industry.

12. SEA-RANCHING

12.1 In accordance with the decision of the Council at its Eighth Annual Meeting that the development of sea-ranching should be kept under review, the Secretary presented a paper describing the present scale of sea-ranching and its possible development in the North Atlantic, CNL(92)26, (Annex 25). Changes in fishing regulations and regimes in the North Atlantic, together with advances in smolt rearing techniques and limits to fish farming are tending to create a situation where ranching is becoming more viable. The large increase in smolt releases in Iceland have resulted in an increase in the harvest of ranched salmon despite a reduction in marine survival in recent years.

12.2 In view of the increasing interest in ranching and its possible effects on the wild stocks the Council requested that the Secretary look at the implications of ranching for the wild stocks and develop further information. The Secretary would also work with ICES so as to ensure that there would be speakers in the programme for the Dialogue Meeting with experience of the impacts on the wild stocks of the Baltic ranching programme.

13. INTERNATIONAL MANAGEMENT BY OTHER SALMON COMMISSIONS

13.1 At its Seventh Annual Meeting the Council agreed that the Secretary should obtain information on the problems and progress in the international management of salmon by other fisheries Commissions. The aim would be to learn from the successes and failures of other salmon management organizations. The Secretary reported, CNL(92)27, that such information is presently being obtained and a report will be presented to the Council at a future Annual Meeting. The Dialogue Meeting in 1993 will provide a useful opportunity to learn more about the salmon management undertaken by the International Baltic Sea Fishery Commission.

14. ECONOMIC VALUE OF ATLANTIC SALMON

14.1 At its Eighth Annual Meeting the Council considered a review of the literature concerning the economic value of Atlantic salmon and asked to be kept informed of additional information on the economic value of the resource. Since then a number of new studies had been undertaken and information had been provided to the Secretariat from previous studies. The Secretary presented a review of these studies, CNL(92)28, (Annex 26) which serve to highlight the considerable economic value of the resource. The Council would be kept informed of further economic assessments concerning Atlantic salmon.

15. INTERNATIONAL REVIEW OF PUBLICATIONS RELATING TO SALMON IN 1991

15.1 The Council considered a review of the literature concerning Atlantic salmon in 1991, CNL(92)29, prepared in accordance with Article 12, paragraph 2 of the Convention.

16. REPORTS FROM THE REGIONAL COMMISSIONS

16.1 The Chairman of each of the three regional Commissions reported to the Council on their activities.

17. REPORT ON THE ACTIVITIES OF THE ORGANIZATION

17.1 The Council adopted a report to the Parties, CNL(92)30, in accordance with Article 5, paragraph 6 of the Convention.

18. OTHER BUSINESS

18.1 There was no other business.

19. DATE AND PLACE OF NEXT MEETING

19.1 The Council confirmed the arrangement to hold its Tenth Annual Meeting in Edinburgh from 6-11 June 1993. The ICES/NASCO dialogue meeting will be held during Monday 7 June and the morning of Tuesday 8 June, prior to the meetings of the Council and Commissions.

19.2 The Council confirmed the arrangements to hold its Eleventh Annual Meeting in Norway from 6-10 June 1994.

20. DRAFT REPORT OF THE MEETING

20.1 The Council agreed the draft report of the meeting, CNL(92)34.

21. PRESS RELEASE

21.1 The Council adopted a press release, CNL(92)46, (Annex 27).

ANNEX 1

WELCOMING ADDRESS MADE BY AMBASSADOR RICHARD J SMITH

Mr President, Distinguished Representatives, Delegates, and Observers:

On behalf of the Government of the United States, I welcome you to Washington, to the United States, and to this Ninth Annual Meeting of the North Atlantic Salmon Conservation Organization (NASCO). It is both an honor and a pleasure for the Department of State to have this opportunity to host this session of NASCO here in our nation's capital.

Our desire to effectively conserve and manage Atlantic salmon resources throughout their range, and our efforts to restore salmon runs in our New England states, are well known to all of you.

Our commitment to restore important salmon runs to our rivers is a long-term, costly operation, involving efforts at the federal and state levels, and by the private sector. Our efforts have been only partially successful; relatively few of the salmon released by our hatcheries return as adults. We are committed to ensuring that as many as possible of the fish that we put into our rivers return to their homewaters in the United States to spawn.

To this end, the United States has recently established a domestic policy objective to work towards ending ocean commercial interceptory fisheries for Atlantic salmon. We will be working through NASCO, bilaterally, multilaterally, and through any other appropriate forum, to achieve this goal. We of course will continue to recognize the legitimate rights of subsistence users and personal use fisheries, and the fact that interceptions of salmon cannot be entirely eliminated. We also recognize that it may take us time to achieve this goal, but our target is to find acceptable solutions to meet it within the next few years.

It is also important in our view to send to the international community a strong, clear message that will discourage unauthorized, non-party fishing for salmon in the North Atlantic. During this NASCO meeting, you will be considering a draft Protocol to address this issue. We encourage your efforts and strongly support this draft Protocol to your convention. The Protocol can serve as a basis for legal action by nations in which those who conduct this fishery have registered their vessels. The United States believes that adoption of this Protocol will hasten the end of this fishery, and will discourage others from similarly undermining NASCO. Other measures are needed. For example, the draft Resolution proposed by the European Community earlier this year in Washington, to supplement the Protocol, defines a role for the Secretary of NASCO in the coordinated collection and dissemination of information both on the high seas fishery, and on the by-catch of Atlantic salmon. The United States believes adoption of this resolution would also be an important step by NASCO at this Annual Meeting.

Your agenda for the week is full. I bid you welcome once again, and I wish you success in completing the work ahead of you. I hope to see all of you at tomorrow evening's reception.

Thank you.

ANNEX 2

OPENING STATEMENT MADE BY THE REPRESENTATIVE OF CANADA

It is a pleasure for the Canadian delegation to participate in the Ninth Annual Meeting of the North Atlantic Salmon Conservation Organization in Washington.

Canada's commitment to NASCO and our views respecting NASCO's important role in the rational management of North Atlantic salmon are well known to the contracting Parties. At previous NASCO meetings Canada has stated its concern over the depleted status of the salmon stocks and has drawn attention to the need for accurate reporting, control of the harvests of salmon on the high seas and implementation of significant measures to protect salmon stocks.

Canada has taken very important steps in past years to manage its salmon fishery and with your permission, Mr President, I will annex to my opening statement a three page list of those management measures Canada has taken since 1972 to protect the salmon stocks. But this year - 1992 - Canada is implementing what certainly are the most drastic measures ever taken to protect the salmon stocks.

On March 6, 1992, our Minister of Fisheries and Oceans announced a five year moratorium on the commercial harvesting of salmon on the Island of Newfoundland. At the same time he announced a major program to retire commercial salmon licences in both Newfoundland and Labrador. Quotas in the Labrador fishery will be reduced as licenses are retired in that area. This initiative will cost the Governments of Canada and Newfoundland over $40 million and represents at least a 50% reduction in the total tonnage of Atlantic salmon caught by Canadian commercial and recreational fishermen. Again with your permission, Mr President, I will annex to my opening statement a brief summary of that program.

Canadian efforts to conserve the salmon resource are not only directed at the commercial fishery. For 1992, recreational fishermen will face quotas and delayed openings in each salmon fishing area in Newfoundland and Labrador and they will also face reductions in seasonal bag limits from ten to eight in most of the Atlantic areas. While these measures will be detailed at some length in the North American Commission, Canada feels it is important for the Council to recognize the seriousness with which it views conservation of this species.

I would like to point out, Mr. President, that all those initiatives taken by Canada are in line with its undertakings at NASCO. In fact, the 1992 management plan, announced a week ago, says, and I quote, "The measures taken by the Department of Fisheries and Oceans in 1992 are consistent with Canada's commitment to cooperate within the North Atlantic Salmon Conservation Organization."

Canada sees these measures as a commitment to safeguard the Canadian salmon stocks. We would like to suggest that other NASCO Parties undertake similar serious measures to address the conservation problems facing stocks on which they fish.

Canada recognizes that there are northern dependent communities which for subsistence or economic reasons depend significantly on salmon. In Canada's case there are Constitutional obligations to our aboriginal peoples that must be met. However, we believe that the

dependence of these communities on salmon can be met without affecting conservation and with a primary focus on reducing the interceptions of salmon destined for the waters of other contracting Parties.

Canada also reiterates its position that all catches of salmon must be reported to NASCO and where applicable must be counted against NASCO quotas. Furthermore, high seas interception of salmon must be stopped. Canada is encouraged by the fact that the Parties could come to agreement on an ad referendum protocol for non-contracting Parties and hopes that the Protocol will be adopted at this meeting. Canada will provide full cooperation to NASCO in efforts to discourage high seas interceptions.

On a personal note, Mr President, over the past year I have come to know the varied skills you possess as leader of this organization. With your leadership and determination I am sure that NASCO will achieve progress towards conserving North Atlantic Salmon. For its part Canada comes in the full spirit of cooperation to work with you and the other contracting Parties to achieve significant progress at this meeting.

Thank you.

THE RETIREMENT OFFER

1. Fishermen with commercial salmon licences, valid in 1991, will be eligible to retire their licences, with ex gratia compensation, while this offer remains in force.

2. The commercial salmon fishery in insular Newfoundland (excludes SFA Zones 2 and 14(B)) will be closed for at least five years. Continued commercial fishing will be permitted for fishermen in Zones 2 and 14(B) who choose to retain their salmon licences.

3. The offer will be in force from the date of announcement until October 31, 1992. Labrador fishermen, whose claims have not been settled by the opening of the commercial fishing season in early June 1992, will not have their claims processed until after October 31, 1992. Fishermen in SFA Zone 1 will be considered separately following further consultations with native groups and commercial licence holders.

4. Licences will be retired permanently.

5. As a condition of compensation, licence retirees will turn in salmon nets at a time and place to be indicated by DFO.

6. Retirees will be offered either:

(i) As a minimum, an ex gratia payment of $8,000, if they choose not to, or do not have documents acceptable to DFO establishing the value of their landings;

(ii) An ex gratia payment equal to eight times the value of the retiree's salmon landings in the best year out of the past three years, up to a maximum of $50,000 per retiree. This must be documented by purchase slips or other verifiable receipts.

7. Payments will be made at the time the licence is retired, the gear turned in and fishermen have accepted compensation offered.

8. Those who choose to retain and renew commercial salmon licences will not be compensated for any fishery closure. If it is decided to re-open the fishery at a later date, subject to policies in effect at that time, those who retained and renewed their licences would be able to fish again. There is no guarantee this fishery will ever re-open, however.

9. Those who voluntarily retire their licences may be considered for re-entry if the fishery re-opens and new licences are issued, subject to policies in effect at that time.

APPEALS

An Advisory Committee will be set up by DFO and the Newfoundland and Labrador government to review disputes over fishermen's eligibility or validity of licensing documents. A Fishermen Food and Allied Worker's (FFAW) Union representative will be invited to

participate on the Committee in an ex-officio capacity. Resolution of disputed cases will be subject to approval by representatives from both governments.

Disputes which cannot be resolved to the appellant's satisfaction may be referred to an independent advisor who will make recommendations to the federal and provincial fisheries ministers. Ministers' decisions will be final and binding on all parties.

In addition to Canada's contribution under this program and agreement, DFO also will pay the salary of a Fishermen's Advisor, under contract with FFAW, for the duration of the program.

MANAGEMENT OF THE COMMERCIAL FISHERY

Fishermen in insular Newfoundland who retain and renew commercial salmon licences will be prohibited from salmon fishing for at least five years. At that time salmon stock recovery will be reviewed. If stocks have recovered sufficiently to permit the resumption of gillnetting, re-opening of the commercial fishery may be considered, subject to policies in place at that time.

Labrador fishermen (SFA Zones 2 and 14(B)) choosing to retain and renew commercial salmon licences will fish under reduced quotas. The quota reduction will be in the same proportion as the number of licences retired. DFO will undertake a survey of Labrador fishermen in early 1992 in order to estimate the percentage who may retire their licences. Estimated quotas will be made public, based on this percentage. DFO will further adjust quotas at the time the season opens, if the actual number of licences retired differs significantly from the estimate.

MANAGEMENT OF THE NATIVE FOOD FISHERY

The licence retirement offer and all quota reductions in Zones 2 and 14(B) will be consistent with DFO and ACOA policies, undertakings and agreements with native groups. While fishermen in SFA zone 1 are currently excluded from this offer, they will be considered following further consultations with native groups.

DFO will continue to manage the native food fishery in a manner consistent with the Sparrow decision, and will continue discussions with aboriginal peoples with respect to fishing rights and opportunities.

MANAGEMENT OF THE RECREATIONAL FISHERY

Recreational fishermen will be required to make a reduction in effort consistent with the overall conservation and sustainable development objectives of the Recreational Fisheries Development Cooperation Agreement. DFO, in consultation with the Province of Newfoundland and Labrador, will consider specific measures on a river-by-river basis. These include imposing river-specific quotas; changes in the opening and closing dates for recreational fishing seasons; bag limits; "grilse-only" retention' "catch-and-release" fishing; or combinations of these measures. DFO will consult with the sportfishing sector and the Province of Newfoundland and Labrador on these measures for 1992.

CHRONOLOGY OF MANAGEMENT MEASURES

1972 - all commercial salmon fishing stopped in New Brunswick and Gaspé; fishermen retired and/or compensated (545).

- driftnets banned in 1972 (Newfoundland and New Brunswick); some fishermen retired and/or compensated (152).

1973 - some licence retirement (1,022) in Newfoundland.

1975 - new licensing policy implemented:
  - freeze on new entrants;
  - policy of attrition; and
  - strict transfer rules.

1976 - licensing policy modified to eliminate persons employed full time in non-fishery jobs.

- salmon-specific licences introduced in Quebec.

1978 - reduced fishing seasons in Cape Ray areas (now 12 and 13).

- changes in herring and mackerel seasons to reduce salmon by-catch.

1979 - to reduce salmon by-catch in Newfoundland and Labrador:
  - min. mesh size in cod leaders increased to 177 mm;
  - monofilament prohibited in cod traps.

1981 - limited commercial fishery re-opened in New Brunswick.

- commercial salmon seasons reduced for all areas of Newfoundland and Labrador except ones with more stringent seasons.

- Bay of Islands (Newfoundland) closed to cod traps.

- area outside 2 nauts of Port-aux-Basques, Newfoundland closed to salmon fishing.

- tagging introduced for anglers in New Brunswick.

- some licence retirement in New Brunswick (271).

1982 - 29 licences retired in Gaspé.

- management zones implemented (14 in Newfoundland and Labrador).

1983 - salmon-specific licences introduced in Nova Scotia and Prince Edward Island.

- tagging introduced for anglers in Nova Scotia.

- gear (amount) standardisation re: full and part-time.

1984 - delay in opening commercial season in Newfoundland and Labrador by two weeks from May 20 to June 5.

- part of New Brunswick commercial fishery closed (Miramichi and Saint John rivers).

- shorter and delayed seasons in most commercial fisheries in the Maritimes.

- tagging introduced for anglers in Quebec.

- angler retention of large salmon (>63 cm) prohibited in Maritime Provinces and in part of Newfoundland.

- Nova Scotia angling limits to 10 per season, 2 per day and possession limit of 6 (from 15, 5 and 8).

- Quebec angling limit in Gaspe and North Shore to 1 per day from 2 and a seasonal limit (7) introduced.

- Area J_2 (now 12) closed to salmon fishing and mandatory retirement of 147 licences (6 others not re-issued).

- transfer of commercial licences limited to immediate family and no transfer of part-time licences.

- retention of salmon caught incidentally prohibited.

- voluntary retirement of commercial licences in Newfoundland and Labrador (665).

- Gaspé areas of Quebec closed to commercial fishing and some licence retirement in Quebec.

1985 - closure of commercial fishery in rest of Maritimes.

- mandatory retirement of part-time commercial licences (552) in Newfoundland and Labrador (other 117 not allowed to renew).

- tagging implemented for anglers in Prince Edward Island and Newfoundland and Labrador.

- tagging implemented salmon exported from Newfoundland and Labrador.

- angler retention of large salmon (>63 cm) prohibited in Newfoundland.

- 7 licences retired in Quebec.

- Gaspé areas remain closed to commercial fishing.

1986 - fall commercial fishery starts closing earlier (October 15 as opposed to December 31).

- season angling limit (15) introduced in Newfoundland and Labrador.

- one licence retired on Quebec North Shore.

1986-87 - 348 licences retired in New Brunswick, Nova Scotia and Prince Edward Island.

1988 - 3 licences retired on Quebec North Shore.

1989 - allowances of salmon totalling 1,300 t introduced for commercial fishery.

1990 - quotas of salmon introduced (allowance maintained for Labrador area) - both total 667 t.

- 36 licences retired in Quebec.

- stringent regulations establishing controls on salmon rivers on an individual basis established for angling in Quebec.

1991 - commercial quota lowered to 600 t.

- Newfoundland and Labrador angling seasonal limit reduced to 10 from 15.

- 16 licences retired in Quebec.

OPENING STATEMENT MADE BY THE REPRESENTATIVE OF DENMARK (IN RESPECT OF THE FAROE ISLANDS AND GREENLAND)

Mr President:

I would like to express our thanks for the invitation to hold this meeting here in the United States from where the initiative to establish our NASCO Convention originally came.

The Equator is 40 degrees south of where we are now. Greenland is 40 degrees north of where we are now. Denmark represents the Faroe Islands and Greenland - countries situated way up north, very far from the urbanised world.

We are heavily dependent upon the living resources of the sea. We do not have any agricultural industry, and no mining activities either. We produce neither cars nor microchips. Our populations are small - 50,000 people - small compared with the 900 million people in the EC, the US, Russia, Canada and other NASCO member states. Our economic activity is based solely on marine living resources.

This entails a huge comprehensibility gap between the people who lay down my delegation's policy and those who lay down the other delegations' policies.

We have experienced this comprehensibility gap with respect to whales, which many of your citizens think should not be hunted. This also goes for whale stocks for which there is scientific evidence that controlled and sustainable hunting has no detrimental effect.

We have also experienced the comprehensibility gap with respect to seals, whose stocks have now grown to sizes that make heavy inroads on the marine living resources, including salmon. This growth is a consequence of pressure from citizens in the EC and the US. And with sort of "reversed logic" these same countries demand - not that the balance between seal and fish is re-established - but that we cut down our salmon quota.

The next "holy cow" seems to be salmon. May I remind you of the fact that the United Nations' Conference on Environment and Development (UNCED) is adopting a principle just now to the effect that member states commit themselves to administer the marine living resources in a sustainable way. Salmon is not exempt from this principle.

The International Covenant on Economic, Social and Cultural Rights of 1966 has been adopted by all Parties and member states of NASCO. Article 1(2) of this Covenant has the following wording:

"All peoples may, for their own ends, freely dispose of their natural wealth and resources without prejudice to any obligations arising out of international economic co-operation, based upon the principle of mutual benefit, and international law. In no case may a people be deprived of its own means of subsistence".

Mr President, my delegation requests that this Article be respected.

OPENING STATEMENT MADE BY THE REPRESENTATIVE OF THE EUROPEAN ECONOMIC COMMUNITY

Mr President, Distinguished Delegates, Observers, Ladies and Gentlemen:

The Ninth Annual Meeting of NASCO has brought us all to Washington DC. On behalf of the European Community I wish to express our appreciation to our American hosts for inviting us to this location. The Ninth Annual Meeting is a very important meeting where regulatory measures have to be adopted by the North-East Atlantic Commission and the West Greenland Commission. It used to be rare that regulatory measures in two of the Convention Areas have to be discussed at the same Annual Meeting, but after last year we face this situation again. In the view of the Community, regulatory measures are essential for obtaining the goals as established in the Convention and the Community Delegation will seek to ensure that the interceptory fishery will be kept within levels which will not endanger the conservation of salmon stocks.

Where NASCO has established regulatory measures at precautionary levels, the contracting Parties in question have to decide on the arrangements according to which the catch is to be taken or not taken. Such decisions are consistent with the provisions of the UN Convention on the Law of the Sea.

On this occasion, the Community Delegation would wish to refer to the decline in catch figures which are now the lowest on record. There might be a decline in marine survival, the reasons for which we are unaware. It seems that such mortality is not just a problem confined to a specific area or to certain stocks. Obviously, as we know from our experience, such mortality in stocks may appear only during a short period. However, at this stage, we are somewhat concerned, and therefore we would like to proceed with caution. Research into the cause of this mortality should be a priority for NASCO and I will return to this at a later stage.

During the previous Annual Meetings and at intercessional meetings NASCO has addressed fishing of salmon outside the limits of exclusive economic zones in the North Atlantic. Such activities are incompatible with the NASCO Convention as well as with the provisions of the UN Convention on the Law of the Sea, which in Article 66 envisages that this kind of fishery may only be conducted under very special conditions which are not fulfilled in this case. It is understood that the level of these fishing activities remained rather limited. An expansion remains, however, possible. For this reason, the European Community has tabled a Proposal on this issue for discussion and, if appropriate, adoption. This Proposal should establish the framework for NASCO in handling this question. We appreciate the observations which were received from other contracting Parties on this Proposal. The Protocol to be agreed at this meeting equips NASCO and its contracting Parties with a tool in encouraging the flag states concerned to take the appropriate measures to stop such activities. The Community intends to continue to put pressure on these countries within the limits of its international obligations.

We shall be discussing other issues such as a review of sea-ranching which might adversely affect wild salmon and the use which has been made of the Guidelines to Minimise the Threats to Wild Salmon Stocks from Salmon Aquaculture, which will be of importance for the future work of this Organization.

Thank you.

OPENING STATEMENT MADE BY THE REPRESENTATIVE OF FINLAND

Mr President, Distinguished Delegates, Observers, Ladies and Gentlemen:

Since NASCO's inception there has been favourable progress on the management of North Atlantic salmon. For almost a decade now, during which NASCO has been working on management and regulatory measures of salmon fisheries, it is quite evident that salmon stocks have improved in the sea as well as in the rivers of origin. The Convention has limited fishing to coastal waters within 12 nautical miles except the waters around the Faroe Islands and West Greenland. Norway has forbidden drift net fishing along her coast and steps have been taken to end high seas salmon fishing by vessels whose Flag States are not members of NASCO. Salmon stocks will also benefit from the purchase of NASCO quotas which has been carried out in Faroese waters. However, a lot of work still remains to be done and new challenges will undoubtedly emerge.

As regards the Teno and Naatamo rivers in Finland and Norway, the catches have improved and smolt production has increased in recent years but is still far from its full capacity. The improvement is mostly due to a drift net ban on the Norwegian coast and fishing restrictions in the Teno river and its tributaries on the Finnish side. Also quota purchase in Faroese waters is expected to have a favourable effect on these rivers. The improvement in salmon stocks allows more extensive use of the resource to the benefit of the local population and tourists. There are still serious threats to the Teno river salmon stocks. Salmon farming in the Teno fjord has not been reduced despite appeals made by Finland. Escapees mix with wild salmon with a great risk of fish diseases and genetic disorders. Once again I want to draw attention to the fact that the only way to minimize these risks is to reduce salmon farming close to smolt producing rivers. Also acidification is still increasing. I hope that in the coming years it will be reduced along with the restructuring of industry in the Kola region.

Mr President, the salmon fishery in international waters of the Convention area under the flags of States not party to the Convention must be stopped. It seems that using diplomatic channels alone is not enough. Therefore, Finland is in favour of establishing a procedure, which would involve such States more effectively and would lead to the elimination of the salmon fishery in international waters. The Protocol to be discussed at this meeting will serve this purpose provided that the States involved in this fishery will sign the Protocol. Salmon fishing contrary to the Convention has an adverse effect on management policy and will undermine a great deal of our efforts to save and strengthen salmon stocks in the Convention area and in the rivers of origin.

Mr President, I hope that this meeting will take us one step further towards the rational management of our common salmon stocks.

Thank you, Mr President.

OPENING STATEMENT MADE BY THE REPRESENTATIVE OF ICELAND

Mr President, Ambassador Smith, Distinguished Delegates, Observers, Ladies and Gentlemen:

We wish to thank the US government for inviting us to hold the Ninth Annual Meeting of NASCO here in Washington DC, the first one to take place outside Europe. We look forward to fruitful negotiations and a productive meeting.

The Icelandic sport catch of salmon in 1991 increased slightly from the previous year, but in tributaries of the Hvita glacial river on Iceland's west coast the catches improved by 45%, at least partly as a result of a non-fishing lease of main-stem net fisheries. Consequently a further three year lease has been negotiated for 1992-94. Returns to salmon ranching facilities increased by 30% to an all time high of 425 tons.

There is some concern regarding the integrity of some wild salmon stocks, as ranched salmon are straying into some rivers close to the large ranching stations in southwestern Iceland. Numbers of cage reared escapees, on the other hand, are dwindling with the phasing out of most cage rearing operations, which have proved to be uneconomical under Icelandic conditions. With increased numbers of ranching stations in operation there is more straying between facilities, which is of growing concern to the ranching community.

The increased ranching effort in Iceland has led to huge increases in the migration of salmon along the Icelandic coast. This has created some illegal salmon fishing opportunities, especially in remote areas, which the fisheries enforcement authorities have been poorly prepared to tackle. Enforcement efforts are being expanded this season.

In 1991 the "Committee for the Purchase of Open Sea Salmon Quotas" purchased the NASCO salmon quotas allocated to the Faroe Islands in 1991 through 1993. The Icelandic government has confirmed the charter of the "North Atlantic Salmon Fund" in order to facilitate the necessary financial transactions. The fund is receiving private and public funds from various countries and governments are increasingly accepting the "Compensation concept" as a means of safeguarding salmon populations.

Illegal salmon fisheries are as we know still occurring in the international areas of the North Atlantic and the situation is still intolerable with respect to the apprehension and punishment of violators of the NASCO Convention. The Icelandic delegation hopes we will reach agreement on a Protocol, which will allow efficient patrolling of the international area.

Thank you, Mr President.

OPENING STATEMENT BY THE REPRESENTATIVE OF NORWAY

Mr President, Distinguished Delegates, Ladies and Gentlemen:

First, let me - on behalf of the Norwegian delegation - thank the authorities of the United States of America for their warm and hospitable welcome. It is a pleasure for us to be here in Washington for this Ninth Annual Meeting of NASCO. We feel certain that the positive spirit of NASCO, enhanced by our President and the Secretary, as well as the delegates, again will be an asset in the work of the Organization. I would like to underline that Norway - a country with major responsibilities regarding Atlantic salmon - recognizes the importance of international cooperation in organizations like NASCO. Our hope is that NASCO, through the negotiations and decisions at this meeting, will prove its effectiveness and develop further.

Norway is concerned about the decrease in the salmon stocks in the North Atlantic area. It is our challenge to implement the precautionary principle and develop sustainable management procedures. As a first step towards this end, the Norwegian Parliament has recently passed a new Act on salmon management. This Act will enter into force from 1 January 1993. The new and most important principle laid down in this Act is that the salmon fishery is closed unless the fishery is specifically opened and gears defined. This Act will give us the necessary tool to safeguard natural stocks and to ensure the biological diversity of the salmon.

The continuing high seas fisheries for salmon in international waters in the North Atlantic is a matter of concern. We highly appreciate the initiatives taken to limit this fishing and will give the work for an effective Protocol high priority. Norway will also continue its efforts to trace and identify the vessels involved in these fisheries.

Regarding the agreement made last year on purchase of quotas, Norway has given its contribution. Of special interest to Norway and to NASCO is the effect of this on the salmon stocks.

To strengthen NASCO all Parties to the Convention should take concerted action.

On the international level, NASCO should emphasize even more the scientific basis for the work of the Organization. It could be appropriate, therefore, to give even more attention to the scientific basis of the management policies.

As a first step NASCO might consider taking the initiative to explain the possible causes for the downward trend in the stocks of Atlantic salmon. Norway is prepared to give a significant contribution to increased understanding of this trend.

Mr President, the Norwegian delegation looks forward to an interesting and constructive annual meeting, which we hope will prove both valuable and of benefit to our respective countries. In this respect, we will follow the quota negotiations with special interest - as well as the other important topics of this meeting.

Thank you, Mr President.

OPENING STATEMENT MADE BY THE REPRESENTATIVE OF THE RUSSIAN FEDERATION

Mr President, Distinguished Delegates, Ladies and Gentlemen:

On behalf of the Russian delegation I am glad to be with you in Washington DC for this Ninth Annual Meeting of NASCO.

The Russian Federation is the successor of the rights of the former Soviet Union in NASCO. It is therefore a new member of the Organization which joined in 1992. We shall continue to cooperate with all member participants of NASCO for conservation of the Atlantic salmon, its investigation and reasonable utilization.

During the time which has passed since last year's meeting, recreational fishing for salmon has been successfully developed in northwest Russia. Anglers from the USA, Great Britain, Norway, Finland etc, have arranged fishing in the Kola Peninsula rivers.

This year recreational fishing will increase considerably. I should like to thank once more Dr Malcolm Windsor and our Organization, NASCO, for their help and advice.

At this meeting we will seek measures against the unlawful fishing of salmon on the high seas and I hope find appropriate legal actions to stop it. Our country condemns this kind of fishing and is willing to contribute to actions to end such fishing.

Concluding my brief statement I wish all participants a fruitful and productive meeting conducted in a spirit of international cooperation. The Russian delegation attaches great importance to these meetings.

Thank you very much.

OPENING STATEMENT MADE BY THE REPRESENTATIVE OF SWEDEN

Mr President, Distinguished Delegates, Observers, Ladies and Gentlemen:

The migrations of the North Atlantic Salmon Conservation Organization have now taken it up the Potomac River. The Swedish delegation is very pleased and grateful to be in the warm and beautiful capital of the United States and is looking forward to taking part in the Ninth Annual Meeting of NASCO.

The following developments in Sweden can be reported since the last Annual Meeting. After a decline in 1989 due to a severe environmental interception in the form of algal bloom at sea the salmon catches in the Swedish NASCO area have again reached their pre-1989 levels. Sweden has continued its liming operations to mitigate the acidification of the salmon river catchment areas. At present there are 13 rivers along the Swedish West Coast with naturally reproducing stocks. This recovery of the Swedish western stocks we see as the combined result of our own efforts, of measures in neighbouring waters, such as the Norwegian ban on driftnets from 1989, and last, but not least, of the measures taken within NASCO.

The salmon and trout fisheries in the border fjord between Norway and Sweden were regulated in 1949 by a treaty between the two countries. These regulations have now been revised in a new treaty effective from the beginning of this year. To favour conservation the regulations have been made more restrictive and the application area has been enlarged.

Thousands of miles from here a much larger meeting than ours is taking place. I am thinking of the United Nations Conference on Environment and Development - the Earth Summit - in Rio. This conference is discussing a vast health programme for our planet called Agenda 21. One of the longest chapters in that programme is concerned with the oceans and their living resources. I do not think it is presumptious to point at NASCO as a pioneering international venture in this context. The NASCO experience shows that the road to success for such a venture is not an easy one and that the advances have to be continuously defended. I am thinking particularly of the tough test our organization had to go through before showing its viability in arriving at regulatory measures for all Commission areas.

A new development in the North-East Atlantic, which has attracted considerable attention in Sweden, is the buy-out programme for the Faroese fishery. Private and public money has been collected in Sweden to contribute to this programme. We think that information about the pursuit and the conservation effects of this programme is of great interest to this Organization.

Since the last Annual Meeting NASCO has held two special meetings to address the problem of fishing for salmon by non-contracting Parties in international waters - or on the "high seas" as the Legal Department of the Swedish Foreign Ministry prefers to name these waters. These special efforts have given tangible results, which will now be presented to the Council. The Swedish delegation is looking forward to a successful conclusion of the work on these measures.

Finally, the Swedish delegation is prepared to take part in this week's deliberations in an open-minded and constructive way in order to make the Ninth Annual Meeting of NASCO a fruitful one.

OPENING STATEMENT MADE BY THE REPRESENTATIVE OF THE UNITED STATES OF AMERICA

Mr President, Distinguished Representatives, Delegates and Observers:

I would like to add my words of welcome to those of Ambassador Smith and President Peterson. Washington is a lovely city and I hope you enjoy your stay with us.

For those of you who will be travelling through New England on the way to the 4th International Atlantic Salmon Symposium in St Andrews, New Brunswick, Canada, I hope you will see that here in the United States we are very serious about preserving our remaining stocks of Atlantic salmon and restoring those fish to areas where they were historically numerous before being exterminated by dams, pollution and overfishing.

We are concerned about the continued decline in catches of Atlantic salmon and reduced returns to their rivers of origin. It is incumbent upon all of us assembled here to continue to work together to stop and ultimately reverse these disturbing trends.

In the United States, we continue to take measures calculated to protect and restore this precious resource. There is no commercial fishery in the United States. In the state of Maine, the only state with a recreational fishery, the season limit has been reduced to one fish. We believe it is important that recreational fishermen continue to have a presence on our rivers, in order to deter poaching and to monitor environmental intrusions.

The US Fish and Wildlife Service has begun the inquiry process concerning possible endangered species status for stocks of US Atlantic salmon in seven rivers. The National Marine Fishery Service continues to fund a study by the State of Maine of the special qualities of these same stocks, and the State of Maine and the USFWS together are embarking upon a programme whereby all stocking to these rivers is of only progeny specific to each of those rivers.

In spite of considerable effort, and significant expense to tax payers and others, our runs continue to decline.

We believe that much of this decline is caused by events taking place in the ocean. Some of these events may be environmental in nature. Climatic warming and increased predation are often mentioned as probable contributing factors, among many others.

But of all the contributing factors, the one which is at once the most visible and the most susceptible to control through the political process is the commercial interceptory fishery in the ocean.

You have heard Ambassador Smith announce that the policy of the United States is to work toward the end of ocean commercial interceptory fisheries for Atlantic salmon.

This is based on the recognition that it is impossible to manage a mixed stock fishery in the ocean in such a way that the impact of that fishery does not have the potential, at least, for disproportionate harvest of particular stocks in need of protection, and the further recognition that the proper management for each stock is in the rivers of its origin, whether that fishery be commercial, recreational or for aboriginal sustenance.

We do recognize the legitimacy of subsistence and personal use of Atlantic salmon, both in countries of origin and in so-called "host nations" and the consideration to be given to dependent communities under Article 9(g) of the Convention.

In this context, we express our appreciation to the Government of Canada, which has recently announced far-reaching, costly and politically difficult measures which it will undertake in recognition that the Atlantic salmon is a species under heavy exploitive pressure, and that drastic measures are necessary if stocks are to rebound.

It is also in this context that we express the hope that in the next few days the discussions in the West Greenland Commission will be based upon the general recognition that strong measures must be taken to reduce the impact of the commercial interceptory fishery on stocks of both North American and European Atlantic salmon, and that the example set by Canada will be followed by the Government of Denmark in respect of Greenland and the Faroe Islands. We believe that exploitation rates which take more than 50% of the salmon which would otherwise return to our rivers are too high.

There is an old saying that a journey of a thousand miles begins with a single step. It is important that the first steps be taken, that pressure upon Atlantic salmon stocks be reduced in 1992, and that these steps be taken in a spirit of mutual cooperation and in the recognition that the purpose of NASCO is to maintain strong and viable Atlantic salmon populations throughout the North Atlantic.

Thank you, Mr President.

ANNEX 3

OPENING STATEMENT MADE BY THE PRESIDENT

Ambassador Smith, Ambassador Agustsson, Vice-President Mehli, Representatives, Delegates, Ladies and Gentlemen:

It is a distinct honor for me to open this Ninth Annual Meeting of the North Atlantic Salmon Conservation Organization. As your President for the past four years and Vice-President for five years previous, when I look back I am aware that NASCO has made many accomplishments over its short history; probably no other international organization has done so much in such a short period of time. We are an organization that has a strong financial footing, that has money in the bank and that has attained capital assets far in excess of the contributions of the Parties. We have effectively addressed our mandate for sound conservation and management of Atlantic salmon. NASCO has advanced the scope of scientific understanding of salmon populations. We have addressed potential problems arising from the growth of salmon aquaculture. We are taking steps to stop the high seas fishery for salmon.

As I finish my term of office I look forward, not just to the outcome of this meeting, but to the years, and yes, facing the problems that lie ahead. My enthusiasm is as strong as ever and I am confident we are up to meeting new challenges.

I am especially pleased, as a Representative of the United States of America, to host this meeting in Washington, our Nation's capital. I hope during your stay you will find the time to visit some of the many Memorials to the great leaders of this country. I also hope that you will avail yourself of the opportunity to see the structures that represent the foundation of our Democratic society. The Capitol Building, the White House, and the Supreme Court are not just impressive buildings; they represent the separate but equal powers that are embodied in our Constitution and safeguard our individual rights and freedoms.

I will do my best too to conduct our meetings so you will have the time to enjoy your visit here.

ANNEX 4

NINTH ANNUAL MEETING OF THE COUNCIL
US DEPARTMENT OF STATE, WASHINGTON DC
9-12 JUNE 1992

LIST OF PARTICIPANTS

* Denotes Head of Delegation

CANADA

MR BRUCE RAWSON	Representative Department of Fisheries and Oceans, Ottawa, Ontario
*MR JEAN E HACHE	Representative Department of Fisheries and Oceans, Ottawa, Ontario
DR WILF CARTER	Representative Atlantic Salmon Federation, St Andrews, New Brunswick
MR JEAN-PAUL DUGUAY	Representative Gaspé, Quebec
MR DAVID ANGELL	Embassy of Canada
MR KEN JONES	Department of Fisheries and Oceans, Ottawa, Ontario
MR DAVID MEERBURG	Department of Fisheries and Oceans, Ottawa, Ontario
MR REX PORTER	Department of Fisheries and Oceans, St Johns, Newfoundland
MR DAVID RIDEOUT	Department of Fisheries and Oceans, Ottawa, Ontario

DENMARK (IN RESPECT OF THE FAROE ISLANDS AND GREENLAND)

*MR EINAR LEMCHE	Representative Greenland Home Rule Government, Copenhagen Office
MR KJARTAN HOYDAL	Representative Faroese Home Government, Torshavn, Faroe Islands
MR POUL E D KRISTENSEN	Representative Royal Danish Embassy of Washington

MR PETER DAVIDSEN	The Organization of Hunters & Fishermen in Greenland, Nuuk
MR JENS MOELLER JENSEN	Greenland Fisheries Research Institute, Copenhagen
MRS AMALIE JESSEN	Department of Fisheries, Greenland Home Rule Government, Nuuk
MR SIVERTH D LARSEN	The Organization of Hunters & Fishermen in Greenland, Nuuk
MRS ANNE MELDGAARD	Royal Danish Embassy of Washington
MR VITTUS NIELSEN	The Organization of Hunters & Fishermen in Greenland, Nuuk
MR SOFUS POULSEN	Faroese Commercial Attaché, Aberdeen

EEC

*MR HARRY KOSTER	Representative Directorate-General of Fisheries, EC Commission, Brussels
MR ALEXANDRE FERNANDES	Embassy of Portugal, Washington DC
MR LUIS TEIXEIRA DA COSTA	Secretariat of the Council of the European Communities, Brussels
MR JOHN CARBERY	Legal Advisor, Secretariat of the Council of the European Communities, Brussels
MR DAVID DUNKLEY	Scottish Office Agriculture and Fisheries Department, Montrose
MRS PAM JARVIS	Ministry of Agriculture and Fisheries, London
MR JESPER KAAE	Royal Danish Embassy, London
MR JOHN KEOHANE	Department of the Marine, Dublin
MR ADRIAN MCDAID	Permanent Representation of Ireland to the EC, Brussels
MR JESUS MIRANDA	Embassy of Spain, Washington DC
DR KEVIN O'GRADY	National Rivers Authority, Bristol
MR TED POTTER	Ministry of Agriculture, Fisheries and Food, Lowestoft

MR WOLFGANG THOMAS	Bundesministerium fur Ernährung, Landwirtschaft und Forsten, Bonn
MR BOB WILLIAMSON	Scottish Office Agriculture and Fisheries Department, Edinburgh

FINLAND

*MR PEKKA NISKANEN	Representative Ministry of Agriculture and Forestry, Helsinki
MR EERO NIEMELA	Representative Finnish Game and Fisheries Institute, Helsinki

ICELAND

*MR HELGI AGUSTSSON	Representative Icelandic Ambassador to the United Kingdom, London
MR ARNI ISAKSSON	Representative Institute of Freshwater Fisheries, Reykjavik
MR ORRI VIGFUSSON	Association of Icelandic Fishing Clubs, Reykjavik

NORWAY

*MR BORRE PETTERSEN	Representative Ministry of the Environment, Oslo
MR SVEIN MEHLI	Representative Directorate for Nature Management, Trondheim
MS INGER LAVIK OPDAHL	Representative Royal Ministry of Foreign Affairs, Oslo
DR LARS PETTER HANSEN	Norwegian Institute for Nature Research, Trondheim
MR STEINAR HERMANSEN	Ministry of the Environment, Oslo
MR TORMOD KARLSTROEM	Ministry of the Environment, Oslo
MR BIRGER LARSEN	Royal Norwegian Embassy, Washington DC
MR GEORG RIEBER MOHN	Regional Board of Salmon Fishery, Oslo

RUSSIAN FEDERATION

*MR ALEXANDER V RODIN	Representative PINRO, Murmansk
MR G BOROVKOV	Representative Ministry of Fisheries, Moscow
MR YURIY N BOVYKIN	Embassy of the Russian Federation, Washington DC
MR VICTOR SOLODOVNIK	Embassy of the Russian Federation, Washington DC

SWEDEN

*MR GUNNAR HOERSTADIUS	Representative Ministry of Agriculture, Stockholm
DR INGEMAR OLSSON	Representative National Board of Fisheries, Göteborg

USA

*MR ALLEN PETERSON	Representative National Marine Fisheries Service, Woods Hole, Massachusetts
MR DAVID EGAN	Representative Connecticut River Atlantic Salmon Commission, Guilford
MR CLINTON TOWNSEND	Representative Maine Council of the Atlantic Salmon Federation, Canaan, Maine
MR RICHARD SMITH	Department of State, Washington DC
DR VAUGHN ANTHONY	National Marine Fisheries Service, Woods Hole, Massachusetts
DR JENNIFER BAILEY	National Marine Fisheries Service, Maryland
MR EDWARD T BAUM	Atlantic Sea Run Commission, Maine
MR DAVID BALTON	US Department of State, Washington DC
MS JANE CLEAVES	Atlantic Salmon Federation, Maine
MS JEAN FLEMMA	US House of Representatives, Washington DC

DR KEVIN FRIEDLAND	National Marine Fisheries Service, Woods Hole, Massachusetts
MR ROBERT JONES	Connecticut Bureau of Fisheries, Hartford, Connecticut
MS LEE LANGSTAFF	Council on Environmental Quality, Washington DC
MR HENRY LYMAN	Atlantic Salmon Federation, Boston, Massachusetts
MR JAMES MCCALLUM	US House of Representatives, Washington DC
MR ARTHUR NEILL	National Marine Fisheries Service, Woods Hole, Massachusetts
MR GILBERT RADONSKI	Sport Fishing Institute, Washington DC
DR PAUL RAGO	US Fish & Wildlife Service, Kearneysville
MR RICHARD ROE	National Marine Fisheries Service, Gloucester, Massachusetts
MR RICHARD SEAMANS	National Marine Fisheries Service, Gloucester, Massachusetts
MR LARRY SNEAD	Department of State, Washington DC
MR STETSON TINKHAM	Department of State, Office of Fisheries Affairs, Washington DC
DR JAMES WEAVER	US Fish and Wildlife Service, Newton Corner, Massachusetts

<u>ICES</u>

DR EMORY ANDERSON	International Council for the Exploration of the Sea, Copenhagen
DR RICHARD GRAINGER	International Council for the Exploration of the Sea, Copenhagen
DR FREDRIC SERCHUK	National Marine Fisheries Service, Woods Hole, Massachusetts

NON-GOVERNMENT OBSERVERS

DR FREDERICK MAZEAUD	AIDSA
ADMIRAL JOHN MACKENZIE CAPTAIN JEREMY READ	Atlantic Salmon Trust
MR WILLIAM BROWN	Scottish Anglers National Association
MR BJORNULF KRISTIANSEN	Norwegian Farmers Union
MR PAUL BROUHA	American Fisheries Society

SECRETARIAT

DR MALCOLM WINDSOR	Secretary
DR PETER HUTCHINSON	Assistant Secretary
MISS MARGARET NICOLSON	PA to Secretary
MRS THERESA GAWTHORNE	PA

ANNEX 5

CNL(92)44
NINTH ANNUAL MEETING OF COUNCIL
9-12 JUNE 1992
STATE DEPARTMENT, WASHINGTON DC, USA

AGENDA		PAPER NO
1.	**Opening Session**	
2.	**Adoption of the Agenda**	CNL(92)1 CNL(92)2 CNL(92)3 CNL(92)4
3.	**Election of Officers**	CNL(92)5
4.	**Secretary's Report**	CNL(92)6 CNL(92)7 CNL(92)8
5.	**Report of the Finance and Administration Committee**	CNL(92)9 CNL(92)10
6.	**Scientific Research**	
(a)	Report to NASCO from the ACFM of ICES	CNL(92)11 CNL(92)12
(b)	Request to ICES for Scientific Advice for 1993	
7.	**Implementation of the Convention**	
(a)	Returns under Articles 14 and 15 of the Convention	CNL(92)13
(b)	Laws, Regulations and Programmes	CNL(92)14
(c)	Return of Catch Statistics	CNL(92)15 CNL(92)16
(d)	Analysis of Catch Statistics	CNL(92)17 CNL(92)18
8.	**Fishing for Salmon in International Waters by Non-Contracting Parties**	
(a)	Report of London Meeting	CNL(92)19 CNL(92)20
(b)	Draft Protocol for Non-Contracting Parties	CNL(92)33

(c)	Draft Resolution "Fishing for Salmon on the High Seas"	CNL(92)39
(d)	Other Actions	
9.	**Salmon Tagging**	
(a)	Repository of Tag Release Data	CNL(92)22
(b)	NASCO Tag Return Incentive Scheme and its Future	CNL(92)23
10.	**Database of Salmon Rivers Flowing into the NASCO Convention Area**	CNL(92)24
11.	**Guidelines to Minimise the Threats to Wild Salmon Stocks from Salmon Aquaculture**	CNL(92)25
12.	**Sea-Ranching**	CNL(92)26
13.	**International Management by Other Salmon Commissions**	CNL(92)27
14.	**Economic Value of Atlantic Salmon**	CNL(92)28
15.	**International Review of Publications relating to Salmon in 1991**	CNL(92)29
16.	**Reports from the Regional Commissions**	
17.	**Report on the Activities of the North Atlantic Salmon Conservation Organization**	CNL(92)30
18.	**Other Business**	
19.	**Date and Place of Next Meeting**	CNL(92)31
20.	**Draft Report of the Meeting**	
21.	**Press Release**	

ANNEX 6

COUNCIL

CNL(92)48

DECISION OF THE COUNCIL ON WORKING CAPITAL

Having regard to the need to review the level of the Working Capital Fund in the light of the Organization's responsibilities for the Headquarters Property and other factors the Council decides:

- to change the level of the Working Capital Fund from 40,000 pounds sterling to 50,000 pounds sterling and therefore to amend Financial Rule 6.3 to read:

- "The Working Capital Fund will be established in the initial budget at 3,000 pounds sterling and may be increased by budgetary provision, miscellaneous income and any cash surplus in the General Fund at the close of a financial year that is not required to meet outstanding commitments in terms of Rule 4.3 until the fund reaches 50,000 pounds sterling. Any surplus above 50,000 pounds sterling shall be entered as income in the budget and used to offset members' contributions for the next financial year".

ANNEX 7

COUNCIL

CNL(92)49

DECISION OF THE COUNCIL ON THE ESTABLISHMENT OF A STABILISATION FUND

Having regard to the desirability of being able to use savings in budgets to create a fund which could be used to stabilise future budgets the Council decides:

- to establish a Stabilisation Fund in accordance with Financial Rule 6.1 and to amend Financial Rules 6.2 and 6.4 to read as follows:

- Rule 6.2: "Contributions paid by members shall be credited to the General Fund or as necessary to the Working Capital Fund or to the Stabilisation Fund. Miscellaneous income shall be credited to the Working Capital Fund".

- Rule 6.4: "The Council may decide at the close of a financial year to enter amounts from the Working Capital Fund or the Stabilisation Fund as income in the budget and use it to offset members' contributions in the next financial year".

ANNEX 8

COUNCIL

CNL(92)50

1993 BUDGET AND 1994 FORECAST BUDGET

NORTH ATLANTIC SALMON CONSERVATION ORGANIZATION
1993 BUDGET AND 1994 FORECAST BUDGET (Pounds Sterling)

SECTION	DESCRIPTION	EXPENDITURE	
		BUDGET 1993	FORECAST 1994
1	STAFF RELATED COSTS	148510	155920
2	TRAVEL AND SUBSISTENCE	23220	30380
3	CONTRIBUTION TO ICES	26140	27440
4	CONTRIBUTION TO WORKING CAPITAL FUND	0	0
5	MEETINGS	17320	7360
6	OFFICE SUPPLIES, PRINTING AND TRANSLATIONS	32550	34160
7	COMMUNICATIONS	9780	10250
8	HEADQUARTERS PROPERTY	23330	20630
9	OFFICE FURNITURE AND EQUIPMENT	8000	8390
10	AUDIT AND OTHER EXPENSES	8600	9020
	TOTAL	297450	303550
			REVENUE
11	CONTRIBUTIONS - CONTRACTING PARTIES	287484	296050
12	MISCELLANEOUS INCOME - INTEREST	10000	10000
13	STABILISATION	-2500	-2500
14	SURPLUS OR DEFICIT(-)FROM 1991	2466	0
	TOTAL	297450	303550

SECTION 1	STAFF RELATED COSTS	BUDGET 1993	FORECAST 1994
1.1	Secretariat members	82290	86400
1.2	Temporary and support staff	13560	14230
1.3	Pensions, allowances, public liability, insurances and other staff related costs	52660	55290
	TOTAL	148510	155920

SECTION 2	TRAVEL AND SUBSISTENCE	BUDGET 1993	FORECAST 1994
2.1	Travel to post and annual meeting	0	6000
2.2	Official travel and subsistence	23220	24380
	TOTAL	23220	30380

SECTION 3	CONTRIBUTION TO ICES	BUDGET 1993	FORECAST 1994
3.1	Annual contribution	26140	27440

SECTION 4	CONTRIBUTION TO WORKING CAPITAL FUND	BUDGET 1993	FORECAST 1994
4.1	Working capital	0	0

SECTION 5	MEETINGS	BUDGET 1993	FORECAST 1994
5.1	Costs of annual meeting	15070	5000
5.2	Costs of other meetings	2250	2360
	TOTAL	17320	7360

SECTION 6	OFFICE SUPPLIES, PRINTING AND TRANSLATION	BUDGET 1993	FORECAST 1994
6.1	Office supplies	14500	15220
6.2	Printing	12750	13380
6.3	Translations	5300	5560
	TOTAL	32550	34160

SECTION 7	COMMUNICATIONS	BUDGET 1993	FORECAST 1994
7.1	Telephone charges	4140	4340
7.2	Telex charges	380	390
7.3	Postal charges	5260	5520
	TOTAL	9780	10250

SECTION 8	HEADQUARTERS PROPERTY	BUDGET 1993	FORECAST 1994
8.1	Capital and interest payments	44350	40500
8.2	Maintenance, services and other building related costs	23080	24230
8.3	**LESS** Income from property	44100	44100
	TOTAL	23330	20630

SECTION 9	OFFICE FURNITURE AND EQUIPMENT	BUDGET 1993	FORECAST 1994
9.1	Furniture	1500	1570
9.2	Equipment	6500	6820
	TOTAL	8000	8390

SECTION 10	AUDIT AND OTHER EXPENSES	BUDGET 1993	FORECAST 1994
10.1	Audit and accountancy fees	4850	5090
10.2	Bank charges and insurances	300	310
10.3	Miscellaneous	3450	3620
	TOTAL	8600	9020

NASCO BUDGET CONTRIBUTIONS FOR 1993 AND FORECAST
BUDGET CONTRIBUTIONS FOR 1994 (Pounds sterling)

CATCH (tonnes)	PARTY		BUDGET 1993	FORECAST 1994
679	CANADA		43615	44915
	DENMARK	(FAROE ISLANDS)		
		(GREENLAND)		
533		(TOTAL)	36298	37379
1075	EEC		63464	65355
69	FINLAND		13041	13430
520	ICELAND		35646	36708
885	NORWAY		53941	55548
215	RUSSIAN FEDERATION		20359	20966
38	SWEDEN		11487	11830
1	USA		9633	9920
4030	TOTAL		287484	296050

Contributions are based on 1991 catches as advised by the Parties. Column totals can be in error by a few pounds due to rounding.

ANNEX 9

COUNCIL

PAPER CNL(92)12

REPORT OF THE ICES ADVISORY COMMITTEE ON FISHERY MANAGEMENT

Source of Information: Report of the Working Group on North Atlantic Salmon, March 1992 (ICES, Doc. C.M.1992/Assess:15)

1. INFORMATION OF INTEREST TO ALL COMMISSIONS OF NASCO

1.1 Catches of North Atlantic Salmon

Total nominal catches of salmon by country, in all fisheries 1960-1991 are given in Table 1.

The total catch reported for all fisheries (4,030 t) and for homewater fisheries (3,491 t) in 1991 are shown in the text table below. The decline in the catch of wild salmon may be greater than suggested by the total due to the inclusion of fish farm escapees and ranched fish in the North-East Atlantic. Management plans in several countries are designed to decrease catches in the sea.

Catch (t)

Year	1986	1987	1988	1989	1990	1991[1]
Total	9248	8142	7716	5893	4890	4030
Homewater	7737	6598	6573	5190	4333	3491

[1] Preliminary

The lack of information on fishing effort presents major difficulties in interpreting the catch data as changes in stock size.

1.2 Unreported Catches

1.2.1 Unreported catches within Commission areas

Unreported catches for the North-East Atlantic and North American Commissions were 1,555 t and 127 t, respectively, in 1991. Total non-catch fishing mortality, which includes unreported catches, has been estimated for the West Greenland Commission area (range of values 10 to 30%).

Unreported Catches (t)

Year	1986	1987	1988	1989	1990	1991
North-East	-	2554	3087	2103	1779	1555
North America	315	234	161	174	111	127

1.2.2 Unreported catch in international waters

The 1989/90 estimate of unreported catch in international waters in the North-East Atlantic Commission area has been updated to reflect new information and ranged between 180-350 t.

Activity in this area was greatly reduced in 1990/91 with only one or two vessels thought to have been operating. The catch in this area may have been between 25 and 100 t. There are no known catches of salmon in international waters in either the North American Commission area or the West Greenland Commission area.

1.3 Status of Stocks

Status of Atlantic salmon stocks was evaluated over long and short time periods by examining catch, survival and escapement data for nations and monitored rivers where available. Information on the fisheries is provided in the sections of interest to each Commission.

1.3.1 Eastern North Atlantic

The total nominal landings of salmon in the North-East Atlantic during the period 1960 to 1991, including the European fraction of the Greenland catch, are provided in Figure 1. The landings increased from more than 5,000 t in 1960, peaked at nearly 9,000 t in the beginning of the 1970s, and decreased to 1991 when the landings were about 3,500 t, the lowest during the period.

The decline of catches in several countries in the North-East Atlantic Commission area suggests reduced abundance of wild salmon in recent years. ACFM examined a number of fishery-independent measures of abundance, but was unable to detect a similar pattern of decline in stocks as noted in the catch data. The number of fishery-independent data series examined was low in number and may not be representative of national stocks.

1.3.2 Western North Atlantic

Abundances of both small and large salmon, as indicated by adult returns and commercial and recreational catches, generally show a downward trend during the last 5-6 years. Similarly, spawning escapements to many rivers of the western North Atlantic were generally low, as inferred from commercial and recreational catches, adult counts at monitoring facilities, and estimated spawning escapements and egg depositions (Figure 2). While large annual variation in smolt survival between years is common, many stocks in the western North Atlantic have exhibited reduced marine survival in recent years.

The abundance of Canadian salmon destined to return as 2SW salmon that contribute to the West Greenland fishery is estimated to have ranged from about 217,000 - 588,000 fish during the years 1983-90, peaking in 1986 and declining in recent years. These estimates also provide an estimate of the spawning escapement of 2SW salmon:

Year	2SW Spawners (000s)
1984	92.2
1985	104.6
1986	131.5
1987	108.3
1988	125.9
1989	113.4
1990	119.0
1991	99.0

The target number of 2SW spawners for Canada is estimated to be between 150,000 - 200,000 2SW fish per year.

Long-term commercial landings in Canada by province and in Greenland is shown in Figure 3. Abundance of salmon is inferred to have been low at the turn of the century and in the 1950s. Reduced harvests in the last 20 years are in part a result of harvest restrictions designed to increase spawning escapement to many Canadian rivers.

The reasons for low abundance, reduced spawning escapements, and lower smolt survival differ from river systems and include: adverse environmental conditions in homewaters, inadequate egg depositions and increased marine mortality.

1.3.3 West Greenland Commission

Although not measured precisely, it is believed that the most abundant European stocks at West Greenland originate from the UK and Ireland. It appears that the abundance of some of these stocks has declined in recent years. Similar declines in abundance have been noted in many North American stocks that contribute to the West Greenland fishery. The decline in catch and fishery-independent measures of abundance in North America and the decline in catch beyond expectation that should have resulted from effort reductions implemented in Europe, suggest there is no reason to expect that the status of stocks that contribute to the West Greenland fishery will improve in the near future.

1.4 Inventory of Parasites and Diseases by Country

The Working Group on Pathology and Diseases of Marine Organisms (WGPDMO) was asked by ICES to prepare an inventory of parasites and diseases of wild and reared salmon by country.

WGPDMO presented qualitative data from Faroes, France, Iceland, Ireland, Norway and Scotland (Table 2). A large number of different diseases was identified originating from virus, bacteria, fungi, protozoans, monogeans, trematodes, cestodes, nematodes, achanthocephalans, crustaceans, molluscans and leeches. It was noted that there were considerable problems with compiling and presenting these data. The WGPDMO stated that the inventory was incomplete and potentially misleading, and stressed that these data should only be used with full awareness of the following constraints:

(1) The information more likely reflects the amount of research activities in this field rather than the actual situation;

(2) Many reports are single observations, often from individual fish;

(3) The record of a disease/parasite does not necessarily mean that it is still present;

(4) Unless a disease/parasite has been specifically looked for, its absence from the list for a particular country, or in farmed or wild fish, cannot be taken as evidence of its absence;

(5) The compilation of the data were not made on the same basis in all countries;

(6) There is controversy regarding the specific identification of some pathogens/parasites and, consequently, records of a particular species from different countries may in reality refer to different species.

ACFM noted the limitations of the inventory presented and endorsed the statement made by the WGPDMO: "NASCO should take note of the limitations of this inventory and its vulnerability to misinterpretation and the WGPDMO urges caution in its use. For example, the circumstances of pathogen/parasite detection and diagnosis must be taken into account in assessing the relative degrees of significance of the listed examples".

1.5 Report of the Workshop on Salmon Assessment Methodology

ACFM reviewed the report of the Workshop on Salmon Assessment Methodology. The Workshop reviewed and reported on salmon assessment methodologies currently in use in the Baltic and North Atlantic. A further task was to examine the need for standardizing the ageing nomenclatures used for Baltic and Atlantic salmon.

1.6 Production of Farm Salmon

The reported production of farmed salmon by several countries was 217,569 t in 1991. Total farm production was more than 50 times the nominal wild catch.

Production ('000 t)

1986	1987	1988	1989	1990	1991
59	68	111	165	224	218

1.7 Compilation of Tag Releases and Fin-Clip Data for 1991

In excess of 1.76 million microtags (CWTs) and 0.32 million external tags were applied to Atlantic salmon released in 1991. In addition, 1.63 million salmon were

finclipped, 1.45 million with adipose finclip only. Thus, more than 3.72 million marked fish were released.

1.8 Recommendations

1. ACFM examined the adequacy of the sampling program at West Greenland and recommended that sampling be maintained in the 3 NAFO Divisions used in the current program and that the duration of sampling within one or two of these Divisions be extended by one or two weeks.

2. ACFM encourages investigations into the decline in marine survival of Atlantic salmon, especially those that examine causality of survival patterns of stock complexes in the North Atlantic. Investigations should include the use of historical data to determine trends in stock status, comparisons of trends between stocks of different river systems that can be ascribed similar migration patterns, and the examination of biological/environmental factors that could explain variation in abundance.

3. ACFM recommends that a new classification methodology, specifically the class of mathematical models referred to as neural networks, be considered and tested as an approach to classifying Atlantic salmon to country or continent of origin.

4. ACFM suggests two investigations be carried out to improve the models used to estimate harvest of individual stocks. Firstly, an investigation should be carried out to examine the assumptions concerning the reporting rate of tags, especially in the light of recently recovered tags from older tag releases. Second, the effect of changes in fleet characteristics at West Greenland should be considered as a means of adjusting non-catch fishing mortality for use in both the proportional and tag return harvest models.

5. ACFM recommends consideration of techniques of time series analysis, such as data smoothing and "route regression" approaches to combine time series, in continuing work on short and long time series of stock status data.

2. INFORMATION OF INTEREST TO THE NORTH-EAST ATLANTIC COMMISSION

2.1 Description of the Fisheries at Faroes

2.1.1 Gear and effort

The gear used in the Faroes fishery is long lines. In recent years, the effort in the salmon fishery has continued to decline, and in the 1990/91 season only 8 out of 13 licenses were used. The maximum permitted number of licenses is 26.

2.1.2 Catches and discards

The total nominal catch in the Faroes fishery in the 1990/91 season was 202 t. The catch for the calendar year 1991 was only 95 t. This included 13 t caught in

December 1991 by a research vessel operating in the Faroes area during the 1991/92 season.

Catch (t)

Year	Catch	Season	Catch
1986	530	1985/86	545
1987	576	1986/87	539
1988	243	1987/88	208
1989	364	1988/89	309
1990	315	1989/90	364
1991	95	1990/91	202

No data are available on the numbers of farmed fish taken in the fishery because appropriate data (e.g. fin measurements or sufficient scale samples) were not collected in the market sampling programme.

Three samples of discards were collected during the fishing season and discard rates ranges from 9.9 to 16.1%; the overall estimate was 14.8%.

2.1.3 Catch per unit effort

The catch in number per 1,000 hooks (CPUE) by statistical rectangle for the whole season is shown in Figure 4. The CPUE values for November and December were among the highest recorded at this time of year since 1981/82. However, the CPUE fell markedly in February and remained fairly low for the rest of the season.

2.1.4 Biological composition of the catch

In the 1990/91 season, practically all the catch consisted of 2SW fish (91%), with only 1% of 1SW fish and 8% of 3SW fish. These values lie within the ranges observed in previous seasons.

No smolt age composition of the Faroes catch was obtained in the 1990/91 season.

2.1.5 Origin of the catch

Microtagged salmon from the Faroe Islands (2), Iceland (1), Ireland (3), England and Wales (5), Northern Ireland (1) and Scotland (2) were recovered during the 1990/91 season.

A total of 135 external tags was recovered in the Faroes fishery in 1990/91 of which 116 were from Norway, 16 were from Sweden, and 3 were from Scotland.

2.1.6 Exploitation rates in the Faroes fishery

The exploitation of hatchery stocks from the Rivers Drammen (Norway) and Lagan (Sweden) have shown similar changes with levels being quite low in the 1986/87 and 1987/88 seasons but higher in 1985/86 and in the two most recent seasons. The two Norwegian hatchery stocks (Drammen and Imsa) showed opposite trends, with the exploitation rate on the Drammen stock falling in 1990/91 after a 2-year peak while that on the Imsa stock rose after a 3-year trough. The exploitation rates on wild fish from the Imsa and North Esk Rivers have been very much lower in the past 5 years than previously, although there was a slight rise for 2SW fish in 1990/91. There is no clear relationship between the trends for individual stocks and the catches recorded in the fishery.

Exploitation

Season	86/87	87/88	88/89	89/90	90/91
Drammen	3	6	36	45	24
Imsa (W)	13	5	3	5	13
Imsa (H)	28	21	10	15	40
N. Esk	6	0	0	0	5
Lagan	0	9	13	21	20

2.2 Description of Homewater Fisheries

2.2.1 Gear and effort

No changes in the regulations affecting salmon fishing gear in 1991 were reported for any countries except Norway and Scotland. In Norway, the use of monofilament nets was banned for catching anadromous salmonids. In Scotland there were changes in the regulations affecting gear or fishing period for rod and line fisheries in four rivers.

Fishing effort was thought to have been reduced in France, Ireland, UK (Northern Ireland), UK (England and Wales), (UK (Scotland), Russia and Sweden. Factors affecting this reduction are thought to have included perceived reductions in stock abundance and weather conditions (e.g. early freezing in Russia and low river flows in most other countries).

2.2.2 Origin of the catch

Table 3 indicates the origin of the salmon catches in each country based upon recoveries of tags over a number of years. Double crosses indicate the principal component of the catch and single crosses other significant contributions. Rare recoveries of one country's tags in another country are indicated by dots. These were assumed to indicate very minor contributions to catches. It is apparent that there is normally a pattern of interchange between neighbouring countries, although this

exchange may not always be even. It must be noted that this table reflects the relative size of national stocks.

The table below shows estimated contributions of ranched and farmed fish to national catches. In this context, ranching is defined as the release into the wild of reared smolts with the intention of attempting to harvest all returning adults. Releases of reared fish to enhance wild stocks or compensate for lost wild production are, therefore, ignored.

Estimated catches (in tonnes round fresh weight) of wild, farmed and ranched salmon in homewater fisheries in 1991

Country	Catches of salmon			
	Wild	Farmed	Ranched	Total
Finland	68	<1	0	69
France	>12	0	<1	13
Iceland	122	3	394	519
Ireland	<422	+	0	422
Norway	692	26[1]		885
Norway		167[2]		
Russia	215	0	0	215
Sweden	23	1	1+a	38
UK (E+W)	199	0	0	199
UK (N.Ireland)	54	<1	0	55
UK (Scotland)	384	12	0	396

[1] (FW)
[2] (Sea)

The only country in the North-East Atlantic Commission Area known to be ranching in this way is Iceland, where ranched fish comprised 76% of the catch in 1991. However, in France there is a small experimental ranching exercise. In addition, 14 t of the catch in Sweden comprised fish that have been released for mitigation purposes, but these fish are not expected to contribute to wild spawning populations.

The only countries in which farmed fish are thought to make a significant contribution to fisheries are Norway and UK (Scotland). In Norway, where extensive surveys have been undertaken since 1988, farmed fish appear in both marine and freshwater fisheries. Estimates of the proportion of farmed fish in various Norwegian fisheries were highly variable between sites but indicate that the proportion of farmed salmon was much lower in samples taken in fresh water than in coastal areas. The proportion of farmed fish in the catch seems to have been relatively constant in the period 1989-91.

In UK (Scotland), sampling in 1990 indicated that most of the reared fish caught in fisheries had escaped or been lost from sea cages. In 1991, however, sampling on the west coast revealed that most of the farm origin fish were derived from losses or releases of smolts or parr. On the east coast, where the incidence of farm escapees was low, most of the farm-origin fish were adult escapees.

In all other countries, farmed fish are thought to form only a very minor (or negligible) part of the catch.

2.2.3 Exploitation rates

Exploitation on the River Drammen and Lagan stocks (hatchery reared fish) was higher than average in 1991 while the rates for the North Esk (UK (Scotland)) and Imsa (Norway), and for hatchery reared fish on the River Bush (UK (Northern Ireland)), were lower. For most other stocks (including wild fish from the River Bush) rates were similar to those estimated for 1990. On the Russian rivers fishing traps are operated every day and the exploitation rates are adjusted by altering the proportion of days on which the catch is released or killed. Exploitation rates were reduced in 1991 to protect spawning stocks.

Preliminary 1991 exploitation (average)

Location (River, H/W)	1SW	2SW	All ages
Iceland (Ellidar, W)	37(39)		
Ireland (Burrishoole, H)	65(74)		
Norway (Drammen, H)	64(57)	70(53)	
Norway (Imsa, W)	41(62)	74(77)	
Norway (Imsa, H)	54(67)	69(83)	
Russia (Ponoy, W)			20(53)
Russia (Kola, W)			58(80)
Sweden (Lagan, H)	90(82)	92(81)	
UK, E&W (Itchen, net)			-
UK, E&W (Itchen, rod)			-
UK, E & W (Test, rod)			26(30)
UK, N. Ireland (Bush, W)	65(70)	43(45)	
UK, N. Ireland (Bush, H)	57(79)	46(68)	
UK, Scotland (N. Esk)	10(28)	15(31)	

2.2.4 Effects of recent management measures in Norway

Catches in Norwegian homewaters during 1986-1991 are shown below:

Catch (t)

	1986	1987	1988	1989	1990	1991
Drift	795	552	527	0	0	0
Other	497	461	314	488	514	471
Freshwater	306	372	235	417	416	414
Proportion in freshwater	.19	.27	.22	.46	.45	.47

It is likely that the ban on drift netting in 1989 has resulted in a larger number of salmon being available to the other marine homewater fisheries. The additional regulation of these fisheries has probably resulted in a substantial increase in freshwater escapement as suggested by increased catches in freshwater. In 1989, 1990 and 1991, freshwater catch accounted for 46, 45 and 47% of total nominal catches, respectively, compared to 18 to 27% over the years 1982 to 1988. Increased freshwater escapement is also suggested by the reduction in marine exploitation rates on most components of the River Imsa salmon stock. This was not the case for salmon of the River Drammen stock, however, because drift net exploitation on this stock has always been low.

The salmon fishery on the west coast of Norway intercepts stocks from the USSR, Finland and the Swedish west coast on their return to their home rivers. Exploitation on 1SW fish tagged as smolts on the River Lagan (Sweden) was lower in 1989, 1990 and 1991 (average 1%) than in 1985-88 (average 7%). This suggests that the management measures introduced in Norway in 1989 also affected Swedish west coast stocks.

The frequency of net-marked salmon entering a river may also give information about changes in netting effort on the migration route. The proportion of net-marked salmon recorded in samples of river fisheries in 1991 was much lower than the unweighted means during the period 1978-88. The reduced proportion of net-marked fish may be accounted for by the management measures introduced in the Norwegian homewater fishery in 1989.

2.2.5 By-catches of fish, birds and mammals in drift net fisheries

Drift net fisheries, targeting Atlantic salmon and migratory trout (*Salmo trutta*), are currently operated by six countries in the NEAC area: France, Finland, Ireland Norway, (UK (England and Wales) and UK (Northern Ireland). A variety of species are taken as by-catch in these fisheries; the details of these by-catches are listed by nation in the Report of the Working Group (Anon, 1992).

3. INFORMATION OF INTEREST TO THE WEST GREENLAND COMMISSION

3.1 Description of the Fishery at West Greenland, 1991

In 1991, the fishery at West Greenland (NAFO Sub-area 1) was opened on 5 August and ended in November, although the official closing date was 31 December. The total nominal catch was 437 t.

Quota and catch (t)

Year	1986	1987	1988	1989	1990	1991
Quota	909	935	-	900	924	840
Catch	960	966	893	337	227	437 [1]

[1] Preliminary

The TAC for 1991 was set unilaterally at 840 t, and divided into a "free" quota of 373 tonnes and a "small boat" quota of 467 tonnes. Because of the small landings in 1991, those quotas were not restrictive.

The salmon fishery at Greenland is a small boat fishery and is executed in inshore and coastal areas. Approximately 80% of the total landings were taken by boats smaller then 30 feet. No information on effort is available for 1991, but the landings during the first two weeks are given for 1980 to 1991 in the text table below.

The nominal catch landings during the two first weeks, 1980-1991 (in tonnes)

Year	First week	First two weeks
1980	260	711 (01 - 14 Aug)
1981	465	735 (15 - 28 Aug)
1982	470	766 (25 Aug - 07 Sep)
1983	105	192 (10 - 23 Aug)
1984	17	58 (10 - 23 Aug)
1985	204	361 (01 - 13 Aug)
1986	509	848 (15 - 28 Aug)
1987	439	737 (25 Aug - 07 Sep)
1988	219	337 (25 Aug - 07 Sep)
1989	131	219 (18 - 31 Aug)
1990	12	38 (01 - 14 Aug)
1991	114	191 (05 - 18 Aug)

3.1.1 Composition and origin of the catch in 1991

The results of classifying salmon in samples from commercial catches in 1991 indicated that the North American proportion was 65% (95% CL = 69,61), and the European proportion was 35% (95% CL = 39,31).

An alternative estimate of the overall proportion of North American and European-origin salmon for the years 1982-1991 was derived by weighting NAFO Division samples by catch in numbers. Information from the nearest NAFO Division was applied to divisions with no samples. The table below gives the results:

Year	Weighted by catch in numbers			% of all samples		
	NA %	Wt	EU %	Wt	NA	EU
1982	57	-	43	-	62	38
1983	40	-	60	-	40	60
1984	54	-	46	-	50	50
1985	47	-	53	-	50	50
1986	59	537	41	423	57	43
1987	59	556	41	411	59	41
1988	42	349	58	544	43	57
1989	55	179	45	158	56	44
1990	74	168	26	59	75	25
1991	63	267	37	170	65	35

ACFM is concerned about the lack of a suitable test sample of scales of known origin salmon for the discriminant analysis.

In 1991, the estimated number of fish caught was 103,013 from North America and 60,935 from Europe for a total of 163,948.

An estimate of the number of Maine-origin salmon harvested at West Greenland in 1991 using the proportional harvest method was 3,757 fish.

3.1.2 Biological characteristics of the harvest

As previously observed, North American 1SW salmon were significantly shorter and lighter than their European counterparts, both overall and on an individual NAFO Division basis. Two sea-winter salmon of North American origin were not different in length but were lighter than European-origin salmon, both overall and between NAFO Divisions at the 5% level of significance.

The sea age composition in 1991 of 94.7% 1SW, 4.9% MSW and 0.3% previous spawners indicated that there were proportionately fewer 1SW salmon and more MSW salmon than in 1990. In 1991, the 1SW components for both North American (95.6%) and European (93.4%) salmon were lower than their respective components in 1990.

The proportion of North American origin river age 1 salmon has been increasing steadily from 2% in the 1986 samples to 8.8% in the 1990 samples. In 1991, it decreased to 5.2%. In 1991, samples (<1.0%) of salmon thought to be fish farm escapees were found in the Greenland catches. The decrease in numbers of North American salmon of river age 4 years and older from the mean value of 22.0% from 1968-1990 to 17.8% in 1991 suggests that either production or migration of salmon from the northerly portion of the range in North America has decreased.

3.1.3 Historical data on tag returns and harvest estimates

Thirty USA-origin Carlin tags were returned in 1991 from Greenland without information as to year of recapture. These tags were presumably caught mostly as 1SW fish in the year following release.

The Carlin tag-based harvest estimates of 1SW Maine-origin salmon for the 1990 fishery totalled 1,525 fish.

Carlin Harvest, Maine-Origin Salmon

Year	1985	1986	1987	1988	1989	1990
Harvest	1469	2035	2087	2309	3797	1525

The CWT harvest estimate for Maine-origin salmon in 1990 was 1,613 fish.

CWT Harvest, Maine-Origin Salmon

Year	1987	1988	1989	1990
Harvest	5571	3882	2857	1613

The proportional harvest method provides estimates of harvest significantly higher than the CWT method in recent years (Figure 5). As escapees from North American aquaculture facilities could increase the estimate provided by the proportional method, ACFM recommends further investigation of the possible explanation of the discrepancy between the two methods.

3.1.4 Patterns of stock composition in the harvest

The recoveries of micro-tagged salmon indicated a north-south trend for tagged North American stocks in some years, with greater numbers in the northern NAFO Divisions. This trend was not as evident for the distribution of European tags. Analysis of the proportions of continental -origin derived from scale characters indicated no consistent north-south distribution of North American or European components. However, in recent years there was an increase in the North American component at West Greenland.

3.2 Description of Homewater Fisheries

European homewater fisheries

Tagging experiments have demonstrated that all countries listed in the National Catch Table (Table 1) contribute fish to the West Greenland fishery.

However, stocks from these countries contribute to the fishery to differing extents both because the proportion of MSW salmon in the stocks varies and because of differences in their migratory behaviour in the sea. Although the relative contributions have not been estimated precisely, MSW stocks from UK, Ireland and France are thought to contribute to the fishery at a higher rate than Scandinavian stocks.

MSW salmon stocks have been in decline in many parts of Europe for at least the last 20 years. The extent of the change varies, but catches in some rivers which used to support mainly MSW salmon are now mainly 1SW fish (e.g. Rivers Exe and Eden in UK (England and Wales)).

The closure of the Norwegian drift net fishery has had beneficial effects on other fisheries in Norway, Finland, Russia and Sweden. The catch in Finland was the highest since the mid-1970s, but exploitation rates were decreased on several rivers in Russia in 1991 to provide increased spawning escapement. Rivers in Sweden, along with many in UK, Ireland and France have experienced low flows in 1990 and 1991, and these have had adverse effects on catches.

The marine survival of several monitored European stocks has been low in some recent years, particularly for the 1989 and 1990 smolt year classes. This appears to have been reflected more widely in the poor catches of 1SW fish in 1990 and both 1SW and 2SW fish in 1991. Additional information on fisheries in the North-East Atlantic is contained in Section 2.

North American homewater fisheries

The Canadian homewater fisheries consist of commercial, recreational and native food fisheries. There were about 3,300 commercial fishermen licensed to fish for salmon primarily with shore-fast set gillnets. The 1991 fisheries were under quota management with either quotas set for specific salmon fishing areas or for individual fishermen. The total commercial landings in Canada during 1991 were 512 t. Recreational fisheries occurred in all Canadian Atlantic provinces. Anglers were permitted to fish only with artificial flies and were restricted by daily and seasonal

retention limits. Retention of salmon >63cm was permitted only in Quebec and Labrador. Some rivers had specific quotas. In 1991 there were about 282,700 rod days of fishing effort which resulted in a catch of 132 t of salmon. Several native groups were permitted to fish for salmon for food in four provinces (Quebec, New Brunswick, Nova Scotia and Newfoundland and Labrador). The total harvest in all of these fisheries was 29 t. Commercial fisheries in Canada harvest salmon of USA origin.

The USA homewater fisheries consist only of recreational fisheries in the State of Maine. Anglers were permitted to fish only with artificial flies. There were daily and seasonal retention limits. In 1991, there were 3,157 licensed anglers and a harvest of 238 salmon. Additional information on fisheries in North America is contained in Section 4.

3.3 Stock Abundance and Exploitation at West Greenland

The "top-down" constraints run-reconstruction model was improved to include an additional constraint related to catches of grilse in Canada during the same year as the fishery in Greenland. Data necessary to complete this task were available for the fishery years 1983 to 1990 at West Greenland. Model outputs also were used to derive a range of abundance estimates for North American and European stocks at West Greenland prior to the fishery.

Abundance estimates for North American stocks were then used to define a range of estimates of pre-fishery abundance. A simple model was developed to illustrate the effects of various combinations of catches on the numbers of fish returning to spawn in North America. The effects of these catch combinations were illustrated for varying levels of pre-fishery abundance for 1SW salmon destined to return as 2SW spawners.

The implementation of catches required to meet specific escapement targets for various levels of abundance would depend on some pre-season indices of abundance of salmon in the Greenland fishery area.

3.3.1 Determining abundance of North American and European salmon at West Greenland

Application to North American stocks

The constraints model was used to estimate feasible ranges of exploitation rates for Canada and Greenland for 1983 to 1990 fishery years. The average minimum and maximum exploitation rates for Canada were 57 and 70% respectively. For Greenland the average minimum and maximum exploitation rates depend on the fraction unavailable (FU parameter). When FU was assumed to be 0.05, the average minimum and maximum exploitation rates in Greenland were 25 and 36%, respectively. Exploitation rates in 1983 and 1984 were particularly low, an observation consistent with the low catches in those years. Exploitation rates between 1985 and 1988 were about twice as high (about 30 to 50%); during these years the quota acted to restrict harvests in Greenland. Estimates for 1989 and 1990 are somewhere between the 1983-84 and 1985-88 periods. The 1983-84 and 1989-90 fisheries were unaffected by the quota, suggesting low abundance in the West Greenland area. When the FU

parameter is assumed to be 0.3, the estimated range of exploitation rates in Greenland increases over the entire period. The same general patterns described above still apply, with low rates in 1983 and 1984, higher rates ranging between 40 to 58% during the period 1985-88 and intermediate levels in 1989-90.

Year	Exploitation FU = .05		Exploitation FU = .30	
	Min	Max	Min	Max
1983	12	19	16	25
1984	13	21	17	28
1985	29	42	36	51
1986	34	46	41	55
1987	37	49	44	58
1988	30	45	37	55
1989	19	29	24	37
1990	23	36	29	46
Average	25	36	31	44

The total estimated abundance of all non-maturing 1SW salmon of North American origin shows a marked decline since 1986. Estimates were obtained simply by reconstructing the population for minimum and maximum values of run and harvest (Figure 6). Thus these estimates represent the entire extant stock. While the data do not indicate abundance by fishing region, the estimates illustrate an over two-fold range of pre-fishery abundance in an 8-year period.

The total abundance of all salmon in the West Greenland area can be estimated by dividing the total catch by the minimum and maximum values of exploitation rates. The derived range of abundance estimates suggest a general downward trend since 1985, regardless of whether FU = 0.05 or 0.30. Peak abundance in 1985 probably ranged from 800,000 to 1 million non-maturing salmon of all sea ages (mostly 1SW). Trends for European and North American stocks appear to be more erratic, but both stock complexes exhibit very low abundance in 1989 and 1990.

Year	Total population FU = .05		Total population FU = .30	
	Min	Max	Min	Max
1983	526,316	833,333	400,000	625,000
1984	454,762	734,615	341,071	561,765
1985	716,786	1038,103	590,294	836,250
1986	688,761	931,853	576,055	772,756
1987	623,878	826,216	527,069	694,773
1988	624,044	936,067	510,582	758,973
1989	404,897	618,000	317,351	489,250
1990	238,833	373,826	186,913	296,483

The derived estimates of fishery area exploitation rates apply collectively to most of the North American stocks that frequent the West Greenland area. To the extent that different stocks have different migration patterns, the period of residence within the fishery would determine the actual rate of exploitation on that stock. Fish that reside within the fishery for longer periods would have greater exploitation rates.

This modelling approach could be applied to specific stocks when data are available. The modelling approach has been applied to all Canadian stocks which have a significant proportion of MSW spawners. For these data, the derived exploitation rates apply to the entire group of stocks and, therefore, represent an average rate for that fraction of the population available to Greenland. The input data could be further disaggregated to incorporate stock complexes, such as northern and southern Canada rivers.

Application to European stocks

ACFM considered ways to apply similar models to the European stocks exploited at West Greenland. Because of the nature of the fisheries, the constraints model cannot be applied directly. ACFM therefore considered a preliminary estimate of the abundance of non-maturing 1SW salmon in the sea at the time of the West Greenland fishery based upon a run-reconstruction approach. Catches of 2SW salmon in homewater fisheries were used to estimate the numbers of 2SW fish returning to each country. These were then used to estimate the numbers that would have been alive in the previous year.

The assessment was carried out for 1990 catches in homewaters. This gave estimates of the numbers of non-maturing 1SW European salmon alive before the 1989 West Greenland fishery of between 915,000 and 1,242,000 salmon. Using the proportion of European salmon estimated to be in the catch that year (44%), the numbers of European fish in the area is estimated to be between 139,635 and 271,920. This

therefore suggests that between 11% and 30% of all the non-maturing 1SW European salmon were in the fishery area in 1989.

It is important to note, however, that there is a marked difference in the proportions of the stocks from the northern and southern countries that go to the West Greenland area.

3.3.2 Modelling interactive effects between abundance and exploitation rates at West Greenland in relation to achievement of North American spawning targets

The number of 2SW spawners migrating to Canadian rivers can be expressed as a function of 1SW catch in Canada (C1) and Greenland (G1), and 2SW catch in Canada (C2) for varying levels of pre-fishery abundance (N1). To illustrate potential utility of the approach, various combinations of catches (G1, C1 and C2) on estimated numbers of spawners were computed for various levels of N1. Results illustrate that a wide variety of catches would allow equivalent numbers of spawners to return.

The target number of spawners necessary to achieve conservation objectives can be called R2_target. ACFM considered a provisional estimate of R2_target of about 175,000 which represents the sum of target spawning requirements for all Canadian rivers. At low levels of pre-fishery non-maturing 1SW abundance (N1 = 200,000; Figure 7) there would be insufficient numbers of spawners (R2) to allow harvest in either Canada or West Greenland. At moderate (N1 = 400,000) and higher (N1 = 600,000) levels of abundance (Figures 8-9), a range of catch allocations among fisheries (C1 vs G1) or years (G1, C1 vs C2) would permit sufficient numbers of spawners within safe biological limits, provided that targets for component stocks were met. Based on observed projections since 1983 (Figure 6), a reasonable range of N1 values is 200,000 to 600,000 salmon.

ACFM identified several problems with using abundance and exploitation information to provide management advice, especially in relation to spawning targets. Although the combined target spawning requirements for Canadian rivers is probably between 150,000 and 200,000 2SW salmon, meaningful catch advice to provide sufficient spawning escapement for individual stocks is not readily available due to the varying proportions of stocks contributing to the fisheries. Previously, the Working Group (Anon, 1982, 1984) advised that "it is not possible at the present time to estimate and advise on a single TAC which would maintain homewater stocks and safeguard the spawning within safe biological limits". It was further advised that regulation by a single TAC would not seem to be a practical method to adequately ensure spawning escapement within safe biological limits for stocks which are, in part, harvested in mixed stock fisheries (Anon, 1984).

ACFM, however, noted that if current catches are adversely affecting the total stock, then reductions in catches would benefit the population as a whole. Benefits to specific stocks, however, could not be predicted. A method of developing a TAC which reduces catches when stocks are low would provide a means of indicating when catch reductions are biologically justified. Present methods for setting catch levels irrespective of population size pose an even greater risk to the total population during periods of low stock abundance. Future management advice could be improved as additional information on particular stocks becomes available.

ACFM considered two approaches for improving catch advice. Estimates of spawning targets could be improved by taking known individual river spawning targets and scaling these up regionally to identify a minimum overall North American target. Another alternative would be to group North American 2SW-producing stocks into "stock complexes" based on river age distributions and evaluate their contribution to catches in Canada and Greenland.

3.3.3 Indices of abundance at West Greenland

ACFM examined information from Canada which may provide a pre-season index of abundance of North American fish at West Greenland. Among several significant relationships, the predictor judged to have the greatest management potential was the count of "small" salmon in the Millbank trap on the Miramichi River. The relationship of numbers of North American river age 4 and older fish caught in the first two weeks of fishing at West Greenland on catch in number of small salmon in Labrador was also significant. In order for this relationship to be of use to management as an index of abundance of salmon at Greenland, a data series of catches of small salmon in Labrador up to a specific date would have to be developed.

It was felt that many European stocks would be unlikely to provide a pre-season index of abundance at West Greenland due to the 1SW returns being spread over the middle and latter parts of the year and being very variable. However, the Working Group recommended that data from fisheries, river counts and traps be examined further to evaluate this possibility.

3.3.4 Exploitation of Maine-origin (USA) salmon

The extant exploitation rates for 1SW Maine salmon in 1990 were lower than in the previous year but still higher than the long-term average. The extant exploitation rates for 2SW salmon in 1990 were higher than the average for the time series.

Fishery area exploitation for 1990 show exploitation in Canada and Greenland are unchanged compared to the previous year. The effects of different reporting rates of Carlin tags and different proportions of the stock population available to each fishery are presented in Figure 10 and these indicate the possible range of fishery area exploitation in 1987-1990.

Estimates of exploitation rates for Maine stocks in Canada and Greenland are generally higher than those estimated by the continental run-reconstruction model. Those estimates of fishery area exploitation rates are based on the aggregate behaviour of many hundreds of stocks. Maine stocks are near the southern boundary of Atlantic salmon habitat and likely have different migration routes than the major Canadian stocks.

3.4 Advice on Catch Levels at West Greenland

ICES was asked to propose and evaluate methods to estimate possible catch levels based upon maintaining adequate spawning biomass. The general concerns about the difficulties of applying a TAC are expressed in Section 3.3.2. Although advances have been made in our understanding of population dynamics of Atlantic salmon and

the exploitation occurring in the fisheries, the concerns about the implications of application of TACs to mixed stock fisheries are still relevant.

ACFM considered how the predictive measures of abundance could be implemented to give annual catch advice. The aim of the advice would be to limit catch to a level that would facilitate achieving overall spawning escapement equivalent to the sum of spawning targets in individual North American and European rivers (when the latter have been defined). To achieve the desired level of exploitation, for a given level of predicted abundance, either a TAC could be fixed or some form of effort limitation introduced.

Effort limitation would, in theory, provide a greater range of options for management, such as season length restrictions, regulating the number of boats or licenses or closed periods in the fishery. However, no reliable data exists on the relationship between effort and exploitation in the fishery.

The methodology employed in Section 3.3.2 simply defines the trade-offs in catches of non-maturing 1SW salmon in Canada and Greenland and 2SW catches in Canada in the following year. In particular, it defines a set of feasible combinations that may ensure that an overall spawning target is met. The advice for any given year is dependent on obtaining a reliable predictor of total non-maturing 1SW abundance for North American stocks. Since pre-fishery abundance for year i is the sum of the catches in year i and catches plus returns in year i+1, the advice for year i+1 fisheries (2SW) could be improved by updating the prediction conditioned on the 1SW catches in year i. For the 1983-1990 data the regression between total 2SW returns plus 2SW catches and total 1SW catches had a coefficient of determination of 0.76. More importantly, the standard error of the prediction was relatively small (i.e. 25,000 fish). Hence, management corrections for 2SW catches may be possible.

In contrast, prediction of pre-fishery abundance of 1SW salmon destined to return as 2SW salon (N1) is much more difficult, as described in previous sections. One possibility would be to use simple trend analysis of the abundance data in Figure 6 to project future abundance. Such predictions could have wide prediction intervals and it would be important to proceed cautiously by using the lower range of predicted abundance levels for management decisions. Further analysis of the error structure of the N1 abundance estimates might provide a means of imputing error bounds on the projections. In turn, these error bounds could be incorporated into the catch advice and expressed in terms of the likelihood of achieving spawning targets.

3.5 By-Catches in the Greenland Salmon Drift Net Fishery

By-catch information for the West Greenland salmon drift net fishery is not routinely recorded. The only information available on by-catch was collected during research investigations of 1970s and in 1980s is not considered applicable to the present fishery due to changes in fishing patterns. Details of these earlier investigations can be found in the Report of the Working Group (Anon, 1992).

3.6 Adequacy of Sampling Program at West Greenland

The sampling program at West Greenland was found to be of adequate spatial coverage but of inadequate temporal coverage in some years. ACFM recommends the program be expanded in one or two locations by one to two weeks of additional sampling.

4. INFORMATION OF INTEREST TO THE NORTH AMERICAN COMMISSION

4.1 Description of the Fisheries in Canada

The following were new management measures for commercial fisheries in 1991:

1) In 1991, quotas for the Newfoundland commercial salmon fishery were lower by the following amounts in these Salmon Fishing Areas (SFAs) of Newfoundland; SFA 3 (35 t), SFA 4 (22 t) and SFA 13 (10 t). Salmon Fishing Area 1 had an allowance of 80 t, the same as in 1990 (an allowance is an estimate of expected catch and not a limitation on allowable harvest). In other SFAs, quotas remained as in 1990.

2) In the Quebec commercial fishery, the quota in Q7 was reduced by 34% (from 2,755 to 1,809 fish), commensurate with a reduction in a number of licenses under a buy-back program. In Q8 and Q9, the quota and fishing seasons remained essentially the same as they were in 1990.

The following were new management measures for recreational fisheries in 1991:

1) The seasonal bag limit for the recreational fishery of Newfoundland-Labrador was reduced from 15 to 10 fish. For conservation reasons, most rivers in SFAs 22 and 23 (Inner Bay of Fundy) were not opened to recreational fishing.

The total salmon landings for Canada in 1991 were 679 t; this is the lowest recorded landing in the 1960-1991 data set. Of the total Canadian landings by weight, 25% were in Quebec, 68% in Newfoundland and Labrador and 8% in the Maritime Provinces. The recreational fisheries harvested 20%, commercial fisheries 75% and the native food fisheries 4% of the total landings by weight.

SFA	1991 Catch (t)	Quota (t)
1	7	80 [1]
2	79	200
3	108	120
4	52	78
5	18	25
6	19	20
7-11	70	82
13-14	81	75
Q7-9	77	NA [2]
Q11	1	15

[1] Allowance
[2] Not applicable

Catches in the Newfoundland commercial fishery are given in the text table below:

Newfoundland Commercial Fishery

Year	1986	1987	1988	1989	1990	1991
Catch (t)	1230	1485	972	867	618	434 [1]

[1] Preliminary

4.1.1 Composition and origin of the catch in 1991

Only salmon of Canadian and USA origin were caught in Canada during 1991. Recaptures of tagged 1SW salmon of USA and Canadian origin occurred in the Newfoundland and Labrador fisheries.

4.1.2 Historical data on tag returns and harvest estimates

ACFM updated the time series of Carlin tag returns and harvest estimates of Maine-origin 1SW salmon in Newfoundland and Labrador. The total harvest of 780 Maine-origin salmon in the 1990 fishery was distributed primarily in SFAs 2-4.

Carlin Harvest, Maine-Origin Salmon

Year	1985	1986	1987	1988	1989	1990
Catch (t)	2288	552	580	393	1722	780

Comparative harvest estimates based on CWT and Carlin tag recoveries were calculated for the communities and Statistical Sections sampled.

4.1.3 Exploitation rates

Exploitation rates for the fisheries in the Miramichi and Margaree were updated and adjusted for mark-recapture techniques. Exploitation is similar to what was previously reported and ranged from 38 to 55%.

4.2 Description of Fisheries in the United States of America

There were no new management measures instituted in the USA during 1991. Recreational catches of Atlantic salmon of 238 were about 63% lower in 1991 than in 1990. The decreased catch was attributed to smaller runs of salmon and slightly (4%) lower license sales. The number of salmon caught and released in Maine rivers exceeded the number caught and killed.

The average exploitation rate on salmon on all age classes in the Penobscot River was 11.5% which is slightly lower than the exploitation rate (13.5%) observed in 1990.

4.3 Description of Fisheries in France (Islands of St Pierre and Miquelon)

Catch of salmon for the Islands of St Pierre and Miquelon in 1991 was 1 t. There were 13 professional fishermen and 37 recreational fishermen in 1989. Tag returns from previous years indicate that salmon of Canadian and USA origin have been caught in the fisheries of St Pierre and Miquelon.

4.4 Effects of Quota Management Measures Taken in 1990 and 1991 in Newfoundland-Labrador Commercial Fisheries

4.4.1 Effects on Canadian stocks and fisheries

The quantities of large and small salmon affected by the early closure of the fisheries were evaluated by applying the closure date in each SFA, in 1990 and 1991, to the temporal distribution of the landings in each SFA and year, 1984-1989.

For 1990, the estimated mean total weight of salmon not caught due to the early closure of the fisheries was 79 t of small salmon and 39 t of large salmon. The estimated mean numbers of fish not caught were 41,600 small salmon and 8,600 large salmon. The mean predicted weight of small salmon not caught in 1991 is 21 t and

for large salmon is 9 t. These weights are equivalent to about 12,600 small salmon and 2,500 large salmon.

In both 1990 and 1991, the quota had a greater effect on proportionally reducing the catch of small salmon than large salmon in most SFAs. This difference in reduction was expected because the large salmon tend to migrate earlier along the coast than small salmon.

4.4.2 Effects on USA stocks

The mean percent harvest on 1SW Maine-origin salmon which would not have been caught if the 1991 closure dates were in effect during fishery years 1984-1989 is 16%. This is 63% less than if the closure dates from the 1990 fishery were used to evaluate the fishery. This difference suggests that the quotas in 1991 were less effective in proportionally reducing the harvest than in 1990.

4.5 By-Catches of Fish, Birds and Marine Mammals in Salmon Drift Net Fisheries

ACFM is not aware of any legal or illegal drift net fisheries for salmon in the North American Commission area.

REFERENCES

Anon, 1982. Report of Meeting of the Working Group on North Atlantic Salmon. ICES Headquarters, Copenhagen, 13-16 April 1982. ICES, Doc. C.M. 1982/Assess:19.

Anon, 1984. Report of Meeting of the Working Group on North Atlantic Salmon. Aberdeen, 20 April - 4 May 1984. ICES, Doc. C.M. 1984/Assess:16.

Anon, 1982. Report of the Working Group on North Atlantic Salmon. Dublin, 5-12 March 1992. ICES, Doc C.M. 1992/Assess:15.

Table 1. Nominal catch of SALMON by country (in tonnes round fresh weight), 1960-1991 (1991 provisional figures).

Year	Canada (4)	Den.	Faroes	Finland	France	East Grld.	West Grld.	Iceland	Ireland (1)	Norway (3)	Russia	St. P & M.	Sweden (W. C.)	UK E. & W.	UK Scotland	UK N.I.(1,2)	USA	Others (5)	Total
1960	1636	-	-	-	-	-	60	100	743	1659	1100	-	40	283	1443	139	1	-	7204
1961	1583	-	-	-	-	-	127	127	707	1533	790	-	27	232	1185	132	1	-	6444
1962	1719	-	-	-	-	-	244	125	1459	1935	710	-	45	318	1738	356	1	-	8650
1963	1861	-	-	-	-	-	466	145	1458	1786	480	-	23	325	1725	306	1	-	8576
1964	2069	-	-	-	-	-	1539	135	1617	2147	590	-	36	307	1907	377	1	-	10725
1965	2116	-	-	-	-	-	861	133	1457	2000	590	-	40	320	1593	281	1	-	9392
1966	2369	-	-	-	-	-	1370	106	1238	1791	570	-	36	387	1595	287	1	-	9750
1967	2863	-	-	-	-	-	1601	146	1463	1980	883	-	25	420	2117	449	1	-	11948
1968	2111	-	5	-	-	-	1127	162	1413	1514	827	-	20	282	1578	312	1	403	9755
1969	2202	-	7	-	-	-	2210	133	1730	1383	360	-	22	377	1955	267	1	893	11540
1970	2323	-	12	-	-	-	2146	195	1787	1171	448	-	20	527	1392	297	1	922	11241
1971	1992	-	-	-	-	-	2689	204	1639	1207	417	-	18	426	1421	234	1	471	10719
1972	1759	-	9	32	34	-	2113	250	1804	1568	462	-	18	442	1727	210	1	486	10915
1973	2434	-	28	50	12	-	2341	256	1930	1726	772	-	23	450	2006	182	2.7	533	12746
1974	2539	-	20	76	13	-	1917	225	2128	1633	709	-	32	383	1708	184	0.9	373	11941
1975	2485	-	28	76	25	-	2030	266	2216	1537	811	-	26	447	1621	164	1.7	475	12209
1976	2506	-	40	66	9	<1	1175	225	1561	1530	772	2.5	20	208	1019	113	0.8	289	9536
1977	2545	-	40	59	19	6	1420	230	1372	1488	497	-	10	345	1160	110	2.4	192	9495
1978	1545	-	37	37	20	8	984	291	1230	1050	476	-	10	349	1323	148	4.1	138	7650
1979	1287	-	119	26	10	<1	1395	225	1097	1831	455	-	12	261	1076	99	2.5	193	8089
1980	2680	-	536	34	30	<1	1194	249	947	1830	664	-	17	360	1134	122	5.5	277	10080
1981	2437	-	1025	44	20	<1	1264	163	685	1656	463	-	26	493	1233	101	6	313	9929
1982	1798	-	865	54	20	<1	1077	147	993	1348	354	-	25	286	1092	132	6.4	437	8634
1983	1424	-	678	57	16	<1	310	198	1656	1550	507	3	28	429	1221	187	1.3	466	8731
1984	1112	-	628	44	25	<1	297	159	829	1623	593	3	40	345	1013	78	2.2	101	6892
1985	1133	-	566	49	22	7	864	217	1595	1561	659	3	45	361	913	98	2.1	-	8095
1986	1559	-	530	38	28	19	960	310	1730	1598	608	2.5	54	430	1271	109	1.9	-	9248
1987	1784	-	576	49	27	<1	966	222	1239	1385	564	2	47	302	922	56	1.2	-	8142
1988	1311	-	243	34	32	4	893	396	1874	1076	419	2	40	395	882	114	0.9	-	7716
1989	1139	-	364	52	14	<1	337	278	1079	905	359	2	29	296	895	142	1.7	-	5893
1990	911	13	315	59	15	<1	227	426	586	930	315	2	33	338	624	94	2.4	-	4890
1991	679	3.3	95	69	13	4	437	519	422	885	215	1	38	199	395	55	0.8	-	4030

1. Catch on River foyle allocated 50% Ireland and 50% Northern Ireland.

2. Not including angling catch (mainly grilse).

3. Before 1966, sea trout and sea charr included (5% total).

4. Includes estimates of some local sales and by-catch.

5. Includes catches in Norwegian Sea by vessels from Denmark, Sweden, Germany, Norway and Finland.

Table 2. **Inventory of Parasites and Diseases of Wild and Reared Salmon in Countries at the West Greenland and N.E. Atlantic Commissions Areas of NASCO (no information were made available for Belgium, CIS, Denmark, England, Finland, Greenland, Netherlands, Spain or Sweden).**

F = Found in farmed fish.
W = Found in wild fish.
0 = Looked for but not found.
Blank = No records.

Diseases	FAROES	FRANCE	ICELAND	IRELAND	NORWAY	SCOTLAND
A. Viral Diseases						
VHS	0	0	0	0	0	0
IHN	0	0	0	0	0	0
IPN	F	F	0	F	FW	FW
Viral papilloma				FW	FW	FW
VEN/EIBS	F	0		F	FW	F
Swim bladder tumor				0		F
B. Diseases of unknown etiology						
Pancreas Disease	0	F		F	F	F
ISA		0			F	0
Epitheliocystis			F		F	
C. Bacterial diseases						
Aeromonas salmonicida	FW	F	F	FW	FW	FW
Aeromonas sp. (motile)	F	F	F	FW	FW	FW
Renibacterium salmoninarum	F	0	FW	0	FW	FW
Yersinia ruckeri	0	0	F	F	F	F
Vibrio sp.	F	F	F	FW	FW	FW
V. anguillarum	F	F	F	FW	FW	
Vibrio salmonicida	F	0	0	0	F	F
Flexibacter columnaris		F		F	FW	FW
Flexibacter sp.	F				F	
Pseudomonas sp.	F		F	FW	F	F
Serratia sp.				0		F
Lactobacillus sp.			F			
Mycobacterium sp.			F		FW	

Diseases	FAROES	FRANCE	ICELAND	IRELAND	NORWAY	SCOTLAND
D. Fungal infections						
Ichthyophonus hoferi		0		W	FW	W
Exophiala salmonis		F	F	F	F	F
Phoma herbarum		0		F	F	F
Saprolegnia parasitica				FW	FW	
Saprolegnia sp.		FW		FW	FW	FW
Saprolegnia diclina				0		F
Dermocystidium sp.					FW	F
Paecilomyces farinosus				0	F	F
Phialophora sp.				F		F
E. Protozoan infections						
Myxobolus neurobius					F	W
Myxidium truttae						W
Myxidium oviforme					W	W
PKX organism (probable myxosporid)				F	FW	F
Ichthyobodo (Costia) necatrix	FW	F	F	F	F	FW
Ichthyophthirius multifiliis		F		F	FW	FW
Hexamita sp.				F	F	F
Trichodina sp.	F	F		FW	F	FW
Leptotheca sp.					FW	FW
Epistylis sp.					F	F
Apiosoma sp.					FW	F
Scyphidia sp.	F			F	FW	FW
Chilodonella cyprini					FW	FW
Trichophyra sp.				F	FW	F
F. *Monogeneans*						
Gyrodactylus derjavini					FW	FW
Gyrodactylus truttae					FW	FW
Gyrodactylus salaris					FW	0
Discocotyle sagittata					W	W
G. *Trematodes*						
Crepidostomum farionis				W	W	W
Diplostomum spathaceum				W	W	W
Diplostomum sp.				FW	W	W
Apatemon sp.						W
Phyllodistomum simile						W
Hemiurus sp.					W	W
Derogenes sp.					FW	W
Lecithaster sp.						W
Brachyphallus sp.						W
Tetracotyle sp.					W	W

Diseases	FAROES	FRANCE	ICELAND	IRELAND	NORWAY	SCOTLAND
H. <u>*Cestode infections*</u>						
Cyathocephalus truncatus					W	W
Diphyllobothrium ditremum larvae				W	W	FW
Diphyllobothrium dendriticum larvae				FW	W	FW
Diphyllobothrium sp. larvae				W		W
Eubothrium crassum				FW	FW	FW
Hepatoxylon sp. larvae						W
I. <u>Nematode infections</u>						
Anisakis sp. larvae				W	FW	W
Hysterothylaceum sp. (larvae and adults)					FW	W
Capillaria salvelini						W
Capillaria sp.						W
Metabronema sp.					W	W
Rhabdochona salvelini						W
Rhabdochona sp.					W	W
Cystidicola farionis						W
Cystidicoloides sp.						W
J. <u>*Acanthocephalan* infections</u>						
Neoechinorhynchus rutili						W
Echinorhynchus truttae						W
Pomphorhynchus laevis						W
Acanthocephalus lucii						W
K. <u>Crustacean infections</u>						
Lepeophtheirus salmonis	FW	F	F	FW	FW	FW
Caligus elongatus	FW	F	F	FW	FW	FW
Salmincola salmonea					FW	W
L. <u>Molluscan infections</u>						
Margaritifera margaritifera (glochidia)				F	FW	F
Mytilus edulis					FW	F
M. <u>Leech infections</u>						
Hemiclepsis marginata						W

Table 3. Origin of catches of salmon in homewater fisheries.

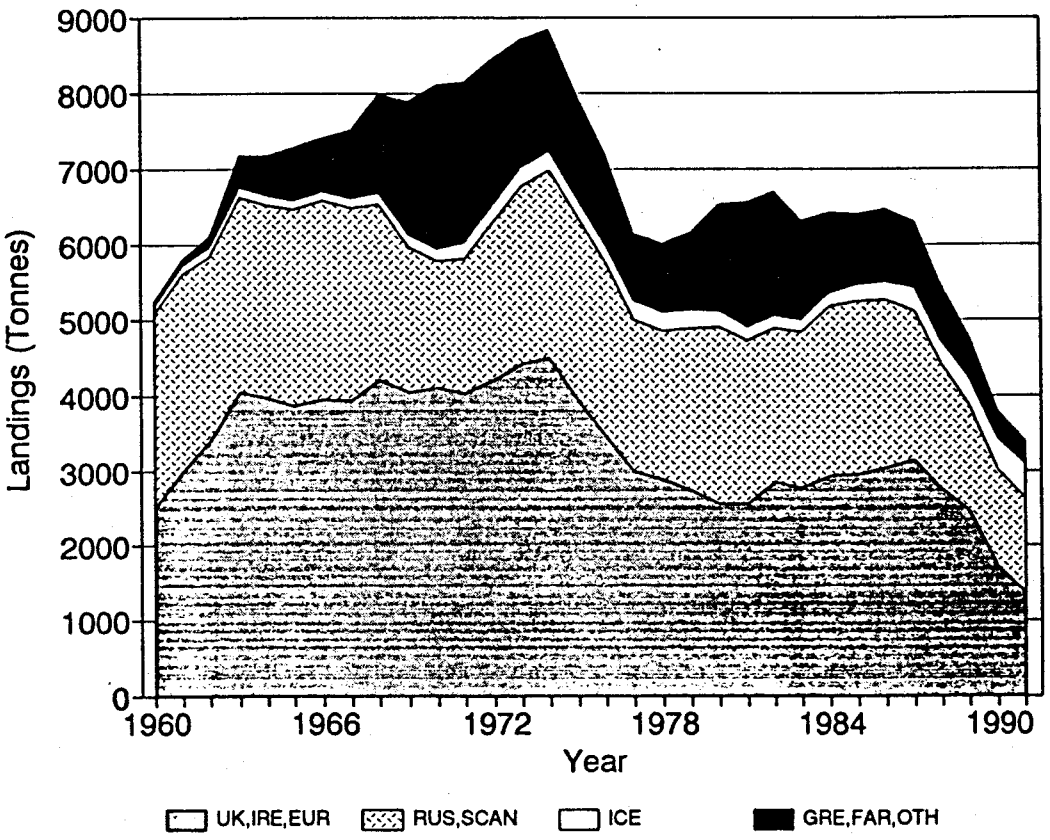
++ = principal component of the catch

\+ = other significant contributions

\- = occurence

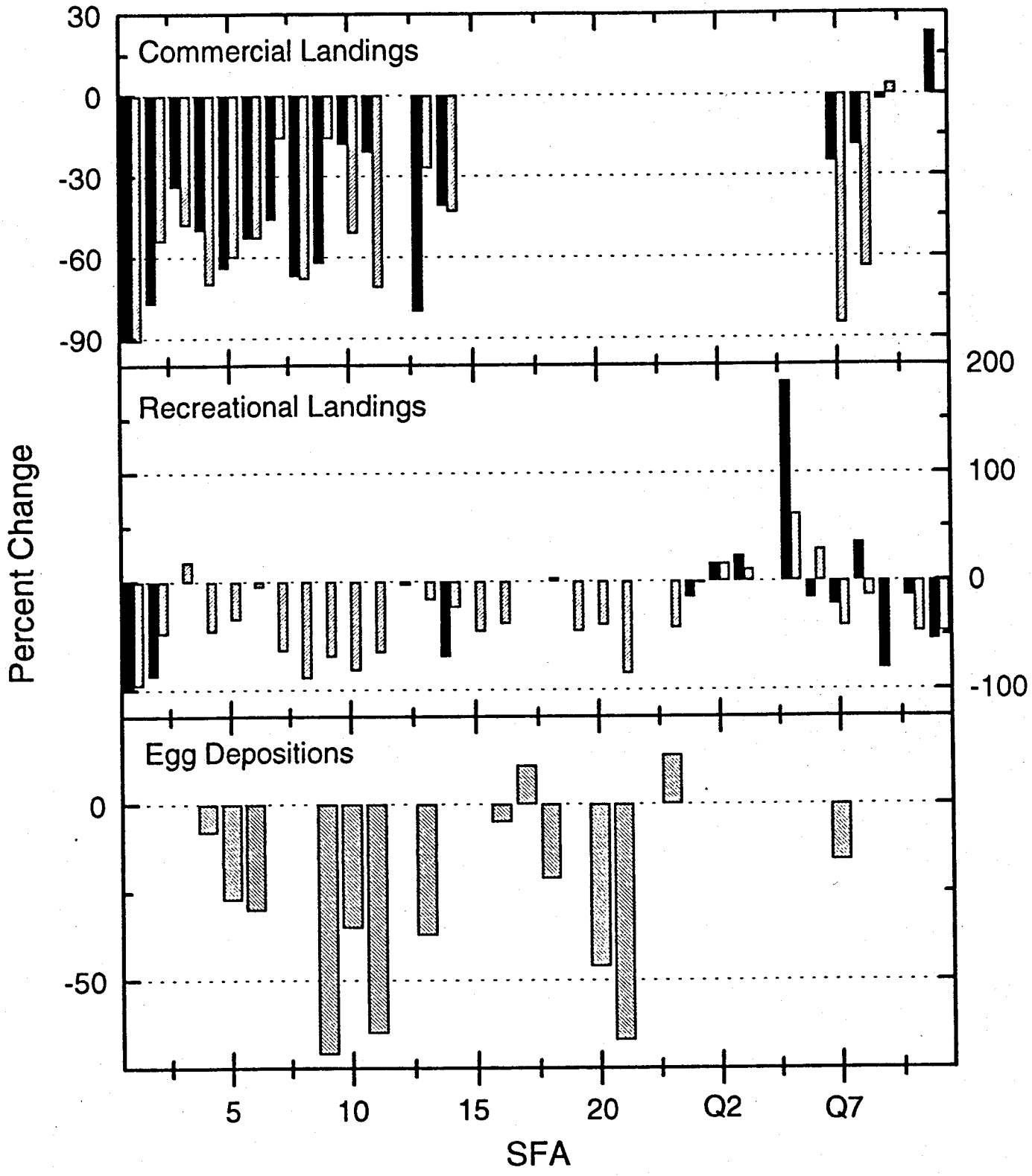
	Catch in Country									
Origin of Catch	Rus	Fin	Nor	Swe	Fr	UK E&W	UK Scot	UK NI	Ire	Ice
Russia	++	-	+							
Finland		++	+							
Norway		+	++	+		-	-		-	
Sweden			+	++						
France					++					
UK (E&W)			-	-	-	++	+	+	+	
UK (Scot)						+	++	+	+	
UK (NI)						-	+	++	+	
Ireland			-	-	-	-	+	+	++	
Iceland			-							++

Figure 1. Total landings of European stocks in home and distant water fisheries.



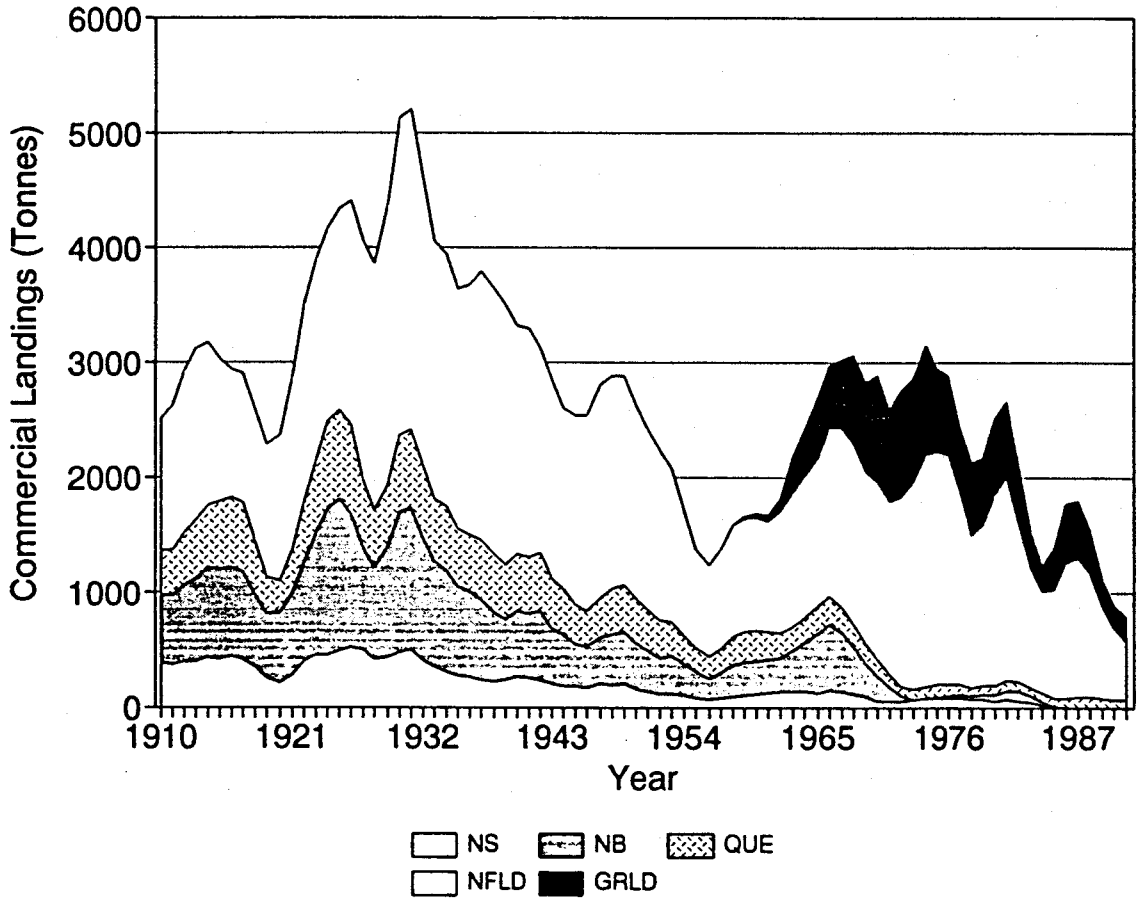
UK,IRE,EUR=United Kingdom, Ireland, mainland Europe
RUS,SCAN=Russia, Scandinavia
ICE=Iceland
GRE,FAR,OTH=European component of Greenland, Faroes, others

Figure 2. Percent change between harvest of salmon in 1991 and the average for 1986-1990 (comm) and 1984-89 (rec) in SFAs or zones of Canada. Percent change in 1991 egg depositions from 1986-90 is for specifc rivers.*



* SFAs without bars (comm) or without bars for large salmon (rec) had no fisheries.

Figure 3. Commercial landings of Canadian origin salmon in home and distant water fisheries.



NS=Nova Scotia
NB=New Brunswick
QUE=Quebec
NFLD=Newfoundland-Labrador
GRLD=North American component of Greenland

Figure 4. Catch per unit effort (1000 hooks) of salmon by statistical rectangle from logbooks in the 1990/1991 season.

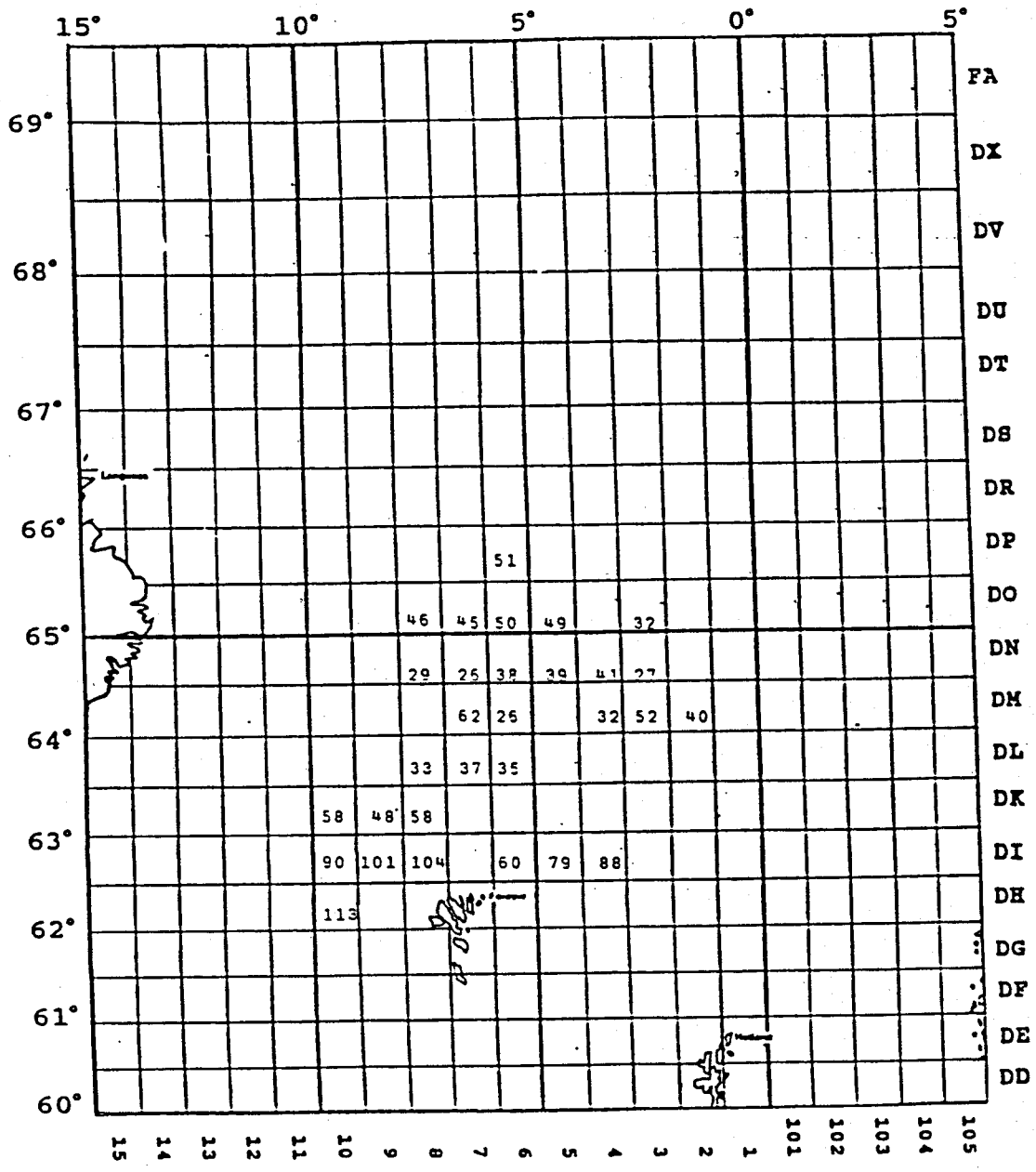


Figure 5. Harvest with confidence limits for 1987-90.

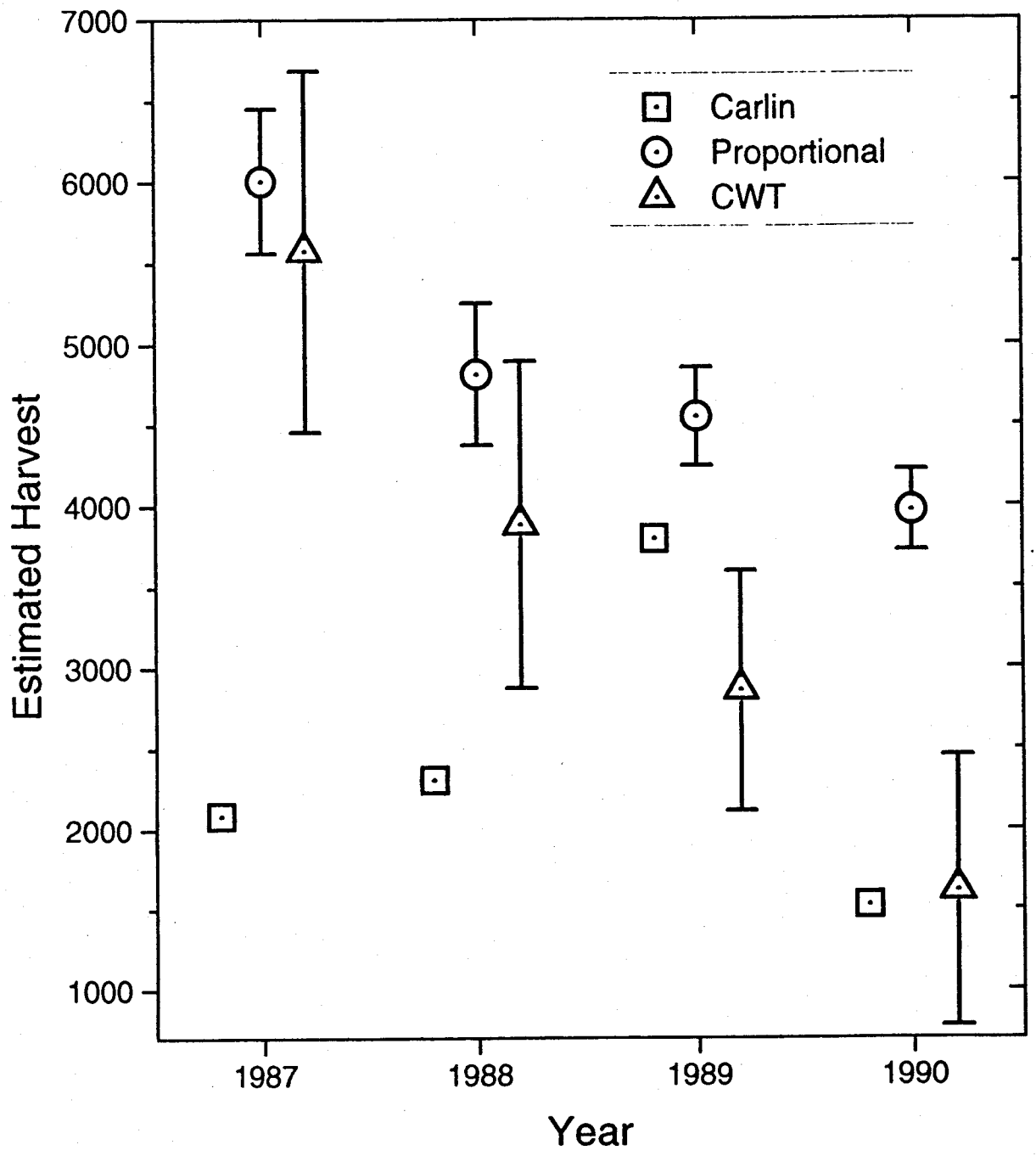


Figure 6. Estimated pre-fishery abundance (year i) of 1SW salmon of North American origin destined to retruns as 2SW fish in year (i+1). Estimate includes all salmon regardless of location.

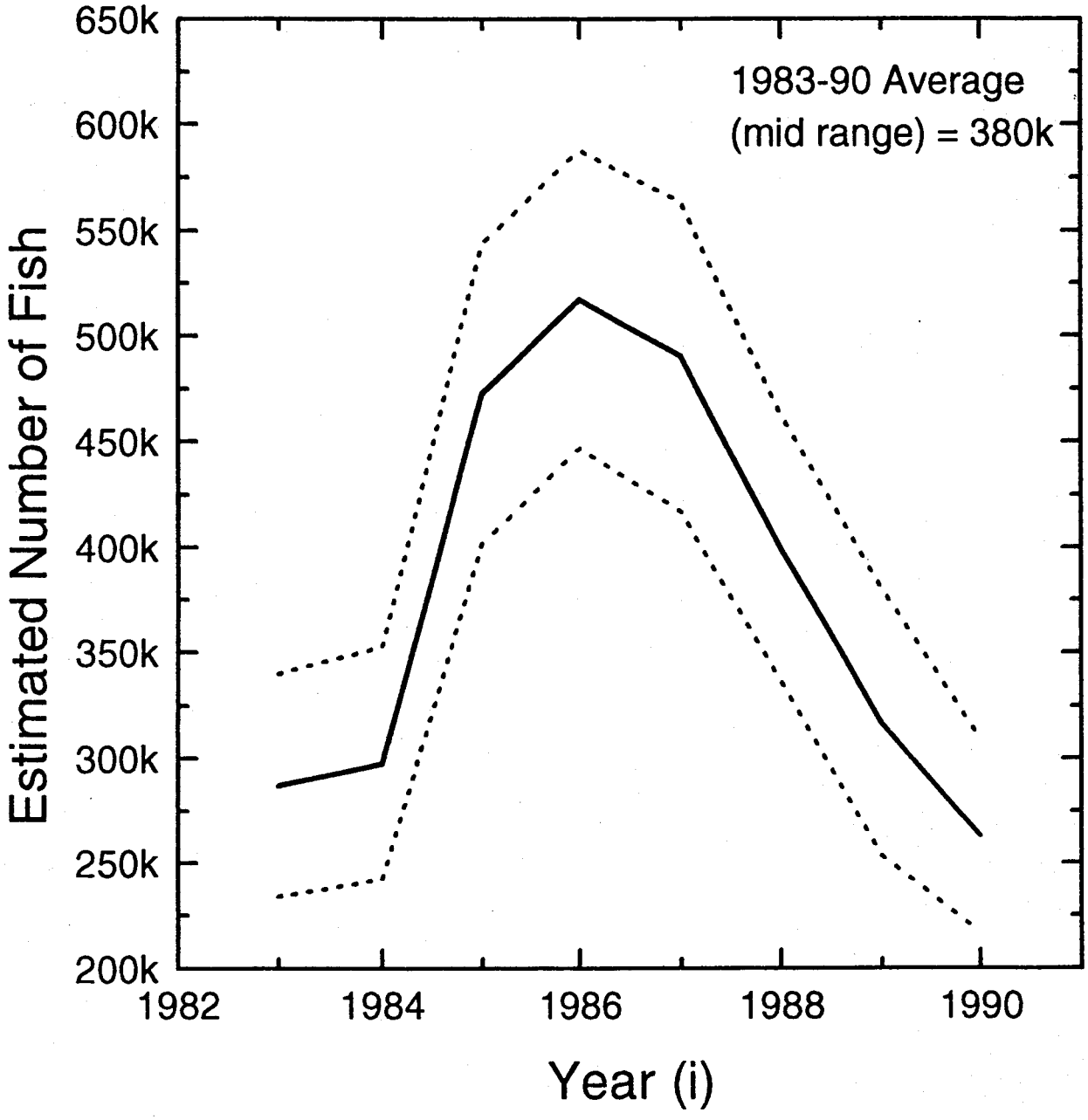


Figure 7. Predicted number of spawners remaining after fisheries on non-maturing 1SW salmon in Canada (C1) and Greenland (G1) and 2SW salmon in Canada (C2). Pre-fishery abundance of 1SW salmon destined to return as 2SW spawners is 200,000 fish.

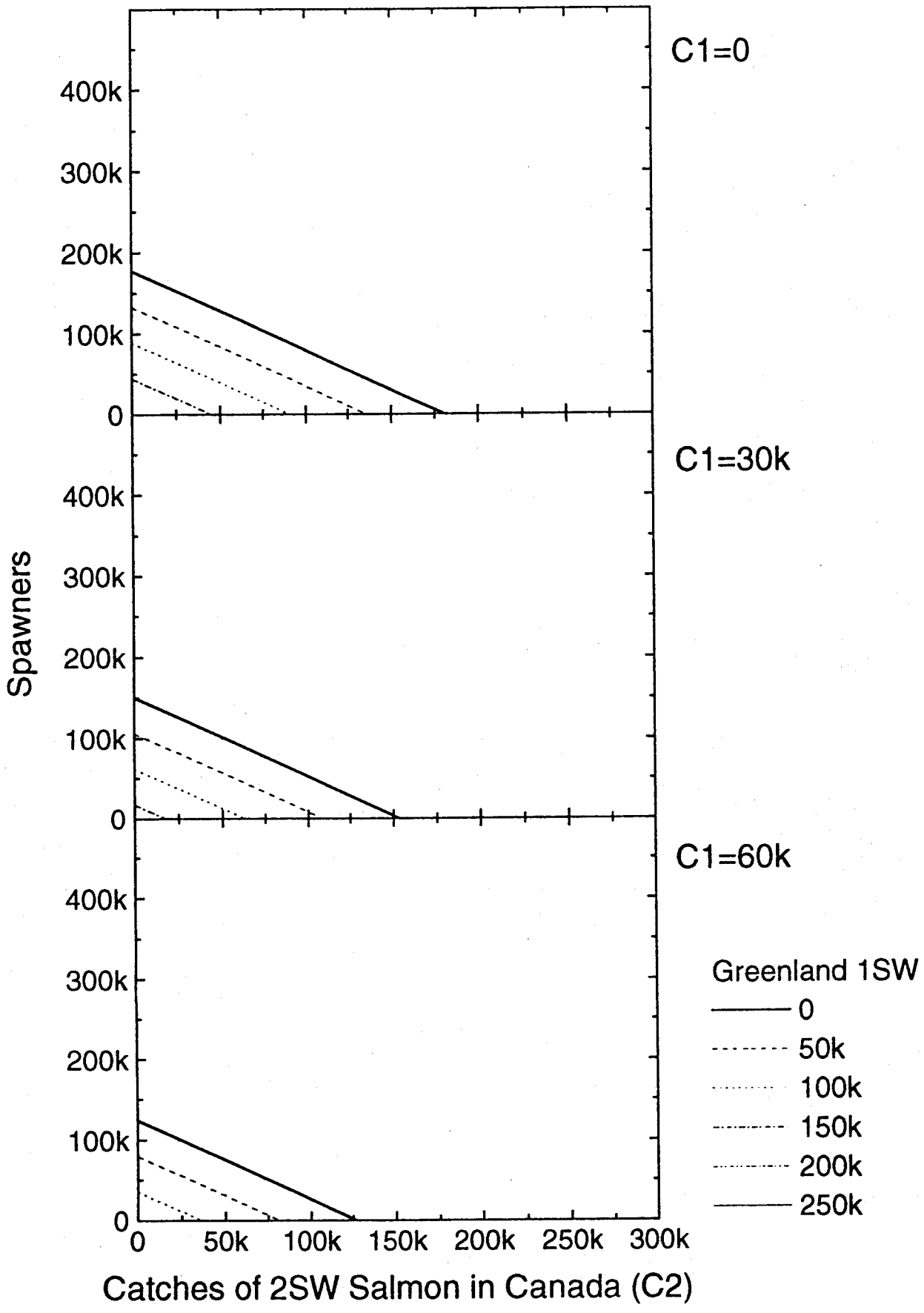


Figure 8. Predicted number of spawners remaining after fisheries on non-maturing 1SW salmon in Canada (C1) and Greenland (G1) and 2SW salmon in Canada (C2). Pre-fishery abundance of 1SW salmon destined to return as 2SW spawners is 400,000 fish.

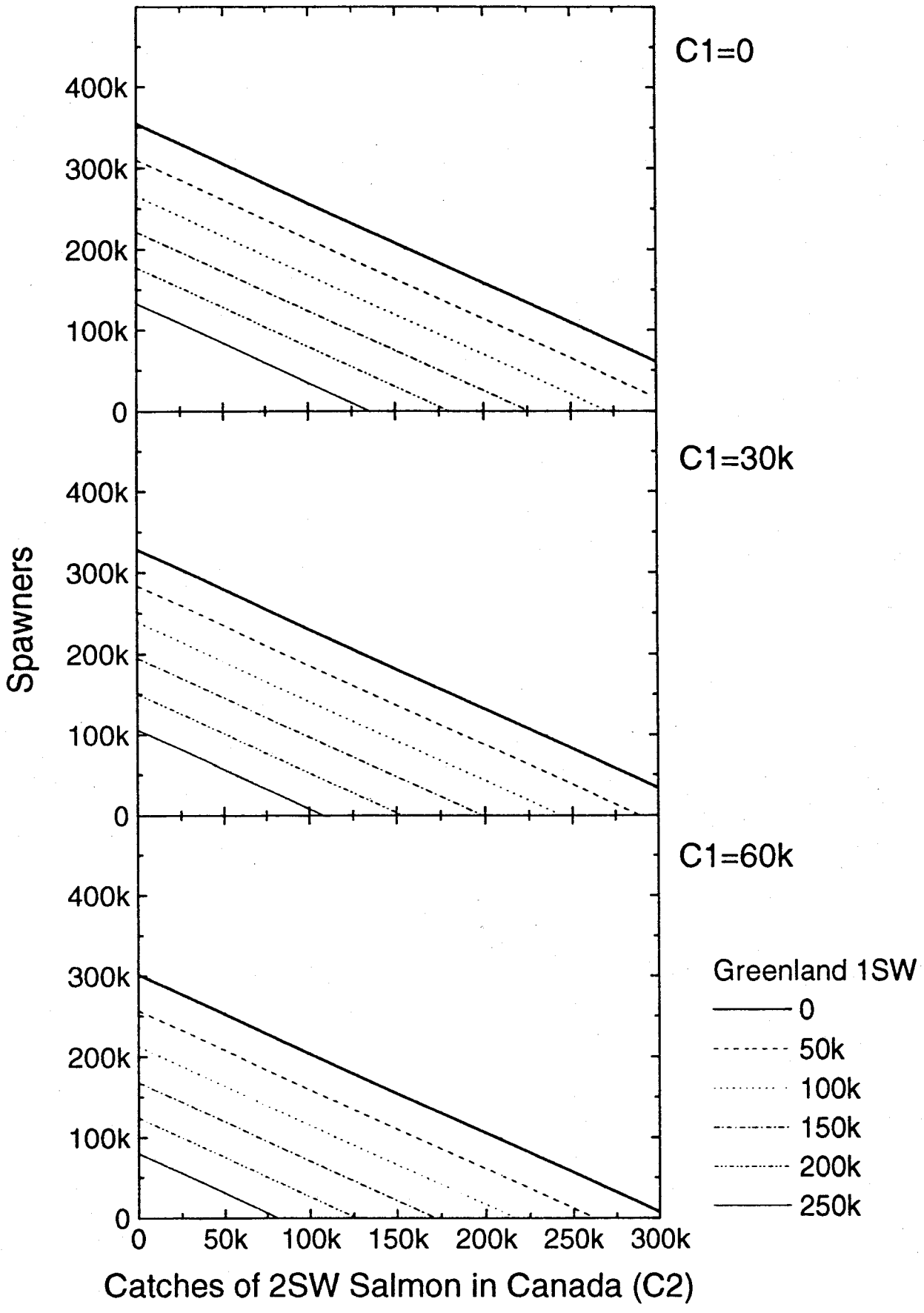


Figure 9. Predicted number of spawners remaining after fisheries on non-maturing 1SW salmon in Canada (C1) and Greenland (G1) and 2SW salmon in Canada (C2). Pre-fishery abundance of 1SW salmon destined to return as 2SW spawners is 600,000 fish.

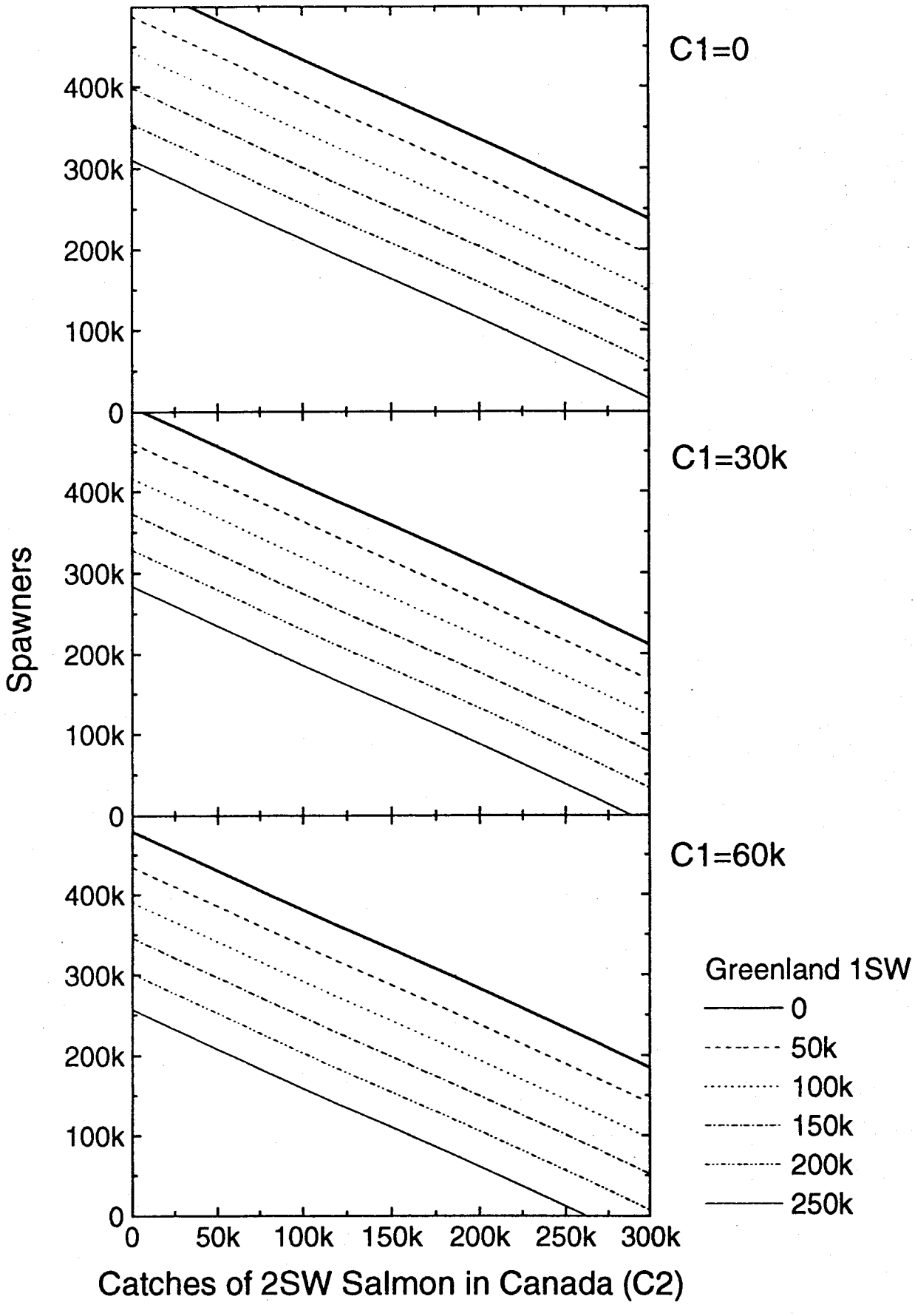
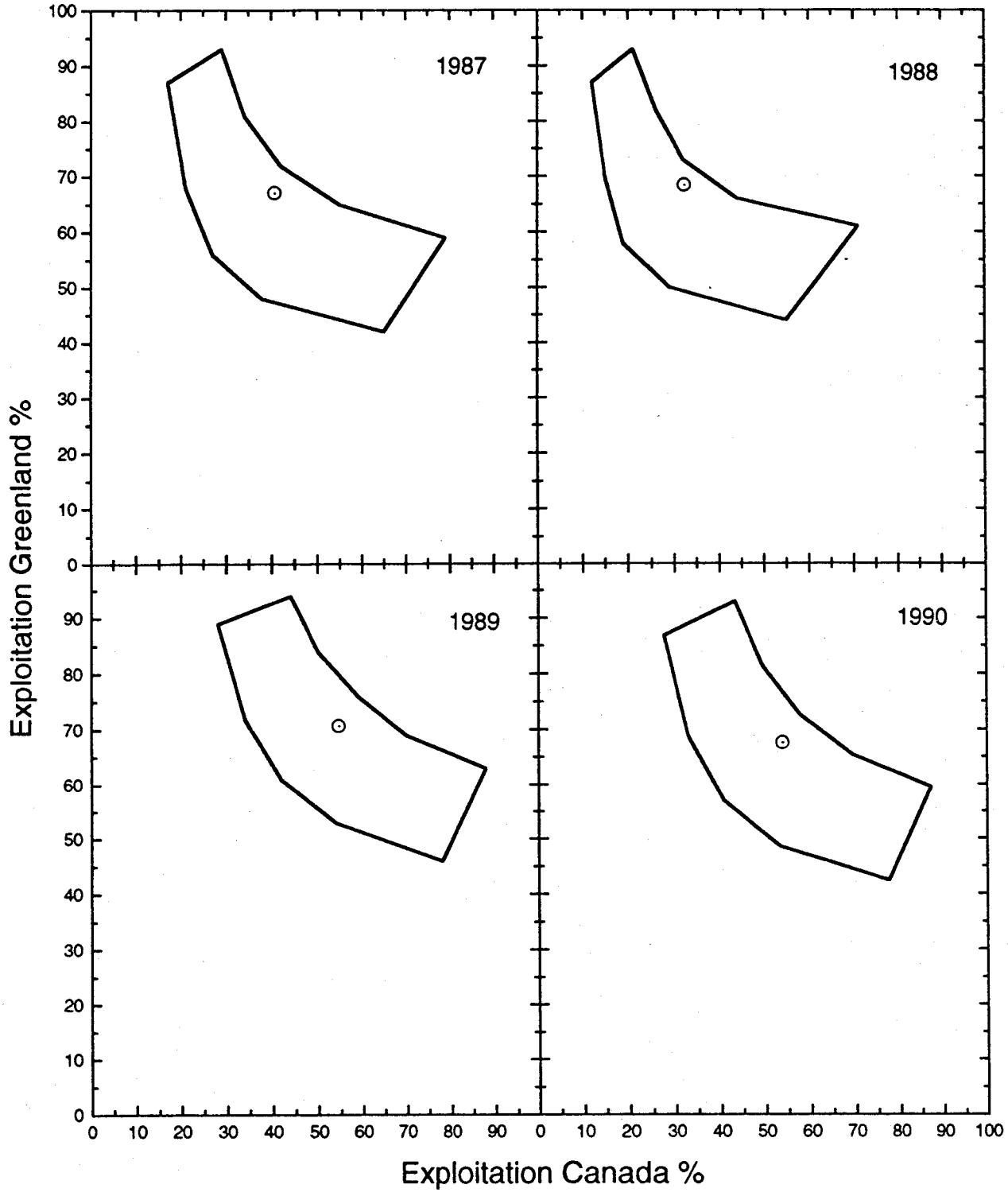


Figure 10. Effect of Carlin tag reporting rate and proportion of Maine origin stocks available to the fisheries in Greenland and Canada. Upper line of each panel represents fishery area exploitation with a tag reporting rate adjustment of 2; lower line, reporting rate is unadjusted. Midpoint represents average of the perimeter values.



ANNEX 10

COUNCIL

CNL(92)51

DECISION OF THE COUNCIL TO REQUEST SCIENTIFIC ADVICE FROM ICES

CNL(92)51

DECISION OF THE COUNCIL TO REQUEST SCIENTIFIC ADVICE FROM ICES

1. With respect to Atlantic salmon in each Commission area, where relevant:

   a. describe the events of the 1992 fisheries with respect to catches (including unreported catches), gear, effort, composition and origin of the catch (including escapees and sea-ranched fish), and rates of exploitation;
   b. describe the status of the stocks occurring in the Commission area, and where possible evaluate escapement against targets.
   c. evaluate causes of the apparent reduced survival of salmon in recent years;
   d. evaluate the by-catch and mortality of salmon in non-salmon directed fisheries.
   e. specify data deficiencies and research needs.

2. Evaluate the following management measures on the stocks and fisheries occurring in the respective Commission areas:

   a. quota management measures and closures implemented in 1991 and 1992 in the Newfoundland and Labrador commercial salmon fisheries;
   b. regulations introduced into the Norwegian salmon fisheries in 1989;
   c. evaluate the effects of cessation of fishing activity at Faroes.

3. With respect to the fishery in the West Greenland Commission area:

   a. describe which stocks make the greatest numerical contributions of salmon to the fishery and which stocks are most heavily exploited in the fishery;
   b. describe the relative importance to stocks of regulatory measures in the fishery and in home waters;
   c. describe the relationship between the abundance of grilse and multi-sea-winter salmon in returns to homewaters and the effects of this on the management of the fishery.
   d. continue the development of a model which could be used in the setting of catch quotas in relation to stock abundance and provide worked examples with an assessment of risks relative to the management objective of achieving adequate spawning biomass.
   e. estimate the pre-fishery abundance of non-maturing 1SW salmon at the time of the fishery.

4. Review biological indicators, if any, which would make it possible to assess trends in the abundance of salmon in the North-East Atlantic.

5. With respect to the assessment of fisheries in each Commission area, evaluate the effects of the NASCO tag return incentive scheme.

6. With respect to Atlantic salmon in the NASCO area, provide a compilation of microtag, finclip, and external tag releases by ICES Member Countries in 1992.

ANNEX 11

COUNCIL

CNL(92)13

RETURNS UNDER ARTICLES 14 AND 15 OF THE CONVENTION

CNL(92)13

RETURNS UNDER ARTICLES 14 AND 15 OF THE CONVENTION

The form for the return of information relevant to the period 1 January - 31 December 1991 was circulated on 3 February 1992 for completion by the Parties. All Parties were requested to complete and return the form even if there had been no changes since the last notification. Where changes have been notified under Article 15, the Laws, Regulations and Programmes concerned have been lodged with the Secretariat and this information will be incorporated into the Laws, Regulations and Programmes database. Copies of the detailed submissions are available from the Secretariat. A summary of the new actions taken under Articles 14 and 15 of the Convention is attached. At the time of preparation, information had not been received from all of the EEC's member states which have salmon interests.

Secretary
Edinburgh
15 May 1992

ARTICLE 14

1. ACTIONS TAKEN TO MAKE EFFECTIVE THE PROVISIONS OF THE CONVENTION *(Article 14, paragraph 1)*

1.1 The prohibition of fishing for salmon beyond 12* nautical miles from the baselines from which the breadth of the territorial sea is measured. ***(Article 2, paragraph 2)***

* 40 nautical miles at West Greenland
* Area of fisheries jurisdiction of the Faroe Islands

NO NEW ACTIONS

1.2 Inviting the attention of States not party to the Convention to any matter relating to the activities of the vessels of that State which appears to affect adversely the salmon stocks subject to the Convention. ***(Article 2, paragraph 3)***

USA
Department of State cable traffic regarding fishing activities in international waters by vessels from non-party nations. The US also drafted, with Canada, proposed resolution/protocols to better monitor and eliminate this fishing activity.

1.3 Measures to minimise the by-catches of salmon originating in the rivers of the other member. ***(Article 7, paragraph 2)*** [North American Commission members only]

Canada
Quotas were lowered slightly for the Newfoundland commercial salmon fishery.

1.4 Alteration in fishing patterns in a manner which results in the initiation of fishing or increase in catches of salmon originating in the rivers of another Party, except with the consent of the latter. ***(Article 7, paragraph 3)*** [North American Commission members only]

NO NEW ACTIONS

2. ACTIONS TAKEN TO IMPLEMENT REGULATORY MEASURES UNDER ARTICLE 13 *(Article 14, paragraph 1)*

Canada
Amendments to the Fisheries Act adopted in 1991 have greatly increased the penalties for fishing offences and have made it possible to impose area closures and fish size and weight restrictions more promptly. The penalty increases, for example, will make the maximum penalties for general fishing offences $100,000 and/or up to 1 year in jail on summary conviction or $500,000 and/or up to 2 years in jail on indictment. The previous maximum penalty was $5,000 and/or up to 6 months in jail on summary conviction only.

Denmark (in respect of the Faroe Islands and Greenland)
Home Rule Order No. 26 on Licensing of Salmon Fishing in Greenland was introduced on 19 July 1991.

ARTICLE 15

3. LAWS, REGULATIONS AND PROGRAMMES ADOPTED OR REPEALED SINCE THE LAST NOTIFICATION *(Article 15, paragraph 5(a))*

Canada

Amendments to the Fisheries Act adopted in 1991 have greatly increased the penalties for fishing offences and have made it possible to impose area closures and fish size and weight restrictions more promptly. The penalty increases, for example, will make the maximum penalties for general fishing offences $100,000 and/or up to 1 year in jail on summary conviction or $500,000 and/or up to 2 years in jail on indictment. The previous maximum penalty was $5,000 and/or up to 6 months in jail on summary conviction only.

Denmark (in respect of the Faroe Islands and Greenland)

Home Rule Order No. 26 on Licensing of Salmon Fishing in Greenland was introduced on 19 July 1991.

EEC

The wealth of salmon legislation of a Community, national, regional or local nature within the European Community is subject to a process of continuous review and assessment to ensure its effectiveness for the conservation and rational management of the salmon stocks concerned. Therefore, whilst major framework legislation is not by its nature in the short-term subject to modification, laws are enacted, adopted or repealed relating to the day-to-day management of the stocks at the level of rivers or river systems in conformity with the objectives of Community management. Copies of these new laws and regulations have been lodged with the Secretariat.

Norway

A new salmon law has been prepared by the Ministry of the Environment. The law will be finally adopted in May 1992. A programme for sea-ranching of cod, lobster, salmon and sea-char has been started. The main intention of the programme is to clarify ecological, economical and juridical consequences of sea-ranching. The expenditure on the activity concerning salmon is approximately 10 million NOK each year. The programme is scheduled to end in 1996. The Norwegian authorities attach importance to the need for the programme to consider the value of the natural stocks.

Sweden

An agreement has been reached between Norway and Sweden concerning the fishery for salmon and trout in a border river system (Svinesund, Indefjordon and Enningdalsälven). This Agreement replaced a Convention from 1949 on the same fishery. On the basis of the Agreement new regulations on closed seasons, a closed area and fishing methods came into force on 1 January 1992.

USA

(1) Redefinition of overfishing of Atlantic salmon in marine waters (3-12 miles).

(2) Atlantic salmon taken from Maine inland or coastal waters shall be immediately tagged with a tag bearing the angler's licence number, and shall be registered within 12 hours and be affixed with a permanent plastic tag.

(3) Maine's season limit possession has been reduced from 5 to 1 with some minor exceptions involving boundary rivers with Canada.

4. OTHER NEW COMMITMENTS RELATING TO THE CONSERVATION, RESTORATION, ENHANCEMENT AND RATIONAL MANAGEMENT OF SALMON STOCKS SUBJECT TO THE CONVENTION *(Article 15, paragraph 5(b))*

EEC (Scotland)

A commitment to specify that fishing methods in the sea would be restricted to net and coble, bag net, flynet or other stake net; these being the methods which chiefly exploit the salmon stocks of nearby rivers. The measure reaffirms the prohibition on the use of driftnets and other gillnets etc and the intention that salmon fishing should not be allowed away from the immediate coast.

Norway

The collection of material for the sperm bank of salmon has continued. In all 143 stocks with a total number of 3,558 salmon are represented in the sperm bank. The first living gene bank for salmon is established with material mainly from mid-Norwegian rivers. Establishing a second living gene bank for rivers in western Norway is under consideration. A Working Group has presented a review on Norwegian enhancement activities concerning anadromous fish. The report is presently in a broad hearing process which includes management authorities and research institutions. A national group of genetic scientists has been established to give advice to the management authorities on genetic questions, including enhancement activities, safeguarding of natural stocks, sea-ranching and with special reference to the area of interactions between farmed fish and natural stocks.

5. OTHER FACTORS WHICH MAY SIGNIFICANTLY AFFECT THE ABUNDANCE OF SALMON STOCKS SUBJECT TO THE CONVENTION *(Article 15, paragraph 5(c))*

Iceland

Increased ranching in Iceland could increase catches in Iceland and possibly Greenland. Quota purchase in the Faroes could affect catches in homewater.

Norway

A cooperative programme on scientific and management questions on Atlantic salmon has been established between Russia and Norway. The programme has been developed within the frame of the joint environmental programme between the two countries and includes direct investigations and exchange of specialists. A new revised agreement between Sweden and Norway on salmon in the Iddefjord area was put into force on 1 January 1992. The new agreement covers a greater geographical area than earlier. A closer cooperation between the environmental authorities, the police and the coastguard has been established to improve the supervision of the salmon fishery.

ANNEX 12

COUNCIL

CNL(92)15

CATCH STATISTIC RETURNS BY THE PARTIES

CNL(92)15

CATCH STATISTIC RETURNS BY THE PARTIES

1. The Official Catch Statistics for 1991, as submitted by the Parties, are tabulated overleaf (Table 1). These catch statistics, rounded to the nearest tonne, will be used to calculate the contributions to NASCO for 1993 unless the Secretary is advised otherwise.

2. Under Article 12 of the Convention, the Secretary is to compile and disseminate statistics and reports concerning salmon stocks subject to the Convention. Table 2 presents catch statistics for the period 1960-1991 by Party to the NASCO Convention.

3. Tables 1 and 2 are set out in the format for the presentation of catch statistics which was agreed by the Council at its Fifth Annual Meeting. A further, more detailed record of catch statistics during the period 1960-1991, is provided for information only in paper CNL(92)16.

Secretary
Edinburgh
22 May 1992

TABLE 1: OFFICIAL CATCH STATISTICS

	PROVISIONAL 1991 CATCH (TONNES)	PROVISIONAL 1991 CATCH ACCORDING TO SEA AGE						CONFIRMED 1990 CATCH (TONNES)
		1SW		MSW		TOTAL		
		NO	WT	NO	WT	NO	WT	
CANADA	679	-	318	-	361	-	679	911.5
DENMARK (in respect of Faroe Islands and Greenland)	532.7							542
FAROE ISLANDS *(1)	95	631	-	56,810	-	57,441	-	315
GREENLAND	437.7	-	-	-	-	-	-	227
EUROPEAN ECONOMIC COMMUNITY	1,075.3	-	-	-	-	-	-	1,645.1
FINLAND	69	-	-	-	-	-	-	59
ICELAND	520	-	370	-	150	-	520	426
NORWAY	885	173,500	347	92,759	538	266,259	885	930
RUSSIAN FEDERATION	215	40,603	-	17,543	-	58,146	-	316
SWEDEN	38	8,987	20	3,620	18	12,607	38	33
UNITED STATES OF AMERICA	0.8	48	0.1	190	0.7	238	0.8	2.4

*(1) Breakdown of the Faroese catch according to sea-age is for the 1990/91 season.

TABLE 2: CATCHES OF ATLANTIC SALMON BY THE PARTIES TO THE NASCO CONVENTION

	CANADA	DENMARK*	EEC	FINLAND	ICELAND	NORWAY	RUSSIAN FEDERATION	SWEDEN	USA
1960	1636	60	2676		100	1576	1100	40	1
1961	1583	127	2342		127	1456	790	27	1
1962	1719	244	3948		125	1838	710	45	1
1963	1861	466	3862		145	1697	480	23	1
1964	2069	1539	4290		135	2040	590	36	1
1965	2116	861	3696		133	1900	590	40	1
1966	2369	1338	3611		106	1823	570	36	1
1967	2863	1600	4540		146	2058	883	25	1
1968	2111	1167	3645		162	1752	827	150	1
1969	2202	2350	4420		133	2083	360	76	1
1970	2323	2361	4036		195	1861	448	52	1
1971	1992	2511	3802		204	1847	417	35	1
1972	1759	2146	4187	32	250	1976	462	38	1
1973	2434	2402	4538	50	256	2126	772	73	3
1974	2539	1945	4339	76	225	1973	709	57	1
1975	2485	2086	4413	76	266	1754	811	56	2
1976	2506	1479	2901	66	225	1530	772	45	1
1977	2545	1652	2977	59	230	1488	497	10	2
1978	1545	1159	3070	37	291	1050	476	10	4
1979	1287	1694	2542	26	225	1831	455	12	3
1980	2680	2052	2593	34	249	1830	664	17	6
1981	2437	2602	2532	44	163	1656	463	26	6
1982	1798	2609	2523	83	147	1348	354	25	6
1983	1424	1433	3512	78	198	1550	507	28	1
1984	1112	997	2290	73	159	1623	593	40	2
1985	1133	1430	2989	49	217	1561	659	45	2
1986	1559	1490	3524	38	330	1597	608	53	2
1987	1784	1539	2593	49	250	1385	559	47	1
1988	1311	1136	2833	34	412	1076	419	40	1
1989	1139	701	2450	52	277	905	359	29	2
1990	912	542	1645	59	426	930	316	33	2
1991	679	533	1075	69	520	885	215	38	1

NOTES: *In respect of the Faroe Islands and Greenland

1. The EEC catch consists of the sum of the catches of the present members of the Community for which data are available.
2. The catch for Denmark in respect of the Faroe Islands and Greenland includes the catch for Greenland when it was a member of the European Community and the catches up to 1983 by Denmark.
3. Figures from 1986 on are the official catch returns to NASCO. Figures to 1986 are based on data contained in the ICES Working Group Reports.

ANNEX 13

COUNCIL

CNL(92)17

COMPARABILITY OF CATCH STATISTICS

CNL(92)17

COMPARABILITY OF CATCH STATISTICS

1. The Council of NASCO has previously considered the question of comparability of catch statistics. A number of areas where improvements might be made have been highlighted and at its Seventh Annual Meeting the Council agreed that the establishment of a minimum standard for catch statistics was desirable. Last year the Council also considered the problems associated with assessing unreported catches (CNL(91)17) and the possible methods of reducing the level of unreported catches (CNL(91)18). A review of the pros and cons of carcass tagging as a method of reducing the illegal harvest of salmon is submitted separately, CNL(92)18.

2. It was agreed that the Secretary should contact the Parties with a view to addressing the general issues of comparability and unreported catches and ascertaining the nature of any problem areas concerning these issues. This consultation process is now starting and it is hoped that it will be possible to report back to the Council at its Tenth Annual Meeting with a view to adopting a minimum standard for catch statistics including possible actions concerning unreported catches. An outline of the document that will form the basis of these consultations is contained as a draft in Appendix 1.

Secretary
Edinburgh
8 April 1992

Appendix 1

CONSULTATIONS ON A POSSIBLE MINIMUM STANDARD FOR CATCH STATISTICS

1. THE ATLANTIC SALMON CATCH STATISTICS OF THE PARTIES TO THE NASCO CONVENTION SHOULD:

- ~ *include all components of the salmon fisheries*
- ~ *include salmon caught in non-salmon gear where retention of fish caught in this way is legal*
- ~ *include both the number and weight of salmon*
- ~ *be differentiated into sea-age class or grilse and multi-sea-winter salmon*
- ~ *include returns to ranching units and catches of fish which have escaped from fish farms*
- ~ *be converted to whole round weight equivalent using appropriate conversion factors where fish are landed gutted or gutted and glazed*

2. THE PARTIES TO THE NASCO CONVENTION SHOULD:

- ~ *encourage studies to assess the level of unreported catches*
- ~ *encourage measures to reduce the level of unreported catches*

COUNCIL

CNL(92)18

CARCASS TAGGING

CNL(92)18

CARCASS TAGGING

1. Carcass tagging of Atlantic salmon, in which some form of tag is applied to the fish after its harvest, was first introduced in New Brunswick, Canada, in 1980, in order to control the illegal harvest. It has subsequently been introduced in the remaining provinces of Canada bordering the North Atlantic, in the State of Maine (US), and within the EEC in France and Spain. Furthermore, there is interest in introducing carcass tagging in Iceland and a detailed review of methods to reduce the sale of illegally caught salmon in England and Wales concluded that carcass tagging would be the most practicable and effective solution.

2. Experience in Canada suggests that the programme has deterred poaching, and has made the transport and black marketing of illegally caught salmon more difficult although few objective performance indicators are available. It has also been reported that carcass tagging results in an improvement in catch statistics, facilitates quota enforcement, allows the by-catch of salmon in other fisheries to be assessed, and offers marketing and quality control advantages.

3. While carcass tagging is simple in concept the considerable quantities of farmed salmon and expanded international trade could present practical difficulties. While little has been published in the way of costings of carcass tagging schemes, it has been reported that the administration costs are offset, at least in part, by reduced enforcement costs. In Canada, the costs of the tagging programme are believed to be justified. The sale of portions of salmon may also give rise to difficulties and, unless the issue of tags is carefully controlled, tags could be used to "legalise" illegally caught salmon.

4. If the practical and technical difficulties described above can be overcome carcass tagging would appear to offer a simple and effective method of controlling illegal fishing and of improving the quality of catch statistics.

Secretary
Edinburgh
15 May 1992

CNL(92)18

CARCASS TAGGING

1. INTRODUCTION

1.1 The Council of NASCO has recently considered the range of problems which could lead to unreported catches (CNL(90)19). Illegal fishing has been identified in the literature as a particular problem but catches may also be unreported because of suppression of information or innocent inaccuracy in making returns. One method that has been used to address the problem of illegal fishing in a number of North Atlantic countries is carcass tagging in which some form of tag is applied to the fish after its harvest. This technique has been supported by a number of salmon conservation organizations and the Third International Atlantic Salmon Symposium adopted a recommendation urging "that NASCO investigates the value of a salmon tagging scheme such as is in operation in eastern Canada and Spain with the view that it recommends its adoption by all member countries for both a more reliable collection of catch data and a more effective control of illegal fishing" (Mills, 1988).

1.2 At its Eighth Annual Meeting the Council considered possible methods to reduce the level of unreported catches (CNL(91)18) and agreed to ask the Secretary to produce a review of the pros and cons of carcass tagging as a method of reducing the illegal harvest of salmon.

2. CARCASS TAGGING IN CANADA

2.1 The first carcass tagging programme for Atlantic salmon was implemented in New Brunswick in 1980 (Bird, 1983). It was introduced in order to counteract an expanded black market for salmon which had developed following the closure of the commercial salmon fishery in 1971. The closure of this fishery had been necessary because of a sharp decline in the multi-sea-winter salmon stocks but large scale poaching, an expanded Indian fishery and increased catches of salmon in gear set ostensibly for other species threatened to undermine this conservation measure (Anon, 1983). Under the programme possession of an untagged salmon became illegal and it was prohibited for any fish merchant to sell or possess an Atlantic salmon without a proper tag. The carcass tagging programme identified immediately an untagged fish as "stolen property" thereby making enforcement easier, and making it much more difficult to market illegally caught fish (Anderson, 1986). The tags were initially made of light vinyl paper sealed to the tail of the fish by waterproof adhesive but because of problems these were replaced by a plastic locking tag in 1982. While the introduction of a seasonal limit for angling catches was not an issue in developing the tagging programme, it was decided to limit the number of tags issued to fifteen per licence. This move was supported by the anglers as a positive conservation action (Bird, 1983).

2.2 While the primary objective of the programme was curtailment of the illegal harvest of salmon (Anderson, 1986) the programme also facilitated the introduction of seasonal bag limits for anglers and assessment of the incidental catch of salmon (Bird, 1983). There was generally strong support for the New Brunswick tagging programme, and carcass tagging was subsequently introduced in Nova Scotia (1983),

Quebec (1984), Prince Edward Island (1985) and Newfoundland (1988). The tags are colour coded for the different types of fishery and aquaculture and are individually numbered to match the fishing licence. Under the Canadian tagging programme any salmon caught and retained must be tagged forthwith and the tag may only be removed when the fish is prepared for consumption. It is an offence to be in possession of an untagged salmon and to use or possess a tag issued to another person. It is also an offence to be in possession of any tag which has been altered or tampered with (Anon, 1983).

2.3 The Canadian programme applies to all salmon including those reared in salmon farms. In the case of salmon aquaculture tags must be applied following harvesting. The farmed production in 1991 amounted to 10,000 tonnes and although the unit cost of the tags is not high, if tags were applied to every harvested salmon the total cost would be considerable. The tagging scheme has however been seen as a beneficial marketing aid by the aquaculture industry.

3. CARCASS TAGGING IN THE STATE OF MAINE

3.1 Salmon tagging was introduced in the State of Maine in 1983, in order to facilitate the enforcement of quotas rather than because of concern about illegal fishing (Anderson, 1986). Under the Maine Atlantic Sea Run Salmon Commission's Atlantic Salmon Fishing Regulations, any salmon taken from inland or coastal waters must be tagged immediately with a tag bearing the licence number of the person who caught the fish. Furthermore, the person who killed the fish must register the salmon within 12 hours at which point biological data is collected. It is "unlawful for any person to possess, sell, give away, accept as a gift, offer for transportation or transport an Atlantic salmon which has not been lawfully tagged". It is also unlawful to possess any part of a salmon taken from Maine waters unless each part is labelled with details of the person who registered the fish.

3.2 Imported salmon and farmed salmon are exempt from the registration requirements and with regard to selling and purchasing of Atlantic salmon it is unlawful for any person to possess, buy or sell an Atlantic salmon unless it is tagged if caught in Maine waters; tagged with the appropriate tag if imported from Canada; identified by a sales receipt less than 24 hours old or a bill of sale indicating numbers of fish purchased, date of purchase and origin of the fish.

4. CARCASS TAGGING IN ICELAND

4.1 In recent years there has been a large increase in salmon ranching in Iceland and there is concern that illegal coastal netting for salmon returning to ranching units may develop. There is therefore considerable interest in the possible benefits of carcass tagging both to control the illegal harvest and for quality control purposes since a tagging scheme would allow wild, ranched and farmed fish to be identified and in the case of ranched and farmed fish traced back to their production units.

5. CARCASS TAGGING WITHIN THE EEC

Spain

5.1 In Spanish rivers each salmon caught by angling (netting salmon rivers and their estuaries was prohibited in 1942) must be recorded (name and address of the captor, details of the fish, place of capture) and tagged by a bailiff. In Cantabria the tag consists of a circular cardboard tag disc bearing an identification number which is attached to the tail of the fish with a wire and lead seal and which gives details of the date and river of capture (de Leaniz et al, 1987). This system facilitates collection of statistics and restricts the trade in illegally caught fish but requires a team of bailiffs financed by the provincial government and is best suited to rivers where fishing activity is heavily regulated and supervised (de Leaniz et al, 1987).

France

5.2 In France carcass tagging was introduced to control the catch limits of recreational and commercial fishermen and to provide information on the biological characteristics of the catch. The tags used are plastic lock type tags imported from Canada and four types of tag are used (inland and estuarine commercial, two types of recreational). A tag must be applied immediately a salmon is caught. Tagging of salmon caught in the sea, farmed salmon and imported salmon are exempt from the requirement to be tagged. It is considered to be a useful management tool.

United Kingdom

5.3 Although carcass tagging has not been introduced in the UK the National Water Council established a Salmon Sales Group in 1981 to "consider appropriate methods of control for the sale of both rod and net caught salmon as a means of curtailing the sale of illegally caught fish" in England and Wales (Anon, 1983). In their report the Group indicated that illegal fishing at that time had reached epidemic proportions and that further expenditure on "traditional" enforcement practices would almost certainly not be cost effective. The Group concluded that carcass tagging would be the most practicable and effective solution to the problem in England and Wales. The programme envisaged was intended as a conservation scheme designed to combat illegal fishing and safeguard the resource and had the following elements:

- Every salmon killed and retained would have to be tagged by its captor without delay and it would be an offence not to do so;
- It would be an offence to be either in possession of an untagged (dead) salmon, or to offer an untagged salmon for sale;
- Tags would be for use by the lawful holder only;
- It would be an offence to fish for salmon when not in possession of a valid tag;
- It would be an offence to use any tag that had been used, altered, or tampered with;
- Imported salmon would have to be tagged prior to entry.

5.4 A number of incidental consequences of the proposed programme were envisaged including improvement in the validity of the catch statistics. However, the Group

recognised the practical difficulties associated with the imported salmon having to be tagged and recognised that further detailed consideration was necessary. The proposals contained in the report were turned down by the Government because of major difficulties particularly those posed by imports, farmed salmon and control over issue of tags. The report was produced in 1983, before the rapid increase in the salmon farming industry which now produces approximately 38,000 tonnes in the UK.

6. BENEFITS AND DRAWBACKS OF CARCASS TAGGING

6.1 It is clear from the published literature that while carcass tagging has been considered to be a useful management technique in some countries, it has been rejected in others. The scope of the tagging schemes varies markedly. In Canada, all salmon must be tagged whereas in France salmon caught in the sea, farmed salmon and imported salmon are exempt from the requirement to tag. A number of pros and cons of carcass tagging have been reported in the literature.

Benefits

6.2 The reason for the introduction of carcass tagging in Canada was the control of the illegal harvest of salmon. It is believed that this programme has provided better control over illegal fishing since poaching, transport and black marketing of illegally-caught salmon are more difficult. It has been reported that carcass tagging permits more efficient enforcement (Anderson, 1986; Anon, 1983) and that it makes it harder for the poacher to market the fish (Anderson, 1986). Anderson (1986) referred to the desirability of obtaining objective performance indicators to verify that carcass tagging was deterring illegal fishing but experienced problems in identifying such indicators. Interviews with enforcement officers indicated that those involved in deterring poaching believe that tagging has had the intended effect. He presented data from the Gaspé region on salmon seized by enforcement officers which suggested that tagging had deterred large scale illegal fishing. Because the introduction of carcass tagging may lead to more efficient policing it may also result in reduced costs of enforcement (Anon, 1986) and allow easier enforcement of seasonal quotas where these are introduced (Anderson, 1986).

6.3 It has also been reported that carcass tagging facilitates an improvement in the validity of catch statistics (Anderson, 1986; Anon, 1986). In Maine when the fish are registered, and in France and Spain, biological details as well as details of the place and date of capture are recorded. In Canada, carcass tagging has allowed accurate estimates to be made of the incidental catch of salmon, e.g. by cod fishermen and the retention of salmon caught in gear set for other species has subsequently been prohibited. The Canadian programme has also facilitated the introduction of seasonal catch limits (Bird, 1983). It has also been reported that there may be quality control advantages where farmed and ranched salmon are tagged. In Canada the salmon is perceived as a more valuable resource as a result of tagging and there has been increased support among anglers for conservation work (Anderson, 1986).

Drawbacks

6.4 While carcass tagging is simple in concept its operation can be complex (Anderson, 1986). However, experience in New Brunswick has demonstrated that the

administration of a tagging programme is not as complex as other systems administered by government (Bird, 1983). Perhaps the greatest difficulties with carcass tagging arise from imports of salmon and the rapid expansion of salmon farming. In Canada all farmed fish must be tagged and there has been considerable support for the tagging programme since the tags are perceived as a marketing asset, they allow monitoring of quality and they may reduce thefts from salmon farms (Anderson, 1986). In their review of the situation in England and Wales the Salmon Sales Review Group concluded that imported and farmed salmon would have to be tagged, although not all countries who have implemented carcass tagging programmes make this a requirement. Salmon farming in the UK now produces 38,000 tonnes of salmon or somewhere in the region of 9 million fish with an average weight of 4kg. While fish for export may be excluded from tagging provided they are in sealed labelled containers (Anon, 1983) the considerable quantities of farmed salmon and the expanded international trade in salmon could present considerable administrative difficulties and involve considerable costs. However, in this regard it is worth noting that some salmon farmers in the UK have already introduced their own tagging schemes for quality control purposes.

6.5 Little has been published in the way of detailed costing of carcass tagging schemes but concern has been expressed about the cost. The price of the plastic tags themselves is not high, however, and in Canada it is a small proportion of the licence fee (Anderson, 1986). However, if required in large numbers for application to farmed fish, significant costs may be incurred. While there will be costs in the administration of a tagging programme and there would be costs associated with establishing and publicising the scheme, it has been reported that enforcement costs may decline once a tagging scheme has been implemented. In England and Wales the Salmon Sales Review Group believed that the administrative costs should be minor in relation to the level of fisheries expenditure and should only be a small proportion of the potential savings (Anon, 1983). This report was, however, prepared before the rapid expansion in the UK salmon farming industry. In Canada interviews with fisheries personnel indicated that in all cases the costs of the scheme were believed to be justified (Anderson, 1986).

6.6 Problems may also arise with carcass tagging from the sale of portions of salmon in retail outlets and careful consideration will need to be given to appropriate legislative provisions in this regard. In Canada, portions of salmon do not need to be tagged but the retail outlets must display the tagged fish from which the portions were obtained. Furthermore a number of technical problems have been encountered with the design of the plastic lock seal tags used in Canada (e.g. brittleness following freezing, tendency to melt during smoking, ability to be re-used) but these should be readily solved (Anderson, 1986). There may also be problems of implementation in remote areas and if the issue of tags is not carefully controlled tags could be used to legalise an illegally caught salmon making it easy for the poacher to market the fish.

7. CONCLUSIONS

7.1 Carcass tagging would appear to offer two principal benefits to those involved in the management of the wild resource - the efficient control of illegal harvests and the opportunity to improve the standard of catch statistics. However, the advent of fish farming and the expanded international trade in salmon may create considerable

practical difficulties in some situations. If these can be overcome experience shows the technique to be effective.

REFERENCES

Anderson, J M (1986): Review of the Atlantic Salmon Tagging Program Atlantic Salmon Federation, St Andrews, March, 1986

Anon (1985): Thumbs down for salmon tagging, Water Bulletin 15 November 1985

Anon (1983): Salmon Conservation - A New Approach
Report of the Salmon Sales Group of the National Water Council. London

Bird, J M (1983): Tagging: An Idea Whose Time Has Come. Atlantic Salmon Journal, Spring 1983.

de Leaniz, C; Hawkins, A; Hay, D and Martinez, J J (1987): The Atlantic Salmon in Spain Atlantic Salmon Trust, Moulin, Pitlochry. 32pp

Mills, D H (1988): Summary and Recommendations. In: Atlantic Salmon: Planning for the Future. Proceedings of the Third International Atlantic Salmon Symposium. Biarritz. 21-23 October 1986. Croom Helm.

ANNEX 15

COUNCIL

PAPER CNL(92)19

REPORT OF THE SPECIAL MEETING ON FISHING FOR SALMON IN INTERNATIONAL WATERS BY NON-CONTRACTING PARTIES

CNL(92)19

REPORT OF THE SPECIAL MEETING ON FISHING FOR SALMON IN INTERNATIONAL WATERS BY NON-CONTRACTING PARTIES

14-15 JANUARY 1992, WALDORF HOTEL, LONDON

1. INTRODUCTION

1.1 The Chairman, Mr Allen E Peterson, opened the meeting and welcomed the delegates to London. A list of participants is given in Appendix 1.

1.2 The representative from the former Soviet Union explained that a newly-established Committee of Fisheries within the Ministry of Agriculture, Russia, had taken over the responsibility for all fisheries matters. The representative of the EEC (the Depositary) referred to the question of a formal notification of this change being made to NASCO.

2. ADOPTION OF THE AGENDA

2.1 The meeting adopted its agenda, CNL27.013, after deleting item 3.2 (Appendix 2).

3. FISHING FOR SALMON IN INTERNATIONAL WATERS

3.1 Nature and extent of the fishery

3.1.1 The Secretary presented a background paper, CNL27.051 (Appendix 3), summarising the information available on the nature and extent of the fishery and presenting details of the surveillance of the area of international waters. The catch in this fishery in 1990 may have exceeded the Faroese quota and could therefore seriously undermine the work of the Organization. While most of the sightings were from 1990 there had again been activity in 1991, albeit at a greatly reduced level. Although it had been suggested that, because of the frequency of airborne surveillance operations, it would be difficult for a sustained fishery to go undetected, there were indications that activity in late 1989 had gone undetected.

3.1.2 The representative of the US asked if the fishery was conducted during daylight hours. Although no information was available on the time of day at which the sightings were made, at northerly latitudes there is almost 24 hours of darkness during the winter months when the fishery operates. The representative of the EEC referred to the reduction in the number of sightings in 1991 which might be due to the vessels concerned fishing for other species and to the success of diplomatic demarches called for by the NASCO Resolution adopted in 1990. There was no indication that the level of surveillance patrols of the area had declined in 1991. The reduced price of salmon might also be a factor in the apparently lower effort. The representative of Canada sought clarification concerning the northerly limit of the fishery. To date, the activity has been in the area between 66°N - 68°N and consultations by the Secretariat had indicated that catch rates north of 71°N would probably be low. However, any

activity in this more northerly area would probably be detected by the existing airborne patrols.

4. POSSIBLE ACTIONS

4.1 International cooperation on surveillance (patrols, satellite, etc.)

4.1.1 The representative of Iceland referred to the desirability of coordinating the surveillance operations since no single Party has the responsibility for patrolling areas of international waters. Such cooperation would ensure that the maximum information would be obtained. There was general support for NASCO acting as a clearing-house for surveillance information and it was agreed to recommend to the Council that there be a formal agreement that any information concerning fishing for salmon in international waters by non-contracting Parties be reported to the NASCO Secretariat. Further, the coordination of surveillance operations should be strengthened. Other forms of surveillance such as monitoring of radio traffic and the possible use of satellite-borne surveillance systems should be identified.

4.2 Consideration of draft protocols for adoption by non-contracting parties

4.2.1 The representative of the US introduced a Draft Protocol, CNL27.033 (Appendix 4), prepared by the US and Canada. He commented that since the Atlantic salmon is a small resource, there is no margin for unauthorised fishing and a strong initiative was therefore needed. He referred to the UN Resolution placing a moratorium on large-scale pelagic drift netting which will result in 800-900 vessels either having to be scrapped or find other forms of fishing. He also referred to the changing situation in Europe. In view of these changes it was vital to send a strong, permanent signal to non-member countries that NASCO intends to protect the resource. He highlighted a number of the key elements of the Protocol but indicated that the US could be flexible on the final content.

4.2.2 The Chairman asked the Parties for comments on whether or not they supported the concept of a protocol. The representatives of Canada, Iceland and Norway supported the need for a protocol. The representative of Norway voiced the consensus of the meeting when he added that he wished to see this fishery ended, and he believed that a protocol was an important instrument. Iceland also welcomed the development of a protocol as a useful step forward. The representative of Canada supported the US comments and felt that a protocol would be valuable in developing the necessary international collaboration. The representative of the EEC stressed that fishing in international waters by non-contracting Parties is a general problem of great concern to the Community. In the case of salmon, however, the problem seemed to be restricted to a small number of vessels experienced in long-lining. While accepting that some permanent action was necessary he questioned whether or not the adoption of a protocol, which would be a lengthy procedure, was appropriate.

4.2.3 The representative of Sweden agreed that there was a need to address the problem of fishing for salmon in international waters but felt that the instrument used must be acceptable to non-contracting Parties. The representative from Russia agreed with the need for the Protocol and drew attention to the incidental catch of salmon in a pelagic trawl fishery for mackerel and horse mackerel in international waters close to the

Norwegian EEZ. He described this fishery which involved vessels from Lithuania, Estonia and Latvia, and possibly also the former German Democratic Republic and Bulgaria, and which took place during the summer (June to August). Between 25 and 100 vessels were thought to be involved, depending on the availability of fuel and opportunities in other fisheries, and an example was given where the by-catch of salmon in one haul amounted to 0.3 tonnes. The potential catch of Atlantic salmon is therefore large.

4.2.4 The representative of Finland also agreed with the need to take measures to eliminate salmon fishing in international waters but considered that the present wording of the Protocol might deter some countries from signing. There was therefore a need to look at other possibilities and amend the existing words of the Protocol. The representative of Denmark (in respect of the Faroe Islands and Greenland) supported Finland and added that there is a need to work towards a permanent solution through consensus before the problem escalates. He supported the idea that a joint inspection scheme might also be a useful measure.

4.2.5 The Chairman asked for general comments on the draft Protocol, recognizing that providing these comments did not imply a commitment to the concept of a protocol. In reviewing the draft document Article by Article the Chairman asked the drafters to note these comments with a view to producing a more acceptable document. In this review there were, apart from a number of drafting points concerning definitions and wording, problems with Article 2 including Appendix 1, which the Chairman suggested should be completely re-examined. The representative of the EEC questioned whether the provisions of Article 2 Paragraph 4 were consistent with the GATT and whether there would be any way to implement these provisions. There was however support for Paragraph 4 of Appendix 1. Article 3 also gave rise to problems. It was unlikely to be acceptable to some Parties to allow seizure of vessels and imposition of penalties. It was unlikely that the provision to prevent vessels being transferred would be enforceable after the first such transaction. There was support for the provisions of Sub-Paragraphs (c) and (d) of Article 4. Article 5 was not necessary if NASCO Parties were to sign as well as the non-contracting Parties. No major problems were raised with the content of the other Articles.

4.2.6 The United States offered to prepare a simpler revised draft protocol, taking account of the comments. It was agreed that this document would then be circulated to the Parties at the earliest opportunity so that a drafting session could be held in Washington DC in April in order to finalise a draft protocol which would be presented at the Ninth Annual Meeting. It might be useful if the draft gave alternate versions for use both in the situation where contracting Parties would also sign and where only non-contracting Parties would sign.

4.2.7 The representative of the EEC questioned whether it was appropriate to consider a protocol in a restricted forum rather than a Diplomatic Conference including States whose flags had been used in the fishery. He was not in a position to give a firm commitment concerning the Community's continued participation in the elaboration of a protocol and presented an alternative approach which included further diplomatic initiatives by the Parties, a standing instruction for NASCO to contact the Flag States concerned, a role for NASCO as a clearing-house for information on fishing for

salmon in international waters and recommendations to the contracting Parties to coordinate their surveillance operations in international waters.

4.2.8 The representatives of Norway and Canada supported the idea of a protocol and expressed their appreciation to the US for offering to undertake the redrafting work. The representative of Denmark (in respect of the Faroe Islands and Greenland) stressed the need to draft the document in a manner which would enhance the possibility for non-contracting Parties to participate. He considered that it might also be useful to send diplomatic notes to parties whose vessels might fish for salmon in the North Atlantic. The representative of Sweden drew attention to the possible implications for the existing NASCO Convention of a protocol also signed by the contracting Parties to the Convention. The representative of Norway stressed that Norway would like to see a simpler, brief protocol, which simply invites non-contracting Parties to join NASCO's rules regarding fishing for salmon in international waters. There was general support for the view that the revised draft should be in a shortened and simplified form.

4.3 Use of stronger diplomatic initiatives

4.3.1 At its Seventh Annual Meeting in 1990 the Council of NASCO adopted a Resolution calling for diplomatic initiatives by the Parties and by the Organization to ensure that the fishery was ended. A response had been received from Panama indicating that a resolution had been issued urging compliance with the NASCO prohibitions. No formal response has so far been received from Poland.

4.3.2 The representative of the EEC referred to the progress which had resulted from the Resolution and felt that this line of action should be developed. He considered that further diplomatic demarches could be made if further evidence of fishing in international waters becomes available in the coming months. He referred to the desirability of giving a standing instruction to the Secretary to contact the Flag States concerned informing them that their vessels are operating in the area and expressing the concern of the Organization. There was general support for the consideration of further diplomatic initiatives and the representative of Norway referred to the desirability of drawing attention to the development of the protocol in any further diplomatic demarches.

4.3.3 The US representative supported the EEC's initiative but felt that it involved reacting to events rather than the discouragement provided by a protocol. He saw the initiative as being complementary to a protocol rather than an alternative to a protocol.

4.4 Collaboration with other international organizations

The Secretary presented a paper, CNL27.030, outlining the actions taken by the other international fisheries commissions in the North Atlantic to address the problem of fishing by vessels registered to non-contracting Parties. All Parties supported the proposal in the paper to improve links with other international organizations involved and recommended that the Secretary be asked to take steps to develop such cooperation.

4.5 Certificate of origin requirements

4.5.1 The representative of Canada described the possible use of certificates of origin to monitor and control the trade in a particular resource. In view of the large quantity of aquaculture salmon on the market such a scheme would be difficult to administer and other measures such as stronger diplomatic initiatives and the Protocol would be more appropriate in the short term.

4.5.2 A number of Parties shared the concerns expressed by Canada about the feasibility of using certificates of origin. The Chairman referred to the review being prepared by the Secretary for consideration at the Ninth Annual Meeting of the Council on the utility of carcass tagging to reduce the illegal harvest of salmon. It was agreed that the Secretary should include in this review information on the applications of certificates of origin.

4.6 Claims for compensation for salmon taken by non-contracting parties in the Convention area

4.6.1 The representative of Iceland expressed interest in the idea of seeking compensation for salmon taken by non-contracting Parties in international waters. The fines imposed by these parties could, he felt, be used to establish a fund administered by NASCO and used to conduct research of interest to the Organization. Although there were serious doubts about the practicability of the proposal the Chairman requested that Iceland might develop this item for future consideration.

4.7 Model regulations for adoption by non-contracting parties prohibiting fishing for salmon in the Convention area

4.7.1 The representative of Iceland raised the question of NASCO formulating model regulations to prohibit fishing in international waters which could be used to assist non-contracting Parties in formulating appropriate national legislation. There was support for this proposal and it was agreed that the Secretary should look into the possibility of producing model regulations based on information contained in the Laws, Regulations and Programmes database established by the Council.

4.8 Other possible actions

No further possible actions were discussed.

5. ANY OTHER BUSINESS

There was no other business.

6. REPORT OF THE MEETING

6.1 A draft report of the meeting was agreed, CNL27.045, subject to final circulation.

Appendix 1

SPECIAL MEETING - FISHING FOR SALMON IN INTERNATIONAL WATERS
WALDORF HOTEL, LONDON
14/15 JANUARY 1992

LIST OF PARTICIPANTS

* denotes Head of Delegation

CHAIRMAN

MR ALLEN E PETERSON	President of NASCO

CANADA

*MS LISEANNE FORAND	Department of Fisheries and Oceans, Ottawa, Ontario
MR DAVID RIDEOUT	Department of Fisheries and Oceans, Ottawa, Ontario

DENMARK (IN RESPECT OF THE FAROE ISLANDS AND GREENLAND)

*MR EINAR LEMCHE	Greenland Home Rule, Copenhagen
MR OTTO H LARSEN	Ministry of Foreign Affairs, Copenhagen

EEC

*MR HENRIK SCHMIEGELOW	Directorate-General for Fisheries, EC Commission, Brussels
MR CARLOS ALBUQUERQUE	Direccao Geral das Pescas, Lisbon
MR MARTIN NEWMAN	Directorate-General for Fisheries, EC Commission, Brussels
MR ANDREW THOMSON	Directorate-General for External Relations, EC Commission, Brussels
MR HYWEL DUCK	Council of the European Communities, Brussels
MR JOHN CARBERY	Council of the European Communities, Brussels
MR JESPER KAAE	Danish Embassy, London
MR WOLFGANG THOMAS	Ministerium für Ernahrung, Landwirtschaft und Forsten, Bonn

MR JUAN CALVERA	Spanish Embassy, London
MR DANIEL SILVESTRE	Secrétariat d'Etat à la Mer, Paris
MR ADRIAN MCDAID	Permanent Representation of Ireland to the European Communities, Brussels
MS NICOLE BOLLEN	Ministry of Agriculture & Fisheries, The Hague
DR TONY BURNE	Ministry of Agriculture, Fisheries and Food, London
MRS PAM JARVIS	Ministry of Agriculture, Fisheries and Food, London
DR KEVIN O'GRADY	National Rivers Authority, Bristol
MR TED POTTER	Ministry of Agriculture, Fisheries and Food, Lowestoft
MR CHRIS SOUTHGATE	Ministry of Agriculture, Fisheries and Food, London
MR BOB WILLIAMSON	Scottish Office Agriculture & Fisheries Department, Edinburgh

FINLAND

*MR PEKKA NISKANEN	Ministry of Agriculture & Forestry, Helsinki

ICELAND

*H.E. HELGI AGUSTSSON	Ambassador of Iceland, London
MR ARNI ISAKSSON	Institute of Freshwater Fisheries, Reykjavik

NORWAY

*MR SVEIN MEHLI	Directorate for Nature Management, Trondheim
MR STEINAR HERMANSEN	Ministry of the Environment, Oslo
MS INGER LAVIK OPDAHL	Ministry of Foreign Affairs, Oslo
MR MARIUS HAUGE	Fisheries Counsellor, Norwegian Embassy, London

RUSSIA**

*MR ALEXANDER V RODIN	PINRO, Murmansk
MR GUENRIKH BOROVKOV	Ministry of Fisheries, Moscow
MR KONSTANTIN BUDANOV	Murmanrybvod, Murmansk

** representing the interests of the former Soviet Union

SWEDEN

*MR GUNNAR HOERSTADIUS	Ministry of Agriculture, Stockholm
MS ANNA KARIN ENESTROEM	Ministry for Foreign Affairs, Stockholm

USA

*MR CLINTON B TOWNSEND	Maine Council of the Atlantic Salmon Federation, Maine
MR DAVID F EGAN	Connecticut River Atlantic Salmon Commission, Guilford
MR LARRY SNEAD	Department of State, Director, Office of Fisheries Affairs, Washington DC
DR JENNIFER L BAILEY	National Marine Fisheries Service
MR DAVID A BALTON	Office of the Legal Adviser, Department of State, Washington DC
MR STETSON TINKHAM	Department of State, Office of Fisheries Affairs, Washington DC

SECRETARIAT

DR MALCOLM WINDSOR	Secretary
DR PETER HUTCHINSON	Assistant Secretary
MISS MARGARET NICOLSON	PA to the Secretary

Appendix 2

SPECIAL MEETING ON FISHING FOR SALMON IN INTERNATIONAL WATERS BY NON-CONTRACTING PARTIES
14-15 January 1992, Waldorf Hotel, London

AGENDA

1. **Introduction**

2. **Adoption of the Agenda**

3. **Fishing for Salmon in International Waters**

   3.1 Nature and extent of the fishery

4. **Possible Actions**

   4.1 International cooperation on surveillance (patrols, satellite, etc.)

   4.2 Consideration of draft protocols for adoption by non-contracting Parties (2 draft protocols CNL(91)39 and CNL(91)40 were tabled at the June 1991 Council Meeting)

   4.3 Use of stronger diplomatic initiatives

   4.4 Collaboration with other international organizations

   4.5 Certificate of origin requirements

   4.6 Claims for compensation for salmon taken by non-contracting Parties in the Convention area.

   4.7 Model regulations for adoption by non-contracting Parties prohibiting fishing for salmon in the Convention area.

   4.8 Other possible actions

5. **Any Other Business**

6. **Report of the Meeting**

Secretary
Edinburgh
14 January 1991

FISHING FOR SALMON IN INTERNATIONAL WATERS BY NON-CONTRACTING PARTIES

1. It is clear from the attached review (Attachment 1), which gives details of the vessels known to have been involved and the location of the fishery, that there was considerable salmon fishing activity by non-contracting Parties in the area of international waters north of the Faroe Islands in the first quarter of 1990 and that such activities continued, probably on a lesser scale, in 1991. It is also evident that even a few such vessels could take catches which would exceed, for example, the Faroese quota. Consultations with the Norwegian coastguard suggest that the airborne patrols and other sources of information would make it difficult for a sustained fishing operation in this area to go undetected although activity by vessels in 1989 was not detected by airborne patrols. Obtaining detailed information on the vessels and particularly the catches is difficult. There are other areas of international waters in the North Atlantic that might not be as well patrolled but which could also support salmon fishing operations although we have received no reports of such activity.

2. The Resolution on Fishing for Salmon in International Waters which was adopted by the Council at its Seventh Annual Meeting in 1990 resulted in the Panamanian Authorities issuing a resolution requiring compliance with NASCO's prohibitions. There has still been no formal response from Poland although they have informed the Danish Ministry of Foreign Affairs that they would consider adhering to the NASCO Convention. Despite this there were again reports in 1991 of a vessel registered to a non-contracting Party fishing in international waters and the Panamanian vessel "Brodal" entered a northern Norwegian port in March of that year.

3. The future holds new uncertainties in that the political map of Europe is being re-drawn and newly sovereign states with access to the North Atlantic now exist.

4. Clearly in a situation where fishing by even a very few vessels of non-contracting Parties could take about 15% of the North Atlantic salmon catch there is a need to ensure that the work of the NASCO Convention is safeguarded. In view of this the Special Meeting will consider what further actions may be necessary. It seems likely that progress on improved cooperation between surveillance authorities, the development of collaboration with other international organizations, continued diplomatic pressure and on the possible development of a new protocol, could all be valuable steps.

Secretary
Edinburgh
6 February 1992

Attachment 1

FISHING FOR SALMON IN INTERNATIONAL WATERS BY NON-CONTRACTING PARTIES

1. INTRODUCTION

1.1 During the first quarter of 1990, NASCO began to receive reports of salmon fishing activities by vessels registered to non-contracting Parties and operating in international waters in the Norwegian Sea north of the Faroe Islands. This paper reviews the available information concerning the location of this fishing activity, the dates of sightings, the vessels involved, the possible catches from the fishery and the options for improving our information on these activities.

2. LOCATION OF THE FISHERY

2.1 The NASCO Convention applies to salmon stocks which migrate beyond areas of fisheries jurisdiction of coastal States of the Atlantic Ocean north of 36°N latitude throughout their migratory range. Within this area there are three blocks of international waters illustrated in Figure 1. To date all of the reported salmon fishing activity by vessels registered to non-contracting parties has been in the area of international waters bounded by the exclusive economic zones of Faroe Islands, Iceland, Jan Mayen, Greenland, Spitzbergen and Norway.

2.2 The area of international waters north of the Faroe Islands is about twice the area of Sweden. However, all the sightings to date have been in the southern quarter of this area between 66-68°N. These sightings are shown in Figure 2 and were during the period January 1990 - February 1991. Sightings in both years were restricted to the first quarter of the year although it is known that vessels also operated in the last quarter of 1989. The Norwegian coastguard also sighted one vessel fishing in international waters in February 1991 and the vessel "Brodal" called at a northern Norwegian harbour in March 1991.

2.3 It is possible that salmon fishing could be conducted in other areas of international waters in the North Atlantic although no reports of such activities have been received.

3. SOURCES OF INFORMATION

3.1 All of the sightings of activity in international waters received by NASCO were obtained from maritime patrol flights by the Icelandic and Norwegian coastguards. The Icelandic patrols are by Fokker F-27-200 aircraft based in Reykjavik. The patrols of the eastern boundary of the 200 nautical mile EEZ take the aircraft into the south-western corner of the area of international waters but diversions further east may be made when vessels are detected by radar, VHF bearing or from other information. These diversions may cover the area between 66°N and 68°N towards 01°W. In normal conditions the patrols in the area of international waters take place 4 or 5 times a month and last about 7½ hours. Earlier this year the Icelandic coastguard's aircraft was fitted with a new 360° radar unit replacing the nose-mounted 120° weather

radar which could easily miss small vessels such as salmon fishing vessels in 25-30 knot winds due to sea clutter.

3.2 The Norwegian coastguard also conducts airborne (Orion planes) surveillance of the area on a regular basis in connection with patrols of the Jan Mayen fisheries zone (twice a month); following detection of vessels in international waters during patrols of the western boundary of the Norwegian EEZ (once a week) or as a result of information provided by vessels in the area. Consultations with the Norwegian coastguard suggest that it would be unlikely that sustained fishing operations in this area would go undetected, although operations in the last quarter of 1989 were not detected by these patrols.

3.3 When fishing vessels are detected during airborne patrols the aircraft descend from high altitude (6,000 - 10,000 feet) to 500 feet so that details of the vessel and its activities can be obtained. Photographs are taken although at such northerly latitudes this is difficult during the winter months as there can be almost 24 hours per day of darkness.

3.4 In addition, valuable information has been received from the Faroese authorities as a result of one of the vessels calling at Torshavn harbour for repairs and from the Scottish Fishery Protection Agency who boarded one of the vessels near the Shetland Islands.

4. DETAILS OF THE VESSELS FISHING IN INTERNATIONAL WATERS

4.1 Information obtained from airborne surveys is restricted to date of sighting, location and, when visibility permits, the name and registration number of the vessel. From photographs provided by the Icelandic and Norwegian coastguards it is clear that a number of the vessels do not display their registration numbers. The following information has been obtained concerning the vessels operating in international waters:

"Brodal"

Long-lining vessel, 30.92m in length, boarded by Scottish Fishery Protection Agency officers in December 1989 en route to Lerwick to refuel, take on provisions and undertake repairs. 30 tonnes of salmon on board. Skipper was a Danish national but gave an address in Vienna (Austria). Boat registered in Panama but had no registration number. Owner given as Myrtleberry Inc, Bank of America Building, 50th Street, Panama City, Panama. The skipper informed the SFPA officers that the salmon were taken in international waters in the vicinity of 67°N latitude 00° longitude between 17 October and 9 December 1989, that he made three voyages a year and that a number of other boats were involved in the fishery. He intended to land the salmon at Kolberg in Poland.

This vessel was subsequently sighted by the Icelandic coastguard on 17 January 1990 at 67°04'N - 05°41'W; on 21 February at 66°49'N - 01°15'W and on 2 March 1990 at 66°58'N - 02°33'W and by the Norwegian coastguard on 10 March 1990 at 66°45'N - 03°17'W. "Brodal" called at a Northern Norwegian harbour in March 1991.

Information provided by the Icelandic coastguard indicates that the vessel was built in 1962, that it is 29m in length and weighs 133 gross registered tonnes and that its call-sign is OVUH.

The vessel was previously owned by Mr K B Jensen, Bornholm and Mr M F Jensen, Svaneke, Denmark and the reflagging was notified to the Danish Ship Register on 14 October 1988 with actual reflagging occurring on 14 November 1988. The owners had received EC Fishing Vessel Scrapping Support, i.e. the vessel could no longer be used for fishing by countries with access to the EC fisheries zone.

"Minna"

The vessel "Minna" called at Torshavn harbour on 18 January 1990. It was fully geared for salmon long line fishing although it had no salmon on board. Registered to Poland the vessel is owned by Pol-Fish (75%) and by Danish interests (25%). The Faroese authorities were informed that the vessel intended to fish for salmon in international waters and that the catch would be landed in Poland. "Minna" returned to Torshavn on 2 February 1990 for repairs with 5 tonnes of salmon on board. These were taken in seven long line sets at approximately 65°N and 4°E north of the Faroes. The salmon were in the size range 50-90cm and the average weight was estimated to be 4-4.5kg. It was intended to return to the same area to fish up to 25 tonnes before returning to Poland. The vessel weighs 84.5 gross registered tonnes, has the registration number WLA69 and its call-sign is OZTH. This vessel was sighted by the Icelandic coastguard on 26 January 1990 at 66°22'N - 04°15'W. This vessel was previously owned by Mr V Pedersen, Bramming, West Jutland, Denmark but was sold on 13 November 1989 to Pol-fish Co Ltd, Wladyslawowo, Poland. The vessel was reflagged on 15 November 1989. The vessel was seized by the Danish Authorities in May 1988 for violating an EC Council Resolution (171/1983) but was later released against payment of claims.

"Seagull"

This vessel was observed by the Icelandic coastguard on 17 January 1990 at 66°40'N - 04°22'W; on 26 January 1990 at 67°41'N and 04°22'W and on 21 February 1990 at 66°55'N - 00°36'W. It is Polish-registered, 46m in length, 299 gross registered tonnes, was built in 1967 and operates under the call-sign OVID. The vessel was also sighted in international waters in early 1990 by the Norwegian coastguard and photographs were taken.

"Annette Bri"

This vessel was observed by the Icelandic coastguard on 2 March 1990 operating with the vessel Brodal at 66°58'N - 02°33'W. Its call-sign is OUHZ. It was also sighted by the Norwegian coastguard in early 1990 and photographs were taken. This vessel was sold in December 1989 by a Fishing Corporation in Bornholm to Pol-fish Co Ltd, Wladyslawowo, Poland. It was reflagged on 27 April 1990. Its Polish registration number is WLA-12.

"Uncle Sam" (Probably formerly named "Onkel Sam")

This vessel was observed by the Norwegian coastguard on 28 January 1990 at 66°27'N - 00°48'W. This vessel was owned by Mr P M Poulsen of Bornholm, Denmark but was sold on 28 April 1989 to Diro Navigation Corp, Panama. It was reflagged on 16 February 1990. Prior to being sold the owner of the vessel had received EC Fishing Vessel Scrapping Support. This vessel is presently the subject of a case which was referred to the European Court in April last year.

4.2 There are also some unconfirmed reports that another two vessels, "Bermuda" and "Marie Viking", may also have been fishing for salmon in international waters. We have received no information concerning the Marie Viking but details of the Bermuda are as follows.

"Bermuda"

This vessel was previously owned by Mr P E Nykjaer, Bornholm, Denmark but was sold on 28 March 1988 to Tejn Fishing Corporation, c/o Panama Lawyers, ABC Pan Building, 32 East Street, Panama City, Panama. The vessel was reflagged on 2 September 1988 and operates under the call-sign OWRG.

4.3 All the sightings of vessels fishing for salmon in international waters are shown in Figure 2 including sightings of vessels which were not identified by name or registration number.

5. INFORMATION ON CATCH LEVELS

5.1 It is known from inspections of the "Brodal" and "Minna" that these vessels can take significant quantities of salmon. At the time that "Brodal" was inspected she had 30 tonnes of salmon on board, had a capacity for 45 tonnes and it was indicated that three fishing trips were made each year. The "Minna" had 5 tonnes on board but intended to fish 25 tonnes before returning to port. These vessels were considerably smaller than the "Seagull" which is also known to have operated in international waters.

5.2 In 1990, the North Atlantic Salmon Working Group estimated that if seven vessels made three trips a year and took an average of 30 tonnes of salmon, the potential catch would amount to 630 tonnes. Catches of this level could seriously undermine the conservation measures agreed within NASCO. Indeed this level of catch exceeds the combined catch at Faroes and Greenland in 1990.

5.3 While it is possible to make estimates of the potential catch very limited information is available on the actual catch in 1990 and 1991. Article 119, paragraph 2 of the United Nations Convention on the Law of the Sea which deals with the Conservation of the living resources of the high seas states that "Available scientific information, catch and fishing effort statistics, and other data relevant to the conservation of fish stocks shall be contributed and exchanged on a regular basis through competent international organizations, whether sub-regional, regional or global, where appropriate and with participation by all States concerned". It is possible that the provisions of

this Article provide a mechanism for obtaining catch statistics from non-contracting Parties.

Map of the NASCO Convention Area showing Areas of International Waters.

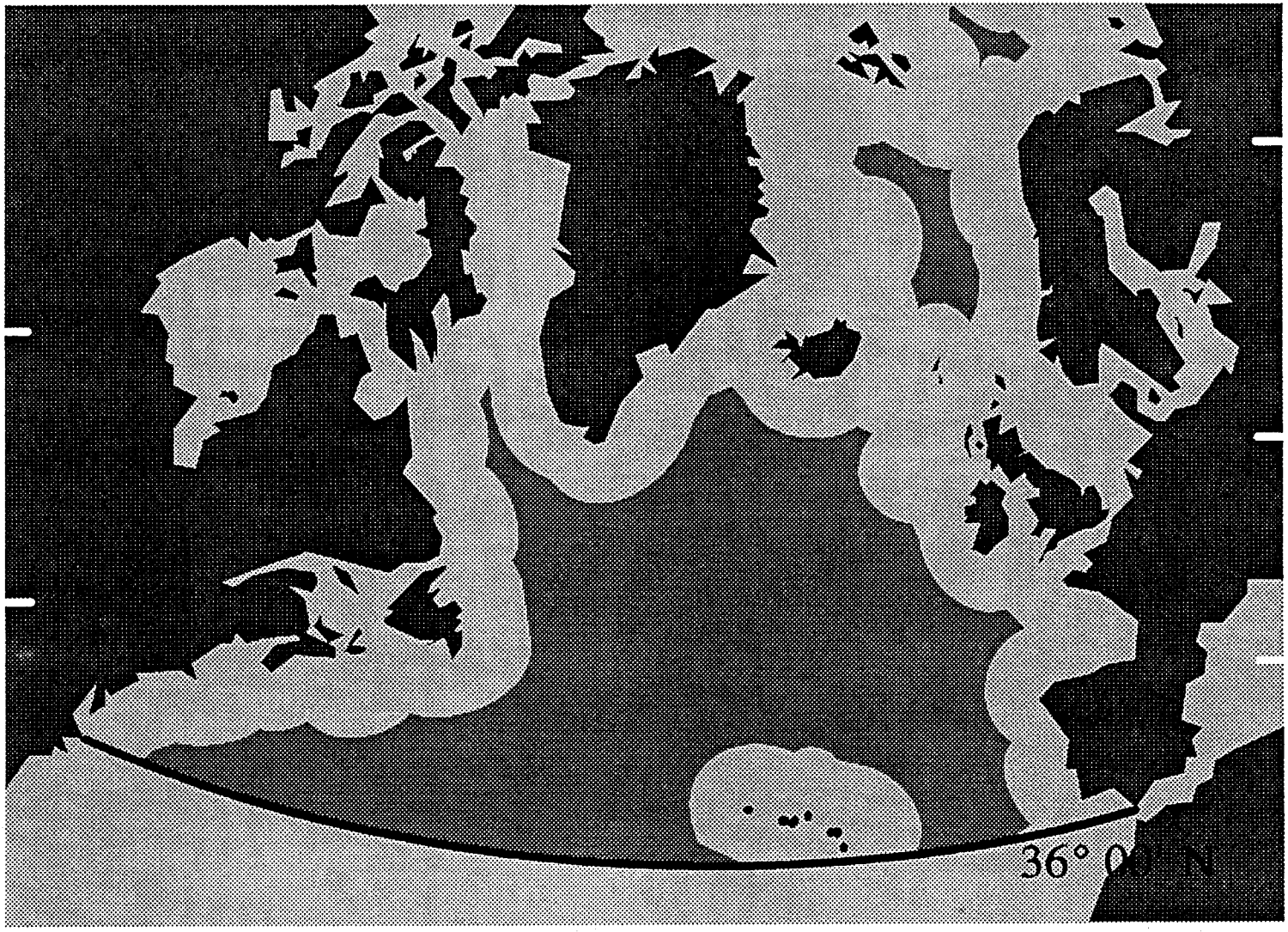
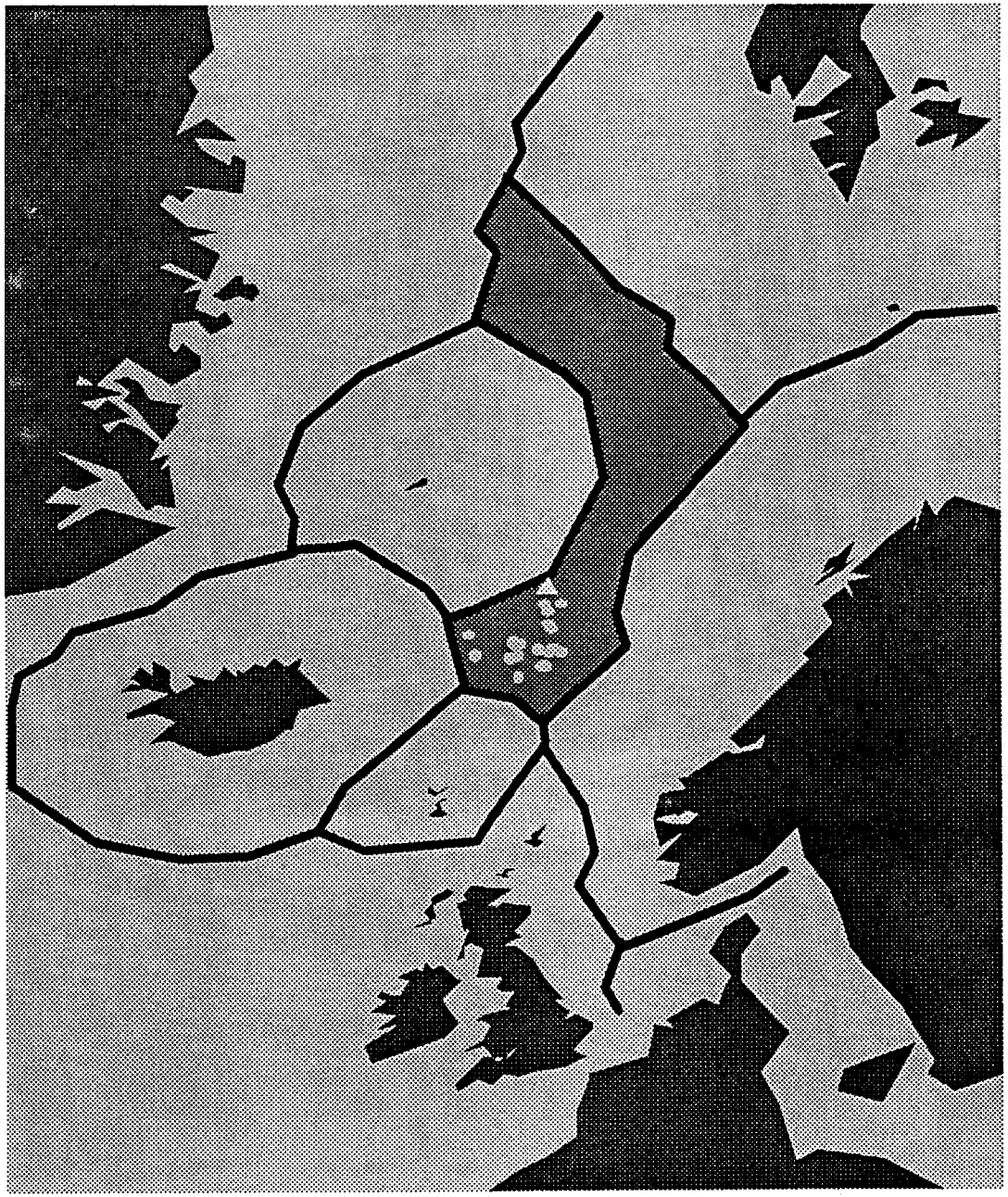


FIGURE 1

NOTE: This map is for illustrative purposes only. The boundaries of some of the EEZ's illustrated are subject to dispute.



Sightings of vessels fishing for salmon in international waters in the North-East Atlantic Ocean.

- International Waters
- Sightings in 1990
- Sightings in 1991
- Exclusive Economic Zones

FIGURE 2

NOTE: This map is for illustrative purposes only. The boundaries of some of the EEZ's illustrated are subject to dispute.

Appendix 4

DRAFT PROTOCOL TO THE CONVENTION FOR THE CONSERVATION OF SALMON IN THE NORTH ATLANTIC OCEAN

(Prepared by the US and Canada)

DRAFT PROTOCOL TO THE CONVENTION FOR THE CONSERVATION OF SALMON IN THE NORTH ATLANTIC OCEAN

The Parties to this Protocol,

NOTING the provisions of the Convention for the Conservation of Salmon in the North Atlantic Ocean (the "Convention"),

RECOGNIZING that the conservation of Atlantic salmon stocks referred to in Article 1(1) of the Convention will be enhanced by broad international agreement on conservation measures,

HAVE AGREED as follows:

ARTICLE 1

Definitions

For the purposes of this Protocol:

1. "Fishing" means:

   a. any activity which results in, or can reasonably be expected to result in, the catching, taking, or harvesting of fish; or

   b. any operation at sea in preparation for or in direct support of any activity described in subparagraph (a).

2. "Directed fishing" means fishing primarily for a particular species or stock of fish.

3. "Incidental taking" means catching, taking, or harvesting a species or stock of fish while fishing for another species or stock of fish.

ARTICLE 2

Measures to Conserve Atlantic Salmon

1. Directed fishing of salmon stocks referred to in Article 1(1) of the Convention is prohibited beyond areas of fisheries jurisdiction of coastal States.

2. Incidental taking of such salmon shall be minimized in accordance with Annex 1.

3. The retention on board a fishing vessel of such salmon taken as an incidental catch in a directed fishing activity is prohibited.

4. The sale, purchase, importation, export, landing, retention, possession, transfer and transport of such salmon referred to in paragraph 1, whether or not in processed form, harvested contrary to the provisions of this Protocol is prohibited.

ARTICLE 3

Enforcement

1. Each Party shall take appropriate measures:

   (a) to ensure that its nationals and vessels refrain from engaging in any activity contrary to the provisions of this Protocol and, if such activity occurs, to take appropriate enforcement action including penalties which shall be limited to appropriate fines, forfeiture, or revocation or suspension of fishing privileges;

   (b) to prevent vessels registered in or exported from its jurisdiction from being transferred, for the purpose of avoiding the provisions of this Protocol, to a State which is not party to the Convention or to this Protocol.

2. If there are reasonable grounds to believe that a vessel registered in the territory of a Party is engaging in activity contrary to the provisions of this Protocol, that Party shall not object to the taking of appropriate enforcement action by a Party to the Convention, which may include seizure of the vessel and imposition of penalties.

3. In the case of a seizure made pursuant to paragraph 2, the seizing State shall promptly inform the Flag State, through diplomatic channels, of the facts and actions taken, and shall promptly release the vessel and crew upon the posting of reasonable bond or other security.

ARTICLE 4

Information

1. Each Party shall provide to the North Atlantic Salmon Conservation Organization:

   (a) information on measures it has adopted to implement this Protocol;

   (b) information concerning enforcement action it has taken in response to activities contrary to the provisions of this Protocol;

   (c) scientific and technical data, samples of fisheries data, including catch and fishing effort statistics and time and area of vessel and fleet operations, for Atlantic salmon referred to in Article 1(1) of the Convention, or any other information intended to be provided or exchanged under the Convention; and

   (d) such other information as may be relevant and useful for the conservation of such stocks.

ARTICLE 5

Relationship to the Convention

Each Party to the Convention shall have the right to invoke the provisions of this Protocol as against each Party to this Protocol.

ARTICLE 6

Adoption of Stricter Measures

Nothing in this Protocol shall be construed as preventing any Party from taking measures, consistent with international law, against fishing activities contrary to the provisions of this Protocol which are stricter than those required by this Protocol.

ARTICLE 7

Non-Prejudice

Nothing in this Protocol shall be deemed to prejudice:

(a) the extent and the exercise by States of sovereign rights over maritime areas in accordance with international law or the position of any Party concerning the extent of its fisheries jurisdiction;

(b) the positions or views of any Party with respect to its rights or obligations under international law, including, but not limited to, treaties and other international agreements to which it is party; or

(c) any arrangements between or among the Parties concerning fisheries enforcement in the Atlantic Ocean.

ARTICLE 8

Amendments

Any Party may propose amendments to this Protocol by submitting a proposal to the Depositary. The Depositary shall promptly provide a copy of the proposal to all Parties to this Protocol and to the Convention. No amendment shall come into force until [all] [a three quarters majority of] the Parties to the Convention and all Parties to this Protocol as of the date the Depositary gave notice of the proposal have deposited instruments of ratification, acceptance or approval of the proposal.

ARTICLE 9

Reservations

This Protocol shall not be subject to reservations.

ARTICLE 10

Withdrawal

At any time after one year from the date on which this Protocol has entered into force for a Party, that Party may withdraw from the Protocol by giving written notice to the Depositary. Withdrawal shall take effect one year after receipt of such notice by the Depositary.

ARTICLE 11

Depositary

The Depositary shall be the Council of the European Communities.

ARTICLE 12

Final Provisions

1. This Protocol shall be open for signature by any State or regional economic organization representing a group of States ("REO").

2. This Protocol shall be subject to ratification.

3. Instruments of ratification shall be deposited with the Depositary.

4. This Protocol shall enter into force for each State or REO on the date of deposit of its instrument of ratification with the Depositary.

5. The Depositary shall notify all Parties to this Protocol and to the Convention of its receipt of any instruments of ratification and withdrawal notices.

6. The original of this Protocol in the English and French languages, each version being equally authentic, shall be deposited with the Depositary, which shall transmit certified copies thereof to all of the signatories.

IN WITNESS WHEREOF the undersigned, being duly authorised by their respective Governments, have signed this Protocol on the dates indicated next to their signatures.

Annex 1
to the Protocol

With respect to Article 2(2) of the Protocol, the Parties shall take the following measures aimed at the minimization of the incidental taking of salmon stocks referred to in Article 1(1) of the Convention.

1. Fisheries for non-anadromous fish beyond the areas of fisheries jurisdiction of coastal States shall be conducted in such times, areas and manners as to minimize the incidental taking of such salmon stocks to the maximum extent practicable to reduce such incidental taking to insignificant levels.

2. When two or more Parties to the Convention notify NASCO that they believe a fishery is being conducted by nationals or vessels of a Party to this Protocol contrary to this Annex, NASCO shall convene a special meeting to consider the matter as soon as possible. The Parties who have notified NASCO shall be responsible for presenting the information on which they based such notification. The Party whose nationals or vessels are conducting the fishery in question shall be responsible for demonstrating that the fishery is not being conducted contrary to this Annex. If NASCO decides that a satisfactory demonstration has not been made, the fishery shall be suspended until it is demonstrated that the fishery shall be conducted consistent with this Annex.

3. In order to facilitate the gathering of scientific information concerning the nature and extent of incidental taking of such salmon stocks:

   (a) each Party to the Convention may send through diplomatic channels to any Party to this Protocol a request to accommodate the requesting Party's scientific observer or observers, at the expense of the requesting Party, on board any vessel or vessels of the other Party engaged in a fishery which the requesting Party has reasonable grounds to believe may incidentally take such salmon. Any such request shall be complied with promptly by the other Party;

   (b) the logistics for the transportation and accommodation of scientific observers shall be agreed upon by the Parties concerned.

4. Pursuant to Article 4(1)(d) of the Convention, NASCO may request research into and analyses of data concerning the incidental taking of Atlantic salmon in the area referred to in Article 1(1) of the Convention, including analyses of data obtained by the scientific observers referred to in paragraph 3 of this Annex, and may make recommendations to the Parties based upon such research and analyses, including recommendations on appropriate measures concerning avoidance, adjustments to gear, area closures and other steps to minimize the incidental taking of Atlantic salmon in the area concerned.

ANNEX 16

COUNCIL

CNL(92)20

FISHING FOR SALMON IN INTERNATIONAL WATERS BY NON-CONTRACTING PARTIES

CNL(92)20

FISHING FOR SALMON IN INTERNATIONAL WATERS BY NON-CONTRACTING PARTIES

1. At its Seventh Annual Meeting the Council adopted a resolution calling for action through diplomatic channels to ensure that fishing for salmon in international waters by non-contracting Parties was halted. Last year the Council considered a review, CNL(91)19, of the situation since the adoption of the resolution, including further unconfirmed information concerning activity during the first half of 1991. The Council agreed that a Special Meeting be held to consider ways in which to assess the nature and extent of such fishing activities and the possible remedial actions. This meeting was held in London in January and was attended by representatives from all Parties. A report of this meeting is presented separately, CNL(92)19.

2. At this meeting a draft Protocol which had been prepared by the US and Canada was discussed. Following comments by the Parties, the US offered to prepare a simpler revised draft Protocol which they agreed to circulate to the Parties, so that a drafting session could be held prior to the Ninth Annual Meeting. Two revised draft Protocols were subsequently circulated to the Parties by the US, one of which would apply to non-contracting Parties only and one which would apply to both non-contracting Parties and to NASCO's contracting Parties. A drafting session was held during 8-9 April 1992 in Washington DC and a report of this meeting is presented separately, CNL(92)33.

3. In addition to consideration of a draft Protocol a number of recommendations were made at the Special Meeting for consideration by the Council. These were as follows:

   i) There should be a formal agreement that any information concerning fishing for salmon in international waters by non-contracting Parties be reported to the NASCO Secretariat.

   ii) Coordination of surveillance operations should be strengthened and other forms of surveillance such as monitoring of radio traffic and use of satellite borne surveillance systems should be identified.

   iii) There was general support for the consideration of further diplomatic initiatives.

   iv) The Secretary should be asked to develop cooperation with other international organizations concerning the problem of fishing for salmon in international waters.

   v) The Secretary should include in the review of carcass tagging being prepared for the Council information on the applications of certificates of origin.

   vi) Iceland might develop its outline proposal to seek compensation for salmon taken by non-contracting Parties.

vii) The Secretary should look into the possibility of producing model regulations to assist non-contracting Parties in formulating appropriate national legislation.

4. At the Special Meeting in London a paper summarising the information available to the Secretariat on the location, nature and extent of fishing for salmon in international waters was presented (Appendix 3 of paper CNL(92)19). Shortly after this meeting the Secretariat received information from an anonymous source indicating that the vessels "Brodal" and "Seagull" had left port in late January to fish for salmon in international waters. Both of these vessels are registered to Panama, and both have previously been sighted fishing for salmon in international waters. The vessel "Brodal" has called at the Norwegian harbour of Bodø on four occasions since the beginning of 1991 (28/1/91; 4/3/91; 5/12/91 and 5/3/92) and the Norwegian coastguard sighted a vessel thought to have been the "Brodal" in international waters earlier this year. We have been advised by the Norwegian authorities that the Norwegian coastguard observed the "Brodal" and another, as yet unidentified, vessel fishing for salmon in international waters during a patrol flight on 8 May (Appendix 1). There have also been unconfirmed reports that the vessel "Bermuda", which is also registered to Panama, may have been operating in international waters earlier this year. These reports indicate that a small number of vessels known to have been involved in salmon fishing are still operating in the North Atlantic.

5. The Council will separately consider the draft Protocol contained in CNL(92)33. In addition the Council may wish to consider what other actions it should take and, in particular, whether it can endorse the recommendations listed in paragraph 3 which arose from the London meeting.

Secretary
Edinburgh
13 May 1992

OFFICIAL: Svein Aage Mehli/MB

Your ref.:

Our ref.: 5814/92-~~822.4~~

Date: 11.5.92

NASCO
11 Rutland Square
Edinburgh EH1 2AS
SCOTLAND
UK

OBSERVATIONS OF BOATS FISHING FOR SALMON IN INTERNATIONAL WATERS

The Norwegian Coast-guard made the following observations of boats fishing for salmon in international waters in the North Atlantic Ocean on Friday 8 May 1992:

- "Brodal" 72.17 N 0625 E

- "Name unknown", carried the distinguishing mark SG76 observed on 71.57 N 0528 E. The longline used for salmon fishing was in this case seen in the water.

Photos were taken of both wessels. We will later come back with information on the name of the second wessel.

Best regards

Svein Aage Mehli

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N-7004 Trondheim
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ANNEX 17

COUNCIL

CNL(92)33

REPORT OF THE PROTOCOL DRAFTING MEETING

CNL(92)33

REPORT OF THE PROTOCOL DRAFTING MEETING

1. At its Eighth Annual Meeting the Council agreed that further action was necessary to address the problem of fishing for salmon in international waters by non-contracting Parties. A number of options were considered and draft Protocol documents were submitted by Canada and the US. It was agreed that a Special Meeting should be held prior to the Ninth Annual Meeting to consider ways in which to assess the nature and extent of such fishing activities and possible remedial actions. A report of this meeting, which was held in London on 14-15 January 1992, is presented separately as document CNL(92)19.

2. At the Special Meeting a draft Protocol prepared by the United States and Canada was considered. Following discussion of its provisions, the United States offered to prepare a simpler revised draft Protocol, taking account of the comments received, to circulate this to the Parties at the earliest opportunity and to host a meeting of Government experts from Parties to NASCO to finalize the draft Protocol. This meeting of experts was held in Washington DC during April 8-9, 1992. I now attach the documents that were finalized at that meeting. They include a revised draft Protocol (Appendix 1) and an accompanying resolution for use by the Council in adopting the Protocol (Appendix 2). In view of the continuing reports of activity by vessels known to have engaged in salmon fishing in the past and the general agreement at the Special Meeting that further action was necessary with the objective of ending fishing for salmon in international waters the Council is asked to consider the draft Protocol and its accompanying resolution with a view to their adoption in Washington DC in June 1992.

3. A second draft resolution to accompany the Protocol was also discussed at the April meeting of NASCO Government experts, but its text was not finalized in Washington. The European Community has offered to receive comments from Parties and to incorporate the comments into a revised text, which will be circulated to Parties prior to the June NASCO meeting, so that it may also be put before the Council for adoption this June.

Secretary
Edinburgh
24 April 1992

Appendix 1

NORTH ATLANTIC SALMON CONSERVATION ORGANIZATION
MEETING OF GOVERNMENT EXPERTS
WASHINGTON, D.C.
APRIL 8-9, 1992

DRAFT

PROTOCOL FOR STATES NOT PARTY TO THE CONVENTION FOR THE CONSERVATION OF SALMON IN THE NORTH ATLANTIC OCEAN

Each Party to this Protocol,

HAVING REGARD TO the Convention for the Conservation of Salmon in the North Atlantic Ocean (the "Convention"), which seeks to promote the conservation, restoration, enhancement and rational management of salmon stocks;

WELCOMING the achievements in salmon conservation by contracting Parties to the Convention, within the framework of the Convention, and the role of the North Atlantic Salmon Conservation Organization (the "Organization") therein;

BEING CONSCIOUS that the conservation of Atlantic salmon stocks as referred to in Article 1(1) of the Convention will be enhanced by broad international agreement on conservation measures;

DESIRING the creation of a legal instrument for States which are unable to become contracting Parties to the Convention;

Has agreed as follows:

ARTICLE 1

Measures to Conserve Atlantic Salmon

Each Party shall:

(a) prohibit the fishing of salmon stocks referred to in Article 1(1) of the Convention beyond areas of fisheries jurisdiction of coastal States; and

(b) take appropriate action to enforce the provisions of this Protocol.

ARTICLE 2

Information

Each Party shall provide to the Organization information on measures it has adopted to implement this Protocol and on any enforcement action it has taken in response to activities contrary to the provisions of this Protocol.

ARTICLE 3

Non-Prejudice

Nothing in this Protocol shall prejudice or affect the extent of a Party's sovereignty, the exercise by a Party of sovereign rights over maritime areas in accordance with international law, the position of any Party concerning the extent of its fisheries jurisdiction, or the position of any Party regarding any other international agreement to which it has adhered or may adhere.

ARTICLE 4

Withdrawal

At any time after three months from the date on which this Protocol has entered into force for a Party, that Party may withdraw from the Protocol by giving written notice to the Depositary. Withdrawal shall take effect six months after receipt of such notice by the Depositary.

ARTICLE 5

Final Provisions

1. This Protocol shall be open for signature by any State.

2. This Protocol shall be subject to ratification or approval.

3. Instruments of ratification or approval shall be deposited with the Depositary, which shall be the Council of the European Communities.

4. The Depositary shall inform the signatories to this Protocol, the Organization, and the contracting Parties to the Convention of the deposit of all instruments of ratification or approval.

5. This Protocol shall enter into force for each State one month after the date of deposit of its instrument of ratification or approval with the Depositary.

6. The original of this Protocol in the English and French languages, each version being equally authentic, shall be deposited with the Depositary, which shall transmit certified copies thereof to all of the signatories.

IN WITNESS WHEREOF the undersigned, being duly authorized, have signed this Protocol on the dates indicated next to their signatures.

Appendix 2

NORTH ATLANTIC SALMON CONSERVATION ORGANIZATION
MEETING OF GOVERNMENT EXPERTS
WASHINGTON, D.C.
APRIL 8-9, 1992

DRAFT

RESOLUTION OF THE COUNCIL OF
NASCO AT ITS NINTH ANNUAL MEETING
WASHINGTON, 8-12 JUNE 1992

ADOPTION OF A PROTOCOL FOR STATES NOT PARTY TO
THE CONVENTION FOR THE CONSERVATION OF SALMON
IN THE NORTH ATLANTIC OCEAN

The Council,

RECALLING the Special Meeting of the contracting Parties held in London on 14-15 January 1992, at which the possibility of drafting of Protocol to the Convention on the Conservation of Salmon in the North Atlantic Ocean was discussed;

RECALLING FURTHER the drafting session held in Washington, D.C. on 8-9 April 1992 which produced a draft text of such a Protocol;

DESIRING to promote the conservation of salmon stocks in the North Atlantic Ocean through international cooperation;

1. Adopts the Protocol for States not party to the Convention for the Conservation of Salmon in the North Atlantic Ocean ("the Protocol");

2. Requests the NASCO Secretariat to transmit copies of the Protocol together with any related resolution to the governments of all States identified by the Council; and

3. Invites NASCO contracting Parties to encourage such States to become party to the Protocol.

Appendix 3

MEETING OF GOVERNMENT EXPERTS

of States party to the

NORTH ATLANTIC SALMON CONSERVATION ORGANIZATION

U.S. Department of State
Washington, D.C.

8-10 April, 1992

LIST OF PARTICIPANTS

Canada

David Rideout, Department of Fisheries and Oceans
David Angell, Embassy of Canada

Denmark
(in respect of the Faroe Islands and Greenland)

Anne Meldgaard, Embassy of Denmark

European Community

Henrik Schmiegelow, EC Commission, Directorate-General for Fisheries
Andrew Thomson, EC Commission, Directorate-General for External Relations
Carlos Albuquerque, EC Council Presidency
John Carbery, Council Secretariat, Legal Advisor
Luis Teixeira Da Costa, Council Secretariat, Directorate for Fisheries
Anthony Burne, MAFF, UK
Jesper Jespersen-Kaae, Fisheries Counsellor, Denmark
Adrian McDaid, Fisheries Attache, Ireland
Jesus Miranda, Embassy of Spain

Finland

Mr. Jarmo Sareva, Embassy of Finland

Iceland

Norway

Svein A. Mehli, Directorate for Nature Management
Ingrid S. Stuhaug, Ministry of Foreign Affairs

Russian Federation

A. V. Rodin, Director PINRO
G. A. Borovkov, Fisheries Committee
Yu. N. Bovykin, Russian Embassy
V. N. Solodovnik, Russian Embassy

Sweden

Gunnar Horstadius, Ministry of Agriculture
Anna Karin Enestrom, Ministry of Foreign Affairs

United States

Larry Snead, Department of State
Stetson Tinkham, Department of State
David A. Balton, Department of State
David Chang, Department of State
Margaret F. Hayes, U.S. Department of Commerce, NOAA
Jennifer L. Bailey, NOAA, National Marine Fisheries Service

Appendix 4

MEETING OF GOVERNMENT EXPERTS

of States party to the

NORTH ATLANTIC SALMON CONSERVATION ORGANIZATION

U.S. Department of State
Washington, D.C.
9:30 AM
8-10 April, 1992

Room 1205

PROVISIONAL AGENDA

1. Opening of the Meeting and Introductions

2. Designation of Chair

3. Adoption of the Agenda

4. Consideration of Draft Protocol for Adherence by States not party to the NASCO Convention

5. Tabling the Draft Protocol at the Annual Meeting

6. Other Business

COUNCIL

CNL(92)52

RESOLUTION OF THE COUNCIL OF NASCO AT ITS NINTH ANNUAL MEETING WASHINGTON DC, 9-12 JUNE 1992

ADOPTION OF A PROTOCOL FOR STATES NOT PARTY TO THE CONVENTION FOR THE CONSERVATION OF SALMON IN THE NORTH ATLANTIC OCEAN

CNL(92)52

RESOLUTION OF THE COUNCIL OF NASCO AT ITS NINTH ANNUAL MEETING WASHINGTON DC, 9-12 JUNE 1992

ADOPTION OF A PROTOCOL FOR STATES NOT PARTY TO THE CONVENTION FOR THE CONSERVATION OF SALMON IN THE NORTH ATLANTIC OCEAN

The Council,

RECALLING the Special Meeting of the contracting Parties held in London on 14-15 January 1992, at which the possibility of drafting of Protocol to the Convention on the Conservation of Salmon in the North Atlantic Ocean was discussed;

RECALLING FURTHER the drafting session held in Washington, D.C. on 8-9 April 1992 which produced a draft text of such a Protocol;

DESIRING to promote the conservation of salmon stocks in the North Atlantic Ocean through international cooperation;

1. Adopts the Protocol for States not party to the Convention for the Conservation of Salmon in the North Atlantic Ocean ("the Protocol");

2. Requests the NASCO Secretariat to transmit copies of the Protocol together with any related resolution to the governments of all States identified by the Council; and

3. Invites NASCO contracting Parties to encourage such States to become party to the Protocol.

COUNCIL

CNL(92)53

PROTOCOL FOR STATES NOT PARTY TO THE CONVENTION FOR THE CONSERVATION OF SALMON IN THE NORTH ATLANTIC OCEAN

CNL(92)53

PROTOCOL FOR STATES NOT PARTY TO THE CONVENTION FOR THE CONSERVATION OF SALMON IN THE NORTH ATLANTIC OCEAN

Each Party to this Protocol,

HAVING REGARD TO the Convention for the Conservation of Salmon in the North Atlantic Ocean (the "Convention"), which seeks to promote the conservation, restoration, enhancement and rational management of salmon stocks;

WELCOMING the achievements in salmon conservation by contracting Parties to the Convention, within the framework of the Convention, and the role of the North Atlantic Salmon Conservation Organization (the "Organization") therein;

BEING CONSCIOUS that the conservation of Atlantic salmon stocks as referred to in Article 1(1) of the Convention will be enhanced by broad international agreement on conservation measures;

DESIRING the creation of a legal instrument for States which are unable to become contracting Parties to the Convention;

Has agreed as follows:

ARTICLE 1

Measures to Conserve Atlantic Salmon

Each Party shall:

(a) prohibit the fishing of salmon stocks referred to in Article 1(1) of the Convention beyond areas of fisheries jurisdiction of coastal States; and

(b) take appropriate action to enforce the provisions of this Protocol.

ARTICLE 2

Information

Each Party shall provide to the Organization information on measures it has adopted to implement this Protocol and on any enforcement action it has taken in response to activities contrary to the provisions of this Protocol.

ARTICLE 3

Non-prejudice

Nothing in this Protocol shall prejudice or affect the extent of a Party's sovereignty, the exercise by a Party of sovereign rights over maritime areas in accordance with international law, the position of any Party concerning the extent of its fisheries jurisdiction, or the position

of any Party regarding any other international agreement to which it has adhered or may adhere.

ARTICLE 4

Withdrawal

At any time after three months from the date on which this Protocol has entered into force for a Party, that Party may withdraw from the Protocol by giving written notice to the Depositary. Withdrawal shall take effect six months after receipt of such notice by the Depositary.

ARTICLE 5

Final Provisions

1. This Protocol shall be open for signature by any State.

2. This Protocol shall be subject to ratification or approval.

3. Instruments of ratification or approval shall be deposited with the Depositary, which shall be the Council of the European Communities.

4. The Depositary shall inform the signatories to this Protocol, the Organization, and the contracting Parties to the Convention of the deposit of all instruments of ratification or approval.

5. This Protocol shall enter into force for each State one month after the date of deposit of its instrument of ratification or approval with the Depositary.

6. The original of this Protocol in the English and French languages, each version being equally authentic, shall be deposited with the Depositary, which shall transmit certified copies thereof to all of the signatories.

IN WITNESS WHEREOF the undersigned, being duly authorized, have signed this Protocol on the dates indicated next to their signatures.

ANNEX 20

COUNCIL

CNL(92)54

RESOLUTION OF THE COUNCIL OF NASCO AT ITS NINTH ANNUAL MEETING WASHINGTON DC, 9-12 JUNE 1992

FISHING FOR SALMON ON THE HIGH SEAS

CNL(92)54

RESOLUTION OF THE COUNCIL OF NASCO AT ITS NINTH ANNUAL MEETING WASHINGTON DC, 9-12 JUNE 1992

FISHING FOR SALMON ON THE HIGH SEAS

The Council

HAVING REGARD to international law and, in particular, the provisions in the United Nations Convention on the Law of the Sea on anadromous fish stocks;

RECALLING the objective of NASCO to contribute through consultation and cooperation to the conservation, restoration, enhancement and rational management of salmon stocks subject to the Convention for the Conservation of Salmon in the North Atlantic Ocean;

RECALLING the prohibition on salmon fishing on the high seas contained in the NASCO Convention;

RECALLING the Regulatory Measures adopted by NASCO;

RECALLING NASCO's Resolution on Fishing for Salmon in International Waters adopted at its Seventh Annual Meeting;

RECALLING the Protocol for States not party to the Convention for the Conservation of Salmon in the North Atlantic Ocean adopted by the Council at its Ninth Annual Meeting;

NOTING that vessels which are registered in countries that are not Parties to the NASCO Convention have harvested and might continue to harvest salmon on the high seas;

EXPRESSING CONCERN that any salmon fishery on the high seas is seriously undermining the conservation measures in force and is contrary to the objectives of the provisions of the NASCO Convention;

HAVING REGARD to Article 2 paragraph 3 of the NASCO Convention which states that the contracting Parties shall invite the attention of any State not a party to the Convention to any matter relating to the activities of the vessels of that State which appears to affect adversely the conservation, restoration, enhancement or rational management of salmon stocks subject to this Convention or the implementation of the Convention;

NOTING THAT appeals have been previously addressed to some non-contracting Parties urging them to take the necessary action to ensure that such fishing activities cease,

1. Resolves that all non-contracting Parties fishing for salmon on the high seas in the North Atlantic should be invited by NASCO to sign the Protocol to the Convention;

2. Resolves that the contracting Parties should actively seek to encourage such non-contracting Parties fishing for salmon on the high seas in the North Atlantic to comply with the Protocol to the Convention;

3. Resolves that the contracting Parties should take appropriate measures for discouraging its nationals and to prohibit vessels owned by its nationals from engaging in any activity contrary to the provisions of the Convention;

4. Resolves that the contracting Parties should transmit to the Secretary of NASCO information concerning sightings of fishing activities on the high seas of the North Atlantic which may undermine the conservation measures adopted by NASCO;

5. Given the shared concerns of contracting Parties as to the detrimental effects on the salmon stock of fishing on the high seas, requests the Secretary of NASCO to

- obtain, and compile information provided by contracting Parties concerning sightings of fishing activities on the high seas of the North Atlantic which may undermine the conservation measures adopted by NASCO and disseminate such information to contracting Parties as appropriate;

- draw the attention of the non-contracting Parties concerned to the activities of their vessels and to the resolve of all contracting Parties to deal with this threat to the conservation of salmon in the North Atlantic;

- obtain and compile all available information on landings and transhipments of salmon caught in the North Atlantic by non-contracting Parties, including the details on the name and flag of the vessels; the quantities landed or transhipped within ports and waters of contracting Parties; and the ports through which the salmon was shipped;

- request ICES to undertake research into and analyses of data relating to the by-catch of salmon in other fisheries in the North Atlantic and, in particular, examine the extent to which discarding of such by-catches takes place;

- obtain, and compile all scientific and technical data available on this fishery and provide details of such data;

- establish regular contacts with other international organizations with an interest in the area, in particular NEAFC, with a view to share information about the incidence of fishing by non-contracting Parties and to report on the outcome of his contacts.

ANNEX 21

COUNCIL

CNL(92)22

SUMMARY OF MICROTAG, FINCLIP AND EXTERNAL TAG RELEASES IN 1991

CNL(92)22

SUMMARY OF MICROTAG, FINCLIP AND EXTERNAL TAG RELEASES IN 1991

1. The annual summary of the information on tagging programmes conducted by the Parties in 1991 is attached as Table 1. In excess of 3.7 million fish were either tagged or marked during 1991, prior to release, of which 47% were microtagged, 44% were finclipped (principally adipose clips), 8% were tagged with external tags (principally Carlin tags) and less than 1% were branded or dyemarked. Approximately 1.9 million fish bore auxiliary marks, principally adipose clips used in conjunction with microtagging. Thus a total of almost 3.3 million adipose clipped fish were released in 1991 of which less than 1.7 million carried microtags. Out of the total of 3.7 million marked fish released, approximately 97% were of hatchery origin.

2. Table 2 presents a comparison of the tagging programmes in 1990 and 1991. The 1991 figure of 3.7 million released marked fish is 3% less than the number released the previous year. There was a 17% increase in the release of externally tagged fish and a 10% increase in the number of fish that were branded. The reduction overall, however, was due to a 5% reduction in the number of fish bearing microtags and a 4% reduction in the number of fish that were finclipped. There was a very small increase in the number of wild fish tagged in 1991 compared to 1990.

Secretary
Edinburgh
14 May 1992

TABLE 1

SUMMARY OF 1991 TAG RELEASES BY PARTY

PARTY	ORIGIN	MARKING METHOD				
		MICROTAGS	EXTERNAL TAGS	BRANDS, DYEMARKS ETC.	FINCLIPS	AUXILIARY TAGS, FINCLIPS, MARKS ETC.
CANADA	Hatchery	104,614	53,417	-	909,456	137,821
	Wild	31,456	4,429	-	2,744	30,412
	Mixed*	-	1,372	-	-	-
	TOTAL	136,070	59,218	-	912,200	168,233
EEC	Hatchery	827,719	6,195	515	213,308	869,572
	Wild	27,409	11,422	1,380	-	33,755
	TOTAL	855,128	17,617	1,895	213,308	903,327
ICELAND	Hatchery	295,111	-	-	-	295,111
	Wild	6,959	-	-	-	6,959
	Mixed*	-	8,407	-	-	-
	TOTAL	302,070	8,407	-	-	302,070
NORWAY	Hatchery	-	143,627	28,816	9,500	54,579
	Wild	-	4,540	-	-	-
	TOTAL	-	148,167	28,816	9,500	54,579
RUSSIAN FEDERATION	Hatchery	-	4,000	-	377,200	4,000
	Wild	-	-	-	-	-
	TOTAL	-	4,000	-	377,200	4,000
SWEDEN	Hatchery	-	9,682	-	31,487	1,971
	Wild	-	249	-	-	-
	TOTAL	-	9,931	-	31,487	1,971
USA	Hatchery	465,781	50,074	-	85,760	465,781
	Wild	824	41	-	-	824
	TOTAL	466,605	50,115	-	85,760	466,605
TOTAL	**Hatchery**	**1,693,225**	**266,995**	**29,331**	**1,626,711**	**1,828,835**
	Wild	**66,648**	**20,681**	**1,380**	**2,744**	**71,950**
	Mixed	**-**	**9,779**	**-**	**-**	**-**
	TOTAL	**1,759,873**	**297,455**	**30,711**	**1,629,455**	**1,900,785**

* Either not differentiated into hatchery or wild fish or origin unknown.

TABLE 2

COMPARISON OF 1990 AND 1991 TAGGING PROGRAMMES

	1990	1991	% CHANGE
MICROTAGS			
Hatchery	1,789,747	1,693,225	-5.4
Wild	59,386	66,648	+12.2
TOTAL	1,849,133	1,759,873	-4.8
EXTERNAL TAGS			
Hatchery	221,645	266,995	+20.5
Wild	30,278	20,681	-31.7
Mixed	1,650	9,779	+492.7
TOTAL	253,573	297,455	+17.3
BRANDS, DYEMARKS			
Hatchery	27,977	29,331	+4.8
Wild	-	1,380	-
TOTAL	27,977	30,711	+9.8
FINCLIPS			
Hatchery	1,699,163	1,626,711	-4.3
Wild	1,589	2,744	+72.7
TOTAL	1,700,752	1,629,455	-4.2
TOTAL			
HATCHERY	**3,738,532**	**3,616,262**	**-3.3**
WILD	**91,253**	**91,453**	**+0.2**
MIXED	**1,650**	**9,779**	**+492.7**
TOTAL	**3,831,435**	**3,717,494**	**-3.0**

ANNEX 22

COUNCIL

CNL(92)23

NASCO TAG RETURN INCENTIVE SCHEME

CNL(92)23

NASCO TAG RETURN INCENTIVE SCHEME

1. The NASCO Tag Return Incentive Scheme was established on a trial basis covering tags returned in the four years 1989-1992. Last year the Scheme received wide publicity before the fishing seasons commenced and the number of tags entered into the draw was more than 58% higher than in the first year of the Scheme. Furthermore, the ACFM report last year indicated a higher level of overall reporting rate at West Greenland which they considered may have been related to a number of factors including the initiation of the NASCO lottery. We may therefore already be seeing some effects of the Scheme which was established to encourage and improve the return of external tags. Following last year's draw we again achieved good publicity for the Scheme with the announcement of the prize winners in the Press Release issued at the close of the Eighth Annual Meeting. The ceremony, at Hirtshals, Denmark, where the Grand Prize was presented, received coverage in both the local and national press and on national television. There was also good coverage for the prizes in each Commission.

2. In accordance with the Rules of the Scheme the participating Parties were requested to provide by 1 May a list of names and addresses of persons returning eligible external tags during the year 1 January - 31 December 1991. Alternatively, a list of serial numbers only was considered acceptable provided that the identity of the person returning the tag was known by the Party concerned. The country of recapture of the tag was also requested in order that each tag could be allocated to its appropriate Commission area.

3. A total of 1,764 eligible tags were returned and entered into the draw for the Grand Prize. 376, 107 and 1,281 eligible tags were entered into the draws in the North American Commission, the West Greenland Commission and the North-East Atlantic Commissions respectively. The draw will be made on 27 May by the auditors to NASCO, and in accordance with the Rules of the Scheme. The winner of the $2500 prize will be announced by the President at the Ninth Annual Meeting of the Council. The winners of the prizes in each Commission area will be announced by the Chairmen of the respective Commissions at the Ninth Annual Meeting.

4. The Scheme was established by the Council for a trial period of four years, during which the US agreed to fund the rewards. The awards made in 1993 will be the last during the trial period and the Council may therefore wish to consider what arrangements it wishes to make once the trial period is complete.

Secretary
Edinburgh
14 May 1992

COUNCIL

CNL(92)24

DATABASE OF SALMON RIVERS FLOWING INTO THE NASCO CONVENTION AREA

1. At its Sixth Annual Meeting the Council agreed to establish a listing of all salmon rivers flowing into the Convention area with an indication of their status. A format detailing the scope of the information to be included was agreed in 1990 and the information was requested from the Parties on 13 March 1991.

2. Clearly the establishment of this database is a large undertaking which could take several years. A limited amount of information has been received from some Parties and work on the database has now commenced.

Secretary
Edinburgh
8 April 1992

COUNCIL

CNL(92)25

GUIDELINES TO MINIMISE THE THREATS TO WILD SALMON STOCKS FROM SALMON AQUACULTURE

1. At its Eighth Annual Meeting the Council adopted "Guidelines to Minimise the Threats to Wild Salmon Stocks from Salmon Aquaculture", for use as appropriate by the Parties on a voluntary basis. It was further agreed that the document should be reviewed from time to time to take account of developments in aquaculture practices.

2. It was agreed that the guidelines should be transmitted to the Parties and to other interested bodies. In accordance with this decision the guidelines were printed as a separate NASCO document in booklet form in English and French and distributed to all Representatives and other interested individuals and organizations. There has been a great deal of interest in the guidelines and to date about 1,500 copies have been issued. We have received favourable comments from both those concerned with management of the wild stocks and the farming industry.

3. It has been suggested that the concept of guidelines, which have been internationally endorsed, might usefully be extended to cover the practical and technical aspects of the stocking of rivers with salmon. The Council may wish to consider draft guidelines at a later date.

Secretary
Edinburgh
8 April 1992

ANNEX 25

COUNCIL

PAPER CNL(92)26

SEA-RANCHING

CNL(92)26

SEA-RANCHING

The changes in fishery regulations and regimes in the North Atlantic, together with advances in smolt rearing techniques and limits to fish farming activities, are tending to create a situation where salmon ranching is becoming more viable. Interest in the activity is growing and production is already increasing. Ranched fish which migrate beyond areas of fisheries jurisdiction are subject to the NASCO Convention. However, there are potential dangers for the wild stocks in the North Atlantic. In the Baltic ranching programmes have successfully maintained a fishery despite loss of many rivers to natural production through hydro-electric development. However, because of the availability of the ranched fish the exploitation rates on the remaining wild stocks are now so high that they are threatened. The attached paper summarises the present situation and suggests some actions which might be taken by the Council.

Secretary
Edinburgh
8 April 1992

CNL(92)26

SEA-RANCHING

1. At its Eighth Annual Meeting the Council considered a review of sea-ranching as it relates to other enhancement activities, CNL(91)27. This review identified a number of potential risks to the wild stocks from salmon ranching. These include the possibility of over-fishing the wild stocks in mixed stock fisheries, genetic impacts on the wild stocks and impacts on the grazing capacity of marine waters. These threats are highlighted by the situation in the Baltic where ranching has maintained the fishery but where exploitation of the wild stocks is at such a high level that many are threatened. In recent years there has been increasing interest in ranching Atlantic salmon, and other species, and the Council agreed that this subject would need to be kept under review. Ranched salmon which migrate beyond areas of fisheries jurisdiction are covered by the NASCO Convention.

2. Ranching in the North Atlantic can be considered to be on a pilot scale compared to the Pacific. To date Iceland is the only country bordering the North Atlantic where private sea-ranching has been developed. Despite possessing few suitable ranching sites which would allow smolt rearing, the prohibition of directed salmon fisheries and advancements in smolt rearing techniques made at the Kollafjordur Experimental Fish Farm since the early 1960's have created conditions favourable to private ranching (Isaksson, 1990). The industry in Iceland has grown rapidly since 1987 (see below) and the harvest of ranched fish in 1991 was three times the harvest of wild fish. The rapid increase was possible because of surplus smolts from the salmon farming industry but there was very little increase in smolt releases in 1991 because of financial difficulties facing the industry (Isaksson, 1990).

GROWTH OF SALMON RANCHING IN ICELAND

Year	No of Smolts Released	Harvest (Tonnes)
1981	140,000	14
1982	300,000	16
1983	261,000	33
1984	323,000	24
1985	382,000	58
1986	186,000	65
1987	953,000	40
1988	2,004,000	179
1989	4,401,000	136
1990	5,800,000	280
1991	6,000,000	390

Source: Institute of Freshwater Fisheries, Reykjavik, Iceland

Recent initiatives to improve the economics of ranching have concentrated on the production of 0+ smolts and selective breeding focusing on increasing the rate of and size at return. Concern about possible adverse effects on the wild stocks resulted in legislation being introduced in 1988 requiring that ranching stations must be at least 15km from large salmon streams and 5km from minor salmon streams, that foreign stocks must not be used for ranching and that ranching stations must microtag 10% of their releases (Isaksson, 1988).

3. Elsewhere in the North Atlantic ranching of salmon can presently be considered to be on an experimental basis (see paper CNL(92)14). For example, in Ireland an experimental ranching programme has been initiated to formulate the legislative and administrative requirements for a properly structured ranching industry which would ensure that the wild stocks are safeguarded should ranching be developed.

4. In Norway, salmon ranching has been carried out on a research basis at Imsa, south-west Norway, since 1974. However, because of heavy marine exploitation of salmon, ranching has not been established other than as a research activity or as compensatory releases in regulated rivers. Ranching has, however, been shown to be potentially profitable and the recent closure of the drift net fishery, which has probably increased freshwater escapement (Anon, 1991) has created conditions which may be more favourable for ranching. Furthermore, the first sale value of farmed salmon has fallen markedly recently creating financial difficulties for the industry. It is possible that ranching may be seen as an economic alternative to farming particularly if the rate of and size at return can be improved and the cost of smolts reduced (Hansen and Johnsson, 1991). Consequently, there has been increasing interest in ranching in Norway in recent years and since 1977 the Institute of Marine Research in Bergen has advocated large scale sea-ranching as a means of supporting the economies of coastal regions (Holm et al, 1991). Because of the potential employment benefits and the fact that it combines traditional fisheries and aquaculture, the Norwegian government has funded a national sea-ranching programme to evaluate the potential for ranching Atlantic salmon, Arctic char, cod and lobster (Pedersen, 1990). The programme will be conducted between 1990-1997 and, in accordance with the recommendations of the World Commission of Environment and Development, the potential ecological and genetic impacts on wild populations will be assessed before final decisions about developing commercial ranching are taken (Skaala et al, 1991). In order to develop ecologically and genetically sound release and recapture methods, experimental coastal releases of smolts commenced in 1991 at Selstøvåg in south-western Norway. If the experimental releases are successful, fishing for ranched salmon in the vicinity of the release site may become a substitute for the closed drift net fishery for salmon (Holm et al, 1991).

CONCLUSIONS

5. Although interest in salmon ranching appears to have increased in recent years the releases of smolts, except in Iceland and in the Baltic, are still on an experimental basis. Salmon ranching poses a number of potential threats to the wild stocks. Some of these threats, such as the possible over-fishing of wild stocks where fishing for ranched fish in mixed stock fisheries is allowed, may not be covered by the Guidelines to Minimise the Threats to Wild Stocks from Salmon Aquaculture adopted by the Council last year. The Council might therefore wish to consider, at a later date, a

separate set of guidelines dealing only with salmon ranching. In the meantime, it would appear to be prudent to continue to keep this subject under review, particularly in view of the large numbers of smolts being produced for salmon farming and the financial problems being faced by this industry. The advice and research findings of those Parties undertaking or considering ranching would be useful to the Organization in assessing this new activity.

REFERENCES

Anon (1991): Report of the Working Group on North Atlantic Salmon. ICES CM1991/Assess:12. Copenhagen, 14-21 March, 1991.

Hansen, L.P. and Jonsson, B. (1991): Ranching of Atlantic Salmon in the River Imsa, Norway. ICES CM1991/M:35. Ref F.

Holm, M.; Jorstad, K.; Skilbrei, O.T.; Pedersen, T.N.; Skaala, O. and Nortvedt, R. (1991): Coastal Releases of Atlantic Salmon, a New Model for Salmon Ranching in Norway. ICES CM1991:M38. Ref 7.

Isaksson, A. (1988): Salmon Ranching in Iceland. In: Wild Salmon Present and Future. Sherkin Island Marine Stateion, Ireland. 108pp.

Isaksson, A. (1990): Atlantic Salmon: Present Status and Perspectives of Sea-ranching. In: Sea-ranching - Scientific Experiences and Challenges. Proceedings from the Symposium and Workshop, 21-23 October 1990, Bergen, Norway. (Editors: T.N. Pedersen and E. Kjørsvik). Norwegian Society for Aquaculture Research.

Pedersen, T.N. (1990): Preface to Sea Ranching - Scientific Experiences and Challenges. Proceedings from the Symposium and Workshop, 21-23 October 1990, Bergen Norway. (Editors: T.N. Pedersen and E. Kjørsvik). Norwegian Society for Aquaculture Research.

Skaala, O.; Dable, G.; Taggart, J.B.; Jorstad, K.E.; Orreland, L.; Karlsen, T.; Bakke, G. and Paulsen, O.I. (1991): Screening for Genetic Markers to Assess Potential Genetic Impacts from Salmon Ranching on Wild Stocks. ICES CM1991/M:14. Ref F.

ANNEX 26

COUNCIL

PAPER CNL(92)28

ECONOMIC VALUE OF ATLANTIC SALMON

CNL(92)28

ECONOMIC VALUE OF ATLANTIC SALMON

1. Last year the Council gave its first consideration to the economic value of the Atlantic salmon. It is recognised that the salmon has many aspects to its value; its value as food, its contribution to the economies of certain countries and communities dependent on fishing, the value it adds to property, tourism, transportation, hotels, restaurants, shops, gear manufacturing etc and the creation of employment, often in areas that are difficult for jobs.

2. It is possible to get some measure of the economic values of the resource and the attached paper brings to the attention of the Council some studies in the UK, Norway and USA which attempt to do this. Last year an estimate of expenditure on North Atlantic salmon fisheries of about £300 million was given. The studies mentioned here attempt to assess economic value rather than just expenditure and, on this basis, the North Atlantic resource may be worth about £2 billion ($3.5 billion) if the values obtained for Great Britain are typical for other countries. If the economists assumptions are accepted, we are clearly dealing with a very valuable resource.

3. In addition, surveys have shown that people who have no intention of fishing, whether for recreational or commercial reasons, derive a sense of satisfaction from knowing that the salmon are in the rivers and in the seas. There is a willingness to pay to conserve and restore the resource for future generations. Furthermore, the very existence of certain communities which depend on the salmon can hardly be given a monetary value.

4. One problem with economic assessments of salmon is that different economists produce and use different methodologies for their measurements. For example, it is at the moment only possible to speculate as to the economic value in the North Atlantic making large assumptions and scaling up values from published national studies. In the light of this evidence of the high economic value of the salmon, the Council might wish at some future date to consider whether a framework for economic evaluation of all its aspects might be discussed. In the meantime it is proposed that the Council be kept in touch with current economic studies.

Secretary
Edinburgh
15 May 1992

CNL(92)28

ECONOMIC VALUE OF ATLANTIC SALMON

1. At its Eighth Annual Meeting the Council considered a review of the economic aspects of salmon fishing, CNL(91)29. This review concluded that the Atlantic salmon is a valuable resource which generates economic impacts on both a regional and national basis. For example, the recreational fisheries in Canada, Iceland, Ireland, Scotland and Wales generated an estimated gross expenditure of around £190 million at 1990 prices, and it was speculated that throughout the North Atlantic gross expenditure might amount to £300 million. It was recognised that the economic value of the resource was probably considerably higher. Furthermore, there are many facets to the value of the resource to which it is difficult to assign a value and which are therefore often omitted from the assessments.

2. Since last year's review the results of a major study to assess the economic value of salmon fisheries in Great Britain have been published and two studies concerning economic aspects of the US salmon restoration programme have been drawn to the attention of the Secretariat. In accordance with the Council's request to be kept informed of additional information on the economic value of the resource, these papers are summarised below.

3. EUROPEAN ECONOMIC COMMUNITY (GREAT BRITAIN)

3.1 In 1989 researchers at the Centre for Marine Resource Economics at Portsmouth Polytechnic, UK started a study commissioned by the Ministry of Agriculture, Fisheries and Food to estimate the net economic value of the commercial and recreational fisheries in Great Britain and to estimate the expenditure of salmon anglers in that year (Radford et al, 1991). The survey was restricted to assessing the user values associated with fishing. It did not assess other sources of value arising from fishing or the value to those who do not fish for salmon. People are willing to pay to conserve salmon even if they do not fish. Furthermore, the estimate was based on assessing economic rent which is likely to underestimate the user value.

3.2 The total net economic value of salmon fisheries in Great Britain in 1988 was estimated to be £340 million, with the recreational fisheries accounting for approximately £327 million of this total. On a regional basis the fisheries in England and Wales were assessed to have a net economic value of approximately £76 million (the total gross expenditure by salmon and sea-trout anglers in England and Wales was estimated to be approximately £16.5 million). The net economic value of Scottish fisheries was estimated to be approximately £264 million. The economists thus consider that the economic value of these fisheries is considerably higher than the actual expenditure, in the case of England and Wales over four times higher.

3.3 While the net economic value of the recreational fishery is considerably greater than the commercial fishery the authors stressed the need to interpret the data with care. Since resource managers are seldom concerned with the complete demise of a particular use of the resource, the marginal changes are of more significance. The study revealed that a 10% change in the 5-year average catch of salmon in the

recreational fisheries would be expected to result in a 5.5% change in total market value in the same direction. In the case of the commercial fisheries a 10% change in landings would be expected to cause a 6.7% change in gross revenues in the same direction.

4. NORWAY

4.1 The Directorate for Nature Management has provided the Secretariat with English summaries of two recent papers concerning the economic value of Atlantic salmon in Norway.

4.2 The river Audna is a salmon and sea-trout river in southern Norway which has been adversely affected by acid rain. Since 1985 a project to restore the river has been undertaken which involves regular liming. Navrud (1991) undertook an assessment of the costs and benefits of the liming project using two independent valuation techniques. The annual value associated with fishing activities was estimated to be 1.2 million NOK (£104,000) and the annual non-use value was estimated to be 12.2 million NOK (£1.1 million). The annual cost of the project was estimated to be 2.8 million NOK (£240,000). Depending on the assumed time horizon and interest rates the total net benefits of the project were estimated to be 58-202 million NOK (£5-17.5 million) and the cost benefit ratio was calculated to be 4.1-5.8. The author concluded that the project was extremely profitable to society with beneficial effects on income distribution.

4.3 The river Gaula is a very famous Norwegian salmon river. Rolfsen (1991) estimated the recreational value of salmon fishing in a limited part of the river. The total number of angling days on the study section was 2,200 and the total recreational value was estimated to be 1.1 million NOK (£96,000). While this figure was not scaled up to the whole river system the total number of angling days on the river Gaula in 1979 was estimated to be 53,000.

5. UNITED STATES OF AMERICA

5.1 In the years between 1967-1983 in excess of $76 million was spent on restoration efforts in New England and in the late 1980's the US Fish and Wildlife Service was faced with either continuing the programme at an estimated cost of a further $100 million over 25 years or cutting the programme back to the minimum levels required by legislation (Kay et al, 1987). In order to provide an economic input to this decision process Kay et al (1987) conducted a questionnaire survey in order to assess the economic benefits of the restoration programme. It was found that almost 60% of the New England population "care" about Atlantic salmon and that their total willingness to pay for this programme exceeded $100 million. This figure exceeds the estimated costs of the programme and the authors therefore concluded that there are economic grounds for continuing the restoration programme. The study included estimates of willingness to pay both of users and non-users, the latter being approximately $28 million. It is clear, therefore, that economic assessments which fail to take into account non-user aspects may considerably underestimate the economic value of the resource.

5.2 A more recent study of the costs and benefits of the US salmon restoration programme during the period 1960-1987 and projected to the year 2012 was conducted by Edwards (1989). This analysis was restricted to the direct costs and benefits although it was recognised that studies into existence values (i.e. values assigned to the resource by non-users) have shown that such benefits often rival use value to the direct user. The study estimated that the cost of the total investment in the restoration programme (excluding border rivers) was approximately $0.3 billion. For a number of reasons this estimate was considered to underestimate the true present value of the costs. The total future benefits of the restoration programme (excluding border rivers) were estimated to range from $2.6 billion - $4.3 billion (constant $US in 1986), considerably higher than the estimated cost of restoration.

5. CONCLUSIONS

5.1 Last year's review speculated that if the studies of gross expenditure by anglers for Canada, Iceland and parts of the EEC were typical then the total wild stocks of salmon may generate expenditure of about £300 million over the whole of the North Atlantic. It was recognised that this figure would underestimate economic value. A recent study of the economic value of salmon fishing in Great Britain indicates it is considerably higher than actual expenditure. This is to be expected because economic value is assessed as willingness to pay which must at least equal actual expenditure. In this study the net economic value of angling was approximately four times higher than the actual expenditure. It is to be expected, therefore, that the economic value of salmon in the North Atlantic will be higher than the speculative figure of £300 million presented last year which was based on angler expenditure. Indeed, the estimate of net economic value of the salmon fisheries in Great Britain alone exceeds the estimate of expenditure in the North Atlantic based on previous studies.

5.2 These latest studies serve to emphasise the considerable economic value of the North Atlantic salmon. If the net economic values per fish obtained from the study in Great Britain are typical for other countries we can assume, as a crude estimate, that the total net economic value of the salmon fisheries to NASCO members in the North Atlantic might be in the region of £2 billion ($3.5 billion). This figure is based only on the user value, i.e. the value of the fishings, and does not take account of non-user values of the resource which the Norwegian and US studies indicate may be very significant and would further increase this figure.

REFERENCES

Edwards, S.F. (1989): An Economic Review of North Atlantic Salmon Restoration: US Fair Share Working Papers. Northeast Fisheries Centre Reference Document 89-01. NOAA National Marine Fisheries Service, Woods Hole, MA02543. 24pp.

Kay, D.L.; Brown, T.L. and Allee, D.J. (1987): The Economic Benefits of the Restoration of Atlantic Salmon to New England Rivers.

Navrud, S (1991): Cost Benefit Analysis of Liming in the River Audna - a Broader Analysis. Report to the Directorate for Nature Management by the Norwegian Agricultural University.

Radford, A.F., Hatcher, A.C. and Whitmarsh, D.J. (1991): An Economic Evaluation of Salmon Fisheries in Great Britain. Report prepared for the Ministry of Agriculture, Fisheries and Food. Centre for Marine Resource Economics, Portsmouth Polytechnic.

Rolfsen, Jørm (1991): Recreational Value of Salmon and Sea-trout Fishing on TOFA's zones in the river Gaula in the season of 1990. Research Thesis from the Norwegian Agricultural University.

ANNEX 27

CNL(92)46

PRESS RELEASE

Strengthened measures to end fishing for salmon in international waters in the North Atlantic Ocean were adopted by the North Atlantic Salmon Conservation Organization (NASCO) during its Ninth Annual Meeting which was held in the Department of State, Washington DC during 9-12 June.

NASCO is an inter-governmental Commission established by a Convention, with the objective of contributing to the conservation, restoration, enhancement and rational management of Atlantic salmon. It has as member Parties Canada, Denmark (in respect of the Faroe Islands and Greenland), the European Economic Community, Finland, Iceland, Norway, Sweden, the Russian Federation and the United States of America. Its Headquarters are in Edinburgh, UK.

In recent years NASCO has become aware of vessels which have been re-flagged to non-contracting countries, fishing for salmon on high seas north of the Faroe Islands. The Council of NASCO adopted a Protocol for signature by non-contracting Parties and which would extend the NASCO prohibitions on the fishing of salmon on the high seas to these States. The Council also adopted a Resolution calling for NASCO Parties to encourage non-contracting Parties to comply with the Protocol and for the collection and compilation of information on the scale and extent of the fishery.

The North-East Atlantic Commission was successful in reaching agreement on a regulatory measure for the Faroe Islands fishery in 1993. This measure maintained the quota at a level of 550 tonnes for the calendar year. The North American Commission agreed protocols concerning the introduction and transfer of salmonids in order to safeguard wild salmon stocks from genetic, ecological and disease interactions. Negotiations were also held in the West Greenland Commission but no agreement was reached on a regulatory measure for the 1992 fishing season.

NASCO also considered a range of other subjects relevant to salmon including the development of sea-ranching and its impacts on the wild stocks, the economic value of salmon, improvements to the comparability of catch statistics and the use of carcass tagging to reduce illegal harvests. The Organization operates a Tag Return Incentive Scheme to encourage the return of scientific tags applied to salmon. The winner of the Grand Prize of $2500 was Mr Onslow Wells, Newfoundland.

The President of the Organization, Mr Allen E Peterson Jr (USA), retired from office at the end of the meeting and Mr Børre Pettersen (Norway) was elected as his successor. The Vice-President, Mr Mehli (Norway) also retired from office and Mr David Meerburg (Canada) was elected as his successor.

The Organization will hold its next Annual Meeting in Edinburgh during 6-11 June 1993.

ANNEX 28

LIST OF COUNCIL PAPERS

Paper No.	Title
CNL(92)1	Provisional Agenda
CNL(92)2	Draft Agenda
CNL(92)3	Explanatory Memorandum on Draft Agenda
CNL(92)4	Proposed Schedule of Meetings
CNL(92)5	Election of Officers
CNL(92)6	Secretary's Report
CNL(92)7	Audited Accounts for 1991
CNL(92)8	Contributions by the Parties
CNL(92)9	Outline of 1993 Draft Budget and 1994 Forecast Budget
CNL(92)10	Report of the Finance and Administration Committee
CNL(92)11	Report of the ICES North Atlantic Salmon Working Group
CNL(92)12	Report of the ICES Advisory Committee on Fishery Management
CNL(92)13	Returns under Articles 14 and 15 of the Convention
CNL(92)14	Report on Laws, Regulations and Programmes
CNL(92)15	Catch Statistics Returns by the Parties
CNL(92)16	Historical Catch Record 1960-1991
CNL(92)17	Comparability of Catch Statistics
CNL(92)18	Carcass Tagging
CNL(92)19	Report of the Special Meeting on Fishing for Salmon in International Waters by Non-Contracting Parties
CNL(92)20	Fishing for Salmon in International Waters by Non-Contracting Parties
CNL(92)21	Not issued

Paper No.	Title
CNL(92)22	Summary of Microtag, Finclip and External Tag Releases in 1991
CNL(92)23	NASCO Tag Return Incentive Scheme
CNL(92)24	Database of Salmon Rivers Flowing into the NASCO Convention Area
CNL(92)25	Guidelines to Minimise the Threats to Wild Salmon Stocks from Salmon Aquaculture
CNL(92)26	Sea-Ranching
CNL(92)27	International Management by Other Salmon Commissions
CNL(92)28	Economic Value of Atlantic Salmon
CNL(92)29	Review of Salmon Related Literature
CNL(92)30	Report on the Activities of the North Atlatnic Salmon Conservation Organization in 1991
CNL(92)31	Dates and Places of 1993 and 1994 Meetings
CNL(92)32	UN Resolution on Large-Scale Pelagic Driftnet Fishing
CNL(92)33	Report of the Protocol Drafting Meeting
CNL(92)34	Draft Report of the Ninth Annual Meeting of the Council
CNL(92)35	Further Application for Non-Government Observer Status to NASCO
CNL(92)36	NASCO Tag Return Incentive Scheme - 1992 Grand Prize
CNL(92)37	The Form of ACFM Advice
CNL(92)38	Figures used by the Chairman of ACFM in his Presentation to the Council
CNL(92)39	Draft Resolution of the Council of NASCO at its Ninth Annual Meeting, Washington DC, 9-12 June 1992, on Fishing for Salmon on the High Seas
CNL(92)40	Draft Decision of the Council on Working Capital
CNL(92)41	Draft Decision of the Council on the Establishment of a Stabilisation Fund
CNL(92)42	Revised Draft Agenda
CNL(92)43	Draft Press Release
CNL(92)44	Agenda

Paper No.	Title
CNL(92)45	Draft Decision of the Council to Request Scientific Advice from ICES
CNL(92)46	Press Release
CNL(92)47	Report of the Finance and Administration Committee (incorporating all annexes)
CNL(92)48	Decision of the Council on Working Capital
CNL(92)49	Decision of the Council on the Establishment of a Stabilisation Fund
CNL(92)50	1993 Budget and 1994 Forecast Budget
CNL(92)51	Decision of the Council to Request Scientific Advice from ICES
CNL(92)52	Resolution of the Council of NASCO at its Ninth Annual Meeting, Washington DC, 9-12 June 1992, on the Adoption of a Protocol for States not Party to the Convention for the Conservation of Salmon in the North Atlantic Ocean
CNL(92)53	Protocol for States not Party to the Convention for the Conservation of Salmon in the North Atlantic Ocean
CNL(92)54	Resolution of the Council of NASCO at its Ninth Annual Meeting, Washington DC, 9-12 June 1992, Fishing for Salmon on the High Seas
CNL(92)55	Report of the Ninth Annual Meeting of the Council

NOTE: This list contains all papers submitted to the Council prior to and at the meeting. Some, but not all, of these papers are included in this report as annexes.