2001

EIGHTEENTH
ANNUAL MEETING

MONDARIZ, GALICIA, SPAIN

4-8 JUNE 2001

President: Mr Jacque Robichaud (Canada)

Vice-President: Mr Eidur Gudnason (Iceland)

Secretary: Dr Malcolm Windsor

CNL(01)67

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Report of the Eighteenth Annual Meeting of the Council 4-8 June 2001, Mondariz, Galicia, Spain

1. Opening Session

1.1 The President, Mr Jacque Robichaud, opened the meeting, and introduced Mr Tomas Fernandez-Couto Juanas, Director General of Forestry and the Natural Environment in the Autonomous Government of Galicia, who welcomed delegates to Mondariz (Annex 1).

1.2 The President made an opening statement on the work of the Organization (Annex 2).

1.3 The representatives of Canada, Denmark (in respect of the Faroe Islands and Greenland), the European Union, Iceland, Norway, the Russian Federation and the United States of America made opening statements (Annex 3).

1.4 Opening statements were made by the International Baltic Sea Fishery Commission (IBSFC), the North Atlantic Marine Mammal Commission (NAMMCO) and the North Pacific Anadromous Fish Commission (NPAFC) (Annex 4).

1.5 Five opening statements were made jointly on behalf of all Non-Government Organizations (NGOs) attending the Annual Meeting. One joint statement was made on behalf of 14 of the NGOs attending the meeting. In addition, opening statements were made by the World Wildlife Fund (US), the National Anglers Representative Association and the Federation of Irish Salmon and Sea-Trout Anglers. These opening statements are contained in Annex 5.

1.6 The President expressed appreciation to the Parties and to the observer organizations for their statements and closed the Opening Session.

1.7 A list of participants is given in Annex 6.

2. Adoption of Agenda

2.1 The Council adopted its agenda, CNL(01)47 (Annex 7).

3. Administrative Issues

3.1 Secretary's Report

The Secretary made a report to the Council, CNL(01)5, on: the status of ratifications of and accessions to the Convention; membership of the regional Commissions; observers at NASCO's meetings; progress with arrangements for a joint meeting with NPAFC and IBSFC; progress with arrangements for a possible joint meeting of all North Atlantic Fisheries Commissions; the twenty-fourth session of the FAO Committee on Fisheries; the NASCO website; the Tag Return Incentive Scheme; the Organization's financial affairs; and the manual of Resolutions, Agreements and

Guidelines. In accordance with Financial Rule 5.5, the Secretary reported on the receipt of contributions for 2001. Contributions had been received from all the Parties and there were no arrears.

Since the last Annual Meeting, Greenpeace International had been granted observer status.

At its Seventeenth Annual Meeting the Council had agreed that the proposed joint meeting of NASCO, NPAFC and IBSFC might be held in March 2002. Following consultations with NPAFC and IBSFC a framework for the meeting had been developed. The proposal is that the meeting will focus on factors affecting marine survival of salmon in the North Pacific and North Atlantic Oceans and in the Baltic Sea and will comprise sessions on status of salmon stocks and fisheries and on the factors associated with increased marine mortality (such as climate change; fish farming, enhancement and ranching; predation and competition; and migration and ocean rearing areas). The Council agreed to proceed with the meeting to be held in Vancouver, Canada on 14-15 March 2002. The Standing Scientific Committee had suggested some speakers and some amendments to the framework for the meeting. The Secretary was asked to liaise with NPAFC and IBSFC on the detailed arrangements for the meeting.

The Council had previously recognised that there could be benefits from a joint meeting of all the North Atlantic Fisheries Commissions (i.e. NASCO, ICCAT, NEAFC and NAFO) to discuss issues of mutual interest such as the Precautionary Approach, control and enforcement schemes and data collection. The Secretary indicated that because of other commitments it had not been possible to make progress with the arrangements since the last Annual Meeting. The Council asked the Secretary to liaise with the other organizations so as to develop an agenda for the proposed meeting, which could be considered by the Council at its next Annual Meeting. In view of NASCO's other meeting commitments in 2002 it was further proposed that the joint meeting of North Atlantic Fisheries Commissions might be held in 2003.

The Council noted with interest the decision of FAO's Committee on Fisheries to establish a Sub-Committee on Aquaculture and asked the Secretary to report on the Sub-Committee's progress. It was further agreed that this Committee should be informed of NASCO's work in relation to salmon aquaculture. The Secretary was asked to report to the Council on a regular basis on any other issues of relevance to NASCO being addressed within FAO.

3.2 **Report of the Finance and Administration Committee**

The Chairman of the Finance and Administration Committee, Mr Steinar Hermansen (Norway), presented the report of the Committee, CNL(01)6. Upon the recommendation of the Committee the Council took the following decisions:

(a) to accept the audited 2000 annual financial statement, FAC(01)2;

(b) to adopt a budget for 2002 and to note a forecast budget for 2003, CNL(01)48 (Annex 8);

(c) to appoint PricewaterhouseCoopers of Edinburgh as auditors for the 2001 accounts, or such other company as may be agreed by the Secretary following consultation with the Chairman of the Finance and Administration Committee;

(d) to establish a Special Fund under Financial Rule 6.1 called 'NASCO Staff Fund,' CNL(01)49 (Annex 9);

(e) to adopt guidelines in relation to the possible acceptance of voluntary contributions by non-members, CNL(01)50 (Annex 10). The Council decided that the issue of whether or not to accept voluntary contributions would be considered under agenda item 5.4;

(f) to adopt the report of the Finance and Administration Committee.

The President thanked Mr Hermansen for his valuable work and for that of the Committee.

3.3 **Methods of Calculating the Contributions to NASCO**

At its Seventeenth Annual Meeting the Council had asked the Secretary to prepare a series of scenarios, including very low catches, and a high proportion of catch and release. These scenarios would be used to calculate contributions. The calculations might also include specific examples of what would happen if the fixed and catch-related proportions in the Convention were changed. The Council considered paper CNL(01)7 which concluded that there is an infinite number of scenarios, some involving changes to the Convention and others which might include a redefinition of the term 'nominal catches'. The Council noted these scenarios and agreed that, for the time being, there should be no change to the method used to calculate the contributions to NASCO. However, the subject would remain open for review in the light of changes such as the further development of catch and release salmon fishing.

3.4 **Review of NASCO's Relationship with its Observer Organizations**

At its Seventeenth Annual Meeting the Council had reviewed its relationship with its observer organisations. The Council had concluded that participation by observers in NASCO's meetings had been of mutual benefit and had enhanced transparency of international cooperation on salmon conservation and management. The Council had agreed to further consider this issue in 2001 and accordingly the Secretary introduced paper CNL(01)8. Following the Seventeenth Annual Meeting the NGOs had proposed that two of their representatives be nominated as spokespersons who could be invited by the President or Commission Chairman to present the NGO view on particular agenda items. In addition, the NGOs had requested that they be permitted to make one joint statement at the opening session of each Commission meeting. The Secretary also reported that the decision to admit aquaculture organizations under the same conditions as NGOs was causing some difficulties for the Secretary and President in considering such applications since it was unlikely that these organizations would have as a stated objective the conservation of the wild stocks. The conditions for NGOs state that the organization applying for NGO status should

have objectives compatible with those of NASCO, i.e. conservation, restoration, enhancement and rational management of salmon stocks.

The Council decided that, although they could not accept NGO interventions on Council agenda items, they would accept the proposal that one joint 5-minute NGO statement be made at the Opening Session of each Commission meeting. The Council would, however, only re-open this question of NGO statements on a consensual basis after more experience of the new arrangements.

With regard to admission of aquaculture organizations as NGOs, the Council agreed that the mechanism through the Liaison Group was better for that industry and should remain the way forward.

3.5 Reports on the Activities of the Organization

In accordance with Article 5, paragraph 6 of the Convention, the Council adopted a report to the Parties on the Activities of the Organization in 2000, CNL(01)9. The Council agreed that a biennial report covering the period 2000/2001 should be published and that the report should be agreed through correspondence with Heads of Delegations following the Annual Meeting.

3.6 Announcement of the Tag Return Incentive Scheme Grand Prize

The President announced that the draw for the Tag Return Incentive Scheme was made by the Auditor at NASCO Headquarters on 18 May. The winner of the $2500 Grand Prize was Mr Magnar Ernes, Eresfjord, Norway. The Council offered its congratulations to the winner.

4. Scientific, Technical, Legal and Other Information

4.1 Scientific Advice from ICES

The representative of ICES presented the report of the Advisory Committee on Fishery Management (ACFM) to the Council, CNL(01)11 (Annex 11). Only the advice concerning general issues of relevance to the North Atlantic is annexed here, but the detailed advice on a Commission area basis is annexed to the report of the Commissions.

4.2 Report of the Standing Scientific Committee

The Chairman of the Committee presented a draft request to ICES for scientific advice. Upon the recommendation of the Committee, the Council adopted a request for scientific advice from ICES, CNL(01)66 (Annex 12).

The representative of the European Union made the following statement:

"The adoption of the Precautionary Approach requires, *inter alia*, that stocks be maintained above conservation limits, and NASCO has suggested that this might be achieved by means of management targets. This is not consistent with the approach used in recent years to set a quota for West Greenland. ICES has also advised that

there appear to be some inconsistencies in the way that biological reference points are applied to salmon. However, it is clearly the responsibility of NASCO managers to determine how this should be taken forward. We strongly believe that NASCO should be taking greater account of uncertainties in the scientific advice in determining management actions. We are aware, however, that ICES requires feedback from us before they can take the next step in developing their advice. For example, it is up to NASCO to decide which of the approaches (suggested by ICES) might be appropriate for taking account of uncertainty and what levels of risk should be adopted."

4.3 Catch Statistics and their Analysis

The Secretary introduced a statistical paper presenting the official catch returns by the Parties for 2000, CNL(01)13 (Annex 13), and historical data for the period 1960-2000, CNL(01)14. The statistics for 2000 are provisional and will be updated by the Parties.

4.4 Review of International Salmon-Related Literature Published in 2000

The Council took note of a review of the literature concerning Atlantic salmon published during 2000, CNL(01)15, which had been prepared in accordance with Article 13, paragraph 2 of the Convention.

5. Conservation, Restoration, Enhancement and Rational Management of Salmon Stocks

5.1 Measures Taken in Accordance with Articles 14 and 15 of the Convention

The Secretary presented a report on the returns made under Articles 14 and 15 of the Convention, CNL(01)16 (Annex 14). The representative of the USA described the implications of the decision to list the distinct population segment of Atlantic salmon in Maine under the Endangered Species Act. The Act defines an endangered species as one "in danger of extinction throughout all or a significant portion of its range". The Act also requires all federal agencies to consult with the services to ensure any action authorised, funded or carried out by any federal agency is not likely to jeopardise the listed salmon. Under the Act it is illegal to "take" a listed species, and there is a requirement to develop a recovery plan designed to restore the listed species to health.

5.2 The Precautionary Approach to Salmon Management

(a) Report of the Standing Committee on the Precautionary Approach on Application of a Precautionary Approach to Habitat Protection and Restoration

The Standing Committee on the Precautionary Approach (SCPA), established in 1999 under the Council's Action Plan for Application of a Precautionary Approach, held its second meeting in Ottawa, Canada, during 7-9 February 2001 (Chaired by Dr Andrew Rosenberg) on the topic of application of a Precautionary Approach to habitat protection and restoration. The Secretary

introduced the Committee's report, CNL(01)17 (Annex 15). The Committee had recognised that one of the complexities of applying a Precautionary Approach to protection and restoration of salmon habitat is that a wide range of interested parties is involved and that there is, therefore, a need to develop a tool for application of the Precautionary Approach in a more complex policy environment than for management of the fisheries. The Committee had developed a proposed NASCO Plan of Action for Application of the Precautionary Approach to the Protection and Restoration of Atlantic Salmon Habitat. This proposed Plan of Action lays down Guiding Principles, including the objective of maintaining and where possible increasing the current productive capacity of Atlantic salmon habitat, and commits each of the Contracting Parties to the establishment of comprehensive salmon habitat protection and restoration plans. The proposed Plan of Action also commits NASCO, its Contracting Parties and their relevant jurisdictions to measuring and comparing progress in meeting the objective of the Plan of Action by *inter alia* establishing inventories of rivers and regularly reporting on, and updating, these inventories.

The Council adopted the NASCO Plan of Action for the Application of the Precautionary Approach to the Protection and Restoration of Atlantic Salmon Habitat, CNL(01)51 (Annex 16). The Council recognised that there would be a need to review the plan from time to time in the light of experience gained and of improved scientific information. The representative of the European Union indicated that although he could not make a legally binding commitment with regard to implementation of the provisions of the Plan, the European Union Member States are fully prepared to work towards implementation of the Plan. The Council agreed that at its Nineteenth Annual Meeting the Contracting Parties would report back on the steps taken to develop and implement habitat protection and restoration plans as envisaged in the NASCO Plan of Action. A Special Session on Habitat Protection and Restoration would be held for this purpose. The Secretary was asked to develop proposals for the presentations by the Parties so as to lead to some standardisation of the presentations.

(b) Implications of socio-economic issues for application of the Precautionary Approach

The Council decided to ask the SCPA to take this issue forward by:

(i) asking each Party to provide to the Secretariat, by mid-January 2002, what information it had available on socio-economic issues relating to salmon conservation;

(ii) requesting four Parties (Canada, the European Union, Norway and the USA) to provide to the Secretariat, by mid-January 2002, possible frameworks that would assist the Council in considering socio-economic factors in applying the Precautionary Approach. Contributions by other Parties would also be welcome;

(iii) asking the Secretariat to attempt to summarise the documents in (i) and (ii) above in order to assist the SCPA to develop Terms of Reference for a future meeting of the SCPA on how socio-economic factors can be considered in applying the Precautionary Approach.

The work identified in (iii) above would best be carried out by the SCPA when it next meets in March 2002 (see 5.2(d) below) and it would be valuable to have some socio-economic expertise at that meeting.

(c) Review of Progress in Applying the Decision Structure for Management of Salmon Fisheries

The Parties reported to the Council on progress in implementing the decision structure for management of salmon fisheries, adopted on a provisional basis at the Council's Seventeenth Annual Meeting. Papers were tabled by Canada, CNL(01)55, Denmark (in respect of the Faroe Islands and Greenland), CNL(01)56, the European Union, CNL(01)41, Norway, CNL(01)57, the Russian Federation, CNL(01)58, and the United States of America, CNL(01)59. The Council had previously agreed that the SCPA should undertake a thorough evaluation of the decision structure at a meeting in 2002.

The Council decided that a more detailed evaluation and development of the decision structure should be carried out by the SCPA when it next meets in March 2002 (see 5.2(d) below).

(d) *Future Actions in Relation to Application of the Precautionary Approach to Salmon Management*

The Council considered a possible schedule of meetings for future actions in relation to application of the Precautionary Approach. The Council agreed to hold a meeting of the SCPA, which would be chaired by the President, during 11-13 March 2002 in Vancouver, Canada, immediately before the joint meeting with NPAFC and IBSFC. This SCPA meeting should:

(a) carry out the tasks in 5.2(b) above;
(b) carry out the task in 5.2(c) above;
(c) develop draft Terms of Reference for a meeting of the SCPA on the application of the Precautionary Approach to introductions and transfers, aquaculture and transgenics.

In regard to (c) it would be valuable to have ideas from the Parties by mid-January 2002. The SCPA would draft Terms of Reference which could then be discussed with industry at the Liaison Group Meeting to be held the following month and then brought forward to the 2002 Council Meeting. It is the Council's intention to hold the SCPA meeting on this subject so that a report could be made to the Council in 2003.

5.3 **Unreported Catches**

(a) Returns by the Parties

The Secretary introduced document CNL(01)19 (Annex 17) summarising the returns by the Parties. These returns indicate that despite best efforts by all Parties to obtain detailed and accurate catch statistics, in 2000 unreported catches were estimated to be between 1,057-1,437 tonnes compared to a total reported catch of 2,814 tonnes. At the time of preparation of the document, no estimate of unreported catch had been available for the European Union (Northern Ireland). The representative of the European Union advised the Council that for 2000 this estimate was 8 tonnes. The total estimate was, therefore, 1,065-1,445 tonnes.

The representative of Canada indicated that action had been taken to reduce unreported catches in 2000 through directed monitoring and enforcement efforts, particularly in Labrador.

The Council welcomed the information contained in document CNL(01)19 which presented the information in a transparent manner. The Council noted the advice from ICES which indicated that the proportion of the total catch which was unreported had decreased slightly in 2000. The Council welcomed the progress and emphasised the need to take further measures to minimise the level of unreported catches.

(b) FAO International Plan of Action on Illegal, Unreported and Unregulated fishing

The Council considered an International Plan of Action on Illegal, Unreported and Unregulated Fishing, CNL(01)20, approved by consensus at the Twenty-fourth Session of the FAO Committee on Fisheries. The Council recognised that NASCO was already taking action consistent with the International Plan of Action and agreed that the document should, following minor amendments, be sent to FAO so that it was aware of NASCO's actions.

5.4 **International Cooperative Research**

(a) Report of the Working Group on International Cooperative Research

At its Seventeenth Annual Meeting the Council had established a Working Group to develop ideas for a research programme to identify and explain the causes of increased marine mortality of Atlantic salmon and to examine the possibilities to counteract the mortality. The Working Group had also been asked to advise on possible sources of funding for the research programme and how to organise it, and to consider the issue of by-catch in pelagic fisheries. The Working Group had met in Oslo, Norway during 10-12 October 2000. The Chairman, Dr Lars Petter Hansen (Norway), presented the Working Group's report, CNL(01)21 (Annex 18). An updated table of current expenditure on research on salmon at sea, CNL(01)36, was presented which

indicated that current total expenditure for all North Atlantic countries on research on salmon at sea was approximately £1.2 million.

(b) Financial and administrative implications of the recommendations of the Working Group

The Secretary introduced document CNL(01)22 which summarises some of the financial and administrative implications of the Working Group's recommendations.

(c) Future actions in relation to International Cooperative Research

In the light of the Reports of the Working Groups on Cooperative Research, CNL(01)21 and CNL(01)63, the Council decided as follows:

(i) the Secretariat should establish administrative mechanisms to accept contributions, and establish an administrative framework to provide funding for projects.

(ii) a Board nominated by the Heads of Delegations should be established by the end of June 2001. The Board should comprise one member from each NASCO Party assisted, as appropriate, by another representative. The Board should direct and coordinate the research programme further to guidance provided in CNL(01)63.

(iii) the Secretariat, on behalf of the Board, should compile an inventory of all on-going or scheduled marine salmon research which Contracting Parties plan to carry out on the high seas or estuarine areas during 2002, 2003, and 2004. With the assistance of the Standing Scientific Committee, the Board should review this inventory and advise members on areas of potential co-operative research and compile priorities for marine research for the next three years. The Standing Scientific Committee should also take account of the research programmes identified in CNL(01)21. The inventory should be available to NASCO and its Contracting Parties by September 15, 2001.

(iv) in consultation with the Standing Scientific Committee, the Board should define project terms and conditions for funding eligibility and, at such time as funds become available, solicit, evaluate and approve project proposals. Priority should be assigned to projects designed to improve the understanding of marine distribution and migration of salmon from smolts to adults. The Board should find appropriate ways to limit the number of project proposals, and encourage the submission of larger cooperative proposals.

(v) the Board could meet at the ICES Annual Science Conference in September but if this is not possible it should meet no later than December 2001.

5.5 Scientific Research Fishing in the Convention Area

Notifications of proposals to conduct scientific research fishing in 2001 and 2002 were tabled by Canada, CNL(01)39, and the USA, CNL(01)45, respectively. The Council approved these proposals.

5.6 By-catch of Atlantic Salmon

At its Fourteenth Annual Meeting the attention of the Council was drawn to the enormous growth of fishing for pelagic species of fish in the North-East Atlantic Commission area, principally for herring and mackerel in ICES Division IIa. The concern had been raised that, even if a very small percentage of the catch in these fisheries is salmon post-smolts, the losses could be significant. New information provided by ICES (see CNL(01)11) based on special fishing experiments for post-smolts conducted in the Norwegian Sea indicated that catches were high and were a concern with respect to the impact of the mackerel fishery in this area.

The representative of Denmark (in respect of the Faroe Islands and Greenland) stressed that there was a need to obtain an estimate, based on available scientific information, of the scale of by-catch in the trawl fishery for mackerel.

The representative of the European Union presented document CNL(01)38 concerning information on surface tuna fisheries operating in European waters and international waters. On the basis of various sources of information it was concluded that surface fisheries for albacore tuna probably do not pose a threat to salmon stocks.

The question of whether the mackerel fishery poses a threat should be referred to the Board described in 5.4(c).

5.7 Fishing for Salmon in International Waters by Non-Contracting Parties

The Secretary presented a report, CNL(01)23, describing actions taken in relation to the Resolution on Fishing for Salmon on the High Seas. There have been no sightings since February 1994 but there have been few surveillance flights over the winter and spring period. The Secretary will continue to liaise with the Northwest Atlantic Fisheries Organization (NAFO) and the North-East Atlantic Fisheries Commission (NEAFC) with a view to obtaining relevant information on sightings.

5.8 Impacts of Aquaculture on Wild Salmon Stocks

(a) Special Liaison Meeting to Review Measures to Minimise Impacts of Aquaculture on the Wild Stocks

The Council held a Special Liaison Meeting at which there were presentations by the Faroe Islands, Iceland and the USA on the measures taken to minimise the impacts of salmon aquaculture on the wild stocks. A report of the Special Liaison Meeting will be prepared by the Secretariat and distributed to delegates prior to the Nineteenth Annual Meeting. The Council asked that the reports from the three Special Liaison Meetings be collated together in a single report.

The Council decided that in view of the decision to hold Special Liaison Meetings on habitat protection and restoration (see paragraph 5.2(a)) it would not hold further Special Liaison Meetings to Review Measures to Minimize Impacts of Aquaculture on Wild Stocks for the time being. However, these measures would continue to be reviewed by NASCO and by the NASCO/North Atlantic Salmon Farming Industry Liaison Group.

(b) Report of the 2000 Special Liaison Meeting

A report of the 2000 Special Liaison Meeting at which there had been presentations by the European Union and its Member States will be distributed by the Secretariat following the annual meeting. The Council had previously agreed that the reports of the Special Liaison Meetings should be made available to the Liaison Group.

(c) Returns made in Accordance with the Oslo Resolution

The Secretary presented a report, CNL(01)26 (Annex 19), on the returns made in accordance with Article 5 of the Oslo Resolution. At its Seventeenth Annual Meeting the Council had agreed that for subsequent returns it wished only to be advised of new measures. The Council welcomed the considerably shortened format of the report. Full information on the returns made since 1998 is available in a database which has been established by the Secretariat. The Secretary reported that there was no return from some European Union Member States which may have salmon aquaculture. The European Union agreed to seek full returns from these Member States.

(d) Liaison with the Salmon Farming Industry

The Chairman, Mr Andrew Thomson (European Union), presented a report, CNL(01)27 (Annex 20), of the second meeting of the Liaison Group between NASCO and the North Atlantic Salmon Farming Industry, held in Ottawa on 5 and 6 February 2001. The Council welcomed this closer, more open and broader cooperation with the salmon farming industry and the commitment to work together on issues of mutual concern. A Constitution to guide the Group's work had been agreed at the first meeting and had been accepted by NASCO at its Seventeenth Annual Meeting. At the second Liaison Group Meeting the salmon farming industry had confirmed that they could also accept the Constitution. The Council agreed:

- that the Guiding Principles for Cooperation between NASCO and its Contracting Parties and the North Atlantic Salmon Farming Industry were acceptable to NASCO;
- that the Chairman and Rapporteur of the Liaison Group be invited to attend future NASCO meetings so as to contribute to the relevant agenda item where a report is made on the work of the Liaison Group;
- to the proposal to establish a Committee on future cooperation, to be called the Salmon Cooperation Group, to further explore the options

for enhanced cooperation between wild and farmed salmon interests. The proposals developed by the Liaison Group for the initial work of this Committee were acceptable to the Council;

- to hold a third meeting of the Liaison Group in Galway, Ireland on 8-9 April 2002.

(e) Development of Guidelines on Containment of Farm Salmon

At its Seventeenth Annual Meeting the Council had considered Draft Guidelines on Containment of Farm Salmon developed through the Liaison Group. While the Council had welcomed this development it had recognised the need to include elements on monitoring, control and enforcement, and a requirement to adopt improved technology as this becomes available.

At its second meeting the Liaison Group had developed revised draft Guidelines on Containment of Farm Salmon, CNL(01)28. Under these guidelines each jurisdiction should draw up a national action plan or regional plans at the earliest opportunity based on the guidelines. The Council agreed the Guidelines on Containment of Farm Salmon, CNL(01)53 (Annex 21), and stressed that these would need to be renewed and updated on a regular basis to take account of new technology and better information on impacts on wild stocks. The Council recognised that these elements are included in the guidelines and asked that the Liaison Group monitor the development of the action plans and their implementation and advise the Council of progress on an annual basis.

5.9 **Transgenic Salmon**

At its Fourteenth Annual Meeting the Council had expressed concern about the risks posed by transgenic salmon and had adopted NASCO Guidelines for Action on Transgenic Salmon, designed to prevent impacts on the wild stocks. Under these guidelines the Parties agree to advise the Council of any proposal to permit the rearing of transgenic salmonids, providing details of the proposed method of containment and other measures to safeguard the wild stocks. Last year Canada had advised the Council that a company located in Eastern Canada is currently producing transgenic Atlantic salmon and rainbow trout broodstock in a secure land-based facility. The representative of the USA had informed the Council of preliminary discussions between a company and the US Food and Drug Administration.

The Secretary reported, CNL(01)29, that following the Seventeenth Annual Meeting he and the President had visited the Aqua Bounty facility on Prince Edward Island. The company believed that much of the commercial production of transgenic salmon would be conducted in sea cages after the fish had been rendered sterile. The Council noted that such an approach would not be consistent with its guidelines.

The US committed to alert the President and Secretary when there was a possibility to make NASCO's views on this matter known to the relevant US authorities.

The Parties all reported that they supported the present NASCO guidelines in document CNL(97)48. It was noted that these do not necessarily have legal force but there was nevertheless a commitment to them.

The Council had previously agreed that when the Standing Committee on the Precautionary Approach considers the issue of introductions and transfers, it should also consider how the Precautionary Approach would apply to transgenic salmon. The Council also agreed that there might be benefits from a Special Session on transgenic salmon at a future meeting.

5.10 **St Pierre and Miquelon Salmon Fisheries**

Last year, the Council had adopted a Resolution Concerning St Pierre and Miquelon. In accordance with the Resolution the President was asked to communicate through appropriate diplomatic channels to convey NASCO's concerns over the level of salmon harvests in St Pierre and Miquelon in 1998 and 1999, to urge France in respect of St Pierre and Miquelon to immediately set harvest limits for the 2000 salmon fishery at the lowest possible level consistent with advice provided by ICES, and to request that information on the measures taken be made available to NASCO at its 2001 Annual Meeting. The Council had also agreed that when the Resolution is transmitted to France (in respect of St Pierre and Miquelon) by the President, France (in respect of St Pierre and Miquelon) should be invited to attend the Eighteenth Annual Meeting of NASCO, as an observer, to report on measures taken. It had been further agreed that the issue of whether to invite France (in respect of St Pierre and Miquelon) to become a Contracting Party to NASCO should be considered by the Council at its Eighteenth Annual Meeting.

The Secretary reported, CNL(01)30, on the progress since the Resolution was transmitted by the President to the Ambassador for France in London. Canada and the USA had also raised concerns with France about the fishery at St Pierre and Miquelon. A response to the points raised in the Resolution had been received by the Secretary prior to the Eighteenth Annual Meeting and was distributed, CNL(01)37 (Annex 22).

The representative of the US suggested that he would propose to the St Pierre and Miquelon authorities a US-funded sampling programme, perhaps with Canadian collaboration, to determine the origin of the wild salmon in the catch. The Council supported this proposal as a useful first step in dealing with this matter. The Council also agreed that France (in respect of St Pierre and Miquelon) should continue to be invited to attend NASCO's Annual Meetings in an observer capacity.

5.11 **Predator-related Mortality**

The President reported that he viewed this as a matter of some concern for salmon conservation. The representative of the European Union tabled a paper, CNL(01)61 (Annex 23), on control of seals as predators of salmon in the European Union. Verbal reports were given by the other Parties on the management of seal populations. There was also a contribution, CNL(01)70, from one of NASCO's NGOs. The President commended this paper to the Council as containing some valuable information and ideas. The Council agreed to consider holding a Special Session on predator-related

mortality of salmon at a future meeting. The Council asked the Secretariat to compile information on predator-related mortality of salmon for presentation to the Council on an annual basis.

5.12 **Reports on Conservation Measures Taken by the Three Regional Commissions**

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

6. Other Business

6.1 The President stated that NASCO had been at the forefront among inter-governmental fishery organizations on a number of issues, including application of the Precautionary Approach. He referred to the procedures of other inter-governmental organizations with regard to communication and participation in their meetings. He proposed that the Secretary review these procedures and report back to the Council at its next annual meeting.

7. Date and Place of Next Meeting

7.1 The Council accepted an invitation to hold its Nineteenth Annual Meeting in Torshavn, Faroe Islands, during 3-7 June 2002.

7.2 The Council agreed to hold its Twentieth Annual Meeting from 2-6 June 2003, either in Edinburgh or elsewhere at the invitation of a Party. The representative of Denmark (in respect of the Faroe Islands and Greenland) suggested that his delegation would find it helpful if the 2003 and subsequent meetings could be held later in the month of June. The President asked the other Parties to consider if this would be convenient for them also. A decision will be made at, or before, the next annual meeting.

8. Report of the Meeting

8.1 The Council agreed the report of the meeting, CNL(01)67.

9. Press Release

9.1 The Council adopted a press release, CNL(01)65 (Annex 24).

NOTE: A list of all Council papers is contained in Annex 25. The annexes mentioned above begin on page 31, following the French translation of the report of the meeting.

CNL(01)67

Compte rendu de la Dix-huitième réunion annuelle du Conseil 4-8 juin 2001, Mondariz, Galice, Espagne

1. Séance d'ouverture

1.1 Le Président, M. Jacque Robichaud, a ouvert la conférence et présenté M. Tomas Fernandez-Couto Juanas, Directeur Général du Service de l'Environnement naturel et des Forêts du Gouvernement autonome de Galice. Ce dernier a souhaité aux délégués la bienvenue à Mondariz (annexe 1).

1.2 Le Président a prononcé une déclaration d'ouverture portant sur le travail de l'Organisation (annexe 2).

1.3 Les représentants du Canada, du Danemark (pour les Îles Féroé et le Groenland), de l'Union européenne, de l'Islande, de la Norvège, de la Fédération de Russie et des Etats-Unis d'Amérique ont prononcé leur déclaration d'ouverture (annexe 3).

1.4 La Commission Internationale des Pêches de la mer Baltique (CIPMB), la Commission pour les mammifères marins de l'Atlantique Nord (CMMAN) ainsi que la Commission des Poissons Anadromes du Pacifique Nord (CPAPN) ont chacune prononcé leur déclaration d'ouverture (annexe 4).

1.5 Cinq déclarations d'ouverture ont été prononcées conjointement au nom de l'ensemble des organisations non gouvernementales. Une déclaration commune a été faite au nom de quatorze des organisations présentes à la réunion. A celle-ci est venu s'ajouter la déclaration d'ouverture des organisations ci-dessous :

Le WWF (US), l'Association nationale représentant les pêcheurs à la ligne et la Fédération des pêcheurs à la ligne de saumons et de truites de mer d'Irlande. Les déclarations figurent à l'annexe 5.

1.6 Le Président a exprimé sa reconnaissance aux Parties et aux organisations présentes en tant qu'observateurs pour leurs déclarations et a clos la séance d'ouverture.

1.7 Une liste des participants figure en annexe 6.

2. Adoption de l'ordre du jour

2.1 Le Conseil a adopté l'ordre du jour CNL(01)47 (annexe 7).

3. Questions administratives

3.1 Rapport du Secrétaire

Le Secrétaire a rendu compte au Conseil, de par son rapport CNL(01)5, des questions suivantes : état d'avancement des ratifications et des adhésions à la Convention, nombre des adhérents aux Commissions régionales, observateurs aux réunions de

l'OCSAN, progrès réalisés quant à l'organisation d'une réunion commune avec la CPAPN et la CIPMB, progrès réalisés également quant à l'organisation éventuelle d'une réunion commune de l'ensemble des Commissions des Pêcheries Nord Atlantique, vingt-quatrième réunion du Comité des Pêches de la FAO (OAA), site Web de l'OCSAN, programme d'encouragement au retour des marques, état financier de l'Organisation, nouveaux textes fondamentaux et manuel des Résolutions, Accords et Orientations de l'OCSAN. Conformément au règlement financier 5.5, le Secrétaire a dressé un rapport sur les contributions reçues pour 2001. Les Parties avaient toutes versé leur contributions et il n'y avait aucun arriéré.

Depuis la dernière réunion annuelle, Greenpeace International avait obtenu le statut d'observateur.

Lors de la Dix-septième réunion annuelle, le Conseil avait convenu de tenir la réunion commune faisant intervenir l'OCSAN, la CPAPN et la CIPMB en mars 2002. Les consultations qui eurent lieu avec ces deux derniers organismes ont abouti à l'élaboration d'un cadre pour la réunion. Cette réunion devrait porter principalement sur les facteurs qui affectent la survie en mer des saumons, dans les océans du Pacifique Nord et Atlantique Nord ainsi que dans la mer Baltique. Elle se composerait de séances consacrées au statut des stocks de saumons et à celui de la pêche. A ceci viendraient s'ajouter des séances portant sur les facteurs liés à l'augmentation de la mortalité marine (tels que les changements climatiques ; l'élevage de poissons, la mise en valeur et le pacage ; la prédation et concurrence ; la migration et les zones océaniques de reproduction). Le Conseil a convenu de donner suite à ce projet de réunion. Celle-ci aura lieu au Canada du 14 au 15 mars 2002. Le Comité scientifique permanent a suggéré une liste d'intervenants ainsi que quelques modifications au cadre de la réunion. Le Secrétaire a été prié de travailler en liaison avec les CPAPN et CIPMB pour finaliser les préparatifs de la réunion.

Le Conseil avait déjà reconnu qu'une réunion commune avec l'ensemble des Commissions chargées de la pêche dans l'Atlantique Nord (soit l'OCSAN, la CICTA, la CPANE et l'OPANO) pourrait s'avérer fructueuse en ce qui concernait les questions d'intérêt commun telles que l'approche préventive, les programmes de contrôle et d'application et la collecte des données. Le Secrétaire a indiqué qu'en raison d'obligations diverses, il n'avait pas été possible de faire progresser les arrangements depuis la dernière réunion annuelle. Le Conseil a prié le Secrétaire de bien vouloir travailler en liaison avec les autres organisations sur un ordre du jour qui pourrait alors être examiné par le Conseil lors de la prochaine réunion annuelle. Compte tenu des autres obligations de l'OCSAN en 2002, en termes de réunions, il fut par ailleurs proposé que cette réunion commune soit repoussée à 2003.

Le Conseil a noté avec intérêt la décision prise par le Comité de la FAO visant à établir un sous-comité chargé de l'aquaculture et s'est enquis auprès du Secrétaire pour en connaître les progrès. Il fut par ailleurs convenu que ce Comité serait tenu au courant du travail de l'OCSAN en ce qui concernait l'aquaculture du saumon. Le Secrétaire fut prié de bien vouloir informer régulièrement le Conseil de toute question examinée au sein de la FAO qui serait pertinente à l'OCSAN.

3.2 Rapport de la Commission financière et administrative

Le Président de la Commission financière et administrative, M. Steinar Hermansen (Norvège), a présenté le rapport de la Commission, CNL(01)6. Suite aux recommandations de celle-ci, le Conseil a pris les décisions suivantes :

(a) accepter la déclaration financière révisée de 2000, FAC(01)2 ;

(b) adopter un budget pour 2002 et prendre acte du budget prévisionnel pour 2003, CNL(01)48 (annexe 8) ;

(c) nommer, soit PricewaterhouseCoopers d'Edimbourg, vérificateur des comptes pour l'an 2001, ou toute autre société recevant l'approbation du Secrétaire après consultation du Président de la Commission financière et administrative ;

(d) créer, conformément au règlement financier 6.1, un fonds spécial intitulé « Fonds destiné au personnel de l'OCSAN », CNL(01)49 (annexe 9) ;

(e) adopter des orientations concernant l'acceptation éventuelle des contributions volontaires versées par les Parties non signataires, CNL(01)50 (annexe 10). Le Conseil a décidé que la question de savoir si l'on accepterait ou pas les contributions volontaires serait examinée sous le point 5.4 de l'ordre du jour ;

(f) adopter le rapport de la Commission financière et administrative.

Le Président a remercié M. Hermansen de son excellent travail et de celui de la Commission.

3.3 Méthodes de calcul des contributions à l'OCSAN

Lors de la Dix-septième réunion annuelle, le Conseil avait demandé au Secrétaire de préparer une série de différents scénarios, dont un faisant intervenir des prises très basses et un autre une haute proportion de captures avec remise à l'eau des prises. Ces scénarios serviraient à calculer les contributions. Les calculs pourraient aussi inclure des exemples spécifiques de ce qui pourrait se passer si l'on modifiait les proportions de la Convention, fixes et liées aux prises. Le Conseil a examiné le document CNL(01)7 dont la conclusion était qu'il existait un nombre infini de possibilités, certaines faisant intervenir une modification de la Convention et d'autres une redéfinition éventuelle de l'expression « captures nominales ». Le Conseil a pris acte de ces différents scénarios et a convenu que, pour l'instant, aucune modification ne serait apportée à la méthode employée pour calculer le niveau des contributions à l'OCSAN. La question resterait cependant ouverte, et pourrait être réexaminée dans le contexte d'une évolution de la situation telle qu'une augmentation des captures de saumons avec remise à l'eau des prises.

3.4 Nouvel examen des rapports de l'OCSAN avec ses observateurs

Au cours de la Dix-septième réunion annuelle, le Conseil avait de nouveau examiné les rapports qu'il entretenait avec les organisations admises en tant qu'observateurs. Le Conseil en avait conclu que la participation des observateurs aux réunions de l'OCSAN s'était avérée d'un profit mutuel et qu'elle avait amélioré la transparence de la coopération internationale pour ce qui est de la conservation et gestion du saumon. Pour continuer l'étude de la question en 2001 comme le Conseil en avait convenu, le Secrétaire a présenté le document CNL(01)8. Suite à la Dix-septième réunion annuelle, les ONG avait proposé que deux de leurs représentants soient nommés en tant que porte-parole ; l'intention étant que ceux-ci pourraient être invités par le Président, ou Président de la Commission concernée, à présenter l'opinion des ONG sur des points particuliers de l'ordre du jour. En outre, les ONG avaient demandé à être autorisées à prononcer une déclaration commune lors de la séance d'ouverture des réunions des Commissions. Le Secrétaire a alors annoncé que la question d'admettre les organisations aquacoles au même titre que les ONG lui présentait quelques difficultés ainsi qu'au Président. Il était en effet peu probable que l'objectif de ces organisations soient de préserver les stocks sauvages. Les conditions auxquelles étaient soumises les ONG, précisaient que toute organisation faisant une demande de statut d'observateur en tant qu'ONG devait avoir des objectifs compatibles avec ceux de l'OCSAN, c.à.d. la conservation, restauration, mise en valeur et gestion rationnelle des stocks de saumons.

Le Conseil a décidé que, bien qu'il ne puisse pas accepter d'interventions de la part des ONG concernant les points de l'ordre du jour du Conseil, il acceptait toutefois la proposition d'une déclaration commune de 5 minutes prononcée lors de la séance d'ouverture des réunions des différentes Commissions. Le Conseil n'accepterait toutefois de débattre à nouveau cette question des déclarations d'ONG sur un accord consensuel, qu'après avoir testé plus longuement les nouvelles dispositions.

En ce qui concernait l'admission des organisations aquacoles au même titre que les ONG, le Conseil a convenu que le mécanisme instauré par le Groupe de liaison était plus approprié pour ce secteur. Ceci demeurerait donc la clé de l'avenir.

3.5 Rapports sur les activités de l'Organisation

Le Conseil a adopté le rapport sur les activités de 2000 de l'Organisation, CNL(01)9, adressé aux Parties conformément à l'article 5, paragraphe 6 de la Convention. Le Conseil a convenu qu'un rapport bisannuel portant sur la période 2000/2001 serait publié et que le contenu de ce rapport serait accepté par correspondance par les Chefs de délégations à la suite de la réunion annuelle.

3.6 Annonce du gagnant du Grand Prix du Programme d'encouragement au retour des marques

Le Président a annoncé que le tirage au sort du Programme avait été effectué par le Commissaire aux Comptes, au siège de l'OCSAN, le 18 mai. Le gagnant du Grand Prix de 2 500 $ est M. Magnar Ernes, d'Eresfjord, en Norvège. Le Conseil a offert ses félicitations au gagnant.

4. Questions scientifiques, techniques, juridiques et autres

4.1 Recommandations scientifiques du CIEM

Le représentant du CIEM a présenté au Conseil le rapport du Comité Consultatif sur la Gestion des Pêcheries (CCGP), CNL(01)11 (annexe 11). Seule, les recommandations concernant les questions d'intérêt général pertinentes à l'Atlantique Nord sont annexées à ce compte rendu. Se reporter aux comptes rendus des Commissions, pour le détail des recommandations les interessants.

4.2 Compte rendu du Comité scientifique permanent

Le Président du Comité a présenté une demande provisoire de recommandations scientifiques au CIEM. Fort de cet avis, le Conseil a adopté une demande de recommandations scientifiques au CIEM, CNL(01)66 (annexe 12).

Le représentant de l'Union Européenne a prononcé la déclaration suivante :

« L'adoption de l'approche préventive exige, *inter alia*, que les stocks soient maintenus au delà des limites de conservation. L'OCSAN a suggéré que ceci était possible dans la mesure où des cibles de gestion étaient fixées. Ceci ne correspond toutefois pas avec l'approche employée ces dernières années pour fixer le quota du Groenland occidental. Le CIEM a également fait remarquer qu'il semblerait y avoir des inconsistances dans la façon dont les points de référence biologique étaient appliqués au saumon. Il incombe cependant entièrement à l'OCSAN de déterminer comment progresser sur cette question. Nous pensons vraiment que l'OCSAN devrait beaucoup plus tenir compte des incertitudes présentes dans les recommandations scientifiques lors de la définition des mesures de gestion. Nous sommes toutefois conscients que le CIEM a besoin de nos remarques avant de pouvoir formuler ses recommandations. Il incombe, par exemple, à l'OCSAN de décider laquelle des approches proposées par le CIEM suivre si l'on veut tenir compte des incertitudes et quels niveaux de risques devraient être adoptés. »

4.3 Statistiques de capture et analyse

Le Secrétaire a présenté un document statistique portant sur les déclarations de captures officielles effectuées par les Parties en 2000, CNL(01)13 (annexe 13), et sur les données historiques pour la période 1960-2000, CNL(01)14. Les statistiques de 2000 sont provisoires et seront mises à jour par les Parties.

4.4 Revue des publications internationales portant sur le saumon publiées en 2000

Le Conseil a pris acte d'une revue d'ouvrages portant sur le saumon atlantique publiés en 2000, CNL(01)15. Ce document avait été rédigé conformément à l'article 13, paragraphe 2 de la Convention.

5. Conservation, restauration, mise en valeur et gestion rationnelle des stocks de saumons

5.1 Mesures prises au titre des articles 14 et 15 de la Convention

Le Secrétaire a présenté un compte rendu sur les renvois effectués au terme des articles 14 et 15 de la Convention, CNL(01)16 (annexe 14). Le représentant des Etats-Unis a expliqué ce qu'impliquait la décision d'ajouter le segment de population du saumon atlantique du Maine à la liste des espèces en danger régie par la loi. L'Acte de loi définit une espèce en danger comme étant « en danger d'extinction sur toute ou sur une importante portion de sa distribution ». La loi exige également qu'aucune des agences fédérales n'omette de contacter les services appropriés en vue d'assurer que toute action autorisée, sponsorisée ou entreprise par n'importe laquelle de ces agences fédérales ne présente aucun danger pour le saumon figurant sur la liste. Selon la loi, il est illégal de « prendre » une des espèces listées. Il est également requis de formuler un programme de rétablissement visant à restituer l'abondance de l'espèce en danger.

5.2 L'approche préventive dans le cadre de la gestion du saumon

(a) Rapport du Comité permanent de l'approche préventive portant sur l'application d'une approche préventive à la protection et restauration de l'habitat

Le Comité permanent chargé de la question de l'approche préventive (CPAP), établi en 1999 conformément au Programme d'actions du Conseil afin de faciliter la mise en place d'une approche préventive, a tenu sa seconde réunion à Ottawa au Canada du 7 au 9 février 2001. La réunion, présidée par le Dr. Andrew Rosenberg, portait sur l'application de l'approche préventive à la protection et restauration de l'habitat. Le Secrétaire a présenté le rapport du Comité, CNL(01)17 (annexe 15). Le Comité avait reconnu que l'une des difficultés à appliquer l'approche préventive à la protection et restauration de l'habitat du saumon résidait dans le nombre de Parties intéressées. Il importait par conséquent de concevoir un outil qui permettrait l'application de l'approche préventive à un contexte politique plus complexe que celui de la gestion des pêcheries. Le Comité avait préparé un projet de programme d'actions OCSAN pour l'application de l'approche préventive à la protection et restauration de l'habitat du saumon atlantique. Ce programme d'actions fixait des principes-guides, notamment l'objectif de maintenir et, dans la mesure du possible, d'accroître la capacité de l'habitat du saumon atlantique à favoriser la reproduction. Les principes-guides exigeaient également de chacune des Parties signataires qu'elles mettent sur pied des programmes compréhensifs visant à protéger et restaurer l'habitat du saumon. Le programme d'actions proposé engageait également l'OCSAN, ses Parties signataires et leurs juridictions appropriées à mesurer et comparer les progrès réalisés pour atteindre l'objectif du programme d'actions. Ceci s'effectuerait en établissant, *inter alia,* des inventaires de rivières et en les diffusant et mettant à jour régulièrement.

Le Conseil a adopté le Programme d'actions OCSAN visant à faciliter l'application de l'approche préventive à la protection et restauration de l'habitat du saumon atlantique, CNL(01)51 (annexe 16). Le Conseil a accepté qu'il serait nécessaire de réviser ce programme de temps en temps, à la lumière des expériences acquises et de l'amélioration des informations scientifiques disponibles. Le représentant de l'Union européenne a indiqué que bien qu'il ne soit pas en mesure de s'engager légalement en ce qui concernait la mise en place des provisions du Programme, les Etats membres de l' Union européenne étaient entièrement disposés à faire tout leur possible pour que le Programme soit mis en application. Le Conseil a convenu de demander aux Parties signataires de dresser, au cours de la Dix-neuvième réunion annuelle, un rapport sur les mesures prises pour élaborer et mettre en application des programmes de protection et de restauration d'habitat dans leur pays réciproque, tel que le conçoit le Programme d'actions de l'OCSAN. Une séance spéciale sur le sujet de protection et de restauration de l'habitat serait organisée à cet effet. Le Secrétaire fut invité à préparer des suggestions quant à la façon dont les informations seraient présentées par les Parties, l'intention étant de standardiser au mieux les présentations.

(b) Implications des questions d'ordre socio-économique sur l'application de l'approche préventive

Le Conseil a décidé de demander au CPAP de faire progresser cette question en :

(i) invitant chaque Partie à fournir au Secrétariat, d'ici la mi-janvier 2002, toute information disponible sur les questions d'ordre socio-économiques liées à la conservation du saumon ;

(ii) demandant à quatre Parties (Canada, Union européenne, Norvège et Etats-Unis) de fournir au Secrétariat, d'ici la mi-janvier 2002, des propositions de cadre qui permettraient au Conseil de tenir compte des facteurs socio-économiques lors de la mise en application de l'approche préventive. Toutes autres contributions par les autres Parties seraient également bienvenues ;

(iii) définissant des mandats pour sa prochaine réunion ; réunion qui portera sur les facteurs socio-économiques et comment les prendre en considération dans le contexte de la mise en application de l'approche préventive. Le Secrétariat tentera de résumer les documents mentionnés sous (i) et (ii) ci-dessus afin d'aider le CPAP dans sa tâche.

Il serait préférable que le travail du CPAP, défini sous le point (iii) ci-dessus soit entrepris au cours de sa prochaine réunion en mars 2002 (voir 5.2(d) ci-dessous). Il serait également utile que des experts en matière de questions socio-économiques soient présents à cette réunion.

(c) Analyse des progrès réalisés dans l'application de la Structure de décisions à prendre dans le cadre de la gestion des pêcheries de saumons

Les Parties ont informé le Conseil des progrès réalisés dans la mise en application de la Structure de décisions à prendre dans le cadre de la gestion des pêcheries de saumons, adoptée provisoirement lors de la Dix-septième réunion annuelle du Conseil. Des documents furent soumis par le Canada, CNL(01)55, le Danemark (pour les Îles Féroé et le Groenland), CNL(01)56, l'Union européenne, CNL(01)41, la Norvège, CNL(01)57, la Fédération de Russie, CNL(01)58, et les Etats-Unis d'Amérique, CNL(01)59. Le Conseil avait déjà convenu que le CPAP entreprendrait une évaluation approfondie de la Structure de décisions lors d'une réunion en 2002.

Le Conseil a ainsi décidé que le CPAP entreprendrait une évaluation plus minutieuse et un développement plus détaillé de la Structure de décisions lors de sa réunion de mars 2002 (voir 5.2(d) ci-dessous).

(d) *Mesures à prendre à l'avenir dans le cadre de l'application de l'approche préventive à la gestion du saumon*

Le Conseil a étudié un programme provisoire de réunions visant à fixer les mesures à prendre à l'avenir dans le cadre de l'application de l'approche préventive. Le Conseil a convenu de tenir une réunion du CPAP, présidée par le Président, du 11 au 13 mars 2002 à Vancouver au Canada, juste avant la réunion commune avec la CPAPN et la CIPMB. Cette réunion du CPAP aurait pour but de :

(a) remplir les tâches mentionnées au point 5.2(b) ci-dessus ;
(b) remplir la tâche mentionnée au point 5.2(c) ci-dessus ;
(c) définir des mandats préliminaires pour la réunion du CPAP qui traiterait de l'application de l'approche préventive aux introductions et transferts, à l'aquaculture et aux transgéniques.

En ce qui concernait le dernier point (c), il serait utile de recevoir des suggestions de la part des Parties d'ici la mi-janvier 2002. Le CPAP ébaucherait les mandats préliminaires à débattre avec les éleveurs lors de la réunion du groupe de liaison qui se tiendrait le mois suivant. Ces mandats préliminaires seraient ensuite proposés à la réunion du Conseil de 2002. Il était dans les intentions du Conseil de tenir une réunion du CPAP à ce sujet de façon à ce qu'un rapport puisse être présenté au Conseil en 2003.

5.3 **Captures non déclarées**

(a) Renvois par les Parties

Le Secrétaire a présenté le document CNL(01)19 (annexe 17) résumant les renvois effectués par les Parties. Malgré les plus grands efforts déployés par chacune des Parties pour obtenir des statistiques de captures détaillées et exactes, l'estimation des captures non déclarées en 2000 étaient de l'ordre de 1 057 à 1 437 tonnes. A titre de comparaison, le total des captures déclarées

s'élevait à 2 814 tonnes. Au moment de la préparation du document, aucune estimation du niveau de captures non déclarées n'avait été disponible pour l'Union européenne (Irlande du nord). Le représentant de l'Union Européenne a avisé le Conseil que l'évaluation pour 2000 était de 8 tonnes. L'estimation globale des captures non déclarées se situait donc entre 1 065 et 1 445 tonnes.

Le représentant du Canada a indiqué que des mesures avaient été prises pour réduire le niveau de captures non déclarées en 2000, dont un programme de surveillance ponctuelle et de mise à exécution, surtout au Labrador.

Le Conseil a accueilli favorablement les informations contenues dans le document CNL(01)19 qui présentait les faits avec transparence. Le Conseil a pris acte de l'avis du CIEM, à savoir que la proportion non déclarée de l'ensemble des captures avait légèrement baissé en l'an 2000. Ayant souhaité les progrès réalisés, le Conseil a néanmoins souligné la nécessité de prendre des mesures supplémentaires pour réduire au minimum le niveau des captures non déclarées.

(b) Programme d'actions international de la FAO (OAA) contre la pêche illégale, non déclarée et échappant au règlement

Le Conseil a étudié un Programme international d'initiatives contre la pêche illégale, non déclarée et échappant au règlement, CNL(01)20, approuvé par consensus lors de la Vingt-quatrième réunion du Comité des pêches de la FAO. Le Conseil a reconnu que l'OCSAN prenait déjà des mesures qui s'accordaient avec ce programme et a accepté que le document soit envoyé, après quelques ajustements, à la FAO de façon à ce que celle-ci soit consciente des démarches de l'OCSAN.

5.4 Coopération en matière de recherche internationale

(a) Rapport du groupe de travail portant sur la recherche internationale menée en coopération

Lors de sa Dix-septième réunion annuelle, le Conseil avait créé un groupe de travail dont le mandat était de suggérer un programme de recherche, d'identifier et d'expliquer les causes d'une augmentation de la mortalité du saumon atlantique en mer et d'examiner les différents moyens de contrer cette mortalité. Le Groupe de travail était également censé offrir ses recommandations quant aux différentes sources de financement du programme de recherche et quant à la manière d'organiser ce programme. A ceci s'ajoutait la question des captures accidentelles effectuées au cours de pêcheries pélagiques. Le Groupe de travail s'était rencontré à Oslo en Norvège du 10 au 12 Octobre 2000. Le Président, Dr Lars Petter Hansen (de Norvège) a présenté le rapport du Groupe de travail, CNL(01)21 (annexe 18). Un tableau, mis à jour, détaillait les dépenses actuelles engagées pour la recherche sur le saumon en mer, CNL(01)36. Il associait un coût total d'environ 1,2 million de livres sterling à la recherche sur le saumon en milieu marin, menée par l'ensemble des pays de l'Atlantique Nord.

(b) Implications financières et administratives des recommandations du Groupe de travail

Le Secrétaire a présenté le document CNL(01)22 qui résumait quelques unes des implications d'ordre financier et administratif des recommandations offertes par le Groupe de travail.

(c) Mesures à prendre à l'avenir quant à la recherche internationale menée en coopération

A la lumière des rapports des groupes de travail chargés de la question de recherche en coopération, CNL(01)21 et CNL(01)63, le Conseil a pris les décisions suivantes :

(i) le Secrétariat établira des mécanismes administratifs qui permettront de recevoir les contributions ainsi qu'un cadre administratif qui facilitera le financement des projets.

(ii) une Commission, nommée par les Chefs de délégations, sera mise en place d'ici la fin du mois de juin 2001. Cette Commission comprendra un membre de chacune des Parties de l'OCSAN, assisté, si nécessaire, par un autre représentant. Elle développera et assurera la coordination du programme de recherche selon les conseils donnés dans le document CNL(01)63.

(iii) au nom de la Commission, le Secrétariat produira un inventaire à partir de toutes les recherches courantes et futures portant sur le saumon en mer que les Parties signataires avaient l'intention de mener, en haute mer ou en estuaire, en 2002, 2003 et 2004. La Commission sera tenue de maintenir cet inventaire à jour, avec l'assistance du Comité scientifique permanent. La Commission avisera également les Parties signataires des aires ou une coopération serait possible en matière de recherche et établira la liste des priorités de recherche en milieu marin pour les trois prochaines années. Le Comité scientifique permanent devra, en l'occurrence, tenir compte des programmes de recherches, tels qu'ils ont été définis dans le document CNL(01)21. L'OCSAN et les Parties signataires devraient pouvoir avoir accès à cet inventaire d'ici le 15 septembre, 2001.

(iv) la Commission formulera, de pair avec le Comité scientifique permanent, les modalités de financement des projets. La Commission sollicitera, évaluera et donnera son approbation aux propositions de projet, dès que les fonds seront disponibles. Priorité sera donné aux projets conçus pour améliorer la compréhension de la distribution et migration marine du saumon à partir du stade de smolts jusqu'à celui de l'adulte. La Commission devra trouver un moyen de limiter le nombre de propositions de projets et d'encourager par ailleurs la soumission de propositions de coopération de grande envergure.

(v) la Commission se réunira lors de la Conférence scientifique annuelle du CIEM en septembre. Si cela s'avérait toutefois impossible, la date serait repoussée, au plus tard, au mois de décembre 2001.

5.5 Pêche à des fins de recherches scientifiques dans la zone de la Convention

Le Canada, CNL(01)39, et les Etats-Unis, CNL(01)45, ont notifié le Conseil de leur intention d'effectuer une pêche à des fins de recherches scientifiques en 2001 et 2002 respectivement. Le Conseil a accepté ces propositions.

5.6 Prises accidentelles de saumons

Lors de la Quatorzième réunion annuelle, l'attention du Conseil avait été attirée sur le fait que la pêche aux espèces pélagiques dans la zone de la Commission de l'Atlantique du Nord-Est avait énormément augmenté, surtout dans le cas du hareng et du maquereau dans la division IIa du CIEM. Le fait que les pertes en saumon pouvaient être considérables, même si les saumons post smolts ne représentaient qu'un faible pourcentage des captures dans ces pêcheries, avait en effet suscité des inquiétudes. De nouvelles informations fournies par le CIEM (voir CNL(01)11), ont été tirées des expériences menées spécifiquement sur la pêche de post-smolts en mer de Norvège. Celles-ci indiquaient que les prises étaient élevées et particulièrement inquiétantes en ce qui concernait l'impact de la pêche au maquereau dans cette zone.

Le représentant du Danemark (pour les Îles Féroé et le Groenland) a souligné la nécessité d'obtenir une estimation de l'étendue des prises accidentelles ayant lieu au cours de la pêche au chalut du maquereau, cette estimation devant reposer sur les toutes dernières informations scientifiques disponibles.

Le représentant de l'Union Européenne a présenté le document CNL(01)38 traitant de la pêche au thon effectuée en surface dans les eaux européennes et internationales. D'après les différentes sources d'information, il en fut conclut que la pêche en surface du thon albacore ne présentait probablement pas de danger pour les stocks de saumons.

La question de savoir si la pêche au maquereau représentait une menace devrait être renvoyé à la Commission, telle qu'elle était définie au point 5.4(c).

5.7 Pêche au saumon effectuée en eaux internationales par les Parties non signataires

Le Secrétaire a présenté le rapport CNL(01)23 décrivant les mesures prises dans le cadre de la Résolution sur la pêche au saumon en haute mer. Aucun navire n'avait été détecté depuis février 1994, mais il fallait noter qu'il n'y avait eu que peu de vols de surveillance au cours des périodes hivernale et printanière. Le Secrétaire maintiendra ses rapports avec l'OPANO et la CPANE en vue d'obtenir tous renseignements pertinents sur les détections.

5.8 **Effets nuisibles de l'aquaculture sur les stocks de saumons sauvages**

(a) Réunion spéciale de liaison visant à examiner les mesures prises en vue de minimiser les effets nuisibles de l'aquaculture sur les stocks de saumons sauvages

Le Conseil a tenu une réunion spéciale de liaison durant laquelle les Îles Féroé, l'Islande et les Etats-Unis avaient présenté des comptes rendus sur les mesures prises pour minimiser les effets de l'aquaculture du saumon sur les stocks sauvages. Un compte rendu de la réunion spéciale sera préparé par le Secrétariat et envoyé aux délégués avant la Dix-neuvième réunion annuelle. Le Conseil a demandé que les rapports des trois réunions spéciales de liaison soient regroupées en un seul document.

Etant donné la décision d'organiser des réunions de liaison particulières sur la protection et restauration de l'habitat (voir paragraphe 5.2 (a)), le Conseil a décidé d'interrompre temporairement les réunions spéciales de liaison visant à examiner les mesures prises pour minimiser les effets nuisibles de l'aquaculture sur les stocks sauvages. Ces mesures continueront cependant à être étudiées par l'OCSAN et le Groupe de liaison OCSAN/éleveurs de l'Atlantique Nord.

(b) Compte rendu de la Réunion spéciale de liaison de 2000

Un compte rendu de la réunion spéciale de liaison de 2000, au cours de laquelle l'Union Européenne et ses Etats membres avaient fait des présentations, sera diffusé par le Secrétariat à la suite de la réunion annuelle. Le Conseil avait déjà convenu que les rapports des réunions spéciales de liaison seraient mis à la disposition du Groupe de liaison.

(c) Renvois réalisés dans le cadre de la Résolution d'Oslo

Le Secrétaire a présenté le rapport, CNL(01)26 (annexe 19), portant sur les renvois réalisés conformément à l'article 5 de la Résolution d'Oslo. Le Conseil avait convenu, lors de la Dix-septième réunion annuelle, qu'il ne désirait désormais être informé que des nouvelles mesures. Le Conseil a ainsi accueilli favorablement le format beaucoup plus condensé du rapport. Les informations dans leur intégralité sur les renvois effectués depuis 1998 sont désormais disponibles à partir d'une base de données créée par le Secrétariat. Le Secrétaire a indiqué que certains Etats membres de l'Union européenne n'avaient pas renvoyé d'informations bien qu'ils soient soupçonnés de pratiquer l'élevage aquacole de saumons. L'Union européenne a indiqué qu'elle s'efforcerait d'obtenir des renvois complets d'informations de ces Etats membres.

(d) Liaison avec l'industrie salmonicole

Le Président, M. Andrew Thomson (Union européenne), a présenté le compte rendu CNL(01)27 (annexe 20) de la seconde réunion du Groupe de liaison OCSAN/éleveurs de l'Atlantique Nord, tenue à Ottawa du 5 au 6 février 2001.

Le Conseil a accueilli favorablement cette coopération plus étroite avec l'industrie salmonicole ainsi que l'engagement à coopérer sur des questions d'intérêt mutuel. Une Constitution établie pour guider le travail du groupe a été formulée lors de la première réunion et acceptée par l'OCSAN lors de sa Dix-septième réunion. Les éleveurs ont confirmé, lors de la seconde réunion du groupe de liaison, qu'ils acceptaient également les termes de la Constitution. Le Conseil a convenu :

- que les principes-guides pour une coopération entre l'OCSAN, ses Parties signataires et l'industrie salmonicole de l'Atlantique Nord étaient acceptables pour l'OCSAN ;
- d'inviter le Président et Rapporteur du Groupe de liaison à participer aux prochaines réunions de l'OCSAN afin qu'ils puissent offrir leur contribution sur le point approprié de l'ordre du jour, quand un rapport a été dressé sur le travail du Groupe de liaison ;

Le Conseil a également accepté :

- la proposition de créer un Comité chargé de la coopération future. Ce comité sera nommé Groupe coopération saumon. Son mandat sera d'explorer d'une manière plus approfondie les options qui se présentent pour une plus large coopération entre les différents centres d'intérêts du saumon (saumon sauvage et d'élevage). Le Conseil a donné son aval aux propositions offertes par le Groupe de liaison pour le travail initial dudit Comité ;
- qu'une troisième réunion du Groupe de liaison soit tenue à Galway, en Irlande du 8 au 9 Avril 2002.

(e) Elaboration d'orientations sur le confinement physique du saumon d'élevage

Au cours de la Dix-septième réunion annuelle, le Conseil avait étudié un avant projet d'orientations sur le confinement physique du saumon d'élevage mis au point par le Groupe de liaison. Bien que le Conseil ait accueilli favorablement son élaboration, il avait également reconnu la nécessité d'y inclure des éléments portant sur la surveillance, le contrôle et la mise en application et d'adopter les technologies de pointe au fur et à mesure qu'elles devenaient disponibles.

Au cours de sa seconde réunion, le Groupe de liaison a apporté des révisions au projet d'orientations sur le confinement physique du saumon d'élevage, CNL(01)28. Le document recommandait que chaque juridiction s'inspire du texte des orientations et décide d'un programme d'actions national, ou de plusieurs plans d'actions régionaux, dès que possible. Le Conseil a donné son approbation aux orientations sur le confinement physique du saumon d'élevage, CNL(01)53 (annexe 21). Il a par ailleurs souligné qu'il importait que le contenu de ce texte soit régulièrement revu et mis à jour afin de tenir compte des nouvelles techniques et de l'amélioration des informations disponibles concernant les effets nuisibles sur les stocks sauvages. Le Conseil a reconnu que ces éléments avaient été inclus dans les orientations et a demandé que le Groupe de liaison suive l'élaboration des programmes

d'actions et leur mise en application et avise annuellement le Conseil des progrès réalisés.

5.9 Saumon transgénique

Lors de sa Quatorzième réunion annuelle, le Conseil avait exprimé ses préoccupations quant aux risques posés par le saumon transgénique et avait adopté les orientations de l'OCSAN recommandant l'application de mesures concernant le saumon transgénique, conçues pour éviter les effets nuisibles sur les stocks sauvages. Selon ces orientations, les Parties avaient convenu d'informer le Conseil de toute proposition qui permettrait l'élevage de salmonidés transgéniques, donnant les détails de la méthode de confinement prévue et des autres mesures prises pour protéger les stocks sauvages. L'année dernière, le Canada avait informé le Conseil qu'une société implantée à l'Est du Canada produisait actuellement des stocks de reproducteurs de saumons et truites arc-en-ciel transgéniques dans des installations sur terre sûres. Le représentant des Etats-Unis avait également avisé le Conseil de discussions préliminaires qui avaient eu lieu entre une certaine société et l'Administration américaine de l'alimentation et de l'industrie pharmaceutique (*US Food and Drug Administration*).

Le Secrétaire a signalé, CNL(01)29, qu'à la suite de la Dix-septième réunion annuelle, il avait visité, accompagné du Président, les installations de la Aqua Bounty située sur l'Île du Prince Edward. La société était d'avis que la production commerciale du saumon transgénique s'effectuerait en grande partie dans des cages marines, une fois le poisson stérilisé. Le Conseil a noté que ce type d'approche ne respecterait pas les orientations de l'OCSAN.

Le représentant des Etats-Unis s'est engagé à informer le Président et le Secrétaire du meilleur moment pour communiquer aux autorités américaines appropriées les opinions de l'OCSAN à ce sujet.

Les Parties ont chacune indiqué qu'elles acceptaient les orientations actuelles de l'OCSAN, document CNL(97)48. Il fut noté que celles-ci n'avaient pas nécessairement force de loi, mais qu'un engagement général existait toutefois en ce qui les concernait.

Le Conseil avait déjà convenu que lorsque le Comité permanent chargé de l'approche préventive étudierait la question des introductions et transferts, il examinerait également la façon dont l'approche préventive pourrait s'appliquer au saumon transgénique. Le Conseil a également convenu qu'il serait peut être utile d'organiser, lors d'une prochaine réunion, une séance spéciale sur le saumon transgénique.

5.10 Pêcheries au saumon à St Pierre et Miquelon

L'année dernière, Le Conseil avait adopté une Résolution concernant St Pierre et Miquelon. Conformément à cette dernière, le Président était censé utiliser les voies diplomatiques appropriées pour communiquer les inquiétudes de l'OCSAN à propos du niveau des récoltes de saumons à St Pierre and Miquelon en 1998 et 1999, pour inciter vivement la France (pour St Pierre et Miquelon) à fixer immédiatement des limites de récolte pour la pêcherie au saumon de l'an 2000 aussi basses que possibles

- en accord avec les recommandations fournies par le CIEM - et pour enfin demander que les informations sur les mesures prises soient mises à la disposition de l'OCSAN au cours de sa Réunion annuelle de 2001. Le Conseil avait aussi convenu que lorsque le Président transmettrait le texte de la Résolution à la France (pour St Pierre et Miquelon), il inviterait également la France (pour St Pierre et Miquelon) à assister à la Dix-huitième réunion annuelle de l'OCSAN en tant qu'observateur, afin de rendre compte des mesures prises. Il avait également été convenu que la question de savoir s'il était approprié d'inviter la France (pour St Pierre et Miquelon) à devenir Partie signataire de l'OCSAN serait étudiée par le Conseil lors de la Dix-huitième réunion annuelle.

Le Secrétaire a dressé un rapport, CNL(01)30, sur les progrès réalisés depuis que la Résolution avait été transmise par le Président à l'ambassadeur de France à Londres. Le Canada et les Etats-Unis avaient aussi fait part de leurs inquiétudes auprès de la France, quant à la pêcherie ayant lieu à St Pierre et Miquelon. Le Secrétaire avait reçu une réponse aux points soulevés dans la Résolution, juste avant la Dix-huitième réunion annuelle. Celle-ci avait été distribuée, CNL(01)37 (annexe 22).

Le représentant des Etats-Unis a suggéré qu'il proposerait aux autorités de St Pierre et Miquelon un programme d'échantillonnage financé par les Etats-Unis, avec éventuellement la collaboration du Canada, afin de déterminer l'origine du saumon sauvage dans les prises. Le Conseil s'est montré favorable envers cette proposition, la considérant comme un bon premier pas vers la résolution de cette question. Le Conseil a aussi convenu de continuer à inviter France (pour St Pierre et Miquelon) à participer aux réunions annuelles de l'OCSAN en tant qu'observateur.

5.11 Mortalité liée aux prédateurs

Le Président a indiqué que, dans le cadre de la conservation du saumon, il considérait cette question comme inquiétante. Le représentant de l'Union européenne a soumis le document CNL(01)61 (annexe 23) traitant du contrôle du nombre des phoques, considérés comme prédateurs du saumon au sein de l'Union européenne. Des rapports verbaux furent reçus de la part des autres Parties sur la gestion des populations de phoques. Il y eut également une contribution faite par l'une des ONG de l'OCSAN, CNL(01)70. Le Président a recommandé ce dernier document au Conseil comme contenant des informations et idées précieuses. Le Conseil a accepté d'envisager la possibilité de tenir une séance spéciale sur la mortalité du saumon liée aux prédateurs lors d'une prochaine réunion. Le Conseil a demandé au Secrétariat de compiler les informations sur cette question afin de les présenter chaque année au Conseil.

5.12 Compte rendus sur les mesures de conservation prises par les trois Commissions régionales

Le Président de chacune des trois Commissions régionales a soumis au Conseil un compte rendu de leurs activités.

6. Divers

6.1 Le Président a annoncé que l'OCSAN figurait au premier plan parmi les organismes intergouvernementaux chargés de la pêche dans plusieurs domaines, dont l'application de l'approche préventive. Il a fait référence aux procédures des autres organismes intergouvernementaux en ce qui concernait particulièrement la communication et la participation aux réunions. Il a proposé que le Secrétaire étudie ces procédures en vue de les présenter au Conseil lors de la prochaine réunion annuelle.

7. Date et lieu de la prochaine réunion

7.1 Le Conseil a accepté l'invitation de tenir sa Dix-neuvième réunion annuelle à Torshavn, aux Îles Féroé du 3 au 7 juin 2002.

7.2 Le Conseil a convenu de tenir sa Vingtième réunion annuelle du 2 au 6 juin 2003, soit à Edimbourg, soit à tout autre endroit qui soit, à l'invitation de l'une des Parties. Le représentant du Danemark (pour les Îles Féroé et le Groenland) a suggéré que sa délégation apprécierait si la date des réunions, à partir de celle de 2003, pouvait être reculée à un peu plus tard dans le mois. Le Président a demandé aux autres Parties d'étudier si elles considéreraient ceci également plus pratique. Une décision à ce sujet sera prise à la prochaine réunion annuelle, si ce n'est plus tôt.

8. Compte rendu de la réunion

8.1 Le Conseil a adopté le compte rendu de la réunion, CNL(01)67.

9. Communiqué de presse

9.1 Le Conseil a approuvé le communiqué de presse, CNL(01)65 (annexe 24).

Note : Une liste de l'ensemble des documents du Conseil figure à l'annexe 25.

ANNEX 1

Welcoming Remarks made by Mr Tomas Fernandez-Couto

President of NASCO, Secretary of NASCO, Mayor, Delegates, Ladies and Gentlemen:

Firstly, permit me to welcome you to Spain and Galicia, the European region that welcomes you to this, the Eighteenth Annual Meeting of NASCO. We would like to thank you for having accepted our candidature to host this important meeting. It is an honour for our people and our authorities to have you here in our country, and we hope that this meeting will be a success, and that productive and satisfactory agreements are reached by all. So we are proud and happy to welcome you amongst us, even more so, as the topic you are all dealing with is salmon.

In our region we understand that the search for agreements and harmony between the different public and private authorities that are involved in this field is one of the most valuable methods on which to base specific and effective actions for the protection of salmon. International agreements and cooperation are, in our humble opinion, crucial in this process.

Galicia has paid, and is currently paying, special attention to this species of fish. Our intention for the immediate future is that of intensifying our efforts with the aim of rapidly recovering satisfactory salmon populations in Galician rivers. This is a task that requires, amongst other things, consistency, time and political intention. It is for these reasons that the Eighteenth Annual Meeting of NASCO in Galicia will enable us to clearly show the salmon authorities present here our commitment towards this species.

We, the Directors General for Nature Conservation in those Spanish Autonomous Communities with salmon-bearing rivers, along with our Portuguese counterparts, meet periodically to exchange information and points of view, and to coordinate projects on specific matters relating to salmon that may favour its presence in our countries. These regular meetings have enabled us to reach agreements, and on the basis of these, to implement specific lines of intervention, which have put us on the right road for protecting salmon.

As an illustrative example of the commitment that I have just mentioned, permit me to briefly mention the Atlantic Salmon Restoration Plan, which is interwoven into the framework established by the River Restoration Plan, approved in 1990 by our regional government. This plan enabled us to investigate and have up-to-date information on the state of our river ecosystems, on both the biological potential of each river basin and their populations. We immediately proceeded to implement projects to return these basins to their optimal conditions by means of habitat improvement schemes, resulting in the setting up of the infrastructure necessary in order to successfully continue the promotion of their fishery reserves. The analysis derived from monitoring the projects of the Plan is cause for optimism in this respect.

Independently of the success of the plan, or rather, as a consequence of its accomplishment, ten years after its approval, an updating of the objectives is currently under way. This is being carried out on the basis of the successes that have been achieved, on the experience that has been acquired and on the working methods that have been used up until now. Our region is currently working on a new strategy, called the Fishery Population Organisation Plan. We

are extremely hopeful, and I can inform you that, in spite of their difficulty, these projects fill us with optimism.

I believe that we are all conscious that in the task of protection in which, from the different public administrations, we are all involved on a daily basis, there is still a long way to go. In any case, I do not think that we will have to wait too long to see the results of our commitment, as they are beginning to be clear for all to see. In this sense, we feel an enormous sense of satisfaction, at what the restoration of salmon signifies for our rivers, as well as at the confirmation that, without short-term concessions, and supported resolutely by the political authorities, our constant labours are leading to these results.

There is one more point that I would like to mention. During these coming days, when you are making the necessary decisions in your debates, remember that the salmon is much more than just a fish, much more than a resource, and much more than a mere symbol: it is the greatest common denominator of all the different North Atlantic peoples. It is something which, for all of us who are present here today, and in spite of any differences that there may be between our nations, we can say is ours, that it belongs to us all, and which is part of our culture.

Once again I would like to take this opportunity to thank you for being here amongst us, in Galicia, the "country of a thousand rivers", as it is popularly known.

We sincerely hope that your exchange of ideas is productive, and that this meeting gives you the opportunity, even if only briefly, of getting to know our land. We hope to make you feel at home, and that when you return to your different homelands, that along with the positive results that we are all hoping for the salmon, you take home fond memories of your stay in Galicia.

ANNEX 2

Opening Statement made by the President

Muchas gracias, Señor Fernández-Couto. I would like to welcome all seven Parties, and particularly the new Heads of Delegations, David Bevan of Canada and Rolland Schmitten of USA, and observers to this Eighteenth Annual Meeting of the North Atlantic Salmon Conservation Organization in these magnificent facilities.

I know I speak for all of us when I express our great pleasure at being here in this very beautiful part of Spain. For us, it is very important that we are, for the first time, in Spain, and to be in Galicia is a particular thrill as many of us have not had the pleasure of being to Galicia before. So let me say at the outset how much we appreciate this invitation.

Of course, we are now at the southern limit of wild salmon stocks and this is also a matter of interest to us because we know that at these southern limits there are particular problems. We would like to learn more about the situation here, and the Secretary and myself were pleased to be invited to meet with you, Senor Fernández-Couto, and other regional representatives. Moreover, we would very much hope that Galicia and the other regions of Atlantic Spain will in future play a part in the work of NASCO now that we have come to visit you.

Senor Fernández-Couto, I do not intend to go into details here, as we will be starting on our Agenda later this morning. I do want to say, though, that we have some very important issues to address.

NASCO has accomplished a lot since its inception in 1984. For example:

- as soon as NASCO was established, fishing was banned in large areas in the North Atlantic;
- fishing effort has been greatly reduced in most countries and great sacrifices have been made to curtail harvests in mixed stock fisheries;
- great strides have been made in improving control as well as providing more accurate data.

We have, a year or so ago, started on the task of implementing the Precautionary Approach to all our work on salmon. Last year in Canada we agreed to set up what one might call a pilot scheme for managing salmon fisheries under a Precautionary Approach. Personally I am anxious to hear how that has gone and I will be inviting the Parties to report on progress. More recently in Ottawa we looked at how one can manage habitat in a precautionary way. The report of that Working Group will also need to be discussed here and action agreed on. Since habitat protection and restoration is so central to the survival of salmon I do hope that we can make progress on this matter so that not one square centimeter more of salmon habitat is lost and that we can go well beyond that to recover habitat that has been lost, in some cases lost for many years.

We need, too, to turn our attention to the valuable work of the Liaison Group that we have set up to work with the salmon farming industry. They have come up with a useful report and also drafted new guidelines on containment. I hope we shall be able to give these close attention here.

We also have on our Agenda some Regulatory Measures for the fisheries in Greenland and the Faroe Islands. Our friends and colleagues in Greenland and the Faroe Islands have done a marvellous job in restricting their catches to very low levels and I hope that this will continue. As well, many countries have taken drastic steps, at a high cost to government and the users, to curtail the harvest of wild salmon. We have to continue that work here in the next few days. Fortunately, there are some initial signs that all our sacrifices are paying off. After many years of low returns and many sacrifices, you will understand why I would not wish to place much weight on abundance in one year, although it is certainly encouraging to see the first improvements for some years. I believe it tells us that we are doing the right things, but it is not a signal to relax our guard!

Senor Fernández-Couto, we know little about salmon in the sea but we believe that there are problems for salmon in the marine environment. We have before us at this meeting a valuable report from our scientists telling us what they think should be done in terms of a new International Cooperative Research Programme, and what is more, how much it might cost. I do want to see a good debate here on that matter and, hopefully, the beginnings of such a programme. I shall be looking for real support here from our colleagues in our Non-Governmental Organizations so I hope they came here with their wallets!

That is not all: we will have to look at many other issues which impinge on the abundance of salmon stocks: transgenic salmon, by-catches, unreported catches, etc. etc.

There is much to do before Friday so I will take no more of our time but I would just assure you, Senor Fernández-Couto, of our sincere thanks at what you and your staff, working with our Secretary, have done to make us so welcome. To hold our meeting so close to a salmon river is a real bonus and we really do appreciate the work that has gone into this meeting. I will now give the floor to the Parties for Opening Remarks.

ANNEX 3

Opening Statements made by the Parties

Opening Statement made by Canada

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

I am a delighted to be in Mondariz, Spain in such a beautiful location here beside the Tea River. I want to congratulate our hosts and the Secretariat on the preparations for these proceedings and for making us so very welcome. I see that NASCO's Secretariat has developed a very full agenda for the week ahead. I would like to take only a few minutes to provide Canada's views on some of the issues that we will be discussing at this annual meeting.

NASCO has been a leader in the Precautionary Approach to salmon management and we will hear interim reports from Contracting Parties this week on their experiences with salmon management. Canada fully supports NASCO's work in this area and has endeavored to act in a precautionary manner. We have restricted fishing unless we are confident that we are not impacting on weaker stocks and as you are aware we have permanently retired the balance of our commercial Atlantic Salmon Fishery licences through fair compensation to more than 3,000 commercial salmon fishermen in Eastern Canada. This initiative cost in excess of 43 million dollars.

We note as well the sacrifice made by Greenland over the past few years. Notwithstanding these efforts, some of our stocks have been identified as endangered. We have seen some improvement on some rivers but those signs of improvement are off-set by poor returns in many of Canada's salmon rivers. We must remain vigilant and cautious but challenges remain.

In addition, many of us around the table today were present at the recent NASCO inter-sessional meeting that was held in February of this year in Ottawa, Canada. There we discussed the application of the Precautionary Approach to habitat management and considered terms of reference for a Working Group that would consider how to incorporate socio-economic factors within the Precautionary Approach. At our meeting in Ottawa we considered the application of the Precautionary Approach for the protection and restoration of Atlantic salmon habitat. We developed a draft NASCO Plan of Action for its application and consideration at this annual meeting. I am hopeful that we can move ahead on this issue during our deliberations this week.

Before the recent NASCO inter-sessional meeting in February we were also asked to host a meeting on behalf of NASCO for the Second Liaison Meeting of NASCO and the North Atlantic Salmon Farming Industry. I am pleased that the Working Group was successful in refining the Guidelines on Containment. These are contained in the Liaison Group Report being tabled for consideration by the Council at this meeting. I am hopeful that we can move this forward so that we, and other Contracting Parties, can embark on the development of domestic action plans in support of these guidelines.

Codes of containment and habitat management within our jurisdictions are not the only challenges we face in our task to conserve Atlantic salmon. We are facing a problem of at-sea survival and need to seek better information to further our understanding of the causes. I believe that we can only obtain a better understanding of these complex issues through co-operative research activities. I look forward to our discussions this week on international co-operative research.

As most of you know, in Canada we are fortunate to have wild salmon on both sides of our country as well as in our Great Lakes. The knowledge gained through our cooperative efforts here in NASCO continues to assist us with our endeavors to strengthen all stocks.

As in years past, I am sure that all of us will remain faithful to NASCO's mission of promoting the conservation, restoration, enhancement and rational management of salmon stocks in the North Atlantic Ocean through our continued international cooperation.

Opening Statement made by Denmark (in respect of the Faroe Islands and Greenland)

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

It is a great pleasure for my delegation to be here in Mondariz at the Eighteenth Annual Meeting of NASCO. Thanks to the Galician authorities for hosting this annual meeting.

The people of the Faroe Islands and Greenland are overwhelmingly dependent upon the marine living resources. Thus the socio-economic impact from fisheries management decisions is considerable. Also the salmon fisheries are important to our people. Hopefully, this Eighteenth Annual Meeting of NASCO will bring us a step forward in strengthening regional co-operation in the North Atlantic on the management of our common salmon resources.

It is now generally recognized that the principal problem for the salmon in the homewater rivers was after all not the ocean fisheries in the Faroes and Greenland. As we can see from the ICES reports, real life is not that simple. Whatever possible and positive effects might be attributable to the sacrifices we have made, they appear to have been more than outweighed by negative impacts on salmon stocks from other factors. The picture varies, not least due to the vast amount of unreported catches, on an average amounting to 31% of the total of reported and unreported catch. The estimate for 2000 is an increase of 23% compared with 1999 (1,032 tonnes) and an increase of 21% compared to the average 1995-1999 mean of 1,051 tonnes.

We all know a number of factors which have a negative impact upon the salmon stocks, such as pollution, habitat damage, potential by-catches, but also insufficiently regulated homewater fisheries, many of which are mixed stock fisheries. A recent and growing problem is the contaminating impact caused by salmon farming.

We are fully aware of the impact of the production of farmed salmon, which was nearly 700 thousand tonnes in 2000 for the North Atlantic, of which approximately 5% was produced in the Faroe Islands. As was reported in yesterday's Special Liaison Meeting, the Faroese authorities are taking care to minimize the impact of salmon farming upon marine wildlife.

A research fishery has been recognised as of major importance to the scientific programme and ICES recommended such a programme last year. ICES further advise that if the commercial fishery recommences, it is recommended that biological samples should be collected and analysed. This is an issue which we find important.

In the North-east Atlantic the large herring, mackerel and blue whiting stocks might affect the role of the salmon in the ecosystem. The potential by-catch of salmon post-smolts in the mackerel fishery in the North-east Atlantic has caused concern, and therefore more research effort should be made to clarify whether this concern is a threat to the salmon stock.

The ups and downs of total salmon catches seem to be independent of the amounts caught in the Faroe Islands and Greenland. We are glad to see the apparent improvement in the Pre-Fishery Abundance.

We are looking forward to discussing issues of relevance to the rational management and utilisation of North Atlantic salmon throughout its entire distributional range.

Now it is timely for NASCO to address the serious problems affecting salmon in homewaters and for other NASCO members to make binding commitments for the benefit of the salmon stocks.

Opening statement made by the European Union

Mr. President, Distinguished Delegates and Observers:

First of all, on behalf of the European Union, I would like to welcome you all to Mondariz for the Eighteenth Annual Meeting of NASCO. I would like to express my great appreciation to the Autonomous Government of Galicia, particularly to Mr. Tomas Fernández-Couto Juanas, the Director General for Forestry and the Natural Environment, and to Mr. Lorenzo Rodríguez, the Mayor of Mondariz, for making all the arrangements at this very interesting town on the eastern edge of the Atlantic, at a place where the southernmost wild salmon in the North Atlantic can be found. It gives me great pleasure to be here. However, it makes it very difficult for all of us to work with such a beautiful vista just outside.

You can see from the composition of my delegation that within our family, we are obliged to take decisions affecting a whole range of issues and satisfying a diverse range of interests. Within NASCO, the divergence of interests is even greater, and that only emphasises the need for all the NASCO Parties to take appropriate steps, which can satisfy the greater good. It remains my commitment to ensure that full account is taken of all relevant interests when we take our decisions in NASCO this week.

On this note, for the European Union, there are two NASCO Commissions where we would like to see further real progress. In the North-East Atlantic Commission, we recall that for 2001, it was agreed that there would be no regulation of the Faroe Islands fishery. However, we note that Denmark (in respect of the Faroe Islands and Greenland) has taken a very responsible approach to this fishery. We would like to see a TAC which represents the need for scientific research but if this is not possible we would like to see a pragmatic solution, which offers the Contracting Parties sufficient guarantees so that the fisheries will not expand in an uncontrolled manner. We have trust in the Faroe Islands.

With regard to the West Greenland Commission, the European Union is acutely aware of the difficulties which have arisen with regard to the interpretation of the advice from ICES for 2001. European Union Member States have made great efforts towards significantly reducing or even eliminating exploitation on multi-sea-winter stocks in their home waters in recent years. Furthermore, they have introduced other measures to conserve and rebuild these stocks. We would therefore urge the authorities of Denmark (in respect of the Faroe Islands and Greenland) to exercise the utmost restraint in order to support the stock rebuilding process to which all relevant Parties have committed themselves in recent years. There is a saying that it is better to have a small part of something than a large part of nothing. With a precautionary approach, we should all be able to harvest the benefit of our efforts in the medium and long term.

After our first year working in practice with the Precautionary Approach, our colleagues in the Standing Committee on the Precautionary Approach met again in Ottawa in February to examine the next step in that committee's work. They have now proposed a Plan of Action on habitat protection and restoration, which needs to be translated into action plans for the individual jurisdictions. There is much work to be done in this respect, but I must agree that the proposal to adopt the Plan of Action should be endorsed at this week's meeting. Looking further into the future, we need to agree on the Terms of Reference on the examination of socio-economic issues, the next step in this committee's work. Finally, we must look at the

progress made so far on the decision-making structure we adopted in 2000 for the Precautionary Approach.

We have just had the final Special Liaison Meeting on the efforts to minimise the impacts of aquaculture on the wild salmon, and I would particularly like to thank our colleagues from the Faroe Islands, Iceland and the United States for their contributions. These results of the Oslo Resolution are the Precautionary Approach in action. I am pleased to see that all the Contracting Parties have made much progress on this issue during the last few years.

On a somewhat related issue, our co-operation with the aquaculture industry has continued to blossom. I would like to congratulate all those involved in the success of the Salmon Liaison Group this year and particularly welcome the guidelines for containment, which they so ably drafted at their meeting in Ottawa.

As regards the issue of international co-operative research, I look forward to a very fruitful discussion this week on ways in which NASCO can best harness the efforts of its Contracting Parties and have the best possible results from research on issues concerning wild salmon. I can assure you that I will remain open to any relevant discussion on this important subject.

Mr. President, I am delighted once again to be with all my friends in the NASCO family and particularly delighted to be here in Spain. I thank the Administration of Galicia and all those associated with the arrangements for this meeting for all their efforts in ensuring a comfortable stay in Mondariz.

Mr. President, Distinguished Delegates and Observers, as usual, my delegation wishes all of you who are present at the meeting this week the very best for a fruitful programme of work. Our aim in being here is to ensure the future of the wild salmon and this we will promise to do in as constructive a manner as possible. I would like to wish everyone a very successful meeting.

Thank you.

Opening Statement made by Iceland

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

I bring best wishes from Ambassador Eiður Guðnason, who regrets not being able to attend this meeting due to other engagements.

It is a great pleasure to be here in Galicia at the southernmost limit of the Atlantic salmon's distribution. People usually associate Spain with anything but salmon, but its presence here as well as in the northernmost areas of Iceland, Norway and Russia is probably the best evidence of the hardiness and adaptability of the species.

The Icelandic angling catches for the year 2000 were 13 % lower than the 1999 catches and over 20 % lower than the 25-year average. This reduction was primarily reflected in the two-sea-winter component, which has been greatly reduced in the 1990s. This falls in line with the recommendation of ICES for the past decade and this year we are once more reminded to keep the harvest of two-sea-winter salmon in mixed stock fisheries to a minimum. Iceland strongly supports that viewpoint.

As we discussed in the Special Liaison Meeting on the Oslo Resolution, there has been a dramatic change in the aquaculture scene in Iceland. Salmon farming has predominantly been conducted in land-based operations but now there is a growing interest to start salmon farming in sea-cages in certain areas. The Salmonid Fisheries Act was not well prepared for the administration of this new development and consequently a revision of the aquaculture section was passed by the Icelandic Parliament in mid-May of this year. The new act contains numerous provisions regarding licensing and monitoring of aquaculture as well as many opportunities for setting regulatory measures.

In the early part of this year the Minister of Agriculture furthermore set a regulatory measure forbidding the rearing of fertile salmon in any fjords which were adjacent to a major salmon-producing area. Cage farming is thus mostly limited to the eastern fjords and the northwest peninsula, which do not harbour salmon populations.

It is safe to say that this new aquaculture development has caused apprehension among river owners and anglers, who fear the effects of escapees from cages if they migrate into salmon rivers. Although the proposed facilities are kept far away from salmon-producing areas, the authorities have responded to those concerns by putting provisions in the operating licence of sea-cage farms regarding large-scale microtagging of the smolts put into the cages, and a fairly extensive evaluation into possible effects of the cage-farm on wild salmon stocks, all of which must be funded by the respective salmon farmer.

We have a lot of interesting items on our agenda, related to the various factors which are affecting Atlantic salmon, such as shrinking freshwater and marine habitats, marine predation of salmon, by-catches in other fisheries as well as effects from salmon aquaculture. These need to be adressed in a holistic way as they are probably all contributors to the decline of salmon. Further research into the marine phase of the salmon's life history is sorely needed and Iceland welcomes NASCO's inititative to promote such efforts.

Finally, Mr. President, we would like to thank our Spanish hosts for arranging this meeting in such a beautiful setting and look forward to a productive meeting.

Thank you Mr President.

Opening Statement made by Norway

Mr. President, Delegates, Observers, Ladies and Gentlemen: it gives the Norwegian delegation great pleasure to participate at this annual meeting of NASCO here in Galicia.

NASCO was founded as a fishery organization, and discussions on regulatory measures still form a basis for our Organization. However, present fishing activity in the high seas has a limited impact on the stocks of Atlantic salmon. In recent years, NASCO has increased the efforts to address other environmental issues. In our view, NASCO has successfully strengthened these efforts and now stands as a fishery organization with a good environmental profile. Many other fisheries organizations should actually have something to learn from NASCO's broad focus on environmental issues.

NASCO's efforts to advise on implementation of the Precautionary Approach and to engage in active co-operation with the aquaculture industry are prominent examples of this. As a vital and competitive organization in the midst of our race, however, we should keep our forward momentum and aim at further improvements.

In this process, we should keep three important issues in mind.

First, we must keep a steady focus on the principle of sustainable use. This principle is threatened from two opposing sides. One threat is over-exploitation and ignoring of scientific advice shown by a number of regimes in the fisheries sector. The other threat is static conservation, which has been most clearly demonstrated by the International Whaling Commission. In my mind both these lines of policy represent a clear disregard of science and a threat both to conservation and sustainable use. I am glad that NASCO has struck a good balance between conservation and sustainable use. In this context, we should also appreciate the responsible handling of the mixed stock fisheries demonstrated in recent years by the Faroe Islands and Greenland. Several of the Parties, Norway included, should learn from this.

The second issue I want to address is NASCO's relations to the public in general, and to the NGO's in particular. Last year, we had a discussion on this issue, and Norway expects good solutions to be found this year. As part of this solution, we could look into possible means of improving utilisation of the great resources gathered within and outside delegations at the annual meetings.

As my third and last issue, let me underline the importance of getting good results in the fields where NASCO has already initiated work. We should continue our efforts to promote precautionary management by translating this concept into operational standards. We should also initiate action to follow up the report from the working group on research on salmon at sea.

I want to add that the impact of NASCO's work depends to a large degree upon national implementation of measures and recommendations by the Parties. In the light of the developments in biotechnology in recent years, I want to remind all Parties of the existing obligations under the guidelines on transgenic salmon.

And finally - back to the salmon stocks themselves. Norway had a nice fishing season and a relatively good yield last year. However, these signs of improvement were limited to salmon

stocks with an established good status, and other stocks did not show the same positive signs. We feel, therefore, that any celebrations would be premature and that – as we say in Norway – one swallow makes no summer.

Mr. President, I will use this opportunity to thank our hosts and the Secretariat for having prepared marvellously for this meeting.

With these remarks I wish us all a good meeting.

Opening Statement made by the Russian Federation

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

It gives us great pleasure to once again attend such a representative forum as the Annual Meeting of NASCO. First, I would like to thank our Spanish hosts for offering us the opportunity to meet in another community close to the salmon and, what is most exciting, close to a river located at the southern limit of the salmon's distribution range in Europe.

A year has passed since our last meeting. It flew by quite rapidly although it seemed that the time between two Annual Meetings, the time marking the end of the last century and millennium and the beginning of a new century and millennium, should have been ever-lasting. That year was rich with various events; however, for us the most important development was that despite different cataclysms, an overall increasing trend in the abundance of Atlantic salmon in rivers of the North-West Russia was noted.

We are well aware that nature has played its role in this. Nevertheless, it is obvious that the cooperation of many years on conservation of Atlantic salmon under the guidance of NASCO has borne fruit. This in the first place refers to the application of the Precautionary Approach to salmon management.

In 2000 the tendency towards reduction of commercial fisheries on salmon rivers in Russia continued. Catch limits for all fisheries were established on the basis of conservation limits and management targets. It is extremely important for us that salmon stocks in Russia are in good shape because the welfare of communities on the coast of the White and Barents Seas is dependent on how abundant the salmon returns to our rivers are. A rather difficult social and economic situation in these areas sometimes affects management decisions. Nevertheless, we have support and full understanding from various authorities that the application of the Precautionary Approach is important both in management of salmon fisheries and habitat protection and restoration. However, at the same time we realize that the challenging task of reducing social and economic implications of precautionary actions needs to be addressed.

At this Annual Meeting the agenda includes, as usual, many issues, among which of particular importance for us are those relating to the impact of aquaculture on wild salmon stocks. Up to now Russia has been fairly far from all problems associated with salmon culture. However, this year the first facilities for farming of Atlantic salmon will be launched in western areas of the Kola peninsula. We hope that experience and knowledge available in other countries, to which we have had access through NASCO, will help us avoid mistakes which would have been inevitable otherwise.

Another issue of concern for us is instability of salmon stocks. It is becoming increasingly difficult to manage the stocks in a rational way because variations in their abundance are often unpredictable, but are attributable to the impact of a great number of adverse influences caused by man's activities. These include pollution of salmon habitat, excessive harvest, hydropower schemes, aquaculture and others. All these problems can and should be resolved through joint effort. As a positive example of how these problems could be addressed, the situation with sea fisheries can be referred to. With the knowledge we have today, management of these fisheries is associated with great risks and precautionary actions may not always reach the goal we pursue, since the exploitation rate on distinct stocks harvested in these fisheries cannot be measured. We believe that the improved situation with salmon

stocks in Russian rivers, which we now witness, is as a result of, *inter alia*, NASCO's persistent efforts aimed at cessation of these fisheries.

Mr. President, I avail myself of the opportunity to express once again my appreciation of the cordial welcome and excellent arrangements for this meeting provided by our hosts. Spain is a country of glorious history and great culture. A Spanish expedition led by Christopher Columbus discovered America. We hope that the NASCO expedition here in Spain will discover new possibilities to conserve and enhance salmon stocks.

Thank you.

Opening Statement made by the United States of America

Mr. President, Distinguished Delegates, Ladies and Gentlemen:

It is my great pleasure to participate in this Eighteenth Annual Meeting of NASCO. I would like to thank the NASCO Secretariat and the President for all of the hard work they have invested in preparation for this meeting. I would also like to extend my compliments and gratitude to our hosts here in the beautiful town of Mondariz.

The listing of Atlantic salmon populations in the United States under the Endangered Species Act has become a reality in 2000. Estimated two-sea-winter returns, a total of 533 fish, to US rivers in 2000 represent less than 2% of the spawner requirements for all rivers, were 54% below the 1999 estimate, and are the lowest in the 30-year time series. Returns in 2001 from May and early June do not indicate an improvement from returns this same time last year. According to our scientific advisors, the probability of US stocks meeting their conservation requirement is zero. The simple fact is that every fish counts in the United States.

We acknowledge the sacrifice, leadership and courage of all Parties around the table including elimination of commercial fisheries for Atlantic salmon in eastern Canada, and limiting the fishery off Greenland for the past three years to internal use only, and we are pleased with the ICES reports of significant reductions in the North-East Atlantic Commission as well. Specifically we note that ICES concludes that measures introduced in Ireland in 1997 contributed to a reduction in both overall catch and the exploitation rate on Irish stocks and that changes in fisheries in the UK are expected to reduce homewater exploitation rates.

In light of the status of US Atlantic salmon populations, I would like to bring your attention to significant actions we have undertaken in 2000 to further the protection and recovery of our salmon populations and their habitats. The first, as you have heard, is the listing of the Gulf of Maine distinct population segment of Atlantic salmon as "endangered" under the Endangered Species Act. All recreational fishing for sea-run Atlantic salmon has been eliminated and some areas of rivers are closed to all fishing to protect Atlantic salmon. Efforts to assess, protect and restore salmon habitat in 2000 are impressive. In addition aggressive action has been taken to identify and address threats including fish passage improvements and dam removals, installation of weirs to exclude aquaculture escapees, working with the aquaculture industry as reported in the special session yesterday, and best management practices for agriculture and forestry. All of this is accomplished through federal, state, industry and private sector cooperation and collaboration for the protection and recovery of Atlantic salmon, their habitat and ecosystems.

We are encouraged by preliminary estimates of increases in pre-fishery abundance; however these have not been able to be confirmed by increases in returns to homewaters. Marine survival rates are still low and sea survival of the salmon populations has not increased as expected. Despite these projections for improvement, there is still a zero probability that US rivers will meet their conservation limits. Given these realities, we need to reaffirm and intensify efforts to gather as much scientific information as possible on the distribution and abundance of salmon stocks to better guide management decisions.

It is critical that we commit to protecting the considerable investment all Parties have made in the future of Atlantic salmon. We need to be cautious and allow salmon time to respond to

improvements in habitat both in fresh water and the marine environment and reductions and eliminations in harvest.

This year we face a true test of our commitment to apply the NASCO Agreement on the Adoption of the Precautionary Approach. We have preliminary indications of an improvement in stock status yet we have not seen a demonstrated response to drastic closures and reductions in fisheries and expected improvements in marine survival. We need to move forward cautiously, careful not to make any management decisions that will have the potential to cause irreversible changes in stock status, including potential extirpation of weak stocks. It is paramount that we keep management decisions strongly rooted in the science – which is more than simply taking a number from a model but understanding the advice the scientists are telling us including the assumptions in the model, the level of uncertainty associated with many of the input values, and the need to groundtruth the mathematical estimates with documented returning adults.

I would also like to note the significant other work of NASCO including not just the general adoption of the precautionary approach, but progressive development of methods to incorporate it into salmon management and habitat protection and restoration. We are pleased with the successful completion of the open review by all Parties on measures adopted to minimize impacts from aquaculture on wild stocks. NASCO is also taking a bold step forward in considering initiation of international cooperation on marine research.

I look forward to working cooperatively with the other Parties this week as we face the significant challenges before us. We must be mindful that the future of Atlantic salmon is at stake and remember the words of the Convention. The driving force that brought us together around the table was the mutual desire to promote the conservation, restoration, enhancement and rational management of salmon stocks in the North Atlantic Ocean through international cooperation. These principles should serve as the foundation for our work here this week.

Mr. President, Distinguished Delegates and Observers, my delegation and I look forward to a productive meeting.

ANNEX 4

Opening Statements made by Inter-Government Organizations

Opening Statement made by the International Baltic Sea Fishery Commission

Mr President, Distinguished Delegates and Observers:

IBSFC would like to thank NASCO for the invitation to attend this meeting in an observer capacity. We also want to thank the hosts from Mondariz and the Province of Galicia which is well known – among others – because of the Ria coast.

IBSFC has invited NASCO and NPAFC to attend the next session of our Commission in the former historic capital of Poland, the city of Cracow, in September 2002. We are in the process of preparing for the joint scientific seminar of NASCO, NPAFC and IBSFC to be held in March 2002 in Vancouver, Canada. The effort made by our Commissions in this direction has also been appreciated by FAO. In the report of the Second Meeting of FAO and Non-FAO Regional Fishery Bodies, Rome, February 2002, it is stated that:

"The Meeting noted with satisfaction the strengthening of cooperation among RFB's since the First Meeting of FAO and Non-FAO Regional Fishery Bodies. In this respect, it took note of the meeting of scientists of tuna management organizations that was held in Thailand, in March 2000, and the meeting of scientists of salmon commissions (NASCO, IBSFC and NPAFC), planned for March 2002, in Vancouver."

Concerning the latest development of the status of the wild salmon stocks in the Baltic Sea Region, ICES stated in its assessment of April 2001:

"Most stocks improving, but still not all."

The IBSFC Salmon Action Plan Surveillance Group meeting conducted in the beginning of 2001 concerning the wild smolt production stated:

"In some rivers the goal set by the IBSFC Salmon Action Plan 1997-2010 – the production of wild salmon should gradually increase to attain for each salmon river a natural production of wild Baltic salmon up at least 50% of the best estimate potential - was already achieved, while in other rivers the production had declined."

The next meeting of the Salmon Action Plan Surveillance Group in June 2002 will:

"Further elaborate on how to shift the fishing pattern, to the greatest extent possible, from the mixed wild and reared population fishery to a fishery targeting mainly reared populations and to continue the work on definitions of terminal fishery areas."

Thank you, Mr President.

Opening Statement made by the North Atlantic Marine Mammal Commission

The North Atlantic Marine Mammal Commission (NAMMCO) welcomes the opportunity to become observers to the Annual Meeting of the North Atlantic Salmon Conservation Organization.

NAMMCO, a regional inter-governmental body, was established by the Agreement on Co-operation in Research, Conservation and Management of Marine Mammals in the North Atlantic, signed in Greenland in 1992, by the Faroe Islands, Iceland, Greenland and Norway. The NAMMCO Agreement has its basis in internationally recognised principles of conservation and sustainable utilisation of renewable resources. Marine resources, including marine mammals, are of particular cultural and economic importance to the member countries of NAMMCO. Through this regional regime, NAMMCO aims to strengthen international co-operation on, and rational science-based approaches to, conservation, management and study of marine mammals in the North Atlantic.

At its Tenth Meeting in Sandefjord, Norway, in September 2000, the NAMMCO Council agreed that NAMMCO should inform relevant sister organisations about its work on the economic aspects of marine mammal – fisheries interactions. It is therefore appropriate that NAMMCO is represented as an observer to the NASCO Annual Meeting. A reciprocal observer relation between the two organisations will provide a useful mechanism for an open exchange of information on topics of mutual interest.

In the NAMMCO preamble it is stated:

Desiring to enhance the cooperation in research on marine mammals and their role in the ecosystem, including, where appropriate, multispecies approaches…

NAMMCO is concerned with both the multispecies approaches to management, marine mammal - fisheries interactions, and the economic aspects of such interactions. The NAMMCO Scientific Committee has convened two Working Groups addressing the topic. The result of the first such Working Group is found in NAMMCO Scientific Publication Volume 2: *Minke whales, harp and hooded seals: Major predators in the North Atlantic.* The conclusion by the NAMMCO Scientific Committee based on these studies was that these species might have substantial direct and/or indirect effects on commercial fish stocks. However, significant uncertainties of these effects remain.

The second Working Group, on Economic Aspects of Marine Mammal Fisheries Interaction, focussed in 1998 on bio-economic models of varying complexity and eco-systems, and concluded that despite the preliminary nature of the results the emerging cost benefit figures warranted serious consideration. In 2000 the problem was investigated further and it was concluded that significant uncertainties remain in the calculation of consumption by marine mammals, and that this uncertainty was found to be the most important factor hindering the development of models linking consumption with fishery economics. After a review of the available information it was concluded that data are lacking in the following areas: abundance estimates and seasonal distribution - for relevant species; diet composition of the predator species; the link between diet composition and prey abundance; the seasonal variation of energy consumption, and that multispecies models must be developed further. NAMMCO is continuing the work in this area and is looking forward to keeping NASCO informed, as more information becomes available.

Thank you, Mr President.

Opening Statement made by the North Pacific Anadromous Fish Commission

Mr President, Distinguished Delegates, Ladies and Gentlemen:

On behalf of the North Pacific Anadromous Fish Commission (NPAFC) I would like to thank you for the invitation to attend your Eighteenth Annual Meeting in such a beautiful location as Mondariz.

As you know, Mr President, our organizations have been working closely together over the last two years in an attempt to organize a joint meeting of NPAFC, NASCO, IBSFC and other international organizations on the Causes of Marine Mortality of Salmon in the North Pacific and North Atlantic Oceans and in the Baltic Sea. We have agreed that this meeting will be held in March next year in Vancouver, Canada.

The objective of this joint meeting is to compare scientific and other information on the increased marine mortality of some salmon stocks observed in recent years. It is hoped that comparison of this information will lead to a better understanding of the mechanisms which have resulted in increased marine mortality in recent years, identify research priorities and stimulate increased cooperation and exchange of information in the future.

We hope that this joint meeting will serve as an example of the good cooperation between regional fisheries bodies.

Mr President, I wish you a successful meeting.

Thank you.

ANNEX 5

Opening Statements made by Non-Government Organizations

Joint Statements

Mr President, delegates: I am pleased to introduce the statements of the NGOs. We have agreed on one principal statement which I shall make, four subsidiary ones highlighting particular topics which will be presented by individual NGOs with the support of us all, and four further statements.

Principal joint statement on mixed stock fisheries

Wild salmon stocks are endangered on both sides of the Atlantic. ICES is clear with its advice that the exploitation of individual stocks should be conducted and managed within or close to their own catchments. The operation of drift net, long line and other interceptory fisheries is not compatible with this principle and the NGOs urge NASCO to act upon ICES advice. Scotland banned drift netting in 1962, the USA has closed all its fisheries and Canada has spent $72 m to close all commercial fisheries off their east coast.

We are all aware that one of the main concerns of delegates this year is the negotiation of the West Greenland (and Faroes) quota(s). We recognise that the negotiation of quotas is always difficult and the end results are frequently not satisfactory to any Party. We have welcomed the developments in England, Wales and Northern Ireland in promoting the cessation of homewater mixed stock fisheries. This is to be achieved by voluntary agreements involving fair compensation funded on a joint government/private basis. We very much hope these developments will soon be followed in the Republic of Ireland, whose drift net fishery takes salmon from Eastern Atlantic countries as far south as Spain.

We would suggest that this approach offers an alternative to the quota negotiation process. We have all welcomed the restraint shown by both the Faroese and Greenland Governments, and noted that those fisheries have previously suspended operation as a result of compensation agreed on a purely private basis. We believe this is the time to seek a long-term effective closure of both fisheries (with a possible allowance for subsistence catches) through new international compensation agreements, which should include government funding on a multi-national basis, as well as private contributions.

The NGOs commend this approach to the Contracting Parties.

North American joint statement

It is my pleasure to speak on behalf of the Atlantic Salmon Federation's 150 affiliated organizations throughout the range of the wild Atlantic salmon in eastern Canada and northeastern United States.

You will remember that in 1998 at Edinburgh, NGOs presented to NASCO an International Atlantic Salmon Accord supported by 30 conservation organizations representing more than 11 million people throughout the North Atlantic. The Accord provides a blueprint for conserving and managing Atlantic salmon throughout their life-cycle and has been used by NGOs as a tool for moving governments towards more conservationally sound salmon management practices.

ASF and the World Wildlife Fund U.S. (WWF) have presented to the governments of Canada and the United States a report card, based upon the International Accord, assessing their performance in conserving and responsibly managing our wild Atlantic salmon. Before next

year's NASCO meeting, NGOs intend to present to all countries that produce wild Atlantic salmon a report card on the performance of each of the individual governments.

ASF fully supports the joint NGO call to once and for all eliminate fisheries that target mixed populations of wild Atlantic salmon. ICES considers North American stocks to be outside safe biological limits and recommends that there should be no exploitation of North American salmon in the waters of Greenland in 2001 nor should they be exploited in North America when they return as two-sea-winter salmon in 2002. The only exception ICES advises should be in-river harvests where it can be determined that stocks are above biologically-based spawning escapement requirements. ICES goes on to advise that exploitation should be further reduced in North America and Greenland by controlling the by-catch in other fisheries.

ICES cautions that mixed-population fisheries present particular threats to conservation. The problem with ocean fisheries is that they cannot be managed sustainably. The nets kill salmon from rivers that have endangered populations as well as those from healthier river populations. According to ICES, the Greenland harvest, in recent years, has contained an extremely high proportion of salmon originating from North America (as high as 90% were of North American origin in 1999). About 6.5% of the North American fish harvested are from the United States, where only 2% of conservation requirements are being met and where the remaining wild salmon populations have been listed as endangered. In addition, there are large deficiencies in spawners in the Bay of Fundy and the Atlantic coast rivers of Nova Scotia where 10 of the 11 rivers assessed have egg depositions that are less than 50% of spawning requirements. Each salmon returning to these rivers is precious and there is no way to prevent their harvest in the nets of fishermen at Greenland.

We commend Greenland for accepting a subsistence fishery for the past three years. We also commend Canada for terminating its Atlantic salmon commercial fisheries in its territorial waters. We urge other nations to heed ICES' advice and follow the example of Greenland and Canada by eliminating mixed-population fisheries in their own homewaters.

We urge a rational and practical implementation of the Precautionary Approach in management and decision making, especially as the Precautionary Approach pertains to the impacts of industrial users on wild salmon and in protecting and restoring the wild salmon's habitat. The possibility of negatively impacting a wild Atlantic salmon population or its habitat should not be subordinate to economic development. Irreversible damage to the salmon and its environment must be avoided at all costs.

There is overwhelming peer-reviewed scientific evidence of the very real threats farmed escapees present to wild Atlantic salmon from genetic interaction, competition for habitat and food, and spread of disease and parasites. Progress toward mitigating for these threats will be quicker when the aquaculture industry joins us in finding ways to solve the problems facing wild salmon. I am optimistic that we have established a basis for discussion and progress with industry representatives and I hope to be able to show you concrete results at the next meeting of NASCO.

Among our goals is the importance of the aquaculture industry and governments agreeing upon and implementing strong measures to contain farmed salmon to prevent interactions with wild Atlantic salmon. This is perhaps the single biggest problem for both the industry and conservation.

Finally, we urge governments to implement better assessment of salmon populations to improve the knowledge on which to base management decisions. WWF with the help of ASF has produced an important report detailing the status of wild Atlantic salmon in the 19 salmon-producing countries throughout the North Atlantic. The reports on individual countries in this study reveal that, of 2,615 historical salmon-bearing rivers, 2,005 can be categorized, whereas insufficient data exists to categorize 610 rivers. Of the total of the 2,005 salmon-bearing rivers that can be categorized, 294 (15%) have lost their salmon populations completely, 403 (20%) have populations that are endangered, and 236 (12%) are in critical condition (very close to extinction). Another 205 (10%) of the rivers have populations that are vulnerable, whereas the wild Atlantic salmon populations of only 867 rivers (43%) are healthy.

Through ICES, emphasis has been placed on managing salmon populations on a river-by-river basis. In its advice to NASCO, ICES states:

"Management of salmon stocks in the whole of the North Atlantic should be based on local assessments of the status of river and sub-river stocks (NASCO, 2000)."

The Atlantic Salmon Federation urges all nations to adopt this fundamental salmon conservation principle. Managing individual stocks of salmon is the only way to ensure that each river meets its spawning target.

In the 18 years since NASCO was first formed, Atlantic salmon stocks have declined by more than 75%. Despite the advice of ICES, the NASCO member states have refused or failed to manage Atlantic salmon on a river-specific basis in recognition of the fact that each river system hosts a strain of salmon uniquely adapted to its particular ecology (WWF Status of Wild Atlantic Salmon Report).

In Canada, the status of 72% of 550 salmon rivers is unknown. The information on Labrador rivers is practically non-existent. We can't manage what we don't understand. This is true of salmon in the ocean and in the rivers. Governments must provide the funding to assess and restore our wild Atlantic salmon runs and to research the causes of the high mortality of Atlantic salmon in the ocean.

We urge all Parties to make a significant commitment to an international cooperative marine research initiative based on agreed-upon priorities.

The people in this room are in a position to change the course for wild Atlantic salmon. Your decisions over the next few days can halt the decline of this extraordinary creature and signal the beginning of its recovery.

The Non-Government Organizations are anxious to help and we offer our expertise and resources to help recover wild Atlantic salmon populations throughout the North Atlantic.

Joint statement on the impact of aquaculture

Mr President: the NGOs are encouraged by the development of a productive and positive dialogue with the salmon aquaculture industry and we remain unanimous in our desire to contribute to this relationship.

We urge NASCO to build upon the Oslo Resolution to establish a binding code of conduct for responsible and sustainable aquaculture operations within the boundaries of the NASCO member countries for adoption at its next annual meeting.

Joint statement on transgenic salmon

The NGOs present at NASCO last year expressed in the strongest terms their call to all Parties for a complete ban on the licensing and introduction of transgenic salmonoids. This year the issue is even more immediate since the application to commercialize transgenic salmon by A/F Proteins/AquaBounty Farms is now actively being considered by the US Food and Drug Administration.

Therefore in addition to the concerns and recommendations already expressed last year we have put forward a list of specific and practical proposals for action that the Parties to NASCO can and should take.

These proposals are contained within the 'Greenpeace International proposal to NASCO' a copy of which has been distributed and which we would like included in the official documents of this meeting. All of the NGOs present fully support these proposals and recommendations. We call upon all Parties to implement these recommendations as a matter of urgency.

We note many aquaculture and fisheries organizations have already indicated that they are not in favour of transgenic salmon, including for example: - the International Salmon Farming Association (ISFA), the British Columbia Salmon Farmers Association, Scottish Quality Salmon and the Swedish National Board of Fisheries.

We are concerned about the suggestion within the North American Commission that transgenic salmonoids may be used in marine and freshwater cages and note that this is not in keeping with NASCO's agreed guidelines.

We share the "…doubts that 100% sterility can presently be achieved in a commercial situation", expressed by the NASCO Secretariat in their paper on Transgenic Salmon (CNL(01)29) and further note that regardless of the sterility issue transgenic fish may negatively disrupt the aquatic ecosystem if or when they escape. Given the record of escapes from aquaculture facilities such escape seems likely.

We note the scientific advice of the Royal Society of Science for Canada and the Royal Society of Science for the UK, both of whom recommend that approval for any commercial production of transgenic fish be conditional on the rearing of fish in contained land-based facilities only. This is in line with NASCO's currently agreed guidelines.

In the expectation that a decision regarding the application to commercialize these transgenic salmon will be made before next year's NASCO meeting, we urge in the strongest terms that the Parties to NASCO take the opportunity this week to re-state their commitment to the NASCO Guidelines on Transgenic Salmon during the scheduled discussion on Transgenic Salmon. In particular that, "The Parties will take all possible actions to ensure that the use of transgenic salmon, in any part of the NASCO Convention Area, is confined to secure, self-contained, land-based facilities."

Joint statement on *Gyrodactylus salaris*

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

As always, it is a pleasure to participate in the NASCO Annual Meeting and in this case in an interesting part of the Iberian Peninsula. This statement will focus on one of the most threatening dangers to Norwegian salmon rivers, the parasite *Gyrodactylus salaris.* The parasite represents the most extensive threat to salmon caused by human activities during recent years. So far, 41 Norwegian rivers have been infected, among them some of the most famous salmon rivers in Norway. If we don't succeed in stopping it, we are afraid that several other very important rivers will be infected in a few years, with almost 100% mortality of smolts.

The occurrence of *Gyrodactylus salaris* in Norway is a classic example of an accidental introduction of an exotic species into a new environment. In our country this started in the 1970s when the parasite, by incautiousness, arrived with the import of smolts from Sweden. Norway is committed to attempt to eradicate the parasite through our ratification of the Rio Convention on Biological Diversity.

In order to stop the parasite from spreading, a number of restrictive measures have been implemented. These involve disinfection of fishing gear and boats, limiting the stocking of fish and spreading of infected water, closing fish ladders and installing fish obstruction facilities, and using Rotenone.

These measures are followed up with an information campaign.

So far, chemical treatment using Rotenone is the only method which will normally exterminate the parasite. 25 of the 41 infected rivers in Norway have been treated, most of them successfully. However, during the period 1993 to 1997 treatment in four river systems failed, and from these watercourses at least 3 other treated rivers in the neighbourhood are reinfected. Further to this, a working group has evaluated the situation and proposed an improved treatment strategy.

Another important factor regarding chemical treatment is a growing opposition towards the use of a chemical which kills a lot of the organisms present in the watercourse, although experience show that the microfauna normally reappear in a rather short time after treatment. This problem has led to increased research into new ways of fighting the parasite.

The alternative treatment being developed is based on killing the parasite without killing its host or other aquatic organisms. So far there have been promising laboratory studies on the use of aluminium, but it remains to be tested on a large-scale system like a river. Further laboratory studies, which also include experiments with copper and zinc, will be necessary before the methods can be used in a watercourse. This will still take at least two or three years.

The fact remains that *Gyrodactylus salaris* represents a major threat to the wild Atlantic salmon. We cannot afford to gamble that the salmon will adapt to the parasite. We have to act now and our organisations agree with and fully support the policy and strategy adopted by our management authorities. However, the strategy is of no use unless the political authorities are willing to raise the money needed.

The support of NASCO and all its NGOs would be of great importance in our effort to get rid of the parasite. All practical measures should be taken to prevent further spread to new watercourses and new countries. What is being done or not being done, in one country, may have tremendous implications for another. As an example we would just remind you of the very short distance from the infected areas in Sweden and Finland to the border river Tana, which is the most important salmon river in Norway, maybe in whole the NASCO area. This river, with its 120 tons of salmon caught in the Norwegian part of it last year, may be one of the next infected rivers if we don't act in a precautionary manner.

Thank you, Mr. President.

The five statements above were supported by all NGOs represented at the Eighteenth Annual Meeting.

Opening Statement made by the Salmon Net Fishing Association of Scotland

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

The Salmon Net Fishing Association of Scotland once again welcomes this opportunity to make an Opening Statement at this, the Eighteenth Annual Meeting of NASCO.

This is a very short verbal statement; a full written statement (CNL(01)70) has been circulated.

An area of major concern to netsmen remains predation and they noted that both grey and common seals did not stop fishing during the six-week voluntary cessation of netting at the start of the 2000 and 2001 seasons. In fact, some netsmen have collected sufficient evidence to suggest that seals possibly killed more salmon during this period than what might have been the combined harvest had they also been fishing.

Mr President, this Organization has shown itself willing and able to deal with a wide range of difficult issues facing the wild Atlantic salmon as they have arisen. Unfortunately the negative impact of seal predation on salmonid stocks has not been considered sufficiently important to have been included. Netsmen across the North Atlantic, who have borne the brunt of the major restrictions placed on fisheries, implore NASCO to take firm action in this area.

Thank you, Mr President.

The above statement was supported by 14 of the NGOs represented at the Eighteenth Annual Meeting.

Opening Statement made by the World Wildlife Fund (USA)

I respectfully submit to NASCO delegates a report compiled by independent researchers, WWF country staff and various government representatives, entitled "The Status of Wild Atlantic Salmon: A River by River Assessment".

In this report, the summary of findings are:

- Wild Atlantic salmon populations in one third of the rivers of North America and Europe are endangered;
- Wild Atlantic salmon stocks have already disappeared completely from at least 309 river systems in Europe and North America;
- Wild Atlantic salmon are on the brink of extinction in Portugal, Estonia, Poland, the United States and adjoining parts of southern Canada;
- Nearly 90 percent of the known healthy populations of wild salmon are found in only four countries – Norway, Iceland, Scotland and Ireland;
- In the remainder of the range, 85 percent of wild Atlantic salmon populations are categorized as either *Vulnerable, Endangered* or *Critical;* and
- The production of farmed salmon in the North Atlantic is 600,000 tonnes annually – which is 300 times greater than the annual catch of wild salmon. This means that for every wild salmon caught, one tonne of farmed salmon is produced.

WWF and the Atlantic Salmon Federation call on NASCO to do the following:

- INSTRUCT all member countries to assess and classify the status of all salmon rivers within their borders and present to NASCO 2002 a plan of action aimed at eliminating the major threats to salmon and their habitat;

- IMPLEMENT measures to close all mixed-stock fisheries for wild Atlantic salmon, establish permanent "no-take" marine protected areas for salmon and provide appropriate compensation for adversely affected fishermen;

- DECIDE to establish a code of conduct for Responsible Aquaculture Industry Operations within the boundaries of the NASCO member countries by NASCO 2002 and full compliance within NASCO by 2005; and

- URGENTLY REQUEST member governments to establish, before NASCO 2002, gene banks that would ensure the survival of salmon stocks in rivers faced with imminent extinction.

Thank you, Mr President.

Opening Statement made by the National Anglers Representative Association (Ireland)

Mr President, Distinguished Delegates, Ladies and Gentlemen:

I am delighted to be present on behalf of my Irish constituents in this beautiful location in Galicia. We share a common Celtic heritage with the people here in our music, dance and social practices, so we are proud to be here.

NARA, in concert with the other 16 NGOs, fully supports the NGO joint statements and notes the positive moves to fund a cessation of home-water mixed stock fisheries in England, Wales and Northern Ireland. There is also some movement in Ireland this year.

We respectfully call on NASCO to encourage the Irish Government to facilitate on a partnership basis the voluntary cessation, with compensation, of the drift net fishery off the coast of Ireland.

Go raith maith agaibh.

Thank you.

Opening Statement made by the Federation of Irish Salmon and Sea Trout Anglers

El Presidente de NASCO, Delegados del mundo del salmon, Senoras, Senores, Amigas, Amigos:

Whilst fully supporting the Joint Statements of my Fellow NGOs, we in FISSTA believe that special emphasis must be placed on the Irish interceptory net fishery.

The Republic of Ireland has the unenviable distinction of being the last Salmonoid State which has not ended, or committed itself to end, this destructive practice.

To their credit Wales, England and the North of Ireland have recently done so. Southern Ireland therefore stands alone in the salmonoid world as a migratory mixed stock netting pariah. Yes, they have made some token compensatory voluntary "set aside" of net licences in a few estuaries of rivers earmarked for "Catchment Management" plans, which has created great anxiety for the future rights of angler club leases, etc.

Lack of money cannot be cited as a reason for the Minister for the Marine not seriously engaging and making commitment with NASF (North Atlantic Salmon Fund), who have proven so successful as honest brokers in other countries, in ending netting.

Anglers have declared their willingness to financially contribute to such a "buy out". In initial surveys 75% of netsmen are favourable to a "buy out" and 20% to a "set aside". The Minister is also responsible for forestry and has announced that £500,000,000 (five hundred million) is available for tree planting, mostly of the coniferous variety which themselves damage fish habitats.

Other millions of pounds are being committed to the salmon farming industry, which is planned to double or treble from its present 18,000 tonnes within a few years, while the salmon farmers themselves are seeking to exceed 100,000 tonnes. Given the damage already inflicted upon sea trout and wild salmon in Ireland by salmon farms, one can only say "woe upon woe".

Surely a positive step would be to first bring the massive Irish drift netting to a just, compensatory closure. Here in Spain on the River Tea one, as an Irishman, is somewhat shamed knowing that our State is still allowing the slaughter of not just our own salmon but those of other nations. Indeed it is certain that the very scarce salmon in the River Tea and the Iberian Peninsula generally are made even scarcer by the Irish interceptory nets.

FISSTA received a plea from APS (Association Protectrice du Saumon) through and with support of the AIDSA, another NASCO NGO, requesting us to incorporate in our statement the French organisation's abhorrence at what is happening to their salmon off the Irish coast.

In their “Open Letter” APS indicate their outrage that, despite all their expense and work on the River Allier, for instance, and that they have forbidden all salmon angling for seven years on that river in order to improve stocks, Irish nets undermine their efforts by killing some of their precious French salmon.

Therefore, Mr President, FISSTA calls upon all the Contracting Parties to NASCO to use all their considerable influence to persuade, and above all, encourage the Irish Government and its Salmon Commission to grasp the historic occasion offered through the NASF initiative to end interceptory netting and join with the rest of the salmonoid world on this issue to help protect and restore to abundance the wild Atlantic salmon stocks.

Gracias – Go Raibh Mile Maith Agaibh (A hundred thousand thanks to you all).

ANNEX 6

List of Participants

* Denotes Head of Delegation

CANADA

*Mr David Bevan	Representative Department of Fisheries and Oceans, Ottawa, Ontario
Mr Jim Gillespie	Representative Quispamsis, New Brunswick
Mr Pierre Tremblay	Representative Sainte-Foy, Quebec
Mr Jacque Robichaud	President of NASCO Ottawa, Ontario
Ms Julia Barrow	Department of Fisheries and Oceans, Ottawa, Ontario
Mr Michael Calcutt	Department of Fisheries and Oceans, Ottawa, Ontario
Mr Peter Cronin	New Brunswick Department of Natural Resources and Energy, Fredericton, New Brunswick
Mr David Dunn	Department of Fisheries and Oceans, Moncton, New Brunswick
Ms Nell Halse	New Brunswick Salmon Growers' Association, Letang, New Brunswick
Mr Murray Hill	Department of Fisheries, Pictou, Nova Scotia
Mr Ron Jasperse	Department of Fisheries and Oceans, Ottawa, Ontario
Mr André Magny	Société de la faune et des parcs du Québec, Quebec
Mr Brian Meaney	Department of Fisheries and Aquaculture, St John's, Newfoundland
Mr David Meerburg	Department of Fisheries and Oceans, Ottawa, Ontario
Mr Rex Porter	Department of Fisheries and Oceans, St John's, Newfoundland

Mr Berkley Slade	Department of Fisheries and Oceans, St John's, Newfoundland
Mr Jack Taylor	Office of the Commissioner for Aquaculture Development, Ottawa, Ontario

DENMARK (IN RESPECT OF THE FAROE ISLANDS AND GREENLAND)

*Mr Einar Lemche	Representative Greenland Home Rule, Copenhagen, Denmark
Mr Arni Olafsson	Representative Ministry of Foreign Affairs, Copenhagen, Denmark
Ms Ulla S Wang	Representative Faroese Home Government, Torshavn, Faroe Islands
Dr Jan-Arge Jacobsen	Fisheries Laboratory of the Faroes, Torshavn, Faroe Islands
Mr Per Kanneworff	Greenland Institute for Natural Resources, Copenhagen, Denmark
Mr Lars Dyrlov Madsen	Greenland Home Rule, Nuuk, Greenland
Mr Niels J Nielsen	Salmon Vessel Owners Association, Torshavn, Faroe Islands
Mr Sofus Poulsen	Faroese Commercial Attaché, Aberdeen, UK
Mr Emanuel Rosing	Greenland Home Rule, Nuuk, Greenland
Mr Hedin Weihe	Faroese Home Government, Torshavn, Faroe Islands

EUROPEAN UNION

*Mr Ole Tougaard	Representative European Commission, Brussels, Belgium
Mr Andrew Thomson	Representative European Commission, Brussels, Belgium
Mr Pablo Caballero	Xunta de Galicia, Santiago de Compostela, Spain
Ms Hazel Campbell	Department of Culture, Arts and Leisure, Belfast, UK
Mr Isaias Calvo	Xunta de Galicia, Santiago de Compostela, Spain

Mr Richard Cowan	Ministry of Agriculture, Fisheries and Food, London, UK
Dr Walter Crozier	Department of Agriculture and Rural Development for Northern Ireland, Bushmills, UK
Mr David Dunkley	Scottish Executive Rural Affairs Department, Edinburgh, UK
Mr Jaako Erkinaro	Finnish Game and Fisheries Research Institute, Oulu, Finland
Mr Lal Faherty	The Western Regional Fishery Board, Galway, Ireland
Mr D Tomas Fernández-Couto	Xunta de Galicia, Santiago de Compostela, Spain
Mr Peter Funegard	National Board of Fisheries, Gothenburg, Sweden
Mr Antonio Garcia Elorriaga	Secretaria General de Pesca Maritima, Madrid, Spain
Dr Paddy Gargan	Central Fisheries Board, Dublin, Ireland
Mr Jose Luis Gonzalez	Secretaria General de Pesca Maritima, Madrid, Spain
Mr Tobias Kerrn-Jespersen	Ministry of Food, Agriculture and Fisheries, Copenhagen, Denmark
Mr Michael Kennedy	The Western Regional Fishery Board, Galway, Ireland
Mrs Eija Kirjavainen	Ministry of Agriculture and Forestry, Department of Fisheries and Game, Helsinki, Finland
Dr Guy Mawle	Environment Agency, Bristol, UK
Mr Julian MacLean	Scottish Executive Rural Affairs Department, Montrose, UK
Mr Jesus Marquina	Xunta de Galicia, Santiago de Compostela, Spain
Mr Maurice Mullen	Department of the Marine and Natural Resources, Dublin, Ireland
Mr Pentti Munne	Ministry of Agriculture and Forestry, Department of Fisheries and Game, Helsinki, Finland
Mr John O'Connor	Central Fisheries Board, Dublin, Ireland
Dr Niall Ó Maoileidigh	Marine Institute, Dublin, Ireland

Mr Vicente Pons-Mateu	Council Secretariat of the European Union, Brussels, Belgium
Mr Ted Potter	Centre for Environment, Fisheries and Aquaculture Science, Lowestoft, UK
Dr Ken Whelan	The Marine Institute, Newport, Ireland

ICELAND

*Mr Arni Isaksson	Representative Directorate of Freshwater Fisheries, Reykjavik

NORWAY

*Mr Steinar Hermansen	Representative The Royal Ministry of Environment, Oslo
Mr Arne Eggereide	Representative Directorate for Nature Management, Trondheim
Ms Eva Espeland	Representative The Royal Ministry of Environment, Oslo
Mr Raoul Bierach	Directorate for Nature Management, Trondheim
Dr Lars Petter Hansen	Norwegian Institute for Nature Research, Oslo
Ms Bente Wilhelms	Ministry of Agriculture, Oslo

RUSSIAN FEDERATION

*Mr Boris Prischepa	Representative Murmanrybvod, Murmansk
Ms Svetlana Krylova	Murmanrybvod, Murmansk
Mr Vladimir Moskalenko	PINRO, Murmansk
Ms Elena Samoylova	PINRO, Murmansk
Dr Alexander Zubchenko	PINRO, Murmansk

USA

*Mr Rolland Schmitten	Representative National Marine Fisheries Service, Silver Springs, Maryland
Mr Robert Jones	Representative Connecticut River Salmon Association, S. Windsor, Connecticut
Dr Ray Owen, Jr.	Representative Orono, Maine
Mr Ed Baum	Atlantic Salmon Unlimited, Hermon, Maine
Mr Sebastian Belle	Maine Aquaculture Association, Hallowell, Maine
Ms Kimberly Blankenbeker	National Marine Fisheries Service, Silver Spring, Maryland
Ms Nikki Brajevich	US Department of State, Office of Marine Conservation, Washington, DC
Dr Russell Brown	National Marine Fisheries Service, Woods Hole, Massachusetts
Mr Stephen Chase	Atlantic Salmon Federation, St Andrews, New Brunswick
Ms Mary Colligan	National Marine Fisheries Service, Gloucester, Massachusetts
Dr Jaime Geiger	US Fish and Wildlife Service, Hadley, Massachusetts
Mr Stephen Gephard	Department of Environmental Protection, Fisheries Division, Old Lyme, Connecticut
Dr Francis Juanes	University of Massachusetts, Amherst, Massachusetts
Dr Fred Kircheis	Maine Atlantic Salmon Commission, Augusta, Maine
Mr Joseph McGonigle	Aqua Bounty Farms, Waltham, Massachusetts
Dr Andrew Rosenberg	University of New Hampshire, Durham, New Hampshire

PARTICIPANTS AT THE SPECIAL LIAISON MEETING ONLY

Mr Richie Flynn	Irish Salmon Growers Association, Dublin, Ireland
Mr Ari Johanneson	Ministry of Trade and Industry, Torshavn, Faroe Islands

INTER-GOVERNMENT ORGANIZATIONS

Mr Vladimir Fedorenko	North Pacific Anadromous Fish Commission, Vancouver, Canada
Mr David de G Griffith	International Council for the Exploration of the Sea Copenhagen, Denmark
Mr Tore Jakobsen	International Council for the Exploration of the Sea, Copenhagen, Denmark
Dr Henrik Sparholt	International Council for the Exploration of the Sea, Copenhagen, Denmark
Dr Walter Ranke	International Baltic Sea Fishery Commission, Warsaw, Poland
Ms Ulla S Wang	North Atlantic Marine Mammal Commission, Tromso, Norway (also representing Denmark (in respect of the Faroe Islands and Greenland))

NON-GOVERNMENT ORGANIZATIONS

Dr Frederic Mazeaud	AIDSA, France
Mr Brian Davidson	Association of Salmon Fishery Boards, UK
Mr William Taylor Ms Sue Scott	Atlantic Salmon Federation, Canada
Captain Jeremy Read	Atlantic Salmon Trust, UK
Mr Richard Behal	Federation of Irish Salmon and Sea-Trout Anglers, Ireland
Mr Mark Boyden	Coomhola Salmon Trust Ltd, Ireland
Mr Lindsay Keenan Ms Helene Bours	Greenpeace International, Germany
Mr John Gregory	Institute of Fisheries Management, UK

Mr Patrick Byrne	National Anglers Representative Association, Ireland
Mr Bjornulf Kristiansen	Norges Bondelag (Norwegian Farmers Union), Norway
Mr Aage Wold Mr Stian Stensland	Norskelakseelver (Norwegian Salmon Rivers), Norway
Mr William Shearer	Salmon Net Fishing Association of Scotland, UK
Mr Ian Calcott	Scottish Anglers National Association, UK
Mr Chris Poupard Mr Patrick Fothringham	European Anglers Alliance, and Salmon and Trout Association, UK
Mr Henning Roed Mr Cesar Rodriguez Ruiz	World Wide Fund for Nature, Norway
Mr Thomas Grasso Ms Martha Wilson	World Wildlife Fund, USA

SECRETARIAT

Dr Malcolm Windsor	Secretary
Dr Peter Hutchinson	Assistant Secretary
Miss Margaret Nicolson	PA to the Secretary
Mrs Sophie Ross	PA

ANNEX 7

CNL(01)47

Eighteenth Annual Meeting of the Council
Hotel Tryp Mondariz, Mondariz, Galicia, Spain
4-8 June, 2001

Agenda

1. Opening Session

2. Adoption of Agenda

3. Administrative Issues

3.1 Secretary's Report

3.2 Report of the Finance and Administration Committee

3.3 Methods of Calculating the Contributions to NASCO

3.4 Review of NASCO's Relationship with its Observer Organizations

3.5 Reports on the Activities of the Organization

3.6 Announcement of the Tag Return Incentive Scheme Grand Prize

4. Scientific, Technical, Legal and Other Information

4.1 Scientific Advice from ICES

4.2 Report of the Standing Scientific Committee

4.3 Catch Statistics and their Analysis

4.4 Review of International Salmon-Related Literature Published in 2000

5. Conservation, Restoration, Enhancement and Rational Management of Salmon Stocks

5.1 Measures Taken in Accordance with Articles 14 and 15 of the Convention

5.2 The Precautionary Approach to Salmon Management

(a) Report of the Standing Committee on the Precautionary Approach on Application of a Precautionary Approach to Habitat Protection and Restoration

(b) Implications of socio-economic issues for application of the Precautionary Approach
(c) Review of progress in applying the Decision Structure for Management of Salmon Fisheries
(d) Future actions in relation to application of the Precautionary Approach

5.3 Unreported Catches

(a) Returns by the Parties
(b) FAO International Plan of Action on Illegal, Unreported and Unregulated Fishing

5.4 International Cooperative Research

(a) Report of the Working Group on International Cooperative Research
(b) Financial and administrative implications of the recommendations of the Working Group
(c) Future actions in relation to International Cooperative Research

5.5 Scientific Research Fishing in the Convention Area

5.6 By-catch of Atlantic Salmon

5.7 Fishing for Salmon in International Waters by Non-Contracting Parties

5.8 Impacts of Aquaculture on Wild Salmon Stocks

(a) Special Liaison Meeting to Review Measures to Minimise Impacts of Aquaculture on the Wild Stocks
(b) Report of the 2000 Special Liaison Meeting
(c) Returns made in accordance with the Oslo Resolution
(d) Liaison with the salmon farming industry
(e) Development of Guidelines on Containment of Farm Salmon

5.9 Transgenic Salmon

5.10 St Pierre and Miquelon Salmon Fisheries

5.11 Predator-related Mortality

5.12 Reports on Conservation Measures Taken by the Three Regional Commissions

6. Other Business

7. Date and Place of Next Meeting

8. Draft Report of the Meeting

9. Draft Press Release

ANNEX 8

Council

CNL(01)48

2002 Budget, 2003 Forecast Budget and Schedule of Contributions

North Atlantic Salmon Conservation Organization
2002 Budget And 2003 Forecast Budget (Pounds Sterling)

Section	Description	Expenditure	
		Budget 2002	Forecast 2003
1	Staff-related costs	250,270	257,760
2	Travel and subsistence	34,350	30,120
3	Research and advice	29,720	30,612
4	Contribution to Working Capital Fund	0	0
5	Meetings	7,500	15,630
6	Office supplies, printing and translation	23,850	31,090
7	Communications	14,300	14,720
8	Headquarters Property	-28,270	-27,490
9	Office furniture and equipment	7,250	7,460
10	Audit and other expenses	9,600	8,330
11	Tag Return Incentive Scheme	4,700	4,550
	Total	353,270	372,782

		Revenue	
		Budget 2002	Forecast 2003
12	Contributions - Contracting Parties	363,270	381,782
13	Miscellaneous Income - Interest	8,000	8,000
14	Stabilisation	-18,000	-17,000
15	Surplus or Deficit (-) From 2000	0	0
	Total	353,270	372,782

Adjustments to 2001 contributions (Pounds Sterling)
to take into account confirmed 1999 Catch Statistics

Party	1999 Provisional catch	1999 Confirmed catch	2001 Contribution based on provisional catch	2001 Contribution based on confirmed catch	Adjustment to 2001 contribution
Canada	143	152	30,999	31,760	+761
Denmark (Faroe Islands and Greenland)	19	19	17,203	17,173	-30
European Union	995	1,016	125,796	126,523	+727
Iceland	145	147	31,222	31,212	-10
Norway	811	811	105,324	104,038	-1,285
Russian Federation	102	102	26,438	26,276	-162
USA	0	0	15,089	15,089	0
TOTAL	2,215	2,247	352,070	352,070	0

Note: A positive adjustment represents an underpayment.

NASCO Budget Contributions for 2002 and Forecast
Budget Contributions for 2003 (Pounds Sterling)

Party	2000 Provisional catch (tonnes)	Contribution for 2002	Adjustment from 2001	Adjusted contribution for 2002	Forecast contribution for 2003
Canada	150	29,124	+761	29,884	30,608
Denmark (Faroe Islands and Greenland)	29	18,189	-30	18,159	19,116
European Union	1,251	128,616	+727	129,343	135,170
Iceland	84	23,159	-10	23,149	24,340
Norway	1,176	121,839	-1,285	120,554	128,047
Russian Federation	124	26,774	-162	26,612	28,138
USA	0	15,569	0	15,569	16,362
TOTAL	2,814	363,270	0	363,270	381,782

Contributions are based on the Official Catch Returns supplied by the Parties.
Column totals can be in error by a few pounds due to rounding.

ANNEX 9

Council

CNL(01)49

Decision by the Council of NASCO Concerning a NASCO Staff Fund

CNL(01)49

Decision by the Council of NASCO Concerning a NASCO Staff Fund

Having regard to present issues and potential future difficulties of the investment of existing Secretariat members' funds in Equitable Life, paid by the Organization and the Secretariat Members under Staff Rule 8.2, and set aside for the future provision of NASCO Secretariat members, the Council decides:

To establish a Special Fund under NASCO Financial Rule 6.1, called "NASCO Staff Fund", to be used wholly for the benefit of Secretariat members.

The Council further agrees that:

1. Contributions by NASCO and contributions by the Secretariat members may be held in this Fund, which shall be subdivided into a separate fund for each Secretariat member;

2. The funds may be held on deposit or, should the Secretariat member concerned so decide, be placed under the management of a competent fund manager;

3. NASCO shall have neither any claim on, nor any responsibility for, the Fund other than its existing obligations to contribute under Staff Rule 8, and the Fund shall not form part of the NASCO Accounts except that the annual payments made by NASCO and the staff member as provided for under Section 1 of the budget should be detailed in the audited accounts;

4. The funds may be transferred in and out by existing and past Secretariat members, and considered as tax-paid deferred salary payments.

ANNEX 10

Council

CNL(01)50

Guidelines on Acceptance of Voluntary Contributions

CNL(01)50

Guidelines on Acceptance of Voluntary Contributions

In the event that the Council decides to accept voluntary contributions offered by non-members in accordance with Financial Rule 7.2, such contributions may be accepted provided:

(1) that the Council shall decide if the purpose of the contribution is consistent with the policies, aims and activities of the Organization;
(2) that voluntary contributions from non-members shall not be used to fund the general work of the Organization but may be accepted for Special Projects of relevance to the conservation, restoration, enhancement and rational management of salmon identified by the Council;
(3) that those offering the voluntary contribution recognize that acceptance of the contribution does not signify that NASCO endorses the products, aims or objectives of those making the donations;
(4) that those offering the voluntary contributions may not attach conditions to the contribution other than possibly specifying a Special Project previously identified by the Council for which the contributions are to be used;
(5) that voluntary contributions do not confer any rights to participate in or influence the work of the Organization;
(6) that those offering voluntary contributions may not use NASCO's name and/or logo to signify an association with the Organization without prior approval from the Secretary; they may, however, indicate their general support for the objectives of NASCO;
(7) that those offering voluntary contributions accept these conditions in writing prior to the contribution being accepted.

ANNEX 11

Council

CNL(01)11

Report of the ICES Advisory Committee on Fishery Management

Only the advice concerning general issues of relevance to the North Atlantic is given in this report. The detailed advice on a Commission area basis is annexed to the report of the Commissions.

Include separately

ANNEX 12

CNL(01)66

Request for Scientific Advice from ICES

1. With respect to Atlantic salmon in the North Atlantic area:

    1.1 provide an overview of salmon catches and landings, including unreported catches by country and catch and release, and worldwide production of farmed and ranched salmon in 2001;
    1.2 report on significant developments which might assist NASCO with the management of salmon stocks;
    1.3 provide a compilation of tag releases by country in 2001.

2. With respect to Atlantic salmon in the North-East Atlantic Commission area:

    2.1 describe the key events of the 2001 fisheries and the status of the stocks;
    2.2 update the evaluation of the effects on stocks and fisheries of significant management measures introduced since 1991;
    2.3 further develop the age-specific stock conservation limits where possible based upon individual river stocks;
    2.4 provide catch options or alternative management advice with an assessment of risks relative to the objective of exceeding stock conservation limits;
    2.5 provide an estimate of by-catch of salmon post-smolts in pelagic fisheries based on the scientific information currently available;
    2.6 identify relevant data deficiencies, monitoring needs and research requirements.

3. With respect to Atlantic salmon in the North American Commission area:

    3.1 describe the key events of the 2001 fisheries and the status of the stocks;
    3.2 update the evaluation of the effects on US and Canadian stocks and fisheries of management measures implemented after 1991 in the Canadian commercial salmon fisheries;
    3.3 update age-specific stock conservation limits based on new information as available;
    3.4 characterise the reliability of input data used to estimate the lagged spawner variable, with special emphasis on the Labrador region, and evaluate sensitivity of resulting pre-fishery abundance estimates;
    3.5 provide catch options or alternative management advice with an assessment of risks relative to the objective of exceeding stock conservation limits;
    3.6 identify relevant data deficiencies, monitoring needs and research requirements.

4. With respect to Atlantic salmon in the West Greenland Commission area:

4.1 describe the events of the 2001 fisheries and the status of the stocks;
4.2 update the evaluation of the effects on European and North American stocks of the Greenlandic quota management measures and compensation arrangements since 1993;
4.3 characterise the historical and current temporal and spatial distribution and relative abundance of North American and European Atlantic salmon and, where possible, smaller stock groups, in fisheries at West Greenland;
4.4 provide catch options or alternative management advice with an assessment of risk relative to the objective of exceeding stock conservation limits;
4.5 provide a detailed explanation and critical examination of any changes to the model used to provide catch advice and of the impacts of any changes to the model on the calculated quota;
4.6 evaluate the ad hoc management programme and advise on an appropriate management system for the fishery in future years, taking account of the stocks of both North American and European origin;
4.7 identify relevant data deficiencies, monitoring needs and research requirements.

Notes:

1. In the responses to questions 2.1, 3.1 and 4.1 ICES is asked to provide details of catch, gear, effort, composition and origin of the catch and rates of exploitation. For homewater fisheries, the information provided should indicate the location of the catch in the following categories: in-river; estuarine; and coastal. Any new information on non-catch fishing mortality of the salmon gear used, and on the by-catch of other species in salmon gear and of salmon in any new fisheries for other species, is also requested.

2. In response to question 2.4 advise on potential biases in the catch advice resulting from the inclusion of fish farm escapes in the assessment models.

3. In response to question 4.1, ICES is requested to provide a brief summary of the status of North American and North-East Atlantic salmon stocks. The detailed information on the status of these stocks should be provided in response to questions 2.1 and 3.1.

4. With regard to question 4.5, "changes to the model" would include the development of any new model.

ANNEX 13

Council

CNL(01)13

Catch Statistics - Returns by the Parties

CNL(01)13

Catch Statistics - Returns by the Parties

1. The Official Catch Statistics, as submitted by the Parties, are tabulated overleaf (Table 1). The figures for 2000 are provisional. These catch statistics, which have been rounded to the nearest tonne, will be used to calculate the contributions to NASCO for 2002 and the adjustment to the 2001 contributions (in the light of the confirmed 1999 catches) unless the Secretary is advised otherwise.

2. Under Article 12 of the Convention, the Secretary shall compile and disseminate statistics and reports concerning the salmon stocks subject to the Convention. Table 2 presents catch statistics for the period 1960-2000 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 1960-2000 is provided, for information only, in paper CNL(01)14.

4. For the 2000 catch data the discrepancy in the combined catches provided to ICES and those provided to NASCO by the Contracting Parties is less than 2 tonnes.

Secretary
Edinburgh
11 May, 2001

Table 1: Official Catch Statistics

	Provisional 2000 Catch (Tonnes)	Provisional 2000 Catch according to Sea Age						Confirmed 1999 Catch (Tonnes)
		1SW		MSW		Total		
		No	Wt	No	Wt	No	Wt	
Canada *	150	50,108	87	11,459	62	-	150	152
Denmark (in respect of Faroe Islands and Greenland)	29	-	-	-	-	-	-	19
Faroe Islands	8	-	-	-	-	-	-	0
Greenland	21	-	-	-	-	-	-	19
European Union**	1,251	-	-	-	-	-	-	1,016
Iceland***	84	-	58	-	26.2	-	84.2	147
Norway	1,176	250,468	503.6	124,253	672.5	374,721	1,176.1	811
Russian Federation	124	27,702	75.4	9,415	48.4	37,117	123.8	102
United States of America	0	-	-	-	-	-	-	0

* The breakdown of the Canadian catch is into the categories small (shown under 1SW) and large (shown under MSW) salmon.
** Breakdown of the catch by European Union by number and weight according to sea age is only available for some of its Member States.
*** The 2000 catch for Iceland includes 2 tonnes of ranched salmon.

Table 2: Catches of Atlantic Salmon by the Parties to the NASCO Convention

	Canada	Denmark (Faroe Islands and Greenland)	European Union	Finland	Iceland	Norway	Russian Federation	Sweden	USA
1960	1636	60	2641		100	1576	1100	40	1
1961	1583	127	2276		127	1456	790	27	1
1962	1719	244	3894		125	1838	710	45	1
1963	1861	466	3842		145	1697	480	23	1
1964	2069	1539	4242		135	2040	590	36	1
1965	2116	861	3693		133	1900	590	40	1
1966	2369	1338	3549		106	1823	570	36	1
1967	2863	1600	4492		146	2058	883	25	1
1968	2111	1167	3623		162	1752	827	150	1
1969	2202	2350	4407		133	2083	360	76	1
1970	2323	2354	4069		195	1861	448	52	1
1971	1992	2511	3745		204	1847	417	35	1
1972	1759	2146	4261	32	250	1986	462	38	1
1973	2434	2402	4604	50	156	2126	772	73	3
1974	2539	1945	4432	76	225	1973	709	57	1
1975	2485	2086	4500	76	166	1754	811	56	2
1976	2506	1479	2931	66	225	1530	542	45	1
1977	2545	1652	3025	59	130	1488	497	10	2
1978	1545	1159	3102	37	291	1050	476	10	4
1979	1287	1694	2572	26	225	1831	455	12	3
1980	2680	2052	2640	34	249	1830	664	17	6
1981	2437	2602	2557	44	163	1656	463	26	6
1982	1798	2350	2533	83	147	1348	364	25	6
1983	1424	1433	3532	79	198	1550	507	28	1
1984	1112	997	2308	75	159	1623	593	40	2
1985	1133	1430	3002	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	711	533	1139	69	505	877	215	38	1
1992	520	260	1506	77	636	867	166	49	1
1993	373	35	1483	70	656	923	140	56	1
1994	355	18	1919	48	448	996	141	44	0
1995	259	86	1852	-	439	839	130	-	0
1996	290	92	1474	-	358	787	131	-	0
1997	229	59	1179	-	154	630	111	-	0
1998	157	17	1183	-	164	740	130	-	0
1999	152	19	1016	-	147	811	102	-	0
2000	150	29	1251	-	84	1176	124	-	0

NOTES:

1. The European Union catch from 1995 includes the catches by Finland and Sweden.
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 Union and the catches up to 1983 by Denmark.
3. Figures from 1986 are the official catch returns to NASCO. Figures to 1986 are based on data contained in the ICES Working Group Reports.
4. The Faroese fishery was subject to compensation arrangements in the period 1991-1998. The West Greenland fishery was subject to compensation agreements in 1993 and 1994.

ANNEX 14

Council

CNL(01)16

Returns under Articles 14 and 15 of the Convention
(updated to include information for EU (France) provided after the Eighteenth Annual Meeting)

CNL(01)16

Returns under Articles 14 and 15 of the Convention (updated to include information for EU (France) provided after the Eighteenth Annual Meeting)

The request for the return of information required under the NASCO Convention and relevant to the period 1 January - 31 December 2000 was circulated on 3 January 2001. All Parties were requested to make a return even if there had been no changes since the last notification. Where changes have been notified under Article 15, and the laws, regulations and programmes concerned have been lodged with the Secretariat, the 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 of this paper, information has not been received from all EU Member States which have salmon interests. No information is available for Portugal or Spain.

Secretary
Edinburgh
11 July, 2001

Returns under Article 14 of the Convention

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

Norway

Information on sightings is reported directly to NASCO from the Norwegian Coast Guard Squadron North.

Other Parties

No actions reported by the other Parties.

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)*

Canada

In discussions between Canada and France concerning mutual fishing relations, Canada voiced its concern and that of NASCO regarding the state of the Atlantic salmon stocks, emphasising the negative impact of interception catches (St Pierre and Miquelon) on the rebuilding of salmon stocks in Canadian and U.S. rivers.

USA

Consistent with the Resolution passed by NASCO in 2000, the U.S. contacted France regarding the fishery at St Pierre and Miquelon. In response, France indicated its willingness to report the requested information to NASCO.

Other Parties

No actions reported by the other Parties.

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

The moratorium on commercial salmon fishing remained in effect for the island of Newfoundland.

USA

No measures reported.

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 actions reported by either Party.

2. Actions Taken To Implement Regulatory Measures Under Article 13 *(Article 14, Paragraph 1)*

No actions reported by any Party.

Returns under Article 15 of the Convention

3. Laws, Regulations And Programmes Adopted Or Repealed Since The Last Notification *(Article 15, Paragraph 5(a))*

European Union

France

A specific TAC for multi-sea-winter salmon has been implemented for recreational fisheries in the Armorican region (Brittany and Lower Normandy). This measure resulted in the early closure of fishing for five rivers in 2000, which led to an estimated reduction of 7% in the catch of multi-sea-winter salmon in this region. In the Adour basin (south-west France) a quota of 180 salmon was set for anglers and a summer closure of the commercial net fishery has been implemented in order to ensure higher escapement.

United Kingdom

In England and Wales, net limitation orders for the rivers Lune, Dart and Teign were renewed and led to further reductions in the number of nets that may be used to fish for salmon. For example, the number of seine nets that may be used in the River Dart was reduced from 18 to 15. On the River Lune a season bag limit of 4 salmon (killed) was introduced for the rod fishery.

In Scotland, the Scotland Act 1998 (Border Rivers) Order 1999 entered into force in 1999 (but was not reported last year). This Order made provisions in relation to the conservation, management and exploitation of salmon, trout, eels and freshwater fish in the River Esk and River Tweed following transfer of fisheries matters in Scotland to the Scottish Parliament as a result of devolution. The Order provides a mechanism for the management of the Border Rivers requiring agreement by both the UK and Scottish Ministers. Under the Salmon (Fish Passes and Screens) (Scotland) Regulations 1994, the regulations in relation to dams and fish passes came into force on 1 January 2000. The regulations in relation to screens came into force on 1 January 1998.

Iceland

A revised regulatory measure concerning transport and release of salmonids (No. 105/2000) took effect on February 18th 2000.

Norway

The fishing season for wild salmon with bag-nets was shortened by ten days in the county of Sogn og Fjordane and seven days in the county of Nordland. At the same time, the fishing season was shortened in many rivers in the same areas.

A working group was established to evaluate different aspects concerning quota-based fishing regulations.

In 2000 the total cost of supervision in territorial sea areas and watercourses was NOK 6.5 million.

USA

On November 17, 2000 the Gulf of Maine distinct population segment of Atlantic salmon was listed as endangered under the U.S. Endangered Species Act. That listing became effective on December 18, 2000. Under the Endangered Species Act, "take" of a listed species is against the law. "Take" is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." Harm is further defined as including any act which actually kills or injures fish and such acts may include significant habitat degradation that significantly impairs essential behavioural patterns including spawning, rearing, migrating, feeding or sheltering. A copy of the final listing has been lodged with the Secretariat.

Other Parties

No changes reported by the other Parties or the other EU Member States. Greenland has reported that the Greenland Home Rule Executive Order 13 of 12 August 1999 on salmon fishing is still in force.

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))*

Denmark (Faroe Islands and Greenland)

Faroe Islands

No new commitments.

Greenland

Canada and Denmark for Greenland have undertaken to complete a research programme for 1999 and 2000 to improve scientific sampling of salmon at Greenland.

European Union

France

The specific TAC for multi-sea-winter salmon will be maintained for 5 years in the rivers of Brittany. In the Adour basin the measure will be maintained until 2003.

Ireland

Catchment management plans in two rivers in Ireland have incorporated closures/set-aside of inshore draft net fisheries for conservation purposes.

Sweden

A more comprehensive monitoring programme will be implemented with regard to the parasite *Gyrodactylus salaris*.

United Kingdom

In England and Wales netsmen have received compensation payments (from various sources) not to fish for all or part of the season in the following salmon fisheries: Tavy, Tamar, Lynher, Fowey, Usk, Avon and Stour and Cumbrian coastal fisheries. A number of mixed stock fisheries continue to be phased out. In the largest of these, the North-East coast fishery, the number of drift net licences has now fallen to 71, a 50% reduction since the phase-out began in 1993.

For England the UK Government announced that it would be providing up to £750,000, subject to matching funds from interested parties, to launch compensation arrangements designed to accelerate the phase-out of mixed stock salmon net fisheries on a voluntary basis.

In Scotland the voluntary practice of catch and release in the rod fishery continues to increase, rising from an estimated 8% in 1994 to an estimated 33.5% in 2000. Salmon netsmen deferred, voluntarily, the opening of the net fishing season for 6 weeks to conserve early-running MSW salmon. District salmon fishery boards throughout Scotland have undertaken stocking programmes resulting in the introduction of more than 6.75 million ova, fry, parr and smolts into Scottish rivers (5.8 million as fry) during the year 2000. Habitat improvement schemes in rivers throughout Scotland have been continued to improve spawning and nursery areas, and to provide increased access to spawning areas.

In Northern Ireland work on the Salmon Management Plan reported last year continues. Three fish counters will be operational in 2001 to produce data to support the Plan. Salmon carcass-tagging regulations are expected to be introduced in both the Foyle and FCB areas in 2001.

Norway

National salmon watercourses and fjords

In 1999 the Wild Salmon Committee proposed that a number of salmon watercourses and adjoining migratory areas and fjords be given status as national salmon watercourses and national salmon fjords. In these areas wild salmon will receive special protection by being given priority. Based on this proposal and subsequent action taken by the Norwegian Government and the Parliament, the Ministry of Environment, together with other relevant ministries, is carrying out a more thorough evaluation concerning the extent of such a programme and appropriate management

strategies. Furthermore the necessary legislative adjustments and administrative and economic consequences are being given special attention. This review is still in progress and should lead to a final proposal, which should be submitted to the Norwegian Parliament in 2001.

National working group for Atlantic salmon

A national working group for Atlantic salmon was appointed by the Directorate for Nature Management in the autumn of 2000. The working group will report on the status of the stocks both to ICES and to the national authorities.

Liming

In 2000, 20 Atlantic salmon rivers were limed in Norway. The liming has been conducted over the last 3 to 6 years in most of the rivers at an annual cost of NOK 45 million. It will still take some years before these salmon stocks are rebuilt. There are liming projects in three large watercourses in southern-most Norway: Tovdalselva, Mandalselva and Bjerkreimselva. In Tovdalselva and Mandalselva, the natural Atlantic salmon stocks are extinct due to acidification. Before acidification the catch of salmon in the river Mandalselva was as high as 30 tons per year at the end of the last century. In both rivers a restocking program is being carried out in connection with the liming program. The catches are increasing in the river Mandalselva and were about 5 tons last year, but the catches are still low in the river Tovdalselva. Bjerkreimselva had a small population of its natural salmon stock before liming. For the last three years catches in Bjerkreimselva have been high and in 2000, almost 13 tons were taken. This was the highest catch ever according to official statistics. Financial constraints meant that no new liming projects were initiated in salmon rivers in 2000.

Gyrodactylus salaris

The fatal parasite *Gyrodactylus salaris* has been recorded in 41 watercourses in Norway and has affected several of the most important salmon stocks. Stocks are highly threatened or wiped out wherever the parasite has been recorded. The rotenone treatment of 25 infected watercourses has reduced its incidence. The parasite has been eradicated in 14 rotenone-treated watercourses. Three watercourses have been treated and are under supervision and evaluation to confirm the absence of the parasite. Unfortunately, in 8 of the treated rivers, the parasite has survived the rotenone treatment. As a direct consequence, a committee was appointed in order to improve and refine the treatment procedure. The mandate of the committee has been to advise on opportunities to reduce the probability of rotenone treatment failure, so as to ensure that all specimens of *G. salaris* are eliminated after chemical treatment.

The committee has concluded that there is considerable potential to improve the rotenone treatment methodology through: double treatment, improved mapping, increased retention of rotenone in the river system, use of hydrological expertise, quality assurance of field work, use of high-concentration rotenone compounds, increased focus on the land-water interface, extensive use of artificial obstacles and development of equipment.

Future work associated with *G. salaris* will focus on active efforts to combat the parasite through fish obstruction facilities and rotenone treatment as set out in the action plan of the Directorate for Nature Management and the Norwegian Animal Health Authority.

Gene-bank and milt-bank

By the end of 2000, milt from a total of 6,432 wild salmon from 173 stocks had been frozen in the Norwegian Gene Bank to provide an opportunity to protect stocks from extinction. In 2000, milt from 234 individuals, from 20 different stocks, was frozen. 33 characteristic and valuable stocks have been taken into "living gene banks". Norway today operates 3 living gene banks; one in northern Norway, one in mid-Norway and one in south-western Norway.

International research programmes

Cooperation between Norway and Russia on environmental issues, on research and on management of Atlantic salmon has continued. Cooperation between Norway, Finland and Karelia in Russia has commenced in connection with research and monitoring of *Gyrodactylus salaris.*

Other Parties

No new commitments reported by the other Parties or the other EU Member States.

5. Other Factors Which May Significantly Affect The Abundance Of Salmon Stocks Subject To The Convention *(Article 15, Paragraph 5(c))*

European Union

United Kingdom

In Northern Ireland, the Salmonid Enhancement Programme, partly funded from the EU Peace Programme, paid approximately £800,000 in grant aid during 2000 to angling clubs, the majority of which was targeted at in-river improvements.

Other Parties

No factors reported by the other Parties or the other EU Member States.

ANNEX 15

Council

CNL(01)17

Report of the Standing Committee on the Precautionary Approach - Application of a Precautionary Approach to Habitat Protection and Restoration

CNL(01)17

Report of the Standing Committee on the Precautionary Approach - Application of a Precautionary Approach to Habitat Protection and Restoration

1. The Second Meeting of the Standing Committee on the Precautionary Approach (SCPA), established by the Council under the Action Plan for Application of the Precautionary Approach in 1999, on the subject of habitat protection and restoration, was held in Ottawa, Canada, during 7-9 February 2001 under the Chairmanship of Dr Andy Rosenberg (USA). The report of the meeting is attached and includes as Annex 7 a proposal for a NASCO Plan of Action for the Application of the Precautionary Approach to the Protection and Restoration of Atlantic Salmon Habitat.

2. The Council is asked to consider the recommendations of the SCPA and, in particular, to decide if it wishes to adopt the proposed NASCO Plan of Action for the Application of the Precautionary Approach to the Protection and Restoration of Atlantic Salmon Habitat. Adoption of this Plan of Action will *inter alia*:

   - commit NASCO to the overall objective of maintaining and, where possible, increasing the current productive capacity of salmon habitat by using the guiding principles in the Plan of Action;

   - commit NASCO, its Contracting Parties and their relevant jurisdictions to measuring and improving progress in meeting this objective by *inter alia* establishing inventories of rivers and regularly reporting on, and updating, these inventories;

   - commit NASCO's Contracting Parties and their relevant jurisdictions to the establishment of comprehensive salmon habitat protection and restoration plans containing a general strategy for the protection of habitat for all salmon rivers and identifying and prioritising the requirements for salmon habitat restoration needs. The Parties will seek to develop these plans for presentation at NASCO's 2002 Annual Meeting, and there will be progress reports on implementation of the plans on an ongoing basis.

3. If the Council decides to adopt a NASCO Plan of Action the SCPA has asked the Council to decide whether:

   - in the first instance, the relevant information for the establishment of inventories should be assembled by the Contracting Parties for a small selection of rivers;

   - the Secretariat should establish a database of inventories of salmon rivers, by modification of the existing rivers database;

   - the information in the inventories should be made publicly available.

4. The SCPA also developed Proposed Terms of Reference for a meeting of the Committee to examine the implications of socio-economic issues for application of the Precautionary Approach. These are contained in Annex 8 of the attached report, but will be considered by the Council under Agenda Item 5.2(b) (see document CNL(01)18).

Secretary
Edinburgh
9 April, 2001

SCPA(01)15

Report of the Meeting of the Standing Committee on the Precautionary Approach on Application of a Precautionary Approach to Habitat Protection and Restoration

Canadian Government Conference Centre, Ottawa, Canada 7 – 9 February 2001

1. Opening of the Meeting

1.1 The Chairman, Dr Andy Rosenberg (USA), opened the meeting, welcomed participants to Ottawa and thanked the Canadian Government for agreeing to host the meeting and for the arrangements made. He referred to the challenge before the Committee in its two tasks of considering how the Precautionary Approach should be applied to the protection and restoration of salmon habitat and in developing Terms of Reference for a meeting of the Standing Committee on the Precautionary Approach (SCPA) to consider socio-economic implications for the application of a Precautionary Approach. He indicated that he was unaware of any other international fisheries organization that had considered these aspects of the application of the Precautionary Approach and that there was little relevant literature that the Committee could refer to. The Committee, therefore, had two difficult tasks to address during its meeting.

1.2 A list of participants is contained in Annex 1.

2. Nomination of a Rapporteur

2.1 The Committee appointed Dr Peter Hutchinson as rapporteur for the meeting.

3. Adoption of the Agenda

3.1 The Committee adopted its agenda, SCPA(01)16 (Annex 2).

4. Consideration of the Terms of Reference

4.1 The Committee considered the Terms of Reference for the meeting on habitat protection and restoration, SCPA(01)2 (Annex 3). The Council had asked that the Committee take into account the points arising from the Special Session on Habitat Issues held in 1999 as summarised in document SCPA(01)4. The Committee noted that it had also been requested by the Council to develop Terms of Reference in relation to socio-economic implications for the application of a Precautionary Approach.

5. Development of principles to ensure the Precautionary Approach is taken into account in decisions or activities that may have adverse impacts for salmon habitats

5.1 The Secretary introduced document SCPA(01)3 which provided some principles which may be relevant in applying the Precautionary Approach to the protection and restoration of salmon habitat. NASCO's objectives are to conserve, enhance, restore and rationally manage salmon stocks and he noted that these objectives can only be achieved if salmon habitat is also conserved, enhanced, restored and rationally managed. He suggested that from a habitat viewpoint, and with the Precautionary Approach in mind, to "conserve" must mean that any further loss of salmon habitat is unacceptable, and to "enhance and restore" must mean that damaged habitat should be improved and lost habitat regained. At NASCO's Special Session on Habitat Issues held in 1999 it became clear that there had been considerable losses of salmon habitat over the last 150 years and that a very wide range of factors had been implicated in damage to salmon habitat.

5.2 The representative of Norway referred to the many interests utilizing salmon rivers and noted that there will always be a need to resolve salmon interests with those other activities which impact on the salmon's habitat. In recognition of this situation the Norwegian Government had decided to designate approximately fifty rivers, which account for 90% of salmon production in Norway, as National Salmon Rivers in which there will be special protection for the salmon stocks. He introduced document SCPA(01)6 (Annex 4) which included a preliminary framework developed for use in the National Salmon Rivers for evaluating the impact of various activities on juvenile salmon and criteria for deciding on whether or not an activity should be permitted.

5.3 A representative of the European Union (Scotland) introduced document SCPA(01)7 (Annex 5) which provided an inventory of salmon habitat problems and details of the measures taken to remedy these in Scottish rivers. He noted that Scotland has more than three-hundred-and-eighty rivers with self-supporting populations of salmon, very few, if any, of which have not been affected in some way by human activities. The document identified a wide range of sources of problems (e.g. mill, hydro-electric and other dams; forestry; acidification; water abstraction; industrial pollution; agriculture; transport; and aquaculture), their potential effects on salmon and their habitat, and the remedial measures being used to address the problems. A second document, SCPA(01)8, provided a list of twenty-eight Potentially Damaging Operations (PDOs) used in decisions concerning protection of habitat within designated Sites of Special Scientific Interest (SSSIs) in the UK. Within these designated areas there is a requirement for landowners or occupiers to seek approval from the appropriate authority to carry out any of these activities. He also referred to the development in Scotland of guidelines for use by road engineers to ensure that salmon habitat and access considerations are taken into account at the planning stage. Accommodation of these requirements is considerably less expensive at the planning stage than retrospectively and he suggested that NASCO might provide a valuable forum for exchange of such guidelines and other information among the Parties.

5.4 A brief report was made by a representative of the European Union on the Salmon Action Plan developed by the International Baltic Sea Fishery Commission (IBSFC). The Commission had established an inventory of salmon rivers indicating the area of

existing salmon habitat, the extent of damaged habitat and the potential habitat. The plan includes long-term (to 2010) objectives and short- and medium-term strategies to conserve and restore wild salmon and strategies for the fisheries.

5.5 The representative of the European Union tabled a summary of Directive 2000/60/EC of the European Parliament and of the Council, which establishes a framework for Community action in the field of water policy (the 'Water Framework Directive'), SCPA(01)11 (Annex 6). This Directive has as one of its objectives the prevention of further deterioration of, and protection and enhancement of, the state of aquatic ecosystems. The Directive requires the development of river basin management plans.

5.6 A brief summary of Canada's policy on fish habitat was described. This policy includes the guiding principle of 'no net loss' of habitat and is designed to protect existing habitat and to restore that which has been degraded or lost. Important elements of the policy are the need to build partnerships and to foster public support through education initiatives. Under the policy there is a hierarchy of preferences which apply to any proposed activity. Where a proposed activity would result in loss of habitat, the preference would be to seek a change to, or relocation of, the activity. If this is not feasible then mitigation would be required, usually with a replacement ratio of 2 or 3 : 1, and if mitigation is not feasible then compensation could be considered. Under the policy there is a requirement for long-term monitoring to ensure effectiveness of mitigation measures.

5.7 The concern was expressed that mitigation measures may be applied at some distance from the site of habitat damage, as had been the case in relation to some oil spills. The Committee agreed that for Atlantic salmon it would be desirable that mitigation measures be applied at the population level, i.e. if a particular activity affects a salmon population the mitigation measures should apply to that population.

5.8 The Committee discussed an appropriate approach to its work. One of the complexities in applying a Precautionary Approach to protection and restoration of salmon habitat is that a wide range of interested parties is involved. It was recognized that compared to the Committee's work in developing a decision structure for management of fisheries, there was a need to develop a tool for application of the Precautionary Approach to habitat which would have utility in a rather more complex policy environment. The Chairman referred to the development of international plans of action by the Food and Agriculture Organisation (FAO) of the United Nations for *inter alia* the conservation and management of sharks. These plans lay out objectives and recommended measures, including the establishment of inventories, and call upon the member states of FAO to develop action plans. The Chairman suggested that the Committee may wish to consider a similar approach in which NASCO would agree some guiding principles for application of a Precautionary Approach to habitat protection and restoration, drawing on those arising from the Special Session, and the actions that might be taken by the Contracting Parties through their own decision structures. There would be reports back to NASCO from the Contracting Parties on the specific application of national action plans. The Committee agreed with this proposed approach and developed a NASCO Plan of Action for the Application of the Precautionary Approach to the Protection and Restoration of Atlantic Salmon Habitat, SCPA(01)12 (Annex 7).

6. Development of possible decision structures for identifying factors limiting salmon production (other than exploitation) and for taking steps to remedy these (including stock rebuilding programmes)

6.1 The view was expressed that while it was clear how the Precautionary Approach might be applied to habitat protection, the relevance of the approach to habitat restoration was less clear. In the case of restoration it would be possible to prioritise activities in terms of 'value for money' but this approach would not apply to habitat protection.

6.2 In the light of the proposal from the Chairman referred to in paragraph 5.8, the Committee decided that it would address this issue through the NASCO Plan of Action and not by developing a decision structure.

7. A possible inventory of salmon habitats and/or habitat problems to assist in application of a Precautionary Approach

7.1 The Committee recognised the importance of quantifying Atlantic salmon habitat in order to assess its present extent and future gains or losses and so as to be able to assess the effectiveness of the NASCO Plan of Action. The draft Plan of Action includes the Committee's recommendations in relation to the development of habitat inventories. The Committee noted that the establishment of the inventories envisaged under the Draft Plan of Action would be a considerable undertaking and recommends that the relevant information be assembled by the Contracting Parties for a small selection of rivers in the first instance. The Committee also recommends that the Council decides whether the information should be made available publicly if the inventory envisaged in the Plan of Action is developed. The Council will also need to decide if the establishment of a database of the inventories of salmon rivers should be undertaken by the Secretariat by modification of the existing rivers database.

8. Development of Terms of Reference for application of a Precautionary Approach to Socio-economic Issues

8.1 At its first meeting in March 2000, the Committee had discussed the interplay between biological factors and socio-economic factors in relation to the Precautionary Approach. It had been recognised that allowing socio-economic factors to dominate could undermine the effectiveness of the Precautionary Approach and the Committee had agreed that it is, therefore, necessary to give proper emphasis to biological factors.

8.2 The representative of the European Union provided a brief description of a project designed to examine the social and economic aspects of Atlantic salmon.

8.3 The Committee agreed Terms of Reference for Consideration of Social and Economic Implications for Application of a Precautionary Approach, SCPA(01)14 (Annex 8). The Secretary was asked to investigate potential contractors for, and likely costs associated with, the studies envisaged in the Terms of Reference and report to the Council at its next Annual Meeting.

9. Date and place of next meeting (if required)

9.1 The Committee agreed that it would not meet again before the Eighteenth Annual Meeting of NASCO, at which time the Council would consider arrangements for the next meeting of the SCPA in accordance with the Action Plan for Application of the Precautionary Approach.

10. Any other business

10.1 There was no other business.

11. Consideration of the draft report of the meeting

11.1 The Committee agreed a report of the meeting.

12. Close of meeting

12.1 The Chairman closed the meeting and thanked all members of the Committee for their contributions.

Annex 1 of SCPA(01)15

Standing Committee on the Precautionary Approach

Canadian Government Conference Centre
7-9 February 2001

List of Participants

Canada

Mr Yves Bastien	Department of Fisheries and Oceans, Ottawa, Ontario
Mr David Bevan	Department of Fisheries and Oceans, Ottawa, Ontario
Mr Michael Calcutt	Department of Fisheries and Oceans, Ottawa, Ontario
Ms Caroline Ducros	Department of Fisheries and Oceans, Ottawa, Ontario
Mr Ron Jasperse	Department of Fisheries and Oceans, Ottawa, Ontario
Mr Patrice Leblanc	Department of Fisheries and Oceans, Ottawa, Ontario
Mr Pierre Lemieux	Department of Fisheries and Oceans, Ottawa, Ontario
Mr David Meerburg	Department of Fisheries and Oceans, Ottawa, Ontario
Mr Barry Rashotte	Department of Fisheries and Oceans, Ottawa, Ontario
Mr Jacque Robichaud	President of NASCO
Mr Gorazd Ruseski	Department of Fisheries and Oceans, Ottawa, Ontario

Denmark (Faroe Islands and Greenland)

Dr Jan Arge Jacobsen	Fisheries Laboratory of the Faroes, Torshavn
Mr Hedin Weihe	Ministry of Fisheries, Torshavn

European Union

Mr David Dunkley	Scottish Executive Rural Affairs Department, Edinburgh, UK
Mr Peter Funegard	National Board of Fisheries, Gothenburg, Sweden
Ms Jinny Hutchison	Scottish Executive Rural Affairs Department, Edinburgh, UK

Mr Fred Kingston	Economic and Commercial Affairs, European Union, Ottawa, Ontario
Mr Pentti Munne	Ministry of Agriculture and Forestry, Helsinki, Finland
Mr Kjell Nybacka	European Commission, DG Fisheries, Brussels, Belgium
Mr Vicente Pons-Mateu	Council Secretariat of the E.U., Brussels, Belgium
Mr Ted Potter	CEFAS, Lowestoft, UK
Ms Teresa Rodriguez-Trencas	Ministerio Agricultura, Pesca y Alimentacion, Madrid, Spain
Mr Andrew Thomson	European Commission, DG Fisheries, Brussels, Belgium
Dr Ken Whelan	Marine Institute, Newport, Ireland
Iceland	
Mr Arni Isaksson	Directorate of Freshwater Fisheries, Reykjavik
Norway	
Mr Steinar Hermansen	Royal Ministry of Environment, Oslo
Mr Oyvind Walso	Directorate for Nature Management, Trondheim
Russian Federation	
Ms Svetlana Krylova	Murmanrybvod, Murmansk
Mr Vladimir Moskalenko	PINRO, Murmansk
Mr Boris Prischepa	Murmanrybvod, Murmansk
Ms Elena Samoylova	PINRO, Murmansk
Dr Alexander Zubchenko	PINRO, Murmansk
USA	
Ms Nikki Brajevich	U.S. Department of State, Washington, DC
Ms Mary Colligan	National Marine Fisheries Service, Gloucester, Massachusetts
Dr Fred Kircheis	Maine Atlantic Salmon Commission, Augusta, Maine

Dr Andrew Rosenberg (Chairman)	University of New Hampshire, Durham, New Hampshire

Secretariat

Dr Malcolm Windsor	Secretary
Dr Peter Hutchinson	Assistant Secretary

Annex 2 of SCPA(01)15

SCPA(01)16

Meeting of the Standing Committee on the Precautionary Approach
Application of a Precautionary Approach to Habitat Protection and Restoration
Canadian Government Conference Centre, Ottawa

7 - 9 February 2001

A G E N D A

1. Opening of the Meeting

2. Nomination of a Rapporteur

3. Adoption of the Agenda

4. Consideration of the Terms of Reference

5. Development of principles to ensure the Precautionary Approach is taken into account in decisions or activities that may have adverse impacts for salmon habitats

6. Development of possible decision structures for identifying factors limiting salmon production (other than exploitation) and for taking steps to remedy these (including stock rebuilding programmes)

7. A possible inventory of salmon habitats and/or habitat problems to assist in application of a Precautionary Approach

8. Development of Terms of Reference for application of a Precautionary Approach to socio-economic issues

9. Date and place of next meeting (if required)

10. Any other business

11. Consideration of the draft report of the meeting

12. Close of meeting

Annex 3 of SCPA(01)15

SCPA(01)2

Terms of Reference for the Standing Committee on the Precautionary Approach - Application of a Precautionary Approach to Habitat Protection and Restoration

1. Devise principles for ensuring that the Precautionary Approach is taken into account in decisions or activities that may have adverse impacts for salmon habitats.

2. Advise on possible decision structures for identifying factors limiting salmon production (other than exploitation) and for taking steps to remedy these (including stock rebuilding programmes);

3. Advise on the possible utility of an inventory of salmon habitats and/or habitat problems, to assist in the application of the Precautionary Approach to habitat issues.

SCPA(01)6

Paper contributed by Norway on the Impacts of Various Activities on Habitat

A key element of applying the Precautionary Approach to habitat protection will be a thorough evaluation of any proposal that may have an impact on salmon habitats and a presumption against those that could have an adverse impact (see SCPA(01)3, paragraph 2.7). The purpose of this document is to give some examples of activities that can be harmful to juvenile salmon and restrictions necessary to prevent this.

Some activities will have a negative impact regardless of how the measure is carried out and in which river it is accomplished. For other kinds of activities the state of the river and of the salmon stocks are of vital importance. It should also be considered that the total effect of several minor measures can be severe.

Some activities can have serious negative effects if accidents occur but no consequences otherwise. For these kinds of activities risk analyses should be carried out and only low risks should be accepted. Dependent on the potential harm of the activity the evaluation should include both the river and adjacent areas. This difference between rivers implies that activities that have negative effects in one river could be insignificant in another. This means that rivers should be managed individually. The table attached illustrates this approach.

Impacts on juvenile salmon of activities and structural changes in the river or in the catchment area

Activity or structure	Primary purpose	Impacts on juvenile salmon	Example of evaluation	
			When the activity or structure should not be allowed	**When the activity or structure could be considered**
Withdrawal of water	Hydropower	Production of juvenile salmon depends on the extent of the water-covered area. A reduction in discharge causes a reduction in water-covered area and hence a reduction in the production of juvenile salmon.	- Leads to a reduced low flow below that which is allowed in the licence conditions.	- Causes only a minor reduction in low flow.
	Aquaculture			
	Irrigation			
	Water supply			
Drainage of adjacent areas, ditches	Agriculture	Drainage systems result in a quicker runoff. The discharge will therefore increase during flood periods and decrease during droughts. The discharge is a limiting factor in the production of juvenile salmon.	- Changes the discharge pattern significantly, in particular low flows. - Changes the trophic level.	- Causes insignificant changes in discharge. - Causes no change in trophic level.
	Forestry			
Regulation of rivers	Hydropower	River regulation entails a modification of discharge and temperature. Seasonal flood volumes are detained in reservoirs and used in power production during the winter. A lower spring flood can reduce the protection for the salmon smolt and thereby increase the predation. Withdrawals from the reservoirs during the summer will reduce the water temperature downstream which in turn will have an adverse effect on the growth of juvenile salmon as well as on the catch of adult salmon. Migration obstacles may be introduced.	- Changes the discharge, water temperature, water quality or possibilities for migration.	- There are no changes in discharge, water temperature, water quality or migration pattern which are significantly adverse for the salmon. - If additional regulation leads to more natural conditions.
	Industry			
	Aquaculture			

Activity or structure	Primary purpose	Impacts on juvenile salmon	Example of evaluation	
			When the activity or structure should not be allowed	**When the activity or structure could be considered**
Transfer of water	Hydropower	Fish and limnic animals do not migrate between rivers which therefore may contain different species. Transferring water between rivers will counteract the natural barrier so that some of the organisms from one river may spread to others. Water transfer may also affect the discharge or chemistry and adversely affect the salmon, e.g. by increasing the acidity.	- Entails interbasin transfer.	- Only entails transfer of water within the river.
Transfer of a river to a closed conduit (culvert)	Agriculture Housing Railroads Roads	Leading a river through a culvert reduces the natural supply of prey animals from the adjacent land areas and reduces the productive area for juvenile salmon. A culvert acts as a migration obstacle.	- Requires a culvert on the salmon-producing stretch of the main river. - Requires a culvert on the salmon-producing stretch of a tributary for more than 20 metres.	- Requires a culvert on the salmon-producing stretch of a tributary for less than 20 metres.
Bank protec-tion, revetments and channelization	Reduction of flood damage River training Reclamation of land	A river which is fixed in place by structural means will tend to have a higher rate of bottom erosion. This can narrow the cross-section and lower the bottom. The consequence is a reduction in the production of juvenile salmon.	- Shortens the length of the river. - Leads to increased erosion.	- Does not lead to increased bottom erosion. - Is necessary to prevent damage to life, property and infrastructure.
Flood control embankments	Reduction of flood damage	Embankments close to the river beds are typically constructed at the expense of the riparian vegetation where the fish finds food and shelter. The embankments will increase the velocity during floods. This increases the bottom erosion at other locations in the river. Erosion has an adverse effect on hatching and the survival of juveniles.	- Is constructed where there is riparian vegetation.	- Located between the riparian vegetation and areas to be protected. - Constructed along rivers in peri-urban areas.

Activity or structure	Primary purpose	Impacts on juvenile salmon	Example of evaluation	
			When the activity or structure should not be allowed	**When the activity or structure could be considered**
Gravel mining	Road and various use of gravel	Gravel mining may uncover less stable bottom materials and hence an increased suspended sediment load. This can impede the uptake of nutrients and thereby the growth of juvenile salmon. This activity can furthermore have negative influence on the conditions for spawning, hatching and survival of salmon fry.	- Causes a significant change in the river bed. - Causes an increase in the suspended particle concentration in the water.	- Does not cause the relocation of the river. - Does not increase the loads of suspended sediments. - Is necessary to prevent damage to life, property and infrastructure.
River bed improvement	Reduced risk of flood damage	Clearing the river bed will, in many cases, lead to a more fine-grained and uniform bottom substrate. This provides fewer places where the juvenile salmon can find shelter, hence reduced survival and production.	- Leads to a lowering of the river bed.	- Does not lead to a lowering of the river bed.
Aquaculture	Production of fish for food	Escaped fish may genetically affect the local stock and reduce their ability for survival. Cultivated fish may also spread diseases and parasites. Escaped fish may be competing for the resources with the local stock and cause a reduced production of salmon.	- Increases the risk of escaped fish or the spread of fish diseases.	- Does not increase the risk of escaped fish or the spread of fish diseases.
Removal of riparian vegetation	Pulp and paper production	The removal of riparian vegetation reduces the food supply from land, reduces the cover for the juvenile salmon, and causes problems from the runoff from agricultural areas. The result is a reduced production of juvenile salmon.	- If the vegetation is removed over a length of more than 100 metres, or if the removal in combination with previous damage extends for more than 10% of the river-reach with anadromous fish.	- Has no significant effect on the supply of prey animals or shelter.
	Agriculture			
Land reclamation	Industry/other development	Filled-in areas along the river change the alignment which may lead to increased velocities, increased erosion and reduced production areas. The result may be a decreased production of juvenile salmon.	- Leads to a change in the position of the river channel.	- Does not change the position of the river channel.
	Road			
	Railroad			

Activity or structure	Primary purpose	Impacts on juvenile salmon	Example of evaluation	
			When the activity or structure should not be allowed	**When the activity or structure could be considered**
Discharge of contaminants	Disposal of waste products from municipalities, industry or agriculture	The effects, which depend on the type and amount of pollutants, include survival, food supply and competition. The consequences may be reduced production of juvenile salmon.	- Causes an impairment of the water quality below some class defined by the authorities, even though the geo-chemistry of the catchment implies such a water quality.	- Does not affect the survival or production of salmon adversely.
Clearcutting near rivers	Lumber, pulp and paper production	Clearcutting has the same effect as a drainage system by increasing the runoff during periods of flood. It also increases the supply of plant nutrients to the river. Excessive amounts can lead to an increase in mortality of juvenile salmon.	- Causes levels of nitrogen or suspended particles which are adverse to salmon production.	- Does not increase the nitrogen or suspended particles at levels which are adverse to salmon production.
Cultivation of areas adjacent to rivers	Food production	Cultivation of areas adjacent to a river increases the supply of plant nutrients to the water. Excessive amounts can lead to an increase in mortality of juvenile salmon.	- Causes eutrophication - Changes the flow pattern (in particular reduces the low flow)	- Does not lead to eutrophication. - Does not adversely affect terrestrial biotopes which are important for salmon production.
	Pasture			

Inventory of Salmon Habitat Problems and Measures Taken to Remedy These

(Tabled by the European Union – UK (Scotland))

Scotland has over 380 rivers supporting self-sustaining populations of the Atlantic salmon. Very few, if any, of these rivers have not been affected in some way by Man's activities. The main sources of problems, where they occur, the potential effects and the remedial measures and organisation involved are summarised at Attachment I. This is not an exhaustive list but illustrative of the range of issues involved.

Obstructions

Rivers have long been used to provide power to drive mills. In many instances, dams or weirs were constructed, and lades excavated to divert water from the dams to the mills. The earliest of these mills were probably built to produce flour and oatmeal. Such mills were common throughout southern, central and eastern Scotland. During the Industrial Revolution, textile mills and sawmills were built, particularly in the Borders and in the Central Belt. Schedule G to the Salmon Fisheries (Scotland) Act 1868 required each mill dam constructed to be provided with a fish pass, and each lade to be provided with a sluice to control the amount of water abstracted and screens to prevent smolts and adult salmon entering.

The development of hydro-electricity in Scotland really started in the 1930s on the River Dee in Kirkcudbrightshire in south-west Scotland. During the 1940s and 1950s, there were further developments in the Highlands, notably in the Tay, Lochy, Beauly, Conon and Shin systems. In each case, the provision of a fish pass and screening arrangements was a statutory requirement. The Fisheries Committee, established under the Hydro-Electric Development (Scotland) Act 1943, provides advice to the power companies and to the Scottish Ministers on the impacts on fish of power stations driven wholly or principally by water. Any proposed hydro-electric scheme with an installed capacity of more than 1MW must be examined by this Committee.

All other dams, including mill dams and hydro-schemes of less than 1MW, are subject to the provisions of the Salmon (Fish Passes and Screens) (Scotland) Regulations 1994.

Dams may not only cause physical obstruction to salmon movements. Flow regimes may be altered by the storage of water, and each hydro-electricity development has also required the establishment of compensation flow arrangements. In addition, the flooding of spawning and juvenile nursery areas has reduced the productive capacity of some rivers. In some cases, compensation agreements have been reached, in some cases involving the establishment of hatcheries.

Not all impoundments are associated with the generation of power. A number of lochs in Scotland have been dammed to form reservoirs for potable water supplies. Fish passes have

been required in these cases. As with hydro-schemes, there have been concerns about alterations in flow regimes in affected rivers. However, because of the small size of its population, the pressure on Scotland's river systems as sources of potable water are relatively low. So far as major salmon rivers are concerned, the highest levels of abstraction for human consumption are from the upper Tweed and the lower Spey, Dee (Aberdeenshire) and Tay. The effects of this abstraction are closely monitored by both SEPA and the FRS Freshwater Laboratory.

Water Quality

Water quality remains high throughout most of Scotland; 36,500 km of rivers (72% of total length) have been designated under the Fresh Water for Fish Directive (78/659/EEC), of which over 98% comply with mandatory water quality standards.

The EU Water Framework Directive, to be implemented by Scottish legislation in 2002, will provide an opportunity to take a step forward in the way that environmental problems affecting Scotland's rivers, lochs (lakes) and coastal waters are tackled. It sets the framework for an holistic approach to planning the protection and improvement of water resources based on natural river basins. This Directive will update and replace some of the older Community water legislation, including the Fresh Water for Fish Directive, and will provide a framework for the operation of others, such as the Nitrates and Urban Waste Water Treatment Directives. Management plans must be drawn up with co-ordinated programmes of measures designed to ensure good status of both surface and ground waters within a specified timetable. Stakeholders must be involved in the whole process, with comprehensive consultation.

The most seriously polluted Scottish river systems tend to be in the Forth/Clyde valley where most of the human population and industrial development is concentrated. Widespread improvements in effluent treatment and changes in the structure of Scottish industry have combined to increase water quality in the Forth/Clyde valley. Reduced oxygen levels at head of tide, which threatened smolt and adult survival in the Forth system and effectively excluded salmon from the Clyde and Kelvin, are no longer the problem they were. As a result, the salmon population of the Forth is now more robust than it was in 1980, and the Clyde and Kelvin now have increasing salmon populations of their own.

The Don (NE Scotland) which suffered severely from industrial pollution at head of tide until some 20 years ago is no longer affected in this way and is again an important salmon river. The Ythan system, also in NE Scotland, is currently suffering from enhanced nitrate levels from agricultural sources. However, the river still supports a salmon population and nitrate inputs are being reduced as a requirement of the EEC Nitrate Directive.

Pollution in Scottish rivers is being reduced. Between 1980 and 1995, SEPA noted a 41% reduction in river length classified as polluted or seriously polluted and a 47% reduction in estuaries.

Surface water acidification from airborne sources is a problem in areas of Scotland where the receiving geology has low buffering capacity. Many such areas are also favoured for the planting of conifer forests. Mature conifers are effective collectors of airborne acidifying pollutants and therefore have the potential to increase surface water acidification in sensitive catchments. Salmonids are particularly affected by increasing acidity (declining pH) and associated increases in the levels of toxic forms of aluminium.

Monitoring of surface water acidity by the FRS Freshwater Laboratory has shown a four-fold reduction in non-marine sulphate deposition in SW Scotland (one of the principal areas affected by surface water acidification) with accompanying improvements both in surface water acidity and salmonid survival.

No major salmon river in Scotland is seriously compromised by surface water acidity but parts of the upper Spey and Dee (Aberdeenshire) and Forth systems are affected, as are a number of minor rivers in Arran and SW Scotland, including the Cree and Fleet.

Land use

The productive capacity of rivers supporting salmonid and other freshwater fish may be affected by such activities as agriculture, forestry, and estate management. The types of problem that may be experienced include diffuse pollution, erosion and siltation. Nevertheless, remarkable progress has been made in recent years, particularly as a result of introducing practices such as the use of buffer strips beside water courses; set-aside land (land taken out of agricultural use); planting of native, broad-leaved trees beside water courses; and fencing stream banks to limit access by livestock. In some upland areas, damage to fragile land in river valleys and to river banks may still occur as a result of the numbers of sheep and deer present.

Transport

There is a clear need for good road and rail systems throughout any country. However, even a cursory glance at a map of Scotland shows that nobody can ever be far from a river, stream, loch or pond. Scotland has over 50,000 km of rivers and more than 30,000 lochs and ponds. Roads and railways must cross these watercourses. Problems associated with roads and railways include pollution as a result of run-off from hard surfaces and the possible obstruction of fish passage at badly designed culverts and bridge aprons. This has been addressed in Scotland by the publication by the Scottish Executive Development Department in 2000 of 'River Crossings and Migratory Fish: Design Guidance'. This guidance was produced to emphasise to engineers the need to take the requirements of fish into account when bridges and culverts are at the design stage.

A number of other codes have been produced by local fishery management organisations for their particular areas – notably in the Tweed and Spey catchments.

Aquaculture

Concerns have been expressed over the potential effects of aquaculture on salmonid fish and the environment in which they live. Among the concerns noted have been the possible impacts on wild stocks of escaped farmed fish, and of disease and parasite transfers. The potential impact on the environment of excess food, waste from cages and chemicals used in the treatment of disease and parasites has also been the subject of much investigation. A Tripartite Working Group comprising representatives of wild salmon fishery interests, the salmon farming industry and the Scottish Executive has been established to address these problems. This Group has set up the formation of Area Management Agreements to facilitate the development of co-ordinated sea lice treatments in sea lochs, and co-ordinated fallowing programmes.

Stocking

Many District Salmon Fishery Boards (DSFBs) throughout Scotland augment natural spawning in the rivers for which they have management responsibility by the operation of hatcheries, usually supplementing production by stocking in areas that can support juvenile fish but which are inaccessible to salmon. In recent years, more than 6.5 million eggs, fry and parr have been stocked into Scottish rivers. In each case, the DSFBs use broodstock native to the river being stocked.

Habitat restoration

DSFBs throughout Scotland have embarked on habitat restoration programmes. These programmes have involved measures such as improving access for fish at culverts and bridge aprons; river bank repairs to reduce siltation; fencing off banks to reduce erosion caused by livestock; planting riverside areas with native tree species to stabilise banks, to provide cover and to increase the input of allochthonous material and terrestrial insects.

*** - examples in many river systems, but not all give rise to problems.**

Source of Problem	Principal River Systems Affected	Potential Effect	Remedial Measures/ Organisations
Mill Dams	Throughout Scotland.*	Obstruction of salmon migration. Injury to migrating smolts.	Fish passes and screens required. 'Salmon Fisheries (Scotland) Act 1868', 'Salmon (Fish Passes and Screens) Regulations 1994'. District Salmon Fishery Boards (DSFBs), Fisheries Research Services (FRS), Historic Scotland (HS), The Scottish Executive (TSE).
Other Dams	Throughout Scotland.*	Obstruction of salmon migration. Injury to migrating smolts.	Fish passes and screens required. 'Salmon (Fish Passes and Screens) Regulations 1994'. DSFBs, FRS, HS, TSE.
Hydro-Electricity	Shin, Conon, Beauly, Ness, Spey, Tay, Awe, Lochy, Dee (Kirkcudbright)	Obstruction of salmon migration. Injury to migrating smolts. Loss of spawning and juvenile habitat. Small-scale run-of-river schemes.	Fish passes, smolt screens, compensation flows required – conditions made at construction and monitored thereafter. 'Electricity Act 1979', 'Electricity Act 1989'. 'Salmon (Fish Passes and Screens) Regulations 1994'. Establishment of hatcheries. Power generating companies, Fisheries Committee, DSFBs, Fisheries Trusts (FTs), FRS, TSE.

Source of Problem	Principal River Systems Affected	Potential Effect	Remedial Measures/ Organisations
Water Supplies	Upper Tweed, lower Spey, Dee (Aberdeenshire), Tay, Leven (Loch Lomond), Forth (Loch Katrine)	Alteration of flow regime – effects on migration, obstruction of migration.	Fish passes, smolt screens, compensation flows required – conditions made at construction and monitored thereafter. Water Authorities (WAs), DSFBs, FRS, TSE.
Water Quality	Central Belt rivers – particularly tributaries of Clyde and Forth	Industrial pollution at levels harmful to freshwater life.	Improved waste water treatment, reduction in heavy industry. EU Directives – 'Fresh Water for Fish Directive' (78/659/EEC). EU Water Framework Directive – 36,500 km of rivers (72% of total length) designated, of which over 98% comply with mandatory WQ standards. Scottish Environment Protection Agency (SEPA), WAs, DSFBs, FTs, FRS, TSE.
Forestry	West Galloway rivers, parts of Tweed, Forth, Dee and Spey systems, West and North Highland Rivers	Alteration of flow regime. Siltation. Exacerbation of effects of acidification. Use of pesticides.	Adoption of 'Forest and Water Guidelines', 'Forestry Strategy'. Planting of native tree species next to watercourses, restructuring existing plantations. Forestry Commission, Forestry Authority, DSFBs, FTs, SEPA, FRS, TSE.

Source of Problem	Principal River Systems Affected	Potential Effect	Remedial Measures/ Organisations
Acidification	Upper Spey, upper Dee (Aberdeenshire), Arran, Cree, Fleet (Kirkcudbright)	Hatching of ova and juvenile development affected. Lowered pH and toxic forms of aluminium.	Treatment at power generating stations has led to four-fold reduction in non-marine sulphate deposition in SW Scotland (one of the principal areas affected by surface water acidification) with accompanying improvements both in surface water acidity and salmonid survival. Power companies, DSFBs, FTs, SEPA, FRS, TSE.
Agriculture	Throughout Scotland. * Abstraction, particularly in summer in some eastern Scottish rivers	Fertilisers, pesticides, livestock overgrazing and/or breaking down banks – erosion, siltation. Abstraction for irrigation.	Buffer strips, fencing off river banks, set-aside land, planting of native trees. Farming community, Scottish Agriculture Science Agency (SASA), DSFBs, FTs, SEPA, FRS, TSE.
Transport	Throughout Scotland.*	Pollution from hard surfaces, obstruction to fish movements by culverts.	'River Crossings and Migratory Fish: Design Guidance'. Local Authorities (LAs), DSFBs, SEPA, FTs, FRS, TSE.
Aquaculture	West and north west Highland rivers	Escapes, diseases, parasites, water abstraction at hatcheries.	Area Management Agreements, fallowing, chemotherapeutants, use of best equipment, contingency plans for escapes, planning permission, discharge consents. Salmon farming industry, LAs, DSFBs, FTs, SEPA, FRS.

Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 Establishing a Framework for Community Action in the field of Water Policy
Official Journal L 327, 22/12/2000 P. 0001

(Tabled by the European Union)

Objectives:

The Directive lays down a new basis for coordinating the Member States' policies and measures to protect water resources. It will establish a framework for the protection of inland surface waters, transitional waters, coastal waters and groundwater. The principal objectives are to:

- prevent further deterioration and protect and enhance the state of aquatic ecosystems and, with regard to their water needs, terrestrial ecosystems and wetlands directly depending on the aquatic ecosystems;
- promote sustainable use of water based on the long-term protection of available water resources;
- aim at enhanced protection and improvement of the aquatic environment, *inter alia* through specific measures for the progressive reduction of discharges, emissions and losses of priority substances and the cessation or phasing-out of discharges, emissions and losses of the priority hazardous substances;
- ensure the progressive reduction of pollution of groundwater and prevent further pollution thereof;
- help to mitigate the effects of floods and droughts;
- provide a sufficient supply of good quality surface water and groundwater as needed for sustainable, balanced and equitable water use;
- significantly reduce pollution of groundwater;
- protect territorial and marine waters, and
- achieve the objectives of the relevant international agreements.

Description

1. The framework Directive concerns surface fresh water, estuaries, coastal waters and groundwater within the Community.

2. It lays down environmental quality standards at Community level for a certain number of pollutants that are listed in the annex. Other environmental quality standards are laid down by the Member States for water abstracted for drinking purposes.

3. However, it does not lay down limit values for pollutant emissions, but coordinates the application of those required by other legal texts.

4. The Directive is thus intended to protect the available water resources in the long term by introducing:

    - river basin water management;

- an assessment of the characteristics of each river basin district;
- monitoring of the chemical, ecological and/or quantitative status of surface waters and groundwater in each river basin;
- monitoring of the protected areas within each river basin;
- pollution-measurement programmes, including mandatory and optional measurements;
- incorporation of all of the above factors in a river basin management plan, as described in the annex;
- public consultation on this management plan.

5. More detailed programmes and management plans concerning specific aspects of water management may supplement the management plans.

6. The Directive provides for specific measures to be adopted by the Member States where the environmental quality standards are no longer met or where there is accidental pollution (floods, extinguishing products, by-products from fires, leakage of pollutants).

7. The Directive provides for a reporting procedure and for the exchange of information between the Member States and the Commission and the European Environment Agency. The following are to be provided:

- the management plans;
- the draft management plans;
- the other programmes referred to in paragraph 5.

8. The Directive requires the Member States to take action in order that the price of water reflects the total cost of all of the services linked with water use (operation and maintenance costs, capital maintenance costs, capital costs, reserves for future extensions) together with environmental costs and resource depletion costs.

9. The Directive authorises the Commission to rationalize and coordinate its plans for combating water pollution and, if necessary, to adopt new environmental quality standards or to initiate appropriate measures.

10. The following directives will be repealed in December 2007:

- Directive 75/440/EEC;
- Directive 77/795/EEC;
- Directive 78/659/EEC;
- Directive 79/869/EEC;
- Directive 79/923/EEC;
- Directive 89/68/EEC.

11. Adaptation of the annexes to scientific and technical progress.

12. The Commission will publish a report on the implementation of the Directive by, at the latest, 31 December 2006, and every six years after that.

SCPA(01)12

Proposed NASCO Plan of Action for the Application of the Precautionary Approach to the Protection and Restoration of Atlantic Salmon Habitat

1. Introduction

NASCO and its Contracting Parties have agreed to adopt and apply a Precautionary Approach to the conservation, management and exploitation of salmon in order to protect the resource and preserve the environments in which it lives. NASCO's definition of the Precautionary Approach is summarized in Annex 1.

The Precautionary Approach means that there should be more caution when information is uncertain, unreliable or inadequate, and that the absence of adequate scientific information should not be used as a reason for postponing or failing to take conservation action.

This NASCO Plan of Action for the Application of the Precautionary Approach to the Protection and Restoration of Atlantic Salmon Habitat is intended to be used as a framework by the appropriate jurisdictions, national, regional or local, that have responsibility for activities involving salmon habitat. It lays down the guiding principles and the means to implement the Precautionary Approach with regard to habitat and calls for the development of national salmon habitat protection and restoration plans.

One of the guiding principles of the Precautionary Approach is that priority must be given to conserving the productive capacity of the resource. It is clear that NASCO's objective, " to conserve, enhance, restore, and rationally manage salmon stocks", can only be achieved if habitat is also conserved and restored. It is also clear that over the last 150 years much salmon habitat has been lost and this must be a major contributing factor to the decline in wild salmon stocks.

The challenge now is to protect the remaining salmon habitat and restore as much as possible of the lost and degraded habitat. An important step will be to quantify existing habitat and, if possible, the extent of lost and degraded habitat.

One of the complexities of salmon habitat management compared, for example, to management of salmon fisheries, is that there are many activities outside fisheries involved, such as power generation, agriculture, forestry, aquaculture, water sports, transport, drainage, etc. This will mean that the process of decision-making will need to be transparent to all the other parties involved. It also means that consultation, explanation, education and politics may be significant factors in achieving the aims of this Plan.

This NASCO Plan of Action aims to describe all of the necessary elements to provide a consistent, rational approach to protection and restoration of habitat under a precautionary regime and a reporting procedure to enable progress to be monitored.

2. Nature and Scope

Habitat in this context means spawning grounds, rearing areas, food supplies and migration routes on which Atlantic salmon depend directly or indirectly in order to carry out their life processes and maintain the productive capacity of each population.

Habitat issues related to Atlantic salmon are of concern both in fresh water and in the marine environment. However, many habitat issues in the marine environment are beyond direct human control. The focus of salmon managers and of this Plan is appropriately on protecting and restoring the salmon's habitat in fresh water, estuarine and coastal areas, which have been affected by an array of human activities. These activities can have detrimental effects both locally as well as on an international scale. For example, industrial air pollution, which can be carried long distances, can create acid rain in a distant country, which can be highly detrimental to freshwater fish stocks. While it is important for NASCO to draw attention to such impacts on salmon stocks, issues related to industrial air pollution and acid rain are, however, being dealt with in other international fora.

Salmon habitat in fresh water has been greatly affected by various local activities such as hydro-electric development, irrigation projects, land-drainage, forestry, pollution and enrichment from various sources as well as erosion resulting from gravel mining and other in-river activities. All of these activities have contributed towards a deterioration of spawning as well as rearing areas in rivers. A more recent factor is salmon aquaculture, which may have impacts on the habitat for local wild stocks. Although many large-scale activities are subject to an environmental impact assessment, it is common that many smaller operations are exempt from such scrutiny. Such operations can, however, be detrimental to habitat in rivers and should be subject to some kind of salmon habitat impact assessment.

Although some of the salmon habitat may be permanently lost, there is certainly opportunity to stop and reverse this development in many areas. This should be the common goal of salmon managers, river owners and managers, fishermen and other interested parties.

3. Guiding Principles

RECOGNIZING the obligation under the NASCO and other international agreements to consider the needs of future generations and to avoid changes that are not potentially reversible,

RECOGNIZING that NASCO's objectives are to conserve, enhance, restore and rationally manage salmon stocks, and that these objectives can only be achieved if habitat is also conserved, enhanced, restored and rationally managed,

FURTHER RECOGNIZING that within each Contracting Party there are individual legal and governance frameworks for dealing with habitat management,

NASCO's overall objective is to maintain and, where possible, increase the current productive capacity of Atlantic salmon habitat, by use of the following guiding principles.

NASCO, its Contracting Parties and their relevant jurisdictions will measure and improve progress in meeting this objective by:

- establishing inventories of rivers for the protection and restoration for salmon habitat (see Annex 2);

- regularly reporting on, and updating, these inventories;

- identifying and designating priority/key habitats for improvement; and

- sharing and exchanging information on habitat issues and best management practice.

Contracting Parties to NASCO and their relevant jurisdictions will establish comprehensive salmon habitat protection and restoration plans that aim to:

- identify potential risks to the productive capacity and develop procedures for implementation, in a timely fashion, of corrective measures;

- place the burden of proof on proponents of an activity which may have an impact on habitat;

- balance the risks and the benefits to the Atlantic salmon stocks with the socio-economic implications of any given project;

- maintain biodiversity;

- take into account other biological factors affecting the productive capacity of Atlantic salmon populations, including predator-prey interactions.

In developing and implementing these inventories and plans, NASCO, its Contracting Parties and their relevant jurisdictions will seek to:

- protect the current productive capacity of the existing physical habitat of Atlantic salmon;

- restore, in designated areas, the productive capacity of Atlantic salmon habitat which has been adversely impacted.

4. Role of NASCO and its Contracting Parties

It is the Contracting Parties, or jurisdictions within a Contracting Party, that manage salmon habitat. (There may also be instances of international action by several Contracting Parties acting in concert either through one of NASCO's regional Commissions or through other inter-governmental relations).

NASCO's Agreement on the Adoption of a Precautionary Approach specifies that both NASCO and its Contracting Parties shall adopt the Approach. It is therefore the role of NASCO to seek to produce and update a consistent structure which has been internationally agreed and which may be used by the Contracting Parties as a guideline to assist them in making decisions relating to protection and restoration of habitat within each jurisdiction.

It is the role of the Contracting Parties to implement this Plan of Action by developing Salmon Habitat Protection and Restoration Plans exactly as in section 5 below. The Contracting Parties shall report to NASCO on progress towards implementation of their plan or plans on an ongoing basis.

It is the role of the Council of NASCO to review the overall effectiveness of the NASCO Plan of Action in achieving its aim of protecting and restoring salmon habitat in rivers throughout the North Atlantic on the basis of the Precautionary Approach.

It is also the role of NASCO to communicate its progress and its concerns to other bodies which have an interest in the matters raised or which can assist NASCO in achieving its objectives.

5. Salmon Habitat Protection and Restoration Plans

It should be recognised that to achieve the goals and objectives of the NASCO Plan of Action, NASCO's Contracting Parties will need to focus on establishing partnerships with the many jurisdictions and interested parties whose activities may have an impact on the protection and restoration of salmon habitat.

Salmon Habitat Protection and Restoration Plans should:

- provide a practical framework to improve the management of salmon habitat protection and restoration programmes;

- contain a general strategy for the protection of habitat for all salmon rivers including measures to minimise impacts such as those described in Annex 2;

- identify and prioritise the requirements for salmon habitat restoration needs and contain a strategy for restoration to meet these needs;

- be co-ordinated with regional and local catchment area or watershed planning;

- make available information relating to the protection and restoration of salmon habitat to all interested parties. The information could, for example, include: listings of relevant national legislation, statutory authorities and voluntary bodies and sources of advice on habitat protection and restoration; sources of funding for protection and restoration programmes;

- include participation in the inventory of salmon rivers described in Annex 2;

- introduce evaluation and monitoring systems for salmon habitat protection and restoration;

- be updated to incorporate new information as it becomes available.

Each relevant jurisdiction should:

- seek to develop and implement a Salmon Habitat Protection and Restoration Plan designed to meet the Guiding Principles of the NASCO Plan of Action;

- co-ordinate Salmon Habitat Protection and Restoration Plans with regard to transboundary issues.

Each Contracting Party should:

- seek the development of a Salmon Habitat Protection and Restoration Plan or Plans for presentation at the 2002 Annual NASCO Meeting;

- report to NASCO on progress towards the implementation of their plans on an ongoing basis.

Ottawa,
9 February 2001

Definition of the Precautionary Approach

Under NASCO's Agreement on Adoption of a Precautionary Approach, it is stated that:

a) NASCO and its Contracting Parties agree to adopt and apply a Precautionary Approach to the conservation, management and exploitation of salmon in order to protect the resource and preserve the environments in which it lives. Accordingly, NASCO and its Contracting Parties should be more cautious when information is uncertain, unreliable or inadequate. The absence of adequate scientific information should not be used as a reason for postponing or failing to take conservation and management measures.

b) The Precautionary Approach requires, *inter alia*:

- consideration of the needs of future generations and avoidance of changes that are not potentially reversible;

- prior identification of undesirable outcomes and of measures that will avoid them or correct them;

- initiation of corrective measures without delay, and these should achieve their purpose promptly;

- priority to be given to conserving the productive capacity of the resource where the likely impact of resource use is uncertain;

- appropriate placement of the burden of proof by adhering to the above requirements.

Use of an inventory of salmon rivers in the protection and restoration of salmon habitat

Practical Issues:

Compilation of an inventory will require a large amount of data to be drawn together. It is hoped, however, that much of this information is already available and that developing the inventory is simply a matter of compiling and collating these data. This may be a significant task. The approach should be evaluated on a small number of rivers to determine whether the structure is appropriate and manageable. This will provide the basis for estimating the cost of completing the inventory for all salmon rivers. The Council of NASCO will need to determine how to create an appropriate database structure for this inventory.

Objectives of the Inventory:

There are two key objectives for developing a comprehensive rivers inventory:

- establishing the baseline level of salmon production against which changes may be assessed; such changes may be caused by a range of factors including habitat degradation or improvement; and

- providing a list of impacts responsible for reducing the productive capacity of a river system, which may be used to identify appropriate restoration activities and assist policy makers to determine priorities.

These objectives therefore relate directly to the principles of habitat 'protection' and habitat 'restoration' respectively.

Any habitat inventory will need to be regularly updated, perhaps every 5 years. This will then provide the basis for describing the history of the resource, tracking habitat change and quantifying the effects of management actions. The inventory will also provide an important source of data on habitat management, which should encourage a progressive improvement in our ability to model the sensitivity of habitats to impacts and thus plan the most appropriate ameliorative action.

The inventory, or possibly a summary version, will provide a valuable tool for dissemination of information on salmon rivers to user groups and for the education of the wider public in order to encourage improved stewardship of our natural resources.

Structure of an Inventory:

An inventory should normally be based upon each salmon river (as described in the NASCO rivers database). These may be broken down into smaller units (e.g. tributaries) where this can assist in directing management action, or grouped into regions, where factors having wider impacts, such as those operating in coastal waters, are concerned.

Each river system should be mapped to provide easy reference to the location of impacts and the basis for linking with other databases (e.g. Geographical Information System habitat databases).

A. River data:

For each river the following basic information should ideally be recorded. (Information currently included in NASCO rivers database is shown in categories 1 to 6 and 9):

1. River Number
2. Contracting Party
3. Country
4. Region
5. River name
6. Location (latitude and longitude of the river mouth)
7. Brief description (including basic information on type of river, geology, topography, species composition, special factors (e.g. sensitivity))
8. Special features, protected areas and regulatory measures (e.g. in UK, Sites of Special Scientific Interest)
9. NASCO category. Salmon stock:
   - lost
   - maintained
   - restored
   - threatened with loss
   - not threatened with loss
   - not previously present but potential for providing access (this is a new category not presently used for the NASCO rivers database)
10. Catchment area
11. Total river length
12. Axial length
13. Maximum altitude within catchment
14. Hydrographic characteristics
15. Other information

B. Salmon production data:

Information on the productive capacity of the stock is required to assess the extent of impacts or habitat degradation. The following information should be recorded (where available) to provide a baseline assessment of the river's current and potential productive capacity for salmon:

1. Accessible length of river
   - prior to any anthropogenic impacts (or other historic reference point)
   - currently
2. Area of riverine habitat available to juvenile salmon
   - prior to any anthropogenic impacts
   - currently

3. Area of lacustrine habitat available to salmon
   - prior to any anthropogenic impacts
   - currently
4. Productive capacity of wild adult salmon by sea age (or age-specific conservation limits) (n.b. these are not the same)
   - historic
   - current
5. Proportion of adult production comprising reared fish
6. Productive capacity of wild salmon smolts
   - historic
   - current
7. Special stock characteristics (e.g. run-timing)
8. Critical habitat areas (description of areas of particular importance)

C. Habitat impact data:

A range of factors/activities that may adversely affect the productive capacity of a river are described in the attached Table. The information included in the inventory should describe the impact, outline the extent of the adverse effect on the stock and provide the basis for prioritisation of management actions. While the inventory identifies separate impacts, it should be noted that the cumulative effect of several factors may be greater than the sum of the individual impacts. For each impact that is believed to have had a significant effect on the productive capacity of the river, the following information should be recorded:

1. Physical/chemical/biological impact (from attached Table)
2. Activity causing impact (from attached Table)
3. Location of problem (e.g. latitude/longitude or tributary)
4. Party responsible for impact
5. Regulatory authority responsible for controlling impacting activity
6. Measure(s) of level of impact:
   - length of river affected (%)
   - area of catchment affected (%)
   - lost productive capacity (estimated %)
7. Index of cost/difficulty of removing impact (e.g. 1 (very easy) to 5 (almost impossible) or Low, Medium, High)
8. Assessment of priority based on level of impact and index of cost
9. Actions to restore habitat (i.e. not stocking):
   - underway
   - proposed
10. Mitigating activities
   - underway
   - proposed

Category	Impact On Salmon Habitat	Activities That Could Cause These Impacts
Physical	**Increasing Siltation/Sedimentation**	road and railroad building, forestry, agriculture, gravel mining, channelization, in-river engineering, development, reductions in vegetation, snow removal, dams, bridges, culverts
	Blocking Migration injury to fish, impaired access to spawning habitat and production areas, impaired outmigration to marine environment	Man-made dams, culverts, beaver and debris dams, bridges, weirs, turbines, screens
	Changing Shelter/Cover	Removal of riparian vegetation, substrate alteration, removal of in-river vegetation
	Changing Substrate	gravel mining, channelization, sedimentation, flow modifications
	Changing River Morphology	channelization, in-river engineering, dams, diversions
	Changing Water Quantity alteration of flow regimes, transfers, modifications to natural/seasonal fluctuations, reduction in volume changes in water temperature	irrigation (direct withdrawal, wells), diversions, withdrawals, impoundments, deforestation, dams, roads (hard surfaces), cooling water intakes, dredging deforestation, water diversion, discharges from dams/processing plants, removal of riparian vegetation, impoundments and flow modifications from dams
Chemical	**Changing Water Quality** addition of chemicals nutrient enrichment	 acid deposition, cultivation, pesticides, herbicides, insecticides from agriculture and forestry, run-off from hard surfaces, industrial discharges, aquaculture, atmospheric deposition clearcutting, cultivation, fertilization, sewage processing, livestock, aquaculture
Biological	**Introduction of Diseases and Parasites**	aquaculture, transfer of fish, ballast water, transfer of water
	Changing Composition and Abundance of Species increase in predators and competitors or reduction in prey	 stocking (introduction or augmentation), straying, harvest management

	Changing Food Supply	pollutants, siltation, removal of riparian vegetation

Definitions

Burden of proof (in line with the Precautionary Approach): The requirement to demonstrate, by weight of evidence, that an activity does not significantly degrade productive capacity of the resource. Under the Precautionary Approach the proponents of resource utilisation (habitat or salmon) bear this burden.

Mitigation: Actions taken during planning, design, construction and operation of works and undertakings to alleviate potential adverse effects on the productive capacity of salmon habitats.

Population: A group of salmon, members of which breed freely with each other, but not with others outside the group. The smallest group that can be usefully managed.

Productive capacity: The maximum natural capability of habitats to produce salmon.

Protection (of habitats): Prescribing guidelines and conditions, and reinforcing laws for the purpose of preventing the harmful alteration, destruction or disruption of salmon habitat.

Restoration (of habitats): The improvement of salmon habitat that has been altered, disrupted or degraded for the purpose of returning its productive capacity for salmon to former levels.

Salmon aquaculture: The culture or husbandry of Atlantic salmon and includes salmon farming, salmon ranching and salmon enhancement activities.

SCPA(01)14

Proposed Terms of Reference for Consideration of Social and Economic Implications for Application of a Precautionary Approach

The guiding principles for application of a Precautionary Approach are the avoidance of irreversible changes, giving priority to maintaining the productive capacity of the resource and the implementation of corrective measures without delay. To meet these principles while considering and seeking to reduce potential socio-economic impacts involves accounting for any increased risk to the resource by approving an activity or delaying corrective measures. If activities are accepted or if modifications to corrective measures are made because of a desire to reduce potential social and economic impacts, how much increased risk to productive capacity and of irreversible change is incurred and is this increased risk acceptable?

The SCPA is requested to:

(a) Seek preparatory discussion papers from independent sociologists and economists which, where relevant, would draw on studies and work in the Contracting Parties, in order to identify socio-economic implications that may need to be considered in the application of the Precautionary Approach including *inter alia* interests and rights of dependent communities, cultural, ceremonial and other relevant factors associated with the conservation and management of the Atlantic salmon.

(b) Commission a study to develop an approach for assessing the increased risk of not meeting the principles of the Precautionary Approach by delaying corrective conservation action or failing to stop activities which may have an adverse effect.

(c) Develop advice for balancing the social and economic implications of taking precautionary actions with the increased risk of not meeting the principles of the Precautionary Approach by delaying, limiting, or not taking such actions.

(d) Incorporate this advice into all aspects of the Action Plan for Application of the Precautionary Approach.

Note: 1. The information outlined in paragraphs (a) and (b) would need to be completed prior to the third SCPA meeting. There will be financial implications which will need to be presented to the Council in the 2002 budget.

2. The attached working paper prepared by the Secretariat was distributed to the SCPA in connection with this issue and gives some background.

SCPA(01)5

Development of Terms of Reference for the Standing Committee on the Precautionary Approach - Application of a Precautionary Approach to Socio-economic Issues

Introduction

1. At its Seventeenth Annual Meeting the Council decided that the next steps in the application of the Precautionary Approach would be in relation to habitat protection and restoration and socio-economic issues. With regard to socio-economic issues the Council asked that the Contracting Parties provide relevant background ideas and information on the implications of socio-economic issues for application of the Precautionary Approach, and that this and other relevant information would be used in developing terms of reference to guide the work of the Standing Committee on the Precautionary Approach (SCPA) when it considers socio-economic aspects.

Background

2. Article 9 of the Convention refers to a number of socio-economic factors that are to be taken into account by the Commissions of NASCO in establishing regulatory measures. NASCO's 1998 Agreement on Adoption of a Precautionary Approach ("the Agreement") states that management measures for fisheries *"should be aimed at maintaining all salmon stocks in the NASCO Convention area above their conservation limit, taking into account the best available information and socio-economic factors."* The Decision Structure for management of fisheries provisionally adopted by the Council last year refers to the need to take into account socio-economic factors if consideration is given to closing a fishery (mixed stock fisheries only). However, the Decision Structure does not provide any guidance as to how the requirement to take account of socio-economic factors can be balanced with the need to protect abundance and diversity of salmon stocks. Furthermore, the Agreement states that the Precautionary Approach requires that *"priority be given to conserving the productive capacity of the resource where the likely impact of resource use is uncertain."*

3. The Council has previously reviewed the economic value and some social aspects of the salmon fisheries. However, the Action Plan for Application of the Precautionary Approach refers to the need for socio-economic factors to be taken into account in implementing the Precautionary Approach in relation to *inter alia*: fisheries management, aquaculture, introductions and transfers, stock rebuilding programmes and by-catch. This will be a complex task since it involves consideration of the socio-economic aspects associated not only with the salmon resource but with, for example, forestry, agriculture, aquaculture, fisheries for other species, hydro-electric schemes, road construction, etc. The SCPA has previously recognised that *"allowing socio-economic factors to dominate could undermine the effectiveness of the Precautionary*

Approach and it is, therefore, necessary to give proper emphasis to biological factors."

4. In essence, the questions to be answered might be stated as:

   (i) What are the social and economic factors associated with the management of salmon fisheries?

   (ii) What are the social and economic factors associated with other sectors which impact on salmon, e.g. agriculture, aquaculture, fisheries for other species, forestry, hydro-electric schemes, road construction, etc.?

   (iii) How can these social and economic factors be incorporated into the application of the Precautionary Approach without undermining its effectiveness?

Approach

5. There may be a number of answers to these questions, but there will probably always be a conflict between applying socio-economic factors and applying the Precautionary Approach. It could be argued that until the conservation of the resource is assured there is no justification for taking any socio-economic factors into account. However, it could equally be argued that socio-economic factors must be part of the decision and, if this was the case, it would have to be accepted that conservation and restoration of affected stocks could be slower or even prejudiced. The SCPA has, however, recognised that, in particular circumstances, it may be possible to address biological concerns over a sufficient timescale to allow socio-economic aspects to be taken into account in order to balance the risks to the salmon stocks with the risks to fishing communities dependent on the resource. Application of the Precautionary Approach involves assessment of these risks. However, as referred to in paragraph 3 above, a wide range of socio-economic factors comes into play because the Action Plan envisages application of the Precautionary Approach to many issues and not just to management of salmon fisheries.

6. In order to understand the interplay of socio-economic factors and the Precautionary Approach, one of the initial steps might be to review the various socio-economic aspects of the Atlantic salmon and to develop guidelines on how these factors may be taken into account in applying the Precautionary Approach. The SCPA may, therefore, need to seek advice from independent sociologists and economists. There may be a cost associated with assembling this independent information.

Possible Terms of Reference

7. If the SCPA agrees with this approach, and taking account of the guidance given in the Action Plan for Application of the Precautionary Approach, the Terms of Reference for the Committee's work on socio-economic issues might be as follows:

   (a) to review the various social and economic aspects associated with management of the Atlantic salmon drawing on relevant background information and ideas provided by the Parties, independent experts (if

required) and, where available, information on the approaches proposed by other organizations for including socio-economic aspects in the Precautionary Approach;

(b) to develop guidelines on how these relevant socio-economic factors can be taken into account in applying the Precautionary Approach to *inter alia*: management of North Atlantic fisheries; habitat protection and restoration (including stock rebuilding programmes); introductions and transfers, aquaculture (including stocking and ranching) and transgenics; and by-catch, while giving proper emphasis to biological factors.

ANNEX 16

Council

CNL(01)51

NASCO Plan of Action for the Application of the Precautionary Approach to the Protection and Restoration of Atlantic Salmon Habitat

CNL(01)51

NASCO Plan of Action for the Application of the Precautionary Approach to the Protection and Restoration of Atlantic Salmon Habitat

1. Introduction

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The Precautionary Approach means that there should be more caution when information is uncertain, unreliable or inadequate, and that the absence of adequate scientific information should not be used as a reason for postponing or failing to take conservation action.

This NASCO Plan of Action for the Application of the Precautionary Approach to the Protection and Restoration of Atlantic Salmon Habitat is intended to be used as a framework by the appropriate jurisdictions, national, regional or local, that have responsibility for activities involving salmon habitat. It lays down the guiding principles and the means to implement the Precautionary Approach with regard to habitat and calls for the development of national salmon habitat protection and restoration plans.

One of the guiding principles of the Precautionary Approach is that priority must be given to conserving the productive capacity of the resource. It is clear that NASCO's objective, " to conserve, enhance, restore, and rationally manage salmon stocks", can only be achieved if habitat is also conserved and restored. It is also clear that over the last 150 years much salmon habitat has been lost and this must be a major contributing factor to the decline in wild salmon stocks.

The challenge now is to protect the remaining salmon habitat and restore as much as possible of the lost and degraded habitat. An important step will be to quantify existing habitat and, if possible, the extent of lost and degraded habitat.

One of the complexities of salmon habitat management compared, for example, to management of salmon fisheries, is that there are many activities outside fisheries involved, such as power generation, agriculture, forestry, aquaculture, water sports, transport, drainage, etc. This will mean that the process of decision-making will need to be transparent to all the other parties involved. It also means that consultation, explanation, education and politics may be significant factors in achieving the aims of this Plan.

This NASCO Plan of Action aims to describe all of the necessary elements to provide a consistent, rational approach to protection and restoration of habitat under a precautionary regime and a reporting procedure to enable progress to be monitored.

2. Nature and Scope

Habitat in this context means spawning grounds, rearing areas, food supplies and migration routes on which Atlantic salmon depend directly or indirectly in order to carry out their life processes and maintain the productive capacity of each population.

Habitat issues related to Atlantic salmon are of concern both in fresh water and in the marine environment. However, many habitat issues in the marine environment are beyond direct human control. The focus of salmon managers and of this Plan is appropriately on protecting and restoring the salmon's habitat in fresh water, estuarine and coastal areas, which have been affected by an array of human activities. These activities can have detrimental effects both locally as well as on an international scale. For example, industrial air pollution, which can be carried long distances, can create acid rain in a distant country, which can be highly detrimental to freshwater fish stocks. While it is important for NASCO to draw attention to such impacts on salmon stocks, issues related to industrial air pollution and acid rain are, however, being dealt with in other international fora.

Salmon habitat in fresh water has been greatly affected by various local activities such as hydro-electric development, irrigation projects, land-drainage, forestry, pollution and enrichment from various sources as well as erosion resulting from gravel mining and other in-river activities. All of these activities have contributed towards a deterioration of spawning as well as rearing areas in rivers. A more recent factor is salmon aquaculture, which may have impacts on the habitat for local wild stocks. Although many large-scale activities are subject to an environmental impact assessment, it is common that many smaller operations are exempt from such scrutiny. Such operations can, however, be detrimental to habitat in rivers and should be subject to some kind of salmon habitat impact assessment.

Although some of the salmon habitat may be permanently lost, there is certainly opportunity to stop and reverse this development in many areas. This should be the common goal of salmon managers, river owners and managers, fishermen and other interested parties.

3. Guiding Principles

RECOGNIZING the obligation under the NASCO and other international agreements to consider the needs of future generations and to avoid changes that are not potentially reversible,

RECOGNIZING that NASCO's objectives are to conserve, enhance, restore and rationally manage salmon stocks, and that these objectives can only be achieved if habitat is also conserved, enhanced, restored and rationally managed,

FURTHER RECOGNIZING that within each Contracting Party there are individual legal and governance frameworks for dealing with habitat management,

NASCO's overall objective is to maintain and, where possible, increase the current productive capacity of Atlantic salmon habitat, by use of the following guiding principles.

NASCO, its Contracting Parties and their relevant jurisdictions should measure and improve progress in meeting this objective by:

- establishing inventories of rivers for the protection and restoration of salmon habitat (see Annex 2);

- regularly reporting on, and updating, these inventories;

- identifying and designating priority/key habitats for improvement; and

- sharing and exchanging information on habitat issues and best management practice.

Contracting Parties to NASCO and their relevant jurisdictions should establish comprehensive salmon habitat protection and restoration plans that aim to:

- identify potential risks to the productive capacity and develop procedures for implementation, in a timely fashion, of corrective measures;

- place the burden of proof on proponents of an activity which may have an impact on habitat;

- balance the risks and the benefits to the Atlantic salmon stocks with the socio-economic implications of any given project;

- maintain biodiversity;

- take into account other biological factors affecting the productive capacity of Atlantic salmon populations, including predator-prey interactions.

In developing and implementing these inventories and plans, NASCO, its Contracting Parties and their relevant jurisdictions should seek to:

- protect the current productive capacity of the existing physical habitat of Atlantic salmon;

- restore, in designated areas, the productive capacity of Atlantic salmon habitat which has been adversely impacted.

4. Role of NASCO and its Contracting Parties

It is the Contracting Parties, or jurisdictions within a Contracting Party, that manage salmon habitat. (There may also be instances of international action by several Contracting Parties acting in concert either through one of NASCO's regional Commissions or through other inter-governmental relations).

NASCO's Agreement on the Adoption of a Precautionary Approach specifies that both NASCO and its Contracting Parties shall adopt the Approach. It is therefore the role of NASCO to seek to produce and update a consistent structure which has been internationally agreed and which may be used by the Contracting Parties as a guideline to assist them in making decisions relating to protection and restoration of habitat within each jurisdiction.

It is the role of the Contracting Parties to implement this Plan of Action by developing Salmon Habitat Protection and Restoration Plans exactly as in section 5 below. The

Contracting Parties shall report to NASCO on progress towards implementation of their plan or plans on an ongoing basis.

It is the role of the Council of NASCO to review the overall effectiveness of the NASCO Plan of Action in achieving its aim of protecting and restoring salmon habitat in rivers throughout the North Atlantic on the basis of the Precautionary Approach.

It is also the role of NASCO to communicate its progress and its concerns to other bodies which have an interest in the matters raised or which can assist NASCO in achieving its objectives.

5. Salmon Habitat Protection and Restoration Plans

It should be recognised that to achieve the goals and objectives of the NASCO Plan of Action, NASCO's Contracting Parties will need to focus on establishing partnerships with the many jurisdictions and interested parties whose activities may have an impact on the protection and restoration of salmon habitat.

Salmon Habitat Protection and Restoration Plans should:

- provide a practical framework to improve the management of salmon habitat protection and restoration programmes;

- contain a general strategy for the protection of habitat for all salmon rivers including measures to minimise impacts such as those described in Annex 2;

- identify and prioritise the requirements for salmon habitat restoration needs and contain a strategy for restoration to meet these needs;

- be co-ordinated with regional and local catchment area or watershed planning;

- make available information relating to the protection and restoration of salmon habitat to all interested parties. The information could, for example, include: listings of relevant national legislation, statutory authorities and voluntary bodies and sources of advice on habitat protection and restoration; sources of funding for protection and restoration programmes;

- include participation in the inventory of salmon rivers described in Annex 2;

- introduce evaluation and monitoring systems for salmon habitat protection and restoration;

- be updated to incorporate new information as it becomes available.

Each relevant jurisdiction should:

- seek to develop and implement a Salmon Habitat Protection and Restoration Plan designed to meet the Guiding Principles of the NASCO Plan of Action;

- co-ordinate Salmon Habitat Protection and Restoration Plans with regard to transboundary issues.

Each Contracting Party should:

- seek the development of a Salmon Habitat Protection and Restoration Plan or Plans for presentation at the 2002 Annual NASCO Meeting;

- report to NASCO on progress towards the implementation of their plans on an ongoing basis.

Definition of the Precautionary Approach

Under NASCO's Agreement on Adoption of a Precautionary Approach, it is stated that:

a) NASCO and its Contracting Parties agree to adopt and apply a Precautionary Approach to the conservation, management and exploitation of salmon in order to protect the resource and preserve the environments in which it lives. Accordingly, NASCO and its Contracting Parties should be more cautious when information is uncertain, unreliable or inadequate. The absence of adequate scientific information should not be used as a reason for postponing or failing to take conservation and management measures.

b) The Precautionary Approach requires, *inter alia*:

- consideration of the needs of future generations and avoidance of changes that are not potentially reversible;
- prior identification of undesirable outcomes and of measures that will avoid them or correct them;
- initiation of corrective measures without delay, and these should achieve their purpose promptly;
- priority to be given to conserving the productive capacity of the resource where the likely impact of resource use is uncertain;
- appropriate placement of the burden of proof by adhering to the above requirements.

Use of an inventory of salmon rivers in the protection and restoration of salmon habitat

Practical Issues:

Compilation of an inventory will require a large amount of data to be drawn together. It is hoped, however, that much of this information is already available and that developing the inventory is simply a matter of compiling and collating these data. This may be a significant task. The approach should be evaluated on a small number of rivers to determine whether the structure is appropriate and manageable. This will provide the basis for estimating the cost of completing the inventory for all salmon rivers. The Council of NASCO will need to determine how to create an appropriate database structure for this inventory.

Objectives of the Inventory:

There are two key objectives for developing a comprehensive rivers inventory:

- establishing the baseline level of salmon production against which changes may be assessed; such changes may be caused by a range of factors including habitat degradation or improvement; and

- providing a list of impacts responsible for reducing the productive capacity of a river system, which may be used to identify appropriate restoration activities and assist policy makers to determine priorities.

These objectives therefore relate directly to the principles of habitat 'protection' and habitat 'restoration' respectively.

Any habitat inventory will need to be regularly updated, perhaps every 5 years. This will then provide the basis for describing the history of the resource, tracking habitat change and quantifying the effects of management actions. The inventory will also provide an important source of data on habitat management, which should encourage a progressive improvement in our ability to model the sensitivity of habitats to impacts and thus plan the most appropriate ameliorative action.

The inventory, or possibly a summary version, will provide a valuable tool for dissemination of information on salmon rivers to user groups and for the education of the wider public in order to encourage improved stewardship of our natural resources.

Structure of an Inventory:

An inventory should normally be based upon each salmon river (as described in the NASCO rivers database). These may be broken down into smaller units (e.g. tributaries) where this can assist in directing management action, or grouped into regions, where factors having wider impacts, such as those operating in coastal waters, are concerned.

Each river system should be mapped to provide easy reference to the location of impacts and the basis for linking with other databases (e.g. Geographical Information System habitat databases).

A. River data:

For each river the following basic information should ideally be recorded. (Information currently included in NASCO rivers database is shown in categories 1 to 6 and 9):

1. River Number
2. Contracting Party
3. Country
4. Region
5. River name
6. Location (latitude and longitude of the river mouth)
7. Brief description (including basic information on type of river, geology, topography, species composition, special factors (e.g. sensitivity))
8. Special features, protected areas and regulatory measures (e.g. in UK, Sites of Special Scientific Interest)
9. NASCO category. Salmon stock:
   - lost
   - maintained
   - restored
   - threatened with loss
   - not threatened with loss
   - not previously present but potential for providing access (this is a new category not presently used for the NASCO rivers database)
10. Catchment area
11. Total river length
12. Axial length
13. Maximum altitude within catchment
14. Hydrographic characteristics
15. Other information

B. Salmon production data:

Information on the productive capacity of the stock is required to assess the extent of impacts or habitat degradation. The following information should be recorded (where available) to provide a baseline assessment of the river's current and potential productive capacity for salmon:

1. Accessible length of river
   - prior to any anthropogenic impacts (or other historic reference point)
   - currently
2. Area of riverine habitat available to juvenile salmon
   - prior to any anthropogenic impacts
   - currently
3. Area of lacustrine habitat available to salmon
   - prior to any anthropogenic impacts
   - currently

4. Productive capacity of wild adult salmon by sea age (or age-specific conservation limits) (n.b. these are not the same)
   - historic
   - current
5. Proportion of adult production comprising reared fish
6. Productive capacity of wild salmon smolts
   - historic
   - current
7. Special stock characteristics (e.g. run-timing)
8. Critical habitat areas (description of areas of particular importance)

C. Habitat impact data:

A range of factors/activities that may adversely affect the productive capacity of a river are described in the attached Table. The information included in the inventory should describe the impact, outline the extent of the adverse effect on the stock and provide the basis for prioritisation of management actions. While the inventory identifies separate impacts, it should be noted that the cumulative effect of several factors may be greater than the sum of the individual impacts. For each impact that is believed to have had a significant effect on the productive capacity of the river, the following information should be recorded:

1. Physical/chemical/biological impact (from attached Table)
2. Activity causing impact (from attached Table)
3. Location of problem (e.g. latitude/longitude or tributary)
4. Party responsible for impact
5. Regulatory authority responsible for controlling impacting activity
6. Measure(s) of level of impact:
   - length of river affected (%)
   - area of catchment affected (%)
   - lost productive capacity (estimated %)
7. Index of cost/difficulty of removing impact (e.g. 1 (very easy) to 5 (almost impossible) or Low, Medium, High)
8. Assessment of priority based on level of impact and index of cost
9. Actions to restore habitat (i.e. not stocking):
   - underway
   - proposed
10. Mitigating activities
    - underway
    - proposed

Category	Impact On Salmon Habitat	Activities That Could Cause These Impacts
Physical	**Increasing Siltation/Sedimentation**	road and railroad building, forestry, agriculture, gravel mining, channelization, in-river engineering, development, reductions in vegetation, snow removal, dams, bridges, culverts
	Blocking Migration injury to fish, impaired access to spawning habitat and production areas, impaired outmigration to marine environment	man-made dams, culverts, beaver and debris dams, bridges, weirs, turbines, screens
	Changing Shelter/Cover	Removal of riparian vegetation, substrate alteration, removal of in-river vegetation
	Changing Substrate	gravel mining, channelization, sedimentation, flow modifications
	Changing River Morphology	channelization, in-river engineering, dams, diversions
	Changing Water Quantity alteration of flow regimes, transfers, modifications to natural/seasonal fluctuations, reduction in volume changes in water temperature	irrigation (direct withdrawal, wells), diversions, withdrawals, impoundments, deforestation, dams, roads (hard surfaces), cooling water intakes, dredging deforestation, water diversion, discharges from dams/processing plants, removal of riparian vegetation, impoundments and flow modifications from dams
Chemical	**Changing Water Quality** addition of chemicals nutrient enrichment	acid deposition, cultivation, pesticides, herbicides, insecticides from agriculture and forestry, run-off from hard surfaces, industrial discharges, aquaculture, atmospheric deposition clearcutting, cultivation, fertilization, sewage processing, livestock, aquaculture
Biological	**Introduction of Diseases and Parasites**	aquaculture, transfer of fish, ballast water, transfer of water
	Changing Composition and Abundance of Species increase in predators and competitors or reduction in prey	stocking (introduction or augmentation), straying, harvest management
	Changing Food Supply	pollutants, siltation, removal of riparian vegetation

Definitions

Burden of proof (in line with the Precautionary Approach): The requirement to demonstrate, by weight of evidence, that an activity does not significantly degrade productive capacity of the resource. Under the Precautionary Approach the proponents of resource utilisation (habitat or salmon) bear this burden.

Mitigation: Actions taken during planning, design, construction and operation of works and undertakings to alleviate potential adverse effects on the productive capacity of salmon habitats.

Population: A group of salmon, members of which breed freely with each other, but not with others outside the group. The smallest group that can be usefully managed.

Productive capacity: The maximum natural capability of habitats to produce salmon.

Protection (of habitats): Prescribing guidelines and conditions, and reinforcing laws for the purpose of preventing the harmful alteration, destruction or disruption of salmon habitat.

Restoration (of habitats): The improvement of salmon habitat that has been altered, disrupted or degraded for the purpose of returning its productive capacity for salmon to former levels.

Salmon aquaculture: The culture or husbandry of Atlantic salmon and includes salmon farming, salmon ranching and salmon enhancement activities.

ANNEX 17

Council

CNL(01)19

Unreported Catches – Returns by the Parties

(updated to include information for EU (UK - Northern Ireland) and EU (France) provided at and after the Eighteenth Annual Meeting respectively)

CNL(01)19

Unreported Catches – Returns by the Parties

(updated to include information for EU (UK - Northern Ireland) and EU (France) provided at and after the Eighteenth Annual Meeting respectively)

Introduction

1. The Council has previously agreed that the Parties should be requested to provide, on an annual basis, the following information in relation to unreported catches:

   (i) a description of its management control and reporting systems by country;
   (ii) an estimate of unreported catch by country, broken down by category and indicating whether the unreported catch is the result of legal or illegal activities;
   (iii) an explanation of how it arrives at the figure for unreported catch;
   (iv) the extent of catch and release fishing;
   (v) the measures taken to further minimise the level of unreported catch.

2. For the 2000 returns, the third year in which the Parties have reported to the Council on unreported catches, there have been no changes to the management control and reporting systems used. It is clear from the information provided that a substantial proportion of the total catch still goes unreported. In 2000, between 1,065-1,445 tonnes were estimated to be unreported compared to a provisional declared catch of 2,814 tonnes, i.e. the estimate of unreported catch is between 37-51% of the reported catch. The estimate of unreported catch for 2000 represents an increase on the estimate for 1999 (917-1,160 tonnes) although as a proportion of the reported catch there has been little change compared to 1999 (41-52%). Illegal fishing remains a particular problem in some countries and accounts for at least 35% of the total estimate. At least 92,625 salmon were released following capture in recreational fisheries although catch and release angling is not practised in all countries and in some countries no statistics are available on the extent of its use. A number of new measures to minimise the level of unreported catch have been reported. At the time of preparation of this paper, information had not been received from all EU Member States which have salmon interests. No return of information was made by Portugal or Spain.

3. Last year the Council expressed continuing concern about the high level of unreported catches and emphasised the need to take stronger measures to minimise the level of such catches. The Council is asked to consider what, if any, additional actions it wishes to take in relation to unreported catches. The Secretary will continue to request the information on unreported catches, referred to in paragraph 1 above, on an annual basis.

Secretary
Edinburgh
11 July, 2001

1. Description of management control and reporting systems by country

No changes to the management control and reporting systems were reported for any country. A description of these systems was presented in document CNL(00)19.

2. Estimate of unreported catch by country, broken down by category and indicating whether the unreported catch is the result of legal or illegal activities

Party	Estimate (tonnes)	Breakdown
Canada	124	Illegal activities.
Denmark (in respect of the Faroe Islands and Greenland)		
Faroe Islands	0	
Greenland	Approx. 10	Despite a short season and considerably increased efficiency of the control system, unreported catches estimated to be approximately 10 tonnes. It is not possible to indicate whether the unreported catch is the result of legal or illegal activities.
European Union		
Denmark	0	No estimate but believed to be insignificant.
France	Unknown	Illegal catch unknown but assumed to be low. Guess-estimate of unreported catch made by fishery officers based on their knowledge of catches and the declared catch is included in the catch statistics. Unreported catches should be considered as illegal since declaration of catches is mandatory. However, fishing activity preceding the declaration is legal.
Finland	15	River fisheries, mostly legal.
Ireland	132	Includes estimated illegal catch and legal unreported catch.
Sweden	3.3 (Approx. 10% of reported catch)	Some fishing is permitted by national legislation without a requirement to report catches. This is the main source of unreported catch in Sweden. For example non-professional fishing for salmon is permitted in some coastal areas with no requirement to report catch. In addition, lack of well organised collection of catch data in some small rivers leads to under-reporting. The Swedish unreported catch is, therefore, largely a result of legal activities.
UK – England and Wales	38	Estimates are not made for separate categories of unreported/illegal catch.
UK – Northern Ireland	8	Estimates are not made for separate categories of unreported/illegal catch.
UK – Scotland	44	Estimates are not made for separate categories of unreported/illegal catch.
Iceland	Approx. 2	Mostly by-catch in legal coastal trout fisheries; some by-catch in legal marine fisheries.
Norway	600 uncertainty ± 160 tonnes	Illegal catch in the sea: 150 tonnes By-catch by commercial sea fishing: 20 tonnes Legal catch in sea by bag-net and bend net: 130 tonnes Legal catch in sea by angling:. 130 tonnes Illegal catch in rivers: 20 tonnes Legal catch in rivers, mainly by angling 150 tonnes
Russian Federation	249-309	Legal coastal fishery: 63-75 tonnes (including 40-50 t in Archangel coastal fishery) Illegal coastal fishery: 6-12 tonnes Legal in-river fishery: 10-12 tonnes Illegal in-river fishery: 170-210 tonnes (including 150-180 t of Pechora salmon)
USA	0	
TOTAL	1,065-1,445	

3. Explanation of how the figure for unreported catch is arrived at

Party	*Explanation of how the figure for unreported catch is arrived at*				
	Absence of a requirement for catch statistics to be collected	**Suppression of information thought to be unfavourable**	**Local sale or consumption**	**Innocent inaccuracy in making returns**	**Illegal fishing**
Canada					Estimates supplied by enforcement staff.
Denmark (in respect of the Faroe Islands and Greenland)					
Faroe Islands *					
Greenland	All catches are landed to local markets, sold privately or kept for home consumption. Due to the scattered nature of the fishery, recordings of the landings are considered incomplete.	Not available	Catches for home consumption seem to be heavily underreported. The catches from the commercial salmon fishery in 2000 were restricted to subsistence use only, and one private company was given permission to purchase salmon from the fishermen for distribution in Greenland. Almost all the catch reports originated from landings to this company in 2000, and only a few of the catches from the commercial salmon fishery are reported to have been sold at local markets, local shops, to hotels, schools, hospitals or other public eating places in comparison with previous years. The short season is probably the reason for this, and is not necessarily an indicator of unreported catches.	Not available	Official gamekeepers and inspectors from the GFLK have reported incidents of illegal gill net fishing after the closure of the salmon fishery. The inspection of this fishery had high priority after the closure, and due to the very short season (5 days) it is estimated that there were more illegal fishing incidents in 2000 than previous years.
European Union					
Denmark *					
France	No explanation provided.	No explanation provided.	No explanation provided.	No explanation provided.	No explanation provided.
Finland	No explanation provided.	No explanation provided.	No explanation provided.	No explanation provided.	No explanation provided.
Ireland	Not applicable. Returns for all methods are required by law.	May be some element of this in some areas.	Most of the unreported catch comes from this category.	Not a large part of the estimate.	Some of the input derives from this category.

* Unreported catch estimated to be zero

Party	*Explanation of how the figure for unreported catch is arrived at*				
	Absence of a requirement for catch statistics to be collected	**Suppression of information thought to be unfavourable**	**Local sale or consumption**	**Innocent inaccuracy in making returns**	**Illegal fishing**
Sweden	A large part of the unreported catch.	To some limited degree because of minor catches which are believed not to be reported for tax reasons.	Less than 30% of the total unreported catches.	Underestimation of catch is probably not a common source of unreported catch.	This occurs but to a lesser extent than some other categories of unreported catch.
UK - England and Wales	Not applicable.	No separate estimate.	No separate estimate.	Rod fisheries – 10% of declared catch based on a study of catch returns made following reminders. Net fisheries – 8% of declared catch (with the exception of the North-East coast fishery for which no correction was applied in 2000).	All methods – 12% of total declared catch.
UK - Northern Ireland	Unreported catch is estimated from intelligence reports of fishery officers on the ground and catch figures given to scientists by individual netsmen on a confidential basis.	No separate estimate.	No separate estimate.	No separate estimate.	No separate estimate.
UK - Scotland	Not applicable.	A separate estimate is made from intelligence obtained from a number of sources.	A separate estimate is made from intelligence obtained from a number of sources.	A separate estimate is made from intelligence obtained from a number of sources.	A separate estimate is made from intelligence obtained from a number of sources.
Iceland	Catch statistics are required by law.	Information on catches in coastal and marine salmon fisheries which are prohibited tends to be suppressed.	Some local consumption and limited sale.	Not a source of unreported catch.	Some coastal fishing with illegal mesh-sizes. By-catch in marine fisheries for haddock etc.

Party	*Explanation of how the figure for unreported catch is arrived at*				
	Absence of a requirement for catch statistics to be collected	**Suppression of information thought to be unfavourable**	**Local sale or consumption**	**Innocent inaccuracy in making returns**	**Illegal fishing**
Norway	See document "Description of methods currently used for estimating unreported salmon catches in Norway" contained in CNL(00)19.	See document "Description of methods currently used for estimating unreported salmon catches in Norway" contained in CNL(00)19.	Not a topical issue in Norway.	See document "Description of methods currently used for estimating unreported salmon catches in Norway" contained in CNL(00)19.	See document "Description of methods currently used for estimating unreported salmon catches in Norway" contained in CNL(00)19.
Russian Federation	There is a requirement for catch statistics to be collected from all salmon fisheries.	To cut taxes, the catch statistics are reduced by salmon fishermen fishing in the coastal zone. It has been estimated that this source of unreported catch amounts to 25-40t annually.	This is not believed to be a source of unreported catch.	This is not believed to be a source of unreported catch.	No new information. Expert opinion is that illegal fishing annually constitutes 50-100% of the commercial catch. Assessments indicate that in 1997 illegal fishing on the Tuloma river constituted about 50% of the fish released for spawning.
USA *					

* Unreported catch estimated to be zero.

4. The extent of catch and release fishing

Party	Estimated Number Released	Comment
Canada	29,016 small salmon 20,721 large salmon	
Denmark (in respect of the Faroe Islands and Greenland)		
Faroe Islands	0	
Greenland	0	
European Union		
Denmark	0	Not practised in Denmark.
France	0	Insufficient catch and release activity.
Finland	0	No organized catch and release fishing.
Ireland	No statistics available.	Not widely practised but efforts are being made to encourage greater use of this strategy.
Sweden	No statistics available.	Catch and release fishing is practised in a few rivers in order to improve the protection of females during their spawning period.
UK - England and Wales	7,355	Provisional estimate for 2000 is 42% released (this includes both voluntary and compulsory catch and release). Based on catch returns submitted up to 18th February 2001.
UK - Northern Ireland	No accurate data.	An increase in the incidence of angling catch and release has been observed.
UK - Scotland	19,991	33.5% of all salmon caught by rod and line were subsequently released in 2000.
Iceland	2,918	The extent of catch and release is 10.7% of the salmon landed in the sport fishery. Approximately 7 tonnes.
Norway	0	The extent of catch and release fishing is sporadic and accidental.
Russian Federation	12,624	96.1% of the total catch by rod.
USA	0	There is no legal fishing for sea-run Atlantic salmon in the United States. A recreational fishery is conducted in the Merrimack River for broodstock.
TOTAL	92,625	

5. Any measures taken to further minimise the level of unreported catches

Party	Measures taken
Canada	Licensing of a resident food fishery in Labrador which directs for char and sea trout (see document NAC(00)13 paragraph 6.2).
Denmark (in respect of the Faroe Islands and Greenland)	
Faroe Islands *	
Greenland	Official gamekeepers and inspectors from the GFLK make random checks at local markets in towns and settlements along the west coast. The GFLK have made random checks at hotels, restaurants, butchers' shops, hospitals and schools in various towns in order to compare purchases of salmon with reported catches. To avoid the presumed heavy under-reporting of the catches for home consumption, there has been a greater emphasis on informing both fishermen and municipalities of the rules and procedures for salmon fishing.
European Union	
Denmark *	
France	No new measures reported.
Finland	No new measures reported.
Ireland	No new measures reported.
Sweden	A study was carried out in 2000 to examine the extent of the coastal net fishery and its salmon catch. The results will be used to improve the precision of future estimates of unreported catch. In addition a quality control assessment of the present system of collecting catch data is underway.
UK - England and Wales	Continue to issue multiple reminders to rod fishermen who fail to submit returns and actively pursue missing returns from net licensees who do not respond.
UK - Northern Ireland	The Salmon Tagging Schemes, when introduced, will provide accurate catch statistics of angling and commercial fishing exploitation.
UK - Scotland	A survey of local managers was conducted to update intelligence. Database of fisheries subject to continuous updating and maintenance to ensure coverage.
Iceland	Considerable enforcement and educational activities.
Norway	See document entitled "Description of methods currently used for estimating unreported salmon catches in Norway" contained in Council paper CNL(00)19.
Russian Federation	No new measures reported.
USA *	

* Unreported catch estimated to be zero.

ANNEX 18

Council

CNL(01)21

Report of the Meeting of the Working Group on International Cooperative Research

1. Last year the Council agreed to set up a Working Group to develop ideas for a research programme to identify and explain the causes of increased marine mortality of Atlantic salmon and to examine the possibilities to counteract the mortality. The Working Group was asked to advise on possible sources of funding for the research programme and how to organize it, and to consider the issue of by-catch in pelagic fisheries.

2. The Working Group met in Oslo, Norway, during 10-12 October 2000 under the Chairmanship of Dr Lars Petter Hansen. The report of the meeting is attached. The Group's recommendations, if adopted, would have financial and administrative implications for NASCO. These will be reviewed by the Secretariat in document CNL(01)22.

Secretary
Edinburgh
1 December, 2000

ICR(00)10

Report of the Meeting of the Working Group on International Cooperative Research

Oslo, Norway, 10-12 October, 2000

1. Introduction

1.1 The Chairman, Dr Lars Petter Hansen (Norway), opened the meeting and welcomed participants to Oslo. He introduced Mr Steinar Hermansen, Deputy Director at the Royal Ministry of Environment in Oslo, who added his welcome and referred to the importance of the meeting given the general decline in Atlantic salmon stocks around the North Atlantic. He stressed the importance of a better understanding of the marine phase of salmon but referred to the considerable expense involved in research on salmon in the sea. There is, therefore, a need for international cooperation to ensure efficient use of resources and to achieve significant scientific results. He noted that the success of this NASCO initiative to increase research at sea will be highly dependent on concerted and coordinated contributions from all the Parties. He referred to the need to find an efficient way to organise and finance a cooperative research programme and his personal view was that advantage should be taken of existing organizations such as NASCO and ICES. He wished all participants a productive and successful meeting and an enjoyable stay in Oslo.

1.2 A list of participants is contained in Annex 1.

2. Appointment of Rapporteur

2.1 The Working Group appointed Dr Peter Hutchinson as Rapporteur for the meeting.

3. Adoption of the Agenda

3.1 The Working Group adopted its agenda, ICR(00)8 (Annex 2), after including a new item 5(iii) entitled “By-catch of Atlantic salmon” and after making minor changes to item 6.

4. Terms of Reference of the Working Group

4.1 The Secretary of NASCO, Dr Malcolm Windsor, referred to the desirability of NASCO being science-based in its decision-making but noted the lack of information on the marine phase of Atlantic salmon. He indicated that some years ago NASCO had been compared to a vehicle with a rear-view mirror but no windscreen since there was a lack of predictive advice on which to base management decisions. This had now changed and he thanked the scientists present who had been involved in the development of the predictive models used in agreeing regulatory measures for the West Greenland fishery. He noted the importance of the task facing the Working Group as detailed in the Terms of Reference from the Council of NASCO. These contain two elements: what research is needed to better understand the factors

responsible for the increased marine mortality of salmon and how can this research be financed? The Working Group considered its Terms of Reference, ICR(00)2 (Annex 3).

5. The International Cooperative Research Programme

(i) Background

5.1 The Chairman introduced document ICR(00)4 which provided background information on the decline in salmon abundance, a significant proportion of which has been attributed to an increase in marine mortality. Many factors are thought to influence marine mortality including environmental changes, diseases and parasites, predation, competition, availability of food, exploitation in directed fisheries and as by-catch, and freshwater influences. These factors, operating alone or in combination, may affect mortality and, if sub-lethal, life history responses such as age at maturity. He stressed the considerable expense involved in studying salmon at sea and referred to the need to optimize allocation of resources through international cooperation.

(ii) Overview of Existing or Proposed Research and Development Programmes on Salmon at Sea

5.2 Reports on ongoing research at sea were presented by Canada, England/Wales, Faroe Islands, Iceland, Ireland, Norway, Russian Federation, Scotland, Sweden and USA. Summaries of these presentations are contained in Annex 4.

5.3 In addition, a report was made available to the Working Group of a recent Workshop on research strategies into the cause of declining Atlantic salmon returns in North American rivers, ICR(00)9, sponsored by Fisheries and Oceans Canada (Science Branch). A summary of this report is also contained in Annex 4 as part of the Canadian report.

5.4 The Working Group recognised that while there have been considerable advances in our understanding of salmon at sea as a result of national research programmes, the high cost of research at sea and the level of available funding had limited the knowledge gained. For example, the Working Group was advised that only one research cruise for salmon had been undertaken in the last 10 years in the North-West Atlantic (with the exception of recent work in the Bay of Fundy). In the North-East Atlantic there had been a programme of research at sea over the last 10 years which had provided much valuable information on salmon distribution at sea but much of this work had been conducted during surveys for pelagic species rather than during research cruises devoted to salmon. The Working Group recognized that improved knowledge of salmon at sea would require adequate funding for a multi-disciplinary programme of research which could take advantage of advances in technology such as those in relation to data storage tags.

5.5 The Working Group recognized that while research on salmon at sea was expensive there may be opportunities to save costs on equipment such as data storage tags if these could be purchased in large quantities for a cooperative research programme rather than in the small numbers being purchased presently by individual researchers.

(iii) By-catch of Atlantic Salmon

5.6 The Working Group considered document ICR(00)5 which contains information on salmon by-catch reported by captains of Russian vessels fishing in the Northern Norwegian Sea (65°-73°N) pelagic fisheries in the summer of 2000. A total of between 37 and 43 salmon had been reported captured mainly in surface trawls for mackerel. By-catches of salmon in this area appear to be a feature of the early part of the fishery (June/July) and on the basis of information obtained and knowledge of the number of vessels operating, it had been estimated that the total by-catch in these pelagic fisheries was likely to lie in the range 120-160 salmon. Even if this estimate was only a tenth of the real value it was suggested in the paper that the impacts on the catches of countries contributing post-smolts to the Norwegian Sea would be undetectable although the accidental capture of large numbers of salmon from a single river system would be more worrying. The paper recommended that scientific observers be placed on 5-10 vessels to verify these initial findings and that these observations be supplemented by information from research vessels fishing at the same time and at the same depth as the commercial fleet.

5.7 The Working Group welcomed the information contained in ICR(00)5. However, concern was expressed that the information provided could seriously underestimate the scale of the problem. Norwegian research fishing in the same area using surface trawls had shown that catch rates of post-smolts could be high (up to 170 post-smolts in a two-hour trawl). The Working Group recognized that there could be considerable difficulties for observers in identifying post-smolts among the large catches of pelagic fish such as mackerel on commercial fishing vessels. Such problems had been experienced by observers trying to screen capelin catches for salmon post-smolts in the North-West Atlantic. It was agreed that parallel research fishing might be a more appropriate way to estimate by-catch. The view was expressed that if the mackerel trawls could be operated at about 10m below the surface the by-catch of salmon would be reduced. It was recognized that this measure would also greatly reduce the catch of mackerel.

5.8 The Working Group was made aware of a new design of doors for use with surface trawls which have been used for research on salmon in the Bay of Fundy, Canada. However, the Danish-based manufacturers of these trawl doors had received enquiries from a number of fishermen wishing to use the gear in exploratory fisheries for pelagic species in surface waters. The development of new gear indicates that new fisheries may be targeted in surface waters. Concern was expressed that this could lead to an increased problem of by-catch of salmon in the North Atlantic.

(iv) Objectives for the International Cooperative Research Programme

5.9 The Working Group agreed that the objective for an international cooperative research programme should be to identify and explain the causes of the increased marine mortality of salmon, including by-catch and factors operating in fresh water but which subsequently affect mortality at sea. The Group recognized that it would be desirable to develop a programme of what can realistically be achieved in the next 5 years.

(v) Proposals for the International Cooperative Research Programme

5.10 The Working Group considered the scope of issues facing scientists attempting to understand the causes of mortality of salmon at sea. After reviewing ideas and project concepts, the Working Group was able to develop a short list of concepts that would productively contribute to the overall goal of understanding the causes of marine mortality. This list is not comprehensive in that some areas of research are not included. This does not reflect negatively on those areas of research not included but rather reflects the desire to provide a manageable programme of research areas for consideration by NASCO. The Working Group used a number of approaches to satisfy itself that each of these topics had high relevance to the stated objectives of the cooperative research programme. Obviously, different programme concepts examine different aspects of the overall problems and some concepts are clearly more forward-looking than others. A total of eight programme concepts were identified. Some of these, for example 'Salmon by-catches in pelagic fisheries', specifically focus on one possible mortality factor while others are more generalized. A matrix was developed which indicates the relevance of each project to increasing understanding of the various factors which could contribute to marine mortality. This matrix is contained in Annex 5. The Working Group hopes that the following list of research areas will provide a starting point for successful studies through international collaboration.

Project 1: Scale Growth Analyses

Concept: Freshwater and post-smolt (i.e. salmon in their first year at sea) growth histories are laid down in scales of salmon and can provide valuable data to evaluate the survival and maturation of salmon stocks. Comparison of these data has also helped scientists understand survival and recruitment patterns among stocks. With a greater understanding of growth dynamics, scientists will be able to improve their environmental prediction models by delineating the boundaries between stock complexes.

Approach: Existing archives of scale data have generally been measured for routine ageing. However, these samples could be measured using image processing to extract detailed growth histories. Individual laboratories and investigators could then collaborate to analyse regional and continental growth signature trends.

Timeframe: 5 years.

Resources: A number of image processing laboratories exist that could participate in this initiative. Resources could also be used initially to organize workshops and facilitate the collaboration of the principal investigators with investigators at image processing facilities (£7,000 per annum). It would be desirable to have additional resources to provide image processing systems to key laboratories and pay for temporary technical staff to carry out sample preparations and data extraction (£70,000 per annum).

Project 2: Post-Smolt and Adult Migration and Distribution

Concept: A clear understanding of the temporal and spatial dynamics of migration pathways, distribution, and habitat utilization is essential to understanding marine mortality issues. For most Atlantic salmon stocks, marine distributions are poorly understood. Field-based efforts to describe distributions will generate significant

opportunities for investigating other factors including: short-term growth rates; mortality estimates; diet composition; parasite and disease sampling; assessment of physiological condition; potential opportunities to sample piscivorous predators.

Approach: Full implementation of a coordinated research programme will require smolt tagging, research cruises, and fisheries monitoring. To understand migration pathways, it will be necessary to identify the source of post-smolts and adults intercepted at sea. A coordinated tagging programme using conventional tags and ultrasonic transmitters can be used for identification purposes. Large-scale conventional tagging programmes would be established to mark wild and hatchery smolts from representative river systems. By giving the trawling/tagging programme an appropriate design, mortality estimates at desired stages in the early oceanic phase would be obtained. Targeted use of ultrasonic tags will be an equally effective tool to determine distribution and migrations patterns of post-smolts at sea during the first year and can be used to assist the direction of trawling and fishing effort. Trawling programmes and acoustic monitoring will be used to identify post-smolt habitat and collect individuals to study marine ecology of the post-smolts.

There will be a need for enhancement of existing monitoring programmes and establishment of new monitoring programmes for remaining commercial and recreational fisheries for Atlantic salmon. The research fishing programme will be established so as to also target larger Atlantic salmon after one year at sea.

Timeframe: 5 years.

Resources: Some resources and infrastructure are already available through existing post-smolt trawling and ultrasonic tracking/monitoring programmes. In addition, some established conventional tagging programmes could be redirected in a coordinated manner to address programme objectives. New resources for conventional marking, ultrasonic tracking, post-smolt trawling, enhanced fisheries monitoring, and research fishing programmes are estimated to range from £1.5 million annually for a minimally funded initiative to £3.5 million annually for a fully funded initiative.

Project 3: Thermal Ecology of Salmon at Sea

Concept: Many studies have shown strong links between survival and growth of salmon and sea water temperature. Thus it will be essential to fully describe the thermal habitats of salmon at sea using data storage tags. An additional benefit of these studies will be to provide information on the distribution of salmon at sea.

Approach: Data storage tags will be applied to smolts and adults within the framework of an established recovery programme. Study sites will be representative of the full range of salmon in North America and Europe. Expected results include: comparison of thermal regimes among both individual fish and stocks; comparison of temperatures from data storage tags to available oceanographic climate data sets and other climate datasets; better understanding of factors affecting salmon distribution at sea.

Timeframe: 3 years.

Resources: There are a number of recovery programmes that the data storage tag programme will be based on. Minimum resources required for the data storage tag programme are £125,000 per annum. A full programme including more sites and parameters recorded on the tag would be highly desirable and would require an expenditure of £500,000 per annum. If resources are available then geolocation parameters should be collected on the tag; however geolocation information is extremely expensive to collect.

Project 4: Bioenergetic Modelling of Salmon

Concept: Bioenergetic modelling is essential for understanding growth and survival at sea and is essential for the interpretation of field data. Mortality is growth-dependent as both the effects of predators and parasites vary with the size of the fish. Furthermore the ability to survive critical periods depends on the amount of surplus energy stored by the fish.

Approach: Bioenergetics models show how fish use energy for various purposes. Through modelling we will investigate how much energy is available to fish and how it is used for growth, movement and maintenance. To make such a model internationally acceptable, it needs to be based on published data on the relationship in salmon between food consumption and growth from all marine areas of salmon. It will also use data available from aquaculture research. A preliminary model can be developed in one year. The model will be checked and developed by using datasets on growth, diet and temperature. The model will be used as a tool in projects dealing with growth, diet and mortality.

Timeframe: The entire project, including a validation process, will last 3-4 years.

Resources: The cost for this project is in the order of £80,000 a year. These costs include the costs of one full-time PhD student and the cost of a workshop to develop the input data for the model. The minimum costing based on a part-time PhD student would be £30,000 per annum.

Project 5: Trends in Marine Survival

Concept: The international research community has access to a large volume of archival data from fisheries in home-waters and in the ocean, and from the rivers and streams that receive spawning adults and produce juveniles. Matching environmental data are available both for fresh water and the ocean. Many of the data sets are accessed for national research programmes in order to monitor freshwater production, and to estimate marine abundance and survival. However, value will be increased by using new, advanced analytical methods and combining across national scales.

Approach: ICES performs some of this work routinely each year. However, additional scope for new approaches should be assessed. In particular, patterns of coherence in marine performance and survival, and the comparison of marine survival rates with variations in environmental conditions, such as sea surface temperature, will pinpoint candidate areas of concern. It will also help understanding of the

mechanisms of stock regulation. New sources of archived information should be identified, accessed and integrated into the new analyses. Since the approach is a broad one it is expected to contribute insights in many specialist areas. Additionally, the identification and characterisation of local, national, regional and Atlantic-wide trends will provide further support for the array of predictions that are required for national and international management. The objectives can be achieved at relatively low cost by building on existing collaborative arrangements and forming new ones.

Timeframe: 3 years.

Resources: Existing resources are assumed to be committed. Additional resources of £40,000 per annum are required for travel support and workshops to explore these new areas and devise new working methods.

Project 6: **Salmon By-catches in Pelagic Fisheries**

Concept: Identify interception fisheries in the North Atlantic which have the potential to have a by-catch of salmon, estimate the amount of salmon caught in these fisheries and evaluate possible management measures to minimise such by-catch.

Approach: Based on available data on the distribution, mode of operation and effort in pelagic fisheries, and on the migratory routes of salmon in the ocean, a temporal and spatial matrix describing potential overlap between salmon stocks and pelagic fisheries will be built. Based on this matrix the fisheries will be given a classification as to their impacts on salmon stocks according to their mode of operation and degree of overlap. Observers will be placed on board fishing vessels to inspect catches in order to obtain estimates of the by-catch of salmon. According to need, scientific surveys will be conducted to verify or collect additional data in addition to the data acquired by the observers. Field studies will be carried out in parallel with these surveys to devise fishing strategies yielding less by-catch in the respective fisheries. Based on the results obtained, possible management measures which could reduce by-catch of salmon will be evaluated.

Timeframe: 3 years.

Resources: Minimum - extraction of existing data and construction of overlap matrix: £35,000 per annum. Desirable - as minimum plus observers and experimental fisheries: £200,000 per annum.

Project 7: Survival Dynamics at the Freshwater Marine Transition

Concept: The objective is to estimate mortality of salmon during the transition from fresh water to the marine environment. The mortality may be caused by predation, diseases and parasites. In addition, a number of studies have indicated that conditions in fresh water, e.g. temperature and contaminants, may compromise the ability of smolts to adapt and survive in the marine environment. The magnitude of this mortality may vary considerably on a spatial and temporal basis.

Approach: A number of smolts will be tagged in rivers. Mark-recapture population estimates will be conducted for predatory animals in conjunction with stomach

content analysis. This could facilitate determination of the magnitude of predation and the possible impact on adult returns. Acoustic tags could be applied to smolts which would be actively tracked in estuaries and near shore areas to determine the length of time post-smolts spend in these areas. Physiological studies will be carried out on emigrating smolts in order to assess their ability to adapt to, and survive in, the marine environment in relation to conditions previously experienced in fresh water. Floating trawls could be used to catch post-smolt salmon in different parts of estuaries and nearshore areas to study migration, nutrition, growth and parasite burdens.

Timeframe: 5 years.

Resources: The cost of such a programme, which will involve cooperation between laboratories within the full range of the salmon, will be £100,000 per annum for a pilot project. For implementation of these projects in index areas throughout the range the cost would be £500,000 per annum.

Project 8: Application of Electronic Tag Technology to Determine Marine Distribution of Salmon

Concept: Management of salmonid fisheries is currently based upon a very limited understanding of the marine distribution of Atlantic salmon. Information is required on the spatial and temporal distribution of salmon in the sea in order to develop models to describe the movements of salmon in relation to marine currents and sea surface temperature in order to predict the impact of oceanographic and climatic conditions on marine survival.

Approach: It is proposed to further develop data storage tag technology in order to describe the distribution of salmon in the marine environment. The new generation of data storage tags incorporates a light sensor which collects data that may be used to estimate the position of the salmon in the sea (latitude and longitude) with a degree of precision. The recent miniaturisation of these geopositioning data storage tags now permits their use on fish the size of post-smolts.

Methods will be developed which will form the basis of a large-scale data storage tag study on the environmental distribution of salmon in the sea. These methods will include testing the suitability and resolution of position-fixing data storage tags, identifying appropriate stocks of salmon to maximise the return rate of tags through fishery-dependent methods and assessing the most suitable techniques for attaching tags to post-smolt salmon. The geopositioning data storage tags will also collect data on water temperature and depth of fish and provide further information on the behaviour of salmon in the marine environment. The project will also complement the other proposed programmes investigating the distribution of post-smolts and the thermal preferences of salmon in the sea.

Timeframe: 5 years.

Resources: The major cost of the project would be the purchase of the data storage tags. The number of tags required for the study would be dependent on the release site of the post-smolts and the number of tags that would be returned either through the fishery or by other means. An initial study would require the release of about 200

fish and the cost of such a tagging programme would be in the region of £300,000 per annum. It would be desirable to increase the number of study stocks, which may reduce the individual tag costs, and the use of other technologies that would increase returns would also reduce costs. The cost of this expanded programme might be in the region of £1 million per annum. International collaboration would be necessary in order to spread the cost of the project and to identify the most appropriate river systems to study. However, the core data produced by the project would be highly relevant to all Parties and collaborating countries. In addition the successful outcome of such a study will further promote the development of fisheries-independent data storage tag technology.

Conclusions

5.11 In summary, the minimum and desirable costs (in pounds sterling) for the eight programme concepts outlined above are as follows:

Project title	**Minimum budget**	**Desirable budget**
1: Scale growth analyses	£7,000	£70,000
2: Post-smolt and adult migration and distribution	£1.5 million	£3.5 million
3: Thermal ecology of salmon at sea	£125,000	£500,000
4: Bioenergetic modelling of salmon	£30,000	£80,000
5: Trends in marine survival	Existing resources	£40,000
6: Salmon by-catches in pelagic fisheries	£35,000	£200,000
7: Survival dynamics at the freshwater marine transition	£100,000	£500,000
8: Application of electronic tag technology to determine marine distribution of salmon	£300,000	£1 million

There is, however, a strong interactive effect between the various projects so the costs will not be additive.

5.12 The complexity of the task of trying to reveal the processes underlying the general decrease in Atlantic salmon stocks throughout its range is large and should not be underestimated. Increased efforts in salmon research dedicated to this problem during the last years have led to some insight, but we are still far from a thorough understanding of the basic nature of the decline and the causal factors. At the end of the day one single factor could turn out to be critical but, more probably, a set of interacting factors will emerge as significant.

5.13 The future success of this programme will critically depend on asking the right questions throughout the programme period and on a flexible organisation model capable of extraction and utilization of all results individually and combined. The potential synergistic effects in efficient and open communication between the projects is large, and processes promoting such communication are essential to the overall programme's success. A thorough and ongoing effort throughout the programme should, therefore, be put into developing the interactivity and communication between the projects. With the limited time available to the Working Group, the interactivity between the projects could

not be discussed in any depth, and time should be dedicated to this aspect as soon as possible after commencement of the programme. Assembling the information outlined in this programme would be a prerequisite to assessing whether there are measures that can be taken to counteract the mortality of salmon at sea.

6. Proposed Organization and Funding of the Programme

(i) Existing Research and Development Funding on Salmon at Sea

6.1 The Group initially discussed the definition of research at sea for the purpose of assessing existing funding and agreed that it would exclude work on all freshwater aspects of the salmon's life cycle but would include scientific programmes in estuaries. Work relating to aquaculture escapees and sea lice would be included provided it related directly to assessing salmon mortality at sea.

Country	Average annual expenditure (pounds sterling) on marine research for the period 1998-2000
Canada	£150,000
Denmark	Information not available
Faroes	£25,000
Finland	Information not available
France	Information not available
Germany	Information not available
Greenland	Information not available
Holland	Information not available
Iceland	£50,000
Ireland	£60,000
Norway	£415,000
Russia	£ 0
St Pierre and Miquelon	Information not available
Spain	Information not available
Sweden	Information not available
UK	Information not available
US	£200,000

6.2 Average annual expenditure in the period 1998-2000 by North Atlantic countries on research on salmon at sea ranges from zero to in excess £400,000 per annum. However, information was not available to the Working Group for all countries in the NASCO Convention area and the Group recommends that NASCO Parties be requested to make information on current expenditure available to the Organization. It is anticipated that total existing expenditure on salmon at sea is less than £1 million annually. This level of

expenditure is only a fraction of what will be required for a clearer understanding of the factors affecting salmon at sea.

(ii) New Sources of Funds for an International Programme

6.3 The Group discussed in detail possible sources of funds to support an international marine-based research programme. It envisaged that an initial contribution to the fund might be made by each NASCO Party, so as to encourage others to contribute to the initiative and to ensure the availability of resources during the fund's first year of operation.

6.4 Possible new sources of funding would include:

NASCO Non-Government Organizations
Non-NASCO Non-Government Organizations
Corporate sponsorship
Industry sources (aquaculture, oil, brewing, distilling)
Funding initiatives (Salmon Lottery, tickets, draws, etc.)
EU Research Funds
Other International Agencies
Private Donations and Wills

6.5 The Working Group recognized that it may be attractive to potential funding organizations or individuals if contributions to the fund could be made tax free. This aspect should be given further consideration if the Council decides to proceed with the establishment of a fund.

(iii) Funding and Organization of the Programme

Introduction

6.6 The Working Group considered that there are many possible scenarios. At one extreme there would be no new money at all; the effort would be simply directed towards using existing resources more effectively and possibly diverting more effort towards the marine issue. In that case it is unlikely that much new information could be achieved. At the other extreme national resources, together with new funds, could be put into one internationally administered programme, perhaps similarly to the way that NATO exercises operate where control is given to one international organization over these resources. The Working Group felt that, though it would be helpful, the first scenario above is not sufficient to produce the resources for the significantly greater effort needed at sea. The second scenario is probably not a politically realistic option at present. A practical option would be to set up a fund within the NASCO forum. This is outlined in Figure 1.

The "Programme" and the "Fund"

6.7 The Group considered that in the present circumstances, where only a very low effort is going into this subject, the aim should now be to generate new funding for research on salmon at sea and to better coordinate the existing and new projects. To achieve

this, the Working Group envisages that there be an "International Cooperative Salmon Research Programme" which consists of the sum of the constituent projects contributed to it. A contribution might simply be notification that a certain research project relevant to the Programme would be carried out. Equally it might consist of a project that needed assistance from the "Fund". The Fund consists of contributions of money from any source. The Fund contributes to the International Programme but not all projects will seek funding assistance. Some countries will just notify the Board of their marine research projects contributing to the programme. On the other hand, there may be some countries that do not presently carry out salmon research but which could benefit from the scientific results. They and others, including NGOs, might wish just to contribute money and not any other resource.

6.8 In this way the Programme could be a flexible concept that can accept contributions in many forms and from many sources. The Parties could be invited to make an initial cash contribution to the Fund but this would be voluntary. This initial contribution might be necessary as a catalyst to attract funding from some or all of the other sources listed in 6(ii).

Structure of the Fund

6.9 The Working Group considered that, although it is unlikely that these potential contributors would be willing to pay funds to national governments, they might be persuaded to pay into an international fund set up for this purpose. Some contributors might wish to earmark their money to certain projects and the Working Group can see no reason why this should not be possible as long as the projects are within the framework of the Programme and are acceptable to the Board. The Group also felt that it was better to try to use existing structures where possible. One possible structure that would meet these aims is to set up a Trust Fund under NASCO Financial Rule 6.1. This fund would be set up with the sole aim of funding research which might contribute to our knowledge on the causes of marine mortality of Atlantic salmon at sea and of how to counteract this mortality. The Working Group discussed whether the costs of administering the research programme should be budgeted for by NASCO or borne by the Fund. While this aspect would need further consideration by the Council the Working Group believes that the administration costs should be provided from the Fund.

The Board

6.10 If NASCO Council agrees to this idea the Working Group suggests that a Board be appointed to run the Fund and coordinate the Programme. The Board might consist of one representative from each Party, i.e. seven members from the Parties, plus three members from other contributors, one of which should be from NGOs accredited to NASCO. For simplicity the rules of procedure of the Board and the financial rules of the Fund might be based on those of NASCO. The Working Group believes that the new Board would need the administrative support of the NASCO Secretariat.

6.11 Research proposals could be submitted by any Party, country, group of Parties, organization, individual or any grouping of these. Each project proposal should indicate what resources in terms of staff, vessels, and equipment they would be willing to contribute to the Programme, and how much, if anything, they would seek to use from the Fund. Where the proposal involves a payment from the Fund, the

Board would decide whether the proposal met its objectives. In coming to its decisions the Board would probably need at least two sources of advice. Firstly, it would need a scientific evaluation of the selected projects to ensure scientific balance and objectivity. Taking account of the fact that fisheries research and development programmes are national rather than EU programmes, there may be a need for special arrangements for EU member states. Secondly, the Board would need financial advice on the progress of the Fund, on opportunities for new subscriptions, on costs of various options, etc. The Working Group suggests that both of these "Sub Committees" of the Board be established by the Board itself except that the Council might wish to issue some direction as to the Scientific Committee since that already exists. The Board could receive proposals at any time but it might meet annually at the time of the NASCO meeting. It should be stressed that the Board would have no role in evaluating a project sent to it by an institution for information purposes only, i.e. a project that did not seek any contribution from the Fund. However, the Board should decide whether or not the project is within the framework of the programme. The requirement to notify the Council already exists to some extent through the NASCO Resolution on Scientific Research Fishing and Article 15 of the Convention. It would still be very important, however, to have these projects in the Programme, so as to avoid duplication and overlap and to foster better co-ordination.

Reporting and Quality Assurance

6.12 The recipients of funds would be required to make interim and final reports to the Board. In addition the projects funded should all be published and disseminated through publication in international peer review journals and communicated to ICES so that it can be used in formulating the advice to NASCO. The Board would also make an annual report to NASCO and its Contracting Parties. ICES might be invited to play a role in quality assessment of the output of the programme and/or the Board may make other arrangements for an external peer review process.

(SEE cnl(01)21FIGURE)

[Figure 1 to be inserted]

7. Any Other Business

7.1 There was no other business.

8. Report of the Meeting

8.1 The Working Group agreed a report of the meeting.

9. Date and Place of Next Meeting (If Needed)

9.1 The Working Group agreed that a second meeting would not be required.

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Working Group on International Cooperative Research

ICR(00)8

Agenda

1. Introduction

2. Appointment of Rapporteur

3. Adoption of the Agenda

4. Terms of Reference of the Working Group

5. The International Cooperative Research Programme

   (i) Background
   (ii) Overview of existing or proposed research and development programmes on salmon at sea
   (iii) By-catch of Atlantic salmon
   (iv) Objectives for the International Cooperative Research Programme
   (v) Proposals for the International Cooperative Research Programme

6. Proposed Funding of the Programme

   (i) Existing research and development funding on salmon at sea
   (ii) New sources of funds for an international programme
   (iii) Funding and organization of the programme

7. Any Other Business

8. Report of the Meeting

9. Date and Place of Next Meeting (if needed)

Working Group on International Cooperative Research

ICR(00)2

Terms of Reference

The Council of NASCO agrees to establish a Working Group, under Norwegian Chairmanship, to:

- develop ideas for a programme to identify and explain the causes of the increased marine mortality of Atlantic salmon and to examine the possibilities to counteract the mortality;

- advise on possible sources of funding for the research programme and on how to organise the programme;

- consider the issue of by-catch of Atlantic salmon in pelagic fisheries.

The Working Group should draw on existing information so as to avoid duplication of effort.

Summary Reports of Current Research Programmes on Salmon at Sea

Canada

Salar MAP: The Atlantic Salmon Marine Acoustic-tagging Project

Salar MAP is a collaborative project between the Department of Fisheries and Oceans and the Atlantic Salmon Federation aimed at finding where post-smolt Atlantic salmon go at sea (fine to mesoscale migration routes and distribution over time) and capturing live salmon at sea for examination and release. The goal is to ultimately determine the location and timing of salmon mortality at sea for affected stocks and to uncover the causes. Over the past 6 years, *Salar* MAP has focused on spearheading the development of the technology and methodology to achieve these goals. New electronic tags (acoustic pingers) designed for small fish and new methods of monitoring tagged fish at sea have been used successfully to deliver information on the movement, behaviour, habitat and survival of post-smolts from the time they leave the river. Several pilot studies were conducted to highlight the possibilities.

In 1995 and 1996, both wild and hatchery-reared smolts with individually identifiable pingers were tracked for up to 3 weeks after leaving several rivers in Passamaquoddy Bay in southwestern New Brunswick. Automated pinger detection sites at key locations provided the information to determine the coastal migration routes and to assess migration success or post-smolt survival in estuaries and coastal marine habitat where salmon aquaculture cage sites are abundant. This success led to further developments (single chip pingers with multiple codes and dedicated automated receivers) to extend the tagging and tracking possibilities. Pinger length was reduced by almost half, detection range was doubled, and life span was increased up to 10 fold. In 1999, these new developments were tested in a pilot project to assess the feasibility of mapping the migration and distribution of post-smolts in the Bay of Fundy during the first summer at sea. Both wild and hatchery-reared smolts were tagged and released in a river of the inner bay. Automated receivers were strategically deployed underwater to form pinger detection screens that monitored all tagged fish leaving the river, leaving the coastal zone in a 10 km radius of the river mouth, and moving across a 50 km stretch between the inner and outer portions of the Bay of Fundy. This tracking strategy proved effective; all tagged post-smolts were detected at some time, and the movements of some of these were monitored for up to 3 months. A key feature of the approach developed is that the high efficiency of the pinger detection screens provided a measure of survival of the tagged fish to different points along the migration routes during this period. Other information obtained by tracking included the timing, location and rate of departure and return, travel direction, behaviour and movements in relation to environmental associations, and detailed tracks of individuals and group movements. The pilot project showed that automated detection screens and coded pingers could be used to track and monitor tagged fish at sea, alone or in groups, determine migration routes and distribution, examine behaviour, and determine survival over specific periods. The effectiveness of this method will depend upon location and conditions, extensive testing of pingers and receivers in the target area, and study design. For the river and stock used in the pilot study, tracking identified: a high migration success of smolts into sea water and of post-smolts away from the river mouth and coastal zone (low predation by birds), directed and active migration behaviour, high fidelity of some post-smolts to the inner Bay of Fundy during the first summer at sea,

possible environmental influences on destination, and indicated that the source of mortality common to inner bay stocks is possibly further out at sea. The new technologies and approach provided extensive fishery-independent information over ever-increasing spatial and temporal scales. These case studies highlight how ongoing novel developments in tagging and tracking fish with unique electronic devices can provide a wealth of new knowledge about specific salmon stocks and life stages in habitats where research has until now been restricted.

In 2000, *Salar* MAP focused on testing trawling gear and methods similar to that used by groups in the eastern North Atlantic to capture live salmon at sea for examination and release. A new trawl designed to maximize efficiency and fish a shallow depth (about 10 m) and several designs of towed aquariums for capturing and holding live fish were tested in a survey aboard the CCGS Alfred Needler. Surface trawling with this gear was conducted at 85 sites in the Bay of Fundy during the second half of June. The gear was successful in capturing and retaining a variety of fish alive. Three post-smolts (2 wild, 1 aquaculture escapee) and one adult salmon (aquaculture escapee) were captured. The low salmon capture indicates that some prior knowledge of migration routes and timing obtained through tagging would be of value in finding wild post-smolts because of their extremely low abundance in the Bay of Fundy. A second surface trawling survey was under way in October to try and find some older post-smolts that may have established a feeding habitat within the Bay of Fundy (a possible unique feature of this stock). Live post-smolt capture is an extension of the tracking work and a core component of the project to investigate marine mortality of salmon.

Salar MAP has focused its efforts in the Bay of Fundy because of the urgency of the situation based on the status of its salmon stocks (under consideration for listing as "endangered"). The bay provided an ecosystem that was of manageable size for developing and testing the use of acoustic telemetry to obtain both fine and mesoscale information on salmon at sea, and a similar approach could be used effectively elsewhere.

Ecology of Atlantic Salmon in the Northwest Atlantic

Exploratory fishing in the Northwest Atlantic was begun by the Department of Fisheries and Oceans Canada in 1965. Surface gillnets of various mesh sizes were set out at dawn and fished for up to twelve hours depending on the weather and wave conditions. Nets were sometimes patrolled from a small open boat to obtain live salmon for tagging. Mortalities were sampled for biological characteristics, scales, and stomach contents. Salmon of all sea ages occurred seasonally over most of the Northwest Atlantic and were found concentrated in the Labrador Sea gyre throughout the year, at west Greenland in summer and autumn, and in the spring along the eastern slope of the Grand Banks. Distribution extended as far east as the Irminger Sea. Post-smolt salmon were first caught at sea in 1987 using gillnets of small mesh sizes not previously fished. The highest concentration of post-smolts and adult salmon occurred in the mid-Labrador Sea area. Information collected from scale reading, salmon caught with tags attached, and distribution of recaptures of salmon tagged at sea indicated that salmon over the entire range in North America were found. Diet of salmon examined from stomach contents suggested that salmon were opportunistic feeders.

Experiments with data storage tags (DSTs) were conducted on Atlantic salmon kelts obtained at enumeration facilities on Western Arm Brook, Campbellton and Highlands rivers, Newfoundland in 1998. In total, data on temperature is available from 11 returned tags. Control DSTs for verification purposes were applied to kelts held in a freshwater fluvarium and indicated that water temperatures recorded by the DSTs were accurate. Results from 11

recaptured tags indicated differences between rivers and among fish within a river. Water temperature profiles are useful for indicating water temperatures encountered by salmon in fresh water and in the sea and may prove useful for determining temperature preferences. This information is important for marine climate change models and water temperature protocols for opening/closing angling fisheries in fresh water due to high water temperatures. Movements vertically in the water column were inferred from the daily temperature patterns and indicated some diurnal movements. The Kiwi tagged salmon spent most of their time in water from 5 to 17°C.

Department of Fisheries and Oceans (Science Branch) Workshop on Research Strategies into the cause of declining Atlantic salmon returns in North American Rivers

A Department of Fisheries and Oceans (DFO) Canada salmon science workshop held in 1998 concluded that the decline in survival at sea was coincident with fundamental changes in the ecology of the Northwest Atlantic. Subsequent efforts have failed to identify the factor(s) responsible for the broad-scale decline in North American Atlantic salmon abundance. Accordingly, a second special Workshop was convened by DFO to develop an inter-Regional research focus to determine the cause(s). This Workshop took place during June 12-14, 2000, at Dalhousie University, Halifax. The 35 participants in the Workshop were multi-disciplinary in make-up, and originated from government agencies in Canada (including British Columbia), New England and Europe, as well as universities and the Atlantic Salmon Federation. The conclusions from the Workshop are now documented in a DFO-published "Proceedings" CSAS 2000/18.

The Workshop re-affirmed that the higher mortality is occurring after the salmon leave their rivers. This abnormally high marine mortality, seemingly common to all North American Atlantic salmon spawning populations, is in many cases coupled with local factors (e.g. acid rain, habitat deterioration) in some freshwater and/or near-shore areas.

Workshop participants narrowed down the list of potential causes of low marine survival to a shortened list of the most likely causes. They concluded that there could be multiple causes for low survival, including factors in fresh water that may reduce the fitness of salmon smolts going to sea and subsequently lower marine survival. Several factors, spanning the freshwater to the high seas life phases, were recommended as targets of further research.

The Workshop's principal recommendation is for a new multi-disciplinary research initiative aimed at identifying the cause or causes of the decline in sea survival experienced by North American Atlantic salmon. This proposed initiative would build on and expand the historical time series of data developed for the freshwater areas and aggressively research the marine areas from the estuaries to the high seas. Some of the potential factors identified were reduced smolt quality (freshwater effects), adverse estuarine conditions, increased predation in the marine environment, and changes in ocean migration patterns. A number of these factors may be linked to changes in climate and/or oceanographic conditions.

Maintaining current freshwater monitoring programs and expanding them to areas or stocks not adequately covered were also deemed to be essential by the Workshop participants.

Benefits from the research include better understanding of the marine ecosystem, and for Atlantic salmon, knowledge to better forecast future changes in abundance and essential information for potential mitigation of the current decline in survival at sea. Estimates are

that a DFO commitment of $3 million annually (for 5 years) would probably be sufficient to lever resources from partners to fully implement the program.

The workshop developed 15 project proposals:

Size-dependent survivorship (*survival at sea is determined by smolt size*);
Freshwater conditioning (*freshwater density-dependent determinants of smolt quality*);
Physical characteristics of fresh water (*freshwater density-independent factors modify density-dependent determinants of smolt quality*);
Temperature transitions (*changes in the hydrography of the transitional zone from freshwater to marine environment*);
Coastal migration routes and energetic costs (*migration routes and costs have changed*);
Estimation of survival rates with technology (*identification of factors affecting survival rates of emigrating smolts, returning adults and post-spawning kelts in estuaries and coastal waters*);
Marine fish predation in estuaries and coastal areas (*predation by marine fish has increased*);
Seals and seabird predation (*bird and seal predation reduces survival of smolts and adults in estuaries*);
Aquaculture - interactions (*aquaculture operations and escapees interact adversely with wild salmon*);
Aquaculture - disease effects (*aquaculture fish are a vector for disease transmission to wild salmon*);
Salmon distribution - models (*models would explain migration patterns and serve to probe research directions*);
Salmon distribution - coastal field studies (*using electronic tags to determine distribution*);
Salmon distribution - high seas field studies (*using cruises and electronic tracking studies to determine distribution*);
Marine mammal predation (*marine mammal observations and biological sampling*); and
Gannets as predators (*predation by gannets and indicators of ecosystem changes*).

Details on each of the projects proposed (i.e. background information, available databases to test hypotheses, time frame for completion, resources required, and the consequence for salmon if hypothesis is correct) are provided in Appendix 3 of the Workshop report.

Faroe Islands

The Fisheries Laboratory of the Faroes has carried out research on salmon in the Faroese zone for many years. The main aims of the research programme were to study the spatial and temporal stock structure of salmon, their marine feeding habits and possible interactions of escaped farmed salmon with wild salmon in the ocean. These results may contribute to a better understanding of the general biology of salmon in the oceanic phase, which may help to develop reliable assessment models of wild salmon.

The productive frontal areas north of the Faroes Islands and in the Norwegian Sea are important feeding grounds for salmon. Salmon in this area were sampled by floating long-lines (during

November-March) in three consecutive fishing periods, 1992/1993 to 1994/1995, in addition to samples from the Faroese commercial fishery since the early 1980s.

Salmon that had escaped from fish farms were found intermingled with wild salmon in the Faroese zone. The proportion of escaped fish in the fishery was low until 1988, when it increased, reaching a peak around 1990 and decreasing in recent years. It was concluded that if the farmed components in the catches were not accounted for, the catches of wild salmon would be overestimated resulting in erroneous assessments of wild salmon.

Salmon originating from the entire distribution range may occur at Faroes during part of their sea phase. Most of the tagged wild salmon were recaptured in Norway, but significant numbers of returns were observed in Scotland and Russia as well. The contributions of salmon originating from other countries around the North-east Atlantic and Canada were low. Most of the fish farm escapees originate from Norwegian fish farms. It is suggested that significant proportions of the salmon caught in the Faroes area during autumn originate from southern European countries and that fish from northern regions appear to be more abundant in the winter. Recaptures in the Faroese fishery during autumn and winter of salmon tagged as smolts in different countries support this.

The salmon fed mainly on hyperiid amphipods, euphausiids, shrimps, lanternfishes, pearlsides and barracudinas, and less on larger pelagic fish and squid. However, they tend to select larger prey and prefer fish to crustaceans, if available. Escaped farmed salmon were feeding and growing as efficiently as wild salmon in the sea, indicating that those fish that survived until capture were completely adapted to feed in the marine environment. It is still an open question whether food is a limiting factor for growth and survival of salmon after the post-smolt stage in the sea.

Sea lice (*Lepeophtheirus salmonis*) were found to infest salmon in the open ocean, however, at much lower levels than in coastal areas. Practically all fish were infested, and most lice were adult ovigerous females. The infestation level increased with sea age of the wild salmon. There is a potential for transfer of lice from escaped farmed to wild salmon in the ocean, since the escaped farmed salmon had significantly higher loads of lice than wild salmon during the first winter at sea.

At present there is no research fishing on salmon in the Faroese area.

Iceland

The key factors in management of salmon in Iceland are:

Ban on the ocean fishery;
Constant fishing effort;
Limited number of rods allowed for a limited number of days.

From research on catch statistic and oceanic and climatic factors it is known that:

Catches reflect stock (run) size (confirmed with counting data);
Stock size fluctuates depending on environmental conditions (both at sea and in the rivers);
Stocks in the same geographic area show similar fluctuations;
Growth rate and return rate are correlated (scale readings);

The sea age ratio (1SW/2SW) of many stocks has changed through time and the number of 2SW fish has been low during the last decade.

The main research emphasis has been on three index rivers in Iceland's main salmon regions. Research has also been carried out in many other rivers. The research includes:

Juvenile surveys (electro-fishing);
Smolt counting;
Adult counting (return rate);
Fishery statistics (number, size and sex of every salmon);
Spawning stock size;
Mapping of the size and the quality of nursery habitats in the salmon rivers.

Other studies of salmon at sea:

Adult salmon have been tagged with data storage tags and released at sea. Results show that salmon stay in the uppermost layers of the sea but can undertake deep dives;
Studies on smolt behaviour shortly after sea migration showed that they migrate rapidly to the ocean.

Further research planned includes:

Use of small data storage tags on smolts;
Use of data storage tags on large salmon;
Use of data storage tags with GPS positioning when they become available in a few years' time;
Further studies comparing oceanic and climatic conditions and return rate of salmon (1SW and 2SW).

Ireland

Marine-Based Salmon Research

Ireland's research into marine salmon survival centres on three main areas: an extensive smolt tagging programme, a detailed adult recovery programme and a planned cooperative programme with the National Oceanic and Atmospheric Administration (NOAA)/the University of Massachusetts.

Over 500,000 nose-tagged smolts are released annually into Irish rivers. A similar programme has been in place since the early 1980s. An extensive recovery programme of adult salmon, which involves the examination of over 50% of the national catch, is also in place. These two programmes have provided a detailed database on marine survival of salmon.

Ireland has also agreed to fund research into factors affecting the marine survival of Irish salmon stocks through an ongoing Marine Institute/NOAA cooperative programme. A description of this cooperative programme is given in document ICR(00)6 and a summary of a project to identify and quantify the oceanographic factors affecting the marine survival of Irish salmon stocks is given below. In the context of a partnership approach to marine salmon research, Ireland would be willing to re-direct a proportion of its annual tagged smolt release towards a cooperative programme with countries such as, for example, Scotland, Norway and the Faroes. The tag retrieval programme for adult salmon, the adult fish counter programme and data from the

Burrishoole index system, would greatly assist with the interpretation of results from such an initiative.

Marine Institute/NOAA Cooperative Project to identify and quantify the oceanographic factors affecting the marine survival of Irish salmon stocks

Recent research has shown that the marine survival and maturation rates of certain North American and European stocks of Atlantic salmon are affected by ocean temperature and chlorophyll concentrations. An analysis of historic satellite data, particularly in relation to thermal habitat and chlorophyll, could help to explain fluctuations in Irish salmon abundance. If indeed this is the case, temperature and chlorophyll data could be used in predictive models of pre-fishery abundance. These analyses could be used in conjunction with the wider analyses of marine survival of stocks in other countries to help define the major stock complexes of the north-eastern Atlantic. This would provide an important input into the ICES and NASCO advice on quota setting for high-seas interceptory fisheries of both Irish and U.S. salmon stocks.

The identification and quantification of the oceanographic factors affecting the marine survival of Irish salmon stocks will require:

- The correlation of data on Irish salmon stock abundance over the past three decades with relevant NOAA satellite and other oceanographic data on thermal habitat and chlorophyll concentrations;
- Long-term data series on survival for the stocks of the Rivers Bush, Burrishoole and Corrib will initially be used as inputs to these analyses as well as historical catch records. Assuming that statistically significant relationships are found, models will be developed to predict marine survival for these stocks as a function of temperature and chlorophyll concentrations;
- An examination of sea level pressure fields (SLP) for the same area;
- A study of the stable isotope composition of scales to evaluate trophic position over time is also under consideration.

Norway

Norwegian Institute for Nature Research: Ongoing Research on Atlantic Salmon at Sea

Monitoring of post-smolts in fjords and coastal areas:

Post-smolt salmon are caught with floating trawls at several sections of three fjords to study migration, nutrition, growth and infection by sea lice. Furthermore, some fish are tagged with hydro-acoustic tags and released into the sea.

Monitoring sea lice infection on salmon post-smolts and adults:

Infection of sea lice on post-smolts and adult salmon is routinely monitored at a number of sampling sites along the coast.

Monitoring of escaped farmed fish in catches and stocks:

At 13 marine localities and about 50 rivers, the proportion of escapes from fish farms has been estimated for several years. In the rivers, this proportion is estimated both in anglers' catches, and in spawning stocks.

Monitoring of the abundance of salmon in a fjord in Central Norway:

Over the last four years, adult salmon have been caught in bag-nets at a station located close to the inlet of the Trondheimsfjord and tagged and released. Based on recoveries, abundance and exploitation rates in the sea and in rivers were estimated. Additional information such as infection of sea lice, and food of dead fish, was collected.

Analysis of time series on marine survival:

Salmon smolts have been Carlin-tagged in some rivers for up to 30 years to analyse marine survival (the rivers Figgjo, Imsa, Drammenselva, Halselva). In the Imsa and Halselva, all ascending and descending fish are caught in traps, and hence all fish entering the river are checked for tags.

Analysis of time series on marine growth and sea-age at maturation:

Scale samples of salmon have been collected for several years in some rivers to estimate trends in marine growth.

Pilot experiments on the use of data storage tags on salmon:

Some salmon kelts and smolts have been tagged and released in the River Imsa as a pilot study. Three kelts and three post-smolts have so far been recovered.

Total costs in 2000 were about NOK 4,600,000 (£350,000).

Salmon in the Sea

The development of new pelagic trawl technology in 1990-91 led to consistent post-smolt captures during the Institute of Marine Research, Bergen, Norway (IMR) pelagic surveys in the Norwegian Sea.

Salmon distribution has been surveyed regularly on pelagic summer cruises since 1995 in co-operation with NINA. In addition, starting in 1998, special salmon surveys have been performed in the fjords, at the coast and in the ocean.

Additional flotation on the wings and head rope is used to keep the head rope at 0m. Temperature and salinity profiles are taken at or close to the trawl positions.

During the period 1990-2000, more than 1,600 surface hauls have been performed from late May - early September, predominantly in the Norwegian Sea basin, but also in the northern North Sea, west of the British Isles and in the South-West Barents Sea.

About 2,000 post-smolts and around 100 older salmon have been captured in Norwegian fjords, in the coastal current and in the high seas areas surveyed.

Captures indicate a near surface distribution of the post-smolts.

Distinct and partly overlapping migration paths of southern European and Norwegian salmon have been revealed and it has been shown that the distribution pattern of the post-smolts is closely related to the North Atlantic current pattern.

The distribution is obviously patchy, and varies greatly between years.

The capture of post-smolts is associated with warm and saline water (9-11°C and salinity ≥ 35 parts per thousand).

The smolt age at capture in the Norwegian Sea is heavily biased towards 1-2 year old smolts, while a striking absence of older smolt year-classes has been noted, indicating a predominantly "southern" origin of the post-smolts caught.

Post-smolts have been observed to be opportunistic feeders, but prefer fish larvae when present.

Microtagged and Carlin-tagged post-smolts have been recaptured in the Norwegian Sea indicating the value of such tagging also for marine investigations.

Post-smolt distribution in June-July overlaps with the distribution of mackerel in the Norwegian Sea. Due to the near-surface nature of the mackerel trawl-fishery in this area, it may intercept with the northward migration of the post-smolts. The results of our investigations suggest that by-catches of post-smolt salmon originating from southern Europe and Norway could be significant in this fishery.

Annual internal costs for running the salmon surveys have been NOK 2.8-3.5 million (£215,000-£270,000) in 1999-2000.

The mechanisms and the migratory routes of post-smolt and older salmon are still insufficiently understood. Such understanding is crucial for the initiation of proper management tasks directed at conserving salmon stocks. A coordinated international effort to address these problems is highly desirable due to the magnitude of the task.

The extent and consequences of sea lice infections on salmon in the early marine phase

Due to an increasing production of farmed salmonids the mean concentration of sea lice larvae has increased in Norwegian fjords and coastal waters.

Sea lice have been described as a possible stock-limiting factor for salmon and sea trout stocks. In sea trout the negative effects of sea lice infections have been relatively simple to prove due to the coastal distribution of the species and its premature return to fresh water at high sea lice infections. Due to the direct ocean migration of the salmon, mortality due to sea lice infection has been difficult to prove in this species.

Through the development of the new "Fish-Lift" live catching trawling device it has been possible to catch live post-smolts in fjords of western Norway. Results of these trawl surveys during the period 1998-2000 have shown varying, but in some cases alarmingly high, levels of sea lice infection on sea-going post-smolts of salmon (up to a mean level of 104 sea lice per fish).

An experiment illustrating the severe effect of sea lice on post-smolt salmon was carried out within this project in May-July 1999. Live wild post-smolts with a natural mean infection of 31.4 sea lice were caught in a fjord in western Norway in May and brought to the Institute of Marine Research Laboratory in Bergen. The fish were fed heavily on a mix of krill and pellets and fed heavily. 5 groups of 20 fish each were de-loused while 5 other groups also of

20 fish each were left with their natural infection of sea lice. In the de-loused groups 11% mortality was observed during a period of 40 days. In the groups with natural sea lice infection the mortality was 76% during the same period. The fish in the sea lice groups died from injury caused by the sea lice.

The 24 survivors in the groups with sea lice had a maximum number of 11 sea lice per fish. This number is in accordance with the observations made in the main feeding areas of European post-smolts in the Norwegian Sea in June-August. During a 10-year period we have never found post-smolts with more than 10 adult sea lice. The fishes caught in these areas with 10 adult sea lice have shown signs of severe difficulties, illustrated by injuries in the head region and hematocrit values down to 18. These signs are exactly the same as those observed in the experiment just prior to death of the sea lice infected fish.

The results of this project have been communicated to the Norwegian fish farmers on a regular basis. Through close communication and cooperation it is hoped that the concentrations of sea lice larvae in Norwegian coastal waters can be reduced. During the winter of 2000 the fish farmers carried out a co-ordinated effort to reduce sea lice infection in their pens. The results of the trawl investigations during the spring of 2000 are promising as the mean infections on the wild sea-going post-smolts this year were the lowest recorded so far.

The fish farmers will continue their efforts to reduce sea lice infections during the coming winter. It is our hope that we will be able to evaluate the effects of these campaigns through screening of the sea-going salmon post-smolts in the coming years. Further experiments on wild sea-going smolts will also be carried out.

The annual cost of this project is approximately NOK 2 million (£150,000).

Russian Federation

Historically Russia has never fished for salmon at sea. Therefore there was no need to conduct research on the marine phase of the life-cycle. All information pertinent to this phase of Russian salmon was gathered primarily through Norwegian or Faroese research programmes.

Presently, due to financial difficulties in Russia, marine research on salmon is not feasible. Therefore, all research is now based on maintaining and upgrading the database which has been established in previous years. In practical terms this is done through conducting monitoring on 24 rivers. These monitoring programmes provide comprehensive data on the production potential of salmon rivers and on the biology of salmon, both juveniles and adults. On the basis of these data and long-term series of data on sea water temperature in the Barents Sea, a prediction is made of the abundance of salmon stocks in Russian rivers 2 years prior to the year of return.

Another topic on which we are currently focusing is a study of the impact of enhancement on the stocks of wild salmon. This is a 6-year project and we have already obtained quite interesting results indicating that “enhanced” technologies for smolt rearing (at a higher rate) alter the genetic structure of salmon population.

Thus, the Russian contribution to meet the objectives as set for this Group could be in providing long-term data series on salmon biology and water temperature in the Barents Sea.

Sweden

There are rather small salmon stocks on the Swedish west coast and it is only from that area that Swedish salmon enter the North Atlantic. The Swedish resources allocated to monitoring and research on the west coast are much smaller than those allocated to the much larger Baltic stocks. Existing information from the west coast that may be of interest in the present context is, for example, the existence of a limited scale archive, mainly for reared fish, going back to the 1950s. There are also counts of adult spawners and partial counts of smolts for the same period. A recent action programme for salmon on the west coast will start to be implemented at the beginning of 2001. Elements in the action programme that may be of interest are, for instance, improved catch statistics and improved monitoring of the present status of some of the stocks. The most important step may, however, be the establishment of an index river. In this river we will have monitoring of smolt output, escapement and egg deposition and electrofishing surveys. In addition, annual tagging will be carried out.

At present it seems unlikely that any additional Swedish funding will be available for an international research programme, other than that arising through reallocation of existing national funding.

UK (England and Wales)

Migration of salmon smolts in coastal waters

Telemetry studies using acoustic transmitters, acoustic sonar buoys and dedicated coastal tracking systems are currently being undertaken to describe the movements of salmon smolts in estuaries and coastal waters in relation to environmental conditions.

Salmon migration routes in the sea

Models of the migration routes of post-smolts in the sea in relation to environmental and climatic conditions are being developed. Oceanographic data collected during research programmes, (e.g. sea surface temperatures, thermal fronts, shelf edge currents, tidal currents and wind-driven ocean currents), together with data from micro-tagging and tracking studies will be modelled in order to predict the most likely migration routes of selected populations of salmon from the estuary to their overwintering feeding grounds.

The impact of climate change on salmon

A literature review is being undertaken to predict the proposed changes in climate on a number of population parameters (e.g. reproduction, growth and development, smolt production, migration and distribution). The study will include detailed analyses of the results from previous studies on wild salmon to examine trends between the migratory behaviour, run-timing in smolts, marine survival and water temperature.

(UK) Scotland

In Scotland, two categories of research and assessment of the marine phase of the salmon's life-cycle have been pursued in recent years. First, the biology of post-smolts has been investigated directly for fish caught in early summer in marine research cruises using surface trawls in both near-shore and off-shore locations. Second, monitoring of key research sites and of the fisheries generally has continued to provide information on marine performance, including growth, development and survival. In both cases, long time series of data are available.

The North Esk trapping facilities, coupled with surveillance and sampling of local fisheries, are used to monitor both smolt production and adult returns (since 1966). Indices of marine survival rate, treated on a whole-catchment basis, show marked declines over the period of monitoring. Smaller, tributary sites are monitored on the adjacent Dee catchment (Girnock since 1966; Baddoch since 1988), providing separate assessments for early-running (spring) salmon on a near-population basis. Declines in marine survival of salmon belonging to early-running populations have been particularly marked in recent years. Supporting environmental data is available for both the North Esk and the Dee. Both are large rivers belonging to the eastern group of watersheds that dominates total smolt production for Scotland. Recently, however, a third trapping site was commissioned on the Shieldaig, a small catchment in western Scotland, in order to monitor and investigate declines in the fisheries of this region.

Fisheries data are used to extend assessment over the whole Scottish range. Catch data supplied by commercial and sports fishermen are available from 1952. Geographical coverage is near-total and the data resolve by month (February-November) and by location (5-10km) for all legal fisheries. Commercial catches are matched with estimates of fishing effort. However, recent closures of commercial fisheries have made it necessary to consider biasing future assessments towards analysis of sports fishery catches for which realistic estimates of effort are not available. In the first part of an analysis intended to extend to all the months of the sports fishing season, rod catches of 2SW spring salmon (February-May, 1952-1997) show high levels of coherence among rivers and among months, containing signals that reflect underlying abundance. Using plausible estimates of exploitation rate, rod catch data can be used to estimate pre-fishery abundance in home waters, as well as to forecast spawning escapement.

Further, within sea-age classes, month of capture is a proxy for intended spawning location. Earlier-running fish of both the main sea-age classes (1SW and 2SW) tend to spawn in the higher altitude parts of catchments that are more distant from the sea. Experimental evidence shows that run-timing is a genetic characteristic associated with subcatchment population structuring. This and other genetic evidence shows that population structuring is a prominent feature of all the major Scottish rivers and an important factor in management. Temporal data for the sports fisheries of single rivers can be transferred to subcatchment, geographical scales in order to examine variations in the performance of populations. In recent years, trends have diverged among the spring months, showing the greatest declines for February, and greater relative declines in February and March, than in April and May. These changes cannot be attributed to changes in smolt production or in marine exploitation: they appear to be due to population-specific variations in natural marine mortality. In future, these analyses will be extended to include fishery data for all months of the season.

USA

Current and Recent Marine-Related Atlantic Salmon Research in the United States

Investigators in the United States are actively involved in research that focuses on factors affecting the growth and survival of Atlantic salmon in the marine environment. These studies include estuary and nearshore tracking studies; post-smolt trawl surveys to identify distribution; evaluation of stock-specific growth rates in the marine environment; migration and survival dynamics; analyses of hard tissues to infer marine environmental conditions and growth dynamics; and ocean climate analysis and modeling.

Estuary and Nearshore Tracking Studies

The U.S. has been monitoring the emigration of Atlantic salmon from the Narraguagus River from 1997-1999 and will resume monitoring from 2001-2003. In past years, Atlantic salmon were tracked from 12 km above head-of-tide through Narraguagus River, Estuary and Bay, until their entry to the Gulf of Maine. An array of automated ultrasonic detection units were deployed in mid-April to evaluate the number of smolts passing river, estuary and nearshore ecological transition zones. Starting in 2001, the array will be expanded into the Gulf of Maine an additional 10 km to determine how emigrating smolts relate to the Maine Coastal Current. During the emigration of wild-reared smolts, ultrasonic pingers will be implanted in 100-110 wild Atlantic salmon smolts releasing a minimum of 2 and a maximum of 8 fish each day. In some years, 15-30 pingers are also implanted in hatchery-reared smolts. The movement of smolts will be monitored through the use of this array though the end of smolt emigration - typically early June. Data are used to measure migration rates through ecological transition zones and maximum likelihood models are used to determine survival of fish as they exit the nearshore environment.

Post-Smolt Distribution, Migration, and Survival

Beginning in 2001, the U.S. will initiate an estuary and nearshore marine post-smolt trawling program in the vicinity of Penobscot Bay. Objectives of this program are to quantify the distribution and migration pathways of Atlantic salmon smolts emigrating from the Penobscot River. The presence of 170,000 marked hatchery smolts in this system will allow for development of relationships between timing of emigration and migration pathways relative to predominate marine coastal currents.

Evaluation of Stock-Specific Growth Rates

U.S. investigators are completing a project that has monitored the stock-specific marine growth rates of three stocks of Atlantic salmon raised in commercial net pen facilities at two marine sites. The commercial aquaculture industry raised approximately 6,000 smolts for 2 sea winters from Dennys, East Machias and Machias Rivers. Uniquely colored visual implant elastomer tags were used to facilitate stock identification and post-smolts were sampled approximately every other month during growth-out. In addition to monitoring the stock-specific marine growth rates of these three stocks, the project will also: 1) assess the marine growth rates for individual Atlantic salmon and compare these rates among stocks and two net pen sites; 2) evaluate circuli and annuli formation and timing of deposition for Atlantic salmon raised in captivity within the marine environment; 3) assess retention rates for the VIE tags applied to these smolts; 4) investigate the empirical relationships between fish growth and scale growth for

Atlantic salmon from these three stocks; 5) quantitatively assess the temporal rate of the fin degradation for Atlantic salmon raised within a marine net pen.

Development of Data Storage Tags

Research continues to focus on development of smaller and cost-effective models for data storage tags that can be applied to Atlantic salmon smolts and adults. Circuitry has been developed for a small, cost-effective tag that can be applied to Atlantic salmon smolts. Additional testing is being conducted to verify the performance and reliability of the design before large-scale marking is initiated.

Analysis of Hard Tissues to Infer Marine Environmental Conditions

U.S. investigators continue to play a leading role in the analysis of scale growth patterns. Data from retrospective scale analyses are used to examine association between growth, climate, and the survival dynamics of Atlantic salmon. In 2000, a study was initiated involving the release of approximately 170,000 hatchery smolts in the Penobscot River to evaluate intra-annual variation in nearshore marine growth patterns. Atlantic salmon smolts were batch marked using visual implant elastomer tags to identify release groups. Seven major release groups (24,000 smolts per group) were released to evaluate growth and survival dynamics among stocking locations and times. Return information and scale samples collected from returning adults in 2001 and 2002 will allow for the evaluation of nearshore growth dynamics of surviving fish.

Investigators continue to conduct research in both elemental composition and stable isotope analysis of hard tissues of Atlantic salmon. A nearly completed project has examined the relationship between magnesium concentrations in the otoliths and temperature. Indications of a temperature relationship have been identified; however, follow-on studies are needed using instrumentation with a broader spatial resolution. Studies involving stable isotope analyses have been initiated to relate post-smolt feeding and diet to growth and survival dynamics.

Ocean Climate Analysis and Modeling

Research continues on the identification and quantification of thermal habitat for North American and European stocks by incorporating different climate indicators. For example, patterns in sea level pressure fields will be examined to identify climate signals. These signals can then be used to develop linkages to freshwater habitats, and address post-smolt survival issues.

Summary of factors addressed by each project in the proposed marine research programme

	Project 1	Project 2	Project 3	Project 4	Project 5	Project 6	Project 7	Project 8
	Scale growth analyses	Post-smolt and adult migration and distribution	Thermal ecology of salmon at sea	Bioenergetic modelling of salmon	Trends in marine survival	Salmon by-catches in pelagic fisheries	Survival dynamics at the freshwater marine transition	Application of electronic tag technology to determine marine distribution of salmon
Impacts of Fisheries		**	*		**	**		*
Impacts of By-catch		***				***		*
Growth effects	***	**	**	**	**	*	**	**
Maturation effects	*	*	**	**	**		*	*
Impacts of Predation	*	*	*			*	**	*
Impacts of Parasites & Diseases		**				*	**	
Environmental influences	**	**	***	**	**	*	**	**
Impacts of Pollution		*					*	*
Climatic, population trends, etc.	**	*	*	*	***	*	*	*
Charges in recruitment	*	*	*	*	**		*	*

Notes:

This matrix was prepared by the Working Group in order to illustrate the contribution each project might make to our understanding of the role played by the various factors which could influence marine survival of salmon. It was produced by asking each member of a scientific sub-group, set up by the Working Group, to score each project with regard to its relevance in increasing understanding of the role of ten factors that could influencing marine survival. The sub-group undertook this task so as to gauge the generality or specificity of the eight projects not their relative merits. The scoring system was from 1 (not valuable) to 4 (essential). These scores were then averaged and rounded, and represented in the above matrix by asterisks. Empty cells indicate that a project is unlikely to contribute to a better understanding of the role of a particular factor in the marine mortality of salmon, while *** indicates that a project is considered essential to a better understanding. The matrix represents a snapshot of the sub-group's opinions and the Working Group advises that it is not suitable for further interpretation.

ANNEX 19

Council

CNL(01)26

Returns Made Under the Oslo Resolution
(Updated to include information for EU (France) provided after the Eighteenth Annual Meeting)

CNL(01)26

Returns Made Under the Oslo Resolution (Updated to include information for EU (France) provided after the Eighteenth Annual Meeting)

1. The Resolution by the Parties to the Convention for the Conservation of Salmon in the North Atlantic Ocean to Minimise Impacts from Salmon Aquaculture on the Wild Salmon Stocks (the "Oslo Resolution") was adopted by the Council in 1994. Under Article 5 of the Resolution each Party is required to provide to the Organization, on an annual basis, information of a scope to be determined by the Council concerning measures adopted under Article 2 (measures to minimise genetic and other biological interactions), Article 3 (measures to minimise the risk of transmission of diseases and parasites to the wild stocks of salmon) and on research and development (Article 4). A format for the return of information was agreed in 1995 and the first returns (covering the calendar year 1995) were presented to the Council at its 1996 Annual Meeting.

2. In 1998 the Council adopted a revised, more detailed format for the returns by the Parties under the Oslo Resolution so as to ensure that the Organization has available to it comprehensive information concerning the measures in force when deciding if additional measures to those contained in the Oslo Resolution may be necessary. The request for the return of information for the calendar year 2000 was circulated on 3 January 2001. The returns are attached. Last year the Council had agreed that it wished only to be advised of new measures, and this has resulted in a considerably shortened report. Measures reported in earlier years have not been reported here but the information returned to the Organization in these and all earlier returns has been incorporated in a database and the information is now available to the Parties if requested. The entries in the database indicate, where appropriate, that while a Party may not have reported any new measures in a particular year, previously reported measures still apply. It should be noted that not all forms of aquaculture are practised by all Parties. Greenland has no aquaculture at all. At the time of preparation of this paper, no return of information for 2000 was available for two EU Member States with salmon interests (Spain and Portugal).

Secretary
Edinburgh
11 July, 2001

1. General Measures

1.1 Sites

1.1.1 Sites only to be assigned for aquaculture where hydrographical, epidemiological, biological and ecological standards can be met

Canada

Federal siting guidelines exist and are used; existing guidelines have been upgraded in New Brunswick and have been adopted (Bay of Fundy Site Allocation and Administrative Policy). Provincial authorities in Nova Scotia and New Brunswick have the authority to approve and issue leases for aquaculture.

No new measures reported by the other Parties.

1.2 Operations

1.2.1 Management of aquaculture units to prevent and control diseases and parasites

Norway

A national action-plan regarding sea-lice was established in 1997 and is revised every year. A new regulation concerning sea-lice entered into force during 2000.

No new measures reported by the other Parties.

1.2.2 Management of aquaculture units to prevent escape of fish

USA

The aquaculture industry has received funding to conduct a third party audit of the existing voluntary code of containment. That audit will provide information on the extent of compliance with the code and also the effectiveness of components in the code.

No new measures reported by the other Parties.

2. Measures To Minimise Genetic And Other Biological Interactions

2.1 Design standards for aquaculture units

2.1.1 Establishment of standards and technical specifications for the design and deployment of aquaculture units (marine and freshwater)

European Union

UK (Scotland)

Fish farming in Scotland is conducted in accordance with 'A Code of Practice to Avoid and Minimise the Impact of ISA', published in August 2000. This is a voluntary code. Its implementation is monitored by the Government's Fish Health Inspectors and industry quality assurance schemes. Finance under the ISA - restart scheme is conditional on the Code's implementation. Insurers and retail multiple buyers also press for implementation.

No new measures reported by the other Parties or the other EU Member States.

2.1.3 Regular routine inspection and maintenance of aquaculture systems and upgrading of equipment as new technological improvements become available

Canada

Good management practice; under provincial jurisdiction and done regularly by industry. In Newfoundland, by routine inspection of equipment in the water by DFA (tensile strength of aquaculture nets and ROV inspection of cage moorings). Upgrading of equipment as new technological improvements become available not legislated for; individuals do as circumstances dictate and permit; Containment Code of Practice would require upgrading to new standards (as cages replaced).

No new measures reported by the other Parties.

2.2 Salmon enhancement

2.2.1 Use of local stocks wherever possible

European Union

Denmark

In seven stream systems local stocks are used. In one stream system foreign stock is used. Denmark has salmon releases in 8 out of 9 potential stream systems.

France

This is not mandatory but generally applied in enhancement and restoration programmes.

Ireland

Mixing of stocks from different rivers still occurs but is actively discouraged.

USA

A river-specific stocking program has been implemented for the endangered salmon populations in the state of Maine.

No new measures reported by the other Parties or the other EU Member States.

2.2.2 Implementation of criteria for broodstock selection and management

European Union

Denmark

Standard procedure including genetic analysis.

No new measures reported by the other Parties or the other EU Member States.

2.3 Salmon ranching

2.3.1 Use of local stocks or alternatively local ranching stocks

European Union

Ireland

Generally only local stocks used. Mixing of stocks from different rivers still occurs but is actively discouraged.

Sweden

Compensatory releases of reared smolts occur in three salmon rivers. Local stocks are used for these releases.

No new measures reported by the other Parties or the other EU Member States.

2.3.2 Harvesting of ranched fish at or close to release site or in fisheries managed in a way that prevents over-harvesting of wild stocks

European Union

Sweden

Harvest of fish from compensatory releases concentrated at river mouth or in river.

No new measures reported by the other Parties or the other EU Member States.

2.4 Salmon farming

2.4.1 Use of local broodstocks where practicable

USA

Through consultations conducted under the Endangered Species Act, the National Marine Fisheries Service and the U.S. Fish and Wildlife Service have recommended against the use of non-North American strain Atlantic salmon in commercial culture. This recommendation has not yet been fully implemented.

No new measures reported by the other Parties.

2.4.2 Efforts to recapture escaped farmed salmon

European Union

Sweden

Scanning of ascending salmon spawners occurs in several rivers. Salmon of foreign origin are not allowed to enter the river.

USA

In the fall of 2000, a boat ran into a cage and caused an escape. Efforts were made to contain the fish and recapture those still in the area.

No new measures reported by the other Parties or the other EU Member States.

2.4.3 Establishment of site-specific contingency plan in the event of large escapes

Canada

Recovery plans required and improved procedures being developed; human safety first priority. Newfoundland has adopted a Code of Practice that includes containment measures and recapture protocols.

USA

As part of the consultation under the Endangered Species Act, the National Marine Fisheries Service and the U.S. Fish and Wildlife Service have recommended that all sites develop a loss control plan that would include a contingency plan in the event of large escapes.

No new measures reported by the other Parties.

3. Measures To Minimise Disease And Parasite Interactions

3.1 Control and prevention of diseases and parasites

3.1.1 Aquaculture production process conducted in accordance with appropriate fish health protection and veterinary controls, including the application of appropriate husbandry techniques to minimise risk of diseases

European Union

Ireland

All farms in Ireland are inspected regularly under EU Directives 91/67/EEC and 2001/183/EC. Movement of fish between sites is authorised by permit and is only allowed between sites of similar health status or from a farm with a higher health status to a lower health status. Fish must be clinically healthy prior to movement. Under the terms of each Aquaculture Licence issued in Ireland, all "abnormal mortalities" must be reported to the Marine Institute/Department of the Marine and Natural Resources within 24 hours of their occurrence. Appropriate stocking densities are maintained through the observation by the industry of a voluntary Code of Practice. Single generation sites and fallowing are cornerstones of the type of aquaculture which is currently practised in Ireland.

Russian Federation

Sporadic veterinary inspections of juvenile Atlantic salmon at hatcheries.

No new measures reported by the other Parties or the other EU Member States.

3.1.2 Treatment or removal of diseased stock and measures to ensure diseased fish are not released to the wild

European Union

Ireland

All farms in Ireland are under the care of a veterinary practitioner. He/she is responsible for the treatment of diseased stock in conjunction with the farm

biologist/manager. Mortalities are removed from cages regularly and disposed of in an appropriate manner.

No new measures reported by the other Parties or the other EU Member States.

3.2 Stocking density

3.2.1 Aquaculture production adapted to the site's holding capacity and stocking density should not exceed levels based on good husbandry practices

European Union

Ireland

Experience has shown that high stocking densities do not result in increased profits. For this reason, the Irish industry has been moving progressively towards the use of lower stocking densities for the last number of years. The current trend is towards the use of large off-shore cages which are lightly stocked and which are located at high-energy sites.

No new measures reported by the other Parties or the other EU Member States.

3.3 Removal of dead or dying fish

3.3.1 Removal of dead/dying fish and disposal along with waste materials in an approved manner

Canada

Good management practice; disposal practices by federal and provincial regulation. The Newfoundland industry has adopted a policy of incineration of all Bay d'Espoir salmonid mortalities in commercially-approved incinerators on a daily basis.

European Union

Ireland

Routine mortalities are removed regularly by divers. These fish are generally placed in a skip/disposal bin where they are limed. Most sites have contracts with waste disposal companies which bury the fish at local landfill sites, under permit from the County Council.

No new measures reported by the other Parties or the other EU Member States.

3.3.2 Establishment of procedures for effective removal and disposal of infectious material

European Union

Ireland

All farms within the EU are governed by the Animal Waste Directive (90/667/EEC). This allows for discrimination between "low risk waste" and "high risk waste". Low risk material may be treated as outlined above (or by burning) whilst high risk material must be disposed of at an approved Rendering Plant.

No new measures reported by the other Parties or the other EU Member States.

3.3.3 Establishment of contingency plans for disposal of mortalities from emergency situations

European Union

Ireland

All farms in Ireland are required by the Department of the Marine and Natural Resources to have an "Emergency Plan". This plan is submitted to the Department of the Marine and Natural Resources with each Aquaculture Licence Application. The plan itself is then examined by an expert Committee and additional information/clarification may be requested.

No new measures reported by the other Parties or the other EU Member States.

3.4 Adequate separation

3.4.1 Separation of aquaculture facilities on the basis of a general assessment of local conditions

European Union

Ireland

The distance between facilities is decided by an expert Committee comprising engineers, biologists, fish health experts, oceanographers and administrators. Each application is assessed individually based on site characteristics, production plan, type of cages to be used, history of the site etc.

No new measures reported by the other Parties or the other EU Member States.

3.5 Year-class separation

3.5.1 Rearing of different generations in separate locations where possible

European Union

Ireland

The principle of year class separation is a cornerstone of the type of aquaculture currently practised in Ireland.

UK (Scotland)

Effort is being made by the Tripartite Working Group to facilitate Area Management Agreements.

Iceland

Consistent with Icelandic policy.

USA

This policy has been adopted by much of the U.S. industry.

No new measures reported by the other Parties or the other EU Member States.

3.6 Fallowing of sites

3.6.1 Use of a fallowing regime wherever possible

European Union

Ireland

The principle of fallowing is employed on all sites in the country. The trend toward the use of larger off-shore smolt sites will allow for synchronous fallowing of inshore on-growing sites for significant periods of time.

No new measures reported by the other Parties or the other EU Member States.

3.7 Use of medicines and disinfectants

3.7.1 Careful use of medicines and disinfectants in accordance with manufacturers' instructions, Codes of Practice and in compliance with regulatory authorities

European Union

Ireland

All medication employed on farms in Ireland is prescribed by the veterinarian retained by the farm. It is that veterinarian's duty to ensure that each treatment is carried out according to the manufacturers' instructions. All farms in Ireland are inspected under EU Directive 96/23/EC, which requires that a representative sample of all fish being placed on the market must be assayed for the presence of certain veterinary products. This Directive has been in place for the past three years and has worked well in increasing the industry's awareness about the type of products that they use from time to time.

No new measures reported by the other Parties or the other EU Member States.

3.8 Lists of diseases

3.8.1 Lists of prevailing infectious diseases and parasites and methods for control to be maintained by appropriate authorities

European Union

Ireland

All farms in the country are examined under EU Directives 91/67/EEC and 2001/183/EU. Surveillance is carried out for all the diseases listed in these Directives. However, all unexplained mortality is also investigated by the Official Services. This ensures that the Marine Institute/the Department of the Marine and Natural Resources are aware, not only of the status of the country with respect to the diseases listed in the EU Directives, but also of any new diseases which may emerge from time to time.

No new measures reported by the other Parties or the other EU Member States.

4. Research And Development

4.1 Research, small-scale testing and full-scale implementation of:

4.1.1 Wild salmon protection areas

European Union

Denmark

In several fjords and eastern part of the Wadden Sea.

USA

The listing of Atlantic salmon under the Endangered Species Act elevates the importance of protecting these populations and their habitat.

No new measures reported by the other Parties or the other EU Member States.

4.1.2 Sterile salmon

Canada

Research in progress; findings are variable but indications are that the technique is feasible; all-female line of rainbow trout (steelhead) conditionally approved for use in Newfoundland demonstrated growth superior to previous triploid trout. Marketable steelhead trout could be produced in one summer in Bay d'Espoir marine cages from ~100g fish. Work with triploid Atlantic salmon from Washington State resulted in performance superior to all diploid Atlantic salmon in Bay d'Espoir aquaculture.

No new measures reported by the other Parties.

4.1.3 Tagging and marking

USA

A workshop was held in March 2001 to present information on available marking techniques for potential application to the U.S. aquaculture industry. The industry, under a federal grant, will be conducting field trials with three marking techniques.

No new measures reported by the other Parties.

4.1.4 Designation of aquaculture regions

European Union

Ireland

Full-scale implementation of specific aquaculture regions by the Department of the Marine and Natural Resources.

Norway

Implementation of a system of aquaculture regions (regionalisation) as a measure for disease control is complicated due to the EEA.

No new measures reported by the other Parties or the other EU Member States.

4.1.5 Alternative production methods (land-based, closed or contained floating facilities and other containment technologies)

European Union

Ireland

Limited research by various academic institutes and commercial companies.

No new measures reported by the other Parties or the other EU Member States.

4.1.6 Use of local broodstocks

European Union

Ireland

Limited research based on ranched/enhancement stocks directed by the Marine Institute of Ireland.

No new measures reported by the other Parties or the other EU Member States.

4.1.7 Understanding of genetic interactions

European Union

Ireland

Research and small-scale testing of hybrids (EU funding) directed by the Marine Institute.

Sweden

A study of the number of straying salmon in salmon rivers has been initiated.

No new measures reported by the other Parties or the other EU Member States.

4.1.8 Prevention and control of disease and parasites

European Union

UK (England and Wales)

Range of governmental funded research programmes.

Sweden

A more comprehensive monitoring programme for *Gyrodactylus salaris* will be implemented in salmon rivers.

No new measures reported by the other Parties or the other EU Member States.

No new measures were reported by any Party in relation to the following elements of the Oslo Resolution:

1.1.2 Siting of units to avoid risk of damage by collision

1.1.3 Adequate marking of aquaculture units

1.3.1 Transfers conducted so as to minimise potential for disease/parasite transmission and for genetic and other biological interactions

1.3.2 Introduction of mechanisms to control transfers where necessary

2.1.2 Optimisation of containment of fish through use of appropriate technology for prevailing conditions

2.1.4 Regular monitoring and use of efficient security systems

ANNEX 20

Council

CNL(01)27

Report of the Second Liaison Meeting with the Salmon Farming Industry

CNL(01)27

Report of the Second Liaison Meeting with the Salmon Farming Industry

1. The first meeting of the NASCO/North Atlantic Salmon Farming Industry Liaison Group was held in London in February 2000 and a report of the meeting was presented to the Council at its Seventeenth Annual Meeting. The Council had welcomed the closer, more open and broader cooperation with the salmon farming industry and the commitment to work together on issues of mutual concern. The second meeting of the Liaison Group was held in Ottawa on 5 and 6 February 2001 and was well attended both by representatives of the salmon farming industry in the North Atlantic and NASCO's Contracting Parties. The report of the meeting is attached. Progress was made in agreeing Guiding Principles for Cooperation between NASCO and the North Atlantic Salmon Farming Industry (contained in Annex 5 of the report), in developing Guidelines on Containment of Farm Salmon (contained in Annex 6 of the report) and in establishing a mechanism to explore areas for future cooperation (see paragraph 6.2 of the report).

2. The Council is asked to consider the report of the Liaison Group and decide if it can accept the report and, in particular, if it can accept:

   (i) that the Chairman and Rapporteur of the Liaison Group should be invited to attend future NASCO meetings so that they may report to the Council on the Group's work (the Council had previously agreed that the Chairman of the Group, if from industry, should be invited to attend);

   (ii) the revised Guiding Principles for Cooperation between NASCO and its Contracting Parties and the North Atlantic Salmon Farming Industry;

   (iii) the proposal to establish a Committee on Future Cooperation to further explore options for enhanced cooperation between wild and farm salmon interests;

   (iv) the proposal that the North American Commission be asked to review the implications of the draft Guidelines on Containment of Farm Salmon for the existing NAC Protocols on the Introduction and Transfer of Salmonids;

   (v) the proposal to hold the third meeting of the Liaison Group in late February or March 2002 at a venue in Europe to be decided and that the Secretariat be asked to liaise on arrangements for the meeting.

3. The draft Guidelines on Containment of Farm Salmon developed by the Liaison Group will be considered separately under Agenda item 5.8(e) (see document CNL(01)28).

Secretary
Edinburgh
9 April, 2001

SLG(01)13

Report of the Meeting of the North Atlantic Salmon Farming Industry and NASCO Liaison Group

Canadian Government Conference Centre, Ottawa, Canada

5-6 February, 2001

1. Introduction

1.1 The Chairman, Mr Andrew Thomson, opened the meeting and welcomed delegates to Ottawa. He thanked the Canadian Government and Canadian Aquaculture Industry Alliance (CAIA) representatives for the arrangements made and wished all participants a fruitful meeting and an enjoyable stay in Ottawa.

1.2 An opening statement was made by Mr James Ryan on behalf of the North Atlantic Salmon Farming Industry. This statement is contained in Annex 1. Ms Anne McMullin (CAIA) welcomed delegates to Ottawa. She referred to the progress made by the Liaison Group at its meeting in London and indicated that the Canadian industry representatives looked forward to continuing this process.

1.3 An opening statement was made by Dr Malcolm Windsor on behalf of NASCO. This statement is contained in Annex 2.

1.4 Ms Anne McMullin was appointed as Rapporteur for the meeting.

1.5 A list of participants is contained in Annex 3.

2. Adoption of the Agenda

2.1 The Liaison Group adopted its agenda, SLG(01)10 (Annex 4).

3. Matters Arising since the First Meeting of the Liaison Group

3.1 At its first meeting the Liaison Group had developed a Constitution to guide its work. This Constitution had been considered at NASCO's Seventeenth Annual Meeting and was acceptable to NASCO. Representatives of the salmon farming industry confirmed that they could also accept the Constitution.

3.2 At its Seventeenth Annual Meeting the Council of NASCO had agreed that the Chairman of the Liaison Group (if from the aquaculture industry) should be invited to attend future NASCO meetings. The industry representatives indicated that this would mean that they could only be represented at NASCO's meetings in two years out of four. The Liaison Group therefore agreed to recommend to the Council that both the Chairman and Rapporteur be invited to attend future NASCO meetings. As

these duties are shared between NASCO and industry representatives it would mean that the industry could attend every NASCO meeting. The industry representatives also asked for clarification on the conditions of attendance. NASCO representatives indicated that attendance was not solely on the basis of observer status but that the Liaison Group representatives should be able to contribute to the relevant Council agenda item where a report is made on the work of the Liaison Group. They agreed to seek clarification on this matter from the Council of NASCO.

3.3 The Council of NASCO had decided that aquaculture organizations may be granted observer status to NASCO under the same conditions as applied to its NGOs. The industry representatives indicated that they believed that the appropriate forum for cooperation with NASCO on issues of mutual interest was the Liaison Group. The Secretary of NASCO referred to correspondence he had received from the Chairman of NASCO's NGOs requesting that they be granted observer status at the Liaison Group meetings. The Group noted that NGOs have the opportunity to have an input into the recommendations developed by the Liaison Group when these are presented to NASCO Council. The Liaison Group agreed that it was important that it could demonstrate significant progress before considering changes to its constitution so as to allow wider participation in its meetings. The Group asked that the NASCO Secretary respond to the NGOs, according to an agreed text, detailing its decision and stressing that the Group looks forward to being in a position to return to this issue at a future meeting.

3.4 The report of NASCO's first Special Liaison Meeting on Measures to Minimise Impacts of Aquaculture on the Wild Stocks held in 1999, which included presentations by Norway and Canada, was made available to the Group. The report of the second Special Liaison Meeting held in June 2000, involving presentations by the EU and its Member States, will be made available to the Group when it has been finalised. The report of the third meeting, to be held in June 2001, involving presentations by Iceland, the Faroe Islands and the USA, will be made available to the Group when it has been prepared.

3.5 At the first Liaison Group Meeting a "Declaration on cooperation between NASCO and the North Atlantic salmon farming industry" had been developed. This "Declaration" had been considered by the Council of NASCO at its Seventeenth Annual Meeting. The Council had felt that the "Declaration" should be seen as "Guiding Principles" or a "Statement of Objectives" and that there was a lack of balance since, while there is reference to the benefits of salmon farming, there is no reference to the possible negative effects on the wild stocks. The risk of such negative effects was the reason why NASCO and a number of national salmon farming industries took the initiative to establish the Liaison Group. Furthermore, while the "Declaration" refers to "NASFI" the Council was unaware of the existence of such an organization. NASCO wished to see this issue addressed. A document, SLG(01)5, including NASCO's proposed changes was tabled. The industry representatives also raised a number of proposals for changes that they wished to see addressed in any revision to the document and indicated that the acronym "NASFI" did relate to a sub-committee of the International Salmon Farmers Association (ISFA) which included representation from all countries in the North Atlantic region with salmon farming interests except the USA. Mr Sebastian Belle, of the Maine Aquaculture Association, indicated that, while no decision had yet been taken by his

Board, it was likely that the industry in Maine would become a member of the ISFA in the future. The Liaison Group considered a revised document, entitled "Guiding Principles for Cooperation between NASCO and its Contracting Parties and the North Atlantic Salmon Farming Industry", which incorporated amendments proposed by the Council of NASCO and by the industry. This document, SLG(01)11 (Annex 5), was agreed by the Liaison Group. It would be referred by NASCO to its Council and by the industry to its constituent bodies.

4. Development of Internationally Agreed Guidelines on Containment

4.1 At its first Meeting the Liaison Group had established a Working Group to develop guidelines on containment. This Working Group had met in Brussels on 6 and 7 April 2000 under the Chairmanship of Dr John Webster. The report of the meeting, which included draft guidelines on containment developed by the Group, had been circulated to all members of the Liaison Group. The Chairman of the Working Group briefly summarised the report of the meeting, SLG(00)18.

4.2 The report of the Working Group had been considered by the Council of NASCO at its Seventeenth Annual Meeting. NASCO had welcomed the development of draft guidelines on containment but saw the need for further work to ensure that they would result in a higher standard of containment than is presently being achieved. As drafted the guidelines could only be considered a minimum standard and NASCO had wished to see inclusion of elements on monitoring, control and enforcement and a requirement to adopt improved technology as it becomes available. The Liaison Group recognised the need to address these points, to clarify in the guidelines the meaning of the term "Action Plan" and to include details of the elements that an Action Plan should include. Revised Guidelines on Containment, SLG(01)12 (Annex 6), incorporating these clarifications and changes, were adopted by the Group. The Group recognised that the development of these plans was already ongoing in many countries but that some plans would take longer to develop and implement than others. Nonetheless there should be reports made on progress to the Liaison Group on an annual basis since the plans will continually evolve as a result of monitoring and experience gained.

4.3 The Liaison Group discussed definitions of the term "wild salmon" as developed by ICES and as contained in the Oslo Resolution, SLG(01)3 (Annex 7).

5. Application of the Precautionary Approach to Salmon Management

5.1 A brief presentation, SLG(01)4, was made summarising NASCO's work in applying the Precautionary Approach to the conservation, management and exploitation of salmon. Under the Guiding Principles for Cooperation, NASCO and its Contracting Parties and the North Atlantic Salmon Farming Industry agree to work cooperatively when consideration is given to the application of the Precautionary Approach to salmon aquaculture.

5.2 The industry representatives raised a number of concerns in relation to the application of the Precautionary Approach including the conflict between the Precautionary Approach and socio-economic aspects and the difficulty of applying the Precautionary Approach objectively. While it was recognised that the Precautionary Approach is an

important development, the view was expressed by the industry that its application may be open to misuse by those opposed to a particular issue and that once the Precautionary Approach has been introduced to the regulatory process it may be difficult to convince the relevant authorities that it can be moderated having had the desired effect and in the light of advancing knowledge.

5.3 The NASCO representatives indicated that some of the initiatives within the Liaison Group might be considered to be consistent with a Precautionary Approach. The Liaison Group agreed that the Precautionary Approach should remain on its agenda for future meetings.

6. Other Areas for Discussion and Cooperation

6.1 At the first Liaison Group meeting possible areas for future discussion and cooperation had been considered. There was support for reviewing how the salmon farming industry might assist with restoration and enhancement of wild salmon stocks since it had been recognised that the industry has considerable experience in hatchery techniques, in reducing costs of rearing salmon and in genetic aspects, and some experience in rearing triploid salmon. The Canadian Commissioner for Aquaculture Development had indicated his willingness to consider funding a Special Session of NASCO on restoration and enhancement of wild salmon. Fish health interactions, over-exploitation of pelagic fish on which Atlantic salmon prey and possible funding mechanisms in order to support research of interest to the Liaison Group, which might not otherwise be funded, had also been identified as possible topics for future discussion and cooperation. These proposed topics for future discussion and cooperation had been agreed by NASCO at its Seventeenth Annual Meeting.

6.2 The Liaison Group considered a proposal from the salmon farming industry representatives to establish a Committee on Future Cooperation to further explore the options for enhanced cooperation between wild and farmed salmon interests. The Group noted that there are already several cooperative initiatives under way involving the industry and those concerned with restoration and enhancement of wild stocks. The Committee was asked to work initially by correspondence so as to catalogue ongoing cooperative programmes on restoration. The Committee might also look into the possibility of holding a seminar or Special Session of NASCO on salmon restoration and also examine funding mechanisms for research of interest to the Liaison Group including research on wild and farmed salmon interactions. The Liaison Group appointed Dr Ken Whelan, Mr Yves Bastien, Mr James Ryan and Mr Sebastian Belle to the Committee and asked that it report back on progress prior to the Liaison Group's next meeting.

7. Any Other Business

7.1 The representatives of the salmon farming industries in North America referred to the need to re-examine NASCO's North American Commission's Protocols on Introductions and Transfers in the light of the considerable progress that had been made by the Liaison Group in developing Guidelines on Containment. They indicated that they wished to see a thorough discussion within NASCO of the implications of these Guidelines for the existing Protocols. The Liaison Group agreed that this proposal should be referred to the North American Commission.

7.2 The representative of the Norwegian Fish Farmers Association referred to a new scientific research programme on Atlantic salmon to be funded by the Norwegian Research Council. A total of about 25-30 million Canadian dollars (approximately £12-15 million) has been allocated to the programme over a ten-year period commencing in 2001. The programme will examine causes of variations in production, threats to salmon in Norwegian waters and management and utilisation aspects of wild salmon. The programme is being funded from public and private (including the salmon farming industry) sources. He agreed to keep the Liaison Group updated on the programme's progress.

8. Date and Place of Next Meeting

8.1 The Liaison Group agreed to hold its next meeting in late February or March 2002 at a venue in Europe to be decided. The NASCO Secretariat was asked to make the arrangements for the meeting in consultation with the Parties.

9. Report of the Liaison Group Meeting

9.1 The Liaison Group decided to agree a report of the meeting by correspondence no later than mid-April.

Opening Remarks on behalf of the International Salmon Farmers Association by James Ryan, Chairman, Irish Salmon Growers Association

Ladies and Gentlemen, Good Morning. I must say I am delighted to be here in this beautiful city even though I have never in all my life experienced such cold.

I would like at the outset to thank Malcolm and Peter of NASCO for organising this meeting and the other meetings which have brought us to this promising stage. I would also like to thank the Canadian Government and the Canadian Aquaculture Alliance for hosting us here.

I have been involved in all the meetings so far, both of the Liaison Group and of the Working Group and even the initial meeting in Glasgow, which seems a very long time ago. The process has been far more successful than I expected – coming as I do from a situation in Ireland where there can be a measure of polarisation between farmed and wild interests. I think we have learned we have far more in common than divides us.

It is important that both sides keep in mind that salmon farming developed some 35 years ago from techniques used to enhance or ranch wild salmon. In this context I was interested to read the NASCO/ICES definition which says that salmon aquaculture includes ranching, enhancement and farming. Both the wild and farmed salmon industries are still pushing out the frontiers of knowledge of the biology of this fish which is so important to us all. We must continue of course to share this knowledge.

As I said, we have made significant progress in the last year. We now have a document, 'The Guidelines on Containment of Farmed Salmon', which is close to finalisation and which goes a long way towards addressing the concerns of all parties. Of course the process does not end with this document. The guidelines need to be applied and this is already happening in many of the countries which are party to this document. The other countries will follow suit in the near future. We should remember that it is not too difficult to persuade farmers to accept a reasonable code of practice as regards preventing farm losses. Farmers can't afford to lose fish and adopting the guidelines will save them money.

The process also does not end with this document because there are many other areas where dialogue can be opened up, particularly as regards research and cooperation between both sides as regards ways of halting or reversing declines in wild salmon numbers. We look forward with interest to hearing more on the proposal to hold a conference on restoration techniques.

We are also curious as to why NASCO has placed the Precautionary Principle on the agenda. The salmon farming industry is wary of the way in which the Precautionary Principle is used as a catch-all reason for saying "no" to salmon farms. However, we await with open minds what NASCO has to say on this topic.

We look forward to frank, open and sympathetic debate.

Thank you.

Annex 2 of SLG(01)13

Opening Statement by Dr Malcolm Windsor, Secretary of the North Atlantic Salmon Conservation Organization (NASCO)

First, on behalf of the NASCO delegates to this Liaison Group Meeting, I would like to thank our Canadian colleagues in the Department of Fisheries and Oceans and the salmon farming industry for the arrangements made for this meeting. The facilities you have provided are greatly appreciated. It is a pleasure for us to be here in Ottawa and we look forward to a productive meeting.

At our first meeting last year in London, we indicated that NASCO is emphatically not anti-salmon-farming. I cannot overstress this; it is in fact self-evident since NASCO is made up of governments, most of which support salmon farming. NASCO is not focusing exclusively on salmon farming and we are well aware that there are many factors that are adversely influencing wild salmon populations. As those of you from the industry who attended our meeting in Miramichi last June will be aware, NASCO is addressing a wide range of issues concerning conservation of the wild stocks. However, we do have real concerns about impacts of aquaculture on the wild stocks. Indeed, the risk of negative effects on the wild stocks was the reason for NASCO and a number of the national industries taking the initiative to establish the Liaison Group. We hope that by establishing a closer, more open and broader cooperation with the salmon farming industry and a commitment to work together on issues of mutual concern, we will be able to achieve a win-win situation in which the wild stocks are maintained in their genetically diverse form and the salmon farming industry is sustainable and seen as environmentally responsible.

In London last year we made good progress in establishing the mechanisms for cooperation and in building trust. We have developed a Constitution for the Liaison Group which has been accepted by the Council of NASCO. We also developed some guiding principles for our work which, subject to some amendments, are acceptable to NASCO.

Our challenge for this meeting is to build on this foundation. We would very much like to see real progress here on the issue of containment. Our Working Group which met in April last year made a start on developing internationally-acceptable guidelines on containment but from NASCO's perspective these can only be considered as a minimum standard which will need further work to ensure that they result in a higher standard of containment than is presently being achieved. The fact that these guidelines can be internationally agreed should help us all. If we can succeed in this endeavour there are many other areas where we might seek international cooperation. We have already identified a number of these areas and if time permits we may begin to explore these issues over the next two days.

I can assure you of NASCO's goodwill and commitment to cooperation with the salmon farming industry but there is now a greater sense of urgency to make real progress. We look forward to working with you here in Ottawa.

North Atlantic Salmon Farming Industry and NASCO Liaison Group

Canadian Government Conference Centre, Ottawa
5-6 February, 2001

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SLG(01)10

North Atlantic Salmon Farming Industry and NASCO Liaison Group
Canadian Government Conference Centre, Ottawa
5 and 6 February 2001

A G E N D A

1. Introduction

   - Opening remarks by the North Atlantic Salmon Farming Industry
   - Opening remarks by NASCO

2. Adoption of the Agenda

3. Matters Arising since the First Meeting of the Liaison Group

4. Development of Internationally Agreed Guidelines on Containment

5. Application of the Precautionary Approach to Salmon Management

6. Other Areas for Discussion and Cooperation

7. Any Other Business

8. Date and Place of Next Meeting

9. Report of the Liaison Group Meeting

SLG(01)11

Guiding Principles for Cooperation between NASCO and its Contracting Parties and the North Atlantic Salmon Farming Industry

1. Statement of principle and objective

The North Atlantic Salmon Farming Industry and the North Atlantic Salmon Conservation Organization (NASCO), (hereinafter referred to as "the Parties"), recognising the importance of conserving and enhancing wild salmon stocks and of supporting a sustainable salmon farming industry, have agreed to the establishment of guiding principles for cooperation. The objective is to establish mutually beneficial working arrangements in order to make recommendations on wild salmon conservation and sustainable salmon farming practices, to maximise potential benefits and to minimise potential risks to both.

2. Principles for cooperation between NASCO and its Contracting Parties and the North Atlantic Salmon Farming Industry

2.1 The Parties are committed to responsible management of wild salmon stocks and responsible salmon farming and to working in cooperation and to establishing a better mutual understanding;

2.2 The Parties recognize the importance of sustainability and environmental stewardship;

2.3 Salmon farming and wild stock management both require a risk management approach;

2.4 Decisions respecting salmon management and salmon farming should be based on the best available science and the Parties recognise the need to improve information for decision-making in relation to wild salmon stocks and salmon aquaculture;

2.5 The Parties agree to work cooperatively when consideration is given to the application of the Precautionary Approach to salmon aquaculture;

2.6 Social, economic and environmental costs and benefits should be integral to decision-making whenever possible;

2.7 The Parties are committed to the sustainability of wild salmon stocks, recognizing that a wide and complex range of factors and activities has adverse effects on wild salmon abundance.

SLG(01)12

Guidelines on Containment of Farm Salmon

Section 1: Introduction

1.1 The North Atlantic Salmon Farming Industry and the North Atlantic Salmon Conservation Organization (NASCO) have established a Liaison Group. This Liaison Group recognised the importance of conserving and enhancing wild salmon stocks and of supporting a sustainable salmon farming industry and is seeking to establish mutually beneficial working arrangements in order to make recommendations on wild salmon conservation and sustainable farming practices. To this end the Liaison Group has developed guidelines on containment to apply throughout the NASCO Convention area.

1.2 Both Parties recognise that a number of guidelines and measures, outlined below, should apply to all salmon aquaculture activities. The Liaison Group should be updated annually on progress on the development of parallel measures in relation to these activities.

Section 2: Objectives

2.1 these guidelines are intended to result in the prevention of escapes of farmed salmon in the freshwater and marine environments.

Section 3: Site Selection

3.1 sites shall be selected having regard to the capability of the equipment to withstand the weather and other environmental conditions likely to be experienced at that site;

3.2 in the interest of avoiding collision damage, equipment shall comply with the relevant national and international regulations regarding navigation and marking;

3.3 careful consideration shall be given to the siting of land-based facilities, so as to minimise the risk of escapes from these facilities.

Section 4: Equipment and Structures

4.1 nets, cages and moorings systems shall be designed, constructed and deployed to prevent escapes, having proper regard to the prevailing conditions at the site. Moorings systems should have a significant in-built safety margin;

4.2 nets and cages should be marked with an identification number; adequate records of each net and cage in use should be maintained in order to assess its fitness for purpose;

4.3 nets shall be: compatible with the cages with which they will be used; secured to the cage collar so that the collar alone bears the strain; and adequately UV-protected. Net weights shall be installed in such a way as to prevent damage to the nets;

4.4 tank systems shall be designed to contain fish effectively and to minimise the chances of fish escaping. Where the outflow from tanks passes into a settling pond, the outflow from the settling pond should incorporate a screen of suitable size and construction to minimise the chances of fish escaping;

4.5 effective predator deterrence methods shall be implemented as appropriate; these should be up-graded as improved, site-appropriate and cost-effective systems of proven efficacy become available; records of predator attacks that may have caused escapes should be maintained for audit;

4.6 salmon farming systems should be upgraded as improved, site-appropriate and cost effective systems of proven efficacy become available.

Section 5: Management System Operations

5.1 farm management procedures shall ensure supervision by appropriately trained, qualified or experienced personnel. There is a need for constant vigilance during operations that could result in escapes;

5.2 procedures shall be adopted to ensure that escapes are prevented during movement and handling of stocks (e.g. during stocking, counting, grading, transport, transfers, treatment and harvesting of fish), and during net changes and cleaning;

5.3 regular preventative maintenance, inspection and repair procedures shall be adopted in order to prevent escapes;

5.4 stress testing of all nets in use shall be conducted on a regular basis and testing protocols, minimum breaking strengths and thresholds for net replacement should be specified in action plans. Records of the results of the tests shall be retained throughout the period the net is in use;

5.5 when it is necessary to tow cages, great care shall be taken to avoid damage to the nets;

5.6 storm preparation procedures shall be developed to minimise the risk of damage from storms detailing the actions to be taken to ensure that the site is made ready; after each storm all nets, cages and mooring systems shall be inspected for damage;

5.7 vessels shall be operated so as to minimise the risk of accidental damage to the equipment;

5.8 where practicable, security systems should be installed so as to deter acts of vandalism and malicious damage.

Section 6: Verification

6.1 management systems should include as a minimum all details of introductions, grading, transfers, treatments, handling or any other incident or occurrence that may have led to an escape. These details shall be recorded and retained for audit. Detailed records should allow estimates of escapes to be made. It is recognised that not all discrepancies will be the result of escapes;

6.2 when an event occurs which leads to an escape defined as significant under the action plan, the operator shall advise the appropriate authorities immediately;

6.3 a site-specific contingency plan shall be developed for use when an event occurs which may have led to an escape defined as significant under the action plan. The contingency plan shall include details of the method of recapture to be used and the area and timeframe over which a recapture programme would apply. Efforts shall be made to recapture farmed salmon immediately provided that this is practicable and does not adversely affect wild Atlantic salmon populations;

6.4 action plans should require appropriate authorities to take all reasonable efforts to issue permits for facilitating the contingency plans developed for each farm.

Section 7: Development of Action Plans

7.1 each jurisdiction should draw up a national action plan, or regional plans, at the earliest opportunity, based on these guidelines. The action plan is the process through which internationally agreed guidelines on containment would be implemented at national or regional level through existing or new voluntary codes of practice, regulations, or a combination of both;

7.2 each action plan should:

7.2.1 create a systematic basis for minimising escapes so as to achieve a level of escapes that is as close to zero as is practicable ;

7.2.2 include a mechanism for reporting information on the level and causes of escapes;

7.2.3 include a mechanism for reporting and monitoring in order to assess compliance and to verify the plan's efficacy;

7.2.4 identify areas for research and development.

7.3 the action plan should be based on co-operation between industry and the relevant authorities and should include the allocation of responsibilities under the plan(s) and a timetable for implementation.

Section 8: Reporting to the Liaison Group

8.1 each jurisdiction should advise the Liaison Group annually on progress in implementing its action plan(s).

Section 9: Revision

9.1 these guidelines shall be subject to revision, with the agreement of the Liaison Group, to take account of new scientific, technical and other relevant information.

SLG(01)3

Definition of the term "Wild Salmon"

1. At the meeting of the Working Group to Develop Guidelines on Containment, which had been established by the Liaison Group at its first meeting, the question arose as to an appropriate definition of the term "wild salmon". The attention of the Group was drawn to definitions developed in 1997 by NASCO's scientific advisors, the International Council for the Exploration of the Sea (ICES), and it was agreed that these definitions should be made available to the Liaison Group at a future meeting.

2. The ICES definitions are as follows:

   Native salmon are wild salmon which are members of a population with no known effects from intentional or accidental releases;

   Wild salmon are fish that have spent their entire life-cycle in the wild and originate from parents which were also spawned and continuously lived in the wild;

   Naturalized salmon are fish that have spent their entire life-cycle in the wild and originate from parents, one or both of which were not wild or native salmon;

   Stocked salmon are fish that have had artificial spawning and/or rearing techniques applied at some point in their life-cycle and/or originate from intentional releases to the wild;

   Escaped salmon are fish that have spent part or all of their life-cycle undergoing artificial propagation and originate from accidental or unplanned releases into the wild.

3. These definitions have not been adopted by NASCO but for the purposes of applying the Oslo Resolution adopted by the Council of NASCO in 1994 the following definitions were developed:

   Salmon aquaculture is the culture or husbandry of Atlantic salmon and includes salmon farming, salmon ranching and salmon enhancement activities;

   Salmon farming is a production system which involves the rearing of Atlantic salmon in captivity for the duration of their life-cycle until harvested;

   Salmon ranching is the release of reared juvenile Atlantic salmon with the intention of harvesting all of them on their return;

   Salmon enhancement is the augmentation of wild stocks in individual river systems by the release of Atlantic salmon at different stages in their life-cycle;

   Wild salmon are salmon which originate naturally and have not been subjected to aquaculture.

4. The Liaison Group might wish to consider these definitions in relation to its work.

ANNEX 21

Council

CNL(01)53

Guidelines on Containment of Farm Salmon

CNL(01)53

Guidelines on Containment of Farm Salmon

Section 1: Introduction

1.1 The North Atlantic Salmon Farming Industry and the North Atlantic Salmon Conservation Organization (NASCO) have established a Liaison Group. This Liaison Group recognised the importance of conserving and enhancing wild salmon stocks and of supporting a sustainable salmon farming industry and is seeking to establish mutually beneficial working arrangements in order to make recommendations on wild salmon conservation and sustainable farming practices. To this end the Liaison Group has developed guidelines on containment to apply throughout the NASCO Convention area.

1.2 Both Parties recognise that a number of guidelines and measures, outlined below, should apply to all salmon aquaculture activities. The Liaison Group should be updated annually on progress on the development of parallel measures in relation to these activities.

Section 2: Objectives

2.1 these guidelines are intended to result in the prevention of escapes of farmed salmon in the freshwater and marine environments.

Section 3: Site Selection

3.1 sites shall be selected having regard to the capability of the equipment to withstand the weather and other environmental conditions likely to be experienced at that site;

3.2 in the interest of avoiding collision damage, equipment shall comply with the relevant national and international regulations regarding navigation and marking;

3.3 careful consideration shall be given to the siting of land-based facilities, so as to minimise the risk of escapes from these facilities.

Section 4: Equipment and Structures

4.1 nets, cages and moorings systems shall be designed, constructed and deployed to prevent escapes, having proper regard to the prevailing conditions at the site. Moorings systems should have a significant in-built safety margin;

4.2 nets and cages should be marked with an identification number; adequate records of each net and cage in use should be maintained in order to assess its fitness for purpose;

4.3 nets shall be: compatible with the cages with which they will be used; secured to the cage collar so that the collar alone bears the strain; and adequately UV-protected. Net weights shall be installed in such a way as to prevent damage to the nets;

4.4 tank systems shall be designed to contain fish effectively and to minimise the chances of fish escaping. Where the outflow from tanks passes into a settling pond, the outflow from the settling pond should incorporate a screen of suitable size and construction to minimise the chances of fish escaping;

4.7 effective predator deterrence methods shall be implemented as appropriate; these should be up-graded as improved, site-appropriate and cost-effective systems of proven efficacy become available; records of predator attacks that may have caused escapes should be maintained for audit;

4.8 salmon farming systems should be upgraded as improved, site-appropriate and cost effective systems of proven efficacy become available.

Section 5: Management System Operations

5.1 farm management procedures shall ensure supervision by appropriately trained, qualified or experienced personnel. There is a need for constant vigilance during operations that could result in escapes;

5.2 procedures shall be adopted to ensure that escapes are prevented during movement and handling of stocks (e.g. during stocking, counting, grading, transport, transfers, treatment and harvesting of fish), and during net changes and cleaning;

5.3 regular preventative maintenance, inspection and repair procedures shall be adopted in order to prevent escapes;

5.4 stress testing of all nets in use shall be conducted on a regular basis and testing protocols, minimum breaking strengths and thresholds for net replacement should be specified in action plans. Records of the results of the tests shall be retained throughout the period the net is in use;

5.5 when it is necessary to tow cages, great care shall be taken to avoid damage to the nets;

5.6 storm preparation procedures shall be developed to minimise the risk of damage from storms detailing the actions to be taken to ensure that the site is made ready; after each storm all nets, cages and mooring systems shall be inspected for damage;

5.7 vessels shall be operated so as to minimise the risk of accidental damage to the equipment;

5.8 where practicable, security systems should be installed so as to deter acts of vandalism and malicious damage.

Section 6: Verification

6.1 management systems should include as a minimum all details of introductions, grading, transfers, treatments, handling or any other incident or occurrence that may have led to an escape. These details shall be recorded and retained for audit. Detailed

records should allow estimates of escapes to be made. It is recognised that not all discrepancies will be the result of escapes;

6.2 when an event occurs which leads to an escape defined as significant under the action plan, the operator shall advise the appropriate authorities immediately;

6.3 a site-specific contingency plan shall be developed for use when an event occurs which may have led to an escape defined as significant under the action plan. The contingency plan shall include details of the method of recapture to be used and the area and timeframe over which a recapture programme would apply. Efforts shall be made to recapture farmed salmon immediately provided that this is practicable and does not adversely affect wild Atlantic salmon populations;

6.4 action plans should require appropriate authorities to take all reasonable efforts to issue permits for facilitating the contingency plans developed for each farm.

Section 7: Development of Action Plans

7.4 each jurisdiction should draw up a national action plan, or regional plans, at the earliest opportunity, based on these guidelines. The action plan is the process through which internationally agreed guidelines on containment would be implemented at national or regional level through existing or new voluntary codes of practice, regulations, or a combination of both;

7.5 each action plan should:

7.2.1 create a systematic basis for minimising escapes so as to achieve a level of escapes that is as close to zero as is practicable ;

7.2.2 include a mechanism for reporting information on the level and causes of escapes;

7.2.3 include a mechanism for reporting and monitoring in order to assess compliance and to verify the plan's efficacy;

7.2.4 identify areas for research and development.

7.6 the action plan should be based on co-operation between industry and the relevant authorities and should include the allocation of responsibilities under the plan(s) and a timetable for implementation.

Section 8: Reporting to the Liaison Group

8.1 each jurisdiction should advise the Liaison Group annually on progress in implementing its action plan(s).

Section 9: Revision

9.1 these guidelines shall be subject to revision, with the agreement of the Liaison Group, to take account of new scientific, technical and other relevant information.

ANNEX 22

Council

CNL(01)37

Response from France (in respect of St Pierre and Miquelon) to the Resolution by the Contracting Parties to the Convention for the Conservation of Salmon in the North Atlantic Ocean Concerning St Pierre and Miquelon

(original page supplied)

Reply from France to NASCO's Resolution concerning Saint-Pierre et Miquelon

* * *

Subject: Salmon fishing at Saint-Pierre et Miquelon

References: NASCO document; ref. CNL(00)59
Letter from NASCO, dated: 22nd January, 2001; ref.: CNL 13.094
Letter from NASCO, dated: 2nd April, 2001; ref.: NAC 14.171.
Letter from NASCO, dated: 11th April, 2000; ref.: CNL 13.098.

Attachment: Statistical information on Salmon fishing at Saint-Pierre et Miquelon

This letter contains some explanatory details on salmon fishing activity, together with a table summarising the level of captures over the last three years.

Its aim is to demonstrate to NASCO Contracting Parties that the level of salmon fishing at Saint-Pierre et Miquelon is not such as to constitute a threat to the stock's sustainability. It also endeavours to offer a reply to the Resolution adopted during NASCO's Seventeenth Annual Meeting, concerning Saint-Pierre et Miquelon.

Given the concern expressed by the Contracting Parties in this Resolution about the level of salmon harvests in 1998 and 1999 (at Saint-Pierre et Miquelon), France on behalf of Saint-Pierre et Miquelon is being strongly urged to immediately implement measures which would reduce salmon catches in year 2000 to the lowest possible level.

Firstly, it is important to indicate that salmon fishing at Saint-Pierre et Miquelon is an activity which goes back more than 20 years. This traditional practice is neither temporary nor speculative.

During the 80s, the captured volumes were relatively substantial. Statistics are showing that Saint-Pierre et Miquelon fished 3 tonnes of salmons in 1983, 1984 and 1985. Today, captures amount to 2.3 tonnes, a figure which demonstrate some stability of the activity over time.

It is equally important to stress that the expression “Commercial fishery” corresponds in fact to a traditional subsistence fishery benefiting the local community which is highly reliant on fishing.

Catches made by France on behalf of Saint-Pierre et Miquelon in 1999 (2.3 tonnes) remain extremely negligible in comparison to those carried out in the Western Atlantic (less than 1.5%).

Despite a low level of catches (less than 3 tonnes), also that this activity has a long tradition and that this fishery is important for the local population, France on behalf of Saint-Pierre et Miquelon nevertheless feels it participates fully to the salmon fisheries management.

This fishery is managed through fishing effort limitations and technical restrictions on fishing gear, in accordance with the decree of 20th March 1987. Amongst this package of measures, one should note that **salmon fishing is only authorised for three months of the year.** There are also some measures which reduce the length of the nets. Furthermore, **the number of fishing permits allocated has decreased since 1998, falling from 51 in 1998 to 43 en 2000, which amounts to a 19% reduction.**

The increase in the captures recorded in 1998 and 1999 corresponds to an improvement in the statistical follow-up. One should also point out that the increase in 1998 compared to the 1997 figure is not 55% as it is indicated in the Resolution, but 35% (1,491 kg in 1997 et 2,307 kg in 1998). Thanks to the improvement in the declaration of catches and to the overall fishery management, one may safely assume that catches have, for a number of years now, been stabilised.

As for the invitation extended by NASCO to its Eighteenth Annual Meeting, France on behalf of Saint-Pierre et Miquelon will unfortunately not be able to be represented. On the other hand, this letter may be distributed to the Contracting Parties of NASCO with an interest in the fishing activity at Saint-Pierre et Miquelon.

February, 2001

STATISTICAL INFORMATION ON SALMON AT SAINT-PIERRE ET MIQUELON

CATCHES (in kilograms of live weight)			
Years	Commercial fishery	Recreational fishery	Total
1998	1,039	1,268	2,307
1999	1,182	1,140	2,322
2000	1,134	1,133	2,267

PERMITS ALLOCATED			
Years	Commercial fishery	Recreational fishery	Total
1998	9	42	51
1999	7	40	47
2000	8	35	43

N.B.: The expression “Recreational fishery” corresponds to fishing undertaken as a sports and recreational activity; as for “Commercial fishery”, this expression is incorrect. What is actually referred to here is the traditional subsistence fishery carried out by the local population, highly dependent on fishing.

B.P. 4206 – 97500 Saint-Pierre et Miquelon

ANNEX 23

Council

CNL(01)61

Control of Seals as Predators of Salmon in the European Union

(Tabled by the European Union)

CNL(01)61

Control of Seals as Predators of Salmon in the European Union

(Tabled by the European Union)

Within the European Union, protection for seals is afforded by their inclusion in Annex V of the EU Habitats Directive. A number of Special Areas of Conservation have been designated for seals throughout the member states.

Ireland

Grey seals (*Halichoerus grypus*) and common or Harbour seals (*Phoca vitulina*) are protected under Ireland's Wildlife Act. However, provision is made under this Act to allow licensed fishermen, owners of salmon rod fisheries and staff of state and semi-state agencies involved in the management or protection of fisheries resources to apply for a limiting licence to shoot seals which are interfering with fishing gears or fishery operation.

UK (England and Wales) and UK (Scotland)

Grey seals and common seals are protected under the terms of the Conservation of Seals Act 1970. This Act prohibits the killing of seals other than by the use of a rifle with ammunition having a muzzle energy of not less than 600 ft-lbs (813.5 joules) and a bullet weighing not less than 45 grains (15.4 grams). It also provides for annual close times (1 September to 31 December for grey seals and 1 June to 31 August for common seals) when it is an offence to kill seals. It is not an offence to kill a seal, however, if this is done to prevent it causing damage to a fishing net or tackle, or to any fish in such a net, provided that the seal is in the vicinity of the net or tackle.

A licence may be issued to permit the killing of seals to prevent damage to fisheries, to reduce a population surplus of seals for management purposes, or to use a population surplus as a resource. The licence imposes restrictions on the type of firearm that can be used to shoot seals, which were intended to ensure that the most humane method of killing is used.

UK (Northern Ireland)

In Northern Ireland, persons holding salmon netting licences are permitted to apply control measures to prevent interference by seals to catches and gear. Such measures can include killing by means of high velocity firearm. Licences may be issued under the provisions of the Wildlife (NI) Order 1985.

Sweden

The hunting of seals along the Swedish west coast has been banned since 1967 and 12 seal sanctuaries have been established. However, according to the former HELCOM environment committee, Sweden may issue permits for the capture and/or killing of seals for the purposes of research on the effects of removing seals from areas where extensive damage is being caused to fishing gears. The issue of permits to remove individual animals that are causing problems to fishing gears is possible only in very exceptional circumstances.

Denmark

The killing of seals is prohibited in Denmark. In exceptional cases, permits may be issued to shoot seals that are causing particular damage to fisheries, but very few such licences have been issued and none in respect of salmon fisheries.

New Initiatives

One of the major difficulties in assessing the impact of seals as predators of salmon has been the difficulty in assessing the contribution of salmonids to seal diet.

In the UK, the Atlantic Salmon Trust is currently supporting a project to validate the use of DNA techniques to identify soft tissue salmonid remains in seal faeces, and to differentiate between salmon and sea trout tissues. It is hoped that this will lead to better quantitative assessments of seal diet and predation levels.

This work will be carried out in Scotland by the Fisheries Research Services Freshwater Laboratory and the Cromarty Field Station of the University of Aberdeen. The facilities of the Sea Mammal Research Unit at St Andrews University will also be used. A progress report will be available in Spring 2002, with the final report being completed by October 2002.

ANNEX 24

CNL(01)65

Press Release

- ***New and innovative conservation and restoration measures were agreed internationally by the North Atlantic Salmon Conservation Organization at its Annual Meeting this week in Mondariz, Galicia, Spain, in response to continuing concern about the status of wild salmon stocks. A further significant step was taken in applying the Precautionary Approach, which has now been extended to the management of salmon habitat. The meeting was held beside one of the most southerly salmon rivers flowing into the Atlantic, the River Tea, at the invitation of the Autonomous Government of Galicia.***

- NASCO has agreed to establish an International Salmon Research Programme to identify and explain the causes of increased marine mortality and to explore the possibilities to counteract this mortality. In spite of restrictive management measures introduced both nationally and internationally in recent years by NASCO and its Contracting Parties, requiring great sacrifices by many people dependent on this resource, salmon stocks are still at seriously low levels.

- In the light of the condition of many salmon stocks agreement was reached on a measure for the Faroese fishery for the year 2002 which relies on the Faroe Islands to use the Precautionary Approach and to take account of the scientific advice and which does not, therefore, set a tonnage for a quota. For the West Greenland salmon fishery, an innovative management measure was agreed that seeks to establish an improved management system which is both precautionary and highly adaptive. Depending on the observed abundance of fish from both North America and Europe at West Greenland, which will be monitored in season, the maximum quota for the fishery can be adjusted during the 2001 fishing season. The effectiveness of this new measure will be evaluated in March 2002.

- In order to give long-term protection to wild salmon stocks, NASCO and its Contracting Parties have agreed to implement the Precautionary Approach to salmon management. The Council had previously adopted a decision structure for use by NASCO and the relevant authorities in implementing a Precautionary Approach to management of salmon fisheries. Initial reports on the implementation of this decision structure were received.

- As the next step, NASCO considered how to apply the Precautionary Approach to habitat protection and restoration, and adopted a Plan of Action with the objective of maintaining and, where possible, increasing the current productive capacity of Atlantic salmon habitat. Under this plan, NASCO's Contracting Parties and their relevant jurisdictions will establish comprehensive salmon habitat protection and restoration plans and report back to NASCO at its 2002 meeting.

- The Council has established a Liaison Group with the North Atlantic salmon farming industry to consider issues of mutual concern. The Council agreed Guidelines on Containment of Farm Salmon which had been developed by the Liaison Group. The objective is to minimise escapes. Each jurisdiction will use the Guidelines as a basis to

produce its own national or regional plan. This is considered by all Parties as a fine achievement.

- A Special Liaison Meeting was held in Mondariz to review the measures taken to minimise impacts of aquaculture on the wild stocks. The measures taken by the USA, Faroe Islands and Iceland were reviewed.

- The Council remains concerned about harvest levels at St Pierre and Miquelon and supported a proposal from the United States to improve cooperation with St Pierre and Miquelon through the initiation of a sampling programme there in 2002 to improve understanding of the fishery and to determine the origin of the catch.

- This Press Release was issued in Mondariz, Galicia, Spain on Friday 8 June 2001.

Notes to Editors:

1. The North Atlantic Salmon Conservation is an inter-governmental Organization established by a treaty with the objective of contributing to the conservation, restoration, enhancement and rational management of salmon stocks. The Contracting Parties are Canada, Denmark (in respect of the Faroe Islands and Greenland), the European Union, Iceland, Norway, the Russian Federation and the United States of America.

2. The Organization consists of a Council, three regional Commissions (North American, North-East Atlantic, and West Greenland) and a Secretariat.

3. The Eighteenth Annual Meeting of the Organization was held in Mondariz, Galicia, Spain during 4-8 June 2001.

4. Contact on this press release:

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ANNEX 25

CNL(01)0

List of Council Papers

Paper No.	Title
CNL(01)0	List of Papers
CNL(01)1	Provisional Agenda
CNL(01)2	Explanatory Memorandum on the Agenda
CNL(01)3	Draft Agenda
CNL(01)4	Draft Schedule of Meetings
CNL(01)5	Secretary's Report
CNL(01)6	Report of the Finance and Administration Committee Meeting
CNL(01)7	Methods of Calculating the Contributions to NASCO - Illustrative Scenarios
CNL(01)8	Review of NASCO's Relationship with its Observer Organizations
CNL(01)9	Report on the Activities of the North Atlantic Salmon Conservation Organization in 2000
CNL(01)10	Report of the ICES Working Group on North Atlantic Salmon
CNL(01)11	Report of the ICES Advisory Committee on Fishery Management
CNL(01)12	Report of the Standing Scientific Committee Meeting
CNL(01)13	Catch Statistics - Returns by the Parties
CNL(01)14	Historical Catch Record 1960-2000
CNL(01)15	Review of International Salmon-Related Literature Published in 2000
CNL(01)16	Returns under Articles 14 and 15 of the Convention (updated to include information for EU (France) provided after the Eighteenth Annual Meeting)
CNL(01)17	Report of the Standing Committee on the Precautionary Approach - Application of a Precautionary Approach to Habitat Protection and Restoration
CNL(01)18	Proposed Terms of Reference for Consideration of Social and Economic Implications for Application of a Precautionary Approach

CNL(01)19 Unreported Catches - Returns by the Parties (updated to include information for EU (UK - Northern Ireland) and EU (France) provided at and after the Eighteenth Annual Meeting respectively)

CNL(01)20 FAO International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing

CNL(01)21 Report of the Meeting of the Working Group on International Cooperative Research

CNL(01)22 Financial and Administrative Implications of the Recommendations of the Working Group on International Cooperative Research

CNL(01)23 Fishing for Salmon in International Waters by Non-Contracting Parties

CNL(01)24 Programme for the Special Liaison Meeting to Review Measures to Minimise Impacts of Aquaculture on the Wild Stocks

CNL(01)25 Not issued

CNL(01)26 Returns made under the Oslo Resolution (updated to include information for EU (France) provided after the Eighteenth annual Meeting)

CNL(01)27 Report of the Second Liaison Meeting with the Salmon Farming Industry

CNL(01)28 Development of Guidelines on Containment of Farm Salmon

CNL(01)29 Transgenic Salmon

CNL(01)30 St Pierre and Miquelon Salmon Fisheries

CNL(01)31 Not issued

CNL(01)32 Future Actions in Relation to Application of the Precautionary Approach

CNL(01)33 Summary of Council Decisions

CNL(01)34 Draft Report

CNL(01)35 Draft Press Release

CNL(01)36 Existing Research and Development Funding on Salmon at Sea

CNL(01)37 Response from France (in respect of St Pierre and Miquelon) to the Resolution by the Contracting Parties to the Convention for the Conservation of Salmon in the North Atlantic Ocean Concerning St Pierre and Miquelon

CNL(01)38 Information on the Surface Tuna Fisheries Operating in European Waters and International Waters (Tabled by the European Union)

CNL(01)39 Notification of Proposed Research Cruise (Tabled by Canada)

CNL(01)40 Not issued

CNL(01)41 Initial Comments on the NASCO Decision Structure for Fisheries Management (Tabled by the European Union)

CNL(01)42 Special Liaison Meeting to Review Measures to Minimise Impacts of Aquaculture on Wild Stocks – Presentation by Iceland

CNL(01)43 Special Liaison Meeting to Review Measures to Minimise Impacts of Aquaculture on Wild Stocks – Presentation by the United States of America

CNL(01)44 Special Liaison Meeting to Review Measures to Minimise Impacts of Aquaculture on Wild Stocks – Presentation by Denmark (in respect of the Faroe Islands)

CNL(01)45 Notification of Proposed Research Cruise (Tabled by the United States)

CNL(01)46 Presentation by ICES to the Council

CNL(01)47 Agenda

CNL(01)48 2002 Budget, 2003 Forecast Budget and Schedule of Contributions

CNL(01)49 Decision by the Council of NASCO Concerning a NASCO Staff Fund

CNL(01)50 Guidelines on Acceptance of Voluntary Contributions

CNL(01)51 NASCO Plan of Action for the Application of the Precautionary Approach to the Protection and Restoration of Atlantic Salmon Habitat

CNL(01)52 Report of the Meeting of the Working Group on International Cooperative Research

CNL(01)53 Guidelines on Containment of Farm Salmon

CNL(01)54 Information Note from the Salmon Farming Industry and NASCO Liaison Group

CNL(01)55 Application of the Precautionary Approach to the Management of Atlantic Salmon Fisheries (Tabled by Canada)

CNL(01)56 Initial Comments on the NASCO Decision Structure for Fisheries Management (Tabled by Denmark (in respect of the Faroe Islands and Greenland))

CNL(01)57 Report on Progress in Applying the Decision Structure for Implementing the Precautionary Approach to Management of Salmon Fisheries in Norway

CNL(01)58 Application of the Decision Structure for Implementing the Precautionary Approach to Management of Atlantic Salmon Fisheries in Russia in 2001 (Tabled by the Russian Federation)

CNL(01)59 United States Trial Application of the Decision Structure to Aid the Council and Commissions of NASCO and the Relevant Authorities in Implementing the Precautionary Approach to Management of North Atlantic Salmon Fisheries

CNL(01)60 Report of the Meeting of the Working Group on Cooperative Research Planning, Priorities and Funding (Incorporating Amendments)

CNL(01)61 Control of Seals as Predators of Salmon in the European Union (Tabled by the European Union)

CNL(01)62 Council Decision on the Reports of the Working Groups on Cooperative Research

CNL(01)63 Report of the Meeting of the Working Group on Cooperative Research Planning, Priorities and Funding (Incorporating Further Amendments)

CNL(01)64 Council Decision on the Reports of the Working Groups on Cooperative Research (Incorporating Amendments)

CNL(01)65 Press Release

CNL(01)66 Request for Scientific Advice from ICES

CNL(01)67 Report of the Eighteenth Annual Meeting of the Council

CNL(01)68 FAO International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (including minor amendments)

CNL(01)69 Not issued

CNL(01)70 Can the impact of seals on salmon and salmon fisheries be reduced?
NGO Statement – Salmon Net Fishing Association of Scotland

CNL(01)71 Background Information provided by Greenpeace regarding Transgenic (Genetically Modified - GM) Fish
NGO Statement - Greenpeace International

CNL(01)72 Statement from the Federation of Icelandic River Owners

CNL(01)73 The Role of General Education in the Conservation of Atlantic Salmon
NGO Statement – Coomhola Salmon Trust

CNL(01)74 Observations and Recommendations on Transgenic Salmon as proposed to the Eighteenth Annual Meeting of NASCO - Presented by Greenpeace International

Note: This is a listing of all the Council papers. Some, but not all, of these papers are included in this report as annexes.